

JP1 Version 13

**JP1/Automatic Job Management System 3
Administration Guide**

3021-3-L46-10(E)

Notices

■ Relevant program products

For details about the applicable OS versions, and the service packs and patches required for JP1/Automatic Job Management System 3, see the *Release Notes*.

JP1/Automatic Job Management System 3 - Manager (For Windows):

P-2A12-3KDL JP1/Automatic Job Management System 3 - Manager version 13-10

The above product includes the following:

P-CC2A12-4KDL JP1/Automatic Job Management System 3 - Manager version 13-10 (For Windows Server 2022, Windows Server 2019, Windows Server 2016)

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P-CC2A12-3NDL JP1/Automatic Job Management System 3 - Print Option Manager version 13-10 (For Windows Server 2022, Windows Server 2019, Windows Server 2016)

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JP1/Automatic Job Management System 3 - Agent (For Windows):

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JP1/Automatic Job Management System 3 - Agent Minimal Edition (For Windows):

P-2A12-38DL JP1/Automatic Job Management System 3 - Agent Minimal Edition version 13-10

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JP1/Automatic Job Management System 3 - View (For Windows):

P-2A12-34DL JP1/Automatic Job Management System 3 - View version 13-10

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P-CC2A12-44DL JP1/Automatic Job Management System 3 - View version 13-10 (For Windows Server 2022, Windows Server 2019, Windows Server 2016, Windows 11, Windows 10)

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■ Microsoft product name abbreviations

This manual uses the following abbreviations for Microsoft product names.

Abbreviation	Full name or meaning
Excel	Microsoft(R) Excel
	Microsoft(R) Office Excel
Exchange Server	Microsoft(R) Exchange 2000 Enterprise Server
	Microsoft(R) Exchange 2000 Server
	Microsoft(R) Exchange Server
Internet Explorer	Windows(R) Internet Explorer(R)
Microsoft Edge	Microsoft(R) Edge
Microsoft SQL Server	Microsoft(R) SQL Server
	Microsoft(R) SQL Server Enterprise Edition
MSMQ	Microsoft(R) Message Queue Server

Abbreviation		Full name or meaning
Outlook	Outlook 2016	Microsoft(R) Office Outlook(R) 2016
	Outlook 2019	Microsoft(R) Office Outlook(R) 2019
	Outlook 2021	Microsoft(R) Office Outlook(R) 2021
Outlook Express		Microsoft(R) Outlook(R) Express
Windows 10		Windows(R) 10 Enterprise
		Windows(R) 10 Pro
		Windows(R) 10 Home
Windows 11		Windows(R) 11 Enterprise
		Windows(R) 11 Pro
		Windows(R) 11 Home
Windows Server 2016		Microsoft(R) Windows Server(R) 2016 Datacenter
		Microsoft(R) Windows Server(R) 2016 Standard
Windows Server 2019		Microsoft(R) Windows Server(R) 2019 Datacenter
		Microsoft(R) Windows Server(R) 2019 Standard
Windows Server 2022		Microsoft(R) Windows Server(R) 2022 Datacenter
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Summary of amendments

For details about the amendments, see the manual *JP1/Automatic Job Management System 3 Overview*.

Preface

This manual describes how to operate JP1/Automatic Job Management System 3 (abbreviated hereafter to *JP1/AJS3*). Read this manual in conjunction with the manual *JP1/Automatic Job Management System 3 Overview*, which describes the JP1/AJS3 functions, the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*, which describes JP1/AJS3 design, and the *JP1/Automatic Job Management System 3 System Design (Work Tasks) Guide*.

For details on the prerequisites before reading this manual, see the manual *JP1/Automatic Job Management System 3 Overview*.

■ Organization of this manual

This manual organized into the following chapters. The manual is a common reference for all supported operating systems. Any platform-dependent differences in functionality are noted in the manual.

1. Overview of Operation Using JP1/AJS3

Chapter 1 provides an overview of system operation using JP1/AJS3.

2. Backup and Recovery

Chapter 2 describes how to perform backup and recovery in a system that uses JP1/AJS3.

3. Backing Up and Restoring Jobnets

Chapter 3 describes how to back up and restore the definition information of jobnets and the registration status of each jobnet.

4. Monitoring Jobnets

Chapter 4 describes the execution results of jobnets and how to monitor jobnet execution time.

5. Monitoring the Operating Status

Chapter 5 describes monitoring of the JP1/AJS3 operating status.

6. Starting and Stopping JP1/AJS3 Services

Chapter 6 describes how to start and stop JP1/AJS3 services.

7. Changing the Settings During Operation

Chapter 7 describes how to change the environment and settings during JP1/AJS3 operation.

8. Operating Methods

Chapter 8 provides know-how for operating JP1/AJS3 efficiently.

9. Database Maintenance

Chapter 9 describes how to maintain the JP1/AJS3 database.

10. Operation in a Cluster System

Chapter 10 describes the flow of processing when JP1/AJS3 is used in a cluster system.

11. Disaster Recovery in JP1/AJS3

Chapter 11 describes the disaster recovery mode of JP1/AJS3, the preconditions for its use, and the necessary system configuration. It also describes how to change the environment in which disaster recovery operates.

12. Operation in a Configuration Using an External Database

Chapter 12 describes operation of JP1/AJS3 in a configuration that uses an external database, including procedures for setup and for recovery from a system failure.

13. Case Studies

Chapter 13 presents a number of operating scenarios for JP1/AJS3, and describes how to best configure and operate JP1/AJS3 in each scenario.

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1

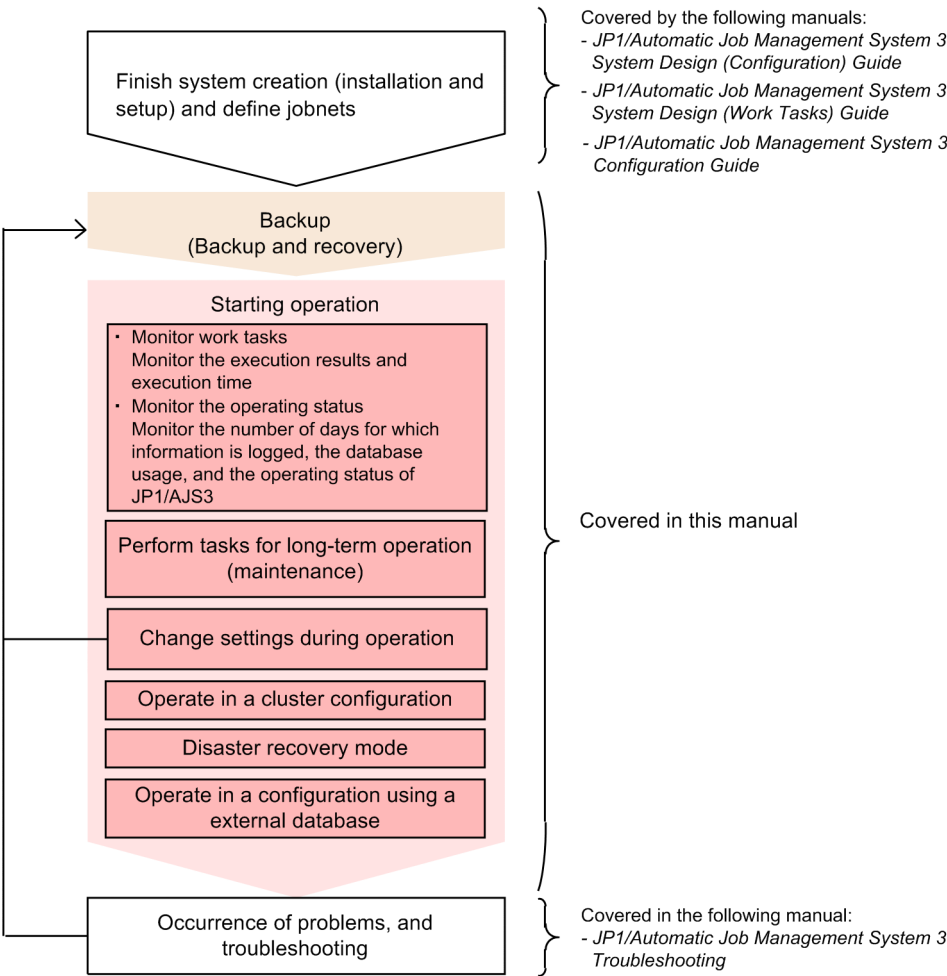
Overview of Operation Using JP1/AJS3

This chapter provides an overview of system operation using JP1/AJS3.

1.1 Example of operation using JP1/AJS3

The following is an example of typical operation using JP1/AJS3.

Figure 1–1: Example of operation using JP1/AJS3



1.2 Operation tasks performed during operation

The following table lists the operation tasks performed during operation of JP1/AJS3. This table also shows the sections in this manual that explain the operation tasks. The operation tasks can be classified into two types: operation tasks related to work tasks, and operation tasks related to system operation.

Table 1–1: Operation tasks performed during operation and the sections that explain the tasks

Operation tasks performed during operation		Section in the manual
Operation tasks related to work tasks	Checking the execution results (normal or abnormal termination) and checking the execution time (startup and termination delays)	<i>4. Monitoring Jobnets</i>
	Changing the definitions during operation • Suppressing execution of jobs and jobnets • Changing a jobnet definition during operation	<i>7. Changing the Settings During Operation</i>
Operation tasks related to system operation	Backup and recovery (for continuous operation) • Backing up and restoring the setup information of a system using JP1/AJS3, and performing a full backup and restoration of such a system • Backing up and restoring databases • Backing up and restoring jobnets	<i>2. Backup and Recovery</i> <i>B. Backing Up and Recovering Databases</i> <i>3. Backing Up and Restoring Jobnets</i>
	Monitoring the operating status • Monitoring the log file sizes and logged information • Monitoring the database usage • Monitoring the operating status of JP1/AJS3	<i>5. Monitoring the Operating Status</i>
	Starting and stopping services	<i>6. Starting and Stopping JP1/AJS3 Services</i>
	Changing the settings during operation • Changing the job execution environment (execution agent information) • Changing a host name and IP address	<i>7. Changing the Settings During Operation</i>
	Performing tasks for long-term operation (maintenance)	<i>9. Database Maintenance</i>
	Operation in a cluster configuration (for higher availability)	<i>10. Operation in a Cluster System</i>
	Disaster recovery operation	<i>11. Disaster Recovery in JP1/AJS3</i>
	Operation using an external database	<i>12. Operation in a Configuration Using an External Database</i>
Operational know-how	Providing know-how for JP1/AJS3 operation	<i>8. Operating Methods</i>
	Providing operation examples for JP1/AJS3 and solutions to problems	<i>13. Case Studies</i>

2

Backup and Recovery

This chapter describes how to perform backup and recovery in a system that uses JP1/AJS3. Use the information in this chapter as the basis for executing backup and recovery in JP1 as a part of a backup plan for the entire system.

2.1 Overview of backup and recovery

This section provides an overview of backup and recovery.

The following table describes where you can find information about backing up and recovering individual programs (JP1/Base, JP1/AJS3 - Manager, JP1/AJS3 - Agent, and JP1/AJS3 - View). For details about methods of backing up and recovering an entire system, see [2.4 Backing up and recovering an entire system](#). For details about methods of backing up and recovering an embedded database while JP1/AJS3 is running, see [2.5 Backing up and recovering JP1/AJS3 - Manager by using the backup enhancement function](#).

Table 2–1: Where backup and recovery methods are described

Setup information	Detailed information	Procedure described in the manual	
		For backup, see:	For recovery, see:
JP1/Base	See the <i>JP1/Base User's Guide</i> .	2.2.2	2.3.3
JP1/AJS3 - Manager	Files used by JP1/AJS3	2.2.3(1)	2.3.4(3)
	Execution-agent information	2.2.3(2)	2.3.4(8)
	Execution environment definition for QUEUE jobs and submit jobs	2.2.3(3)	2.3.4(6)
	Definition of units for other than a root job group	2.2.3(4)(a)	2.3.4(9)(a)
	Information for a root job group	2.2.3(4)(b)	2.3.4(9)(b)
	Calendar information for a root job group	2.2.3(4)(c)	2.3.4(9)(c)
	Execution registration status of a root jobnet	3.4.4	3.4.5
JP1/AJS3 - Agent	Files used in JP1/AJS3	2.2.4(1)	2.3.5(3)
JP1/AJS3 - View	Environment settings files	2.2.5(1)	2.3.6(2)
	Custom job icons	2.2.5(2)	2.3.6(3)
	Icon image folders	2.2.5(3)	2.3.6(4)
	Custom event job icons	2.2.5(4)	2.3.6(5)
JP1/AJS3 - Web Console	Files used by JP1/AJS3	2.2.6(1)	2.3.7(3)
Other setup information	Service account ^{#1}	2.2.7(1)(a)	2.3.8(1)(a)
	Login scripts ^{#2}	2.2.7(2)(a)	2.3.8(2)(a)
	Adjustment values of kernel parameters ^{#2}	2.2.7(2)(b)	2.3.8(2)(b)
	Tool that collects troubleshooting data	2.2.7(1)(b)	2.3.8(1)(b)
		2.2.7(2)(c)	2.3.8(2)(c)
	Tools for supporting cluster software	2.2.7(1)(c)	2.3.8(1)(c)
		2.2.7(2)(d)	2.3.8(2)(d)
	User-created tools for linking mail systems ^{#2}	2.2.7(2)(e)	2.3.8(2)(e)
	Files used by HTTP connection jobs	2.2.7(1)(d)	2.3.8(1)(e)

Setup information	Detailed information	Procedure described in the manual	
		For backup, see:	For recovery, see:
Other setup information	Files used by HTTP connection jobs	2.2.7(2)(f)	2.3.8(2)(g)

#1

Only in Windows.

#2

Only in UNIX.

2.2 Backing up the setup information for a system that uses JP1/AJS3

This section describes how to back up the setup information required for recovering a system that uses JP1/AJS3.

Backup procedures are classified and described as JP1/Base, JP1/AJS3 - Manager, JP1/AJS3 - Agent, JP1/AJS3 - View, and JP1/AJS3 - Web Console procedures. Combine the procedures according to the products that will be used. When you back up JP1/AJS3 - Manager or JP1/AJS3 - Agent, you must also back up JP1/Base. If JP1/AJS3 - Web Console is installed on the same host as JP1/AJS3 - Manager, be sure to also back up JP1/AJS3 - Manager.

Backup procedures are described for both a physical host environment and a logical host environment (for a cluster system). Back up both environments. For example, if there is a physical host environment and a logical host environment, first back up the physical host environment, and then back up the logical host environment.

Cautionary note

When you change the settings of a system that uses JP1/AJS3, use the procedure described here to back up the settings.

A user with administrator privileges of the OS (in Windows) or a user with superuser privileges (in UNIX) must perform backup.

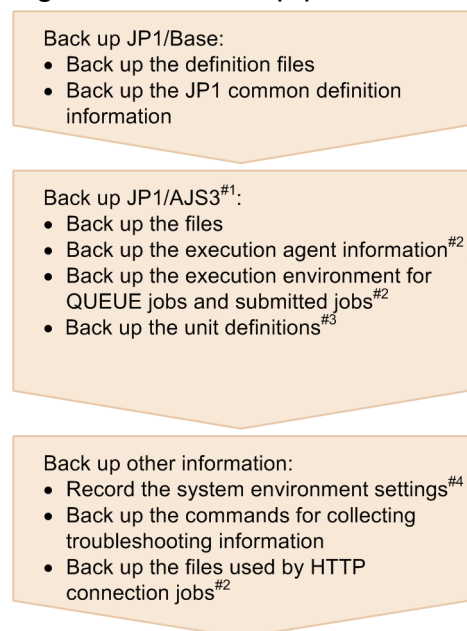
2.2.1 Overview of backup

The following provides an overview of backup.

(1) Backup procedure

The following figure shows the backup procedure.

Figure 2–1: Backup procedure



#1 For JP1/AJS3 - Agent and JP1/AJS3 - Web Console, perform the step "Back up the files" only.

#2 Back up this information as needed.

#3 Back up the definitions for each scheduler service.

#4 Record the system environment settings (for example, the service account in Windows and the kernel parameters in UNIX).

(2) Backup procedure (when a cluster system is used)

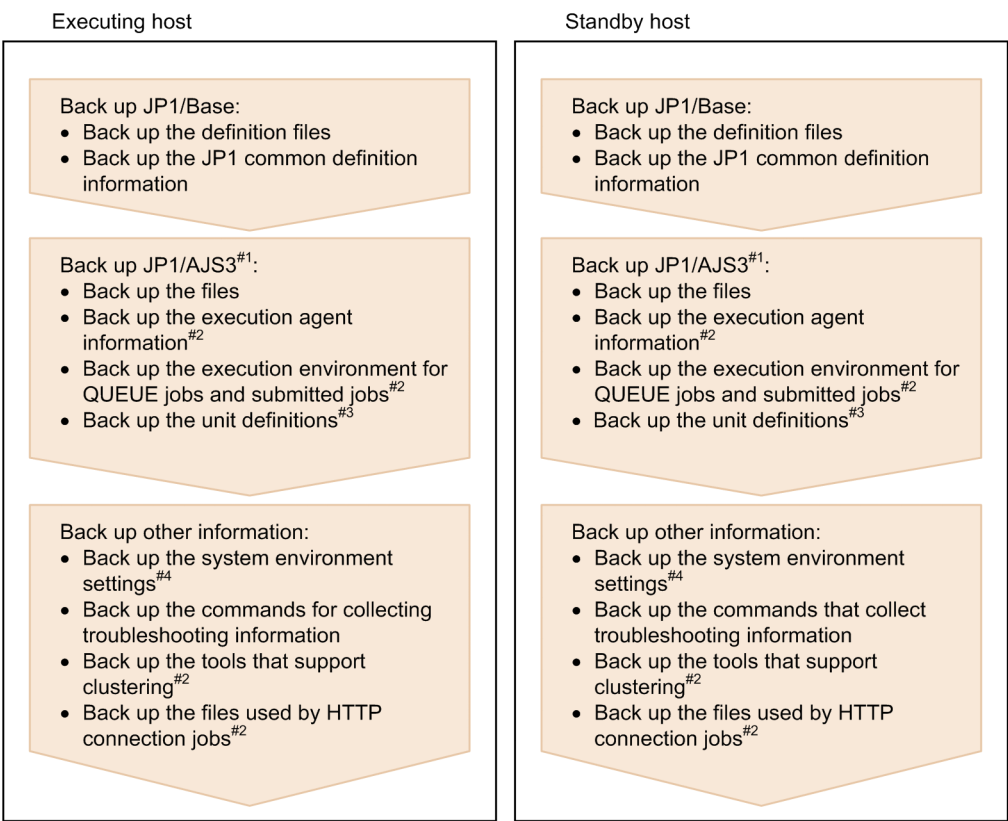
The following describes the backup procedure when a cluster system is used.

(a) Backing up the physical host environment

To back up a physical host environment, use the following procedure to back up the setup information of the physical host environment.

Note that you must perform the backup on both the executing host and standby host.

Figure 2–2: Procedure for backing up the physical host environment



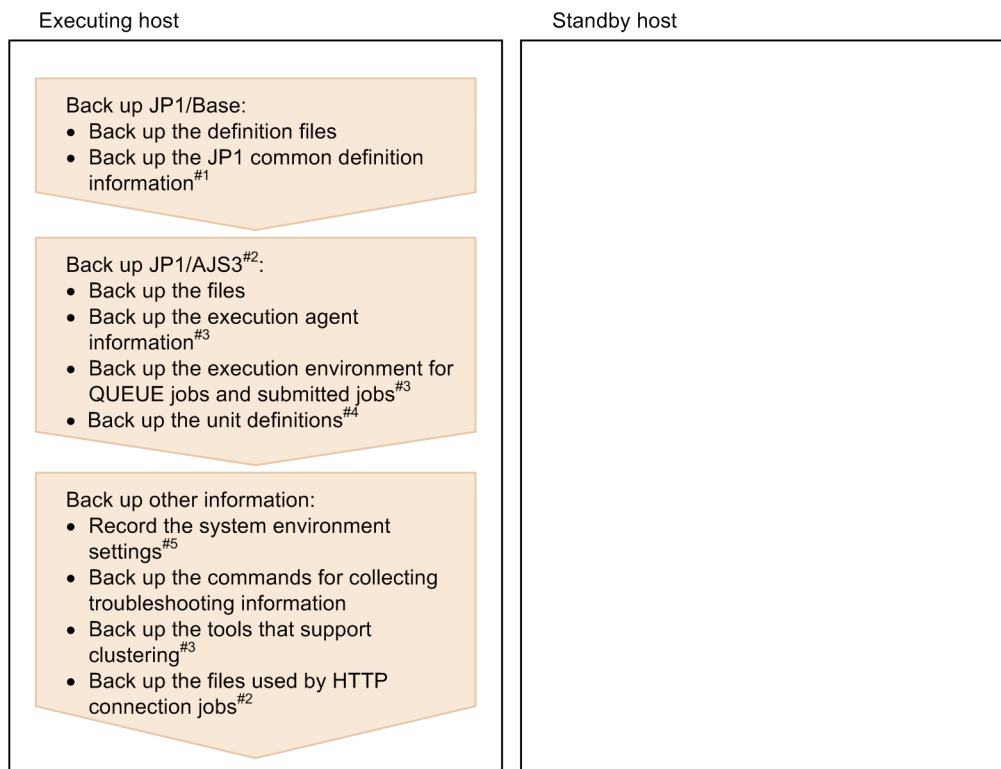
#1 For JP1/AJS3 - Agent and JP1/AJS3 - Web Console, perform the step "Back up the files" only.
#2 Back up this information as needed.
#3 Back up the definitions for each scheduler service.
#4 Record the system environment settings (for example, the service account in Windows and the kernel parameters in UNIX).

(b) Backing up the logical host environment

To back up a logical host environment, use the following procedure to back up the setup information for each logical host environment.

Note that you must perform backup on only the executing host. To restore the standby host, you can use the information that was backed up on the executing host.

Figure 2–3: Procedure for backup up the logical host environment



#1 When backing up the JP1 common definition information, back up the definition information of the physical host (JP1_DEFAULT) in addition to that of the logical host.

#2 For JP1/AJS3 - Agent and JP1/AJS3 - Web Console, perform the step "Back up the files" only.

#3 Back up this information as needed.

#4 Back up the definitions for each scheduler service.

#5 Record the system environment settings (for example, the service account in Windows and the kernel parameters in UNIX).

In addition, if functions for mail linkage, message queue linkage, or HP NNM linkage are used, reconfigure the settings for linkage.

2.2.2 Backing up the JP1/Base setup information

Backing up the JP1/Base setup information requires backup of the definition files set by the JP1/Base user. For details about how to back up the definition files set by the JP1/Base user, see the *JP1/Base User's Guide*.

Note that, if common definition information of JP1/AJS3 is to be obtained separately, perform a backup in accordance with the following procedure.

(1) The common definition information of JP1/AJS3 - Manager

To back up the common definition information for JP1/AJS3 - Manager, execute the following commands:

```
jbsgetcnf [-h logical-host-name] -c JP1AJS2 > backup-file for JP1AJS2
jbsgetcnf [-h logical-host-name] -c JP1NBQAGENT > backup-file for JP1NBQAGENT
jbsgetcnf [-h logical-host-name] -c JP1NBQMANAGER > backup-file for JP1NBQMANAGER
jbsgetcnf [-h logical-host-name] -c JP1NBQCLIENT > backup-file for JP1NBQCLIENT
jbsgetcnf [-h logical-host-name] -c JP1NBQNOTIFY > backup-file for JP1NBQNOTIFY
```

```

IFY
jbsgetcnf [-h logical-host-name] -c JP1AOMMANAGER > backup-file for JP1AOMMA
NAGER
jbsgetcnf [-h logical-host-name] -c JP1AOMAGENT > backup-file for JP1AOMAGE
NT
jbsgetcnf [-h logical-host-name] -c JP1AJSMANAGER > backup-file for JP1AJ SMA
NAGER
jbsgetcnf [-h logical-host-name] -c JP1AJS2COMMON > backup-file for JP1AJS2C
OMMON#1
jbsgetcnf [-h logical-host-name] -c JP1QLAGENT > backup-file for JP1QLAGENT#2
jbsgetcnf [-h logical-host-name] -c JP1AJS2CONSOLEMANAGER > backup-file for
JP1AJS2CONSOLEMANAGER#3
jbsgetcnf -c JP1AJS2CONSOLEAGENT > backup-file for JP1AJS2CONSOLEAGENT#3, #4

```

#1

If environment setting parameters under JP1AJS2COMMON are being added by using the `jajs_config` command or the `jbssetcnf` command, perform a backup because there is a definition key. For details about the environment setting parameter, see 20.11.1 *List of the environment setting parameters for JP1/AJS3 shared information in the JP1/Automatic Job Management System 3 Configuration Guide*.

#2

If the queueless job execution environment is being set up, perform a backup because there is a definition key.

#3

If JP1/AJS3 Console functions are being used as compatibility functions for version 10 or earlier, perform a backup because there is a definition key.

#4

For JP1AJS2CONSOLEAGENT, back up only the common definition information of the physical host.

(2) The common definition information of JP1/AJS3 - Agent

To back up the common definition information for JP1/AJS3 - Agent, execute the following commands:

```

jbsgetcnf [-h logical-host-name] -c JP1AJS2 > backup-file for JP1AJS2
jbsgetcnf [-h logical-host-name] -c JP1NBQAGENT > backup-file for JP1NBQAGE
NT
jbsgetcnf [-h logical-host-name] -c JP1NBQCLIENT > backup-file for JP1NBQCLI
ENT
jbsgetcnf [-h logical-host-name] -c JP1NBQNOTIFY > backup-file for JP1NBQNOT
IFY
jbsgetcnf [-h logical-host-name] -c JP1AOMAGENT > backup-file for JP1AOMAGE
NT
jbsgetcnf [-h logical-host-name] -c JP1AJS2COMMON > backup-file for JP1AJS2C
OMMON#1
jbsgetcnf [-h logical-host-name] -c JP1QLAGENT > backup-file for JP1QLAGENT#2

```

#1

If environment setting parameters under JP1AJS2COMMON are being added by using the `jajs_config` command or the `jbssetcnf` command, perform a backup because there is a definition key. For details about the environment setting parameter, see 20.11.1 *List of the environment setting parameters for JP1/AJS3 shared information in the JP1/Automatic Job Management System 3 Configuration Guide*.

If the queueless job execution environment is being set up, perform a backup because there is a definition key.

(3) Cautionary notes on backing up

- Obtain the common definition information for the physical host and for the logical host.
- If the common definition information of the logical host is to be obtained, backup that information to a different file from the common definition information of the physical host. When doing so, make sure that the backup files do not have the same name.
- Make sure that the logical host name you specify for the `jbsgetcnf` command is identical (including letter case) to the logical host name that was specified when the logical host was defined.
- For details on the `jbsgetcnf` command, see the *JP1/Base User's Guide*.

2.2.3 Backing up the JP1/AJS3 - Manager setup information

If you back up JP1/AJS3 - Manager, you must also back up JP1/Base at the same time.

The following lists the tasks required to back up the JP1/AJS3 - Manager setup information.

- Backing up the files used in JP1/AJS3
- Backing up the execution agent information
- Backing up the execution environment definition for QUEUE jobs and submit jobs (only if QUEUE jobs and submit jobs are used)
- Backing up the unit definition

The following describes how to perform these tasks.

(1) Backing up the files used in JP1/AJS3

Use any method to back up the files used in JP1/AJS3 - Manager either by physical host or by logical host.

The files you need to back up in Windows and UNIX are different. The following subsections describe the files that need to be backed up in each system.

(a) In Windows

The following table lists the JP1/AJS3 - Manager files you need to back up in Windows.

Table 2–2: JP1/AJS3 - Manager files to be backed up (in Windows)

File name	Description
<i>JP1/AJS3-folder</i> ^{#1} \jplajs_env.conf	JP1/AJS3 environment definition file
<i>JP1/AJS3-folder</i> ^{#1} \ajsp_prof_scheduler-service-name_agent.conf ^{#2}	Execution agent profile
<i>JP1/AJS3-folder</i> ^{#1} \ajsp_prof_scheduler-service-name_unit.conf ^{#2}	Unit-attribute profile
<i>JP1/AJS3-folder</i> ^{#1} \jplajs_spmd.conf	JP1/AJS3 startup process definition file (system management)

File name	Description
<i>JP1/AJS3-folder</i> ^{#1} \jplajs_service_0700.conf	JP1/AJS3 extended startup process definition file (system management)
<i>JP1/AJS3-folder</i> ^{#1} \jplajs_dbmd.conf	JP1/AJS3 startup process definition file (database management)
<i>JP1/AJS3-folder</i> ^{#1} \jplajs_dbmd_0700.conf	JP1/AJS3 extended startup process definition file (database management)
<i>JP1/AJS3-folder</i> ^{#1} \jplajs_hstd.conf	JP1/AJS3 startup process definition file (host service management)
<i>JP1/AJS3-folder</i> ^{#1} \jplajs_hstd_0700.conf	JP1/AJS3 extended startup process definition file (host service management)
<i>JP1/AJS3-folder</i> ^{#1} \jplajs_agtd.conf	JP1/AJS3 startup process definition file (agent service management)
<i>JP1/AJS3-folder</i> ^{#1} \jplajs_agtd_0700.conf	JP1/AJS3 extended startup process definition file (agent service management)
<i>JP1/AJS3-folder</i> ^{#1} \jplajs_schd.conf	JP1/AJS3 startup process definition file (scheduler service management)
<i>JP1/AJS3-folder</i> ^{#1} \jplajs_schd_0700.conf	JP1/AJS3 extended startup process definition file (scheduler service management)
<i>JP1/AJS3-folder</i> ^{#1} \jplajs_spmd_pre.conf ^{#2}	JP1/AJS3 pre-start process definition file
<i>JP1/AJS3-folder</i> ^{#1} \permitted_host_manager.conf ^{#2}	Manager connection permission configuration file
<i>JP1/AJS3-folder</i> ^{#1} \permitted_host_agent.conf ^{#2}	Agent connection permission configuration file
<i>JP1/AJS3-folder</i> ^{#1} \jpeqsetup.conf ^{#3}	Configuration definition file for the execution environment for QUEUE jobs and submit jobs
<i>JP1/AJS3-data-folder</i> ^{#4} \conf\profiles ^{#5}	Folder containing the customization information for JP1/AJS3 - View
<i>JP1/AJS3-Manager-installation-folder</i> \conf\jpoov.conf ^{#2}	Definition file for linkage with HP NNM
Folders and files in <i>profile-storage-folder</i> ^{#6} \sys\prf	Profile for sending emails without using Outlook

#1

Substitute the following folder for *JP1/AJS3-folder*:

- For a physical host: *JP1/AJS3-Manager-installation-folder*\conf
- For a logical host: *shared-folder*\jplajs2\conf

#2

This file exists only if the function is used.

#3

If you use a definition file to execute the `jpeqimport` command, back up the execution environment definition for QUEUE jobs and submit jobs described later, and then back up the file.

#4

Substitute the following folder for *JP1/AJS3-data-folder*:

- For a physical host

If the installation folder is the default installation folder or is in a folder protected by the system	%ALLUSERSPROFILE%\Hitachi\JP1\JP1_DEFAULT\JP1AJS2
If the installation folder is other than the above	JP1/AJS3-Manager-installation-folder

The default value for %ALLUSERSPROFILE% is *system-drive*\ProgramData.

A *folder protected by the system* is a folder under any of the following:

- *system-drive*\Windows
- *system-drive*\Program Files
- *system-drive*\Program Files (x86)

For a logical host: *shared-folder*\jp1ajs2\conf

#5

If you use the following files, back up the folder containing these files:

- Common user profiles
- Customize files (jajsDisableMenu) that disable menus in windows for JP1/AJS3 - View
- Executable command settings files (jajsExecutableCommand)

#6

For *profile-storage-folder*, substitute the value set for the WaitInFileOutDir environment setting parameter of the [{JP1_DEFAULT|*logical-host-name*}\JP1AOMAGENT] definition key. For details about the WaitInFileOutDir environment setting parameter, see 20.6.2(16) *WaitInFileOutDir (for agent processes)* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

The folder and files exist only if JP1/AJS3 - Manager has been set up for sending emails without using Outlook.

(b) In UNIX

The following table lists the JP1/AJS3 - Manager files you need to back up in UNIX.

Table 2–3: JP1/AJS3 - Manager files to be backed up (in UNIX)

File name	Description
JP1/AJS3-directory ^{#1} /AJS3_Schedule.conf	Scheduler service environment settings file
JP1/AJS3-directory ^{#1} /AJS3_EVAction.conf	The event/action execution environment settings file
JP1/AJS3-directory ^{#1} /AJS3_Queue.conf	Job execution environment settings file
JP1/AJS3-directory ^{#1} /jp1ajs_env.conf	JP1/AJS3 environment definition file
JP1/AJS3-directory ^{#1} /ajsprof_scheduler-service-name_agent.conf ^{#2}	Execution agent profile
JP1/AJS3-directory ^{#1} /ajsprof_scheduler-service-name_unit.conf ^{#2}	Unit-attribute profile
JP1/AJS3-directory ^{#1} /jp1ajs_spmd.conf	JP1/AJS3 startup process definition file (system management)
JP1/AJS3-directory ^{#1} /jp1ajs_service_0700.conf	JP1/AJS3 extended startup process definition file (system management)
JP1/AJS3-directory ^{#1} /jp1ajs_spmd_pre.conf ^{#2}	JP1/AJS3 pre-start process definition file
JP1/AJS3-directory ^{#1} /jp1ajs_dbmd.conf	JP1/AJS3 startup process definition file (database management)

File name	Description
<i>JP1/AJS3-directory</i> ^{#1} /jplajs_dbmd_0700.conf	JP1/AJS3 extended startup process definition file (database management)
<i>JP1/AJS3-directory</i> ^{#1} /jplajs_hstd.conf	JP1/AJS3 startup process definition file (host service management)
<i>JP1/AJS3-directory</i> ^{#1} /jplajs_hstd_0700.conf	JP1/AJS3 extended startup process definition file (host service management)
<i>JP1/AJS3-directory</i> ^{#1} /jplajs_agtd.conf	JP1/AJS3 startup process definition file (agent service management)
<i>JP1/AJS3-directory</i> ^{#1} /jplajs_agtd_0700.conf	JP1/AJS3 extended startup process definition file (agent service management)
<i>JP1/AJS3-directory</i> ^{#1} /jplajs_schd.conf	JP1/AJS3 startup process definition file (scheduler service management)
<i>JP1/AJS3-directory</i> ^{#1} /jplajs_schd_0700.conf	JP1/AJS3 extended startup process definition file (scheduler service management)
<i>JP1/AJS3-directory</i> ^{#1} /Agent.conf	Agent management control settings file
<i>JP1/AJS3-directory</i> ^{#1} /Schedule.conf ^{#3}	Scheduler service environment settings file (for compatibility with JP1/AJS2 - Manager)
<i>JP1/AJS3-directory</i> ^{#1} /EVAction.conf ^{#3}	The event/action execution environment settings file (for compatibility with JP1/AJS2 - Manager)
<i>JP1/AJS3-directory</i> ^{#1} /profiles ^{#4}	Directory containing customization information for JP1/AJS3 - View
<i>JP1/AJS3-directory</i> ^{#1} /permitted_host_manager.conf ^{#2}	Manager connection permission configuration file
<i>JP1/AJS3-directory</i> ^{#1} /permitted_host_agent.conf ^{#2}	Agent connection permission configuration file
<i>JP1/AJS3-directory</i> ^{#1} /Queue.conf ^{#3}	Job execution environment settings file (for compatibility with JP1/AJS2 - Manager)
<i>JP1/AJS3-directory</i> ^{#1} /jppqsetup.conf ^{#5}	Configuration definition file for the execution environment for QUEUE jobs and submit jobs
<i>JP1/AJS3-directory</i> ^{#1} /Queueless.conf	Queueless job execution environment settings file
/etc/opt/jplajs2/jajs_start	Automatic start script ^{#6}
/etc/opt/jplajs2/jajs_stop	Automatic stop script ^{#6}
/etc/opt/jplajs2/jajs_start.cluster	Logical host start script ^{#6}
/etc/opt/jplajs2/jajs_stop.cluster	Logical host stop script ^{#6}
/etc/opt/jplajs2/jajs_killall.cluster	Logical host forced stop script ^{#6}
/etc/opt/jplajs2/conf/jpooov.conf ^{#2}	Definition file for linkage with HP NNM

#1

Substitute the following directory for *JP1/AJS3-folder*:

- For a physical host: /etc/opt/jplajs2/conf
- For a logical host: *shared-directory*/jplajs2/conf

#2

This file exists only if the function is used.

#3

This is an environment settings file used for compatibility with the JP1/AJS2 - Manager instance that you backed up. This file is not used when the JP1/AJS3 - Manager to be recovered is in the standard configuration.

#4

If you use the following files, back up the directory containing these files:

- Common user profiles
- Customize files (`jaajsDisableMenu`) that disable menus in windows for JP1/AJS3 - View
- Executable command settings files (`jaajsExecutableCommand`)

#5

If you use a definition file to execute the `jpgqimport` command, back up the execution environment definition for QUEUE jobs and submit jobs described later, and then back up the file.

#6

Back up the script as required.

(2) Backing up the execution agent information

The following describes how to back up the execution agent information.

Execute the following command to back up the definition information for an execution agent or an execution agent group to any execution agent definition file. Specify the `-l` option to back up the definition information of all execution agents or execution agent groups.

Definition information includes the execution agent name, execution host name, and the maximum number of concurrently executable jobs.

```
ajsagtprint [-h logical-host-name] {-a execution-agent-name | -g execution-agent-group-name | -l}  
> execution-agent-definition-file
```

Cautionary note

Before starting the backup of execution agent information, make sure that the JP1/AJS3 service is running.

(3) Backing up the execution environment definition for QUEUE jobs and submit jobs

If a definition file has been used for the `jpgqimport` command that creates the execution environment for QUEUE jobs and submit jobs, the definition in the file might be inconsistent with the actual environment. If the file and the environment are inconsistent, output the actual execution environment for QUEUE jobs and submit jobs, copy the definition to the `jpgqsetup.conf` file, and then back up the file.

To back up the execution environment definition:

1. Execute the following command to output the definition of the execution environment for QUEUE jobs and submit jobs.

```
jpgqexport -dt isam -co file-name -mh logical-host-name#
```

#

For a physical host, do not specify `-mh logical-host-name`.

Cautionary note

For centralized management, we recommend that you use `jqsetup.conf` as the file to be set by the `jqimport` command.

To back up the definition of a logical host, specify the logical host name in the `-mh` option.

2. Copy the contents of the output file to `jqsetup.conf`.

The definition of the execution environment for QUEUE jobs and submit jobs is output to the file specified by *file-name* in step 1. Copy the contents of the output file to `jqsetup.conf`.

(4) Backing up the unit definition

The following describes the tasks required to back up the definition information for a jobnet and calendar. Back up the information for each scheduler service.

Cautionary note

For this backup procedure only, the unit for backup is by scheduler service rather than by logical host. Accordingly, back up the information for each scheduler service separately.

Before starting backup, make sure that the JP1/AJS3 service is running.

For details about how to back up the jobnet definition information, see [3. Backing Up and Restoring Jobnets](#).

(a) Backing up the definition information for units other than the root job group

Execute the following command to back up the definition information for the units in the scheduler service. The definition information includes the base time, comments, and all other definitions for each unit, but does not include information about the root job group (/), such as the base time, base day, and base month. To back up the root job group information, use the procedures in (b) and (c) below.

- In Windows:

```
C:\> ajsprint -F scheduler-service-name -a /* > unitbackup.txt
```

- In UNIX:

```
# ajsprint -F scheduler-service-name -a '/' > unitbackup.txt
```

If there are many unit definitions, consider splitting and backing up by job group or jobnet so that each file is less than 200 MB. Execute the following command for each unit you want to back up.

```
ajsprint -F scheduler-service-name -a /unit-name > unit-name_backup.txt
```

Cautionary note

When you use the `ajsprint` command to back up the definition information, specify `no` for the `AJSPRINTNETSCHPRF` environment setting parameter. For details about this parameter, see [20.4.2\(79\) AJSPRINTNETSCHPRF](#) in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(b) Backing up the information about the root job group

Record the following information about the root job group:

- Comments
- Owners

- JP1 resource groups
- Base time
- Base day
- Base month

(c) Backing up the calendar information for the root job group

Execute the following command to back up the calendar information (open days and close days) for the root job group.

```
ajsprint -F scheduler service-name -d / > rootcal.txt
```

Cautionary note

If no calendar information is output to `rootcal.txt`, recovery is not needed.

2.2.4 Backing up the JP1/AJS3 - Agent setup information

If you back up JP1/AJS3 - Agent, you must also back up JP1/Base at the same time.

The following task is required to back up the JP1/AJS3 - Agent setup information.

- Backing up the files used in JP1/AJS3

The following describes the procedure.

(1) Backing up the files used in JP1/AJS3

Use any method to back up the files used in JP1/AJS3 - Manager either by physical host or by logical host.

The files you need to back up in Windows and UNIX are different. The following subsections describe the files that need to be backed up in each system.

(a) In Windows

The following table lists the JP1/AJS3 - Agent files you need to back up in Windows.

Table 2–4: JP1/AJS3 - Agent files to be backed up (in Windows)

File name	Description
<i>JP1/AJS3-folder</i> ^{#1} \jplajs_env.conf	JP1/AJS3 environment definition file
<i>JP1/AJS3-folder</i> ^{#1} \jplajs_spmd.conf	JP1/AJS3 process management definition file
<i>JP1/AJS3-folder</i> ^{#1} \jplajs_service_0700.conf	JP1/AJS3 extended startup process definition file
<i>JP1/AJS3-folder</i> ^{#1} \permitted_host_agent.conf ^{#2}	Agent connection permission configuration file
<i>JP1/AJS3-Agent-installation-folder</i> \conf\jpoov.conf ^{#2}	Definition file for linkage with HP NNM
Folders and files in <i>profile-storage-folder</i> ^{#3} \sys\prf	Profile for sending emails without using Outlook

#1

Substitute the following folder for *JP1/AJS3-folder*:

- For a physical host: *JP1/AJS3-Agent-installation-folder\conf*
- For a logical host: *shared-folder\jp1ajs2\conf*

#2

This file exists only if the function is used.

#3

For *profile-storage-folder*, substitute the value set for the `WaitInFileOutDir` environment setting parameter of the `[{JP1_DEFAULT|logical-host-name}\JP1AOMAGENT]` definition key. For details about the `WaitInFileOutDir` environment setting parameter, see 20.6.2(16) *WaitInFileOutDir (for agent processes)* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

The folder and files exist only if JP1/AJS3 - Manager has been set up for sending emails without using Outlook.

(b) In UNIX

The following table lists the JP1/AJS3 - Agent files you need to back up in UNIX.

Table 2–5: JP1/AJS3 - Agent files to be backed up (in UNIX)

File name	Description
<i>JP1/AJS3-directory</i> ^{#1} /AJS3_EVAction.conf	The event/action execution environment settings file
<i>JP1/AJS3-directory</i> ^{#1} /AJS3_Queue.conf	Job execution environment settings file
<i>JP1/AJS3-directory</i> ^{#1} /jp1ajs_env.conf	JP1/AJS3 environment definition file
<i>JP1/AJS3-directory</i> ^{#1} /jp1ajs_spmd.conf	JP1/AJS3 process management definition file
<i>JP1/AJS3-directory</i> ^{#1} /jp1ajs_service_0700.conf	JP1/AJS3 extended startup process definition file
<i>JP1/AJS3-directory</i> ^{#1} /EVAction.conf ^{#2}	The event/action execution environment settings file (for compatibility with JP1/AJS2 - Agent)
<i>JP1/AJS3-directory</i> ^{#1} /Queue.conf ^{#2}	Job execution environment settings file (for compatibility with JP1/AJS2 - Agent)
<i>JP1/AJS3-directory</i> ^{#1} /Queueless.conf	Queueless job execution environment settings file
<i>JP1/AJS3-directory</i> ^{#1} /permitted_host_agent.conf ^{#2}	Agent connection permission configuration file
/etc/opt/jp1ajs2/jajs_start	Automatic start script ^{#3}
/etc/opt/jp1ajs2/jajs_stop	Automatic stop script ^{#3}
/etc/opt/jp1ajs2/jajs_start.cluster	Logical host start script ^{#3}
/etc/opt/jp1ajs2/jajs_stop.cluster	Logical host stop script ^{#3}
/etc/opt/jp1ajs2/jajs_killall.cluster	Logical host forced stop script ^{#3}
/etc/opt/jp1ajs2/conf/jpooov.conf ^{#4}	Definition file for linkage with HP NNM

#1

Substitute the following directory for *JP1/AJS3-directory*:

- For a physical host: */etc/opt/jp1ajs2/conf*
- For a logical host: *shared-directory/jp1ajs2/conf*

#2

The backed-up environment settings file for compatibility with JP1/AJS2 - Agent is used only if the JP1/AJS3 - Agent to be recovered has been upgraded from JP1/AJS2 - Agent.

#3

Back up the script as required.

#4

This file exists only if the function is used.

2.2.5 Backing up the JP1/AJS3 - View setup information

The following lists the tasks required to back up the JP1/AJS3 - View setup information.

- Backing up the environment settings files
- Backing up the user-created custom job icons (only if custom job icons have been created)
- Backing up the icon image folders created by users for JP1/AJS3 - View (only when the icon image folders are created)

The following describes how to perform these tasks.

(1) Backing up the JP1/AJS3 - View environment settings files

Back up the JP1/AJS3 - View environment settings files and folders listed in the table below.

You can use any backup method, such as copying the files and folders.

The following table lists the files and folders you need to back up.

Table 2–6: JP1/AJS3 - View files and folders to be backed up

File and folder name	Description
• <i>JP1/AJS3-View-installation-folder</i>\conf\ajs.conf • <i>JP1/AJS3-View-installation-folder</i>\conf\ajs2.conf • %ALLUSERSPROFILE%#1\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\conf\default.conf#2 • %ALLUSERSPROFILE%#1\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\conf\ (osusers) #2, #3 • %ALLUSERSPROFILE%#1\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\conf\ajs2view_common.conf#2 • %ALLUSERSPROFILE%#1\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\conf\JP1-user-name#2 • <i>JP1/AJS3-View-installation-folder</i>\conf\timezone • %ALLUSERSPROFILE%#1\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\conf\JP1-user-name\ajs2view_command.conf • <i>JP1/AJS3-View-installation-folder</i>\conf\ssl\nosslhost.conf	JP1/AJS3 - View environment settings file and folder
• %ALLUSERSPROFILE%#1\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\custom.dir*. *#4 • %ALLUSERSPROFILE%#1\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\custom.dir\extend#2, #5	JP1/AJS3 - View custom job registration information file and folder

File and folder name	Description
• %ALLUSERSPROFILE%#1\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\csadef#2	JP1/AJS3 - View custom job registration information file and folder
• %ALLUSERSPROFILE%#1\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\customevent.dir • %ALLUSERSPROFILE%#1\HITACHI\JP1\JP1_DEFAULT\JP1AJS2V\customevent.dir\extend#2,#5	JP1/AJS3 - View custom event job registration information folder
• JP1/AJS3-View-installation-folder\addin.dir	JP1/AJS3 - View add-in program registration information folder

#1

The default of %ALLUSERSPROFILE% is *system-drive*\ProgramData.

#2

Depending on how the system is configured, this file and folder might not exist and can be skipped.

#3

A settings file for the multiuser remote desktop connection function. For details about the multiuser remote desktop connection function, see *11.2.7 Allowing multiple users to concurrently use JP1/AJS3 - View via remote desktop connections* in the *JP1/Automatic Job Management System 3 Operator's Guide*.

#4

Back up this directory, but without the subfolders and files listed below. You do not need to back up this folder if no custom jobs are registered.

Items excluded from the backup:

- ja folder
- en folder
- Cjobregm.exe
- Cjobregm.exe.1000
- CJNAME.cjx.model
- CJX.xsd
- *.dll
- *.olb
- *.tlb

#5

The JP1/AJS3 - View custom job registration information folder that is used when the function that allows each JP1 user to use different custom jobs is enabled. For details about the function that allows each JP1 user to use different custom jobs, see *11.2.8 Allowing each JP1 user to use different custom jobs and custom event jobs* in the *JP1/Automatic Job Management System 3 Operator's Guide*.

(2) Backing up the custom job icons created by users

Back up the custom PC job icons and custom Unix job icons created by users. You can use any backup method, such as copying files. This task is not required if no custom job icons have been created. The following table lists the files you need to back up.

Table 2–7: Files to be backed up when using custom jobs

File name	Description
<i>JP1/AJS3-View-installation-folder\image\custom\CUSTOM_PC_USER_any-name.gif</i>	gif file for custom PC job icons
<i>JP1/AJS3-View-installation-folder\image\custom\CUSTOM_UX_USER_any-name.gif</i>	gif file for custom Unix job icons

(3) Backing up the icon image folders created by users for JP1/AJS3 - View

Back up the icon image folders created by users for JP1/AJS3 - View. You can use any backup method, such as copying the folders. Note that this task is not required if no icon images have been customized (or user-created icons are not used).

Table 2–8: Folder to be backed up when icon images have been created

Folder name	Description
<i>JP1/AJS3-View-installation-folder\image\extend\user_any-name</i>	Folder that contains user-created icon image files

(4) Backing up the custom event job icons

Back up the custom event job icons. You can use any backup method, such as copying files. This task is not required if no custom event job have been registered. The following table lists the files you need to back up.

Table 2–9: Files to be backed up when using custom event jobs

File name	Description
<i>JP1/AJS3-View-installation-folder\image\custom\CE_any-name.gif</i>	gif file for custom event job icons

2.2.6 Backing up the JP1/AJS3 - Web Console setup information

The following lists the task required to back up the JP1/AJS3 - Web Console setup information.

- Backing up the files used by JP1/AJS3

If JP1/AJS3 - Web Console is installed on the same host as JP1/AJS3 - Manager, be sure to also back up JP1/AJS3 - Manager.

The following describes how to perform this task.

(1) Backing up the files used by JP1/AJS3

Back up the files used in JP1/AJS3 - Web Console by using any method of your choice.

Of the files used by JP1/AJS3 - Web Console, the files to be backed up vary depending on whether you are using Windows or Linux. The following describes the files that are to be backed up for each OS.

(a) In Windows

The following table describes the files that are to be backed up.

Table 2–10: Files used by JP1/AJS3 - Web Console that are to be backed up (in Windows)

File name	Description
<i>JP1/AJS3-Web-Console-folder</i> ^{#1} \conf\ajs3web.conf	Environment-settings files
<i>JP1/AJS3-Web-Console-folder</i> ^{#1} \sys\user	User information storage folder
<i>JP1/AJS3-Web-Console-data-folder</i> ^{#2} \ajscd_ajs3web.properties	Network-settings files
<i>JP1/AJS3-Web-Console-data-folder</i> ^{#2} \nosslocalhost.conf	Files for specifying the names of the hosts that use non-encrypted communication
<i>JP1/AJS3-Web-Console-data-folder</i> ^{#2} \conf\ssl\rootcer	Root certificate storage folder
<i>JP1/AJS3-Web-Console-installation-folder</i> \uCP SB\httpsd\conf\httpsd.conf	HTTP server definition files
<i>JP1/AJS3-Web-Console-installation-folder</i> \uCP SB\CC\server\usrconf\ejb\ajs3web\usrconf.properties	User properties file for J2EE server
<i>JP1/AJS3-Web-Console-installation-folder</i> \uCP SB\CC\admin\usrconf\usrconf.properties	System properties file for server management commands
<i>JP1/AJS3-Web-Console-folder</i> ^{#1} \conf\ajs3web_color.conf	Display color settings files
<i>JP1/AJS3-Web-Console-folder</i> ^{#1} \sys\operationpermission_model.csv	Model file for the operating permission configuration file
<i>JP1/AJS3-Web-Console-folder</i> ^{#1} \sys\operes	Operation restriction function information folder
<i>JP1/AJS3-Web-Console-installation-folder</i> \uCP SB\CC\server\usrconf\ejb\ajs3web\usrconf.cfg	Option definition files for J2EE server
<i>JP1/AJS3-Web-Console-installation-folder</i> \uCP SB\httpsd\conf\ssl\server\private-key-file-name ^{#3}	Private key for the Web Console server
<i>JP1/AJS3-Web-Console-installation-folder</i> \uCP SB\httpsd\conf\ssl\server\server-certificate-file-name ^{#3}	Server certificate for the Web Console server
<i>folder-containing-certificate-issuance-request-file\certificate-issuance-request-file-name</i> ^{#3}	Certificate issuance request (CSR)

#1

Replace *JP1/AJS3-Web-Console-folder* with the following folder:

- In a non-cluster configuration: *JP1/AJS3-Web-Console-installation-folder*
- In a cluster configuration: *shared-folder\jp1ajs3web*

#2

Replace *JP1/AJS3-Web-Console-data-folder* with the following folder:

- In a non-cluster configuration:

If the installation folder is the default installation folder or is in a folder protected by the system	%ALLUSERSPROFILE%\Hitachi\JP1\JP1_DEFAULT\jp1ajs3web\conf
If the installation folder is other than the above	<i>JP1/AJS3-Web-Console-installation-folder</i> \conf

The default value for %ALLUSERSPROFILE% is *system-drive*\ProgramData.

A *folder protected by the system* is a folder under any of the following:

- *system-drive*\Windows
- *system-drive*\Program Files

- *system-drive*\Program Files (x86)

- In a cluster configuration: *shared-folder*\jplajs3\web\conf

#3

If the communication encryption function is not used for the communication between client hosts and the Web Console server, these files do not exist.

(b) In Linux

The following table describes the files that are to be backed up.

Table 2–11: Files used by JP1/AJS3 - Web Console that are to be backed up (in Linux)

File name	Description
<i>JP1/AJS3-directory</i> ^{#1} /conf/ajs3web.conf	Environment-settings files
<i>JP1/AJS3-directory</i> ^{#1} /sys/user	User information storage directory
<i>JP1/AJS3-directory</i> ^{#1} /conf/ajscd_ajs3web.properties	Network-settings files
<i>JP1/AJS3-directory</i> ^{#1} /conf/nosslhost.conf	Files for specifying the names of the hosts that use non-encrypted communication
<i>JP1/AJS3-directory</i> ^{#1} /conf/ssl/rootcer	Root certificate storage directory
/opt/jplajs3web/uCPSB/httpsd/conf/httpsd.conf	HTTP server definition files
/opt/jplajs3web/uCPSB/CC/server/usrconf/ejb/ajs3web/usrconf.properties	User properties file for J2EE server
/opt/jplajs3web/uCPSB/CC/admin/usrconf/usrconf.properties	System properties file for server management commands
<i>JP1/AJS3-directory</i> ^{#1} /conf/ajs3web_color.conf	Display color settings files
/var/opt/jplajs3web/sys/operationpermission_model.csv	Model file for the operating permission configuration file
/var/opt/jplajs3web/sys/operes	Operation restriction function information folder
/opt/jplajs3web/uCPSB/CC/server/usrconf/ejb/ajs3web/usrconf.cfg	Option definition files for J2EE server
/opt/jplajs3web/uCPSB/httpsd/conf/ssl/server/ <i>private-key-file-name</i> ^{#2}	Private key for the Web Console server
/opt/jplajs3web/uCPSB/httpsd/conf/ssl/server/ <i>server-certificate-file-name</i> ^{#2}	Server certificate for the Web Console server
<i>directory-containing-certificate-issuance-request-file/certificate-issuance-request-file-name</i> ^{#2}	Certificate issuance request (CSR)

#1

Replace *JP1/AJS3-directory* with the following directory:

- In a non-cluster configuration: /etc/opt/jplajs3web
- In a cluster configuration: *shared-directory*/jplajs3web

#2

If the communication encryption function is not used for the communication between a client host and the Web Console server, these files do not exist.

2.2.7 Backing up other information

You must also back up other information required to run JP1.

The following table lists the tasks required to back up the information necessary for running JP1.

Table 2–12: Tasks for backing up the information necessary for running JP1

Task	Windows	UNIX
Setting up a service account	Y	N/A
Backing up login scripts	N/A	Y
Backing up the adjustment values of kernel parameters	N/A	Y
Backing up the tool that collects troubleshooting data	Y	Y
Backing up the cluster-capable tools (only if required by the cluster system)	Y	Y
Backing up the user-created tools for linking with a mail system	N/A	Y
Backing up the files used by HTTP connection jobs	Y	Y [#]
Backing up the aggregation results of the number of job executions	Y	Y

Legend:

Y: Required

N/A: Not applicable

#

This task is required for Linux only.

The procedure for backing up the information required to run JP1 is different for Windows and UNIX. The following subsections describe these procedures.

Note that only the procedures for major items are described. Other items you will need to back up include the OS, network, and cluster software settings. For details, see the documentation for the OS and the cluster software.

(1) In Windows

(a) Setting up a service account

If you have switched a JP1/AJS3 service to a user account, record this change.

(b) Backing up the tool that collects troubleshooting data (_04.bat)

If you collect data by using the data collection tool (_04.bat) you customized, back up the tool after customization.

(c) Backing up the cluster-capable tools (only if required by the cluster system)

To control JP1 from cluster software, back up the cluster-capable tools created for a logical host. This procedure is unnecessary for cluster software that does not need cluster-capable tools.

The following table lists the file you need to back up.

Table 2–13: File to be backed up

File name	Description
<i>any-file-name</i>	Cluster-capable tool

(d) Backing up the files used by HTTP connection jobs

Back up the files used by HTTP connection jobs.

The following table describes the files to be backed up.

Table 2–14: Files that are used by HTTP connection jobs and are to be backed up

File name	Description
Connection configuration file	File used to set information about HTTP connections
Transmission information file [#]	File used to store information about requests sent to APIs
Transmission information file (URL parameter) [#]	File used to store the URL parameter for accessing information about requests sent to APIs
Transmission information file (message body) [#]	File used to store the message body for accessing information about requests sent to APIs

#

Of the transmission information file, transmission information file (URL parameter), and transmission information file (message body), which files are to be used depends on whether extended mode is used in JP1/AJS3 12-50 or later. Back up these files according to your needs.

For details about extended mode, see *2.4.12 Linking with a business system on the web (example of defining a jobnet that uses HTTP connection jobs)* in the *JP1/Automatic Job Management System 3 System Design (Work Tasks) Guide*.

(e) Backing up the aggregation results of the number of job executions

If automatic aggregation of the number of job executions is enabled in the management portal execution environment, back up the aggregation results of the number of job executions. For details about aggregation of the number of job executions in the management portal execution environment, see *4.6.3 Considering the Management Portal execution environment* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.

The following table shows the folders to be backed up.

Table 2–15: Folders that store the aggregation results of the number of job executions

Folder	Description
For a physical host <i>Mgr_Data_Path</i> [#] \sys\jobagg	Aggregation results of the number of job executions
For a logical host <i>shared_disk_name</i> \jplajs2\sys\jobagg	

#

Mgr_Data_Path differs depending on the JP1/AJS3 installation folder.

If the installation folder is the default installation folder or is in a folder protected by the system

`%ALLUSERSPROFILE%\Hitachi\JP1\JP1_DEFAULT\JP1AJS2`

A *folder protected by the system* is a folder under any of the following:

- *system-drive*\Windows
- *system-drive*\Program Files
- *system-drive*\Program Files (x86)

The default value for %ALLUSERSPROFILE% is *system-drive*\ProgramData.

If the installation folder is other than the above

JP1/AJS3-Manager-installation-folder

(2) In UNIX

(a) Backing up login scripts

When you have changed the user environment to a JP1 environment, you must also back up the login scripts.

(b) Backing up the adjustment values of kernel parameters

Record the values of kernel parameters provided for JP1.

(c) Backing up the tool that collects troubleshooting data (_04)

If you collect data by using the data collection tool (_04) you customized, back up the tool after customization.

(d) Backing up the cluster-capable tools (only if required by the cluster system)

To control JP1 from cluster software, back up the cluster-capable tools created for a logical host. The following table lists the tool you need to back up.

Table 2–16: Cluster-capable tool to be backed up

File name	Description
<i>any-file-name</i>	Cluster-capable tools

(e) Backing up the user-created tools for linking with a mail system

Back up user-created tools for linkage with a mail system, if any.

(f) Backing up the files used by HTTP connection jobs

Back up the files used by HTTP connection jobs.

The following table describes the files to be backed up

Table 2–17: Files that are used by HTTP connection jobs and are to be backed up

File name	Description
Connection configuration file	File used to set information about HTTP connections
Transmission information file [#]	File used to store information about requests sent to APIs
Transmission information file (URL parameter) [#]	File used to store the URL parameter for accessing information about requests sent to APIs
Transmission information file (message body) [#]	File used to store the message body for accessing information about requests sent to APIs

#

Of the transmission information file, transmission information file (URL parameter), and transmission information file (message body), which files are to be used depends on whether extended mode is used in JP1/AJS3 12-50 or later. Back up these files according to your needs.

For details about extended mode, see *2.4.12 Linking with a business system on the web (example of defining a jobnet that uses HTTP connection jobs)* in the *JP1/Automatic Job Management System 3 System Design (Work Tasks) Guide*.

(g) Backing up the aggregation results of the number of job executions

If automatic aggregation of the number of job executions is enabled in the management portal execution environment, back up the aggregation results of the number of job executions. For details about aggregation of the number of job executions in the management portal execution environment, see *4.6.3 Considering the Management Portal execution environment* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.

The following table shows the directories to be backed up.

Table 2–18: Directories that store the aggregation results of the number of job executions

Directory	Description
For a physical host /var/opt/jplajs2/sys/jobagg	Aggregation results of the number of job executions
For a logical host shared_disk_name/jplajs2/sys/jobagg	

2.3 Restoring the setup information for a system that uses JP1/AJS3

This section describes how to recover the setup information for a system that uses JP1/AJS3.

Recovery procedures are classified and described as JP1/Base, JP1/AJS3 - Manager, JP1/AJS3 - Agent, JP1/AJS3 - View, and JP1/AJS - Web Console procedures. Combine the procedures according to the products that are used. When you recover the backup information for JP1/AJS3 - Manager or JP1/AJS3 - Agent, you must first recover JP1/Base. If JP1/AJS3 - Web Console is to be recovered on the same host as JP1/AJS3 - Manager, be sure to recover JP1/AJS3 - Manager before recovering JP1/AJS3 - Web Console.

Recovery procedures are described both for a physical host environment and a logical host environment (for a cluster system). Recover both environments. For example, if there is a physical host environment and a logical host environment, first recover the backup information of the physical host environment, and then recover the backup information of the logical host environment.

Cautionary note

Use the procedure described below to recover the setup information when JP1/AJS3 is not running.

A user with administrator privileges of the OS (in Windows) or a user with superuser privileges (in UNIX) must perform recovery.

Note that the information backed up by using the procedures in [2.2 Backing up the setup information for a system that uses JP1/AJS3](#) can also be restored to a different host. In this case, the host name and IP address need to be changed to match those on the host to which the backup information will be restored. For details about changing the host name, see [7.9.1 Changing the name of the host that runs JP1/AJS3](#). For details about changing the IP address, see [7.9.2 Changing the IP address of the host that runs JP1/AJS3](#).

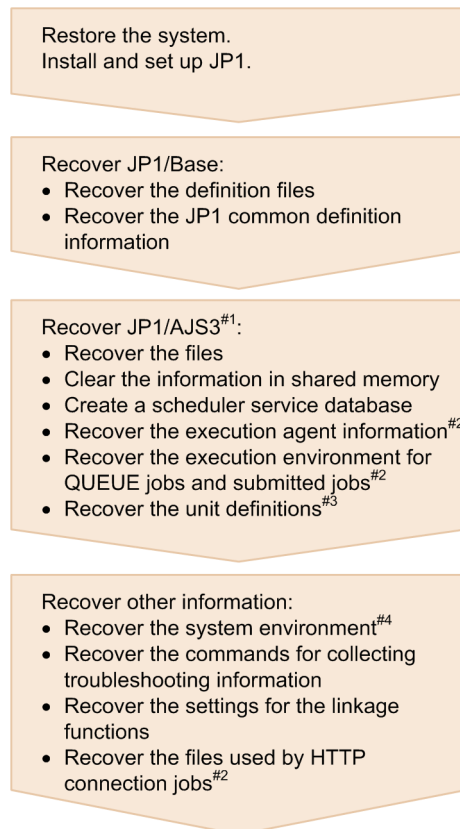
2.3.1 Overview of recovery

The following provides an overview of recovery.

(1) Recovery procedure

The following figure shows the recovery procedure.

Figure 2–4: Recovery procedure



#1 For JP1/AJS3 - Agent and JP1/AJS3 - Web Console, perform the step "Recover the files" only.

#2 If this information exists, recover it as needed.

#3 Recover the definitions for each scheduler service.

#4 Recover the system environment settings (for example, the service account in Windows and the kernel parameters in UNIX).

In addition, if functions for mail linkage, message queue linkage, or HP NNM linkage are used, reconfigure the settings for linkage.

(2) Recovery procedure (when a cluster system is used)

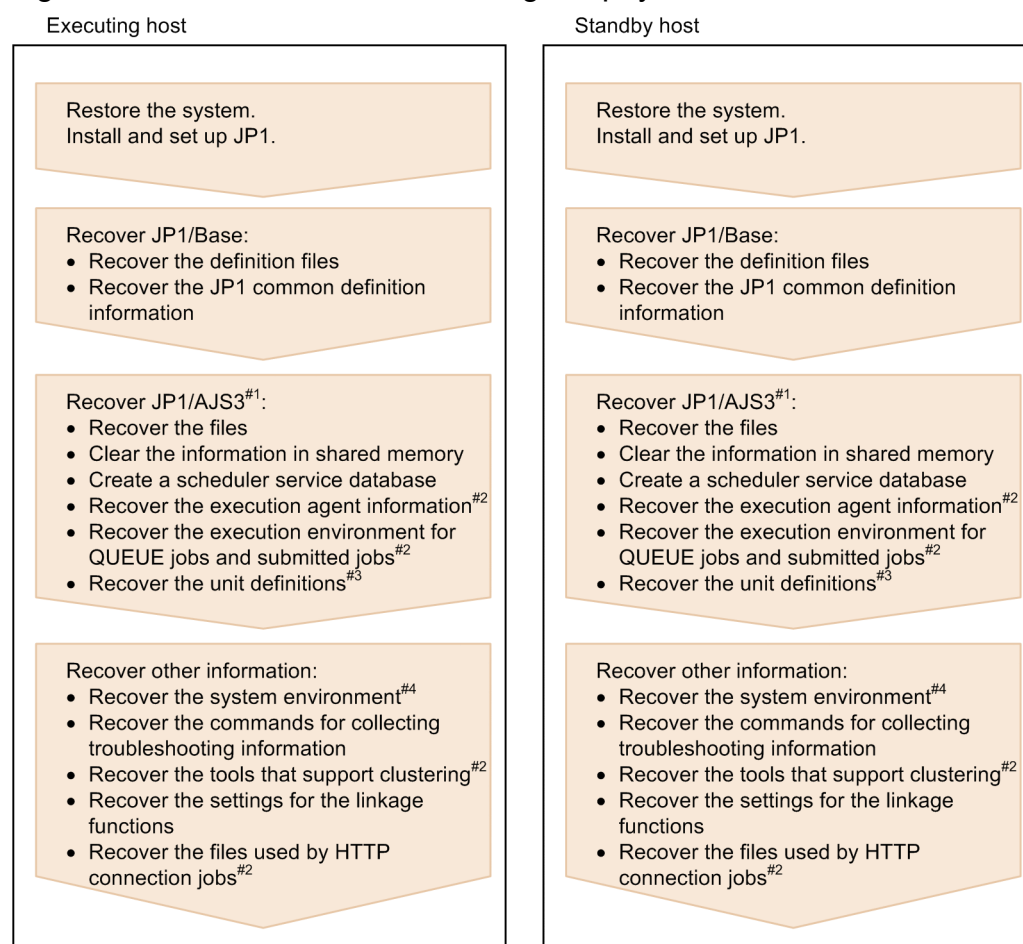
The following explains the recovery procedure when a cluster system is used.

(a) Recovering the physical host environment

To recover a physical host environment, use the setup information you backed up and follow the procedure below.

Note that you must perform the recovery on both the executing host and standby host.

Figure 2–5: Procedure for recovering the physical host environment



#1 For JP1/AJS3 - Agent and JP1/AJS3 - Web Console, perform the step "Recover the files" only.

#2 If this information exists, recover it as needed.

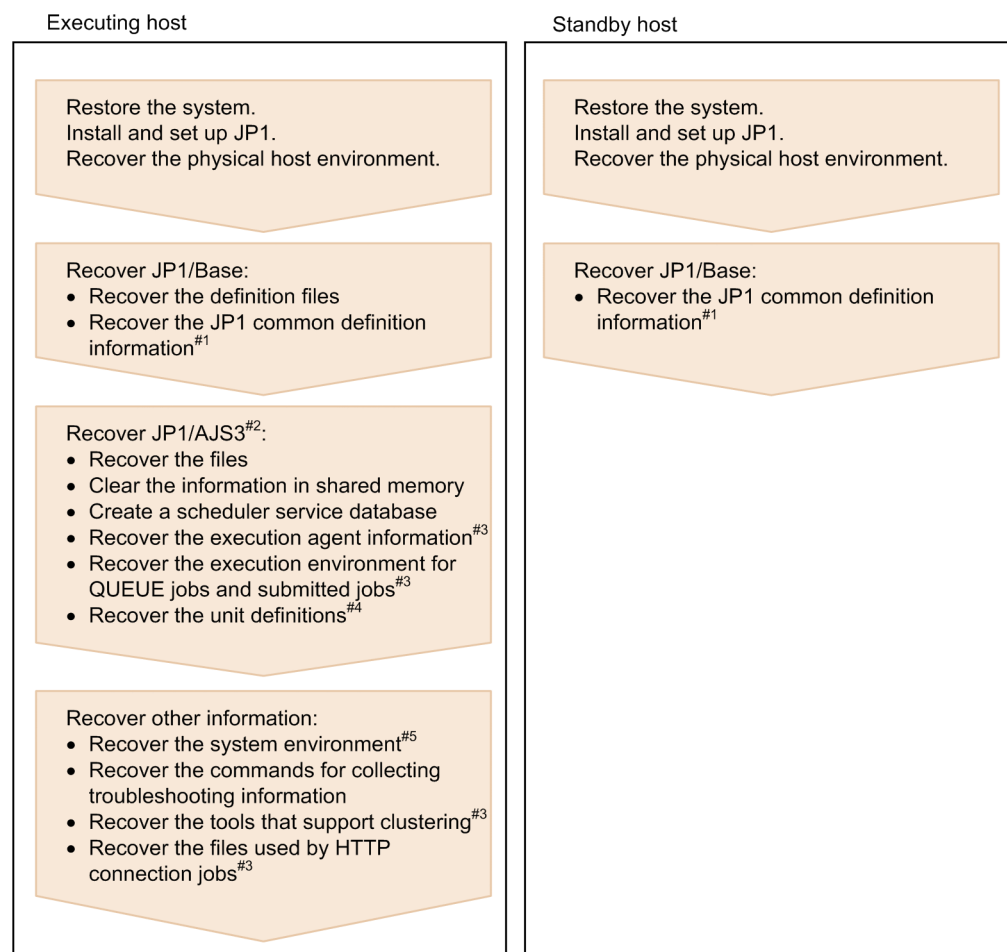
#3 Recover the definitions for each scheduler service.

#4 Recover the system environment settings (for example, the service account in Windows and the kernel parameters in UNIX).

(b) Recovering the logical host environment

To recover a logical host environment, use the setup information you backed up and follow the following procedure.

Figure 2–6: Procedure for recovering the logical host environment



#1 For JP1 common definition information, first recover the definition information of the physical host (JP1_DEFAULT), and then recover the definition of the logical host.

#2 For JP1/AJS3 - Agent and JP1/AJS3 - Web Console, perform step "Recover the files" only.

#3 If this information exists, recover it as needed.

#4 Recover the definitions for each scheduler service.

#5 Recover the system environment settings (for example, the service account in Windows and the kernel parameters in UNIX).

In addition, if functions for mail linkage, message queue linkage, or HP NNM linkage are used, reconfigure the settings for linkage.

2.3.2 Installing and setting up JP1/Base and JP1/AJS3

If the environment of a system that uses JP1/AJS3 has been damaged due to a corrupted disk or another problem, you must first install JP1/Base and JP1/AJS3, before you execute the setup command.

(1) Setting up JP1/Base

If the JP1 environment has been damaged due to a corrupted disk or another problem, install JP1/Base and set up JP1/Base. For details about how to set up JP1/Base, see the *JP1/Base User's Guide*.

(2) Setting up JP1/AJS3

If the JP1 environment has been damaged due to disk corruption or another problem, first install JP1/Base, set up JP1/Base, and then install the JP1/AJS3 series program in that order. For details about how to set up JP1/AJS3 - Manager,

see 3. Setup in the *JP1/Automatic Job Management System 3 Configuration Guide* (in Windows) or 13. Setup in the *JP1/Automatic Job Management System 3 Configuration Guide* (in UNIX).

2.3.3 Recovering the JP1/Base setup information

This subsection describes the tasks required to recover the JP1/Base setup information from the backup.

After setting up JP1/Base, recover the physical host environment and logical host environment. For details about the settings required for recovery, see the *JP1/Base User's Guide*.

Note that, if only the common definition information of JP1/AJS3 is to be recovered collectively, see 2.3.4(2) *Recovering the common definition information of JP1/AJS3 - Manager* or 2.3.5(2) *Recovering the common definition information of JP1/AJS3 - Agent*.

2.3.4 Recovering the JP1/AJS3 - Manager setup information

The following table lists the tasks required to recover the JP1/AJS3 - Manager setup information from the backup.

Table 2–19: Tasks for recovering the JP1/AJS3 - Manager setup information

Task	Windows	UNIX
Recovering the physical host environment and logical host environment	Y	Y
Recovering the common definition information	Y	Y
Recovering the definition files	Y	Y
Clearing the information in the shared memory	N/A	Y
Creating a scheduler service database	Y	Y
Creating an execution environment for QUEUE jobs and submit jobs (only if QUEUE jobs and submit jobs are used)	Y	Y
Recovering the execution agent information	Y	Y
Recovering the unit definition	Y	Y
Starting JP1/AJS3 (cold start)	Y	Y

Legend:

Y: Required

N/A: Not applicable

The following describes the tasks required to recover the JP1/AJS3 - Manager setup information from the backup.

(1) Recovering the physical host environment and logical host environment

After setting up JP1/AJS3 - Manager, recover the physical host environment and logical host environment. For details about the settings required for recovery, see 3.1.2 *Setting up JP1/AJS3 - Manager* in the *JP1/Automatic Job Management System 3 Configuration Guide* (in Windows) or 13.1.2 *Setting up JP1/AJS3 - Manager* in the *JP1/Automatic Job Management System 3 Configuration Guide* (in UNIX).

Note that, if common definition information of JP1/AJS3 - Manager is to be recovered all at once in the following step (2), the user does not have to follow the set-up procedure in the preceding manual to configure common definition information (environment setting parameters) by using the `jajs_config` command or the `jbssetcnf` command. However, the user must perform the procedure to copy the common definition information of the active system to the standby system when setting up the cluster environment.

(2) Recovering the common definition information of JP1/AJS3 - Manager

(a) In a physical host environment

To recover the common definition information for JP1/AJS3 - Manager in a physical host environment, execute the following commands:

For details on the `jbssetcnf` command, see the *JP1/Base User's Guide*.

```
jbssetcnf backup-file for JP1AJS2
jbssetcnf backup-file for JP1NBQAGENT
jbssetcnf backup-file for JP1NBQMANAGER
jbssetcnf backup-file for JP1NBQCLIENT
jbssetcnf backup-file for JP1NBQNOTIFY
jbssetcnf backup-file for JP1AOMMANAGER
jbssetcnf backup-file for JP1AOMAGENT
jbssetcnf backup-file for JP1AJSMANAGER
jbssetcnf backup-file for JP1AJS2COMMON#1
jbssetcnf backup-file for JP1QLAGENT#2
jbssetcnf backup-file for JP1AJS2CONSOLEMANAGER#3
jbssetcnf backup-file for JP1AJS2CONSOLEAGENT#3, #4
```

#1

If environment setting parameters under JP1AJS2COMMON are being added by using the `jajs_config` command or the `jbssetcnf` command, perform a recovery because there is a definition key. For details about the environment setting parameter, see *20.11.1 List of the environment setting parameters for JP1/AJS3 shared information* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#2

If the queueless job execution environment is being set up, perform a recovery because there is a definition key.

#3

If JP1/AJS3 Console functions are being used as compatibility functions for version 10 or earlier, perform a recovery because there is a definition key.

#4

For JP1AJS2CONSOLEAGENT, recover only the common definition information of the physical host.

(b) In a logical host environment

To recover the common definition information for JP1/AJS3 - Manager in a logical host environment, execute the following commands:

For details on the `jbssetcnf` command, see the *JP1/Base User's Guide*.

```
jbssetcnf backup-file for JP1AJS2 of the logical host
jbssetcnf backup-file for JP1NBQAGENT of the logical host
jbssetcnf backup-file for JP1NBQMANAGER of the logical host
```

```
jbssetcnf backup-file for JP1NBQCLIENT of the logical host
jbssetcnf backup-file for JP1NBQNOTIFY of the logical host
jbssetcnf backup-file for JP1AOMMANAGER of the logical host
jbssetcnf backup-file for JP1AOMAGENT of the logical host
jbssetcnf backup-file for JP1AJSMANAGER of the logical host
jbssetcnf backup-file for JP1AJS2COMMON of the logical host#1
jbssetcnf backup-file for JP1QLAGENT of the logical host#2
jbssetcnf backup-file for JP1AJS2CONSOLEMANAGER of the logical host#3
```

#1

If environment setting parameters under JP1AJS2COMMON are being added by using the `jajs_config` command or the `jbssetcnf` command, perform a recovery because there is a definition key. For details about the environment setting parameter, see *20.11.1 List of the environment setting parameters for JP1/AJS3 shared information* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#2

If the queueless job execution environment is being set up, perform a recovery because there is a definition key.

#3

If JP1/AJS3 Console functions are being used as compatibility functions for version 10 or earlier, perform a recovery because there is a definition key.

(3) Recovering the definition files

Restore the definition files that were backed up to their original locations.

Cautionary note

Before you recover the definition files, make sure that the following conditions exist:

1. JP1/Base is installed, and the physical host environment has been set up.
2. JP1/AJS3 is installed, and the physical host environment has been set up.
3. JP1 in the logical host environment has been set up (for recovery of a logical host environment).
4. JP1/Base and JP1/AJS3 are not running.
5. The shared disk is mounted (to recover the settings file of a logical host).

(4) Clearing the information in the shared memory (only in UNIX)

Clear the information about the scheduler services saved in the shared memory when JP1/AJS3 was running. If information remains in the shared memory, the scheduler services restored by the recovery processing might be affected.

To clear the information in the shared memory:

1. Execute the following command to make sure that all JP1/AJS3 services have stopped.

- To check a physical host:
`/opt/jplajs2/bin/jajs_spmd_status`
- To check a logical host:
`/opt/jplajs2/bin/jajs_spmd_status -h logical-host-name`
- To check the JP1/AJS3 monitor functions:
`ps -ef | grep ajsinetd`

Cautionary note

Stop all the JP1/AJS3 services.

2. Execute the following command to clear the information about the scheduler services saved in the shared memory.

```
# /opt/jplajs2/bin/ajsshmdel
```

(5) Creating the scheduler service database

If the scheduler service database is corrupted, you need to re-create it as described below.

Note that you need to stop all the JP1/AJS3 services when creating a scheduler service database. In UNIX, use the procedure in *(4) Clearing the information in the shared memory (only in UNIX)*.

To create the scheduler service database :

1. Execute the `ajsembdbunset` command to delete the embedded database environment.

```
ajsembdbunset -e -id embedded-database-setup-identifier
```

2. Execute the `ajsembdbbuild` command to create the embedded database environment.

For details about how to use the `ajsembdbbuild` command to create an embedded database environment, see 23.4.1(2) *Setting up the embedded database environment* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

For details about how to create an embedded database environment on the primary node in a logical host environment, see 23.5.1(2) *Setting up the embedded database environment* in the *JP1/Automatic Job Management System 3 Configuration Guide*. For details about how to create an embedded database environment on the secondary node, see 23.5.2(2) *Setting up the embedded database environment* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

3. Execute the `ajsembdbsetup` command to set up the JP1/AJS3 environment in the embedded database environment.

For details about how to use the `ajsembdbsetup` command to set up the JP1/AJS3 environment, see 23.4.1(4) *Setting up the scheduler database in an embedded database environment* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

For details about how to set up the JP1/AJS3 environment on the primary node in a logical host environment, see 23.5.1(4) *Setting up the scheduler database in an embedded database environment* in the *JP1/Automatic Job Management System 3 Configuration Guide*. For details about how to set up the JP1/AJS3 environment on the secondary node, see 23.5.2(4) *Setting up the scheduler database in an embedded database environment* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(6) Creating an execution environment for QUEUE jobs and submit jobs

Use the recovered configuration definition file (`jpqsetup.conf`) for the execution environment for QUEUE jobs and submit jobs to create the execution environment for QUEUE jobs and submit jobs.

Before creating the execution environment for QUEUE jobs and submit jobs, make sure that the JP1/AJS3 service on the target logical host is not running.

To create an execution environment:

1. Execute the following command to delete the files in the folder containing the queue information database.

- For Windows


```
del database-directory-for-QUEUE-and-submit-jobs\*#
```

- For UNIX

```
rm database-directory-for-QUEUE-and-submit-jobs/*#
```

#

The database directory of the execution environment for QUEUE jobs and submit jobs is the folder specified in the environment setting parameter DatabasePath in [{JP1_DEFAULT|logical-host-name} \JP1NBQMANAGER\Database].

For details about the environment setting parameter DatabasePath, see 20.5.2(3) DatabasePath in the JP1/Automatic Job Management System 3 Configuration Guide.

2. Execute the following command to create an execution environment for QUEUE jobs and submit jobs.

```
jpgimport -dt isam -ci configuration-definition-file-for-the-execution-environment-of-QUEUE-jobs-and-submit-jobs-(jpgsetup.conf) [-mh logical-host-name]
```

Cautionary notes

- For the configuration definition file for the execution environment of QUEUE jobs and submit jobs (jpgsetup.conf), use the recovered file.
- If you specify only the file name (jpgsetup.conf) for the -ci option, it is assumed that the file jpgsetup.conf exists in the current directory when the command is executed. Therefore, if the file jpgsetup.conf does not actually exist in the current directory, the command will end in an error.
- To execute the command regardless of whether the file jpgsetup.conf exists in the current directory, specify the full path of the file jpgsetup.conf for the -ci option.
- To recover a logical host definition, specify the logical host name in the -mh option.

(7) Starting JP1/AJS3

Restart the JP1/AJS3 services with a cold start.

(8) Recovering the execution agent information

The following describes the tasks required to recover the execution agent information.

Execute the following command to recover the execution agent information from the backup of the execution agent definition file.

```
ajsagtadd [-h logical-host-name] -f execution-agent-definition-file [-i]
```

Cautionary note

If an error occurs during the processing to add information, the processing stops immediately. However, you can specify the -i option to continue the processing even if an error has occurred.

(9) Recovering the unit definition

The following describes the tasks required to recover the setup information of jobnets and calendars. Recover the setup information for each scheduler service.

Cautionary note

For this recovery procedure only, the unit for recovery is by scheduler service rather than by logical host. Accordingly, recover the setup information for each scheduler service separately.

(a) Recovering the definition information for units other than the root job group

Execute the following command to recover the definition information for the units in the scheduler service. The definition information includes the base time, comments, and all other definitions for each unit, but does not include information about the root job group (/), such as the base time, base day, and base month. To recover the root job group information, use the procedures in *(b) Recovering the information about the root job group* and *(c) Recovering the calendar information for the root job group* below.

```
ajsdefine -F scheduler-service-name unitbackup.txt
```

If the information has been split by job group or jobnet during backup, execute the following command for each backup unit to be recovered.

```
ajsdefine -F scheduler-service-name -d definition-destination-unit-name unit  
-name_backup.txt
```

(b) Recovering the information about the root job group

Set the following information about the root job group that you have recorded.

- Comments
- Owners
- JP1 resource groups
- Base time
- Base day
- Base month

(c) Recovering the calendar information for the root job group

Execute the following command to recover the calendar information (open days and close days) for the root job group.

```
ajscalendar -F scheduler-service-name -df rootcal.txt /
```

Cautionary note

This command recovers the calendar of the scheduler service itself.

If no calendar information has been output to `rootcal.txt`, recovery is not needed. For details, see the backup procedure.

2.3.5 Recovering the JP1/AJS3 - Agent setup information

The following lists the tasks required to recover the JP1/AJS3 - Agent setup information of from the backup.

- Setting up JP1/AJS3
- Recovering the definition files

- Starting JP1/AJS3 (cold start)

The following describes the tasks required to recover the JP1/AJS3 - Agent setup information from the backup.

(1) Setting up JP1/AJS3

If the JP1 environment has been damaged due to a corrupted disk or another problem, you must install JP1/Base, set up JP1/Base, and then install the JP1/AJS3 series program in that order. For details about how to set up JP1/AJS3 - Agent, see *3.2.2 Setting up JP1/AJS3 - Agent* in the *JP1/Automatic Job Management System 3 Configuration Guide* (in Windows) or *13.2.2 Setting up JP1/AJS3 - Agent* in the *JP1/Automatic Job Management System 3 Configuration Guide* (in UNIX).

Note that, if common definition information of JP1/AJS3 - Agent is to be recovered all at once in the following step (2), the user does not have to follow the set-up procedure in the preceding manual to configure common definition information (environment setting parameters) by using the `jajs_config` command or the `jbssetcnf` command. However, the user must perform the procedure to copy the common definition information of the active system to the standby system when setting up the cluster environment.

(2) Recovering the common definition information of JP1/AJS3 - Agent

(a) In a physical host environment

To recover the common definition information for JP1/AJS3 - Agent in a physical host environment, execute the following commands:

For details on the `jbssetcnf` command, see the *JP1/Base User's Guide*.

```
jbssetcnf backup-file for JP1AJS2
jbssetcnf backup-file for JP1NBQAGENT
jbssetcnf backup-file for JP1NBQCLIENT
jbssetcnf backup-file for JP1NBQNOTIFY
jbssetcnf backup-file for JP1AOMAGENT
jbssetcnf backup-file for JP1AJS2COMMON#1
jbssetcnf backup-file for JP1QLAGENT#2
```

#1

If environment setting parameters under JP1AJS2COMMON are being added by using the `jajs_config` command or the `jbssetcnf` command, perform a recovery because there is a definition key. For details about the environment setting parameter, see *20.11.1 List of the environment setting parameters for JP1/AJS3 shared information* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#2

If the queueless job execution environment is being set up, perform a recovery because there is a definition key.

(b) In a logical host environment

To recover the common definition information for JP1/AJS3 - Agent in a logical host environment, execute the following commands:

For details on the `jbssetcnf` command, see the *JP1/Base User's Guide*.

```
jbssetcnf backup-file for JP1AJS2 of the logical host
jbssetcnf backup-file for JP1NBQAGENT of the logical host
jbssetcnf backup-file for JP1NBQCLIENT of the logical host
```

```
jbssetcnf backup-file for JP1NBQNOTIFY of the logical host
jbssetcnf backup-file for JP1AOMAGENT of the logical host
jbssetcnf backup-file for JP1AJS2COMMON of the logical host#1
jbssetcnf backup-file for JP1QLAGENT of the logical host#2
```

#1

If environment setting parameters under JP1AJS2COMMON are being added by using the `jajs_config` command or the `jbssetcnf` command, perform a recovery because there is a definition key. For details about the environment setting parameter, see *20.11.1 List of the environment setting parameters for JP1/AJS3 shared information in the JP1/Automatic Job Management System 3 Configuration Guide*.

#2

If the queueless job execution environment is being set up, perform a recovery because there is a definition key.

(3) Recovering the definition files

Restore the backed-up files to their original locations.

Cautionary note

Before you recover the definition files, make sure that the following conditions exist:

1. JP1/Base is installed.
2. JP1/AJS3 is installed.
3. JP1 in the logical host environment has been set up (for recovery of a logical host environment).
4. JP1/Base and JP1/AJS3 are not running.
5. The shared disk is mounted (to recover the settings file of a logical host).

(4) Starting JP1/AJS3

After recovery, cold-start JP1/AJS3.

2.3.6 Recovering the JP1/AJS3 - View setup information

The following lists the tasks required to recover the JP1/AJS3 - View setup information from the backup.

- Installing JP1/AJS3 - View
- Recovering the setup information
- Recovering the custom job icons (only if the custom job icons were created)
- Recovering the icon image folders created by users for JP1/AJS3 - View (only if icon image folders were created)

The following describes the tasks required to recover the JP1/AJS3 - View setup information from the backup.

(1) Installing JP1/AJS3 - View

If the JP1 environment has been damaged due to a corrupted disk or another problem, first install JP1/AJS3 - View.

(2) Recovering the setup information

Restore the backed-up files and folder to their appropriate destination file and folder locations in the new environment.

Cautionary note

Before you recover the folders, make sure that the following conditions exist:

- JP1/AJS3 - View is installed.
- JP1/AJS3 - View is not running.

The following table lists the files and folders you need to recover.

Table 2–20: JP1/AJS3 - View files and folders to be recovered

Files and folder name	Description
• <i>JP1/AJS3-View-installation-folder</i>\conf\ajs.conf • <i>JP1/AJS3-View-installation-folder</i>\conf\ajs2.conf^{#1} • %ALLUSERSPROFILE%^{#2}\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\conf\default.conf^{#3} • %ALLUSERSPROFILE%^{#1}\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\conf\ (osusers)^{#3, #4} • %ALLUSERSPROFILE%^{#2}\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\conf\ajs2view_common.conf^{#3, #5} • %ALLUSERSPROFILE%^{#2}\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\conf\JP1-user-name^{#3, #5} • <i>JP1/AJS3-View-installation-folder</i>\conf\timezone • %ALLUSERSPROFILE%^{#2}\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\conf\JP1-user-name\ajs2view_command.conf • <i>JP1/AJS3-View-installation-folder</i>\conf\ssl\nosslhost.conf	JP1/AJS3 - View environment settings file and folder
• %ALLUSERSPROFILE%^{#2}\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\custom.dir*. *^{#6} • %ALLUSERSPROFILE%^{#1}\HITACHI\JP1\JP1_DEFAULT\JP1AJS2V\custom.dir\extend^{#3, #7} • %ALLUSERSPROFILE%^{#1}\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\csadef^{#3}	JP1/AJS3 - View custom job registration information file and folder
• %ALLUSERSPROFILE%^{#2}\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\customevent.dir • %ALLUSERSPROFILE%^{#2}\HITACHI\JP1\JP1_DEFAULT\JP1AJS2V\customevent.dir\extend^{#3, #7}	JP1/AJS3 - View custom event job registration information folder
• <i>JP1/AJS3-View-installation-folder</i>\addin.dir	JP1/AJS3 - View add-in program registration information folder

#1

If the operating system, computer specifications, or amount of information to be displayed differs at the restoration target environment, instead of simply overwriting the existing file, review the estimated memory requirements and make adjustments as necessary. For details, see *11.2.5 Setting the amount of memory used in the JP1/Automatic Job Management System 3 Operator's Guide*.

#2

The default of %ALLUSERSPROFILE% is *system-drive*\ProgramData.

#3

Depending on how the system is configured, this file and folder might not exist.

#4

Recover this item if the multiuser remote desktop connection function is enabled. For details about the multiuser remote desktop connection function, see *11.2.7 Allowing multiple users to concurrently use JP1/AJS3 - View via remote desktop connections* in the *JP1/Automatic Job Management System 3 Operator's Guide*.

#5

If changes were made to the user-specified option file (`ajs2view_opt.conf`), system common settings file (`ajs2view_common.conf`, `ajs2coview_common.conf`), or to a file specified in the wallpaper settings, repeat the changes in the new environment.

#6

Recover this directory, but without the subfolders and files listed below.

Items excluded from the recovery:

- ja folder
- en folder
- Cjobregm.exe
- Cjobregm.exe.1000
- CJNAME.cjx.model
- CJX.xsd
- *.dll
- *.olb
- *.tlb

#7

Recover this item if the function that allows each JP1 user to use different custom jobs is enabled. For details about the function that allows each JP1 user to use different custom jobs, see *11.2.8 Allowing each JP1 user to use different custom jobs and custom event jobs* in the *JP1/Automatic Job Management System 3 Operator's Guide*.

(3) Recovering the custom job icons

Restore the backed-up icon gif files to their appropriate destination file locations in the new environment.

This step is required only if custom job icons were created.

Cautionary note

Before recovering the custom job icons, make sure that the following conditions exist:

- JP1/AJS3 - View is installed.
- JP1/AJS3 - View is not running.

The following table lists the files you need to recover.

Table 2–21: JP1/AJS3 - View files to be recovered

File name	Description
<i>JP1/AJS3-View-installation-folder</i> \image\custom\CUSTOM_PC_USER_any-name.gif	gif file for custom PC job icons
<i>JP1/AJS3-View-installation-folder</i> \image\custom\CUSTOM_UX_USER_any-name.gif	gif file for custom Unix job icons

(4) Recovering the icon image folders created by users for JP1/AJS3 - View

Restore the backed-up icon image folders for JP1/AJS3 - View to their appropriate destination folder locations in the new environment.

This task is required only if icon image folders for JP1/AJS3 - View have been backed up.

Cautionary note

Before you recover the folders, make sure that the following conditions exist:

- JP1/AJS3 - View is installed.
- JP1/AJS3 - View is not running.

Table 2–22: Folder to be recovered when icon images have been created

Folder name	Description
<i>JP1/AJS3-View-installation-folder\image\extend\user_any-name</i>	Folder containing user-created icon image files

(5) Recovering the custom event job icons

Restore the backed-up icon gif files to their appropriate destination file locations in the new environment.

This task is not required if no custom event job have been registered.

Cautionary note

Before recovering the custom event job icons, make sure that the following conditions exist:

- JP1/AJS3 - View is installed.
- JP1/AJS3 - View is not running.

The following table lists the files you need to recover.

Table 2–23: JP1/AJS3 - View files to be recovered

File name	Description
<i>JP1/AJS3-View-installation-folder\image\custom\CE_any-name.gif</i>	gif file for custom event job icons

2.3.7 Recovering the JP1/AJS3 - Web Console setup information

The following is a list of the tasks for recovering the setup information of JP1/AJS3 - Web Console from the backup data.

- Recovering JP1/AJS3 - Manager
- Installing and setting up JP1/AJS3 - Web Console
- Recovering the JP1/AJS3 - Web Console files
- Starting the services

The following describes the tasks for recovering the setup information of JP1/AJS3 - Web Console from the backup data.

(1) Recovering JP1/AJS3 - Manager

If JP1/AJS3 - Manager is to be recovered on the same host as JP1/AJS3 - Web Console, be sure to recover JP1/AJS3 - Manager before recovering JP1/AJS3 - Web Console.

For details about how to recover JP1/AJS3 - Manager, see [2.3.4 Recovering the JP1/AJS3 - Manager setup information](#).

(2) Installing and setting up JP1/AJS3 - Web Console

Install and set up JP1/AJS3 - Web Console.

For details about how to set up JP1/AJS3 - Web Console in Windows, see [3.4 Setup required to use JP1/AJS3 - Web Console](#) in the *JP1/Automatic Job Management System 3 Configuration Guide*. For details about how to set up JP1/AJS3 - Web Console in UNIX see [13.3 Setup required to use JP1/AJS3 - Web Console](#) in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(3) Restoring the JP1/AJS3 - Web Console files

Restore the JP1/AJS3 - Web Console files from the backup data to the new environment. If you want to use the communication encryption function, be sure to also restore the files for the communication encryption function from the backup data to the original location.

Cautionary note

Before you restore the files, make sure that the following conditions are met:

- The services of JP1/AJS3 Web Application Server and JP1/AJS3 HTTP Server have been stopped.
- To recover a cluster-configuration environment, the setup procedure for cluster operation must have been performed.
- To recover the settings files on a shared disk in a cluster configuration, the shared disk must be mounted.

(4) Starting the services

Start the JP1/AJS3 Web Application Server service and the JP1/AJS3 HTTP Server service.

2.3.8 Recovering other information

In addition to the information described above, also recover the following setup information related to JP1.

The following table lists the tasks required to recover the information necessary for running JP1.

Table 2–24: Tasks for recovering information necessary for running JP1

Task	Windows	UNIX
Setting the adjusted value for the service account	Y	N/A
Recovering the login script	N/A	Y
Verifying the kernel parameter adjustment values	N/A	Y
Recovering the tool that collects troubleshooting data	Y	Y
Recovering the cluster-capable tools (only if required by the cluster system)	Y	Y
Recovering the user-created tools for linking with a mail system	N/A	Y

Task	Windows	UNIX
Setting the linkage functions (only if linkage functions are used)	Y	Y
Recovering the files used by HTTP connection jobs	Y	Y [#]
Recovering the aggregation results of the number of job executions	Y	Y

Legend:

Y: Required

N/A: Not applicable

#

This task is required for Linux only.

The procedure for recovering information required to run JP1 is different for Windows and UNIX. The following subsections describe these procedures.

In addition to the items described below, you must also restore the OS, network system, and cluster software settings. For details, see the documentation for the OS and the cluster system.

(1) In Windows

(a) Setting the adjusted value for the service account

Set the adjustment value if the JP1/AJS3 service has been executed with the user account.

(b) Recovering the tool that collects troubleshooting data

Recover the backed up tool that collects troubleshooting data.

(c) Recovering the cluster-capable tools (only if required by the cluster system)

Recover the backed up cluster-capable tools. In addition, make sure that they are correctly registered in the cluster software.

(d) Setting the linkage functions (only if linkage functions are used)

When mail linkage, message queue linkage, or linkage with HP NNM is used, you need to set up each linkage again.

(e) Recovering the files used by HTTP connection jobs

Recover the files used by HTTP connection jobs from the backup data.

(f) Recovering the aggregation results of the number of job executions

Recover the folders that store aggregation results from their backups.

(2) In UNIX

(a) Recovering the login script (only in UNIX)

Restore the login script for the JP1 user.

(b) Verifying the kernel parameter adjustment values (only in UNIX)

Make sure that the values of the kernel parameters are appropriate.

(c) Recovering the tool that collects troubleshooting data

Recover the backed up tool that collects troubleshooting data.

(d) Recovering the cluster-capable tools (only if required by the cluster system)

Recover the backed up cluster-capable tools. In addition, make sure that they are correctly registered in the cluster software.

(e) Recovering the user-created tools for linking with a mail system (only in UNIX)

Recover the user-created tools for linking with a mail system if these tools have been backed up.

(f) Setting the linkage functions (only if linkage functions are used)

When mail linkage, message queue linkage, or linkage with HP NNM is used, you need to set up each linkage again.

(g) Recovering the files used by HTTP connection jobs

Recover the files used by HTTP connection jobs from the backup data.

(h) Recovering the aggregation results of the number of job executions

Recover the directories that store aggregation results from their backups.

2.4 Backing up and recovering an entire system

If you use the commands and backup tools provided by the operating system to perform a full system backup and recovery, you need to perform a cold start of the JP1/AJS3 system after the recovery process is completed. By performing a cold start of the manager host, you initialize the registered execution-schedule information for jobnets and execution information for jobnets and jobs which ensures that the information is consistent between the manager and agent hosts.

If you would rather not cold-start the manager host for reasons like the need to retain saved generations of jobnets, you can perform a cold start on the agent side instead. However, because every agent host needs to be cold-started, consider the number of agent hosts and the system configuration before starting this process. The manager host must be cold-started if any jobs are running on it.

Before you start a full system backup and recovery, read the notes in [2.4.3 Notes on performing a full system backup or recovery](#).

In any case, perform a cold start on the manager host or the agent hosts. The procedure for each host is described below.

2.4.1 Cold starting the manager host

Cold-starting the manager host initializes the registered execution-schedule information for jobnets and execution information for jobnets and jobs. When performing a full system backup, first execute the `ajsrlexport` command to back up the registered execution-schedule information for jobnets. You can then use the `ajsrimport` command to restore this information to the recovered system.

If you choose to cold-start the manager host rather than the agents, perform a full system backup and recovery as below.

(1) Back up registered execution-schedule information for jobnets and perform full system backup

1. Execute the `ajsrlexport` command to back up the registered execution-schedule information for jobnets.
For details, see from step 2 in [3.4.4 Procedure for using the ajsrlexport command to export the registered execution-schedule information for jobnets](#).
2. Stop the JP1/AJS3 services.
3. Perform a full system backup.
4. Start the JP1/AJS3 services.

(2) Recover the registered execution-schedule information for jobnets and full system

1. Stop the JP1/AJS3 services.
2. Restore the full system backup.
3. Cold-start the JP1/AJS3 services.
4. Execute the `ajsrimport` command to restore the registered execution-schedule information for jobnets.

For details, see from step 3 in *3.4.5 Procedure for using the `ajsgimport` command to import registered execution-schedule information for jobnets*.

2.4.2 Cold starting the agent hosts

If you elect not to cold-start the manager host, stop all scheduler services and ensure that all jobs are stopped on the agent host before performing the backup process. Note that the start conditions cannot be initialized on the agent host if a communication error or other problem prevents a job stop request from reaching the agent host. This can result in inconsistent job execution information between the manager host and agent host.

To avoid introducing inconsistencies into the start conditions or execution information of finished jobs, you need to cold-start the JP1/AJS3 services on the agent hosts.

(1) Perform full system backup

1. Stop the scheduler service on the manager host.

Execute the `ajssstop` command with the `-n`, `-s`, and `-w` options specified to stop the scheduler service after all jobnets have finished executing.

For details about the `ajssstop` command, see *ajssstop* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

2. Stop the JP1/AJS3 services.

Stop the JP1/AJS3 services on the manager host and all agent hosts in the system.

3. Perform a full system backup.

4. Start the JP1/AJS3 services.

Start the JP1/AJS3 services on the manager host and all agent hosts in the system.

(2) Perform full system recovery

1. Stop the scheduler service.

Execute the `ajssstop` command with the `-n`, `-s`, and `-w` options specified to stop the scheduler service after all jobnets have finished executing.

2. Stop the JP1/AJS3 services.

Stop the JP1/AJS3 services on the manager host and all agent hosts[#] in the system.

3. Restore the full system backup.

4. Cold-start the JP1/AJS3 services on all agent hosts.

Perform a cold start of the JP1/AJS3 services on all agent hosts[#] in the system.

5. Start the JP1/AJS3 services on the manager host.

[#]

You do not need to restart the JP1/AJS3 services on agent hosts that are not specified as the execution agent for any jobs.

2.4.3 Notes on performing a full system backup or recovery

- All JP1/AJS3 services must be stopped for the duration of the backup or recovery process.
 - In a cluster environment, perform backup and recovery of the local disk and the shared disk.
 - Information generated after the backup was taken is lost when the backup is restored. This can include the following information:
 - Maintenance information generated when the system recovers from an error
 - JP1 events
 - Changes made to the configuration definition information
 - If a job is scheduled to execute while the JP1/AJS3 services are stopped, the job will execute as soon as the JP1/AJS3 services restart. However, the job will not execute if you cold-start the JP1/AJS3 services.
 - The JP1/AJS3 includes special files. Remember to back up and restore these special files as part of a full system backup.
 - When you perform a backup and recovery to migrate the entire system, you need to ensure the integrity of all file information, including the information registered to the operating system by JP1 programs, and then perform a full system backup. When you perform a full system recovery, you need to recover all of the backup files you created.
 - You can also migrate to a host with a different host name or IP address, but in that case, perform the following changing procedure before starting JP1/AJS3.
 - Migrating to a host with a different host name
For details on the procedure for changing the host name, see [7.9.1 Changing the name of the host that runs JP1/AJS3](#).
 - Migrating to a host with a different IP address
For details on the procedure for changing the IP address, see [7.9.2 Changing the IP address of the host that runs JP1/AJS3](#).
- If both the host name and the IP address are different, both changing procedures are required.
- When using the commands and backup tools provided by the operating system to perform a full system backup and recovery, you need to fully validate the operation in your environment.
 - Backups created in an environment using JP1/AJS3 - Manager 12-60 or earlier cannot be used with JP1/AJS3 - Manager 13-00 or later. Create backups again after upgrading to version 13-00 or later.
Similarly, backups created in an environment using JP1/AJS3 - Manager 13-00 or later cannot be used with JP1/AJS3 - Manager 12-60 or earlier.
 - If an event job or a custom event job was running on an agent host prior to recovery, after performing recovery, to terminate the event job and the custom event job that were running, perform a cold start on the agent host on which the event job and the custom event job were running.

2.5 Backing up and recovering JP1/AJS3 - Manager by using the backup enhancement function

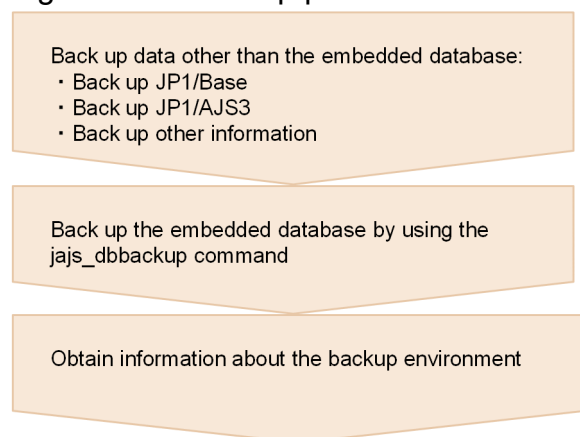
This section describes how to back up JP1/AJS3 - Manager by using the backup enhancement function and how to recover data if a failure occurs in the database.

To use the backup enhancement function, you need to enable this function when setting up the embedded database. For details about how to do this, see *21.6 Settings for backing up and recovering an embedded database while JP1/AJS3 is running* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

2.5.1 Overview of backing up and recovering JP1/AJS3 - Manager by using the backup enhancement function

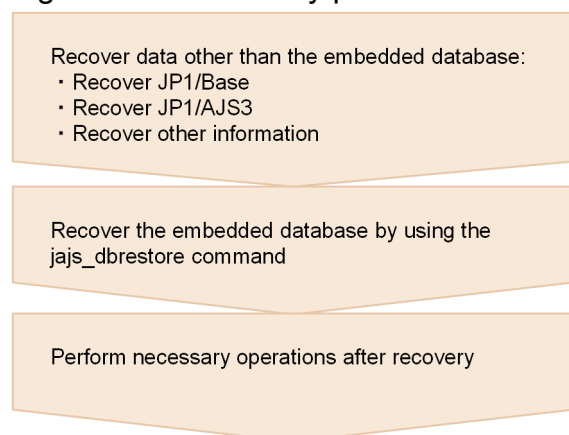
The following figure shows the backup procedure that uses the backup enhancement function.

Figure 2–7: Backup procedure that uses the backup enhancement function



The following figure shows the recovery procedure that uses the backup enhancement function.

Figure 2–8: Recovery procedure that uses the backup enhancement function



2.5.2 Backing up

This subsection describes how to back up JP1/AJS3 - Manager during operation by using the backup enhancement function.

(1) Backing up data other than the embedded database

Backup data created by using the backup enhancement function can be recovered only in the same environment as the one in which the backup was created. Therefore, you must create necessary backups (for example, back up the entire system) so that you can configure the same embedded database environment as the backup environment. We recommend that you create a backup when any change is made to the system configuration or to the environment settings information. For details about how to back up data, see *5.2 Backups and recovery* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide* and *2.2 Backing up the setup information for a system that uses JP1/AJS3*.

(2) Backing up the embedded database

Backing up data of the embedded database allows you to recover information that is updated daily, such as jobnet definitions and registration statuses. If you perform backup on a regular basis, such as at the end of work each day, you can recover data in a condition close to the condition of data when the error occurred.

To back up the embedded database:

1. Create a backup data storage directory on the local disk.

The backup data storage directory requires sufficient free space to accommodate the embedded database to be backed up. The following table provides estimates on the required amount of free space.

Table 2–25: Embedded database models and the required free space

Database model	Required free space
Large scale	About 7,200 MB
Medium scale	About 1,900 MB
Small scale	About 700 MB

If the database area has been expanded by using the `ajsembdbaddarea` command, additional free space equivalent to the area added by the expansion is required. Similarly, if the database auto-increment function is enabled, additional free space equivalent to the area added by the function is required.

For details about the database auto-increment function, see *23.2 Estimating the database area* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

2. Confirm that the embedded database is running.

Execute the `ajsembdbstatus` command to confirm that the embedded database to be backed up is running (that is, `ONLINE` is indicated for `UNIT-STAT`).

The following are examples of using the `ajsembdbstatus` command:

```
ajsembdbstatus -s ust -id embedded-database-setup-ID
```

If the embedded database is not running, execute the `ajsembdbstart` command with the `-id embedded-database-setup-ID` option specified.

For details about the `ajsembdbstatus` command, see *ajsembdbstatus* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*. For details about the `ajsembdbstart` command, see *ajsembdbstart* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

3. Execute the `jajs_dbbackup` command.

Execute the command with the following specified: the setup identifier of the embedded database to be backed up and the backup data storage directory. The following shows an execution example:

```
jajs_dbbackup -id embedded-database-setup-ID -o Backup-data-storage-directory
```

Backup data of the embedded database is stored under the specified backup data storage directory.

For details about the `jajs_dbbackup` command, see *jajs_dbbackup* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

Cautionary notes

- Do not create the backup data storage directory on a network drive. If you specify a network drive for the backup data storage directory, subsequent operation cannot be guaranteed.
- The execution of jobs is suspended while the `jajs_dbbackup` command is creating a backup. Use the `jajs_dbbackup` command when no jobs are to be executed.
- For details about how to cancel the execution of the `jajs_dbbackup` command, see [\(4\) Canceling the processing to back up the embedded database](#).

(3) Obtaining information about the backup environment

To recover data from a backup, you need the following information to confirm the prerequisites for recovery. We recommend that you obtain the information when you execute the `jajs_dbbackup` command.

(a) JP1/AJS3 - Manager version information

In Windows:

Check the information in the following file:

JP1/AJS3-Manager-installation-folder\Version.txt

In UNIX:

Execute `/etc/hitachi_setup`, and then check the information displayed for `List Installed Software`.

(b) Embedded database version information

Execute the following command, and then collect the displayed information:

```
ajsembdbidlist -v
```

(c) Embedded database configuration information

Execute the following command, and then collect the displayed information:

```
ajsembdbstatus -c
```

(d) Scheduler service configuration information

Execute the following command, and then collect the displayed information:

```
ajsembdbidlist
```


(e) Database area extension information

If you have extended the database area of the embedded DB by using the `ajsembdbaddarea` command, obtain the following folder or directory file.

In Windows:

embedded-database-practical-folder\CONF\embrm

In UNIX:

embedded-database-practical-directory/conf/embrm

(f) System definition of embedded database

If you have changed the operand of the system definition of the embedded DB, obtain the setting value. For an overview of the system definition, see *23.1.1 Examining the embedded-database operating environment and operating method* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(4) Canceling the processing to back up the embedded database

In general, do not cancel backup processing of the embedded DB performed by using the `jajs_dbbackup` command. If you want to stop processing at a given time, execute the `jajs_dbbackup` command with the timeout period specified for the `-t` option. Note that if you want to cancel backup processing without waiting for the timeout period to expire, during an emergency etc., perform the following cancellation procedure:

1. Set the environment variables required to execute commands for the embedded database.

The following table describes the environment variables you need to set.

Table 2–26: Environment variable that need to be set

Environment variable	Value to be specified
PATH	This is the directory in which commands for the embedded database are stored. In Windows: Specify <i>embedded-database-practical-directory</i> \bin In UNIX: Specify <i>embedded-database-practical-directory</i> /bin
PDCONFPATH	This is the directory in which definition files for the embedded database are stored. In Windows: Specify <i>embedded-database-practical-directory</i> \conf In UNIX: Specify <i>embedded-database-practical-directory</i> /conf
PDDIR	Specify the name of the embedded database practical directory.
PDLANG	Specify ANY.
PDUSER	Specify the user name and password of the embedded database administrator (the owner of the tables of the scheduler database) in <i>user-name/password</i> format. Example: PDUSER="root"/"root"
PDUXPLDIR	In Windows only, specify the name of the work directory for the embedded database.
SHLIB_PATH [#]	In UNIX only, specify <i>embedded-database-practical-directory</i> /lib.

#

This is LD_LIBRARY_PATH in Solaris or Linux, and LIBPATH in AIX.

Example of environment variable settings in Windows:

```
x:\> set PDDIR=c:\Program Files\HITACHI\JP1AJS2\embdb\_JF0
x:\> set PDCONFPATH=%PDDIR%\conf
x:\> set PDUXPLDIR=%PDDIR%\uxpldir

x:\> set PDUSER="root"/"root"
x:\> set PDLANG=ANY
x:\> set PATH=%PATH%;%PDDIR%\bin
```

Example of environment variable settings in UNIX (HP-UX):

```
# PDDIR=/opt/jp1ajs2/embdb/_JF0
# PDCONFPATH=$PDDIR/conf
# PDUSER=' "root"/"root" '
# PDLANG=ANY
# SHLIB_PATH=$PDDIR/lib
# PATH=$PATH:$PDDIR/bin

# export PDDIR PDCONFPATH PDUSER PDLANG SHLIB_PATH PATH
```

2. Obtain the server name and process ID of the backup processing.

Execute the following command to confirm the server name (SVID) and the process ID (PID). The server name is in the form of 0bcpyx, where *x* is a numeric value such as 0, 1, or 2.

```
pdls -d prc -a
```

3. Cancel the backup processing.

Cancel the backup processing by executing the `ajsembdbcancel` command with the following specified: the server name and process ID you confirmed in step 2.

The following are examples of using the command:

```
ajsembdbcancel -u server-name -p process-ID -id embedded-database-setup-id
entifier
```

For details about the `ajsembdbcancel` command, see *ajsembdbcancel* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

Cautionary note:

If you cancel backup processing, wait for several minutes (approximately 2 minutes) from the start of backup processing.

If you cancel backup processing without waiting, backup processing will be re-executed because backup processing is retried as a result of the `jajs_dbbackup` command for several minutes after the start of backup processing.

2.5.3 Recovery

The following describes how to recover the JP1/AJS3 - Manager by using the backup enhancement function.

(1) Recovering data other than the embedded database

If a system environment that uses JP1/AJS3 has been damaged due to a corrupted disk or another problem, you must first recover the data other than the embedded database. At this time, use a backup of the entire system, if one is available, to recover the system environment. If you do not have a backup of the entire system, perform the following.

(a) Installing and setting up JP1/Base

Install JP1/Base and set up JP1/Base. For details about how to install and set up JP1/Base, see the *JP1/Base User's Guide*.

(b) Installing JP1/AJS3 - Manager

Install JP1/AJS3 - Manager. The JP1/AJS3 - Manager installation procedure varies depending on the OS. For details, see the following table:

No.	OS	Reference
1	Windows	<i>2.2.3(1) New installation in the JP1/Automatic Job Management System 3 Configuration Guide</i>
2	HP-UX	<i>12.2.3 Installation in HP-UX in the JP1/Automatic Job Management System 3 Configuration Guide</i>
3	Solaris	<i>12.2.4 Installation in Solaris in the JP1/Automatic Job Management System 3 Configuration Guide</i>
4	AIX	<i>12.2.5 Installation in AIX in the JP1/Automatic Job Management System 3 Configuration Guide</i>
5	Linux	<i>12.2.6 Installation in Linux in the JP1/Automatic Job Management System 3 Configuration Guide</i>

(c) Recovering the JP1/Base setup information

For details about recovering the JP1/Base setup information, see [2.3.3 Recovering the JP1/Base setup information](#).

(d) Recovering the physical host and logical host environments

You must set up the physical host and logical host for recovery in the same environment as the one in which the backup was created. When you recover the physical host and logical host, make sure that the following items match between the environment in which the backup was created and the environment to be recovered:

- JP1/AJS3 - Manager version
- Embedded database version
- Configuration of the embedded database
- Scheduler service configuration
- Added database area (Only when the database area of the embedded database was expanded by using the `ajsembdbaddarea` command in the environment in which the backup was created.)
- The system definition of embedded database

For details about how to enable the backup enhancement function and set up the physical host, see *21.6.1(1) When creating a new scheduler service and embedded database after performing a new installation* in the *JP1/Automatic Job Management System 3 Configuration Guide*. For details about how to enable the backup enhancement function and set up the logical host, see *21.6.2(1) When creating a new logical host* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(2) Recovering data of the embedded database

To recover data of the embedded database by using the `jajjs_dbrestore` command:

1. Store the backup data created by using the `jaajs_dbbackup` command in the environment after recovery.

Cautionary note

Do not store the backup data on a network drive. If you specify backup data that is stored on a network drive, subsequent operation cannot be guaranteed.

2. Stop the JP1/AJS3 services on the host to be recovered.
3. Confirm the status of the embedded DB to be recovered.

```
ajsembdbstatus -s ust -id embedded-database-setup-ID
```

4. If the embedded DB to be recovered has started, stop the embedded DB normally. If the target embedded database is not running, start it, and then stop it normally.

Example of the command used to start an embedded database:

```
ajsembdbstart -id embedded-database-setup-ID
```

Example of the command used to stop an embedded database normally:

```
ajsembdbstop -id embedded-database-setup-ID
```

5. Execute the `jaajs_dbrestore` command.

Execute the command with the following specified: the setup identifier of the embedded database to be recovered and the backup data used for recovery. The following shows an execution example.

```
jaajs_dbrestore -id embedded-database-setup-ID -i backup-data
```

The specified backup data is recovered in the embedded database.

For details about the `jaajs_dbrestore` command, see *jaajs_dbrestore* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

6. Start the JP1/AJS3 services.

Execute the `jaajs_spmd_status` command to confirm that all processes are running normally.

(3) Perform necessary operations after recovery

To perform necessary operations after recovery, such as checking the statuses of jobnets and jobs and canceling suppression of job execution:

1. Check the jobnets' and jobs' statuses existing when the failure occurred, and then change the statuses or rerun the jobnets and jobs as necessary.

If you recover the embedded database by using the `jaajs_dbrestore` command, the scheduler service will start in disaster recovery mode the next time the system starts after recovery. In this case, the scheduler service starts in the status in which execution is suppressed, and the statuses of jobs and jobnets are changed. Use JP1/AJS3 - View or a command to check the status of each job, and then, if necessary, change the statuses of jobs or rerun jobs.

For details about the status in which jobnets and jobs are placed when JP1/AJS3 is started in disaster-recovery mode, see the description of the statuses of jobnets and jobs when a disaster recovery start is performed in [6.2.1\(3\)\(a\) Statuses when a JP1/AJS3 service on the manager host is restarted](#).

For details about how to check and change job execution statuses and how to rerun a job, see the *JP1/Automatic Job Management System 3 Operator's Guide*.

2. Delete the manager host information that is related to event jobs and custom event jobs and remains on the agent host.

Run the following command on the manager host to delete the manager host information that existed before recovery and remains on the agent host.

For the `-a` option, specify the execution host name that corresponds to the target execution agent name.

```
jpomanevreset -h logical-host-name -F scheduler-service-name -dh manager-host-name -a execution-host-name
```

If the manager host to be recovered is a physical host, you do not need to specify the `-h` option.

If the manager host to be recovered is a logical host, specify the manager host name of the logical host for the `-h` option and `-dh` option.

3. Cancel suppression of job execution.

Execute the following command to cancel suppression of job execution, and then resume work tasks.

```
ajsalter -s none -F scheduler-service-name
```

3

Backing Up and Restoring Jobnets

This chapter describes how to back up and restore jobnet definition information and the execution registration status of each jobnet. You can save, restore and back up jobnets you defined so that they can be executed with other scheduler services or on other hosts.

3.1 Overview of backing up and restoring jobnets

You can back up and restore the unit definition information for each job, jobnet, or job group. You can also create a backup of unit definition information and execute a jobnet distributed to different scheduler services or hosts.

When distributing a job group or jobnet, you can use JP1/Software Distribution or JP1/FTP. Since JP1/Software Distribution can automatically distribute redefined jobnets, it lets you manage JP1/AJS3's applications on hosts more easily. For details about automatic distribution of JP1/Software Distribution, see *10. Automatic Distribution Using JP1/Software Distribution* in the *JP1/Automatic Job Management System 3 Linkage Guide*.

We recommend that only a user with administrator privileges or superuser privileges perform backup and restoration.

Important

The information that can be backed up by using the method described here is information that defines a jobnet or job. Therefore, you cannot use JP1/AJS3 to back up a jobnet or job including its related information such as execution results. If you want to back up and restore the information including execution results of a jobnet or job, use the OS functionality. Before you do so, stop all the JP1/AJS3 services on the manager host and related agent host.

3.1.1 Backup and restore functionality

To back up and restore unit definition information, you can use the following methods:

- Execute the `ajsprint` and `ajsdefine` commands.
The unit definition information stored in a file is used for backup and restoration.
- Execute the `ajsbackup` and `ajsrestore` commands.
The unit definition information stored in backup files in a backup box is used for backup and restoration. This operation is also possible from JP1/AJS3 - View.

The following table lists the functionality for backing up and restoring unit information and the commands you use.

Table 3–1: Backup and restore functionality and commands

Functionality		Command
Outputting definitions of units		<code>ajsprint</code> ^{#1}
Defining units		<code>ajsdefine</code> ^{#1}
Backing up units		<code>ajsbackup</code> ^{#2}
Restoring units		<code>ajsrestore</code> ^{#2}
Deleting backup box		<code>ajsbkudel</code>
Changing and displaying attributes of the backup box	Owner	<code>chown</code> ^{#3}
	Group	<code>chgrp</code> ^{#3}
	Permission mode	<code>chmod</code> ^{#3}
	Renaming	<code>mv</code> ^{#3}

Functionality		Command
Changing and displaying attributes of the backup box	Listing backup file names	ls ^{#3}
Listing units in the backup box		ajsrestore

#1

This method uses a file to back up and restore units. Use this method when you want to distribute units to other hosts or when you do not need to back up information for each application.

#2

This method uses a JP1/AJS3 backup file to back up and restore units.

You can also execute this operation from a menu in the JP1/AJS3 - View window. For details, see [3.3 Backing up and restoring jobnets by using the ajsbackup and ajsrestore commands or JP1/AJS3 - View](#). Use this method when you do not want to distribute units to other hosts or when you need to back up information for each application.

#3

This is a UNIX command.

3.1.2 Precautions for backup and restoration

- If 2-byte codes are used in a unit name, make sure that the values of the LANG environment variables at the source and the destination are the same. For example, if a backed-up unit defined using 2-byte Shift-JIS codes is restored to a host that supports only EUC encoding, the restored unit can no longer be used.
- Before you restore a jobnet, cancel the registration of the jobnet.
- Do not back up or restore any units that are being referenced or updated. Before you perform backup or restoration, make sure that the jobnet work element is not being used.
- You must be authorized to update the units for which you back up units that you want to use for restoration. You cannot restore units, if you were not authorized to update them when you backed them up. A user with administrator privileges or superuser privileges can restore units that were backed up by a user without deletion authorization. Note that if the ADMACLIMIT environment setting parameter is set to yes, a JP1 user who has the following authorizations can back up or restore units:

- Backup
Authorization to reference all units to be backed up
- Restoration
Authorization to update all units to be restored

For details about the ADMACLIMIT environment setting parameter, see *20.11.2(4) ADMACLIMIT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

- When jobnets registered for release (release target jobnets) are backed up, only those definitions in *Being applied* status are backed up while those definitions in *Release wait* status are not backed up. Therefore, if you restore the backed-up jobnets, the definitions in *Release wait* status are not restored. If you want to back up and restore the definitions in *Release wait* status, you must also back up the release-source jobnets (the jobnets from which the definitions in *Release wait* status were registered for release). After restoring the definitions, re-register these definitions for release.
- A backup box contains backup information management files (.ajsbkup). When you change the attributes of the backup box, you must also change the attributes of the backup information management files.

- When you use the `ajsprint` or `ajsbackup` command or JP1/AJS3 - View to back up units, only the unit definition information is backed up. Execution results are not backed up.
- If you back up units by using the `ajsprint` or `ajsbackup` command or JP1/AJS3 - View to back up a jobnet registered for execution, the registration is canceled when you restore the jobnet by using the `ajsdefine` or `ajsrestore` command or JP1/AJS3 - View.
- You can use the `ajsbackup` and `ajsrestore` commands or JP1/AJS3 - View to manage several units collectively for each backup box. If you do not need to manage units collectively, you can use the `ajsprint` and `ajsdefine` commands to back up and restore jobnets.
- When you restore unit definition information backed up by JP1/AJS3, schedule definitions for nested jobnets might be different at the source and the destination.

The following illustrates this problem.

Cause:

This problem occurs when all of the following three conditions exist:

1. You copy a root jobnet that has a schedule rule, and define the copy as a nested jobnet.
2. You use one of the following to back up units that include the nested jobnet described above:
 - `ajsbackup` command
 - `ajsexport` command
 - `ajsprint` command
 - JP1/AJS3 - View backup functionality
3. You use one of the following to restore the units you backed up in 2 above:
 - `ajsrestore` command
 - `ajsimport` command
 - `ajsdefine` command
 - JP1/AJS3 - View restore functionality

Result:

The result is as follows.

- For the schedule definition for the nested jobnet at the source, **Depends on upper-level jobnet** takes effect.
- For the schedule definition for the nested jobnet at the destination, the schedule rule set for the nested jobnet takes effect.

Action:

If you set the `AJSPRINTNETSCHPRF` environment setting parameter to `no` for the scheduler service before you back up or restore the units, the unit definition information will be consistent at both the source and the destination. This setting is specified by default in a new installation of JP1/AJS3 or JP1/AJS2 version 08-00 or later. If you upgrade a version of JP1/AJS2 earlier than 08-00 and this setting has not been specified yet, you will need to specify it. For details about how to set the `AJSPRINTNETSCHPRF` environment setting parameter, see *4.2 Environment setting parameter settings* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

- When you specify a file name for a command argument, make sure that the file contents match the character encoding specified in the `AJSCHARCODE` environment setting parameter.
- If a unit definition file specified in an `ajsdefine` command is large, the command might abnormally terminate due to insufficient memory. If this happens, split the file so that each part is less than 200 MB.

3.2 Backing up and restoring jobnets by using the ajsprint and ajsdefine commands

When you use the `ajsprint` command to back up units, the definition information for the units is stored in files. When you use the `ajsdefine` command to perform restoration, the units are restored using the definitions in the files.

Backup and restoration of jobnets by using the `ajsprint` and `ajsdefine` commands are not managed using backup boxes. Therefore, you do not need to consider the hierarchical structure of the directory for backup information, backup boxes, and backup files. If you do not need to distribute units to other hosts or to back up collectively for each application, use the `ajsprint` and `ajsdefine` commands to back up and restore jobnets. If a file specified in an `ajsdefine` command is large (more than 200 MB), the command might abnormally terminate due to insufficient memory. If there are many unit definitions, consider splitting and backing up by job group or jobnet.

3.2.1 Procedure for backing up units by using the ajsprint command

The following table lists the authorizations required to back up units by using the `ajsprint` command.

Table 3–2: Authorizations required to perform backup using the `ajsprint` command

Target	Authorization required
Unit to be backed up	JP1 user' authorization to reference [#]
The hierarchy level higher than the unit to be backed up	JP1 user' authorization to reference [#]
The hierarchy level lower than the unit to be backed up	JP1 user' authorization to reference [#]

#

To restore the backed-up units, authorization to update the backed-up units is required. If a user without update authorization has backed up the units, only a JP1 user mapped to an OS user with superuser or administrator permissions can restore the units. Note, however, that if the `ADMACLIMIT` environment setting parameter is set to `yes`, a JP1 user who has update authorizations can restore the units.

For details about the `ADMACLIMIT` environment setting parameter, see 20.11.2(4) *ADMACLIMIT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

The following is an example of backing up units by using the `ajsprint` command.

Example: To back up the `/UNIT` unit in the `c:\backup\unit.txt` backup file, execute:

```
ajsprint -a /UNIT > c:\backup\unit.txt
```

For details about the `ajsprint` command, see *ajsprint* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

3.2.2 Procedure for restoring units by using the ajsdefine command

The following table lists the authorizations required to restore units by using the `ajsdefine` command.

Table 3–3: Authorizations required to perform restoration using the `ajsprint` command

Target	Authorization required
Backup files	OS user's authorization to reference
The hierarchy level higher than the unit to be restored	JP1 user's authorization to reference
Hierarchy to be restored	JP1 user's authorization to update
The hierarchy level lower than the unit to be restored	JP1 user's authorization to update

The following is an example of restoring units by using the `ajsdefine` command.

Example: To back up the units from the `c:\backup\unit.txt` backup file, execute:

```
ajsdefine c:\backup\unit.txt
```

For details about the `ajsdefine` command, see *ajsdefine* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

3.3 Backing up and restoring jobnets by using the `ajsbbackup` and `ajrestore` commands or JP1/AJS3 - View

When you use the `ajsbbackup` command or JP1/AJS3 - View to back up units, the definition information for the units is stored as backup files in a specified directory. When you restore the units, the settings of the backup file stored in the directory are used to define the units.

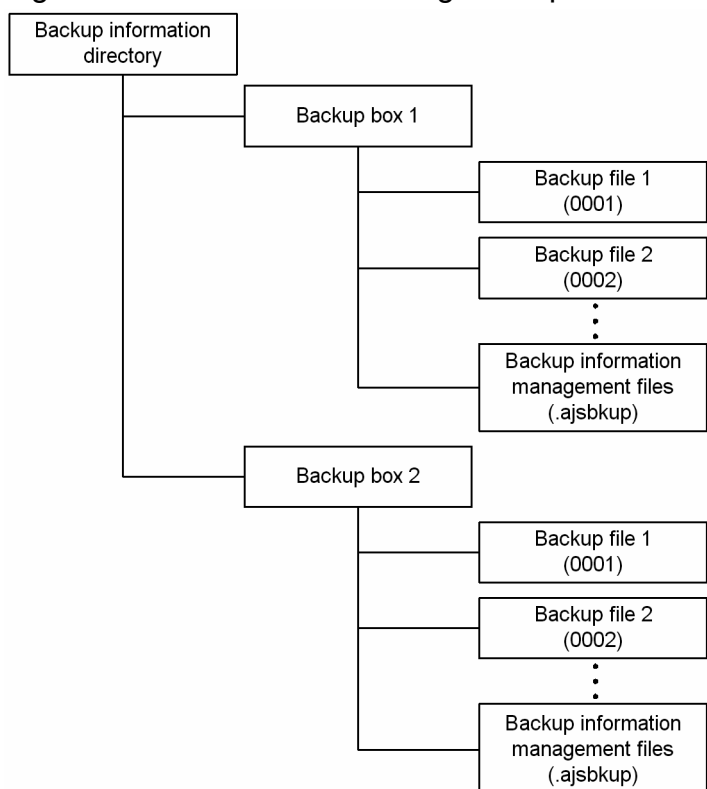
Supplementary note

Since backup and restoration using the `ajsbbackup` and `ajrestore` commands or using JP1/AJS3 - View are managed using backup boxes, you must consider the hierarchical structure of the directory for backup information, backup boxes, and backup files. With these methods, you can manage units for each application. If you do not need to distribute units to other hosts or back up them in units of applications, use the `ajsprint` and `ajsdefine` commands to back up and restore jobnets.

3.3.1 Location for storing information backed up by the `ajsbbackup` command or JP1/AJS3 - View

The following figure shows the location for storing information backed up by using the `ajsbbackup` command or JP1/AJS3 - View.

Figure 3–1: Location for storing backup information



This figure is explained below.

Backup information directory

This directory stores backup information. You can specify any directory name using a JP1/AJS3 environment setting parameter.

Backup box

A backup box is a directory used to store backup files. You can specify any directory name when backing up files. In Windows, you cannot use CON, PRN, AUX, CLOCK\$, NUL, COM m (m : integer from 1 to 9), and LPT n (n : integer from 1 to 9) for the directory name of a backup box. You can collect added and changed units in a backup box. By creating a backup box for each application, for example, you can manage additions and changes for each application. Each backup box can contain a maximum of 1,024 backup files.

Backed-up units can be restored only on the server on which they resided when backed up.

If you want to restore units onto a different server, two steps are required. First, on the server where the units were backed up, use the `ajsprint` command to output the unit definition. Next, on the other server, use the `ajsdefine` command to restore the units.

Backup file

A backup file contains the units output by executing the `ajsprint` command with the `-a` option specified. A four-digit number from 0001 to 1024 is automatically assigned as a file name.

Backup information management file

A file for managing information about the backup files stored in a backup box.

To view the names of the backup files and units in a backup box, use the `ajsrestore` command.

3.3.2 Procedures for backing up units by using the `ajsbackup` command or JP1/AJS3 - View

The following table lists the authorizations required to back up units by using the `ajsbackup` command or JP1/AJS3 - View.

Table 3—4: Authorizations required to perform backup using the `ajsbackup` command or JP1/AJS3 - View

Target	Authorization required
Backup box	OS user's authorization to update
Unit to be backed up	JP1 user' authorization to reference [#]
The hierarchy level higher than the unit to be backed up	JP1 user' authorization to reference [#]
The hierarchy level lower than the unit to be backed up	JP1 user' authorization to reference [#]

#

To restore the backed-up units, authorization to update the backed-up units is required. If a user without update authorization has backed up the units, only a JP1 user mapped to an OS user with superuser or administrator permissions can restore the units. Note, however, that if the `ADMACLIMIT` environment setting parameter is set to `yes`, a JP1 user who has update authorizations can restore the units.

For details about the `ADMACLIMIT` environment setting parameter, see 20.11.2(4) *ADMACLIMIT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

To back up units by using JP1/AJS3 - View:

1. In the JP1/AJS3 - View window or the Jobnet Editor window, select the unit you want to back up.
If you select a job group or a jobnet in the Tree area, the units immediately under the selected job group or jobnet are selected for backup.

- From the **File** menu, choose **Backup**.
The Backup dialog box appears, displaying the selected unit in **Unit element**.
- Enter the name of the backup box to which you want to back up the unit.
If you double-click the name of an existing backup box, the name is entered in **Backup box**.
- In **Units to back up**, enter the name of the unit you want to back up.
If you double-click a name displayed in **Unit element**, the name is entered in **Units to back up**.
- Specify other information and click the **OK** button.
The selected unit is backed up.

The following example shows how to back up a unit by using the `ajsbackup` command.

Example: To back up the `/UNIT` unit to a new backup box named `BACKUP`, execute:

```
ajsbackup -m -n BACKUP /UNIT
```

For details about the `ajsbackup` command, see *ajsbackup* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

3.3.3 Procedures for restoring units by using the `ajsrestore` command or JP1/AJS3 - View

The following table lists the authorizations required to restore units by using the `ajsrestore` command or JP1/AJS3 - View.

Table 3–5: Authorizations required to perform restoration using the `ajsrestore` command or JP1/AJS3 - View

Target	Authorization required
Backup box	OS user's authorization to move the directory
Backup file	OS user's authorization to update
The hierarchy level higher than the unit to be restored	JP1 user's authorization to reference
Hierarchy to be restored	JP1 user's authorization to reference
The hierarchy level lower than the unit to be restored	JP1 user's authorization to reference

To restore units by using JP1/AJS3 - View:

- In the JP1/AJS3 - View window or the Jobnet editor window, select the jobnet or job group you want to restore.
- From the **File** menu, choose **Restore**.
The Restore dialog box appears, displaying the names of the existing backup boxes in **Backup box**.
- In **Backup box**, select a box name.
The **Backup file** list displays the backup files stored in the selected backup box.
- From **Backup file**, select and double-click the name of a backup file.

The file name is entered in **Units to restore**.

5. Click the **OK** button.

The unit is restored at the specified location.

The following example shows how to restore units by using the `ajsrestore` command.

Example: To restore the units in the `BACKUP` backup box, execute:

```
ajsrestore -n BACKUP
```

For details about the `ajsrestore` command, see *ajsrestore* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

3.3.4 Changing and displaying the attributes of a backup box (UNIX)

In UNIX, you can change and display the attributes of a backup box by using UNIX commands.

The following examples show how to use the UNIX commands. The following examples assume that you have moved to the directory specified in the `AJSBKUROOT` environment setting parameter of JP1/AJS3 by executing the following command:

```
cd/var/opt/jplajs2/backup/shcedule (when the default installation directory is used)
```

Example 1: To change the owner of the `BACKUP` backup box to `user2` so that only `user2` can update the backup box, execute:

```
chmod 0744 BACKUP/.ajsbkup
chown user2 BACKUP/.ajsbkup
chmod 0755 BACKUP
chown user2 BACKUP
```

Example 2: To change the name of the `BACKUP` backup box to `host1_BACKUP`, execute:

```
mv BACKUP host1_BACKUP
```

Example 3: To list the names of backup files in the `BACKUP` backup box, execute:

```
ls -la BACKUP
```

3.3.5 Deleting a backup box or backup files

To delete a backup box or backup files, execute the `ajsbkudel` command. Only an OS user authorized to update them can execute the command.

The following example shows how to delete a backup box by using the `ajsbkudel` command.

Example: To delete the `BACKUP` backup box, execute:

```
ajsbkudel -n BACKUP
```

For details about the `ajsbkudel` command, see *ajsbkudel* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

3.3.6 Displaying the list of units in a backup box

To display a list of units stored in a backup box, you can use the following methods:

- Use the Backup dialog box when backing up units by using JP1/AJS3 - View
- Execute the `ajsrestore` command with the `-t` option specified

Each unit is displayed in the following format: *backup-file-number: backup-source-unit: backup-unit-name: unit-type*.

The following example shows how to display a list of units by using the `ajsrestore` command.

Example: To display a list of units in the BACKUP backup box, execute:

```
ajsrestore -t -n BACKUP
```

The following example shows the results of executing this command:

```
0001:/Materials Department:Template:g
```

```
0002:/Materials Department/Shipping Management:Slip Creation:n
```

For details about the `ajsrestore` command, see *ajsrestore* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

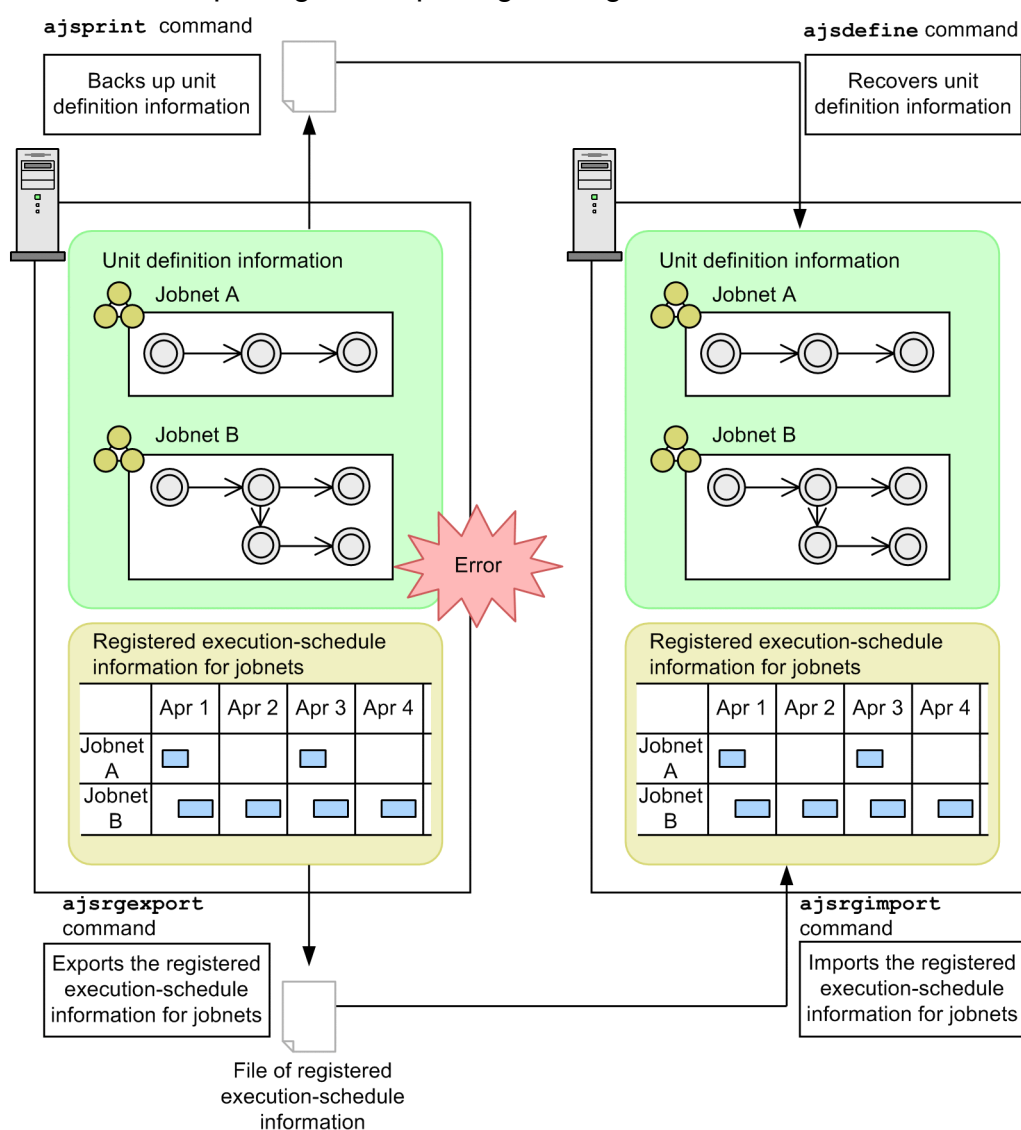
3.4 Backing up and recovering the execution registration status of jobnets by using the ajsrgexport and ajsrgimport commands

You can use the `ajsrgexport` command, which exports registered execution-schedule information for jobnets, and the `ajsrgimport` command, which imports the information, to back up and recover the execution registration status of jobnets.

3.4.1 Overview of backing up and recovering the execution registration status

This subsection provides an overview of backing up and recovering the execution registration status of jobnets using the functions for exporting and importing registered execution-schedule information for jobnets.

Figure 3–2: Backing up and recovering the execution registration status by using the functions for exporting and importing the registered execution-schedule information for jobnets



Unlike the `ajsprint` and `ajsdefine` commands used for the backup and recovery of unit definition information, the `ajsrlexport` and `ajsrimport` commands back up and recover the execution registration status of jobnets by exporting and then importing that information.

If an error occurs in the JP1/AJS3 system, these functions greatly shorten the time required until operation is resumed.

(1) Exporting the registered execution-schedule information for jobnets (ajsrlexport command)

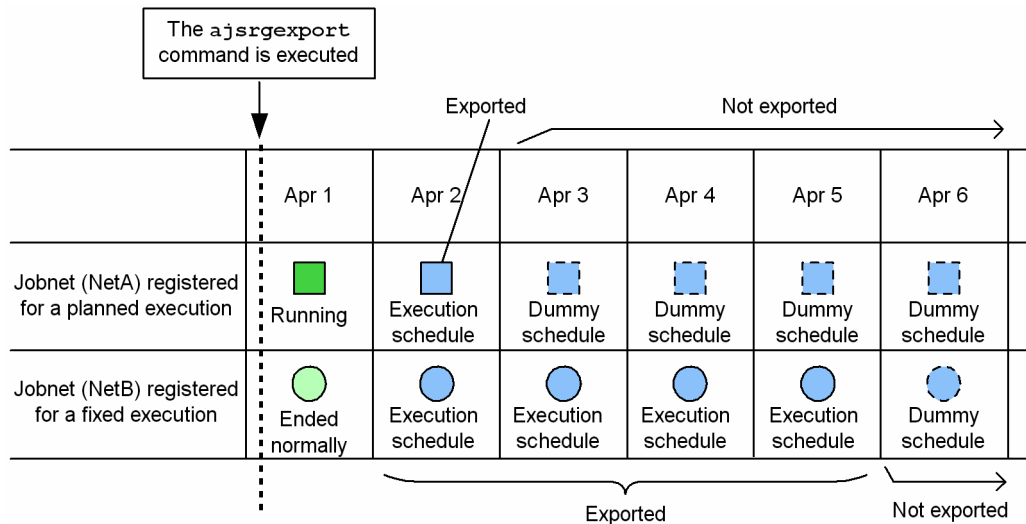
The `ajsrlexport` command exports the execution registration status of jobnets (including the macro variables and time zones specified when the jobnets were registered for execution) to a text file. The information that includes the execution registration status of jobnets and the conditions specified when the jobnets were registered is called the *registered execution-schedule information for jobnets*. A file to which the registered execution-schedule information for jobnets is exported is called a *file of registered execution-schedule information for jobnets*. For details about the `ajsrlexport` command, see *ajsrlexport* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*. For details about the file of registered execution-schedule information for jobnets, see 5.6 *File of registered execution-schedule information for jobnets* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

When exporting information, you can specify the root jobnets listed below that have been registered for execution with *planned execution* or *fixed execution* selected. If you specify a jobnet registered for execution with *immediate execution* selected, the registered execution-schedule information for jobnets will not be registered.

- Root jobnet
- Root remote jobnet
- Root jobnet in a planning group

For a jobnet registered for planned execution, the nearest execution schedule is exported. For a jobnet registered for fixed execution, the nearest execution schedule and subsequent schedules are exported. In either case, execution results or dummy schedules are not exported. For details about the dummy schedule, see 4.4.2(1) *Schedule simulation* in the manual *JP1/Automatic Job Management System 3 Overview*.

Figure 3–3: Execution schedules to be exported



Note that for root jobnets that are registered for planned execution, changes in the schedule made by temporarily changing the plan are not exported. Therefore, after importing the exported information, you must make temporary changes again to the schedule. For root jobnets that have been registered for fixed execution, temporary changes made in the schedule

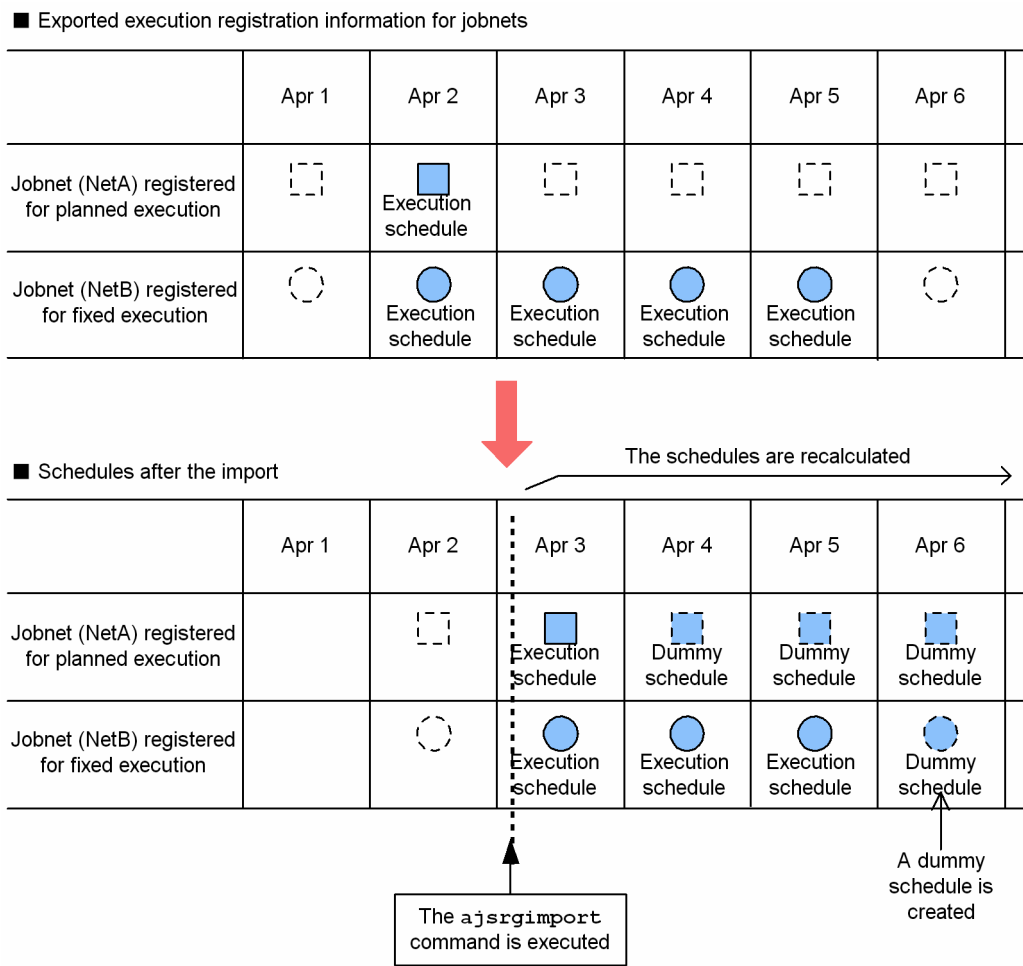
are also exported. However, these changes cannot be undone at the import-destination host. Also note that for root jobnets that are registered for fixed execution and whose schedule is temporarily changed, the export results do not include information that indicates whether wait conditions have been temporarily enabled or disabled. Therefore, after importing the exported information, you must make temporary changes again, as needed, to enable or disable wait conditions.

(2) Importing the registered execution-schedule information for jobnets (ajsrgimport command)

The `ajsrgimport` command imports a file of registered execution-schedule information for jobnets (that was exported by the `ajsrgexport` command), and sets the same registration execution status set for the exported jobnets. For details about the `ajsrgimport` command, see *ajsrgimport* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

For a jobnet registered for planned execution, the schedules are recalculated after the import based on the jobnet schedule rule. For a jobnet registered for fixed execution, the execution schedules after the date that the `ajsrgimport` command was executed are exported based on the contents of the file of registered execution-schedule information for jobnets.

Figure 3–4: Execution schedules to be imported



The unit configuration in the root job group to be imported must be the same at the exporting and importing locations.

Import cannot be performed in the following cases:

- The JP1 user specified when the exported unit was registered for execution and the JP1 user who performs import are different.

- The specified unit is not found in the exported file of registered execution-schedule information for jobnets.
- The file of registered execution-schedule information for jobnets cannot be accessed.
- The file of registered execution-schedule information for jobnets contains a unit that does not exist at the importing location.
- The name of the file of registered execution-schedule information for jobnets contains more than 255 bytes.
- The file of registered execution-schedule information for jobnets contains an invalid definition.
- The specified unit does not exist at the importing location.
- The jobnet to be imported has already been registered for execution at the importing location.
- The import date exceeds the valid term for schedule rules of jobnets.
- The processing cycle or substitute schedule method is not specified in the schedule rule for jobnets.
- The jobnet specified in an exclusive schedule is not the same at the exporting and importing locations.
- There is no job group that references a calendar.

3.4.2 Precautions on backing up and recovering the execution registration status

To use the functions for exporting and importing registered execution-schedule information for jobnets, you must make sure that the importing environment matches the exporting environment so that jobs can be executed at the importing location.

If necessary, before you perform the import, use the procedure in [2.3 Restoring the setup information for a system that uses JP1/AJS3](#) to set up the environment in which jobs can be executed.

You can use the functions for exporting and importing registered execution-schedule information for jobnets if the host or scheduler service is not the same at the exporting and importing locations. Note, however, that you must adjust the character encoding and the linefeed codes in the file of registered execution-schedule information for jobnets, to match the importing environment.

The following describes the prerequisites for exporting or importing on different hosts or scheduler services, and the effects if the prerequisites are not met.

- Prerequisites related to the host

Prerequisites	Effects when not met
The name and setting of the time zone used when a jobnet was registered for execution must be the same for the exporting and importing locations.	A schedule with a different scheduled start time from that of the exporting location might be created.
The agent host must be able to communicate with the exporting and importing locations.	If communication with the agent host is disabled, jobs cannot be executed during import.
The host specified in a QUEUE job must be able to communicate with the exporting and importing locations.	If communication with the agent host is disabled, the QUEUE job cannot be executed during import.
The language (Japanese, English, or Chinese) must be the same for both the exporting and importing locations.	If a multi-byte character is included in a macro variable that was specified when a unit was defined or when a jobnet was registered for execution, the variable will not be able to be imported, because the characters will become garbled.

- Prerequisites in the JP1/Base settings

Prerequisites	Effects when not met
The JP1 user who registered a jobnet for execution must be set in the user mapping at the importing location.	If the JP1 user who registered a jobnet for execution has not been set in the user mapping at the importing location, an error occurs during import.
If the exporting authentication server and the importing authentication server are different, the same JP1 user access permission must be registered on both authentication servers.	If the same JP1 user access permission is not registered on the exporting and importing authentication servers, an error might occur during import or job execution.

- Prerequisites for a scheduler service

Prerequisites	Effects when not met
The local time of the importing JP1/AJS3 must not be later than the local time of the exporting location.	If the local time of the importing location is later than the local time of the exporting location, a schedule that has already been executed at the exporting location might be created again.
When queueless jobs are used, the <code>ajsqlsetup</code> command, which sets up a queueless job execution environment, must also be executed at the importing location.	If the queueless job execution environment has not been set up, queueless jobs cannot be executed after the import.

- Prerequisites for the job execution environment

Prerequisites	Effects when not met
There must be transfer files for job operations at both the exporting and importing locations.	If there are no transfer files, an error occurs during job execution after the import.
The agent and queues used for executing jobs at the exporting location must be defined at the importing location.	If the agent and queues used for executing jobs have not been defined, an error occurs during job execution after the import.

- Prerequisites for environment setting parameters

The values of the following environment setting parameters must be the same for the exporting and importing locations.

- Environment setting parameters related to scheduler services

Environment setting parameter [#]	Effects when not met
AJSCHARCODE (Character encoding for a scheduler service)	Any multi-byte characters contained in the unit definition or in a macro variable specified when a jobnet was registered for execution are represented in the character encoding specified in AJSCHARCODE. Therefore, if the character encoding specified in AJSCHARCODE is different at the exporting and importing locations, import cannot be performed because the characters after the import will be garbled.
ROOTJOBNETSCHEDULERANGE (Time format of a root jobnet)	If a 48-hour schedule is set for the exporting location and a 24-hour schedule is set for the importing location, an execution date in a two-day schedule will be treated as the next day. Accordingly, when, for example, a jobnet is to be executed on an open day that is treated as the next day in a two-day schedule, no schedule is created if the next day is a close day.

#

The definition key is [{ JP1_DEFAULT | *logical-host-name* } \JP1AJSMANAGER\scheduler-service-name] .

The following table shows the settings for the character encodings for each OS.

Value of AJSCHARCODE	Value of the environment variable LANG when the <code>ajsgexport</code> command is executed			
	HP-UX	Solaris	AIX	Linux
SJIS	ja_JP.SJIS japanese	ja_JP.PCK	Ja_JP	--

Value of AJSCHARCODE	Value of the environment variable LANG when the ajsrgexport command is executed			
	HP-UX	Solaris	AIX	Linux
SJIS	ja_JP.SJIS japanese	ja_JP.PCK	Ja_JP.IBM-932	--
EUC	ja_JP.eucJP japanese.euc	ja ja_JP.eucJP	ja_JP ja_JP.IBM-eucJP	--
C	C	C	C	C en_US.UTF-8 en_US.utf8
UTF-8	ja_JP.utf8	ja_JP.UTF-8	JA_JP JA_JP.UTF-8	ja_JP.UTF-8 ja_JP.utf8

Legend:

--: Cannot be used

- Environment setting parameters related to the job execution environment

Definition key	Environment setting parameter	Definition
[{JP1_DEFAULT <i>logical-host-name</i> } \JP1NBQMANAGER\Queue]	MaximumQueue ^{#1}	Maximum number of defined queues
[{JP1_DEFAULT <i>logical-host-name</i> } \JP1NBQMANAGER\Job]	MaximumContentJob ^{#2}	Maximum number of jobs in the system
	AlterContentJob ^{#2}	Number of warning jobs in the system
[{JP1_DEFAULT <i>logical-host-name</i> } \JP1NBQMANAGER\Agent]	MaximumAgent ^{#1}	Maximum number of defined agents
	LeastRecentlyUsed ^{#2}	Definition of method used to determine the agent host that distributes jobs
[{JP1_DEFAULT <i>logical-host-name</i> } \JP1NBQMANAGER\Resource]	MaximumResource ^{#1}	Maximum number of defined execution-locked resources
[{JP1_DEFAULT <i>logical-host-name</i> } \JP1NBQCLIENT\PathEnv]	All Users ^{#2}	Search path for the files to be transferred
	JP1-user-name ^{#2}	Search path for the files to be transferred
[{JP1_DEFAULT <i>logical-host-name</i> } \JP1NBQCLIENT\Process]	MacroOptionReplaceMode ^{#2}	Replacement method used when the information passed by a macro variable is a NULL character string

#1

If the value is not the same, defining agents or queues might no longer be possible.

#2

If the value is not the same, job execution might be affected.

- Prerequisites for units to be imported or exported

Prerequisites	Effects when not met
A job must not be running on the exporting manager.	If the exporting manager goes down or a different host is specified for job execution, an error might occur during the execution of a job after the import.
Neither a physical host nor a logical host at the exporting location must be specified for the host name of a QUEUE job.	If the exporting manager goes down or a different host is specified for job execution, an error might occur during the execution of a job after the import.

Prerequisites	Effects when not met
If the unit being exported has been registered for planned execution, the unit full path to the root jobnet at the exporting location must be the same as that at the importing location.	An error occurs during import.
If the unit being exported has been registered for fixed execution, the unit full path to the root jobnet at the exporting location must be the same as that at the importing location. The unit configuration in the root jobnet must also be the same at both locations.	An error occurs during import.
When a jobnet specified to reference the calendar of another job group is imported, the job group to be referenced must have the same path as that at the exporting location, and must also exist at the importing location.	An attempt to register the jobnet for execution fails during import.
When a jobnet with an exclusive schedule specified is imported, an exclusive jobnet that has same path as that at the exporting location must also exist at the importing location.	An attempt to register the jobnet for execution fails during import.
When a root jobnet containing a jobnet connector is imported, the connection-destination jobnet must have the same path as that at the exporting location, and must exist at the importing location.	After the import, the status of the jobnet connector remains <i>Running</i> + <i>Abend</i> status during job execution.
When a connection-destination jobnet is imported, a jobnet connector that has the same path as the job connector at the exporting location must also exist at the importing location.	During job execution after the import, the connection-destination jobnet operates as follows: When Synchro is selected for Exec. order method: The job is executed after the scheduled start time is reached. When Aynchro is selected for Exec. order method: The job is executed at the scheduled start time.

3.4.3 Cautionary notes on backing up and recovering the execution registration status

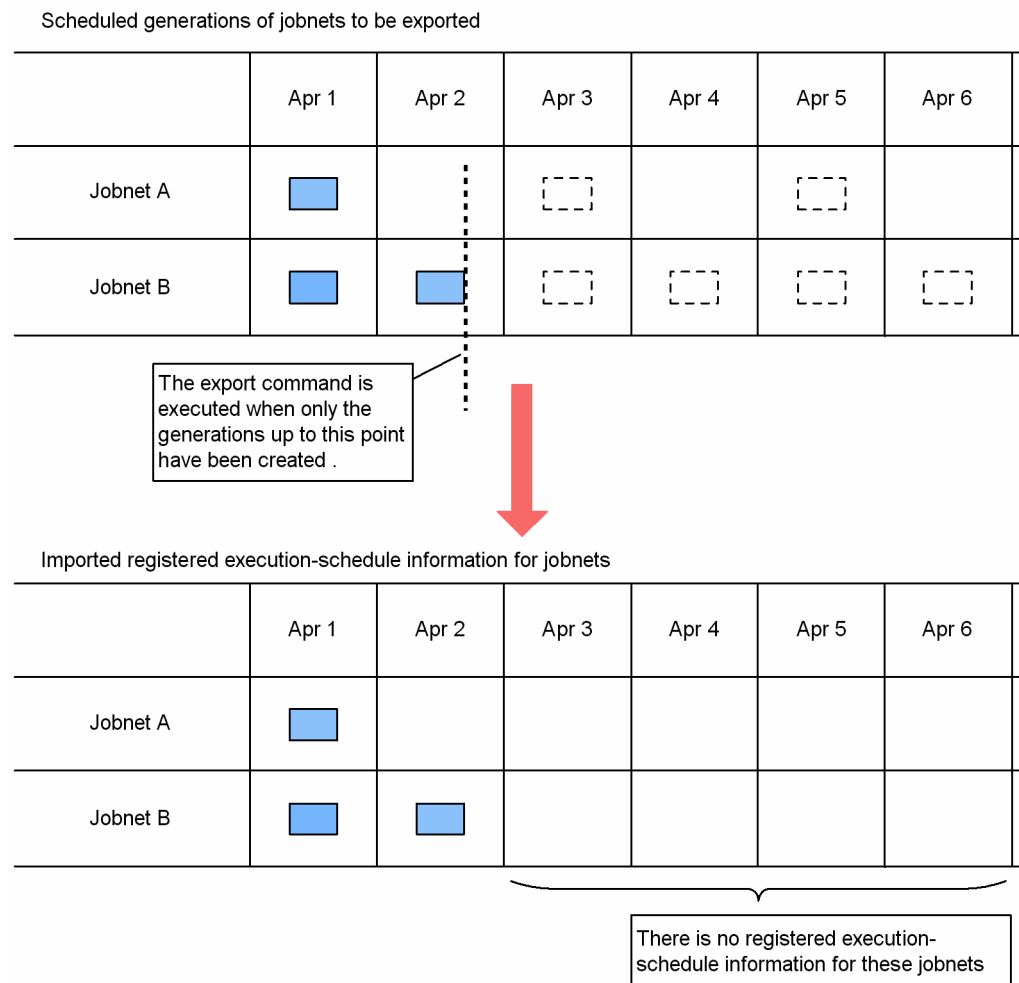
The following are cautionary notes regarding the functions for exporting and importing the registered execution-schedule information for jobnets.

- *When the information is exported while generations are being created or deleted*

The export function exports the registration status existing when the export command (`ajsrsexport`) is executed. Therefore, if the export command is executed during the creation or deletion of generations (while registering period-based fixed execution, temporarily changing an execution plan, or canceling registration), the generation being created or deleted is exported as is.

The following example shows how export is performed during the creation of generations.

Figure 3–5: Example of export performed during the creation of generations (for fixed execution registration)



For example, [Figure 3-5](#) shows that fixed generations are to be created from April 1 to April 6. If the registered execution-schedule information for jobnets is exported when only the generations up to April 2 have been created, only those generations will be output. The generations for April 3 and after are not exported.

Do not export the registered execution-schedule information for jobnets while generations are being created, such as during processing that registers execution, cancels registration, or temporarily changes execution plans.

- *For a jobnet with a start condition defined*

If a start condition is defined and a valid range is set in the jobnet's schedule rule, the following information up to the time of export is not output: the number of times an event defined as the start condition occurred, and the monitoring time. For example, if the valid range for the event count is set to 5 for the start condition and two events have already occurred when the export is performed, the monitoring continues after the import until the event has occurred five times.

3.4.4 Procedure for using the `ajsrsexport` command to export the registered execution-schedule information for jobnets

To export the registered execution-schedule information for jobnets:

1. Back up the unit definition information.
If necessary, back up the unit definition information.

For details, see [2.2.3\(4\) Backing up the unit definition](#).

2. Execute the `ajsrgeexport` command to export the registered execution-schedule information for jobnets.

Execute the command in the following format:

```
ajsrgeexport [-F service-name] [-R] [-e {s|f}] [-o file-of-registered-execution-schedule-information-for-jobnet-name] [-m] unit-name...
```

For details about the `ajsrgeexport` command, see `ajsrgeexport` in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

Cautionary note

Do not change the exported file of registered execution-schedule information for jobnets. If you make any changes, the command might not operate correctly.

3. Check whether the execution schedule has been changed by temporarily changing the plan.

For a jobnet registered for planned execution, any changes made by temporarily changing the plan are not exported. As a result, only the information before the changes is imported. If you want to use the schedule as changed by temporarily changing the plan at the importing location, you need to retain the data necessary for changing the schedule after the import.

For a jobnet registered for fixed execution, any changes made by temporarily changing the plan are exported. As a result, the jobnet is registered for execution with the new schedule after the import. Note, however, that these changes cannot be canceled. You therefore need to retain the data necessary for restoring the schedule to its original status following the import.

If you do not have the data necessary for changing the schedule by temporarily changing the plan or for restoring the schedule to its original status following the import, use the `ajsshow` command to check the registration status, and then export the information. For details about the `ajsshow` command, see `ajsshow` in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

This step is necessary only if the execution schedule has been changed by temporarily changing the plan.

Cautionary note

The `ajsrgeexport` command obtains the registered execution-schedule information for jobnets from the scheduled generation of a root jobnet registered for execution. When a root jobnet registered for fixed execution is exported, this command also obtains the information about the changes made by temporarily changing the plan. As a result, if this command is executed while generation information is being changed, as when the root jobnet is being registered for execution or schedule information is being created or deleted, an error might occur.

For details about the scheduled generation of jobnets, see *4.2 Managing jobnet generations* in the manual *JP1/Automatic Job Management System 3 Overview*.

3.4.5 Procedure for using the `ajsrgeimport` command to import registered execution-schedule information for jobnets

To import the registered execution-schedule information for jobnets:

1. Recover the unit definition information.

If necessary, recover the unit definition information.

For details, see [2.3.4\(9\) Recovering the unit definition](#).

This step is not required if the unit definition information has not changed since the registered execution-schedule information for jobnets was exported.

2. Restart the service on the agent host

When the manager and agent are monitoring events are on separate hosts, restart the JP1/AJS3 service on the agent host.

In other cases, this step is not required.

3. Execute the `ajsalter` command to suppress the execution of jobs.

Execute the command in the following format:

```
ajsalter -F service-name -s EXEC
```

For details about the `ajsalter` command, see *ajsalter* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

4. Execute the `ajsrgimport` command to import the registered execution-schedule information for jobnets.

Execute the command in the following format:

```
ajsrgimport [-F service-name] [-f] [-c] [-u unit-name|-o unit-name]... -i  
file-of-registered-execution-schedule-information-for-jobnet-name
```

Cautionary note

Before you execute the `ajsrgimport` command, make sure that registration of the target jobnet has been canceled. If the jobnet is still registered, the `ajsrgimport` command terminates abnormally.

Supplementary note

You can specify the `-f` option in the `ajsrgimport` command to specify whether to execute a jobnet immediately if the scheduled time for starting execution on a particular day has already passed when the information is imported.

While you are using the `ajsrgimport` command to register root jobnets for execution by importing registered execution-schedule information, a schedule creation error might occur. In such a case, specify the `-c` option if you want the command to continue processing when root jobnets to be registered for execution remain.

For details about the `ajsrgimport` command, see *ajsrgimport* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

5. Check the registration status (import status), and change it if necessary.

If there is a jobnet you do not want to execute on the current day or a unit for which you want to temporarily change the hold attribute (hold or release hold), temporarily change the plan.

6. After making sure that there are no problems in the import results, execute the `ajsalter` command to release the suppression of job execution.

Execute the command in the following format:

```
ajsalter -F service-name -s none
```

For details about the `ajsalter` command, see *ajsalter* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

4

Monitoring Jobnets

In JP1/AJS3, you must typically perform the following operations to determine whether an automated application (jobnet) operates correctly:

- Check the execution result of the jobnet.
- Monitor the execution time of the jobnet.

This chapter describes how to monitor jobnets.

4.1 Checking the execution results of jobnets and monitoring the execution time of jobnets

This section explains how to check the execution results of jobnets and how to monitor their execution time.

4.1.1 Checking the execution results of jobnets

To determine whether applications (jobnets) automated in JP1/AJS3 operate normally, you must check the execution results of the jobnets.

(1) Checking the execution results of a jobnet

The following table describes the methods you can use to check the execution results of a jobnet.

Table 4–1: Methods for checking the execution results

Method	Description
JP1/AJS3 - View windows	If the icon for a jobnet or job in the following windows is displayed in the color indicating normal end (light green by default), the jobnet or job has ended normally: • JP1/AJS3 - View window (summary monitoring window) • Jobnet Monitor window (definition window format) • Monthly Schedule window (calendar format) • Daily Schedule window (chart format)
Web GUI (Job Portal) windows	If you use JP1/AJS3 - Web Console, you can use the Web GUI (Job Portal) in a web browser to check the execution statuses of jobnets and jobs.
User application	Original applications (user applications) developed or implemented by using the API released by JP1/AJS3 can be used to check the execution statuses of jobs and jobnets.
Command	<code>ajsshow</code> command This command outputs information about a jobnet or a job registered for execution to the standard output file. The information output includes the previous execution results, current status, and next execution schedule.
Log data	Information such as whether a jobnet has ended normally or abnormally is output to a JP1/AJS3 scheduler log file. Use a tool such as a text editor to check the log file. The default locations of these log files are as follows: When a log file is output for each scheduler service: In Windows, if the installation folder is the default installation folder or is in a folder protected by the system: • %ALLUSERSPROFILE%\Hitachi\JP1\JP1_DEFAULT\JP1AJS2\log\scheduler\scheduler-service-name\ajs-log1.log • %ALLUSERSPROFILE%\Hitachi\JP1\JP1_DEFAULT\JP1AJS2\log\scheduler\scheduler-service-name\ajs-log2.log The default for %ALLUSERSPROFILE% is <i>system-drive</i> \ProgramData. <i>A folder protected by the system</i> is a folder in any of the following: - <i>system-drive</i>\Windows - <i>system-drive</i>\Program Files - <i>system-drive</i>\Program Files (x86)

Method	Description
Log data	In Windows, if the installation folder is other than the above: <i>JP1/AJS3-Manager-installation-folder</i>\log\scheduler\scheduler-service-name\ajs-log1.log <i>JP1/AJS3-Manager-installation-folder</i>\log\scheduler\scheduler-service-name\ajs-log2.log In UNIX: /var/opt/jplajs2/log/scheduler/scheduler-service-name/ajs-log1.log /var/opt/jplajs2/log/scheduler/scheduler-service-name/ajs-log2.log When a log file is output for each host: In Windows, if the installation folder is the default installation folder or is in a folder protected by the system: %ALLUSERSPROFILE%\Hitachi\JP1\JP1_DEFAULT\JP1AJS2\log\ajs-host-log1.log %ALLUSERSPROFILE%\Hitachi\JP1\JP1_DEFAULT\JP1AJS2\log\ajs-host-log2.log The default for %ALLUSERSPROFILE% is <i>system-drive</i>\ProgramData. A folder protected by the system is a folder in any of the following: - <i>system-drive</i>\Windows - <i>system-drive</i>\Program Files - <i>system-drive</i>\Program Files (x86) In Windows, if the installation folder is other than the above: <i>JP1/AJS3-Manager-installation-folder</i>\log\ajs-host-log1.log <i>JP1/AJS3-Manager-installation-folder</i>\log\ajs-host-log2.log In UNIX: /var/opt/jplajs2/log/ajs-host-log1.log /var/opt/jplajs2/log/ajs-host-log2.log
Windows event log or syslog	When the NETSYSLOG environment setting parameter is set, information indicating whether a jobnet has ended normally or abnormally is output to the Windows event log or to syslog. The following describes the event IDs, facilities, and message IDs for normal end and abnormal end of a jobnet. Jobnet normal-end event Event ID: 30261 Facility: LOG_DAEMON Message ID: KAVS0261-I Jobnet abnormal-end event Event ID: 30262 Facility: LOG_DAEMON Message ID: KAVS0262-E

If a jobnet has ended abnormally, either check whether a recovery unit has been executed or re-execute the jobnet.

For details about the items displayed in the windows and the operating procedures, see the *JP1/Automatic Job Management System 3 Operator's Guide*.

For details about the `ajsshow` command options and output examples, see `ajsshow` in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

For details about the scheduler log output format, see *C. Log Information* in the manual *JP1/Automatic Job Management System 3 Troubleshooting*.

(2) Monitoring the status of jobnet connectors and checking execution results

You can use JP1/AJS3 - View and commands to check the execution status and execution results of jobnet connectors and connection-destination jobnets.

For details about the execution status of jobnet connectors and the jobnets connected by the connectors, see *6.1 Status levels of jobnets, jobs, and jobnet connectors* in the manual *JP1/Automatic Job Management System 3 Overview*. For details about how to use a command to check the execution status and execution results, see the manual *JP1/Automatic Job Management System 3 Command Reference*.

The following describes how to monitor jobnet connectors and connection-destination jobnets in JP1/AJS3 - View.

You can use the following windows to check the execution status and execution results of jobnet connectors and connection-destination jobnets:

- Jobnet Monitor window
- Daily Schedule window
- Monthly Schedule window

The following provides an overview of monitoring with each window.

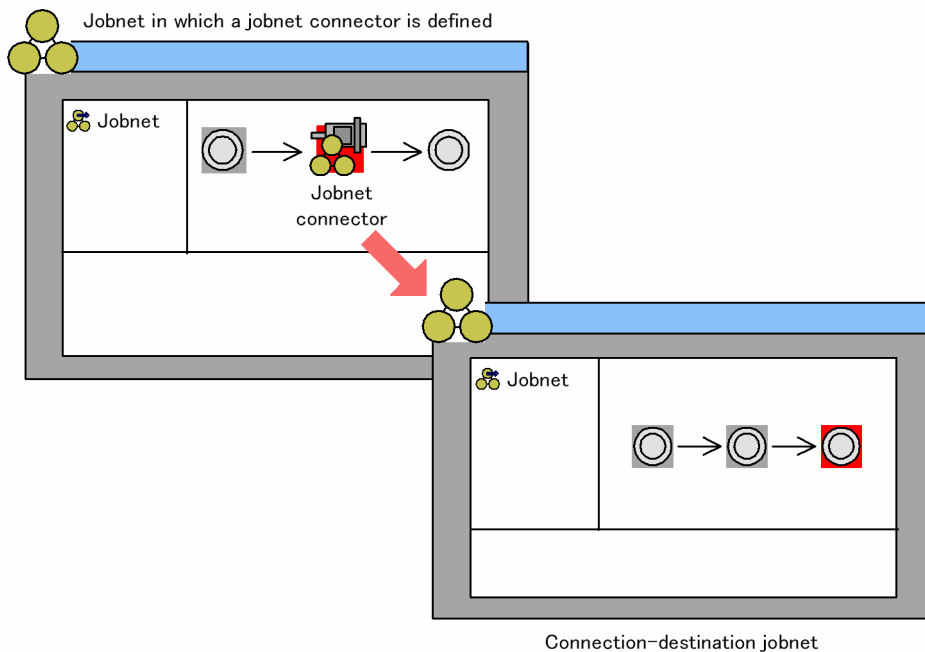
(a) Monitoring in the Jobnet Monitor window

You can use the Jobnet Monitor window to monitor the execution status and check the execution results for a jobnet connector the same way as for ordinary jobnets. This information is displayed in the same image that was displayed when you defined the jobnets. Double-clicking the jobnet connector in the map area opens another Jobnet Monitor window, where you can check the connection-destination jobnet. When the jobnet connector is selected, you can also choose **View** and then **Jobnet for Destination** to open the following windows in which you can check the jobnet:

- Daily Schedule (Hierarchy/All Jobs) window
- Monthly Schedule window
- Jobnet Monitor window

The following figure shows the monitoring available in the Jobnet Monitor window.

Figure 4–1: Monitoring in the Jobnet Monitor window



In addition, you can choose **View** and then **Detailed Information** to display the Monitor Details - [icon-name] dialog box. If you display this dialog box for a jobnet connector, you can check the execution ID of the connection-destination jobnet. If you display this dialog box for the connection-destination jobnet, you can check the execution ID and the setting for the execution order control method for the jobnet connector.

Supplementary notes

- If the connection-destination jobnet does not have an execution schedule or has a shutdown status, you cannot display the Jobnet Monitor window for the jobnet.
- If the jobnet connector and the connection-destination jobnet are on hosts in different user authentication blocs, you need to log in to the appropriate host to perform the following operations:
 - To display the connection-destination jobnet from the jobnet connector, log in to the host on which the connection-destination jobnet resides.
 - To display the Monitor Details dialog box for the jobnet connector, log in to the host on which the connection-destination jobnet resides.
 - To display the Monitor Details dialog box for the connection-destination jobnet, log in to the host on which the connection-destination jobnet resides.

For details, see 12.3.38 *Monitor Details - [Jobnet] dialog box* in the *JP1/Automatic Job Management System 3 Operator's Guide*, or 12.14.6 *Notes on the Jobnet Monitor window* in the *JP1/Automatic Job Management System 3 Operator's Guide*.

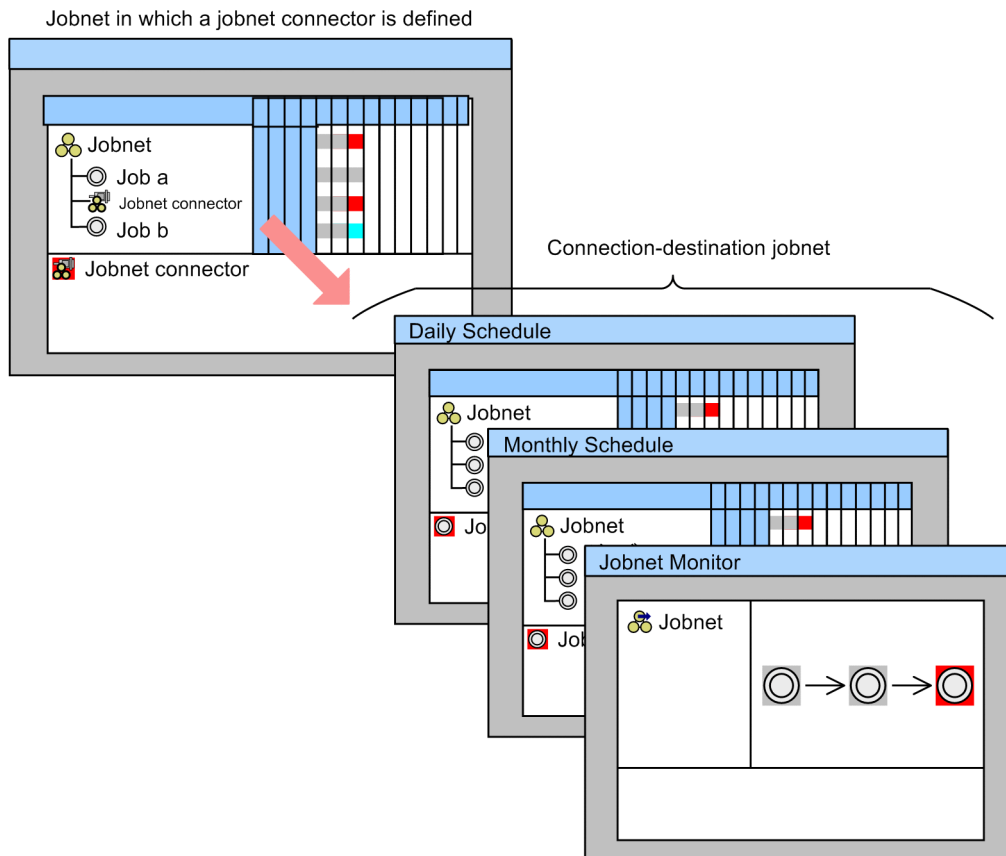
(b) Monitoring in the Daily Schedule window and Monthly Schedule window

In the tree area of the Daily Schedule or Monthly Schedule window, select a jobnet connector and choose **View** and then **Jobnet for Destination**. The following windows, in which you can then check the connection-destination jobnet, appear:

- Daily Schedule (Hierarchy/All Jobs) window
- Monthly Schedule window
- Jobnet Monitor window

The following figure shows the monitoring available in the Daily Schedule and Monthly Schedule windows.

Figure 4–2: Monitoring in the Daily Schedule and Monthly Schedule windows



In addition, you can choose **View** and then **Detailed Information** to display the Detailed Schedule dialog box that shows the detailed schedule information. If you display this dialog box for the jobnet connector, you can check the execution ID of the connection-destination jobnet. If you display this dialog box for the connection-destination jobnet, you can check the execution ID and the setting for the execution order control method for the jobnet connector.

For details about each operating method, see the *JPI/Automatic Job Management System 3 Operator's Guide*.

Supplementary notes

- If the connection-destination jobnet connected by the connector does not have an execution schedule or has been blocked, you cannot display the Jobnet Monitor window for the jobnet.
- If the jobnet connector and the connection-destination jobnet are on hosts in different user authentication blocs, you need to log in to the appropriate host to perform the following operations:
 - To display the connection-destination jobnet from the jobnet connector, log in to the host on which the connection-destination jobnet resides.
 - To display the Detailed Schedule dialog box for the jobnet connector, log in to the host on which the connection-destination jobnet resides.
 - To display the Detailed Schedule dialog box for the connection-destination jobnet, log in to the host on which the jobnet connector resides.

For details, see 12.7.7 *Detailed Schedule dialog box* in the *JPI/Automatic Job Management System 3 Operator's Guide*, or 12.14.7 *Notes on the Daily/Monthly Schedule window* in the *JPI/Automatic Job Management System 3 Operator's Guide*.

4.1.2 Monitoring the execution time of jobnets

Depending on the execution status of the host where JP1/AJS3 is installed, jobnets might not start or end at the specified time. A delayed jobnet might affect succeeding jobnets and might cause overall processing to be delayed.

When you monitor JP1/AJS3 normal operation, you must monitor the following items:

- The execution time of a jobnet itself
- Delayed starting and delayed ending of a jobnet

The following table describes the methods you can use to monitor execution time and delays.

Table 4–2: Methods for monitoring execution time and delays

Method	Description
JP1/AJS3 - View windows	You can use the following windows to monitor execution time and delays: • JP1/AJS3 - View window (Summary Monitor window) • Jobnet Monitor window (definition window format) • Monthly Schedule window (calendar format) • Daily Schedule window (chart format) The following are the default colors used to indicate delays. Check for items displayed in any of the following colors. Start delay: Pink Start delay + Running: Dark pink End delay: Orange End delay (Running): Dark orange
Web GUI (Job Portal) windows	If you use JP1/AJS3 - Web Console, you can use the Web GUI (Job Portal) in a web browser to check the delay status, start time, scheduled end time, and end time for each jobnet. JP1/AJS3 - Web Console can also be used to check the progress of a jobnet in terms of the proportion of jobs under that jobnet that have ended successfully.
User application	Original applications (user applications) developed or implemented by using the API released by JP1/AJS3 can be used to check the delay statuses and start times of jobnets.
Command	<code>ajsshow</code> command This command outputs information about a jobnet or a job registered for execution to the standard output file. The information output includes the previous execution results, current status, and next execution schedule.
Log data	Information such as whether starting or ending of a jobnet was delayed is output to a JP1/AJS3 scheduler log file. Use a tool such as a text editor to check the log file. The default locations of these log files are as follows: When a log file is output for each scheduler service: In Windows, if the installation folder is the default installation folder or is in a folder protected by the system: • %ALLUSERSPROFILE%\Hitachi\JP1\JP1_DEFAULT\JP1AJS2\log\scheduler\scheduler-service-name\ajs-log1.log • %ALLUSERSPROFILE%\Hitachi\JP1\JP1_DEFAULT\JP1AJS2\log\scheduler\scheduler-service-name\ajs-log2.log The default for %ALLUSERSPROFILE% is <i>system-drive</i>\ProgramData. A <i>folder protected by the system</i> is a folder in any of the following: - <i>system-drive</i>\Windows - <i>system-drive</i>\Program Files - <i>system-drive</i>\Program Files (x86)

Method	Description
Log data	In Windows, if the installation folder is other than the above: <i>JP1/AJS3-Manager-installation-folder\log\scheduler\scheduler-service-name\ajs-log1.log</i> <i>JP1/AJS3-Manager-installation-folder\log\scheduler\scheduler-service-name\ajs-log2.log</i> In UNIX: <i>/var/opt/jplajs2/log/scheduler/scheduler-service-name/ajs-log1.log</i> <i>/var/opt/jplajs2/log/scheduler/scheduler-service-name/ajs-log2.log</i> When a log file is output for each host: In Windows, if the installation folder is the default installation folder or is in a folder protected by the system: <i>%ALLUSERSPROFILE%\Hitachi\JP1\JP1_DEFAULT\JP1AJS2\log\ajs-host-log1.log</i> <i>%ALLUSERSPROFILE%\Hitachi\JP1\JP1_DEFAULT\JP1AJS2\log\ajs-host-log2.log</i> The default for <i>%ALLUSERSPROFILE%</i> is <i>system-drive\ProgramData</i>. <i>A folder protected by the system</i> is a folder in any of the following: <i>-system-drive\Windows</i> <i>-system-drive\Program Files</i> <i>-system-drive\Program Files (x86)</i> In Windows, if the installation folder is other than the above: <i>JP1/AJS3-Manager-installation-folder\log\ajs-host-log1.log</i> <i>JP1/AJS3-Manager-installation-folder\log\ajs-host-log2.log</i> In UNIX: <i>/var/opt/jplajs2/log/ajs-host-log1.log</i> <i>/var/opt/jplajs2/log/ajs-host-log2.log</i>
Windows event log or syslog	When the NETSYSLOG and JOBSYSLOG environment setting parameters are set, information such as whether the start or end of a jobnet was delayed and whether the end of a job was delayed is output to the Windows event log or to syslog. The following describes the event IDs, facilities, and message IDs for a delayed start and a delayed end. Delayed-start event Event ID: 30275 Facility: LOG_DAEMON Message ID: KAVS0275-I Delayed-end event Event ID: 30276 Facility: LOG_DAEMON Message ID: KAVS0276-I Event ID: 30248 Facility: LOG_DAEMON Message ID: KAVS0248-I
JP1 event	When a jobnet is scheduled with a JP1 event reception monitoring job defined, the jobnet can be monitored automatically at a specified date and time or at specified intervals. The following describes the event IDs for a start-delay JP1 event and an end-delay JP1 event. Delayed-start event JP1 event ID: 00004122 Delayed-end event JP1 event ID: 00004123 and 00004127

For details about the items displayed in the windows and the operating procedures, see the *JP1/Automatic Job Management System 3 Operator's Guide*.

For details about the `ajsshow` command options and output examples, see *ajsshow* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

For details about the scheduler log output format, see *C. Log Information* in the manual *JP1/Automatic Job Management System 3 Troubleshooting*.

For details about JP1 events, see *A. JP1 Events Issued by JP1/AJS3*.

5

Monitoring the Operating Status

This chapter describes monitoring of the JP1/AJS3 operating status.

During operation, three important points that need to be focused on in the monitoring of the operating status are as follows:

- Checking whether the information for the number of days specified in the estimate is output to log files.
- Checking the amount of the used area in the database.
- Checking whether JP1/AJS3 is operating without any problems

Determine the procedure and schedule for these tasks, and then perform the tasks periodically.

5.1 Checking the log file sizes and output log information

The log file sizes and the amount of information that will be output to log files must be estimated as accurately as possible in the design stage. However, after JP1/AJS3 operation has started, the number of JP1/AJS3 operations, jobs, and jobnets can easily increase, resulting in more information being output to log files than was estimated.

During operation, periodically check whether the information for the number of days specified in the estimate stage is being output to log files. If an error occurs, you can use the information in the log files to determine the operation or processing that caused the error. If the log files do not contain the necessary amount of troubleshooting information, a longer time is necessary to determine the cause of an error.

Monitoring log files daily to ensure output of an adequate amount of information means that the causes of errors can be determined much faster.

The following table lists the log files and the locations in manuals you need to reference when estimating log file sizes.

Table 5–1: Log files and manual references for estimating file sizes

Log file type	To estimate file size, see:
Log file for the scheduler service [#]	<i>3.4.1 Estimating the size of scheduler log files in the JP1/Automatic Job Management System 3 System Design (Configuration) Guide</i>
Trace log file	<i>3.4.2 Estimating the size of the scheduler trace log file in the JP1/Automatic Job Management System 3 System Design (Configuration) Guide</i>
Log output for event jobs and custom event jobs (when event jobs and custom event jobs are used)	<i>3.4.3 Estimating the size of the log information output by event jobs and custom event jobs in the JP1/Automatic Job Management System 3 System Design (Configuration) Guide</i>
Log file for the execution environment for QUEUE jobs and submit jobs	<i>7.1.4 Estimating the size of the logs output by the execution environment for QUEUE jobs and submit jobs in the JP1/Automatic Job Management System 3 System Design (Configuration) Guide</i>
Log file for queueless jobs	• <i>7.2.1(1) Estimating the size of the queueless log file in the JP1/Automatic Job Management System 3 System Design (Configuration) Guide</i> • <i>7.2.1(2) Estimating the size of the queueless trace log file in the JP1/Automatic Job Management System 3 System Design (Configuration) Guide</i> • <i>7.2.1(3) Estimating the size of the internal execution logs for queueless jobs in the JP1/Automatic Job Management System 3 System Design (Configuration) Guide</i>

#

You can use the scheduler log file not only for troubleshooting, but also for checking the execution status of jobnets.

5.2 Checking database usage

JP1/AJS3 uses a database to manage definition information and execution registration information for jobs. If data is added or deleted repeatedly, the efficiency of data usage decreases, resulting in degraded data search performance and potential problems.

You can avoid problems by periodically checking the usage of the database and by using the automatic maintenance function or the `ajsembdbreclaim` command to reclaim space during operation.

Note that, if you periodically perform maintenance, you will rarely need to reconfigure the database. Note, however, that if the usage efficiency of the database has dropped greatly, database reorganization might be required. For details about how to reorganize the database, see [9.2.3 Reorganizing a database](#).

5.2.1 How to check the database usage

You can check the database usage from generated messages and on the **Database Details** screen of the Web GUI (Management Portal).

(1) When the database auto-increment function is used

Each time the database has too little remaining free space and is automatically expanded, the KFPH22024-W message is output to the Windows event log or syslog. If the KFPH22024-W message is output repeatedly, reconfigure the database and check whether the data increment value (job definition information and job execution registration information) is appropriate.

(2) When the database auto-increment function is not used

The KFPH00211-I message is output to the Windows event log or syslog when the usage rate reaches 80%, 90%, or 100%. Therefore, periodically check the Windows event log or syslog.

When the usage rate is 80%, you can avoid problems by reorganizing the database. However, when the usage rate reaches 90% or 100%, simply reorganizing the database will not eliminate the problems. Instead, you will need to delete data (job definition information and job execution registration information) or expand the database.

Cautionary note

If the backup enhancement function is enabled, see also [5.2.5\(5\) Considerations before using the backup enhancement function](#) in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.

(3) When the Web GUI (Management Portal) is used

If you are using the Web GUI (Management Portal), you can check the database usage on the **Database Details** screen. On this screen, alerts are displayed for the databases with low free space. Periodically check the database usage from the Web GUI (Management Portal) and maintain or reorganize databases as necessary.

To use the Web GUI (Management Portal), you must set it up on both the manager host and agent host. For details about how to set up, see [6.7 Settings related to the Web GUI \(Management Portal\)](#) in the *JP1/Automatic Job Management System 3 Configuration Guide* (in Windows) or [15.8 Settings related to the Web GUI \(Management Portal\)](#) in the *JP1/Automatic Job Management System 3 Configuration Guide* (in UNIX).

For details on Database Details screen operations, see [16.2.14 Database Details screen](#) in the *JP1/Automatic Job Management System 3 Operator's Guide*.

5.2.2 How to check the unused area of the ISAM files used in the execution environment for QUEUE jobs and submit jobs, and when the database should be reorganized

Execute the `jpqdbcond` command to check the unused area in the ISAM database.

Notes on using the `jpqdbcond` command are provided below. For details about the `jpqdbcond` command, see *jpqdbcond* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

(1) How to check the unused area

Use the `jpqdbcond` command to check the unused area in the database.

The following are examples of using the `jpqdbcond` command:

```
jpqdbcond -L -a -t se,10
```

This command outputs information about the ISAM files used in the execution environment for QUEUE jobs and submit jobs to the standard output. If the size of the unused area has reached the threshold (10 MB), the command also outputs a message to the standard error output, and Windows event log or syslog. By using the options indicated to schedule the `jpqdbcond` command for execution as a JP1/AJS3 job when not many jobs are executed, you can periodically check the ISAM file status and set the output of warning messages.

```
jpqdbcond -l -a
```

This command outputs the status of the ISAM file used in the execution environment for QUEUE jobs and submit jobs. The output information includes the percentage of unused area, the unused area size, and a percentage value for data file fragmentation.

```
jpqdbcond -L -a -t j,10
```

This command outputs the following JP1 event when the size of the unused area reaches the threshold (10 MB):

- Event ID: 00004164
- Event name: Event for reporting that the size of the ISAM unused area reached the threshold
- Message ID: KAVU5984-W

Reorganize the database if the predefined threshold is exceeded.

(2) When the database needs to be reorganized

To determine when to reorganize the execution environment for QUEUE jobs and submit jobs, use as a guideline the size of the `JPQJOBINFO.K02` file and the number of days for saving job information. For details about reorganization, see [9.3 Reorganizing a database when QUEUE jobs and submit jobs are used](#). For details about setting the number of days for saving job information, see *20.5 Setting up the job execution environment* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

For details about the JP1 event output by the `jpqdbcond` command, see [A. JP1 Events Issued by JP1/AJS3](#).

(3) Notes on the jpqdbcond command

- Before you execute the jpqdbcond command with the -l option specified, make sure that the ISAM files are closed. To close the ISAM files, stop JP1/AJS3. If you execute the command when the ISAM files are open, the operational results are not guaranteed.
- If you specify the command with the -L option specified, you can also obtain information about the ISAM files being used by other processes. However, if other concurrently running processes update the ISAM files, differences arise between the information you have obtained and the ISAM files. While the command is being executed, accesses to ISAM files from other processes are suspended to protect the integrity of ISAM files. Therefore, avoid using this command during a busy period when many jobs are being executed.
- Information output by the -l or -L option indicates the percentage of unused area, not the fragmentation percentage. Therefore, if the ISAM file contains no records or only a few records, 100% is output as the percentage of unused area for the reserved free area that is still unused.

5.3 Checking the operating status of JP1/AJS3

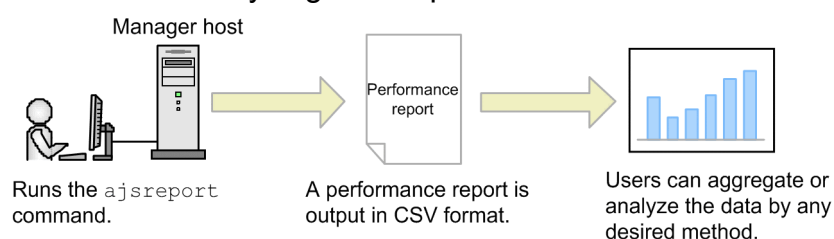
In JP1/AJS3, the amount of data processed by scheduler services and the execution status of jobs can be output as performance reports.

During operation of JP1/AJS3, a large number of jobnets might be executed in a specific time period or many jobnets with start conditions might start at the same time. If such a situation occurs, the amount of data that the scheduler services must process might increase, which can cause problems, such as delays in job execution, to occur. By outputting performance reports and checking the operating status of JP1/AJS3, you can readily understand the occurrence of such problems.

5.3.1 Overview of the performance report output function

The performance report output function collectively outputs information about the amount of data processed by the scheduler services and the job execution status to a CSV file. The information output to the file provides a performance report on the number of started jobs and queued jobs, and other operating status information about the scheduler services, all of which can be aggregated on an hourly basis. With such information, you can check the peak times of job execution and the operating status changing with time. If you use Excel or a similar program, you can also display the CSV-formatted information in graph format. By graphically aggregating or analyzing the output information, you can more easily understand the operating status of JP1/AJS3.

Figure 5–1: Overview of the procedure from outputting a performance report to aggregating or analyzing the output information



The following table shows the types of information output to a performance report.

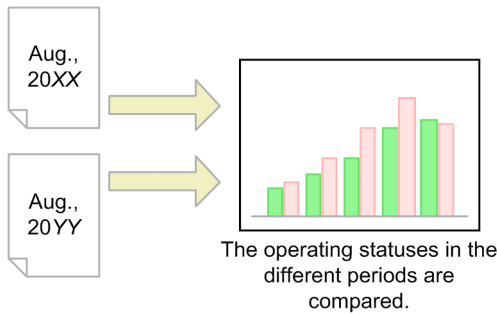
Table 5–2: Types of information output to a performance report

Type of output information	Description
Amount of data processed by scheduler services	- Number of started jobnets and jobs - Number of ended jobnets and jobs
Job execution status	- Number of jobs waiting to be processed - Information about the jobs now being processed

To output performance reports, you must enable the performance report output function. When you enable the function, it starts outputting performance log files (in binary format). When you run the `ajsreport` command at the manager host, the contents of the performance log file are output to a CSV file. Operation status log data output to performance log files is retained in the files for seven days by default. The retention period of status log data can be changed by using the `AJSREPORTSTOREDAYPERIOD` environment setting parameter. The maximum retention period that can be set is 21 days. The `ajsreport` command can be used to set the target scheduler service, the period for which output data is to be aggregated, and the aggregation interval. The `ajsreport` command provides options that allow you to specify such settings when running the command. For example, periodically outputting the operating status to CSV files provides an understanding of the current operating status, and allows for comparison with a past operating status.

Figure 5–2: Overview of periodically outputting performance reports for comparison

Performance log files



For details about the procedure for setting up the performance report output function, in Windows, see *6.6 Settings related to the output of performance reports* in the *JP1/Automatic Job Management System 3 Configuration Guide*. In UNIX, see *15.7 Settings related to the output of performance reports* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

For details about estimating the size of performance log files, see *3.4.8 Estimating the size of performance log files* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.

For details about the `ajsreport` command, see *ajsreport* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

Note

If you move the system time backward during operation of JP1/AJS3 - Manager, delete the performance log files according to the following procedure:

1. Stop the JP1/AJS3 services.
2. Save the output results of the `ajsreport` command.
3. Delete all files under the directory to which performance log files are output.

For information about the output-destination directory of the performance log files, see *1.2.5 List of log files and directories* in the manual *JP1/Automatic Job Management System 3 Troubleshooting* and *20.4.2(115) AJSREPORTDIR* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

5.4 Using the Web GUI (Management Portal)

In JP1/AJS3, you can use the Web GUI (Management Portal) in a web browser to check whether the entire system, including the scheduler services and databases, is operating without problems.

Operation of a JP1/AJS3 system might be affected due to an abnormality occurring in a scheduler service or execution agent, or due to a large number of unavailable areas arising in databases. Use the Web GUI (Management Portal) to monitor JP1/AJS3 operation and, if you find any signs of abnormality, take appropriate measures according to the situation.

5.4.1 Overview of Web GUI (Management Portal)

The Web GUI (Management Portal) allows users to check for abnormalities in JP1/AJS3 operation in a visual manner. The following table lists the items that can be checked by using the Web GUI (Management Portal) and the locations where the items can be checked.

Table 5–3: Items that can be checked by using the Web GUI (Management Portal) and the locations where the items can be checked

No.	Item	Check Location
1	Whether the status of the manager host is normal	Summary screen
2	Whether the status of each scheduler service is normal	Scheduler Service Details screen
3	Time periods in which many jobs are queued or running	Job Execution Details dialog box
4	Whether jobnets with start conditions have been retained	Details on the Retention Status of Jobnets with Start Conditions dialog box
5	Whether there is unreported information	Event Job Retention Details dialog box
6	Whether databases have a large number of unavailable areas	Database Details screen
7	Whether there is a problem with the status of each execution agent	Target host screen
8	Whether JP1/AJS3 services and processes are running	• Service Details dialog box • Process Details dialog box
9	Load on the JP1/AJS3 system, including the usage of scheduler services and the number of job executions	• Usage status of the Scheduler Service dialog box • Number of job executions dialog box • Number of job executions in a day dialog box

To use the Web GUI (Management Portal), you must set it up on both the manager host and agent host. For details about how to set up, see *6.7 Settings related to the Web GUI (Management Portal)* in the *JP1/Automatic Job Management System 3 Configuration Guide* (in Windows) or *15.8 Settings related to the Web GUI (Management Portal)* in the *JP1/Automatic Job Management System 3 Configuration Guide* (in UNIX).

For details on Web GUI (Management Portal) operations, see *16. Management Portal of the Web GUI* in the *JP1/Automatic Job Management System 3 Operator's Guide*.

You can review the JP1/AJS3 operations or address abnormalities in JP1/AJS3 operations by using JP1/AJS3 - View, the Web GUI (Job Portal), or commands. For details on JP1/AJS3 - View operations, see *12. Windows and Dialog Boxes* in the *JP1/Automatic Job Management System 3 Operator's Guide*. For details on Web GUI (Job Portal) operations, see *15. Job Portal of the Web GUI* in the *JP1/Automatic Job Management System 3 Operator's Guide*. For details about

commands, see *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

(1) Number of jobs in the Now queuing or Now running status

If it is likely that the number of queued and running jobs will reach the upper limit specified for the `MaximumContentJob` environment setting parameter in a specific time period, review the jobs that are executed in and around that period. For details about the `MaximumContentJob` environment setting parameter, see *20.5.2(12) MaximumContentJob* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(2) Retention of execution generations with satisfied start conditions

If there might be some generations of a jobnet with start conditions remaining unexecuted, you must revise the job definitions in the root jobnet definition. For details on the jobnet for which start conditions, see *3.4.6 Retention of execution generations with satisfied start conditions* in the manual *JP1/Automatic Job Management System 3 Overview*, *3.4.8 Operations on a jobnet registered for execution with a start condition* in the manual *JP1/Automatic Job Management System 3 Overview* and *8.1.1 Stopping a jobnet that is monitoring start conditions*.

(3) If there is unreported information

If there is unreported information, a large number of unexpected events might have occurred for a specific jobnet with start conditions. In such a case, take measures by operating units from JP1/AJS3 - View or the Web GUI (Job Portal), or by executing commands. For details about how to take measures, see *2.5 Troubleshooting problems if processing of a jobnet with a start condition is delayed* in the manual *JP1/Automatic Job Management System 3 Troubleshooting*.

(4) If the load on the JP1/AJS3 system (including usage of scheduler services and the number of job executions) becomes high

If the load on the JP1/AJS3 system (including usage of scheduler services and the number of job executions) becomes high, JP1/AJS3 processing performance (for example, throughput) might be affected. In such a case, review the operational conditions or system configuration to reduce the system load. See the information in the following sections and take action if necessary:

- *1.3.1 Preparatory estimates and settings for running JP1/AJS3* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*
- *3.1.1 Job throughput* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*
- *23.2 Estimating the database area* in the *JP1/Automatic Job Management System 3 Configuration Guide*

6

Starting and Stopping JP1/AJS3 Services

This chapter describes how to start and stop JP1/AJS3 services.

6.1 Starting or stopping JP1/AJS3 services

After stopping JP1/AJS3 services, you can safely make changes to the JP1/AJS3 environment and settings. After you have made changes, restart the JP1/AJS3 services.

6.1.1 Starting JP1/AJS3 services manually

This subsection describes how to start JP1/AJS3 services manually.

If JP1/AJS3 services are defined to start when the system starts, they start automatically.

(1) In Windows

To start a JP1/AJS3 service manually in Windows:

1. In the Control Panel window, choose **Services**. Alternatively, choose **Administrative Tools** and then **Services**.

2. Select the JP1/AJS3 service you want to start.

Select the required service from the following list of service names:

- JP1/AJS3 service
- JP1/AJS3 Mail service^{#1}
- JP1/AJS3 Check Manager service^{#2}
- JP1/AJS3 Check Agent service^{#3}
- JP1/AJS3 Queueless Agent service^{#4}
- JP1/AJS3 Queueless File Transfer service^{#4}
- JP1/AJS3 Autonomous Agent service^{#5}
- JP1/AJS3 Autonomous Agent Messenger service^{#6}
- JP1/AJS3 Web Application Server service
- JP1/AJS3 HTTP Server service
- JP1/AJS3 System Control Manager service^{#7}
- JP1/AJS3 System Control Agent service^{#7}

#1

Displayed only when mail system linkage has been set up.

#2

Displayed only when JP1/AJS3 Check Manager has been set up.

#3

Displayed only when JP1/AJS3 Check Agent has been set up.

#4

Displayed only when the queueless job execution environment has been set up.

#5

Displayed only when the function of the request destination of the flexible job has been set up.

#6

Displayed only when the function of the request source or request destination of the flexible job has been set up.

#7

Displayed only when the Web GUI (Management Portal) has been set up.

3. Click the **Start** button.

The JP1/AJS3 service you selected starts.

You can also start a service by executing the `net start service-name` command.

Supplementary notes

- You do not need to perform any operations for the JP1/AJS3 Database service during operation because these services are controlled by JP1/AJS3. If the embedded database uses a method from a version earlier than 10-00, the JP1/AJS3 Database ClusterService service is also started. However, in ordinary operation, you do not need to use this service.
- Use the `jajs_spmd_status` command to check whether all processes of JP1/AJS3 service have started.

(2) In UNIX

You can start the following services as described below:

- JP1/AJS3 service
- JP1/AJS3 Check Manager service
- JP1/AJS3 Check Agent service
- JP1/AJS3 Queueless Agent service
- JP1/AJS3 Queueless File Transfer service
- JP1/AJS3 Autonomous Agent service
- JP1/AJS3 Autonomous Agent Messenger service
- JP1/AJS3 Web Application Server service[#]
- JP1/AJS3 HTTP Server service[#]
- JP1/AJS3 System Control Manager service
- JP1/AJS3 System Control Agent service

#

The JP1/AJS3 - Web Console service cannot be started by performing the procedure below. To start the service, use the `jajs_web` command. For details about the `jajs_web` command, see *jajs_web (Linux only)* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

To start the above services:

1. Copy the `/etc/opt/jplajs2/jajs_start` script to any file.

Execute the following command to copy the script without changing the file permissions:

```
cp -p /etc/opt/jplajs2/jajs_start any-file-name
```

2. Use an editor such as `vi` to open the copy of the script, and then delete the comment symbols on the comment lines.

For details about how to delete comment symbols, see 15.10.1 *Setting automatic startup and termination of the JP1/AJS3 service* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

3. Execute the script to start the JP1/AJS3 service.

You can also use the `ajsqlstart` command to start the queueless agent service, and use the `ajsqlftpstart` command to start the queueless file transfer service. In addition, you can use the `ajschkstart` command to start the JP1/AJS3 Check Manager service or JP1/AJS3 Check Agent service. You can also use the `ajsatstart` command to start the JP1/AJS3 Autonomous Agent service, and the `ajsatmstart` command to start the JP1/AJS3 Autonomous Agent Messenger service. You can use the `ajssysctlstart` command to start the JP1/AJS3 System Control Manager service and JP1/AJS3 System Control Agent service.

For details about the `ajsqlstart`, `ajsqlftpstart`, `ajschkstart`, `ajsatstart`, `ajsatmstart`, and `ajssysctlstart` commands, see 4. *Commands Used for Special Operation* in the manual *JP1/Automatic Job Management System 3 Command Reference* or 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

Supplementary notes

- The current directory for the JP1/AJS3 services is determined based on how the services are started, as shown below. Do not delete the current directory during the operation of a JP1/AJS3 service.
 - Started by the `jajs_start` script:
`/opt/jplajs2/bin`
 - Started by the `jajs_spmd` command:
The directory in which the command was executed
- Use the `jajs_spmd_status` command to check whether all processes of JP1/AJS3 service have started. To check whether processes of the JP1/AJS3 - Web Console service have started, use the following commands:
 - For the JP1/AJS3 HTTP Server service

```
ps -ef | grep "/opt/jplajs3web/uCPSB/httpd/sbin/httpd" | grep -v "grep"
```
 - For the JP1/AJS3 Web Application Server service

```
ps -ef | grep "/opt/jplajs3web/uCPSB/CC/server/bin/cjstartsv ajs3web" |  
grep -v "grep"
```

6.1.2 Stopping JP1/AJS3 services manually

This subsection describes how to stop JP1/AJS3 services manually.

Before you stop the JP1/AJS3 services, make sure that no jobs or jobnets are being executed.

(1) In Windows

To stop a JP1/AJS3 service manually in Windows:

1. In the Control Panel window, choose **Services**. Alternatively, choose **Administrative Tools** and then **Services**.

2. Select the JP1/AJS3 service you want to stop.

Select the required service from the following list of service names:

- JP1/AJS3 service
- JP1/AJS3 Mail service^{#1}
- JP1/AJS3 Check Manager service^{#2}
- JP1/AJS3 Check Agent service^{#3}

- JP1/AJS3 Queueless Agent service^{#4}
- JP1/AJS3 Queueless File Transfer service^{#4}
- JP1/AJS3 Autonomous Agent service^{#5}
- JP1/AJS3 Autonomous Agent Messenger service^{#6}
- JP1/AJS3 Web Application Server service
- JP1/AJS3 HTTP Server service
- JP1/AJS3 System Control Manager service^{#7}
- JP1/AJS3 System Control Agent service^{#7}

#1

Displayed only when mail system linkage has been set up.

#2

Displayed only when JP1/AJS3 Check Manager has been set up.

#3

Displayed only when JP1/AJS3 Check Agent has been set up.

#4

Displayed only when the queueless job execution environment has been set up.

#5

Displayed only when the function of the request destination of the flexible job has been set up.

#6

Displayed only when the function of the request source or request destination of the flexible job has been set up.

#7

Displayed only when the Web GUI (Management Portal) has been set up.

3. Click the **Stop** button.

The JP1/AJS3 service you selected stops.

You can also stop the service by executing the `net stop service-name` command.

Supplementary notes

- When you stop the JP1/AJS3 Queueless Agent service by choosing **Services** in Windows Control Panel or by executing the `net stop` command, the service stops immediately without waiting for running queueless jobs to terminate. As a result, the status of queueless jobs that were running on the agent host might change to *Unknown end status* on the manager host.
Use information such as job execution results to check the end status of the queueless jobs whose status has changed to *Unknown end status*.
If you want to stop the JP1/AJS3 Queueless Agent service after the running queueless jobs have terminated, stop the JP1/AJS3 service, and then execute the `ajsqlstop` command with the `-j` option specified.
- You do not need to perform any operations for the JP1/AJS3 Database service during operation because these services are controlled by JP1/AJS3. If the embedded database uses a method from a version earlier than 10-00, the JP1/AJS3 Database ClusterService service is also started. However, in ordinary operation, you do not need to use this service.

(2) In UNIX

You can stop the following services as described below:

- JP1/AJS3 service
- JP1/AJS3 Check Manager service
- JP1/AJS3 Check Agent service
- JP1/AJS3 Queueless Agent service
- JP1/AJS3 Queueless File Transfer service
- JP1/AJS3 Autonomous Agent service
- JP1/AJS3 Autonomous Agent Messenger service
- JP1/AJS3 Web Application Server service[#]
- JP1/AJS3 HTTP Server service[#]
- JP1/AJS3 System Control Manager service
- JP1/AJS3 System Control Agent service

#

The JP1/AJS3 - Web Console service cannot be stopped by performing the procedure below. To stop the service, use the `jajs_web_stop` command. For details about the `jajs_web_stop` command, see *jajs_web_stop (Linux only)* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

To stop the above services:

1. Copy the `/etc/opt/jplajs2/jajs_stop` script to any file.

Execute the following command to copy the script without changing the file permissions:

```
cp -p /etc/opt/jplajs2/jajs_stop any-file-name
```

2. Use an editor such as `vi` to open the copy of the script, and then delete the comment symbols on the comment lines.
For details about how to delete comment symbols, see *15.10.1 Setting automatic startup and termination of the JP1/AJS3 service* in the *JP1/Automatic Job Management System 3 Configuration Guide*.
3. Execute the script to stop the JP1/AJS3 service.

You can also use the `ajsqlstop` command to stop the queueless agent service, and use the `ajsqlftpstop` command to stop the queueless file transfer service. In addition, you can also use the `ajschkstop` command to stop the JP1/AJS3 Check Manager service or JP1/AJS3 Check Agent service. You can also use the `ajsatstop` command to stop the JP1/AJS3 Autonomous Agent service, and the `ajsatmstop` command to stop the JP1/AJS3 Autonomous Agent Messenger service. You can also use the `ajssysctlstop` command to stop the JP1/AJS3 System Control Manager service and JP1/AJS3 System Control Agent service.

For details about the `ajsqlstop`, `ajsqlftpstop`, `ajschkstop`, `ajsatstop`, `ajsatmstop`, and `ajssysctlstop` commands, see 4. *Commands Used for Special Operation* in the manual *JP1/Automatic Job Management System 3 Command Reference* or 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

6.2 Changing the behavior at JP1/AJS3 startup or termination

By specifying a parameter option for the JP1/AJS3 service, you can temporarily change the behavior of JP1/AJS3 when it starts.

By executing the `jajs_spmc_stop` command with a parameter option specified, you can temporarily change the behavior of JP1/AJS3 when it terminates.

The following describes the options you can specify for services and commands, and how to change the behavior.

6.2.1 Temporarily changing the start mode of JP1/AJS3

The following describes the procedure for temporarily changing the start mode of JP1/AJS3 - Manager or JP1/AJS3 - Agent.

To specify the start mode always used in JP1/AJS3 - Manager, use the `jajs_config` command to set the `STARTMODE` environment setting parameter.

For details about the environment setting parameters, see *20.4 Setting up the scheduler service environment* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(1) In Windows

To temporarily change the start mode:

1. In the Control Panel window, choose **Services**. Alternatively, choose **Administrative Tools** and then **Services**.
2. Select the name of the JP1/AJS3 service you want to start.
3. In **Startup Parameter**, specify the start mode.

The following table lists the options you can specify.

Table 6–1: Options that can be specified in Startup Parameter

Operand	Start mode
<code>-cold</code>	The service is cold-started.
<code>-warm</code>	The service is warm-started.
<code>-hot</code>	The service is hot-started.
<code>-disaster</code>	The service is started in disaster-recovery mode [#]

#

This option can be used when running JP1/AJS3 in a disaster recovery environment. By specifying this option, you can start JP1/AJS3 in disaster-recovery mode at the remote site when a major disaster stops operation at the main site and you are switching the system operation to the remote site. In disaster-recovery mode, JP1/AJS3 - Manager starts at the remote site while job execution is suppressed.

For further details, see *11.2.1 Switching operation to the remote site*.

You can specify the `-disaster` option only for disaster-recovery mode. Do not specify this option as the start mode in normal operation.

4. Click the **Start** button.

Note that if you have executed the `net start service-name` command, you cannot temporarily change the start mode.

Cautionary notes

- If the temporarily specified service start mode differs from the service start mode that was specified during setup, the temporarily specified service start mode has priority.
- If you do not specify an option in JP1/AJS3 - Manager, the service start mode specified at setup is used.
- If you do not specify an option in JP1/AJS3 - Agent, `-warm` is assumed.

The status of jobnets and jobs depends on the specified service start mode. For details about the status of jobnets and jobs for each service start mode, see [\(3\) Jobnet and job statuses for each start mode](#).

(2) In UNIX

To temporarily change the start mode:

1. Execute the `jajs_spmd` command with an argument specified.

The following table lists the options you can specify.

Table 6–2: Options that can be specified in the `jajs_spmd` command

Operand	Operation
<code>-cold</code>	The service is cold-started.
<code>-warm</code>	The service is warm-started.
<code>-hot</code>	The service is hot-started.
<code>-disaster</code>	The service is started in disaster-recovery mode [#]

#

This option can be used when running JP1/AJS3 in a disaster recovery environment. By specifying this option, you can start JP1/AJS3 in disaster-recovery mode at the remote site when a major disaster stops operation at the main site and you are switching the system operation to the remote site. In disaster-recovery mode, JP1/AJS3 - Manager starts at the remote site while job execution is suppressed.

For further details, see [11.2.1 Switching operation to the remote site](#).

You can specify the `-disaster` option only for disaster-recovery mode. Do not specify this option as the start mode in normal operation.

Cautionary notes

- If the temporarily specified service start mode differs from the service start mode that was specified during setup, the temporarily specified service start mode has priority.
- If you do not specify an option in JP1/AJS3 - Manager, the service start mode specified at setup is used.
- If you do not specify an option in JP1/AJS3 - Agent, `-warm` is assumed.

The status of jobnets and jobs depends on the specified service start mode. For details about the status of jobnets and jobs for each service start mode, see [\(3\) Jobnet and job statuses for each start mode](#).

(3) Jobnet and job statuses for each start mode

When a JP1/AJS3 service on the manager host is restarted, the statuses of jobnets and jobs differ depending on the start mode of the JP1/AJS3 service. When a JP1/AJS3 service on the agent host is restarted, the status of jobs on the agent host differs depending on the start mode of the JP1/AJS3 service.

The following describes the status of jobnets and jobs when a JP1/AJS3 service on the manager host is restarted, and the status of jobs when a JP1/AJS3 service on the agent host is restarted.

(a) Statuses when a JP1/AJS3 service on the manager host is restarted

The following shows the statuses of jobnets and jobs for each start mode when a JP1/AJS3 service on the manager host is restarted. The *Condition* column in the table indicates any condition, such as the actual status after the JP1/AJS3 service stops or the status monitored by JP1/AJS3, that might cause the job and jobnet status to change.

■ Statuses of jobnets and jobs when a hot-start is performed

The following table shows the statuses of jobnets and jobs when a JP1/AJS3 service on the manager host is hot-started.

Table 6–3: Jobnet and job statuses when a hot-start is performed (-hot)

Unit	Status before JP1/AJS3 stops	Condition	Status after JP1/AJS3 starts
Jobnet	Wait for prev. to end	None	Wait for prev. to end ^{#1, #6, #12, #13, #15}
	Not sched. to exe. (root job)	None	Not sched. to exe.
	Not sched. to exe. (nested job)	None	Not sched. to exe. ^{#1, #6, #12, #13, #15}
	Wait for start time (root job)	None	Wait for start time ^{#2, #3}
	Wait for start time (nested job)	None	Wait for start time ^{#1}
	Being held (root job)	None	Being held ^{#2}
	Being held (nested job)	None	Being held ^{#1}
	Now running	None	Now running ^{#4}
	Running + Warning	None	Running + Warning ^{#5}
	Running + Abend	None	Running + Abend
	Wait for start cond.	None	Wait for start cond. ^{#15}
	Now monitoring	None	Now monitoring ^{#6, #13}
	End status	None	No change
Remote jobnet	Wait for prev. to end	None	Wait for prev. to end ^{#1, #6, #12, #13, #15}
	Not sched. to exe. (root job)	None	Not sched. to exe.
	Not sched. to exe. (nested job)	None	Not sched. to exe. ^{#1, #6, #12, #13, #15}
	Wait for start time (root job)	None	Wait for start time ^{#2, #3}
	Wait for start time (nested job)	None	Wait for start time ^{#1}
	Being held (root job)	None	Being held ^{#2}

Unit	Status before JP1/AJS3 stops	Condition	Status after JP1/AJS3 starts
Remote jobnet	Being held (nested job)	None	Being held ^{#1}
	Now running (root job)	None	Ended abnormally
	Now running (nested job)	None	Ended abnormally
	End status	None	No change
Job (Unix job, PC job, flexible job, HTTP connection job, action job, custom job, passing information setting job)	Wait for prev. to end	None	Wait for prev. to end ^{#1, #6, #12, #13, #15}
	Not sched. to exe.	None	Not sched. to exe. ^{#1, #6, #12, #13, #15}
	Being held	None	Being held ^{#1}
	Waiting to execute	- The JP1/AJS3 service stops before the job is queued. - The job is being queued.	Wait for prev. to end ^{#7}
		The JP1/AJS3 service stops before the job being executed on a remote host ends.	Now running
		The JP1/AJS3 service stops before the job being executed on the local host ends.	Killed
		The job ends.	End status ^{#8}
		When the JP1/AJS3 service is restarted, the job status cannot be acquired due to insufficient memory or a communication error.	Unknown end status
	Now queuing	The job is being queued.	Wait for prev. to end ^{#7}
		The JP1/AJS3 service stops before the job being executed on a remote host ends.	Now running
		The JP1/AJS3 service stops before the job being executed on the local host ends.	Killed
		The job ends.	End status ^{#8}
		When the JP1/AJS3 service is restarted, the job status cannot be acquired due to insufficient memory or a communication error.	Unknown end status
	Now running	The target host is a remote host.	Now running
		The target host is the local host.	Killed
		The job ends.	End status ^{#8}
		When the JP1/AJS3 service is restarted, the job status cannot be acquired due to insufficient memory or a communication error.	Unknown end status
	End status	None	No change
Judgment job, OR job ^{#14}	Wait for prev. to end	None	Wait for prev. to end ^{#1, #6, #12, #13, #15}

Unit	Status before JP1/AJS3 stops	Condition	Status after JP1/AJS3 starts
Judgment job, OR job ^{#14}	Not sched. to exe.	None	Not sched. to exe. ^{#1, #6, #12, #13, #15}
	Being held	None	Being held ^{#1}
	End status	None	No change
QUEUE job	Wait for prev. to end	None	Wait for prev. to end ^{#1, #6, #12, #13, #15}
	Not sched. to exe.	None	Not sched. to exe. ^{#1, #6, #12, #13, #15}
	Being held	None	Being held ^{#1}
	Waiting to execute	The job is being queued.	Now queuing
		The JP1/AJS3 service stops before the job being executed on a remote host ends.	Now running
		The JP1/AJS3 service stops before the job being executed on the local host ends.	Killed
		The job ends.	End status ^{#8}
		- The JP1/AJS3 service stops before the job is queued. - An attempt to acquire the job status fails. - When the JP1/AJS3 service is restarted, the job status cannot be acquired due to insufficient memory or a communication error. - The job information has already been deleted because the number of days for saving job information expired.^{#9}	Unknown end status
	Now queuing	The job is being queued.	Now queuing
		The JP1/AJS3 service stops before the job being executed on a remote host ends.	Now running
		The JP1/AJS3 service stops before the job being executed on the local host ends.	Killed
		The job ends.	End status ^{#8}
		An attempt to acquire the job status fails. - When the JP1/AJS3 service is restarted, the job status cannot be acquired due to insufficient memory or a communication error. - The job information has already been deleted because the number of days for saving job information expired.^{#9}	Unknown end status
	Now running	The target host is a remote host.	Now running
		The target host is the local host.	Killed
		The job ends.	End status ^{#8}

Unit		Status before JP1/AJS3 stops	Condition	Status after JP1/AJS3 starts
QUEUE job		Now running	An attempt to acquire the job status fails. - When the JP1/AJS3 service is restarted, the job status cannot be acquired due to insufficient memory or a communication error. - The job information has already been deleted because the number of days for saving job information expired.^{#9}	Unknown end status
		End status	None	No change
Queueless job		Wait for prev. to end	None	Wait for prev. to end ^{#1, #6, #12, #13, #15}
		Not sched. to exe.	None	Not sched. to exe. ^{#1, #6, #12, #13, #15}
		Being held	None	Being held ^{#1}
		Waiting to execute	The job is waiting for another queueless job to end because the maximum number of concurrently executable jobs set for the queueless agent service has been exceeded.	Waiting to execute
			The queueless job is running.	Now running
			The queueless job ends.	End status ^{#8, #10}
			- When the JP1/AJS3 service is restarted, the job status cannot be acquired due to insufficient memory or a communication error. - Queueless job functionality is disabled when the JP1/AJS3 service restarts.	Unknown end status
			The JP1/AJS3 service was stopped before the job was sent to the agent.	Not executed + Ended
		Now running	The queueless job is running.	Now running
			The queueless job ends.	End status ^{#8, #10}
			- When the JP1/AJS3 service is restarted, the job status cannot be acquired due to insufficient memory or a communication error. - Queueless job functionality has been uninstalled when the JP1/AJS3 service is started.	Unknown end status
		End status	None	No change
Event job, custom event job	In a jobnet	Wait for prev. to end	None	Wait for prev. to end ^{#1, #6, #12, #13, #15}
		Not sched. to exe.	None	Not sched. to exe. ^{#1, #6, #12, #13, #15}
		Being held	None	Being held ^{#1}

Unit		Status before JP1/ AJS3 stops	Condition	Status after JP1/ AJS3 starts
Event job, custom event job	In a jobnet	Now queuing, Now running	• The target host is a remote host. • The target host is a remote host or the local host, and the system is restarted after a system failure.	Now queuing, Now running
			The target host is the local host.	Ended abnormally ^{#11}
		End status	None	No change
	In start conditions	Wait for prev. to end	None	Wait for prev. to end ^{#6, #12, #13, #15}
		Not sched. to exe.	None	Not sched. to exe. ^{#12}
		Now queuing	None	Now queuing ^{#13, #15}
		Now running	The event job and the custom event job is running.	Now running ^{#13, #15}
			The event job and the custom event job ends.	End status ^{#8}
		End status	None	No change
	Jobnet connector		Wait for prev. to end	None
Not sched. to exe.			None	Not sched. to exe. ^{#1, #12}
Now running			The connection-destination jobnet ends normally.	Ended normally ^{#16}
			The connection-destination jobnet ends with warning.	Ended with warning ^{#16}
			The connection-destination jobnet is running.	Now running ^{#16}
			The status of the connection-destination jobnet is Running + Warning.	Running + Warning ^{#16}
			The connection-destination jobnet contains a unit that has ended abnormally.	Running + Abend ^{#16}
Running + Warning			The connection-destination jobnet ends with warning.	Ended with warning ^{#16}
			The status of the connection-destination jobnet is Running + Warning.	Running + Warning ^{#16}
			The connection-destination jobnet contains a unit that has ended abnormally.	Running + Abend ^{#16}
Running + Abend			None	Running + Abend ^{#16}
End status			None	No change

#1

If the preceding unit is handled as an abnormal end, the status is *Not executed* + *Ended*.

#2

If the hot start is performed after the jobnet timeout period expires, the status is *Skipped so not exe.*

#3

If the hot start is performed within the jobnet timeout period but later than the scheduled start time, the status is *Now running*.

However, if the jobnet execution order control method is "Synchro" in the execution order control for a root jobnet between different scheduler services, until the scheduler service that has the jobnet connector starts, a communication error occurs and the status becomes *Ended abnormally*. For details, see 2.2.4 *Using jobnet connectors to control the order of root jobnet execution* in the *JP1/Automatic Job Management System 3 System Design (Work Tasks) Guide*.

#4

If the jobnet contains a unit that is handled as an abnormal end, the status is *Running + Abend* or *Ended abnormally*.

If the jobnet does not contain a unit that is handled as an abnormal end, but contains a unit whose status is *Running + Warning* or *Ended with warning*, the status is *Running + Warning* or *Ended with warning*.

#5

If the jobnet contains a unit that is handled as an abnormal end, the status is *Running + Abend* or *Ended abnormally*.

#6

If the JP1/AJS3 service or scheduler service is forcibly terminated before an event job and a custom event job in start conditions are placed in the *Now running* status on an agent, the status of the root jobnet is *Monitor terminated*. All nested jobnets and jobs that are subordinate to the root jobnet enter the *Not executed + Ended* status.

#7

If the JP1/AJS3 databases use the standard configuration, the jobs queued by job execution control and those in *Waiting to execute* status are canceled and returned to *Wait for prev. to end* status. These jobs, now in *Wait for prev. to end* status, are submitted and queued again by job execution control. Note, however, that if the previous unit ended abnormally, the jobs are not resubmitted, but are placed in *Not executed + Ended* status. For details, see 6.4 *Resubmitting jobs when a JP1/AJS3 service is restarted*.

#8

Jobs and jobnets can have the following end statuses:

- *Ended normally*
- *Ended with warning*
- *Ended abnormally*
- *Killed*
- *Failed to start*

#9

This condition might occur if the number of days for saving job information is set to 0. The job information necessary for managing the job status might have been deleted because the job information retention period (default: 10 minutes) expired before the JP1/AJS3 service was restarted.

If you set 0 for the number of days for saving job information, estimate the time required for the JP1/AJS3 service to start after it has stopped, and then specify a job information retention period greater than the estimated value.

If an estimate is impossible, specify 1 or a greater value for the number of days for saving job information. For details about the number of days for saving job information, see 20.5 *Setting up the job execution environment* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#10

You need to create a status file for use with queueless jobs beforehand. If there is no status file, the job status is *Unknown end status*.

#11

If a failover occurs due to a system failure or if the option to continue execution of active event jobs is enabled, the status is *Now running*.

#12

If a root jobnet is placed in the *Skipped so not exe.* status, all nested jobnets and remote jobnets subordinate to the root jobnet enter the *Skipped so not exe.* status, and all jobs enter the *Not executed + Ended* status.

However, an event job and a custom event job that does not use start conditions and is defined in a start condition whose status is *Not sched. to exe.* enters the *Bypassed* status when the root jobnet is placed in the *Skipped so not exe.* status.

#13

If the JP1/AJS3 service or scheduler service is stopped in restricted termination, a root jobnet in the *Now monitoring* status enters the *Interrupted monitoring* status. When the root jobnet is started by hot start, its status changes from *Interrupted monitoring* to *Now monitoring*.

An event job and a custom event job that is defined in a start condition and placed in the *Now running* status enters the *Interrupted monitoring* status. When the event job and the custom event job is started by hot start, its status changes from *Interrupted monitoring* to *Now running*.

A nested jobnet or job that is defined in the jobnet and placed in the *Wait for prev. to end* or *Not sched. to exe.* status enters the *Not executed + Ended* status. When the jobnet or job is started by hot start, its status changes from *Not executed + Ended* to *Wait for prev. to end* or *Not sched. to exe.*

#14

Judgement jobs and OR jobs are units that are not placed in the *Waiting to execute*, *Now queuing*, or *Now running* status.

#15

An execution generation for which no start conditions are met and that is placed in the *Wait for start cond.* status is deleted when monitoring stops.

#16

In the case of execution order control for a root jobnet between different scheduler services, until the scheduler service that has the connection-destination jobnet starts, a communication error occurs and the status becomes *Ended abnormally*. For details, see 2.2.4 *Using jobnet connectors to control the order of root jobnet execution* in the *JP1/Automatic Job Management System 3 System Design (Work Tasks) Guide*.

■ Statuses of jobnets and jobs when a warm-start is performed

The following table shows the statuses of jobnets and jobs when the JP1/AJS3 service on the manager host is warm-started.

Table 6–4: Jobnet and job statuses when a warm-start is performed (-warm)

Unit	Status before JP1/AJS3 stops	Condition	Status after JP1/AJS3 starts
Jobnet	Wait for prev. to end	The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Wait for prev. to end ^{#10}
		The root jobnet is in <i>Now running</i> status. ^{#1}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Wait for prev. to end ^{#13}
		The root jobnet is in <i>Now monitoring</i> status. ^{#14}	Wait for prev. to end ^{#6, #11}
	Not sched. to exe. (root job)	None	Not sched. to exe.
	Not sched. to exe. (nested job)	The root jobnet is in <i>Not sched. to exe.</i> status.	Not sched. to exe.

Unit	Status before JP1/AJS3 stops	Condition	Status after JP1/AJS3 starts
Jobnet	Not sched. to exe. (nested job)	The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Not sched. to exe. ^{#10}
		The root jobnet is in <i>Now running</i> status. ^{#1}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Not sched. to exe. ^{#13}
		The root jobnet is in <i>Now monitoring</i> status. ^{#14}	Not sched. to exe. ^{#6, #11}
	Wait for start time (root job)	None	Wait for start time ^{#2, #3}
	Wait for start time (nested job)	None	Not executed + Ended
	Being held (root job)	None	Being held ^{#2, #4}
	Being held (nested job)	None	Not executed + Ended
	Now running	None	Interrupted ^{#5}
	Running + Warning	None	Interrupted ^{#5}
	Running + Abend	None	Interrupted ^{#5}
	Wait for start cond.	None	Wait for start cond. ^{#13}
	Now monitoring	None	Now monitoring ^{#6, #11}
	End status	None	No change
Remote jobnet	Wait for prev. to end	The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Wait for prev. to end ^{#10}
		The root jobnet is in <i>Now running</i> status. ^{#1}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Wait for prev. to end ^{#13}
		The root jobnet is in <i>Now monitoring</i> status. ^{#14}	Wait for prev. to end ^{#6, #11}
	Not sched. to exe. (root job)	None	Not sched. to exe.
	Not sched. to exe. (nested job)	The root jobnet is in <i>Not sched. to exe.</i> status.	Not sched. to exe.
		The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Not sched. to exe. ^{#10}
		The root jobnet is in <i>Now running</i> status. ^{#1}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Not sched. to exe. ^{#13}
		The root jobnet is in <i>Now monitoring</i> status. ^{#14}	Not sched. to exe. ^{#6, #11}

Unit	Status before JP1/AJS3 stops	Condition	Status after JP1/AJS3 starts
Remote jobnet	Wait for start time (root job)	None	Wait for start time ^{#2, #3}
	Wait for start time (nested job)	None	Not executed + Ended
	Being held (root job)	None	Being held ^{#2, #4}
	Being held (nested job)	None	Not executed + Ended
	Now running (root job)	None	Interrupted
	Now running (nested job)	None	Interrupted
	End status	None	No change
Job (Unix job, PC job, flexible job, HTTP connection job, action job, custom job, passing information setting job)	Wait for prev. to end	The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Wait for prev. to end ^{#10}
		The root jobnet is in <i>Now running</i> status. ^{#1}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Wait for prev. to end ^{#13}
		The root jobnet is in <i>Now monitoring</i> status. ^{#14}	Wait for prev. to end ^{#6, #11}
	Not sched. to exe.	The root jobnet is in <i>Not sched. to exe.</i> status.	Not sched. to exe.
		The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Not sched. to exe. ^{#10}
		The root jobnet is in <i>Now running</i> status. ^{#1}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Not sched. to exe. ^{#13}
		The root jobnet is in <i>Now monitoring</i> status. ^{#14}	Not sched. to exe. ^{#6, #11}
	Being held	None	Not executed + Ended
	Waiting to execute	- The JP1/AJS3 service stops before the job is queued. - The job is being queued.	Not executed + Ended
		The job ends.	End status ^{#7}
		- The job is running. - When the JP1/AJS3 service is restarted, the job status cannot be acquired due to insufficient memory or a communication error.	Unknown end status
	Now queuing	The job is being queued.	Not executed + Ended
		The job ends.	End status ^{#7}
		The job is running.	Unknown end status
	Now running	The job ends.	End status ^{#7}

Unit	Status before JP1/AJS3 stops	Condition	Status after JP1/AJS3 starts
Job (Unix job, PC job, flexible job, HTTP connection job, action job, custom job, passing information setting job)	Now running	The job is running.	Unknown end status
	End status	None	No change
Judgment job, OR job ^{#12}	Wait for prev. to end	The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Wait for prev. to end ^{#10}
		The root jobnet is in <i>Now running</i> status. ^{#1}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Wait for prev. to end ^{#13}
		The root jobnet is in <i>Now monitoring</i> status. ^{#14}	Wait for prev. to end ^{#6, #11}
	Not sched. to exe.	The root jobnet is in <i>Not sched. to exe.</i> status.	Not sched. to exe.
		The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Not sched. to exe. ^{#10}
		The root jobnet is in <i>Now running</i> status. ^{#1}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Not sched. to exe. ^{#13}
		The root jobnet is in <i>Now monitoring</i> status. ^{#14}	Not sched. to exe. ^{#6, #11}
	Being held	None	Not executed + Ended
	End status	None	No change
QUEUE job	Wait for prev. to end	The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Wait for prev. to end ^{#10}
		The root jobnet is in <i>Now running</i> status. ^{#1}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Wait for prev. to end ^{#13}
		The root jobnet is in <i>Now monitoring</i> status. ^{#14}	Wait for prev. to end ^{#6, #11}
	Not sched. to exe.	The root jobnet is in <i>Not sched. to exe.</i> status.	Not sched. to exe.
		The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Not sched. to exe. ^{#10}
		The root jobnet is in <i>Now running</i> status. ^{#1}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Not sched. to exe. ^{#13}
		The root jobnet is in <i>Now monitoring</i> status. ^{#14}	Not sched. to exe. ^{#6, #11}
	Being held	None	Not executed + Ended

Unit	Status before JP1/AJS3 stops	Condition	Status after JP1/AJS3 starts
QUEUE job	Waiting to execute	The job is being queued.	Not executed + Ended
		The job ends.	End status ^{#7}
		- The JP1/AJS3 service stops before the job is queued. - The job is running. - An attempt to acquire the job status fails. - When the JP1/AJS3 service is restarted, the job status cannot be acquired due to insufficient memory or a communication error. - The job information has already been deleted because the number of days for saving job information expired.^{#8}	Unknown end status
	Now queuing	The job is being queued.	Not executed + Ended
		The job ends.	End status ^{#7}
		- The job is running. - The job information has already been deleted because the number of days for saving job information expired.^{#8}	Unknown end status
	Now running	The job ends.	End status ^{#7}
		- The job is running. - The job information has already been deleted because the number of days for saving job information expired.^{#8}	Unknown end status
	End status	None	No change
Queueless job	Wait for prev. to end	The root jobnet is in <i>Wait for start time or Being held</i> status.	Wait for prev. to end ^{#10}
		The root jobnet is in <i>Now running</i> status. ^{#1}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Wait for prev. to end ^{#13}
		The root jobnet is in <i>Now monitoring</i> status. ^{#14}	Wait for prev. to end ^{#6, #11}
	Not sched. to exe.	The root jobnet is in <i>Not sched. to exe.</i> status.	Not sched. to exe.
		The root jobnet is in <i>Wait for start time or Being held</i> status.	Not sched. to exe. ^{#10}
		The root jobnet is in <i>Now running</i> status. ^{#1}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Not sched. to exe. ^{#13}
		The root jobnet is in <i>Now monitoring</i> status. ^{#14}	Not sched. to exe. ^{#6, #11}

Unit		Status before JP1/AJS3 stops	Condition	Status after JP1/AJS3 starts	
Queueless job		Being held	None	Not executed + Ended	
		Waiting to execute	The queueless job ends.	End status ^{#7, #9}	
			The job is waiting for another queueless job to end because the maximum number of concurrently executable jobs set for the queueless agent service has been exceeded.	Unknown end status	
			The JP1/AJS3 service was stopped before the job was sent to the agent.	Not executed + Ended	
		Now running	The queueless job ends.	End status ^{#7, #9}	
			- The queueless job is running. - When the JP1/AJS3 service is restarted, the job status cannot be acquired due to insufficient memory or a communication error. - Queueless job functionality is disabled when the JP1/AJS3 service restarts.	Unknown end status	
		End status	None	No change	
Event job, custom event job	In a jobnet	Wait for prev. to end	The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Wait for prev. to end ^{#10}	
			The root jobnet is in <i>Now running</i> status. ^{#1}	Not executed + Ended	
			The root jobnet is in <i>Wait for start cond.</i> status.	Wait for prev. to end ^{#13}	
			The root jobnet is in <i>Now monitoring</i> status. ^{#14}	Wait for prev. to end ^{#6, #11}	
		Not sched. to exe.	The root jobnet is in <i>Not sched. to exe.</i> status.	Not sched. to exe.	
			The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Not sched. to exe. ^{#10}	
			The root jobnet is in <i>Now running</i> status. ^{#1}	Not executed + Ended	
			The root jobnet is in <i>Wait for start cond.</i> status.	Not sched. to exe. ^{#13}	
			The root jobnet is in <i>Now monitoring</i> status. ^{#14}	Not sched. to exe. ^{#6, #11}	
		Being held	None	Not executed + Ended	
		Now queuing	None	Unknown end status	
		Now running	None	Unknown end status	
		End status	None	No change	
		In start conditions	Wait for prev. to end	None	Wait for prev. to end ^{#6, #10, #11, #13}

Unit		Status before JP1/ AJS3 stops	Condition	Status after JP1/ AJS3 starts
Event job, custom event job	In start conditions	Not sched. to exe.	None	Not sched. to exe. ^{#10}
		Now queuing	None	Now queuing ^{#11, #13}
		Now running	The event job and the custom event job is running.	Now running ^{#11, #13}
			The event job and the custom event job ends.	End status ^{#7}
		End status	None	No change
Jobnet connector		Wait for prev. to end	The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Wait for prev. to end ^{#10}
			The root jobnet is in <i>Now running</i> status. ^{#1}	Not executed + Ended
		Not sched. to exe.	The root jobnet is in <i>Not sched. to exe.</i> status.	Not sched. to exe.
			The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Not sched. to exe. ^{#10}
			The root jobnet is in <i>Now running</i> status. ^{#1}	Not executed + Ended
		Now running	None	Unknown end status
		Running + Warning	None	Unknown end status
		Running + Abend	None	Unknown end status
		End status	None	No change

#1

Jobs and jobnets can have the following running statuses:

- *Now running*
- *Running + Warning*
- *Running + Abend*

#2

In any of the following cases, the jobnet is placed in *Skipped so not exe.* status.

- `plan` is specified in the `OVERSCHEDULE` environment settings parameter for the scheduler service, and the jobnet is scheduled to be executed on that day.
- `skip` is specified as the `OVERSCHEDULE` environment settings parameter for the scheduler service, and the jobnet is scheduled to be executed before the scheduler service starts.
- When registering the jobnet for execution in the Register for Execution dialog box, **Execute from next time** is selected for **Planned time passed when daemon starts**, and the jobnet is scheduled to be executed before the scheduler service starts.
- The scheduler service is started after the timeout period for the jobnet expired.

For details about the `OVERSCHEDULE` environment setting parameter, see 20.4.2(72) *OVERSCHEDULE* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#3

If the warm start was performed later than the scheduled start time and the condition in #2 above does not apply, the jobnet status is *Now running*.

#4

To recalculate the schedule, the jobnet status changes to *Wait for start time* and then *Being held*.

#5

If the status of a job in the jobnet was *Waiting to execute*, *Now queuing* or *Now running* before the service stopped, its status changes to *Interrupted* after the execution results of all jobs are checked and status of the jobs changes to an end status.

#6

If the JP1/AJS3 service or scheduler service is forcibly terminated before an event job and a custom event job in start conditions are placed in the *Now running* status on an agent, the status of the root jobnet is *Monitor terminated*. All nested jobnets and jobs that are subordinate to the root jobnet enter the *Not executed + Ended* status.

#7

Jobs and jobnets can have the following end statuses:

- *Ended normally*
- *Ended with warning*
- *Ended abnormally*
- *Killed*
- *Failed to start*

#8

This condition might occur if the number of days for saving job information is set to 0. The job information necessary for managing the job status might have been deleted because the job information retention period (default: 10 minutes) expired before the JP1/AJS3 service was restarted.

If you set 0 for the number of days for saving job information, estimate the time required for the JP1/AJS3 service to start after it has stopped, and then specify a job information retention period greater than the estimated value.

If an estimate is impossible, specify 1 or a greater value for the number of days for saving job information. For details about the number of days for saving job information, see *20.5 Setting up the job execution environment* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#9

You need to create a status file for use with queueless jobs beforehand. If there is no status file, the job status is *Unknown end status*.

#10

If a root jobnet is placed in the *Skipped so not exe.* status, all nested jobnets and remote jobnets subordinate to the root jobnet enter the *Skipped so not exe.* status, and all jobs enter the *Not executed + Ended* status.

However, an event job and a custom event job that does not use start conditions and is defined in a start condition whose status is *Not sched. to exe.* enters the *Bypassed* status when the root jobnet is placed in the *Skipped so not exe.* status.

#11

If the JP1/AJS3 service or scheduler service is stopped in restricted termination, a root jobnet in the *Now monitoring* status enters the *Interrupted monitoring* status. When the root jobnet is started by warm start, its status changes from *Interrupted monitoring* to *Now monitoring*.

An event job and a custom event job that is defined in a start condition and placed in the *Now running* status enters the *Interrupted monitoring* status. When the event job and the custom event job is started by warm start, its status changes from *Interrupted monitoring* to *Now running*.

A nested jobnet or job that is defined in the jobnet and placed in the *Wait for prev. to end* or *Not sched. to exe.* status enters the *Not executed + Ended* status. When the jobnet or job is started by warm start, its status changes from *Not executed + Ended* to *Wait for prev. to end* or *Not sched. to exe.*

#12

Judgement jobs and OR jobs are units that are not placed in the *Waiting to execute*, *Now queuing*, or *Now running* status.

#13

An execution generation for which no start conditions are met and that is placed in the *Wait for start cond.* status is deleted when monitoring stops.

#14

A monitoring generation controls the monitoring of event occurrence. Therefore, nested jobnets and jobs that are defined in the monitoring generation of a jobnet are not run. For details, see 3.4.2 *Monitoring generation and execution generation* in the manual *JP1/Automatic Job Management System 3 Overview*.

■ Statuses of jobnets and jobs when a cold-start is performed

If you cold-start (`-cold`) a JP1/AJS3 service on the manager host, the status of all registered jobnets changes to *Not registered*, and the JP1/AJS3 service is started with all the previous execution results for jobnets and jobs deleted.

■ Statuses of jobnets and jobs when a start in disaster-recovery mode is performed

The following table describes the statuses of jobnets and jobs when a JP1/AJS3 service on the manager host is started in disaster-recovery mode (`-disaster`).

Table 6–5: Jobnet and job statuses when a start in disaster-recovery mode (`-disaster`) is performed

Unit	Status before JP1/AJS3 - Manager operation is switched to the remote site	Condition	Status after JP1/ AJS3 - Manager operation is switched to the remote site
Jobnet	Wait for prev. to end	The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Wait for prev. to end ^{#4}
		The root jobnet is in <i>Now running</i> status. ^{#5}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Wait for prev. to end ^{#8}
		The root jobnet is in <i>Now monitoring</i> status. ^{#9}	Not executed + Ended ^{#6}
	Not sched. to exe. (root job)	None	Not sched. to exe.
	Not sched. to exe. (nested job)	The root jobnet is in <i>Not sched. to exe.</i> status.	Not sched. to exe.
		The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Not sched. to exe. ^{#4}
		The root jobnet is in <i>Now running</i> status. ^{#5}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Not sched. to exe. ^{#8}
		The root jobnet is in <i>Now monitoring</i> status. ^{#9}	Not executed + Ended ^{#6}

Unit	Status before JP1/AJS3 - Manager operation is switched to the remote site	Condition	Status after JP1/ AJS3 - Manager operation is switched to the remote site
Jobnet	Wait for start time (root job)	None	Wait for start time ^{#1, #2}
	Wait for start time (nested job)	None	Not executed + Ended
	Being held (root job)	None	Being held ^{#1, #3}
	Being held (nested job)	None	Not executed + Ended
	Now running	None	Interrupted
	Running + Warning	None	Interrupted
	Running + Abend	None	Interrupted
	Wait for start cond.	None	Wait for start cond. ^{#8}
	Now monitoring	None	Monitor terminated ^{#6}
	End status	None	No change
Remote jobnet	Wait for prev. to end	The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Wait for prev. to end ^{#4}
		The root jobnet is in <i>Now running</i> status. ^{#5}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Wait for prev. to end ^{#8}
		The root jobnet is in <i>Now monitoring</i> status. ^{#9}	Not executed + Ended ^{#6}
	Not sched. to exe. (root job)	None	Not sched. to exe.
	Not sched. to exe. (nested job)	The root jobnet is in <i>Not sched. to exe.</i> status.	Not sched. to exe.
		The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Not sched. to exe. ^{#4}
		The root jobnet is in <i>Now running</i> status. ^{#5}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Not sched. to exe. ^{#8}
		The root jobnet is in <i>Now monitoring</i> status. ^{#9}	Not executed + Ended ^{#6}
	Wait for start time (root job)	None	Wait for start time ^{#1, #2}
	Wait for start time (nested job)	None	Not executed + Ended
	Being held (root job)	None	Being held ^{#1, #3}
	Being held (nested job)	None	Not executed + Ended
	Now running (root job)	None	Interrupted
	Now running (nested job)	None	Interrupted
	End status	None	No change

Unit	Status before JP1/AJS3 - Manager operation is switched to the remote site	Condition	Status after JP1/ AJS3 - Manager operation is switched to the remote site
Job (standard job, HTTP connection job action job, custom job, passing information setting job)	Wait for prev. to end	The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Wait for prev. to end ^{#4}
		The root jobnet is in <i>Now running</i> status. ^{#5}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Wait for prev. to end ^{#8}
		The root jobnet is in <i>Now monitoring</i> status. ^{#9}	Not executed + Ended ^{#6}
	Not sched. to exe.	The root jobnet is in <i>Not sched. to exe.</i> status.	Not sched. to exe.
		The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Not sched. to exe. ^{#4}
		The root jobnet is in <i>Now running</i> status. ^{#5}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Not sched. to exe. ^{#8}
		The root jobnet is in <i>Now monitoring</i> status. ^{#9}	Not executed + Ended ^{#6}
	Being held	None	Not executed + Ended
	Waiting to execute	None	Unknown end status
	Now queuing	None	Unknown end status
	Now running	None	Unknown end status
	End status	None	No change
Judgment job, OR job ^{#7}	Wait for prev. to end	The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Wait for prev. to end ^{#4}
		The root jobnet is in <i>Now running</i> status. ^{#5}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Wait for prev. to end ^{#8}
		The root jobnet is in <i>Now monitoring</i> status. ^{#9}	Not executed + Ended ^{#6}
	Not sched. to exe.	The root jobnet is in <i>Not sched. to exe.</i> status.	Not sched. to exe.
		The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Not sched. to exe. ^{#4}
		The root jobnet is in <i>Now running</i> status. ^{#5}	Not executed + Ended
		The root jobnet is in <i>Wait for start cond.</i> status.	Not sched. to exe. ^{#8}
		The root jobnet is in <i>Now monitoring</i> status. ^{#9}	Not executed + Ended ^{#6}

Unit		Status before JP1/AJS3 - Manager operation is switched to the remote site	Condition	Status after JP1/ AJS3 - Manager operation is switched to the remote site
Judgment job, OR job ^{#7}		Being held	None	Not executed + Ended
		End status	None	No change
Queueless job		Wait for prev. to end	The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Wait for prev. to end ^{#4}
			The root jobnet is in <i>Now running</i> status. ^{#5}	Not executed + Ended
			The root jobnet is in <i>Wait for start cond.</i> status.	Wait for prev. to end ^{#8}
			The root jobnet is in <i>Now monitoring</i> status. ^{#9}	Not executed + Ended ^{#6}
	Not sched. to exe.		The root jobnet is in <i>Not sched. to exe.</i> status.	Not sched. to exe.
			The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Not sched. to exe. ^{#4}
			The root jobnet is in <i>Now running</i> status. ^{#5}	Not executed + Ended
			The root jobnet is in <i>Wait for start cond.</i> status.	Not sched. to exe. ^{#8}
			The root jobnet is in <i>Now monitoring</i> status. ^{#9}	Not executed + Ended ^{#6}
	Being held		None	Not executed + Ended
			None	Unknown end status
			None	Unknown end status
			None	No change
Event job, custom event job	In a jobnet	Wait for prev. to end	The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Wait for prev. to end ^{#4}
			The root jobnet is in <i>Now running</i> status. ^{#5}	Not executed + Ended
			The root jobnet is in <i>Wait for start cond.</i> status.	Wait for prev. to end ^{#8}
			The root jobnet is in <i>Now monitoring</i> status. ^{#9}	Not executed + Ended ^{#6}
		Not sched. to exe.	The root jobnet is in <i>Not sched. to exe.</i> status.	Not sched. to exe.
			The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Not sched. to exe. ^{#4}
			The root jobnet is in <i>Now running</i> status. ^{#5}	Not executed + Ended
			The root jobnet is in <i>Wait for start cond.</i> status.	Not sched. to exe. ^{#8}

Unit		Status before JP1/AJS3 - Manager operation is switched to the remote site	Condition	Status after JP1/ AJS3 - Manager operation is switched to the remote site
Event job, custom event job	In a jobnet	Not sched. to exe.	The root jobnet is in <i>Now monitoring</i> status. ^{#9}	Not executed + Ended ^{#6}
		Being held	None	Not executed + Ended
		Now queuing	None	Unknown end status
		Now running	None	Unknown end status
		End status	None	No change
	In start conditions	Wait for prev. to end	The root jobnet is in the <i>Wait for start time</i> or <i>Being held</i> status and uses start conditions.	Wait for prev. to end ^{#4}
			The root jobnet is in <i>Wait for start cond.</i> status.	Wait for prev. to end ^{#8}
			The root jobnet is in <i>Now monitoring</i> status.	Not executed + Ended ^{#6}
		Not sched. to exe.	The root jobnet is in <i>Not sched. to exe.</i> status.	Not sched. to exe.
			The root jobnet is in the <i>Wait for start time</i> or <i>Being held</i> status and does not use start conditions.	Not sched. to exe. ^{#4}
		Now queuing	The root jobnet is in <i>Wait for start cond.</i> status.	Now queuing ^{#8}
			The root jobnet is in <i>Now monitoring</i> status.	Unknown end status ^{#6}
		Now running	The root jobnet is in <i>Wait for start cond.</i> status.	Now running ^{#8}
			The root jobnet is in <i>Now monitoring</i> status.	Unknown end status ^{#6}
	End status	None	No change	
Jobnet connector		Wait for prev. to end	The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Wait for prev. to end ^{#4}
			The root jobnet is in <i>Now running</i> status. ^{#5}	Not executed + Ended
		Not sched. to exe.	The root jobnet is in <i>Not sched. to exe.</i> status.	Not sched. to exe.
			The root jobnet is in <i>Wait for start time</i> or <i>Being held</i> status.	Not sched. to exe. ^{#4}
			The root jobnet is in <i>Now running</i> status. ^{#5}	Not executed + Ended
		Now running	None	Unknown end status
		Running + Warning	None	Unknown end status
		Running + Abend	None	Unknown end status
End status	None	No change		

#1

The next execution schedule is placed in the *Skipped so not exe.* status if one of the following conditions applies:

- `plan` is specified in the `OVERSCHEDULE` environment settings parameter for the scheduler service, and the jobnet is scheduled to be executed on that day.
- `skip` is specified in the `OVERSCHEDULE` environment settings parameter for the scheduler service, and the jobnet is scheduled to be executed before the scheduler service starts.
- When registering the jobnet for execution in the Register for Execution dialog box, **Execute from next time** is selected for **Planned time passed when daemon starts**, and the jobnet is scheduled to be executed before the scheduler service starts.
- The scheduler service started after the timeout period for the jobnet expired.

For details about the `OVERSCHEDULE` environment setting parameter, see 20.4.2(72) *OVERSCHEDULE* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#2

If the scheduler service started in disaster-recovery mode after the scheduled start time of the jobnet, and if the cases described in #1 do not apply, execution of a jobnet or job is suppressed. The jobnet will not be executed even if the scheduled start time is reached, until the suppression of execution for a jobnet or job is canceled.

#3

Because the next execution schedule is recalculated, it first enters the *Wait for start time* status. The status changes to *Being held* when suppression of job execution is canceled.

#4

If a root jobnet is placed in the *Skipped so not exe.* status, all nested jobnets and remote jobnets subordinate to the root jobnet enter the *Skipped so not exe.* status, and all jobs enter the *Not executed + Ended* status.

However, an event job and a custom event job that does not use start conditions and is defined in a start condition whose status is *Not sched. to exe.* enters the *Bypassed* status when the root jobnet is placed in the *Skipped so not exe.* status.

#5

Jobs and jobnets can have the following running statuses:

- *Now running*
- *Running + Warning*
- *Running + Abend*

#6

If the JP1/AJS3 service or scheduler service is stopped in restricted termination, a root jobnet in the *Now monitoring* status enters the *Interrupted monitoring* status. When the root jobnet is started by disaster recovery start so that suppression of job execution is canceled, its status changes from *Interrupted monitoring* to *Now monitoring*.

An event job and a custom event job that is defined in a start condition and placed in the *Now running* status enters the *Interrupted monitoring* status. When the event job and the custom event job is started by disaster recovery start so that suppression of job execution is canceled, its status changes from *Interrupted monitoring* to *Now running*.

A nested jobnet or job that is defined in the jobnet and placed in the *Wait for prev. to end* or *Not sched. to exe.* status enters the *Not executed + Ended* status. When the jobnet or job is started by disaster recovery start, its status changes from *Not executed + Ended* to *Wait for prev. to end* or *Not sched. to exe.*

#7

Judgement jobs and OR jobs are units that are not placed in the *Waiting to execute*, *Now queuing*, or *Now running* status.

#8

An execution generation for which no start conditions are met and that is placed in the *Wait for start cond.* status is deleted when monitoring stops.

#9

A monitoring generation controls the monitoring of event occurrence. Therefore, nested jobnets and jobs that are defined in the monitoring generation of a jobnet are not run. For details, see 3.4.2 *Monitoring generation and execution generation* in the manual *JP1/Automatic Job Management System 3 Overview*.

■ Statuses of jobnets and jobs when the start mode is not specified

If you do not specify the start mode for the JP1/AJS3 service on the manager host, the JP1/AJS3 service will be started in the service start mode specified during setup. If a service mode is not specified during setup, operation is the same as when a warm start is specified.

■ Statuses of jobnets and jobs when an event reset occurs

For details about the statuses of jobnets and jobs when an event reset occurs, see *jpomanevreset* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

(b) Statuses when a JP1/AJS3 service on the agent host is restarted

The status of the jobs on the agent host when the JP1/AJS3 service on the agent host is restarted differs depending on the start mode and job type.

Note that if a start mode is not specified for the JP1/AJS3 service on the agent host, operation is the same as when a warm start is specified.

The following table describes how the job status differs according to the start mode for each job type.

Table 6–6: JP1/AJS3 start modes and the statuses of jobs on the agent host

Start mode	PC job, Unix job, HTTP connection job, flexible job, and QUEUE job	Event job and custom event job	Event job and custom event job specified in the start conditions
Warm start	When the status of a job cannot be reported to the manager host, the status of the job on the manager host changes to <i>Killed</i> . However, if you use the <code>-rs</code> option in the <code>jpqjobsub</code> command to specify the job recovery status, the specified job status is set.	The job finishes monitoring (the status of the job on the manager host changes to <i>Ended abnormally</i>). However, if either of the following conditions exists, the status appropriate for the condition is set: - If the option to continue execution of active event jobs is enabled: The status shown in Table 6-8 is set. For details about this option, see 8.2.1 Continuing the execution of event jobs and custom event jobs if the JP1/AJS3 service stops. - If either the scheduler service or a JP1/AJS3 service on the manager host has stopped: The status is set that is described in (a) Statuses when a JP1/AJS3 service on the manager host is restarted.	Of the event information detected by the agent host before JP1/AJS3 stopped, the event information that could not be reported to the manager host is reported to the manager host after the agent host is started (the status of the job on the manager host remains <i>Now monitoring</i> , and the job is executed when the agent host is restarted).
Hot start			
Cold start			The job is executed when the agent host is restarted. Of the event information detected by the agent host before JP1/AJS3 stopped, the event information that could not be reported to the manager host is discarded (the status of the job on the manager host remains <i>Now monitoring</i>).

(4) Job statuses on the manager host when an agent host is restarted

When you restart a JP1/AJS3 service on the agent host in a manager and agent system configuration, the statuses of jobs on the manager host differ in the following cases:

- When a stopped agent host is restarted
- When an agent host that stopped due to a system failure is restarted

[Table 6-7](#) describes the statuses of jobs on the manager host when a stopped agent host is restarted. [Table 6-8](#) describes the statuses of jobs on the manager host when an agent host that stopped due to a system failure is restarted.

Table 6–7: Statuses of jobs on the manager host when a stopped agent host is restarted

Unit type		Status before the agent host stops	Status after the agent host stops
Job ^{#1}		Wait for prev. to end	Wait for prev. to end
		Being held	Being held
		Now queuing	Now queuing ^{#2}
		Now running	Killed ^{#3}
		Other status	No change
Queueless job		Wait for prev. to end	Not executed + Ended ^{#4}
		Being held	Being held ^{#4}
		Waiting to execute	Unknown end status ^{#4}
		Now running	Unknown end status ^{#4}
		Other status	No change
Event job, custom event job	In a jobnet	Wait for prev. to end	Wait for prev. to end
		Being held	Being held
		Now queuing	Now queuing
		Now running	Ended abnormally ^{#5}
		Other status	No change
	In start conditions	Wait for prev. to end	Wait for prev. to end
		Now queuing	Now queuing
		Now running	Now running
		Other status	No change

#1

A *job* as used here is a standard job, HTTP connection job, action job, or custom job.

#2

If the agent host accepts a job execution request during shutdown processing, an attempt to start the job process might fail, in which case the job status changes to *Failed to start*. If the agent host stops before it sends a response to the job execution request from the manager host, the job execution request results in a timeout error. When the manager host then polls to check the status, the job status changes to *Killed*.

#3

For details about operation when a job is killed, see *4.5.10 Killing a job or jobnet* in the manual *JP1/Automatic Job Management System 3 Overview*.

#4

After the agent host has started, some time might be required for the status to change.

#5

If either of the following conditions exists, the status appropriate for the condition is set.

- If the option to continue execution of active event jobs is enabled, the status is *Now running*.
- If either the scheduler service or a JP1/AJS3 service on the manager host has stopped:

The status is set that is described in *(3)(a) Statuses when a JP1/AJS3 service on the manager host is restarted*.

Table 6–8: Statuses of jobs on the manager host when an agent host that stopped due to a system failure is restarted

Unit type		Status before the agent host stops	Status after the agent host stops
Job ^{#1}		Wait for prev. to end	Wait for prev. to end
		Being held	Being held
		Now queuing	Now queuing
		Now running	Killed
		Other status	No change
Queueless job		Wait for prev. to end	Not executed + Ended ^{#2}
		Being held	Being held ^{#2}
		Waiting to execute	Unknown end status ^{#2}
		Now running	Unknown end status ^{#2}
		Other status	No change
Event job, custom event job	In a jobnet	Wait for prev. to end	Wait for prev. to end
		Being held	Being held
		Now queuing	Now queuing
		Now running	Now running
		Other status	No change
	In start conditions	Wait for prev. to end	Wait for prev. to end
		Now queuing	Now queuing
		Now running	Now running
		Other status	No change

#1

A *job* as used here is a standard job, HTTP connection job, action job, or custom job.

#2

It may take some time before the status is changed after the agent host has started.

6.2.2 Temporarily changing the end mode of JP1/AJS3

You can change the end mode of JP1/AJS3 - Manager.

To temporarily change the end mode:

1. Execute the `jajs_spmd_stop` command with an argument specified.

The following table lists the options you can specify.

Table 6–9: Options that can be specified in the `jajs_spmd_stop` command

Operand	Operation
<code>-job</code>	The system waits until the currently running job stops, and then terminates JP1/AJS3 - Manager.
<code>-kill</code>	The system kills JP1/AJS3 - Manager.

6.3 Changing the behavior of JP1/AJS3 if a JP1/AJS3 process terminates abnormally

If JP1/AJS3 stops for any reason, it is no longer able to execute jobs, adversely affecting the jobs in a distributed system.

If a process stops because of an error, JP1/AJS3 attempts recovery by automatically restarting the process. If the recovery fails, JP1/AJS3 operates at a reduced level without stopping any processes other than the process that caused the error. For details about automatically restarting a process that has terminated abnormally, see [6.3.1 Restarting an abnormally terminated JP1/AJS3 process](#).

In the reduced-operation mode, only some functions are available, depending on the running processes.

To display the processes in the JP1/AJS3 service, you can use the `jajs_spmd_status` command.

For details about the functions of processes, see *B. List of Processes* in the manual *JP1/Automatic Job Management System 3 Troubleshooting*.

Because processes of the agent service function (job execution, event jobs and custom event jobs) do not stop when a process of the scheduler service management function stops, the execution of jobs, events jobs and custom event jobs requested by other hosts is still able to continue.

You can also use the `jajs_spmd_status` command to check whether the JP1/AJS3 service is currently in a reduced-operation mode.

If you specify the `-HA` option in the `jajs_spmd` command or if an error occurs in the JP1/AJS3 service on a logical host in a cluster configuration, there is no reduced-operation mode. If any one of the processes for the JP1/AJS3 service displayed by executing the `jajs_spmd_status` command stops, the entire JP1/AJS3 service will stop.

To detect abnormal condition without causing JP1/AJS3 on a physical host to run in the reduced-operation mode, specify the `jajs_spmd` command with the `-HA` option specified and start JP1/AJS3. You can also stop the entire JP1/AJS3 service.

In addition to the above operations, as a method for detecting failures and taking appropriate action, JP1/AJS3 provides a function that issues a JP1 event if JP1/AJS3 detects an abnormal process. You can specify this function beforehand to issue a JP1 event if a process terminates abnormally.

When issuance of JP1 events is enabled, you can use JP1/AJS3 with other programs, such as JP1/IM, to automatically notify users when a JP1 event is issued.

For details about the function that issues a JP1 event when an abnormal process is detected, see the subsequent subsections.

6.3.1 Restarting an abnormally terminated JP1/AJS3 process

When JP1/AJS3 starts, multiple processes are generated. You can set up JP1/AJS3 - Manager and JP1/AJS3 - Agent to automatically restart a process that has terminated abnormally for whatever reason.

The restart setting described here applies to JP1/AJS3 that is not operating in a cluster system. If you want to automatically restart processes in a cluster system, use cluster software. For details, see [10.1 Overview of cluster systems](#).

Automatic restarting is set in the extended startup process definition file. We recommend using the default values. In JP1/AJS3, the processes that can be restored by restarts are set by default (in JP1/AJS2, no processes are to be restarted by default). For details about the default values of the restart settings for each process, see [Tables 6-15 to 6-18](#).

To change the settings, edit the extended startup process definition file, and then restart JP1/Base and JP1/AJS3.

The extended startup process definition file is in the following location.

In Windows:

JP1/AJS3-installation-folder\conf

In UNIX:

/etc/opt/jplajs2/conf

Whether abnormally terminated processes are restarted automatically is different depending on the host, physical or logical host. The following describes the difference in the restarting operation:

Physical host:

Automatic restarting is performed according to definitions in the extended startup process definition file.

Logical host:

In Windows:

Automatic restarting is disabled regardless of the setting of the `-HA` option.

In UNIX:

If JP1/AJS3 - Manager has been started by the `jajs_start.cluster` command or the `jajs_spmc` command with the `-HA` option specified, automatic restarting is disabled.

For JP1/AJS3 - Agent, automatic restarting is disabled regardless of the setting of the `-HA` option.

The tables below list the processes applicable to the restart setting. Applicable processes are only the child processes or detailed processes of the JP1/AJS3 - Manager and JP1/AJS3 - Agent services in the table. You cannot specify the restart setting for any process except those listed in [Tables 6-10 to 6-13](#).

In Windows:

Table 6–10: Processes applicable to the restart setting (JP1/AJS3 - Manager)

No.	Child process name or detailed process name	Extended startup process definition file	Process that can be restarted
1	jajs_dbmd.exe	jplajs_service_0700.conf	jajs_dbmd.exe and detailed process [#]
2	ajsdmgrp.exe	jplajs_dbmd_0700.conf	ajsdmgrp.exe
3	jajs_hstd.exe	jplajs_service_0700.conf	jajs_hstd.exe and detailed process [#]
4	ajshlogd.exe	jplajs_hstd_0700.conf	ajshlogd.exe
5	ajsinetd.exe	jplajs_hstd_0700.conf	ajsinetd.exe
6	ajsnwtd.exe	jplajs_hstd_0700.conf	ajsnwtd.exe
7	ajsgtmd.exe	jplajs_hstd_0700.conf	ajsgtmd.exe
8	ajsovstatd.exe	jplajs_hstd_0700.conf	ajsovstatd.exe
9	ajsgwmasterd.exe	jplajs_hstd_0700.conf	ajsgwmasterd.exe
10	ajsqlcltd.exe	jplajs_hstd_0700.conf	ajsqlcltd.exe
11	jpqman.exe	jplajs_hstd_0700.conf	jpqman.exe

No.	Child process name or detailed process name	Extended startup process definition file	Process that can be restarted
12	jpomanager.exe	jplajs_hstd_0700.conf	jpomanager.exe
13	ajscdinstd.exe	jplajs_hstd_0700.conf	ajscdinstd.exe
14	jajs_schd.exe	jplajs_service_0700.conf	jajs_schd.exe and detailed process [#]
15	ajslgd.exe	jplajs_schd_0700.conf	ajslgd.exe
16	jpqman.exe	jplajs_schd_0700.conf	jpqman.exe
17	jpomanager.exe	jplajs_schd_0700.conf	jpomanager.exe
18	ajsmasterd.exe	jplajs_schd_0700.conf	ajsmasterd.exe
19	jajs_agtd.exe	jplajs_service_0700.conf	jajs_agtd.exe and detailed process [#]
20	jpqmon.exe	jplajs_agtd_0700.conf	jpqmon.exe
21	jpoagent.exe	jplajs_agtd_0700.conf	jpoagent.exe
22	ajsgtmond.exe	jplajs_hstd_0700.conf	ajsgtmond.exe

#

For details about JP1/AJS3 detailed processes, see *B. List of Processes* in the manual *JP1/Automatic Job Management System 3 Troubleshooting*.

Table 6–11: Processes applicable to the restart setting (JP1/AJS3 - Agent)

No.	Child process name or detailed process name	Extended startup process definition file	Process that can be restarted
1	ajsqlcltd.exe	jplajs_service_0700.conf	ajsqlcltd.exe
2	jpqmon.exe	jplajs_service_0700.conf	jpqmon.exe
3	jpoagent.exe	jplajs_service_0700.conf	jpoagent.exe

In UNIX:

Table 6–12: Processes applicable to the restart setting (JP1/AJS3 - Manager)

No.	Child process name or detailed process name	Extended startup process definition file	Process that can be restarted
1	jajs_dbmd	jplajs_service_0700.conf	jajs_dbmd and detailed process ^{#1}
2	ajsdbrmgrd	jplajs_dbmd_0700.conf	ajsdbrmgrd
3	jajs_hstd	jplajs_service_0700.conf	jajs_hstd and detailed process ^{#1}
4	ajshlogd	jplajs_hstd_0700.conf	ajshlogd
5	ajsinstd	jplajs_hstd_0700.conf	ajsinstd
6	ajsnstd	jplajs_hstd_0700.conf	ajsnstd
7	ajsgtmd	jplajs_hstd_0700.conf	ajsgtmd
8	ajsovsstd	jplajs_hstd_0700.conf	ajsovsstd
9	ajsgwmasterd	jplajs_hstd_0700.conf	ajsgwmasterd
10	jpqman ^{#2}	jplajs_hstd_0700.conf	jpqman ^{#2}
11	jpomanager	jplajs_hstd_0700.conf	jpomanager

No.	Child process name or detailed process name	Extended startup process definition file	Process that can be restarted
12	ajscdinetd	jplajs_hstd_0700.conf	ajscdinetd
13	jajs_schd	jplajs_service_0700.conf	jajs_schdhstd and detailed process ^{#1}
14	ajslogd	jplajs_schd_0700.conf	ajslogd
15	jpqman	jplajs_schd_0700.conf	jpqman
16	jpomanager	jplajs_schd_0700.conf	jpomanager
17	ajsmasterd	jplajs_schd_0700.conf	ajsmasterd
18	jajs_agtd	jplajs_service_0700.conf	jajs_agtdhstd and detailed process ^{#1}
19	jpqmon	jplajs_agtd_0700.conf	jpqmon
20	jpoagent	jplajs_agtd_0700.conf	jpoagent
21	ajsagtmond	jplajs_hstd_0700.conf	ajsagtmond

#1

For details about JP1/AJS3 detailed processes, see *B. List of Processes* in the manual *JP1/Automatic Job Management System 3 Troubleshooting*.

#2

In the case of HP-UX, AIX, and Linux, the detailed process name is jpqman32.

Table 6–13: Processes applicable to the restart setting (JP1/AJS3 - Agent)

No.	Child process name or detailed process name	Extended startup process definition file	Process that can be restarted
1	jpqmon	jplajs_service_0700.conf	jpqmon
2	jpoagent	jplajs_service_0700.conf	jpoagent

The following shows the definition file format.

In JP1/AJS3 - Manager:

```
process-name | path | startup-option | whether-to-restart | restart-count | retry-interval | retry-count-reset-time |
type | scheduler-flag | start-sequence | auto-start | stop-path | stop-option | status-check-path | status-check-option |
status-check-return-code | status-check-interval |
```

In JP1/AJS3 - Agent:

```
process-name | path | startup-option | whether-to-restart | restart-count | retry-interval | retry-count-reset-time |
```

The definition file contains pre-defined information. You can change the values of the *whether-to-restart*, *restart-count*, *retry-interval*, and *retry-count-reset-time* fields. Do not change any other fields, which are used by the system. You cannot omit the vertical bar (|) that delimits fields. If you want to insert a comment line, begin the line with a hash mark (#). The line up to the linefeed is assumed to be a comment line.

The following table lists the values that can be specified for the variable fields.

Table 6–14: Values that can be specified for the variable fields

Field name	Description
<i>whether-to-restart</i>	Specify whether to restart a process when it has terminated abnormally. Specify 0 if the process is not to be restarted. Specify 1 to restart the process. An appropriate value is set by default.

Field name	Description
<i>restart-count</i>	Specify the number of times a restart of a process is attempted. You can specify a value in the range from 0 to 99. An appropriate value is initially set for each process. Customize this value according to the operating mode. If 0 is set for the <i>whether-to-restart</i> field, the <i>restart-count</i> field is disabled regardless of whether a value is specified.
<i>retry-interval</i>	Specify the interval in seconds at which a process restart is attempted. You can specify a value in the range from 0 to 3,600. An appropriate value is initially set for each process. Customize this value according to the operating mode. If 0 is set for the <i>whether-to-restart</i> field, the <i>retry-interval</i> field is disabled regardless of whether a value is specified.
<i>retry-count-reset-time</i>	Specify the period of time (hours converted to seconds) that can elapse from the time a process is restarted until the time the restart count is reset. When the specified time elapses after the process is started, the retry count is reset. If the process abnormally terminates again, the restart count starts again from 1. If a process is restarted and then abnormally terminates again before the specified time expires, the previous restart count is inherited. You can specify a value in the range from 3,600 and 2,147,483,647 (seconds). An appropriate value is initially set for each process. Customize this value according to the operating mode. If 0 is set for the <i>whether-to-restart</i> field, the <i>retry-count-reset-time</i> field is disabled regardless of whether a value is specified.

Cautionary notes

- If you attempt to start a process without a value specified or with an incorrect value specified, an error occurs and the process will not start.
- When you start a process managed by a logical host in a cluster configuration, if the `conf` folder on the logical host does not contain the extended startup process definition file, the file is copied from the physical host.
- When the `ajsmasterd` child process is restarted, the status of the jobnets and jobs after the scheduler service is restarted depends on the start mode of the JP1/AJS3 service. For details about the status of jobnets and jobs for the service start mode, see [6.2.1\(3\) Jobnet and job statuses for each start mode](#).
- When a process is restarted, the following message might be output to the integrated trace log: KNAD3737-E The JP1/AJS3 *management-target-process-name* terminated abnormally. This might occur when a process is restarted too quickly after it has terminated abnormally. In such cases, the restart operation starts before the complete stop of the abnormally terminated process and the child processes of that process, and a double startup is detected. Because a restart of the process is attempted the specified number of times until the process restarts, there is no problem if the KNAD3737-E error message is output. However, you can suppress output of this message by increasing the retry interval in the extended startup process definition file. The possibility of this problem occurring increases on low-performance computers. If necessary, customize the retry interval.
Note that increasing the retry interval might increase the time required for restarting the JP1/AJS3 service. Therefore, do not specify too large a value for the retry count. The recommended value is 10 seconds.
- If JP1/AJS3 child processes restart, their detailed processes also restart. As a result, the restart counts of the detailed processes are reset.

The following tables describe the default values of the restart settings.

In Windows:

Table 6–15: Default values of the restart settings (JP1/AJS3 - Manager)

No.	Child process name or detailed process name	whether-to-restart	restart-count	retry-interval	retry-count-reset-time
1	jajs_dbmd.exe	Yes	3	3	21600
2	ajsdbrmgrd.exe	No	3	3	21600
3	jajs_hstd.exe	Yes	3	20	21600
4	ajshlogd.exe	Yes	3	3	21600

No.	Child process name or detailed process name	whether-to-restart	restart-count	retry-interval	retry-count-reset-time
5	ajsinetd.exe	Yes	3	3	21600
6	ajsnetswd.exe	Yes	3	3	21600
7	ajsagtmpd.exe	Yes	3	3	21600
8	ajsovstatd.exe	Yes	3	3	21600
9	ajsgwmasterd.exe	Yes	3	3	21600
10	ajsqlcltd.exe	Yes	3	3	21600
11	jpqman.exe	Yes	3	3	21600
12	jpomanager.exe	Yes	3	3	21600
13	ajscdinatd.exe	Yes	3	3	21600
14	ajsagtmpd.exe	Yes	3	3	21600
15	jajs_schd.exe	Yes	3	10	21600
16	ajslgd.exe	No	3	3	21600
17	jpqman.exe	No	3	3	21600
18	jpomanager.exe	No	3	3	21600
19	ajsmasterd.exe	No	3	3	21600
20	jajs_agtd.exe	Yes	3	3	21600
21	jpqmon.exe	Yes	3	3	21600
22	jpoagent.exe	Yes	3	3	21600

Table 6–16: Default values of the restart settings (JP1/AJS3 - Agent)

No.	Child process name or detailed process name	whether-to-restart	restart-count	retry-interval	retry-count-reset-time
1	ajsqlcltd.exe	Yes	3	3	21600
2	jpqmon.exe	Yes	3	3	21600
3	jpoagent.exe	Yes	3	3	21600

In UNIX:

Table 6–17: Default values of the restart settings (JP1/AJS3 - Manager)

No.	Child process name or detailed process name	whether-to-restart	restart-count	retry-interval	retry-count-reset-time
1	jajs_dbmd ^{#1}	Yes ^{#2}	3	3	21600
2	ajsdbrmgrd	No	3	3	21600
3	jajs_hstd	Yes ^{#2}	3	20	21600
4	ajshlogd	Yes ^{#2}	3	3	21600

No.	Child process name or detailed process name	whether-to-restart	restart-count	retry-interval	retry-count-reset-time
5	ajsinetd	Yes ^{#2}	3	3	21600
6	ajsnetsd	Yes ^{#2}	3	3	21600
7	ajsagtmpd	Yes ^{#2}	3	3	21600
8	ajsovsatd	Yes ^{#2}	3	3	21600
9	ajsgwmasterd	Yes ^{#2}	3	3	21600
10	jpqman ^{#3}	Yes	3	3	21600
11	jpomanager	Yes	3	3	21600
12	ajscdinetd	Yes ^{#2}	3	3	21600
13	ajsagtmpd	Yes	3	3	21600
14	jajs_schd ^{#1}	Yes ^{#2}	3	10	21600
15	ajslogd	No	3	3	21600
16	jpqman	No	3	3	21600
17	jpomanager	No	3	3	21600
18	ajsmasterd	No	3	3	21600
19	jajs_agtd ^{#1}	Yes ^{#2}	3	3	21600
20	jpqmon	Yes	3	3	21600
21	jpoagent	Yes	3	3	21600

#1

On a logical host, you do not need to specify the restart setting for individual detailed processes under `jajs_dbmd`, `jajs_schd`, and `jajs_agtd`. The detailed processes are restarted when their parent processes are restarted.

#2

On a logical host, automatic restarting is disabled by default.

#3

In the case of HP-UX, AIX, and Linux, the detailed process name is `jpqman32`.

Table 6–18: Default values of the restart settings (JP1/AJS3 - Agent)

No.	Child process name or detailed process name	whether-to-restart	restart-count	retry-interval	retry-count-reset-time
1	jpqmon	Yes	3	3	21600
2	jpoagent	Yes	3	3	21600

The default values of the restart settings have been set to the most appropriate values after taking into account the characteristics of each process. The following describes the characteristics of the processes:

- A long retry interval is set for the `jajs_hstd.exe` and `jajs_hstd` processes because these processes manage many processes that require a long time to stop.
- A long retry interval is set for the `jajs_schd.exe` and `jajs_schd` processes because these processes manage processes that require a long time to stop.
- You cannot start just some of the detailed processes of the `jajs_schd.exe` and `jajs_schd` processes because the detailed processes must be started in sync with one other. The settings have been specified so that if some detailed processes terminate abnormally, the `jajs_schd.exe` and `jajs_schd` processes are restarted. No separate configuration is necessary for the detailed processes to be restarted.
- The settings are configured so that `jajs_dbmd.exe` and `jajs_dbmd` will restart when `ajsdmgrp.exe` and `ajsdmgrp` terminate abnormally. No separate configuration is necessary for `ajsdmgrp.exe` and `ajsdmgrp` to be restarted.
- On a physical host, if the number of abnormal terminations of the detailed processes under `jajs_agtd.exe` and `jajs_agtd` exceeds the value set for `restart-count`, `jajs_agtd.exe` and `jajs_agtd` stop. After stopping, `jajs_agtd.exe` and `jajs_agtd` restart according to their `restart enable/disable` settings.
- In the case of JP1/AJS3 - Manager on a logical host in UNIX, the detailed processes under `jajs_agtd` are not applicable to the restart setting. The detailed processes, however, are restarted when their parent process is restarted.

(1) Setting example

The following shows an example of settings in the extended startup process definition file, and the operation performed when a process terminates abnormally.

This example assumes that the following conditions have been set for JP1/AJS3 child processes:

```
whether-to-restart: 1 (Restart the process)
restart-count: 4
retry-interval: 3 (seconds)
restart-count-reset-time: 3,600 (seconds)
```

Figure 6–1: Example of settings in the extended startup process definition file

In Windows:

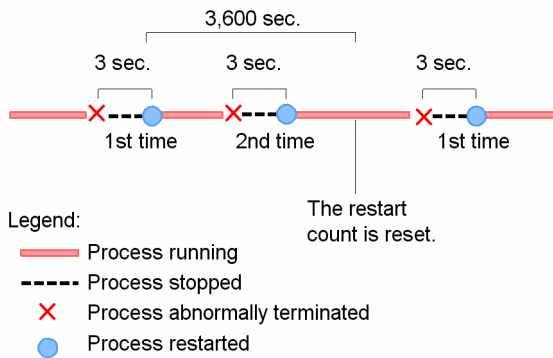
```
jajs_dbmd|jajs_dbmd.exe||1|3|3|3600|0|2||1|||||
jajs_hstd|jajs_hstd.exe||1|4|3|3600|0|0|jajs_dbmd|1|||||
jajs_agtd|jajs_agtd.exe||1|4|3|3600|0|0|jajs_hstd|1|||||
jajs_schd|jajs_schd.exe|-HA|1|4|3|3600|0|1|jajs_agtd|1|||||
```

In UNIX:

```
jajs_dbmd|/opt/jp1ajs2/bin/jajs_dbmd||1|3|3|3600|0|2||1|||||
jajs_hstd|/opt/jp1ajs2/bin/jajs_hstd||1|4|3|3600|0|0|jajs_dbmd|1|||||
jajs_agtd|/opt/jp1ajs2/bin/jajs_agtd||1|4|3|3600|0|0|jajs_hstd|1|||||
jajs_schd|/opt/jp1ajs2/bin/jajs_schd|-HA|1|4|3|3600|0|1|jajs_agtd|1|||||
```

The following shows an example of the operation performed when a process terminates abnormally.

Figure 6–2: Example of the operation performed when a process terminates abnormally



In the above example, if the process does not abnormally terminate before 3,600 seconds (specified for restart-count) has elapsed since the process was restarted, the restart count is reset. Therefore, if the process abnormally terminates again, the restart count starts from 1. However, if the process abnormally terminates within 3,600 seconds after it was restarted, the restart count is incremented. If the restart count then reaches the specified count value, no attempts are made to restart the process even if it terminates abnormally.

6.3.2 Issuing a JP1 event when a JP1/AJS3 process starts, stops, or terminates abnormally

If a process starts, stops, or terminates abnormally, JP1/AJS3 outputs an error message to the integrated trace log.

In JP1/AJS3 - Manager and JP1/AJS3 - Agent, the message can also be issued as a JP1 event. For details about the JP1 events to be issued, see [A. JP1 Events Issued by JP1/AJS3](#).

You can specify settings to issue a JP1 event in the following cases:

- When JP1/AJS3 starts or stops
- When a process managed by JP1/AJS3 starts or stops
- When a process terminates abnormally
- When a timeout occurs without notification at startup
- When restart of an abnormally terminated process finishes[#]
- When pre-start process fails

[#]:

A JP1 event is issued if automatic restart of processes has been set.

The settings for issuing a JP1 event are specified in the `jplajs_param.conf` file. By default, JP1 events are not issued.

To enable issuance of JP1 events:

1. Edit the `jplajs_param.conf` file.

The location of the `jplajs_param.conf` file is as follows:

- Windows: `JP1/AJS3-installation-folder\conf\jplajs_param.conf`
- UNIX: `/etc/opt/jplajs2/conf/jplajs_param.conf`

For details about how to define the `jplajs_param.conf` file, see [6.3.3 Format of the `jplajs\_param.conf` file](#).

If you do not have the `jplajs_param.conf` file, copy `jplajs_param.conf.model` from the above directory.

2. Execute the `jbssetcnf` command.

```
jbssetcnf jplajs_param.conf
```

For details about the `jbssetcnf` command, see the description of this command in the *JP1/Base User's Guide*.

3. Restart JP1/AJS3.

The settings in the `jplajs_param.conf` file are applied.

You can also use the `jajs_config` command to define whether to issue a JP1 event as a separate specification. For details about the `jajs_config` command, see *jajs_config* in 2. *Commands Used during Setup* in the manual *JP1/Automatic Job Management System 3 Command Reference*. For details about the environment setting parameters that define whether to issue a JP1 event, see 20.3 *Setting up the system management environment* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

6.3.3 Format of the `jp1ajs_param.conf` file

This subsection describes the format of the `jplajs_param.conf` file.

In the `jplajs_param.conf` file, find the following entries:

```
[{JP1_DEFAULT|logical-host-name}\JP1AJS2]
"SEND_SYSTEM_STARTSTOP_EVENT"=dword:0
"SEND_SYSTEM_CHILD_STARTSTOP_EVENT"=dword:0
"SEND_SYSTEM_TERMINATED_ABNORMALLY_EVENT"=dword:0
"SEND_SYSTEM_RESTART_EVENT"=dword:0
```

`SEND_SYSTEM_STARTSTOP_EVENT` is a parameter that defines whether to issue a JP1 event when a JP1/AJS3 service starts or stops.

`SEND_SYSTEM_CHILD_STARTSTOP_EVENT` is a parameter that defines whether to issue a JP1 event when a process managed by JP1/AJS3 starts or stops.

`SEND_SYSTEM_TERMINATED_ABNORMALLY_EVENT` is a parameter that defines whether to issue a JP1 event when a process terminates abnormally or when a timeout occurs during startup of a process.

`SEND_SYSTEM_RESTART_EVENT` is a parameter that defines whether to issue a JP1 event when a process has been successfully restarted.

To enable issuance of JP1 events, change the value of each parameter from `dword:0` to `dword:1`.

To disable issuance of JP1 events, change the value of each parameter from `dword:1` to `dword:0`.

If you want to set the `jplajs_param.conf` file on a logical host, you must set it on both the executing host and standby host. When you do so, change `JP1_DEFAULT` in `[JP1_DEFAULT\JP1AJS2]` to the logical host name.

Note that if `SEND_SYSTEM_TERMINATED_ABNORMALLY_EVENT` has been defined together with `SEND_PROCESS_TERMINATED_ABNORMALLY_EVENT`, which is used to ensure compatibility, a JP1 event is issued when the value of either environment setting parameter is `dword:1`. If `SEND_SYSTEM_RESTART_EVENT` has

been defined together with `SEND_PROCESS_RESTART_EVENT`, which is used to ensure compatibility, a JP1 event is issued when the value of either environment setting parameter is `dword:1`.

6.4 Resubmitting jobs when a JP1/AJS3 service is restarted

Job execution control manages the following information required for job execution in memory until jobs are distributed to the execution agent:

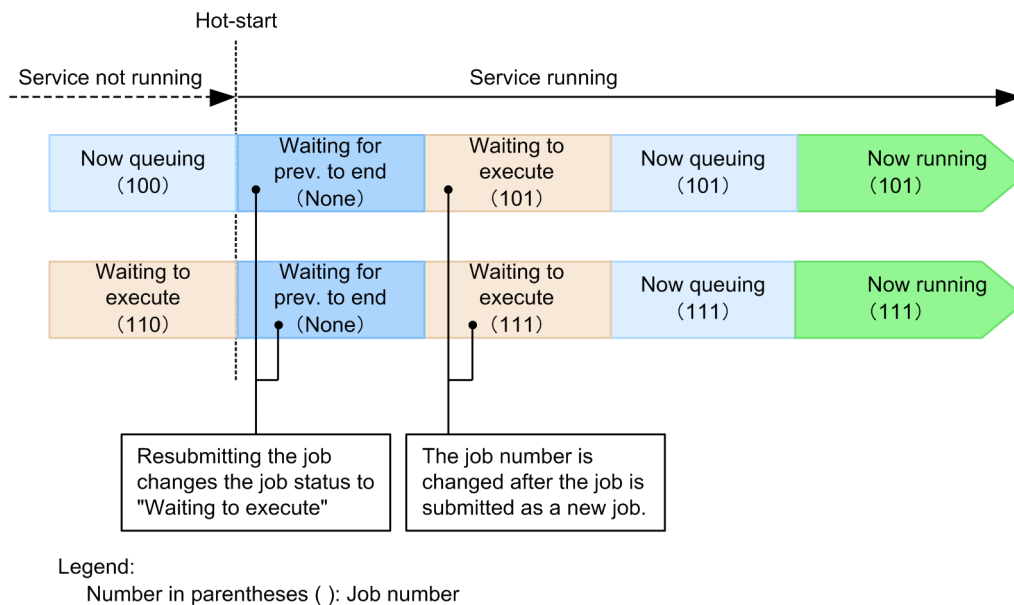
- Execution agent name set in the upper-level jobnet
- Priority set in the upper-level jobnet
- Return code of the preceding job
- End status of the preceding job
- Job definition information

If a JP1/AJS3 service stops before jobs are distributed, the information required for job execution is deleted from memory. Therefore, when the JP1/AJS3 service is restarted (in hot-start mode), the jobs that were in *Waiting to execute* or *Now queuing* status when the service stopped are canceled and returned to *Wait for prev. to end* status. These jobs are then automatically resubmitted to continue jobnet operation. This sequence of operations is called *resubmitting jobs*.

When a job is canceled, the KAVS0266-I message is output. Job execution control deletes the canceled job from the queue and returns the job to *Wait for prev. to end* status. When the job is resubmitted, the job status changes to *Waiting to execute*, and then to *Now queuing*. However, if a previous unit has terminated abnormally, the job is not resubmitted, and instead its status changes to *Not executed + Ended*.

The following figure shows how a job is resubmitted when the JP1/AJS3 service is restarted in hot-start mode.

Figure 6–3: How a job is resubmitted when the JP1/AJS3 service is restarted (hot start)



In the case of JP1/AJS3 - Manager version 11-50 or later, not only the jobs that were in *Now queuing* status but also those in *Waiting to execute* status when the service stopped are resubmitted to continue jobnet operation. The jobs that were in *Waiting to execute* or *Now queuing* status when the service stopped are resubmitted when the service restarts. Consequently, the job execution condition developed when the service stopped might affect the job execution performance and the maximum number of concurrently executable jobs after the service restarts.

When the service is restarted in warm-start mode, the job status changes to *Not executed + Ended*. When the service is restarted in cold-start mode, the job status changes to *Not registered*. When the service is restarted in disaster-recovery-start mode, the job status changes to *Unknown end status*.

7

Changing the Settings During Operation

This chapter describes how to change the environment and settings during operation of JP1/AJS3. To efficiently operate a JP1/AJS3 system, you may need to change the JP1/AJS3 job execution environment and settings during operation.

7.1 Key points about changing settings

When changing the environment or settings during operation of JP1/AJS3, note the following points:

- Consider a method and time period that have minimal impact on the tasks.
- When changing the environment setting items, OS parameters, and disk capacity, redesign these as described in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.
- Test the environment or settings before you actually apply them.
- After changing any items, inform the related departments of the changes.

7.2 Suppressing executing jobnets and jobs

You can suppress execution of jobnets and jobs that are scheduled for execution. This suppression applies to a particular scheduler service. During suppression, new jobnets and jobs are not started. The jobnets and jobs that satisfy start conditions are placed in a wait status until suppression ends. Operations on jobnets and jobs are not accepted during the suppression.

You can suppress executing jobnets and jobs for a particular scheduler service. You can also suppress executing jobnets and jobs that are already running.

7.2.1 Suppressing executing jobnets and jobs at start of the scheduler service

If the scheduler service is started after the execution start time of a jobnet that was to be executed on the day, the jobnet is immediately executed. If you do not want jobnets or jobs to be executed immediately after the service starts, and you want to specify a different execution start time, you need to suppress automatic execution of jobnets and jobs. You can suppress automatic execution of jobnets and jobs in the environment settings or by using the `ajsstart` command. The following procedure shows how to suppress automatic execution of jobnets and jobs at start of the scheduler service.

- Setting the `SUPPRESS` environment setting parameter

Use the `jajs_config` command to specify `exec` in the `SUPPRESS` environment setting parameter.

The following shows an execution example:

```
jajs_config -k "[JP1_DEFAULT\JP1AJSMANAGER\AJROOT1]" "SUPPRESS"="exec"
```

For details about environment setting parameters, see *20.4 Setting up the scheduler service environment* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

- `ajsstart` command specification

When the `ajsstart` command is used to start the scheduler service (that is, when the scheduler service is not automatically started), specify `-s EXEC` in the `ajsstart` command.

For details about the `ajsstart` command, see *ajsstart* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

To stop suppression, always use the `ajsalter` command with `-s none` specified, regardless of which method was used to start suppressing execution of jobnets and jobs.

For details about the `ajsalter` command, see *ajsalter* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

7.2.2 Suppressing executing jobnets and jobs that are already running

You may want to suppress executing jobnets and jobs while they are running to perform host maintenance or to conduct a check before stopping a service. To suppress executing jobnets and jobs while they are running, use the `ajsalter` command with `-s EXEC` specified. To stop the suppression, use the `ajsalter` command with `-s none` specified.

For details about the `ajsalter` command, see *ajsalter* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

7.3 Switching a jobnet definition while the jobnet is registered for execution

You can use the *jobnet release function* to switch the definition of a jobnet registered for execution. If you specify a jobnet definition for the jobnet to be switched in advance, this function automatically switches the jobnet definition at a specified date and time. For details about the jobnet release function, see *4.5.14 Automatically switching a jobnet definition at a specified time* in the manual *JP1/Automatic Job Management System 3 Overview*.

7.3.1 General procedure for registering a jobnet-definition release

The following is the general procedure for registering a jobnet-definition release.

1. Define the release-source jobnet.

Copy a running root jobnet whose definition you want to change to any location, and define the copy as the *release-source jobnet*.

2. As required, perform a check of the release-source root jobnet definition.

Use the `ajschkdef` command to pre-check the definition of the release-source root jobnet.

Although you register a jobnet-definition release by specifying a release-source jobnet that does not have an execution schedule later than the release date, an execution schedule will not be created. Execute the `ajsschedule` command to check whether the release-source jobnet has an execution schedule later than the release date.

For details about the `ajschkdef` command, see *ajschkdef* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

For details about the `ajsschedule` command, see *ajsschedule* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

3. Register the release.

You register a jobnet-definition release by specifying information such as the release date and release-target jobnet. For details about such registration, see *7.3.2 Registering a jobnet-definition release*.

7.3.2 Registering a jobnet-definition release

When you register a jobnet-definition release, you register a previously-defined jobnet definition so that it will be switched into a running jobnet at a specified date and time. When a jobnet-definition release is registered, all running jobnets are treated as jobnets with release information. As a result, the release-target jobnet icon is displayed in the JP1/AJS3 - View window.

You can use either of the following methods to register a jobnet-definition release:

- Choose **Release entry** on the function menu in the JP1/AJS3 - View window
- Execute the `ajsrelease` command

For details about how to use the JP1/AJS3 - View window to register a jobnet-definition release, see *9.14.1 Performing release entry for jobnets* in the *JP1/Automatic Job Management System 3 Operator's Guide*. For details about how to use the `ajsrelease` command, see *ajsrelease* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

Cautionary notes

- A jobnet whose schedule is later than the release time and which has been registered for fixed execution with either a period or a date specified cannot be specified as a release target. In such cases, cancel the registration or prohibit the execution of schedules after the release time, and then register the jobnet-definition release. Note, however, that if a number of future generations is also specified for the jobnet registered for fixed execution, you can register the jobnet-definition release even when the schedule of the jobnet is later than the release time.
- You cannot use the jobnet release function for jobnets of different scheduler services.
- The following jobnets cannot be specified as a release source:
 - A jobnet that has already been specified as a release target
 - A suspended jobnet
 - A jobnet being edited
 - A jobnet being used by another user
 - A jobnet for which at least two of the following are defined: a jobnet connector, a connection-destination jobnet, or a start condition (`.CONDITION`)
 - A jobnet for which a remote jobnet was defined
- The following jobnets cannot be specified as a release source:
 - A suspended jobnet
 - Jobnets in the *Shutdown* status
 - A jobnet being edited
 - Jobnet on which another user is performing operations[#]
 - A jobnet for which at least two of the following are defined: a jobnet connector, a connection-destination jobnet, or a start condition (`.CONDITION`)
 - A jobnet for which a remote jobnet was defined

#

If the operation being performed by the other user is setting or releasing the hold attribute that applies to a unit under a jobnet whose status is *Being applied*, the jobnet can be specified as a release target.

- The following units cannot be added into a root jobnet for which release entry was performed (a release-target jobnet):
 - Remote jobnet
 - `.CONDITION` (start condition)
 - Jobnet connector
- A jobnet whose definition is in *Release wait*, *Delete wait* or *Release entry wait* status cannot be specified as a release-target jobnet. If you want to register a jobnet definition in the *Release wait* status, wait for the jobnet status to change to *Being applied*. For a jobnet definition in *Delete wait* or *Release entry wait* status, cancel the jobnet-definition release, and then re-register it.
- The scheduler service needs to be running to register a release.
- Registering a jobnet-definition release creates a system load that is equal to or greater than the load created by the definition for the release-source jobnet. Do not register a jobnet-definition release during peak job execution times.
- If you register a jobnet-definition release specifying a release-target jobnet for which the upper-level unit-attribute inheritance function has been set, the owner and JP1 resource group of that jobnet will be set by the function.
- When you register a jobnet-definition release, generations after the release date are re-created based on the registered jobnet definition. Therefore, any changes made by temporarily changing the plan before the registering the jobnet-definition release are not passed to the generations after the release date (The information specified

during registration for execution, such as macro variables and JP1 user, is passed). If you want to re-apply the temporary changes that you made before you registered the jobnet-definition release to generations after the release date, re-enter the changes using the function for re-execution of temporary changes. For details about this function, see 4.5.16 *Displaying and re-executing temporary change operations for a job or jobnet* in the manual *JP1/Automatic Job Management System 3 Overview*.

- Although you register a jobnet-definition release by specifying a release-source jobnet that does not have an execution schedule later than the release date, an execution schedule will not be created. Before you register a jobnet-definition release, execute the `ajsschedule` command and make sure that the release-source jobnet has an execution schedule later than the release date.

After you register a jobnet-definition release, use JP1/AJS3 - View or the `ajsshow` command to confirm that the execution schedule has been created correctly from the definition of the release-source root jobnet. If the execution schedule has not been created, cancel the release, review the definition of the release-source jobnet, and then re-register the jobnet-definition release.

For details about the `ajsschedule` command, see `ajsschedule` in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*. For details about the `ajsshow` command, see `ajsshow` in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

- When fixed execution registration is used, the jobnet definition returns to the unregistered status if:
 - Generations exist only after the specified release date, and
 - A jobnet-definition release is registered for a jobnet definition for which (in the schedule definition) no next scheduled generation is created.

In such cases, cancel the registration of the jobnet-definition release, review the release-source jobnet definition, again register the jobnet-definition release, and then re-register the jobnet definition for execution.

- To use the `ajslocaldate` command to change the scheduler service local time or system time to a past time after registering a jobnet-definition release, you must first execute the `ajsdelete` command to delete the release-target jobnet.

If you change the date and time to a past time without deleting the release-target jobnet, operation might not proceed correctly. In such cases, resume the original date and time, delete the release-target jobnet, and then change the date and time again.

To restore a release-target jobnet, you need to back up the definition information for the release-target jobnet before you register a jobnet-definition release.

- To restore a release-target jobnet you deleted, you need to use the `ajsp rint` command to back up the definition information for the release-target jobnet before you register a jobnet-definition release. You can restore the release-target jobnet by using the `ajsdefine` command to define the jobnet definition information from the backup and then re-registering the jobnet-definition release with the release-source specified.
- Consecutive single-byte space characters placed at the end of a release comment become invalid. Do not use single-byte space characters at the end of a release comment.

7.3.3 Jobnet status after registration of a jobnet-definition release

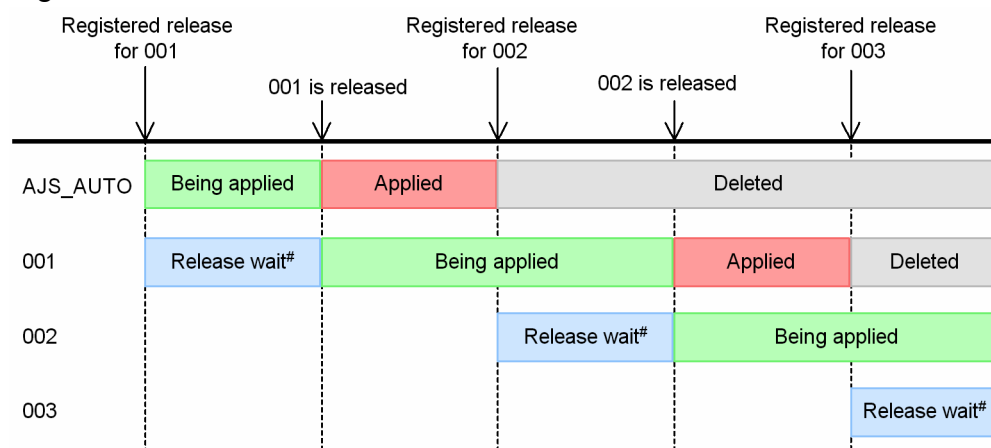
After registration of a jobnet-definition release, the jobnet definition can have one of the following statuses: *Release wait*, *Being applied*, *Applied*, *Delete wait*, or *Release entry wait*. These statuses are called the *release statuses*. The following table describes each status.

Table 7–1: Release status of a jobnet after registration of the jobnet-definition release

Release status	Description
Release wait	Waiting for the release time to arrive. This status exists after the jobnet is registered for release, and until the jobnet definition is released.
Being applied	The jobnet definition has been released and is being applied. This status starts at the date and time of the release.
Applied	The jobnet definition is no longer being applied. This status starts at the next release time, when the next jobnet definition is released.
Delete wait	Waiting for the deletion of a definition that failed to be released. For this status, you need to cancel the release again. For details about how to cancel a release and about the <i>Delete wait</i> status, see 7.3.7 Canceling a release .
Release entry wait	A temporary status that lasts after release entry until <i>Release wait</i> status starts. If release entry fails, the following error message appears: KAVV2120-E Because it failed in release registration, unnecessary jobnet definition remains. Please do release registration again after solving the problem, and doing release cancel, and this status continue. In such cases, you need to cancel the release. For details about how to cancel the release, see 7.3.7 Canceling a release .

The following figure shows the *Release wait*, *Being applied*, and *Applied* status transitions.

Figure 7–1: Release status transitions



This status is temporarily *Release entry wait* before it becomes *Release wait*.
If release fails, the status of the jobnet will remain *Release entry wait*.

The figure shows the status transitions when the same root jobnet is released successively. The release IDs are AJS_AUTO, 001, 002, and 003. The following describes the transitions.

AJS_AUTO

This release ID is automatically created when 001 is registered for release. The status at this time is *Being applied*. When 001 is released, the status changes to *Applied*. When 002 is registered for release, the AJS_AUTO jobnet is automatically deleted unless the jobnet has a generation#.

001 and subsequent release IDs

The status is *Release wait* when a jobnet definition is registered for release. When the definition is released, the status changes to *Being applied*. When the definition with the next release ID is released, the status of the preceding definition changes to *Applied*. When the definition with the subsequent release ID is entered for release, the jobnet in *Applied* status is automatically deleted unless the jobnet has a generation#.

A jobnet is deleted only if the previous jobnet in *Applied* status has been deleted. For example, 001 is not deleted unless AJS_AUTO has been deleted.

#

If you attempt to register a jobnet-definition release while the release-target jobnet is open in the JP1/AJS3 - View Daily Schedule window or Monthly Schedule window, the following message appears: KAVS4631-W The jobnet definition for the applied where the generation did not exist could not be deleted. In this case, the jobnet definition in the *Applied* status is not deleted. Because this situation might reduce the amount of free space in the database, make sure that the Daily Schedule window and Monthly Schedule window are closed before you perform release entry.

7.3.4 Release timing

A jobnet definition is switched at the specified release time, irrespective of the schedule rules for the release-target jobnet. The release time is specified as an absolute time in 24-hour schedule. As a result, if the release-target jobnet runs in 48-hour schedule, for example, you must specify the release time after considering conversion to 48-hour schedule.

Note that the definition of a generation that started before the release time will not be switched if the release time has passed during execution.

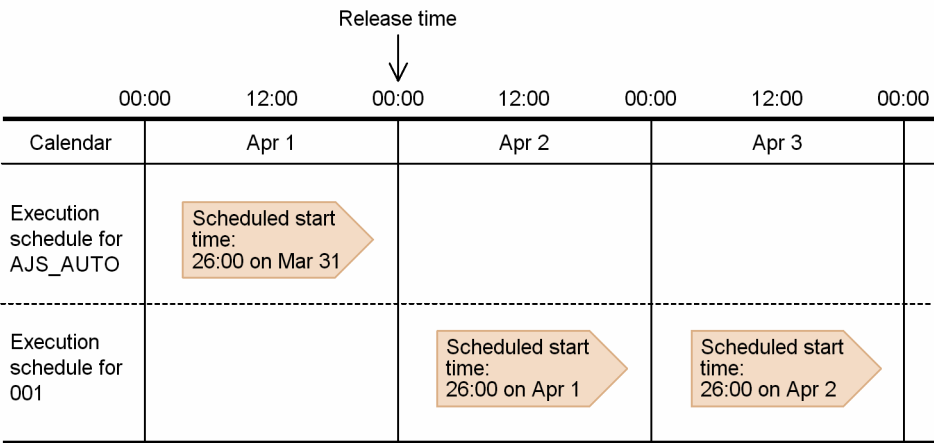
(1) Release timing when using a 48-hour schedule

If the scheduler service uses a 48-hour schedule, the jobnet definition is released at the release time in absolute-time format. The following figure shows an example of release in the 48-hour schedule.

Figure 7–2: Example of release in the 48-hour schedule

Release information

Release ID	AJS_AUTO	001
Release time	—	00:00 on Apr 2
Schedule rule	Executed every day at 26:00	Executed every day at 26:00



Legend:

 : Jobnet execution schedule

This example assumes that the jobnet is executed every day at 26:00 (48-hour schedule).

The execution schedule for 26:00 on March 31 in 48-hour schedule equals 2:00 on April 1 in absolute time, which is earlier than the release time of 00:00 on April 2. As a result, the jobnet is executed with the definition that has the release ID AJS_AUTO. The execution schedule for 26:00 on April 1 in 48-hour schedule equals 2:00 on April 2 in absolute time,

which is later than the release time of 00:00 on April 2. As a result, the jobnet is executed with the definition that has the release ID 001.

Therefore, if you want to use the definition that has the release ID `AJS_AUTO` to execute a jobnet scheduled for execution at 26:00 on April 1, you need to set a release time of 2:01 or later on April 2.

(2) Release timing when a base time is set

If a base time (other than 00:00) is set, the jobnet definition is also released at the release time in absolute time. The following figure shows an example of release when a base time is set.

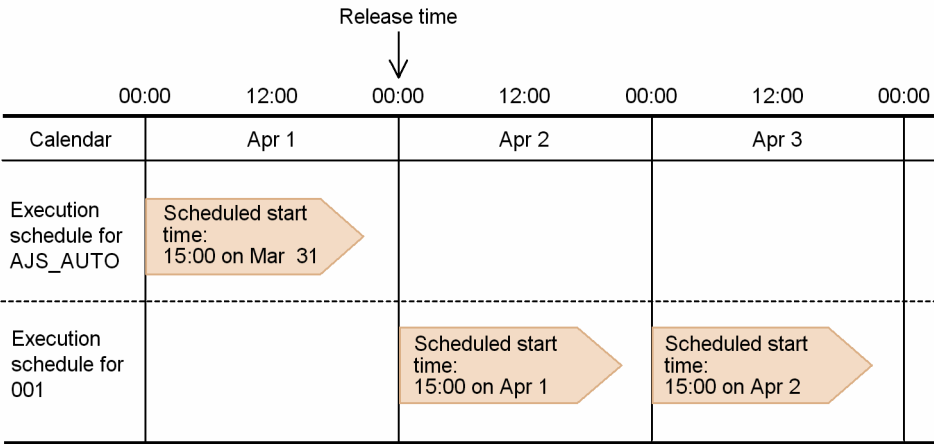
Figure 7–3: Example of release when a base time is set

Release information

Release ID	AJS_AUTO	001
Release time	—	00:00 on Apr 2
Schedule rule	Executed every day at the relative time of 15:00 [#]	Executed every day at the relative time of 15:00 [#]

[#]

Relative time in relation to a base time of 9:00



Legend:

 : Jobnet execution schedule

This example assumes that the base time is 9:00 and that the jobnet is executed every day at the relative time of 15:00.

The execution schedule of 15:00 on March 31 is a relative time in relation to the base time of 9:00. This execution schedule is 00:00 on April 1 in absolute time, which is earlier than the release time of 00:00 on April 2. As a result, the jobnet is executed with the definition that has the release ID `AJS_AUTO`. Similarly, the execution schedule of 15:00 on April 1 equals 00:00 on April 2 in absolute time, which is the same time as the release time of 00:00 on April 2. As a result, the jobnet is executed with the definition that has the release ID 001.

Therefore, if you want to use the definition that has the release ID `AJS_AUTO` to execute a jobnet scheduled for execution at 15:00 on April 1, you need to set the release time to 00:01 or later on April 2.

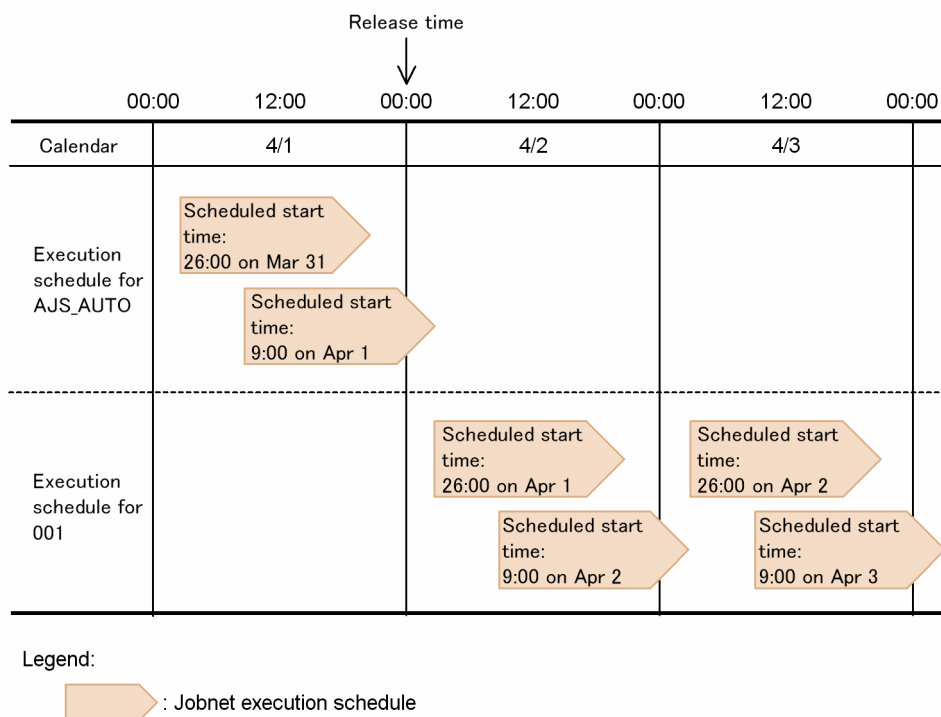
(3) Release timing when a jobnet is executed more than once a day

If the schedule rules are set so that a jobnet is executed more once a day, the jobnet definition is released at a release time in absolute time. The following figure shows an example of release when the schedule rules are set for executing the jobnet more than once a day.

Figure 7–4: Example of release when the jobnet is executed more than once a day

Release information

Release ID	AJS_AUTO	001
Release time	-	00:00 on Apr 2
Schedule rule 1	Executed every day at 9:00	Executed every day at 9:00
Schedule rule 2	Executed every day at 26:00	Executed every day at 26:00



This example assumes that the jobnet is executed every day at 0:00 and 26:00.

For the execution schedules up to 9:00 on April 1, which is earlier than the release time of 00:00 on April 2, the jobnet is executed with the definition that has the release ID AJS_AUTO. The execution schedule of 26:00 on April 1 equals 2:00 on April 2 in absolute time, which is later than the release time of 00:00 on April 2. As a result, the jobnet is executed with the definition that has the release ID 001.

However, if you want to execute a jobnet with the definition that has the release ID AJS_AUTO at 26:00 on April 1, but with the definition that has the release ID 001 on April 2 or later, you will need to set the release time in the range from 2:01 to 8:59 on April 2.

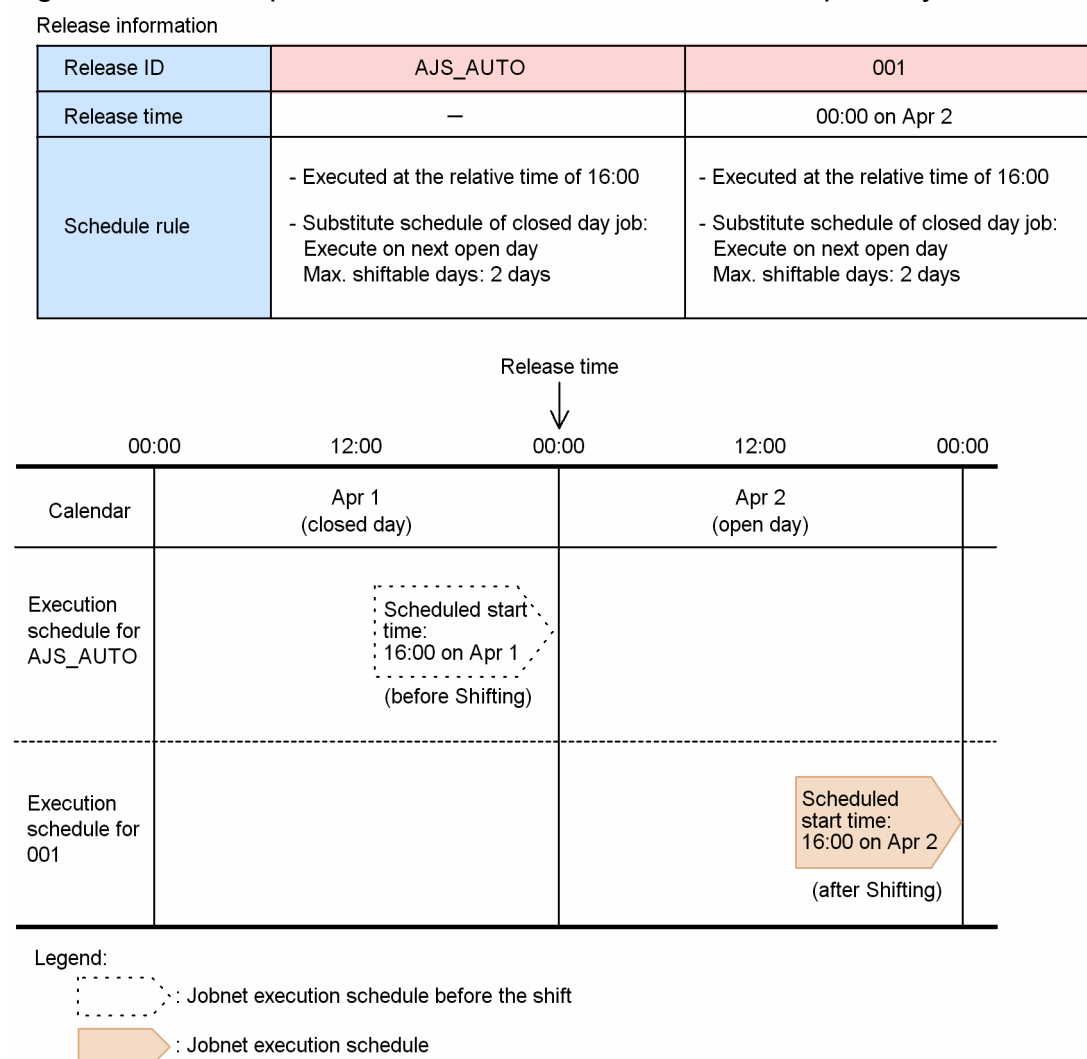
(4) Release timing when a substitute schedule for a closed day job is set

The following describes release when **Execute on next open day** or **Execute on previous open day** is set for **Substitute schedule of closed day job**.

(a) Release timing when "Execute on next open day" is set

If **Execute on next open day** is set for **Substitute schedule of closed day job**, the jobnet definition is released at the release time in absolute time. The following figure shows an example of release when **Execute on next open day** is set.

Figure 7–5: Example of release when "Execute on next open day" is set



This example assumes that April 1 is a closed day and that April 2 is an open day.

Because April 1 is a closed day, the execution schedule for 16:00 on April 1 is shifted to 16:00 on April 2. Because 16:00 on April 2 is later than the release time of 00:00 on April 2, the jobnet is executed with the definition that has the release ID 001.

Therefore, if you want to use the definition that has the release ID AJS_AUTO to execute a jobnet at 16:00 on April 2, which is the execution schedule after shifting, you need to set the release time to 16:01 or later on April 2.

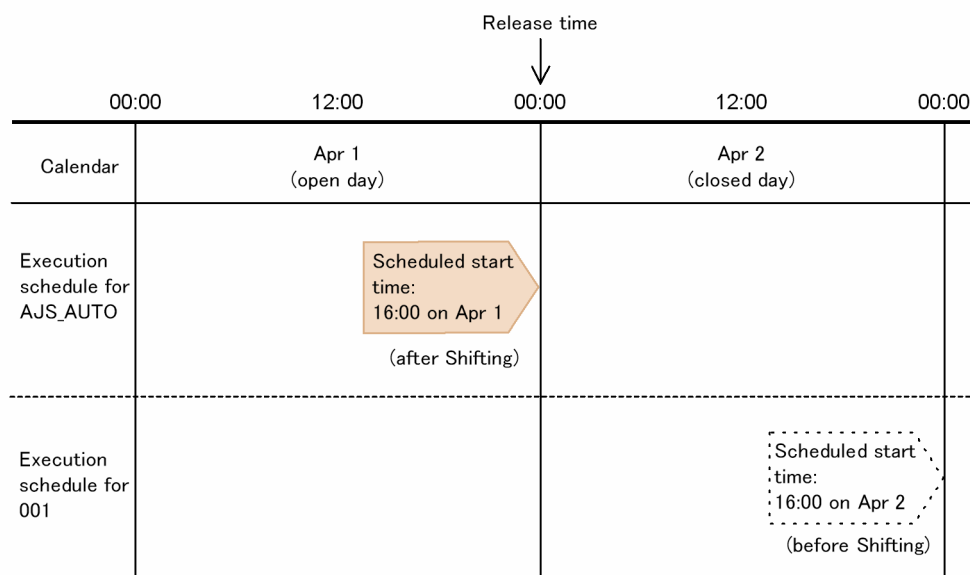
(b) Release timing when "Execute on previous open day" is set

If **Execute on previous open day** is set for **Substitute schedule of closed day job**, the jobnet definition is released at the release time in absolute time. The following figure shows an example of release when **Execute on previous open day** is set.

Figure 7–6: Example of release when "Execute on previous open day" is set

Release information

Release ID	AJS_AUTO	001
Release time	-	4/2 00:00
Schedule rule	- Executed at the relative time of 16:00 - Substitute schedule of closed day job: Execute on previous open day - Max. shiftable days: 2 days	- Executed at the relative time of 16:00 - Substitute schedule of closed day job: Execute on previous open day - Max. shiftable days: 2 days



Legend:

-  : Jobnet execution schedule before the shift
-  : Jobnet execution schedule

This example assumes that April 1 is an open day and that April 2 is a closed day.

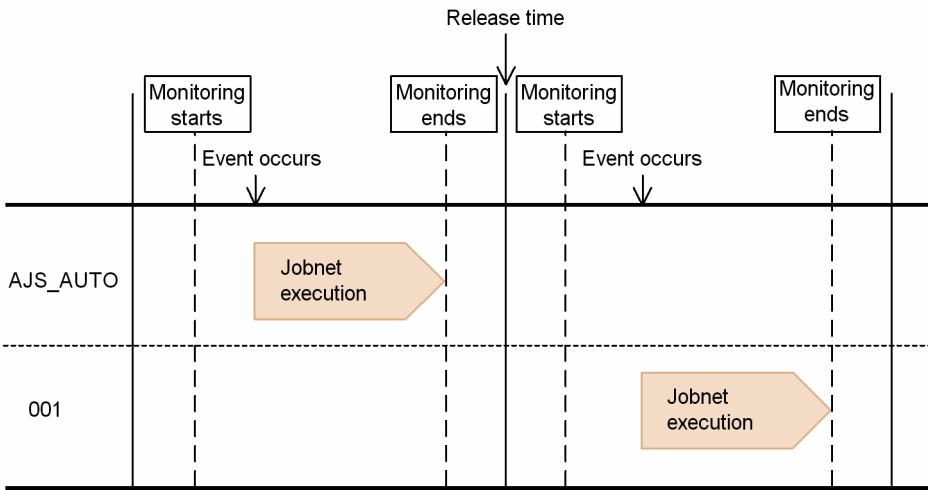
Because April 2 is a closed day, the execution schedule for 16:00 on April 2 is shifted to 16:00 on April 1. Because 16:00 on April 1 is earlier than the release time of 00:00 on April 2, the jobnet is executed with the definition that has the release ID AJS_AUTO.

Therefore, if you want to use the definition that has the release ID 001 to execute a jobnet at 16:00 on April 1, which is the execution schedule after shifting, you need to set a release time that is earlier than 16:00 on April 1.

(5) Release timing when a start condition is set

If a start condition is set, the jobnet definition is released at the release time in absolute time. The following figure shows an example of release when a start condition is set.

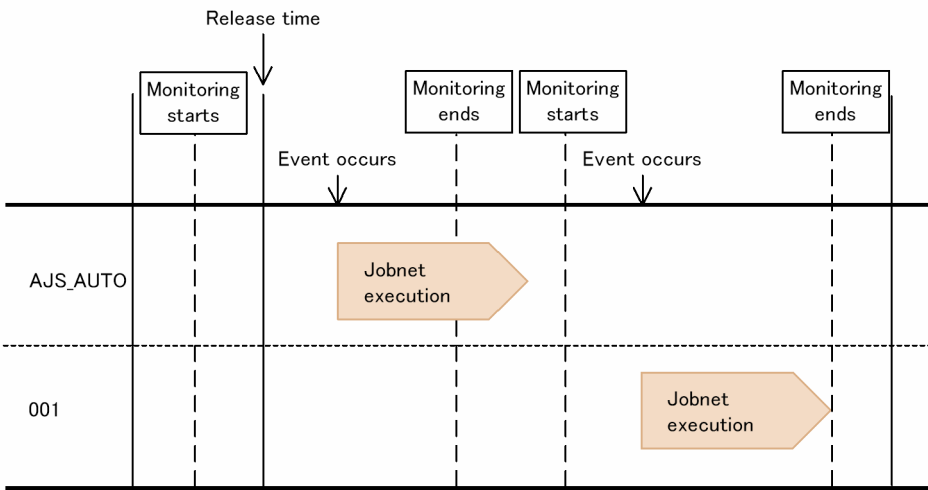
Figure 7–7: Example of release when a start condition is set



In this example, the release time falls between two monitoring periods. In this case, the jobnet definition is switched at the release time.

However, if monitoring is still in progress at the release time as shown in the following figure, the jobnet definition is not switched.

Figure 7–8: Example of release when start condition monitoring has not stopped at the release time



As shown above, if monitoring has not stopped when the release time arrives, the release-target jobnet is executed with the definition that has the release ID `AJS_AUTO`. The definition that has the release ID `001` will be executed after the next monitoring period starts. Therefore, if you want to use the definition that has the release ID `001` for execution of the jobnet being executed at the release time, you need to kill the monitoring.

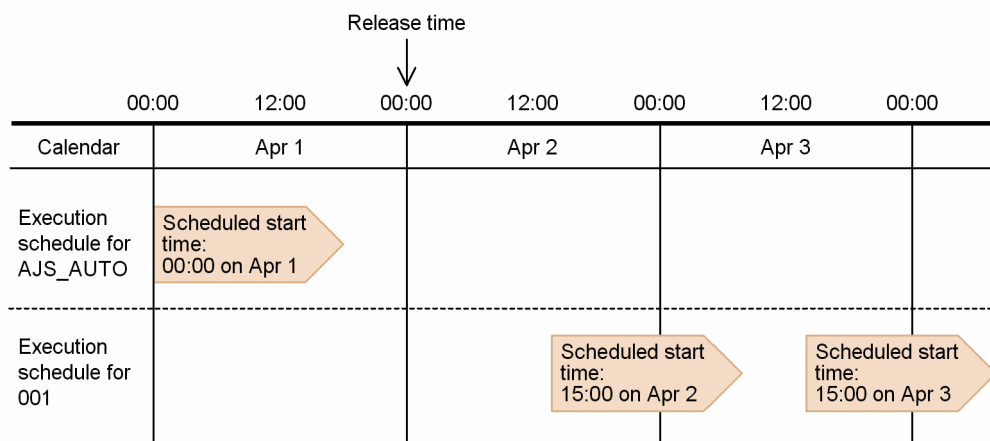
(6) Release timing when a schedule rule differs before and after release

If a schedule rule differs before and after release, the jobnet definition and schedule rule are released at the release time in absolute time. The following figure shows an example of release when the schedule rule is different before and after release.

Figure 7–9: Example of release when the schedule rule is different before and after release

Release information

Release ID	AJS_AUTO	001
Release time	—	00:00 on Apr 2
Schedule rule	Executed every day at 00:00	Executed every day at 15:00



Legend:

 : Jobnet execution schedule

This example assumes that a jobnet executed every day at 00:00 is to be executed every day at 15:00 after the release time arrives. Because 00:00 on April 1 is later than the release time of 00:00 on April 2, the jobnet is executed at 00:00 on April 1 according to the schedule rule in effect for release ID AJS_AUTO. At the release time of 00:00 on April 2, the definition that has the release ID 001 is released, and starting that day, the job is executed at 15:00 instead of 0:00.

However, if you want to use the schedule rule in effect for release ID AJS_AUTO to execute a jobnet on April 2 by setting a scheduled start time of 00:00 on April 2, you will need to specify the release time in the range from 15:01 on April 2 to 15:00 on April 3.

If you specify the release time in the range from 00:01 to 15:00 on April 2, the jobnet is executed twice on that day. This occurs because the jobnet is executed with the definition that has the release ID AJS_AUTO at 00:00 on April 2, and then with the definition that has the release ID 001 at 15:00 the same day.

(7) Release timing when a time zone is specified

The release time depends on the time zone setting used for release entry. Therefore, if this time zone is different from the time zone specified when the release-target jobnet was registered for execution, the jobnet definition is released at the release time of the time zone used for release entry. The following figure shows an example of different time zone settings.

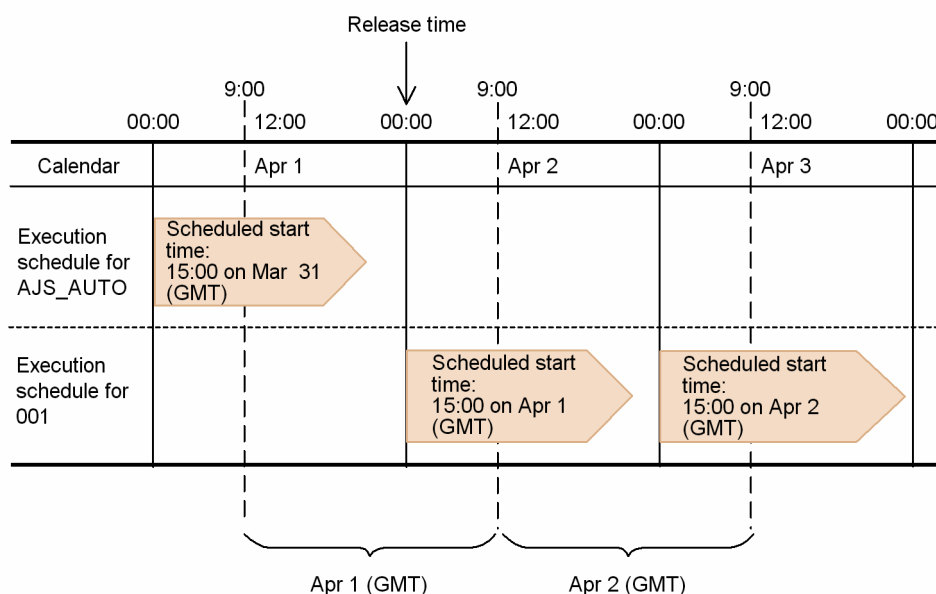
Figure 7–10: Example of release when the time zone settings at jobnet-definition release registration and the release-target jobnet are different

Release information

Release ID	AJS_AUTO	001
Release time	—	00:00 on Apr 2
Schedule rule	Executed every day at 00:00	Executed every day at 00:00

Time zone used to register execution: GMT (Greenwich Mean Time)

Time zone used when registering the release: JST-9 (Japan Standard Time)



Legend:

 : Jobnet execution schedule

In this example, the GMT (Greenwich Mean Time) time zone setting is used for registering execution, and the JST-9 (Japan Standard Time) time zone setting is used when the jobnet-definition release was registered.

Because the release time uses the time zone specified when the jobnet-definition release was registered, the release time is 00:00 on April 2 (JST-9). The execution schedule of 15:00 on March 31 (GMT) equals 00:00 on April 1 (JST-9), which is earlier than the release time of 00:00 on April 2 (JST-9). As a result, the jobnet is executed with the definition that has the release ID AJS_AUTO. The execution schedule for 15:00 on April 1 (GMT) equals 00:00 on April 2 (JST-9), which is the same time as the release time. As a result, the jobnet is executed with the definition that has the release ID 001.

Note that if a time zone for which daylight saving time applies was specified when the release-target jobnet was registered for execution, the jobnet definition is released at the release time specified in the time zone setting for release entry.

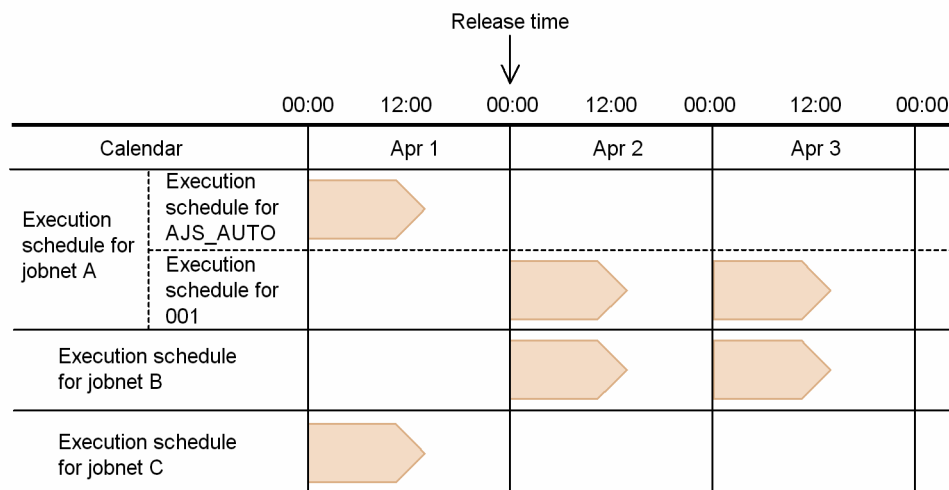
(8) Release timing when an exclusive schedule is specified

If an exclusive schedule is specified, the jobnet definition and the exclusive schedule are switched at the release time in absolute time. The following figure shows an example of an exclusive schedule that differs before and after release.

Figure 7–11: Example of release when the exclusive schedule before and after release is different

Release information

Release ID	AJS_AUTO	001
Release time	—	00:00 on Apr 2
Exclusive schedule	Jobnet B is excluded	Jobnet C is excluded



Legend:

 : Jobnet execution schedule

In this example, jobnet B is specified for exclusion in the exclusive schedule with release ID AJS_AUTO, and jobnet C is specified for exclusion in the exclusive schedule with release ID 001. In this case, jobnet A excludes jobnet B until 23:59 on April 1, and excludes jobnet C from 00:00 on April 2. We recommend that you do not change the exclusive schedule specification because switching of exclusive schedules might cause operational difficulties.

To specify an exclusive schedule (to exclude other schedules on the same day) for a jobnet that uses the jobnet release function, consider registering jobnet-definition release by specifying the base time as the release time.

For jobnets for which a jobnet-definition release is registered, the switching of a jobnet definition identified by a release ID is managed based on the release time. Therefore, jobnets identified by release IDs can be handled in the following time periods. An exclusive schedule is calculated by using these time periods.

- If the release ID is AJS_AUTO
 - Up to 1 second before the release time of the next release ID
- If the release ID is not AJS_AUTO
 - From the release time of the current release ID to 1 second before the release time of the next release ID
 - If the next release ID does not exist, the time period after the release time of the current release ID

For example, suppose that the base time is 00:00, and the release time of release ID 001 for jobnet A is 12:00 on April 1. The calculated exclusive schedule on April 1 for release ID AJS_AUTO is from 00:00:00 to 11:59:59 on April 1. As a result, the schedule of jobnet B from 00:00 to 11:59 on April 1 is excluded, but the schedule after 12:00 on April 1 is not excluded.

To exclude the schedule of jobnet B from 12:00 to 23:59 on April 1, you must set the release time of release ID 001 to 00:00 on April 3. If you cannot specify 00:00 on April 3 for the release time, you must add a schedule rule so that release ID AJS_AUTO of jobnet A excludes jobnet B from 00:00 to 11:59 on April 1.

To prevent complicated operations, consider specifying a jobnet that does not use the jobnet release function in an exclusive schedule.

7.3.5 Displaying release information

After registering a jobnet-definition release, you can use either of the following methods to display the release information including release IDs and release times, for each release-target jobnet.

- JP1/AJS3 - View window
- `ajsrelease` command

For details about how to use the `ajsrelease` command to display release information, see *ajsrelease* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

7.3.6 Checking execution schedules after registering a release

After registering a jobnet-definition release, you can use the JP1/AJS3 - View Daily Schedule window and Monthly Schedule window to check the execution schedules. The following describes how the execution schedules are displayed when release entry is performed with release ID 001 and a release time of 00:00 on April 2 specified.

(1) Display in the Daily Schedule window

The following figure shows the execution schedules displayed in the Daily Schedule window.

Figure 7–12: Display in the Daily Schedule window after registering a release

When jobnet execution schedules are displayed for each release ID

Unit	Apr 1	Apr 2
 Jobnet A		
 Jobnet A(001)		

When execution schedules for units in the jobnets are also displayed

Unit	Apr 1	Apr 2
 Jobnet A		
 job1		
 job2		
 Jobnet A(001)		
 job1		
 job2		
 job3		

Legend:
 : Execution schedule

The initial screen of the Daily Schedule window displays the execution schedules in *root-jobnet-name(release-ID)* format for each jobnet definition. However, if the release ID is `AJS_AUTO`, only the root jobnet name is displayed without a release ID. When the root jobnet is expanded, the execution schedules for the units in the jobnet are displayed.

(2) Display in the Monthly Schedule window

The following figure shows the execution schedules displayed in the Monthly Schedule window.

Figure 7–13: Display in the Monthly Schedule window after registering a release

When jobnet execution schedules are displayed for each release ID

Unit	3/29	3/30	3/31	4/1	4/2	4/3	4/4	4/5	4/6
 jobnetA									
 jobnetA(001)									

When execution schedules for units in the jobnets are also displayed

Unit	3/29	3/30	3/31	4/1	4/2	4/3	4/4	4/5	4/6
 jobnetA									
 job1									
 job2									
 jobnetA(001)									
 job1									
 job2									
 job3									

Legend:

 : Execution schedule

The initial screen of the Monthly Schedule window displays the execution schedules in *root-jobnet-name(release-ID)* format for each definition of the jobnet. However, if the release ID is `AJS_AUTO`, only the root jobnet name is displayed without a release ID. When the root jobnet is expanded, the execution schedules for the units in the jobnet are displayed.

Note that a jobnet that has release information does not inherit statistical information for the jobnet definition before release. The scheduled generation immediately after release is handled as a jobnet that has never been executed before. Therefore, for execution simulation performed in the Daily Schedule window or Monthly Schedule window, the value of **First execution time** in the Preferences dialog box is used as the time required for executing the scheduled generation immediately after release.

7.3.7 Canceling a release

Release cancellation is an operation that cancels the registration of a jobnet-definition release. When release is canceled, the release-target jobnet is returned to the status that existed before the release was registered. However, jobnets for which a jobnet-definition release has been registered are treated as release-target jobnets with release information, even if the release is canceled. As a result, the release-target jobnet icon is displayed in the JP1/AJS3 - View window.

You can cancel a release of a jobnet definition whose status is *Release wait*, *Delete wait*, or *Release entry wait*. You can use the following methods to cancel a release:

- Choose **Release Cancel** from the function menu in the JP1/AJS3 - View window
- Execute the `ajsrelease` command

Note that if an attempt to cancel a release fails, the status of definitions in *Release wait* change to *Delete wait*. In such cases, cancel the release again.

For details about how to use the JP1/AJS3 - View window to cancel a release, see 9.14.2 *Canceling a release for a jobnet* in the *JP1/Automatic Job Management System 3 Operator's Guide*. For details about how to use the `ajsrelease` command to cancel a release, see `ajsrelease` in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

Cautionary notes

- You cannot cancel a release if the jobnet is registered for fixed execution with either a period or a date specified and its schedule is later than the release time. In such cases, cancel the registration or prohibit the execution of schedules after the release time, and then try again to cancel the release. Note, however, that if a number of future generations is also specified for the jobnet registered for fixed execution, you can cancel the release even when the schedule of the jobnet is later than the release time.
- You cannot cancel a release for a root jobnet that has been suspended. In such cases, release the suspension of the root jobnet and try again to cancel the release.
- You cannot cancel a release for a root jobnet in shutdown status. In such cases, cancel the execution registration of the root jobnet and try again to cancel the release.
- The scheduler service needs to be running to cancel a release.
- Canceling a release creates a system load that is equal to or greater than the load caused by deleting the jobnet definitions in the release information. Do not cancel a release during peak job execution times.
- When you cancel a release, generations are re-created based on the jobnet definition whose status becomes *Being applied* after the release is canceled. Therefore, any changes made by temporarily changing the plan before canceling the release are not passed to the jobnets after the release is canceled. Note, however, that the information specified during registration for execution, such as macro variables and JP1 users, is passed.
- If no next scheduled generation is created because of cancellation of the release of a jobnet definition whose status became *Being applied* after the cancellation, no scheduled generation will be created from that definition. Therefore, use JP1/AJS3 - View or the `ajsshow` command to make sure that the scheduled generation has been created correctly after the release is canceled. If a scheduled generation has not been created, review the jobnet definition that is in the *Being applied* status.
- When fixed execution registration is used, the jobnet definition returns to the unregistered status if:
 - Generations exist only in the jobnet definition whose release is to be canceled, and
 - No next scheduled generation is created because the release was cancelled for a jobnet definition whose status became *Being applied* after the cancellation.Review the jobnet definition that is in *Being applied* status after the release was canceled, and then re-register the jobnet for execution.
- You cannot cancel a release for the following jobnets:
 - Suspended jobnet
 - Jobnets in the Shutdown status
 - A jobnet being edited
 - Jobnet on which another user is performing operations[#]

#

If the operation being performed by the other user is setting or releasing the hold attribute that applies to a unit under a jobnet whose status is *Being applied*, you can cancel the release.

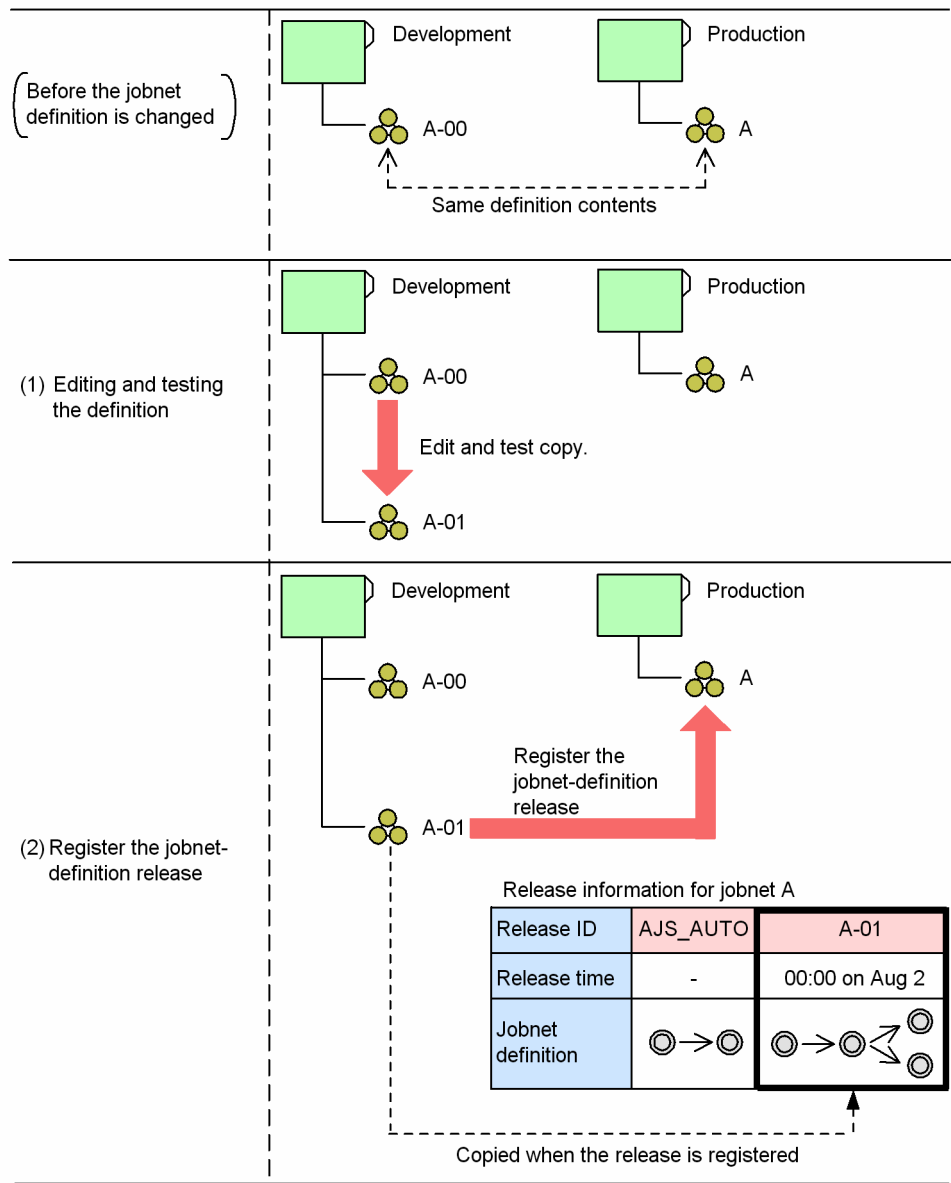
7.3.8 Using the jobnet release function

This subsection describes the basic operation cycle for using the jobnet release function and the recommended methods of operation.

(1) Basic operation cycle

The following figure shows the basic operation cycle for using the jobnet release function.

Figure 7–14: Basic operation cycle for using the jobnet release function



In this example, jobnet A-00, which is used for development, has the same definition contents as the jobnet A in the production environment. When the jobnet release function is used to switch the jobnet A definition, a copy of jobnet A-00 is edited and tested as jobnet A-01 ((1) in the figure). Next, the release is registered ((2) in the figure). In this process, the definition of release-source jobnet A-01 is copied to the production environment, and managed as one of the definitions of release-target jobnet A. If you then edit the definition of the release-source jobnet after the jobnet-definition release has been registered, the release-target jobnet will not be affected.

The following operational points must be considered:

- Managing the master jobnet definition
The release-source jobnet is the master jobnet when you change the release-target jobnet definition. If necessary, create an archive for the release-source jobnet definition.

- Periodically deleting unnecessary execution result generations

Jobnet definitions in the *Applied* status are automatically deleted the next time

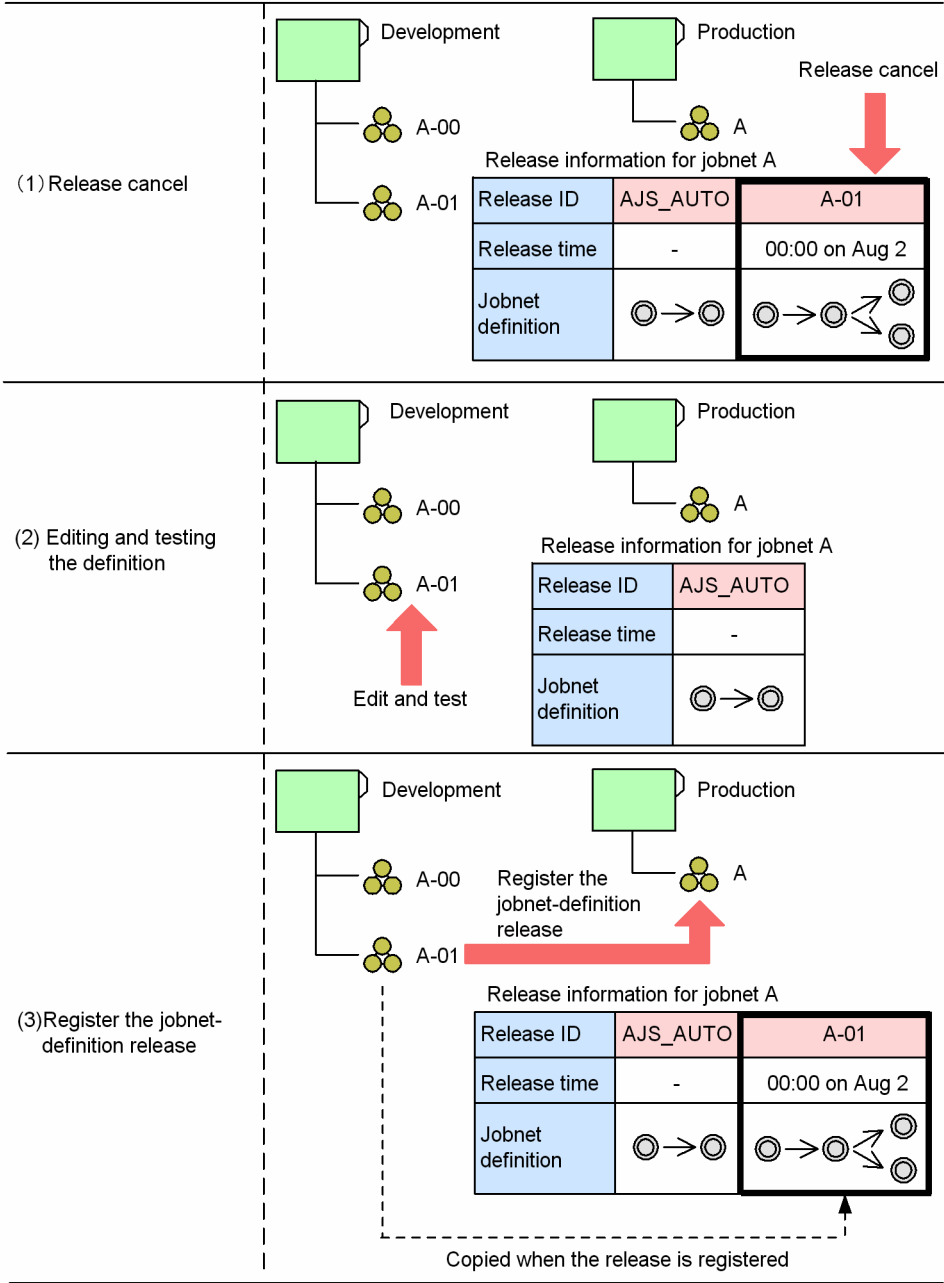
a jobnet-definition release is registered unless a generation is created from that jobnet definition. However, a jobnet definition from which a generation has been created is not deleted. You should therefore consider deleting unnecessary execution-result generations by canceling registration of the generations before you register a release.

Even after registering a jobnet-definition release, you can still edit the release-target jobnet definition by using JP1/AJS3 - View and commands. The edited jobnet definition is applied to the jobnet definition whose status is *Being applied*. Note, however, that information such as execution-result details cannot be retained because the edited jobnet definition is also applied to the generations created according to the release-target jobnet definition. Therefore, consider always using the basic operation cycle except in case of an emergency.

(2) Redoing registration of a jobnet-definition release

If you need to further edit a jobnet definition after it has been registered for release, you can redo the registration. To redo a release registration, cancel the release, edit the jobnet definition, and then re-register the jobnet-definition release. The following figure shows an example of redoing registration of a jobnet-definition release.

Figure 7–15: Operation for redoing registration of a jobnet-definition release



In this example, because editing of the jobnet definition is required after the jobnet-definition release has been registered, the release with the release ID A-01 is canceled ((1) in the figure). Next, the development version of jobnet A-01 is re-edited and tested again ((2) in the figure), after which the release is registered again ((3) in the figure).

(3) Recommended methods of operation

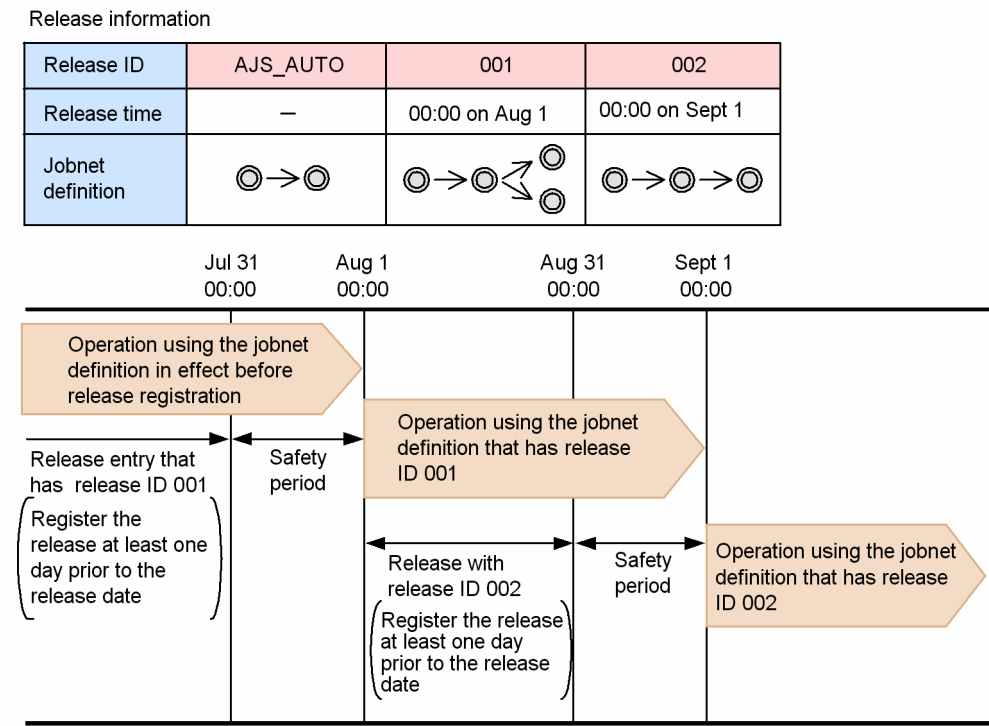
The following describes the recommended methods for using the jobnet release function.

(a) General method of operation

Because a jobnet with a definition in the *Release wait* status cannot be registered for release, multiple jobnet definitions (for example, definitions for August and September) cannot be registered for release at one time. Therefore, after you have registered a release, wait until the jobnet definition you registered for release is switched into operation (status

changes to *Being applied*), and then registered the next jobnet definition for release. At this point, consider registering the release at least one day before the release time to allow extra time as a safety period, as shown in the following figure.

Figure 7–16: Recommended method for using the jobnet release function



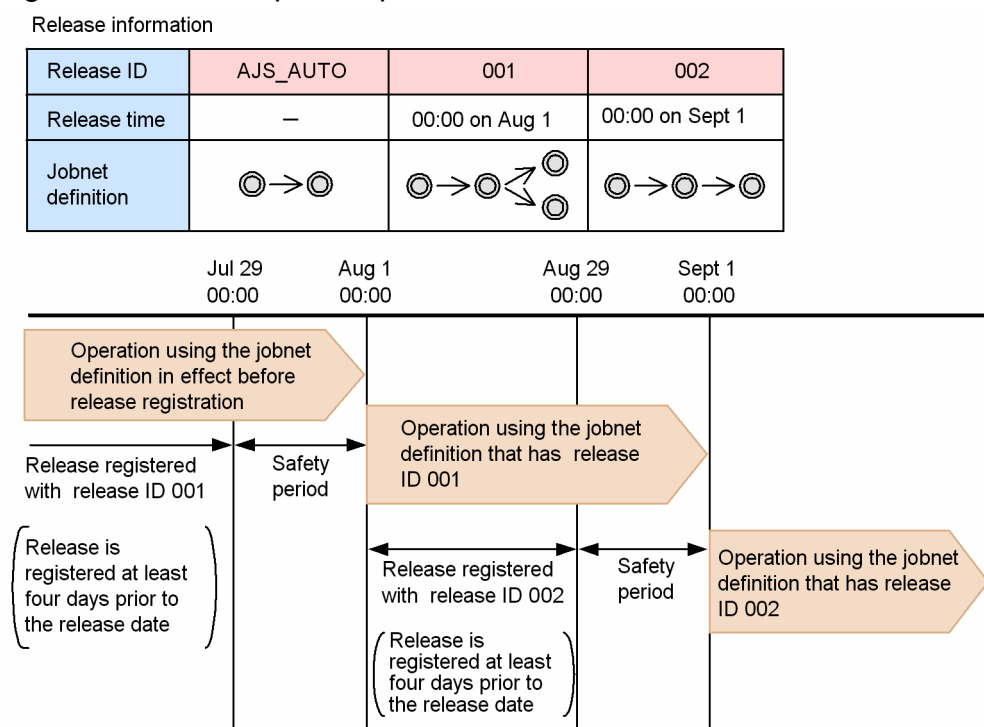
(b) Operation when the execution order control for root jobnets is used

Execution order control for root jobnets connects a jobnet connector and a connection-destination jobnet if they have the same execution date. However, because they are connected while both are running, an attempt to register a jobnet-definition release or cancel the registration while the connection exists might cause problems. For example, a generation preceding the attempted operation might be connected, or the generation to be connected might not be found during operation processing. To prevent problems when using execution order control for root jobnets, make sure that the release registration or release cancellation operation has been completed at least four days[#] before the jobnet connector and a generation of the connection-destination jobnet are to be executed.

#

This number of days is the number of days during which the execution date might be the same due to the base time or time zone setting.

Figure 7–17: Example of operation when execution order control for root jobnets is used



(c) Operation when an execution schedule is changed by temporarily changing the plan

■ When registering a release

If you register a release for a jobnet registered for fixed execution with a period or a number of future generations specified, generations after the specified release time are re-created[#] based on the jobnet definition registered for release. Any changes made by temporarily changing the plan before the release is registered are not passed to the re-created generations.

If you want to apply information about temporary changes made before release entry to the subsequent jobnet definition, use the function for re-execution of temporary changes. This function lists temporary changes made to the jobnet after it was registered for execution. From the displayed list of changes, you can then select which operations to perform again.

For details about the function for re-execution of temporary changes, see 4.5.16 *Displaying and re-executing temporary change operations for a job or jobnet* in the manual *JP1/Automatic Job Management System 3 Overview*. For details about how to check temporary changes and re-execute operations, see 9.17 *Displaying and re-executing temporary changes* in the *JP1/Automatic Job Management System 3 Operator's Guide*.

#

At this time, the following message appears: KAVS4751-W Since the new generation (*execution-ID*) is created to change the jobnet definition of the generation (*unit-name: execution-ID*), information of the temporary change in plan before the definition change is lost.

■ When canceling a release

If you cancel the release for a jobnet registered for fixed execution with a period or a number of future generations specified, the jobnet definition generations specified for release cancellation are re-created[#] for the jobnet definition whose status becomes *Being applied* after cancellation of the release. Information about changes made by temporary changes to the plan before cancellation of the release is not passed to the re-created generations.

Therefore, before canceling a release, use information such as the scheduler log to check the information about temporary changes to the plan performed for generations of the jobnet definition whose release is to be canceled. If necessary, redo the temporary changes to the plan for the re-created generations after the release is canceled.

#

At this time, the following message appears: KAVS4751-W Since the new generation (*execution-ID*) is created to change the jobnet definition of the generation (*unit-name:execution-ID*) , information of the temporary change in plan before the definition change is lost.

■ When an operation entails the recalculation of schedules

In addition to operations to register or cancel a release, generations are also re-created when an operation entails the recalculation of schedules^{#1}. Any changes made by using temporary changes to the plan before the operation is performed are not passed to the re-created generations.

Therefore, before you perform an operation that entails the recalculation of schedules, use information such as the scheduler log to check the information about temporary changes to the plan that have been performed. If necessary, redo the temporary changes to the plan for the re-created generations.

Operations that entail the recalculation of schedules are as follows:

- Making temporary changes to the plan or stopping execution^{#2}
- Changing the calendar definition to be referenced by a release-target jobnet
- Changing the calendar definition to be referenced by an exclusive jobnet
- Changing the base time and base day of an upper-level job group
- Changing the schedule definition of a release-target jobnet
- Changing the schedule definition of an exclusive jobnet
- Warm-starting or disaster-recovery-starting the scheduler service
- Releasing suspension
- Registering or canceling a job-definition release for an exclusive jobnet

#1

At this time, the following message appears: KAVS4751-W Since the new generation (*execution-ID*) is created to change the jobnet definition of the generation (*unit-name:execution-ID*) , information of the temporary change in plan before the definition change is lost.

#2

The following message appears only if the type of execution registration is planned execution registration:
KAVS4751-W Since the new generation (*execution-ID*) is created to change the jobnet definition of the generation (*unit-name:execution-ID*) , information of the temporary change in plan before the definition change is lost.

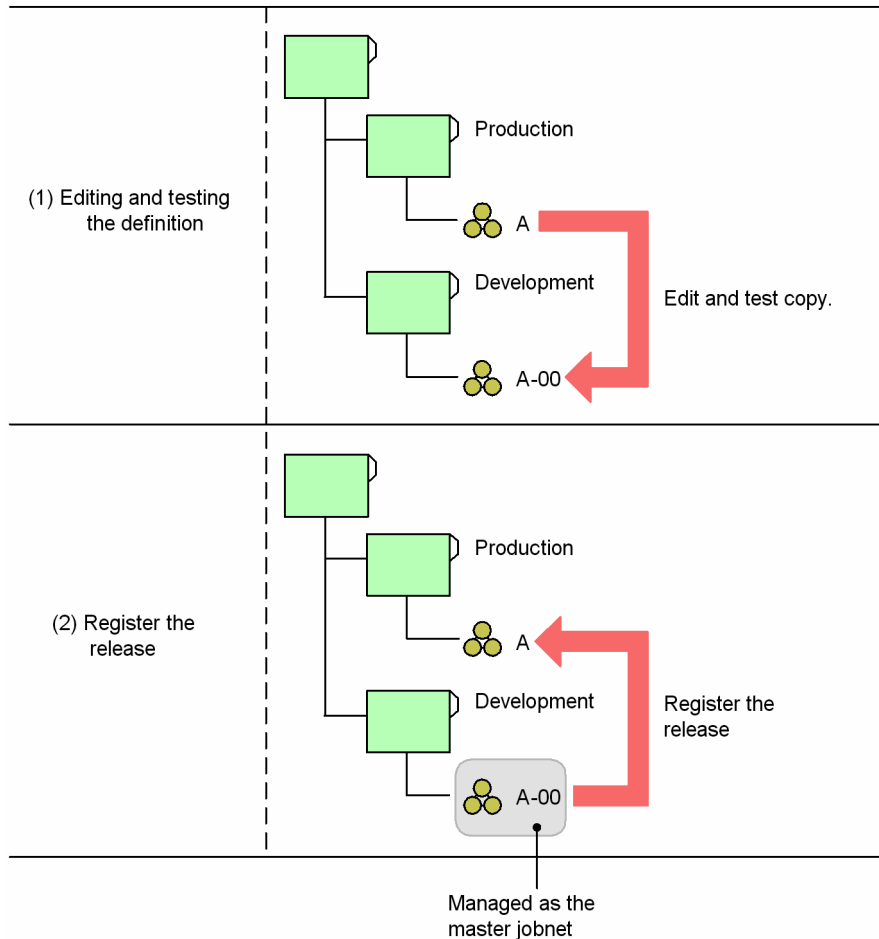
(4) Other methods of operation

The jobnet release function makes it possible to register a jobnet-definition release for any jobnet, thereby making possible operation that is suitable for a development environment. The following describes methods of operation when only production devices are used and when management of a master jobnet is not necessary.

(a) Operation when only production devices are used

If only production devices and no development devices are used, you can switch a jobnet definition by using the same procedure used in the basic operation cycle. After the release is registered, the release-source jobnet is managed as the master jobnet, just as in the basic operation cycle. The following figure shows an example of using only production devices.

Figure 7–18: Example of operation when only production devices are used



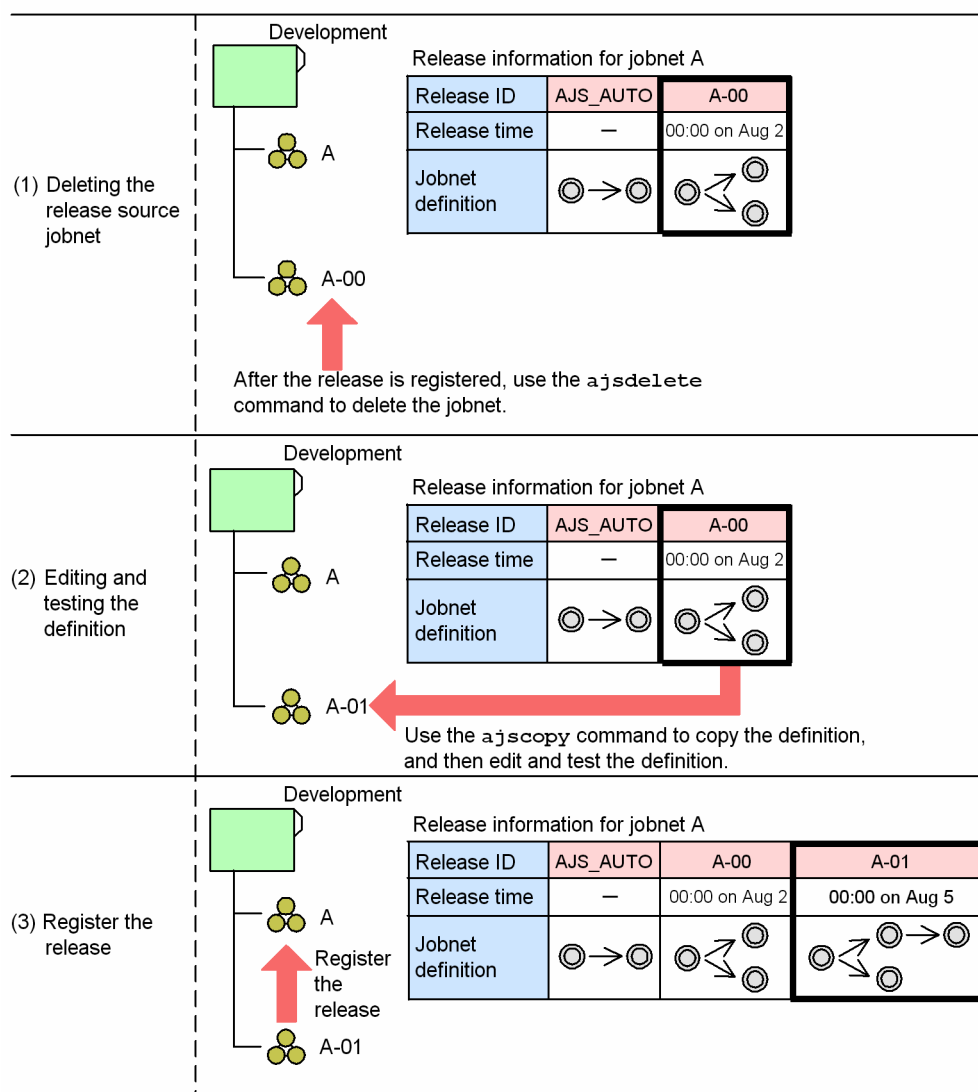
Note that the above operation is also possible if the release-source jobnet and the release-target jobnet belong to the same job group.

(b) Operation when management of a master jobnet is not necessary

If management of a master jobnet is not necessary, you can edit a jobnet definition copied from the release information. Note, however, that only jobnet definitions whose status is *Being applied* can be copied. Therefore, in preparation for redoing a release registration, preserve the release-source jobnet until the status of the jobnet definition registered for release changes to *Being applied*. For example, you can use the `ajsprint` command to output the release-source jobnet to a file.

The following figure shows an example of operation that does not require management of a master jobnet.

Figure 7–19: Example of operation when management of a master jobnet is not necessary



In this example, release-source jobnet A-01 is deleted after release ID A-00 is registered for release ((1) in the figure). Next, a jobnet definition is copied from the release information for jobnet A, and is edited and tested as jobnet A-01 ((2) in the figure). Finally, the release is registered.

(5) When a release is registered or canceled within one day of the release time

When you use the jobnet release function, we recommend that you register releases at least one day before the release time. However, in case of an emergency, you can specify a release time that is less than one day after the release is registered. Similarly, you can cancel the release of a jobnet definition in *Release wait* status less than one day after it has been registered.

However, you must note the following when you register or cancel a release within one day of the release time. In addition, you need to consider a method of operation that avoids registering or canceling a release in this way.

- Until the processing to register a jobnet-definition release has completed, execution of generations whose start time is later than the release time is prohibited. As a result, if processing to register a release takes a long time, execution of these generations will be delayed.

- Until the processing to cancel a jobnet-definition release has completed, execution of generations whose start time is later than the release time of that jobnet definition is prohibited. As a result, if release cancellation processing takes a long time, execution of these generations will be delayed.

(6) When a jobnet is registered for execution within one day after the release time

If you register a jobnet-definition release and then register the jobnet for execution at a time less than one day after the release time, you must take note of the schedule rules for the release-target jobnet. If you use either of the execution registration methods below, a generation is created after the base time of the day on which the jobnet is registered for execution. As a result, if you register the jobnet for execution after the release time, the scheduled generation on that day is executed with the jobnet definition whose status is *Applied*.

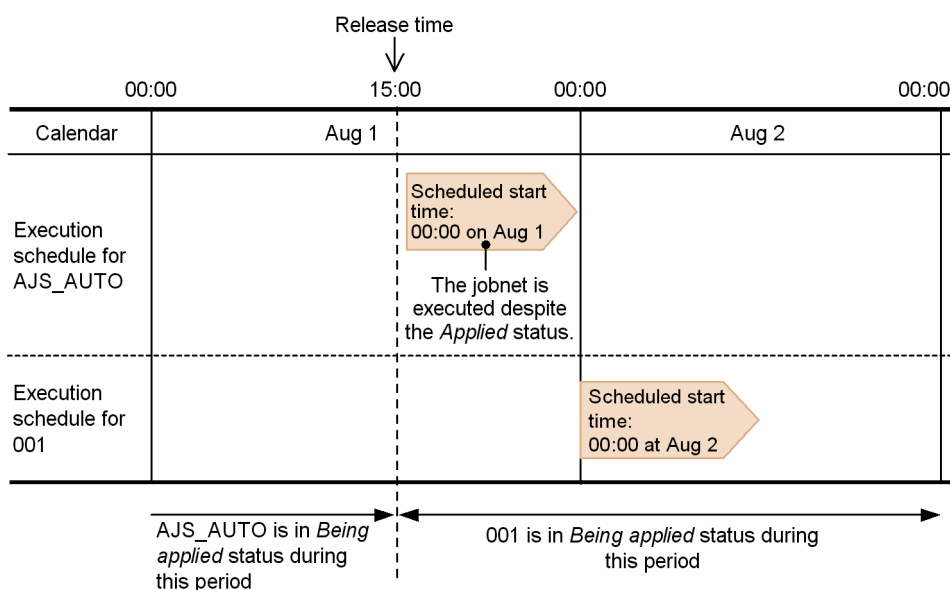
- Planned execution registration
- Fixed execution with a period or a number of future generations specified

The following figure shows operation when the jobnet is registered for execution at time less than one day after the release time.

Figure 7–20: When the jobnet is registered for execution at a time is less than one day after the release time (1)

Release information

Release ID	AJS_AUTO	001
Release time	—	15:00 on Aug 1
Schedule rule	Executed every day at 00:00	Executed every day at 00:00



Legend:

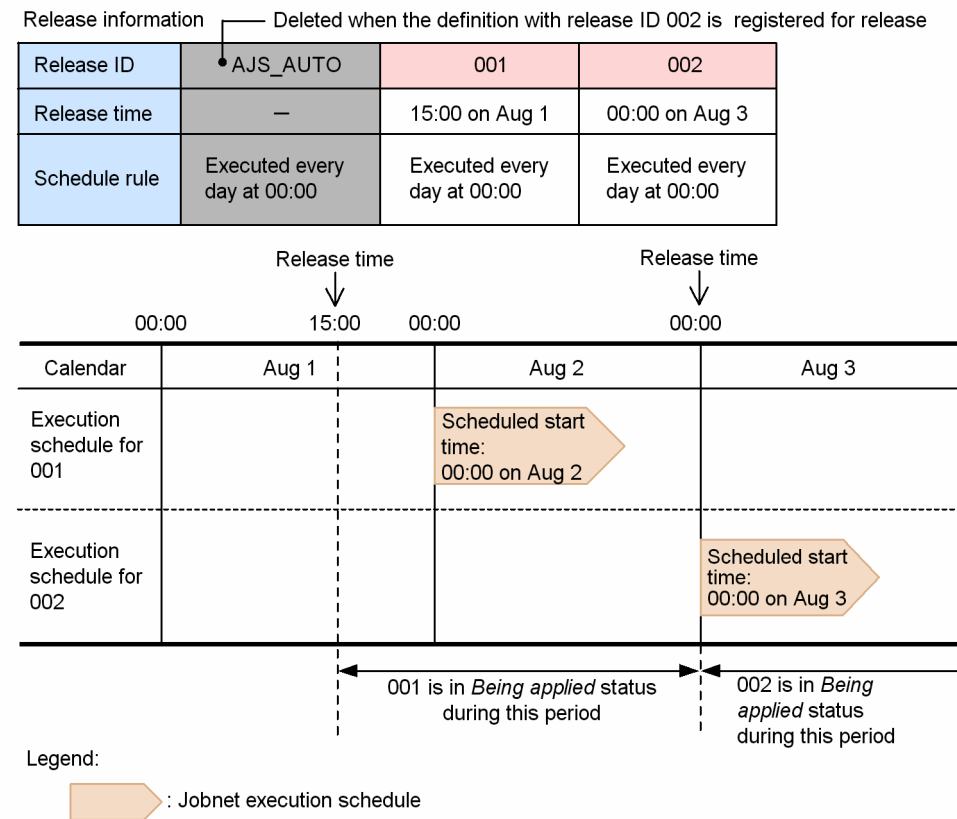
: Jobnet execution schedule

In this figure, the jobnet-definition release is registered with a release time of 15:00 on August 1 specified, and the jobnet is registered to be executed at a time that is less than one day after the release time (from 15:00 to 23:59 on August 1). At 15:00 on August 1, the status of the jobnet definition with the release ID 001 changes to *Being applied*. Because the jobnet is registered to be executed within one day after the release time, a scheduled generation for 00:00 on August 1 is

created for the jobnet definition that has the release ID `AJS_AUTO`, whose status is *Applied*. The jobnet for the scheduled generation for 00:00 on August 1 is executed at the moment it is registered to be executed.

Consider a situation in which a jobnet definition that has the release ID `002` is registered for release after the status of the definition that has the release ID `001` becomes *Being applied*. If the jobnet definition that has the release ID `AJS_AUTO` does not have an execution result generation, this jobnet definition is deleted. Thereafter, when the jobnet is registered for execution on August 1, no scheduled generation for 00:00 on August 1 is created, as shown in the following figure, because the jobnet definition whose status is to become *Being applied* at 00:00 on August 1 (that is, the jobnet definition that has the release ID `AJS_AUTO`) does not exist.

Figure 7–21: When the jobnet is registered for execution less than one day after the release time (2)



7.4 Changing the unit definition information during registration for execution

In JP1/AJS3, during registration for execution, you can change the file name, execution agent, hold attribute, and other unit definitions that are reflected on unit execution. However, depending on the type of unit for which the definition is changed and the status of the root jobnet when the definition is changed, the changes may or may not be applied to the definitions of the unit.

The following table lists whether changes are applied to the definitions based on the combination of unit type and root jobnet status.

Table 7–2: Whether changes are applied to the definitions based on the status of the root jobnet and the type of unit

Type of unit	Status of root jobnet			
	Ended	Now running Running + Warning Running + Abend	Time-wait ^{#1} Wait for start cond. Holding	Time-wait ^{#2}
Root jobnet	Y ^{#3}	N	N	Y
Nested jobnet	Y ^{#3}	N ^{#4}	Y	Y
Job	Y ^{#3}	N ^{#4}	Y	Y

Legend:

Y: All the changes are applied to unit definitions.

N: The changes are not applied to unit definitions if the definitions are listed in [Table 7-3](#).

#1

The next generation that is scheduled to be executed, and the generation waiting beyond its scheduled start time for the end of another generation currently being executed because concurrent execution is disabled

#2

Only the generation waiting for the start time other than the case of #1

#3

The job or jobnet is executed based on the new definitions when the generation in the Ended status is re-executed.

#4

Changes are applied to unit definitions when the following conditions are satisfied:

- Definitions are changed for the unit under the nested jobnet that is not being executed.
- The root jobnet containing the unit with new definitions is re-executed.
- The root jobnet containing the unit with new definitions is released from suspension.
- A service is restarted after unit definitions are changed.

The following table lists the unit definitions for which changes are not applied when "N" is indicated in the above table:

Table 7–3: Unit definition information for which changes will not be applied when changed during registration for execution

Unit type	Unit definition information for which changes will not be applied
Standard jobs, HTTP connection jobs, Action jobs, Custom jobs, and Passing information setting jobs	• Hold • Exec. service • Delayed end • Time required for execution in delayed end • Owner • Executed by • Retry on abnormal end • Return code for retry on abnormal end • Maximum retry times on abnormal end • Retry interval on abnormal end
Event jobs	• Hold • Delayed end • Time required for execution in delayed end
Custom event jobs	• Hold • Delayed end • Time required for execution in delayed end • Owner • Executed by
Judgment jobs	• Hold
Jobnets	• Exec. agent • Concurrent exec. (root jobnet only) • Priority • Schedule option (root jobnet only) • Timeout period (root jobnet only) • Monitor jobnet • Time required for execution in monitor jobnet • Hold
Remote jobnets	• Target manager • Concurrent exec. (root remote jobnet only) • Schedule option (root remote jobnet only) • Timeout period (root remote jobnet only) • Monitor jobnet • Time required for execution in monitor jobnet • Hold
Start condition	• Concurrent exec. of monitoring gen. • Pause exec. gen. for start cond. • Task after abend

For all the unit definition items other than those listed above, changes will be applied. If you want to apply the changes for the items listed above even when they were changed during registration for execution, you must perform an additional operation. For details about the operation, see [7.4.2 Applying the unit definition information changed during registration for execution](#).

Cautionary note

You can specify settings so that changes made to the unit definition information during registration for execution are applied. However, for the items **Timeout period**, **Pause exec. gen. for start cond.**, and **Task after abend**, such

changes will not be applied regardless of the specified settings. To apply changes for these items, cancel the execution registration, and then re-register the execution.

The following table lists the timing of reloading (applying) the latest definition information when the setting that applies unit definition information that has changed during execution registration is specified.

Table 7–4: When the latest definition information is reloaded

Unit type	When the latest definition information is reloaded
Jobs (standard jobs, HTTP connection jobs, event jobs, custom event jobs, action jobs and custom jobs)	Immediately before the jobs wait for execution
Jobnets	Immediately before the jobnets are executed

By changing the definitions before jobs and jobnets are executed, you can execute jobs and jobnets with new definitions.

Cautionary notes

Changes to the definition of an event job and a custom event job in *Now running* status (including an event job and a custom event job defined as a start condition) do not take effect until the job is in *Ended* status. If you want to monitor the job with the changed definition contents, place the job in *Ended* status as follows, and then register the job again:

- Event job and custom event job
Kill the job or terminate the job by changing its status.
- Jobnet with a start condition
Kill the jobnet as described in [8.1.1 Stopping a jobnet that is monitoring start conditions](#).

7.4.1 Unit definition information that is applied by the setting that applies unit definition information that has changed during execution registration

When you specify the setting that applies unit definition information that has changed during execution registration, the latest information is also applied to the following unit information.

Table 7–5: Unit definition information for which changes will be applied

Unit type	Unit definition information for which changes will be applied
Standard jobs, HTTP connection jobs, Action jobs, Custom jobs, and Passing information setting jobs	• Hold • Exec. service • Delayed end • Time required for execution in delayed end • Owner • Executed by • Retry on abnormal end • Return code for retry on abnormal end • Maximum retry times on abnormal end • Retry interval on abnormal end
Event jobs	• Hold • Delayed end • Time required for execution in delayed end
Custom event jobs	• Hold

Unit type	Unit definition information for which changes will be applied
Custom event jobs	• Delayed end • Time required for execution in delayed end • Owner • Executed by
Judgment jobs	• Hold
Jobnets	• Exec. agent • Concurrent exec. (root jobnet only) • Priority • Schedule option (root jobnet only) • Monitor jobnet • Time required for execution in monitor jobnet • Hold
Remote jobnets	• Target manager • Concurrent exec. (root remote jobnet only) • Schedule option (root remote jobnet only) • Monitor jobnet • Time required for execution in monitor jobnet • Hold
Start condition	• Concurrent exec. of monitoring gen.

Cautionary note

You can specify settings so that changes made to the unit definition information during registration for execution are applied. However, for the items **Timeout period**, **Pause exec. gen. for start cond.**, and **Task after abend**, such changes will not be applied regardless of the specified settings. To apply changes for these items, cancel the execution registration, and then re-register the execution.

7.4.2 Applying the unit definition information changed during registration for execution

To specify when changes to definitions are applied:

1. Terminate the JP1/AJS3 scheduler service.

Use the `jajs_spmd_stop` command to terminate the target JP1/AJS3 scheduler service. For details about the `jajs_spmd_stop` command, see *jajs_spmd_stop* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

2. Change the environment setting parameter.

3. Specify an environment setting option.

Execute the following command to change the value of the `UNITDEFINERELOAD` environment setting parameter to `yes`.

```
jajs_config -k "[JP1_DEFAULT\JP1AJSMANAGER\AJROOT1]" "UNITDEFINERELOAD"="yes"
```

If you may change unit definitions during registration for execution, you should select `Yes`.

For details about the environment setting parameters, see 20.4 *Setting up the scheduler service environment* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

When `NO` is specified, the change is not applied for some units (this behavior is the same as in version 06-51 or earlier).

4. Start the JP1/AJS3 scheduler services.

Use the `jajs_spmc` command to start the target JP1/AJS3 scheduler service. If the setting that applies the unit definition information changes made during execution registration has been changed while the JP1/AJS3 scheduler service is running, restart the scheduler service. For details about the `jajs_spmc` command, see *jajs_spmc* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

7.5 Starting and stopping only the scheduler service

You can use commands to start and stop only the scheduler service. The following subsections describe the procedures.

7.5.1 Starting the scheduler service

Use the `jajs_spm` or `ajsstart` command to start only the scheduler service. You can use command options to restrict the execution status of jobnets and jobs when the scheduler service starts.

- Cold start
Execution registration for all jobnets is forcibly canceled when the scheduler service starts.
If the table structure of the JP1/AJS3 scheduler database has changed, you need to perform a cold start.
- Warm start
The status when scheduler service was stopped is inherited when the scheduler service starts. However, the status of jobnets and jobs that were in *Now running* status when the scheduler service stopped changes to an end status.
- Hot start
The status when scheduler service stopped is inherited when the scheduler service starts. The execution of jobnets and jobs that were in *Now running* status when the scheduler service stopped continues.

For details about the `jajs_spm` command, see `jajs_spm` in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

To use advanced options, instead of the options above, to start the scheduler service, use the `ajsstart` command. For details about the `ajsstart` command, see `ajsstart` in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

Cautionary notes

- When cold start is specified, all execution results are disabled because execution information for all jobnets registered for execution is deleted before the scheduler service starts. In addition, you will need to re-register the jobnets after the scheduler service is cold-started.
- Cold-start processing waits for JP1/AJS3 - View to terminate. If you specify a cold start, make sure that the connection with JP1/AJS3 - View is closed.

7.5.2 Stopping the scheduler service

Use the `jajs_spm_stop` or `ajsstop` command to stop only the scheduler service. When you use these commands, while the JP1/AJS3 service is running only the scheduler service is stopped.

To stop the scheduler service, you can use `ajsstop` command options to restrict the execution of jobnets and jobs as follows to ensure the safe termination of the scheduler service.

- Schedule restriction
The scheduler service terminates after all jobnets scheduled for execution on the day on which the command is executed have terminated. Although execution registration for jobnets is accepted during schedule restriction, jobnets scheduled for the next day will not be executed if that day arrived during schedule restriction processing.
- Jobnet restriction

The scheduler service terminates after all jobnets that are running when the command is executed have terminated. During jobnet restriction processing, no new root jobnet is started. Furthermore, a jobnet cannot be registered for immediate execution.

- Job restriction

The scheduler service terminates after all jobs that are running when the command is executed command have terminated. During job restriction processing, no job is started and a running jobnet is interrupted. Automatic retry is not performed if a job ends abnormally. Furthermore, a jobnet cannot be registered for immediate execution.

- Forced termination (kill) of jobs

The scheduler service terminates when the command is executed. All jobnets that are running when the scheduler service terminates are killed. Automatic retry is not performed if a job ends abnormally.

- Forced termination (kill) of the scheduler service

The scheduler service terminates when the command is executed. However, the execution of jobs that are running when the scheduler service terminates continues execution.

For details about the `jajs_spmc_stop` command, see *jajs_spmc_stop* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

To use advanced options to stop the scheduler service, use the `ajsstop` command. For details about the `ajsstop` command, see *ajsstop* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

7.6 Defining a local date and time for the scheduler service

You can define a local date and time for the scheduler service, for a host, that is not the date and time used by the system. For example, if you want to simulate a task before actually executing it, define a local date and time for the scheduler service so that you can execute the operation test without changing the system date and time. This function allows you to test nighttime processing during the daytime.

The definition of a local date and time for a scheduler service is valid only for a particular scheduler service.

Only an OS user who has administrator privileges or superuser privileges can perform this operation.

The following table describes when the local date and time for the scheduler service are applied.

Table 7–6: Date and time to be applied when the local date and time for the scheduler service are defined

Type of date and time	Date and time to be applied
Date and time that the scheduler service can control (date and time for starting and ending a jobnet, and time for starting the scheduler service, other than for jobs, event jobs, custom event jobs, and action jobs that are executed in JP1/AJS3 - Agent)	Scheduler service local date and time
Date and time used when the date and time specification is omitted (for example, when a schedule is temporarily changed)	Scheduler service local date and time
Date and time of log data output by the scheduler service	Scheduler service local date and time
Timestamp of a file created and updated by JP1/AJS3	System date and time
Date and time of log data output to the system logging file	System date and time
Time when an event is received and time when an event arrives	System date and time
Time that a command beginning with <code>ajs</code> is executed	Scheduler service local date and time
Time that a command not beginning with <code>ajs</code> is executed	System date and time
JP1 events with event IDs is 4100 to 4131	Scheduler service local date and time

Use the `ajslocaldate` command to define a local date and time for the scheduler service. For details about the `ajslocaldate` command, see *ajslocaldate* in *4. Commands Used for Special Operation* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

Cautionary notes

- To change a local date and time for the scheduler service, stop the scheduler service, change the date and time, and then restart the scheduler service. To return to the original date and time, use the `jajs_spmd_stop` command with `-n jajs_schd` specified to stop only the scheduler service. After executing this command, execute the `jajs_spmd` command with the `-cold` option and `-n jajs_schd` specified to restart the scheduler service. For details about the `jajs_spmd_stop` and `jajs_spmd` commands, see *jajs_spmd_stop* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference* and *jajs_spmd* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.
- After being set, the local date and time for the scheduler service takes effect at the next restart.
- The local date and time for the scheduler service are generated based on the system date and time. If you change the system date and time, the change is also applied to the local date and time for the scheduler service. If you have changed the system date and time, make sure that the local date and time for the scheduler service will be correct.

- To use a local date and time for the scheduler service in a cluster system, execute the `ajslocaldate` command on both the executing host and standby host.

7.7 Swapping a scheduler log file

The scheduler logs for the scheduler services are output either to a separate file for each service or to a single file for the host. You can use the `AJSLOGOUTPUTDEST` environment setting parameter to specify output separately for each scheduler service or for the host.

For both types of output, output is to one of two log files. When the amount of data stored in the current log file reaches the file size specified in the environment settings, the log file is replaced by the other file.

For output for each scheduler service.

The file specified in the `AJSLOGFILE1` environment setting parameter is replaced by the file specified in the `AJSLOGFILE2` environment setting parameter.

For output for the host.

The file specified in the `HOSTLOGFILE1` environment setting parameter is replaced by the file specified in the `HOSTLOGFILE2` environment setting parameter.

You can use the `-c` option of the `ajsalter` command to forcibly switch the file to which the scheduler log is output. You can also select either of two methods for switching a scheduler log file:

- Switching the log output destination file to the alternate file (`-c CHANGE`)
- Copying the contents of the current log file to the other log file, and then overwriting the current log file from the beginning of the file (`-c COPY`)

If log output is blocked due to a log output error that occurred during scheduler log output, you can cancel the blocked status by executing the `ajsalter` command `-c` option to switch the scheduler log file. For details about the `ajsalter` command, see *ajsalter* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

In addition, when you use the `ajsalter` command `-o` option, the scheduler log file is switched as follows based on the specification of the `AJSLOGOUTPUTDEST` environment setting parameter.

Table 7–7: Scheduler log file subject to the `-c` option according to the combination of the environment setting parameter `AJSLOGOUTPUTDEST` and `-o` option

Specification of <code>AJSLOGOUTPUTDEST</code>	<code>-o</code> option of the <code>ajsalter</code> command	
	Specified	Not specified
<code>schedule</code> (default value)	For the host	For each scheduler service
<code>host</code>	For the host	For the host

Legend:

For the host: The scheduler log file for the entire host

For each scheduler service: The scheduler log file for each scheduler service

For details about the `AJSLOGOUTPUTDEST` environment setting parameter, see *20.4.2(28) AJSLOGOUTPUTDEST* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

Examples of using the `AJSLOGOUTPUTDEST` environment setting parameter and the `ajsalter` command:

The following are examples of using the `ajsalter` command in the following environment.

Environment (manager host: HOST)

Scheduler log files for the host:

```
/var/opt/jplajs2/log/ajs-host-log1.log  
/var/opt/jplajs2/log/ajs-host-log2.log
```

Scheduler service AJSROOT1

- Value of the AJSLOGOUTPUTDEST environment setting parameter: schedule
- Scheduler log files:
/var/opt/jplajs2/log/schedule/AJSROOT1/ajs-log1.log
/var/opt/jplajs2/log/schedule/AJSROOT1/ajs-log2.log

Scheduler service AJSROOT2

- Value of the AJSLOGOUTPUTDEST environment setting parameter: host
- Scheduler log files
/var/opt/jplajs2/log/ajs-host-log1.log
/var/opt/jplajs2/log/ajs-host-log2.log

Example 1

This example shows how to switch the scheduler log file for scheduler service AJSROOT1:

```
ajsalter -F AJSROOT1 -c CHANGE
```

In this case, the scheduler log file /var/opt/jplajs2/log/schedule/AJSROOT1/ajs-log1.log for the scheduler service is switched to /var/opt/jplajs2/log/schedule/AJSROOT1/ajs-log2.log.

Example 2

This example shows how to switch the scheduler log file for the manager host HOST on which the scheduler service AJSROOT1 is defined:

```
ajsalter -F AJSROOT1 -o -c CHANGE
```

In this case, the scheduler log file /var/opt/jplajs2/log/ajs-host-log1.log for the host is switched to /var/opt/jplajs2/log/ajs-host-log2.log.

If you specify the -o option to switch the scheduler log file for the host, note that the scheduler log file for scheduler service AJSROOT2 is also switched. This is because the AJSLOGOUTPUTDEST environment setting parameter for AJSROOT2 is also set to host on the same manager host.

Example 3

This example shows how to switch the scheduler log file for the manager host HOST on which the scheduler service AJSROOT2 is defined:

```
ajsalter -F AJSROOT2 [-o] -c CHANGE
```

In this case, the scheduler log file /var/opt/jplajs2/log/ajs-host-log1.log for the host is switched to /var/opt/jplajs2/log/ajs-host-log2.log.

Because the AJSLOGOUTPUTDEST environment setting parameter for scheduler service AJSROOT2 is set to host, the scheduler log file for the host is switched regardless of whether the -o option is specified.

7.8 Modifying execution agent information

You can set or change information about an execution agent during JP1/AJS3 operation. You need to change the execution agent information if you want to perform the following operations:

- Add or delete an execution agent for jobs during operation.
- Add or delete an execution agent used for load balancing.
- Change the execution agent information (execution host and maximum number of concurrently executable jobs) during operation.
- Change the status of job transfer restrictions for the execution agent during operation.
- Reduce a delay in job distribution to execution agents during operation.

7.8.1 Adding, deleting, or changing a execution agent

You can add and delete an execution agent during JP1/AJS3 operation. You can also change the maximum number of concurrently executable jobs on the execution agent and the status of job transfer restrictions for the execution agent.

You can also add and delete an execution agent group used for load balancing.

(1) Using commands to perform operations on an execution agent

If you want to perform operations on an execution agent from the CLI, use the following commands. For details about the commands, see 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

- `ajsagtadd`
Adds an execution agent. At the same time, this command sets the maximum number of concurrently executable jobs. This command also adds an execution agent group.
- `ajsagtdel`
Deletes an execution agent or an execution agent group.
- `ajsagtalt`
Changes the execution agent information. The following information can be changed:
 - Execution host name (agent host name)
 - Maximum number of concurrently executable jobs
 - Description
 - The status of job transfer restrictions for the execution agent
 - The status of the execution agent

You can also change information about an execution agent group. The following types of changes are possible:

- Changing the description
- Adding or deleting an execution agent to an execution agent group
- Changing the execution agent priority defined in the execution agent group
- Changing the status of job transfer restrictions for the execution agent group

To check the information and status of an execution agent, you can use the `ajsagtshow` command.

(2) Using the Web GUI (Job Portal) to perform operations on an execution agent

You can also perform operations on an execution agent from the Web GUI (Job Portal). For details, see *15.2.4 Execution Agent screen* in the *JP1/Automatic Job Management System 3 Operator's Guide*.

7.8.2 Defining execution agents at the same time

You can output execution agent definition information to define execution agents at the same time on other manager hosts. The command shown below outputs execution agent information. For details about the command, see 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

- `ajsagtprint`

Outputs execution agent definition information as a CSV text file.

By specifying the output text file in the `ajsagtadd` command, you can define several execution agents at the same time.

7.9 Changing the JP1/AJS3 host settings

This section describes how to change the host name, IP address, and system date and time for the host that runs JP1/AJS3. Make these changes to adjust to a change in the network configuration or to temporarily change the date and time for testing.

7.9.1 Changing the name of the host that runs JP1/AJS3

This subsection explains the procedures for changing the names of hosts that run JP1/AJS3 (JP1/AJS3 - Manager, JP1/AJS3 - Agent, JP1/AJS3 - Web Console, and JP1/AJS3 - View).

(1) Notes on changing the host name

- There is no effect on operation of JP1/AJS3 even if the old host name is used in a message before it is changed. Pay special attention, however, if user programs reference log files.
 - After the host name is changed, if you display the detailed results of a job executed before the host name is changed, the old host name is displayed as the name of the host where the job was executed. This does not affect the operation of JP1/AJS3.
 - If you only want to change the domain name of the network environment without defining host names in the FQDN format in JP1/AJS3, depending on whether you are executing operations that use FQDN host names in event jobs and custom event jobs, the required procedure differs. For information about operations that use FQDN host names in event jobs and custom event jobs, see [7.9.5 Changing to FQDN host names for event jobs and custom event jobs in a DNS environment](#) and [2.3.8 Operation in a DNS environment in the JP1/Automatic Job Management System 3 System Design \(Configuration\) Guide](#).
 - If you are not executing operations that use FQDN host names in event jobs and custom event jobs:
You do not need to perform the operations (for changing the host name) described in this subsection.
 - If you are executing operations that use FQDN host names in event jobs and custom event jobs:
You must perform the following operations on hosts whose domain name is to be changed:
 - For JP1/AJS3 - Manager:
You must perform operations in accordance with steps 1, 4, 6, 9, 10, 13, and 14 in [\(2\) Procedure for changing the host name of JP1/AJS3 - Manager](#).
 - For JP1/AJS3 - Agent:
You must perform operations in accordance with steps 1, 2, 3, 5, 6, 7, 8, and 9 in [\(3\) Procedure for changing the host name of JP1/AJS3 - Agent](#).
- If the name of the Access Control Server of JP1/Base is specified in the FQDN format, you must change the user mapping setting according as described in Step 9 of [\(2\) Procedure for changing the host name of JP1/AJS3 - Manager](#) below.
- If you change the host name when QUEUE jobs and submit jobs are used, you need to change the execution agent definition information and the definition information for the execution environment for QUEUE jobs and submit jobs.
 - When the `jp1hosts` information or `jp1hosts2` information of a host that is running is changed or the host name registered on a DNS server is changed, the host name after the change is applied to JP1/AJS3 after JP1/AJS3 restarts. For this reason, if you change the host name without stopping JP1/AJS3, communication by using the host name before the change is attempted, and symptoms such as jobs ending abnormally might occur. Before changing the host name, stop the JP1/AJS3 services. However, if you are adding new `jp1hosts2` information, stopping the JP1/AJS3 services is unnecessary.

(2) Procedure for changing the host name of JP1/AJS3 - Manager

Before you change the host name of JP1/AJS3 - Manager, you need to do the following:

Preparation

- When you use a remote jobnet, before changing the host name, cancel the execution registration of the remote jobnet.
- When you execute the event job and the custom event job, stop all programs of JP1/AJS3 of the agent host that executes the event job and the custom event job.
- If the operation restriction function of the Web GUI (Job Portal) is enabled, prepare a backup of the operating permission configuration file that has been applied on the JP1/AJS3 - Manager host whose name is to be changed.
- Make sure that the following operations are not performed from another host to the manager host whose host name is to be changed.
 - Logging in or performing operations from JP1/AJS3 - View or JP1/AJS3 - Web Console
 - Executing APIs
 - Executing remote commands
 - Executing remote jobnets
 - Executing jobs for which the execution destination of the job is the manager host whose host name is to be changed
 - Controlling the execution order of root jobnets between different scheduler services that use jobnet connectors or connection-destination jobnets of the manager host whose host name is to be changed

To change the host name of JP1/AJS3 - Manager:

1. Log off JP1/AJS3 - View and JP1/AJS3 - Web Console.
2. Use the `ajsprint` command to back up the jobnet definition.
You will use the backup you create here in step 11.
For details about the backup method, see [2.2.3\(4\) Backing up the unit definition](#).
3. Use the `ajsagtprint` command to back up the execution agent definition.
The backup created here will be used in step 12. For details about how to create the backup, see [2.2.3\(2\) Backing up the execution agent information](#).
4. Stop the JP1/AJS3 services on the manager host.
For details on JP1/AJS3 services, see [4.2.1 Types of JP1/AJS3 services](#) in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.
For details on how to stop JP1/AJS3 services manually, see [6.1.2 Stopping JP1/AJS3 services manually](#).
In addition, for the JP1/AJS3 services, stop the services on the physical host and all logical hosts.
5. When QUEUE jobs and submit jobs are used, use the `jpgexport` command to back up the execution environment definition for QUEUE jobs and submit jobs.
The backup created here will be used in step 7. For details about how to create the backup, see [2.2.3\(3\) Backing up the execution environment definition for QUEUE jobs and submit jobs](#).
6. Change the physical host name of the manager host, or the logical host name.
Change the host name of the manager host. Change the host name if the host is a physical host.
If you are running JP1/AJS3 in a cluster system, and you change a logical host name, delete the old logical host name and then set up the new logical host name for use in the cluster system.

In Windows:

For details about deleting logical host names, see 8.2.8 *Deleting logical hosts* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

For details about setting up a logical host to run in a cluster system, see 8. *Setup for Operation in a Cluster System* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

In UNIX:

For details about deleting logical host names, see 17.2.8 *Deleting logical hosts* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

For details about setting up a logical host to run in a cluster system, see 17. *Setup for Operation in a Cluster System* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

Note that it must be possible to perform name resolution for the host name after the change from the other hosts that communicate with the relevant manager host (such as the JP1/AJS3 - View host, the JP1/AJS3 - Web Console server, job-execution-destination agent hosts, and other manager hosts that are the execution sources of remote jobnets, etc.). Change the `hosts` files, etc., on those hosts so that the IP address of the manager host is found from the host name after the change.

For notes on changing the settings of the `hosts` file, etc., see (1) *Notes on changing the host name*.

7. When QUEUE jobs and submit jobs are used, use the `jpqimport` command to re-create the execution environment for the QUEUE jobs and submit jobs.

For details about how to re-create the execution environment for the QUEUE jobs and submit jobs, see 2.3.4(6) *Creating an execution environment for QUEUE jobs and submit jobs*.

For a logical host, this step is unnecessary because the execution environment has already been re-created in step 6.

8. Set up the database environment.

If you change the name of the physical host, you will need to reconfigure the database environment of all embedded databases that are set up on the physical and logical hosts. For details about the procedure for performing setup again, see steps 3 to 7 in 23.4.1(6) *Setting up an embedded database again* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

If you want to use a cluster configuration, set up the primary node and then, on the secondary node, perform the procedure in 23.5.2(6) *Setting up an embedded database again* in the *JP1/Automatic Job Management System 3 Configuration Guide*. In addition, this operation is unnecessary for a logical host because re-setup was already performed in step 6.

9. Perform the following procedure as required.

No.	Condition	Work performed
1	If the host whose name is to be changed is used as the authorization server (a function of JP1/Base)	Change the settings for user mapping. In Windows: In the JP1/Base Environment Settings dialog box, choose the User Mapping tab, and then change the host name defined in Server host of JP1 user to the changed name. In UNIX: Change the host name defined in the user mapping definition file (<code>jp1BsUmap.conf</code>) to the changed name. Then execute the <code>jbsmkumap</code> command. For details on user mapping, see the <i>JP1/Base User's Guide</i>.
2	If an event job or a custom event job is being used	On the manager and agent hosts (including the local host) is being used on which the event job or the custom event job is being executed, execute the <code>jpagoec</code> command, and then cold-start the JP1/AJS3 services on the agent hosts.

No.	Condition	Work performed
2	If an event job or a custom event job is being used	Execute the <code>jpoagoec</code> command on all the hosts that receive requests from the manager whose name is to be changed and that execute the event job or the custom event job. The procedure for executing the command is described below. An example procedure for when hostname <code>ManagerHostB</code> is to be changed to follows: 1. Execute the <code>jpoagoec -p</code> command to check the name of the manager host that the event action agent function currently stores. Display example: <code>ManagerHostA</code> <code>ManagerHostB</code> 2. Execute the <code>jpoagoec -d ManagerHostB</code> command to delete the pre-changed manager host name. 3. Cold-start the JP1/AJS3 services on the agent hosts. Use the following procedure to perform a cold start: In Windows: In the Control Panel, double-click Administrative Tools. In the displayed Administrative Tool dialog box, double-click the Services icon. Select the service name of JP1/AJS3 to be started, and then select Operations and Properties. In the General tab in the <i>service-name</i> Properties dialog box, specify <code>-cold</code> as the start mode for Start Parameters. Then click the Start button. In UNIX: Execute the <code>jaajs_spmd -cold [-h logical-host-name]</code> command.
3	If the communication encryption function is being used and you change the host name to one different from the CN or SAN in the server certificate	Acquire and deploy the server certificate again. To change the host name to one different from the CN or SAN in the server certificate, you need to acquire and deploy the server certificate again. If the CA of the issuer of the reacquired server certificate is different from that of the original certificate, you also need to acquire and deploy the root certificate. For details about how to acquire and deploy server certificates and root certificates, see <i>21.4 Setting up the communication using SSL</i> in the <i>JP1/Automatic Job Management System 3 Configuration Guide</i>.

10. Cold-start the JP1/AJS3 service on the manager host.

Perform a cold start of the physical host or logical host whose host name you changed.

11. Use the `ajsdefine` command to recover the jobnet definition you backed up in step 2.

For details about the recovery method, see [2.3.4\(9\) Recovering the unit definition](#).

12. Use the `ajsagtadd` command to recover the execution agent definition you backed up in step 3.

For details about the recovery method, see [2.3.4\(8\) Recovering the execution agent information](#).

13. If necessary, start the services you stopped in step 4.

14. On the manager host, re-register for execution the jobnets required for operation.

Since the manager host is started by a cold start in step 10, the execution registration of jobnets is all cancelled. Execute and register again the jobnets required for operation.

15. Perform the following procedure as required.

No.	Condition	Work performed
1	If JP1/AJS3 - Web Console is used	Change the name of the connection-destination manager host in the environment settings file (<code>ajs3web.conf</code>) for JP1/AJS3 - Web Console, and then restart the JP1/AJS3 Web Application Server service. For details about the environment settings file (<code>ajs3web.conf</code>) in Windows, see <i>3.4.3 Details on the settings in the environment-settings file (ajs3web.conf)</i> in the <i>JP1/Automatic Job Management System 3 Configuration Guide</i>. For details about the environment settings file (<code>ajs3web.conf</code>) in Linux, see <i>13.3.3 Details on settings in the environment-settings file (ajs3web.conf)</i> in the <i>JP1/Automatic Job Management System 3 Configuration Guide</i>.
2	If JP1/AJS3 - Web Console is used, and JP1/AJS3 - Web Console is installed on the manager host	Specify the new host name in the HTTP server definition file (<code>httpsd.conf</code>), and then restart the JP1/AJS3 HTTP Server service. For details about the HTTP server definition file (<code>httpsd.conf</code>) in Windows, see <i>3.4.5 Details on the settings in the HTTP server definition file (httpsd.conf)</i> in the <i>JP1/Automatic Job Management System 3 Configuration Guide</i>. For details about the HTTP server definition file (<code>httpsd.conf</code>) in UNIX, see <i>13.3.5 Details on settings in the HTTP server definition file (httpsd.conf)</i> in the <i>JP1/Automatic Job Management System 3 Configuration Guide</i>.
3	If JP1/AJS3 - Web Console is used, and the units on the manager host whose names are to be changed are set as monitoring targets in the Dashboard window of the Web GUI (Job Portal)	Log in by using the new host name. Then, set the monitoring targets again. If you specify, at login, the IP address of the manager host for Host to connect, you do not need to set the monitoring targets again.
4	If you use JP1/AJS3 - Web Console installed on a manager host and linkage with JP1/IM is set up	Change the host name specified for the Web Console server that is called from JP1/IM. For details on setting up linkage with JP1/IM, see <i>9.2 Setup for linking JP1/IM</i> in the <i>JP1/Automatic Job Management System 3 Linkage Guide</i>.
5	If JP1/AJS3 - Web Console is used and the operation restriction function of the Web GUI (Job Portal) is enabled	Log in to the Web GUI (Job Portal) by specifying a new host name, and then re-apply the operating permission configuration file that was applied before the host name was changed. For details about the operating permission configuration file, see <i>15.4.2 Customizing the operation restriction settings for each user</i> in the <i>JP1/Automatic Job Management System 3 Operator's Guide</i>.
6	If JP1/AJS3 - Web Console is used and the host name of a manager host to which the Web Console server can connect is changed	Change the name of the connectible manager host in the environment settings file (<code>ajs3web.conf</code>) for JP1/AJS3 - Web Console. For details about the environment settings file (<code>ajs3web.conf</code>) in Windows, see <i>3.4.3 Details on the settings in the environment-settings file (ajs3web.conf)</i> in the <i>JP1/Automatic Job Management System 3 Configuration Guide</i>. For details about the environment settings file (<code>ajs3web.conf</code>) in Linux, see <i>13.3.3 Details on settings in the environment-settings file (ajs3web.conf)</i> in the <i>JP1/Automatic Job Management System 3 Configuration Guide</i>.
7	If linkage with HP NNM is used and you change the name of the host that is used as the NNM monitoring host	Change the transfer destination of the SNMP trap on the Windows host on which the monitored JP1/AJS3 has been installed. For details on how to change the transfer destination of a SNMP trap, see <i>A.2(3) Setting up SNMP trap destinations</i> in the <i>JP1/Automatic Job Management System 3 Linkage Guide</i>. If JP1/AJS3 is installed on a UNIX host, it is not necessary to set the transfer destination of a SNMP trap.

(3) Procedure for changing the host name of JP1/AJS3 - Agent

Before changing the host name of JP1/AJS3 - Agent, perform the following.

Preparation

Examine to make sure that jobs are not executed for the agent host whose host name is to be changed.

To change the host name of JP1/AJS3 - Agent, use the command to be used for execution agent operation. When QUEUE jobs and submit jobs are used, also perform step 4.

To change the host name of JP1/AJS3 - Agent:

1. End the jobnets registered for execution on the agent host whose name is to be changed, and cancel their registration.
2. Stop the JP1/AJS3 services of the agent host whose name you are trying to change.

For details on JP1/AJS3 services, see *4.2.1 Types of JP1/AJS3 services* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.

For details on how to stop JP1/AJS3 services manually, see *6.1.2 Stopping JP1/AJS3 services manually*.

In addition, for the JP1/AJS3 services, stop the services on the physical host and all logical hosts.

3. Execute the `ajsagtalt` command on the manager host to change the host name in the execution agent information that contains the definition of the agent host whose name is to be changed.

For details about the `ajsagtalt` command, see *ajsagtalt* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

4. When QUEUE jobs and submit jobs are used, execute the `jpqagtdel` command on the manager host to delete the old agent host. Then execute the `jpqagtadd` command on the manager host to add the new agent host.

For details about the `jpqagtdel` command, see *jpqagtdel* in *4. Commands Used for Special Operation* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

As soon as you add the agent host, the entrance of the default queue created when the agent was added is closed. Change the attributes of the default queue as required.

For details about the `jpqagtadd` command and how to change the default queue attributes, see *jpqagtadd* in *4. Commands Used for Special Operation* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

5. Change the host name of the agent host.

Change the name of the agent host.

If you are using JP1/AJS3 in a cluster system, and you are changing logical host names, first delete the old names and then perform setup again so that the cluster system will operate with the new logical host names.

In Windows:

For details about deleting logical host names, see *8.2.8 Deleting logical hosts* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

For details about setting up a cluster system, see *8. Setup for Operation in a Cluster System* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

In UNIX:

For details about deleting logical host names, see *17.2.8 Deleting logical hosts* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

For details about setting up a cluster system, see *17. Setup for Operation in a Cluster System* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

Note that it must be possible to perform name resolution for the host name after the change from the other hosts that communicate with the relevant agent (such as manager hosts that are the execution sources of jobs).

Change the `hosts` files, etc., on those other hosts so that the IP address is found from the host name after the change.

For notes on changing the settings of the `hosts` file, etc., see *(1) Notes on changing the host name*.

6. If you are using the communication encryption function and change the host name to one different from the CN or SAN in the server certificate, acquire and deploy the server certificate again.

To change the host name to one different from the CN or SAN in the server certificate, you need to acquire and deploy the server certificate again. If the CA of the issuer of the reacquired server certificate is different from that of the original certificate, you also need to acquire and deploy the root certificate.

For details about how to acquire and deploy server certificates and root certificates, see *21.4 Setting up the communication using SSL* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

7. Cold-start the JP1/AJS3 services on the agent host.

For details about performing a cold start, see *6.2.1 Temporarily changing the start mode of JP1/AJS3*.

Cautionary note

Confirm that communication is possible between the new agent host and the manager host.

8. If necessary, start the services you stopped in step 2.

9. Re-register the jobnets and resume operation.

Re-register the jobnets you canceled in step 1 as required.

(4) Procedure for changing the host name of JP1/AJS3 - Web Console

Before changing the host name of JP1/AJS3 - Web Console, perform the following.

Preparation

Make sure that the following operations are not performed from another host to the Web Console server whose host name is to be changed.

- Logging in to or performing operations in JP1/AJS3 - Web Console
- Executing APIs

The following explains the procedure for changing the host name of JP1/AJS3 - Web Console.

Note that, in the procedure explained here, JP1/AJS3 - Web Console and JP1/AJS3 - Manager are installed on different hosts. For details about how to change the host name when JP1/AJS3 - Web Console and JP1/AJS3 - Manager are installed on the same host, see *(2) Procedure for changing the host name of JP1/AJS3 - Manager*.

1. Stop the JP1/AJS3 HTTP Server service and the JP1/AJS3 Web Application Server service on the Web Console server.

2. Change the host name of the Web Console server.

Change the host name of the Web Console server.

Note that it must be possible to perform name resolution for the host name of the Web Console server from the other hosts that communicate with the relevant server (such as devices that log in from Web GUI).

Change the `hosts` files, etc., on those hosts so that the IP address is found from the host name after the change of the Web Console server.

For notes on changing the settings of the `hosts` file, etc., see *(1) Notes on changing the host name*.

3. If you are using the communication encryption function and change the host name to one different from the CN or SAN in the server certificate, acquire and deploy the server certificate again.

To change the host name to one different from the CN or SAN in the server certificate, you need to acquire and deploy the server certificate again. If the CA of the issuer of the reacquired server certificate is different from that of the original certificate, you also need to acquire and deploy the root certificate.

For details about how to acquire and deploy server certificates and root certificates, see *21.4 Setting up the communication using SSL* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

4. In the HTTP server definition file (`httpsd.conf`), set the new host name.

For details about the HTTP server definition file (`httpsd.conf`) in Windows, see *3.4.5 Details on the settings in the HTTP server definition file (httpsd.conf)* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

For details about the HTTP server definition file (`httpsd.conf`) in UNIX, see *13.3.5 Details on settings in the HTTP server definition file (httpsd.conf)* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

5. If linkage with JP1/IM is set up, change the host name specified for the Web Console server that is called from JP1/IM.
For details on setting up linkage with JP1/IM, see *9.2 Setup for linking JP1/IM* in the *JP1/Automatic Job Management System 3 Linkage Guide*.
6. The system starts the JP1/AJS3 HTTP Server service and JP1/AJS3 Web Application Server service on the Web Console server.

(5) Procedure for changing the host name of JP1/AJS3 - View

The following explains the procedure for changing the host name of JP1/AJS3 - View.

1. Log off from JP1/AJS3 - View.
2. Change the host name of the JP1/AJS3 - View host.
3. If necessary, start JP1/AJS3 - View and then connect to the Manager host.
If you want to connect to the physical host of JP1/AJS3 - Manager by specifying the IP address for **Host to connect** on the Login screen of JP1/AJS3 - View, be sure to connect by using the IP address corresponding to the physical host name.

7.9.2 Changing the IP address of the host that runs JP1/AJS3

We will explain the procedures for changing the IP address of the host that runs JP1/AJS3 and changing the IP address found from the real host name separately for JP1/AJS3 - Manager, JP1/AJS3 - Agent, JP1/AJS3 - Web Console, and JP1/AJS3 - View.

(1) Notes on changing the IP addresses

- Changing the IP address found from the real host name refers to changing the `hosts` file, DNS, `jp1hosts` information, and `jp1hosts2` information to change the IP address that is found as a result of performing name resolution for the execution host name.
- When the `jp1hosts` information or `jp1hosts2` information of a host that is running is changed or the IP address of a DNS server is changed, the IP address after the change is applied to JP1/AJS3 after JP1/AJS3 restarts. For this reason, if you change the IP address without stopping JP1/AJS3, communication by using the IP address before the change is attempted, and symptoms such as jobs ending abnormally might occur. Before changing an IP address, stop the JP1/AJS3 services. However, if you are adding new `jp1hosts2` information, stopping the JP1/AJS3 services is unnecessary.
- For a host that is running, if you want to install or uninstall the IPv4/IPv6 protocol, or to enable or disable the IPv4/IPv6 protocol, stop the JP1/AJS3 services and then perform the operation.

(2) Procedure for changing the IP address of JP1/AJS3 - Manager

Before changing the IP address of JP1/AJS3 - Manager, perform the following.

Preparation

- Make sure that the following operations are not performed from another host to the manager host whose IP address is to be changed.
 - Logging in or performing operations from JP1/AJS3 - View or JP1/AJS3 - Web Console
 - Executing APIs
 - Executing remote commands
 - Executing remote jobnets
 - Executing jobs for which the execution destination of the job is the manager host whose IP address is to be changed
 - Controlling the execution order of root jobnets between different scheduler services that use jobnet connectors or connection-destination jobnets of the manager host whose IP address is to be changed
- Make sure that queueless jobs are not being executed.

If you change the IP address of the manager host while a queueless job is running on an agent host, the end status of the job becomes *Unknown end status* on the manager host. To change the IP address, be sure to make sure that queueless jobs are not being executed. In addition, if the end status of a job becomes *Unknown end status*, check the end status of the job from the queueless log file of the agent host.

The procedure for changing the IP address of JP1/AJS3 - Manager is as follows.

1. Log off from JP1/AJS3 - View and JP1/AJS3 - Web Console.

2. Stop the JP1/AJS3 services on the manager host.

For details on JP1/AJS3 services, see *4.2.1 Types of JP1/AJS3 services* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.

For details on how to stop JP1/AJS3 services manually, see *6.1.2 Stopping JP1/AJS3 services manually*.

In addition, for the JP1/AJS3 services, stop the services on the physical host and all logical hosts.

3. Perform the following procedure as required.

No.	Condition	Work performed
1	If all of the following are met: • You are using the operation restriction function of the Web GUI (Job Portal) of JP1/AJS3 - Web Console. • You logged in to the manager host by specifying the IP address.	• Back up the operating permission configuration file Before changing the IP address of the manager host, acquire a backup of the operating permission configuration file that is applied to the manager host. For details on the operating permission configuration file, see <i>15.4.2 Customizing the operation restriction settings for each user</i> in the <i>JP1/Automatic Job Management System 3 Operator's Guide</i>.

4. Change the IP address of the manager host.

Change the IP address of the manager host.

Note that it must be possible to perform name resolution for the IP address after the change from the other hosts that communicate with the relevant manager host (such as the JP1/AJS3 - View host, the JP1/AJS3 - Web Console server, job-execution-destination agent hosts, and other manager hosts that are the execution sources of remote jobnets, etc.).

Change the `hosts` files, etc., on those hosts so that the changed IP address is found from the manager host name.

For notes on changing the settings of the `hosts` file, etc., see *(1) Notes on changing the IP addresses*.

5. Perform the following procedure as required.

No.	Condition	Work performed
1	If all of the following are met: - You are using the connection-destination host restriction function of JP1/AJS3 - Web Console. - The IP address is specified for a manager host for which connection is to be permitted.	Reconfigure the environment-settings file. It is necessary to change the environment-settings file (<code>ajs3web.conf</code>). For details on the environment-settings file (<code>ajs3web.conf</code>), see <i>3.4.3 Details on the settings in the environment-settings file (ajs3web.conf)</i> in the JP1/Automatic Job Management System 3 Configuration Guide (for Windows) or <i>13.3.3 Details on settings in the environment-settings file (ajs3web.conf)</i> in the JP1/Automatic Job Management System 3 Configuration Guide (for Linux).
2	If all of the following are met: - An event job or a custom event job has been executed from another manager host to the manager host whose IP address was changed. - The option for changing the agent host information to be used for name resolution is not enabled.	- Reconfigure name resolution for event jobs and custom event jobs. One of the following operations is necessary on the other manager host for which the execution destination of event jobs and custom event jobs is the manager host whose IP address was changed. - Restart the JP1/AJS3 services. - Execute the <code>ajsagtdel</code> command and the <code>ajsagtadd</code> command to reregister the execution agent for which the manager host whose IP address was changed is defined as the execution host to the manager host. Note that, if the option for changing the agent host information to be used for name resolution is enabled, work on other manager hosts is unnecessary. For details on the option for changing the agent host information to be used for name resolution, see <i>6.3.18 How to set the option for changing the agent information to be used for name resolution</i> in the JP1/Automatic Job Management System 3 Configuration Guide (for Windows) or <i>15.3.17 How to set the option for changing the agent information to be used for name resolution</i> in the JP1/Automatic Job Management System 3 Configuration Guide (for UNIX).

6. If necessary, start the services you stopped in step 2.

If you want to connect to the physical host of JP1/AJS3 - Manager by specifying the IP address for **Host to connect** on the Login screen of JP1/AJS3 - View, be sure to connect by using the IP address corresponding to the physical host name.

7. Perform the following procedure as required.

No.	Condition	Work performed
1	If all of the following are met: - You are using the operation restriction function of the Web GUI (Job Portal) of JP1/AJS3 - Web Console. - You logged in by specifying an IP address for Host to connect on the Login screen of JP1/AJS3 - Web Console.	Reconfigure the operating permission configuration file. Log in to Web GUI (Job Portal) by using the IP address after the change of the manager host, and then apply the operating permission configuration file that you backed up. For details on the operating permission configuration file, see <i>15.4.2 Customizing the operation restriction settings for each user</i> in the JP1/Automatic Job Management System 3 Operator's Guide.
2	If all of the following are met: - The unit to be monitored is displayed in the Detail Information area of the Dashboard screen of JP1/AJS3 - Web Console. - You logged in by specifying an IP address for Host to connect on the Login screen of JP1/AJS3 - Web Console.	Reconfigure the unit to be monitored. If the conditions are met and you log in to the manager host by using the IP address after the change of the manager host, the unit to be monitored that was displayed in the Detail Information area prior to the IP address change will no longer be displayed. For this reason, after logging in by using the IP address after the change, select the unit you want to monitor in the Set Monitoring Targets dialog box to display the unit to be monitored in the Detail Information area.
3	If all of the following are met: The unit to be monitored is displayed in the summary list of the JP1/AJS3 - View window (Summary Monitor window) of JP1/AJS3 - View.	Reconfigure unit to be monitored. If the conditions are met and you log in to the manager host by using the IP address after the change of the manager host, the unit to be monitored that was displayed in the summary list will no longer be displayed.

No.	Condition	Work performed
3	You logged in by specifying an IP address for Host to connect on the Login screen of JP1/AJS3 - View.	For this reason, after logging in by using the IP address after the change, select the unit you want to monitor in the Monitoring Unit Select dialog box to display the unit to be monitored in the summary list.

(3) Procedure for changing the IP address of JP1/AJS3 - Agent

Before changing the IP address of JP1/AJS3 - Agent, perform the following.

Preparation

Examine to make sure that jobs are not executed from another host to the agent host whose IP address is to be changed.

The procedure for changing the IP address of JP1/AJS3 - Agent is as follows.

1. Stop the JP1/AJS3 services of the agent host.

For details on JP1/AJS3 services, see *4.2.1 Types of JP1/AJS3 services* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.

For details on how to stop JP1/AJS3 services manually, see *6.1.2 Stopping JP1/AJS3 services manually*.

In addition, for the JP1/AJS3 services, stop the services on the physical host and all logical hosts.

2. Change the IP address of the agent host.

Change the IP address of the agent host.

Note that it must be possible to perform name resolution for the IP address of the agent host from the other hosts that communicate with the relevant agent (such as manager hosts that are the execution source of jobs).

Change the `hosts` files, etc., on those other hosts so that the changed IP address is found from the agent host name.

For notes on changing the settings of the `hosts` file, etc., see *(1) Notes on changing the IP addresses*.

3. Perform the following procedure as required.

No.	Condition	Work performed
1	If all of the following are met: - An event job or a custom event job has been executed on the agent host whose IP address was changed. - The option for changing the agent host information to be used for name resolution is not enabled.	Reconfigure name resolution for event jobs and custom event jobs. One of the following operations is necessary on the manager host for which the event job and the custom event job is defined. - Restart the JP1/AJS3 services. - Execute the <code>ajsagt del</code> command and the <code>ajsagt add</code> command to reregister the execution agent for which the agent host whose IP address was changed is defined as the execution host to the manager host. Note that, if the option for changing the agent host information to be used for name resolution is enabled, work on the manager host is unnecessary. For details on the option for changing the agent host information to be used for name resolution, see <i>6.3.18 How to set the option for changing the agent information to be used for name resolution</i> in the <i>JP1/Automatic Job Management System 3 Configuration Guide</i> (for Windows) or <i>15.3.17 How to set the option for changing the agent information to be used for name resolution</i> in the <i>JP1/Automatic Job Management System 3 Configuration Guide</i> (for UNIX).
2	If the connection source restriction function is enabled on the manager host that performs communication with the agent whose IP address was changed	Reconfigure the restricting connection sources It is necessary to change the connection permission configuration file. On the connection-destination manager host, change the IP address in the connection permission configuration file for the manager, and then execute the <code>jajs_pmtcon</code> command.

No.	Condition	Work performed
2	If the connection source restriction function is enabled on the manager host that performs communication with the agent whose IP address was changed	For details on how to change the IP addresses for which connections are to be permitted, see 7.11.2 Changing the hosts that are permitted to access JP1/AJS3 .

4. If necessary, start the services you stopped in step 1.

(4) Procedure for changing the IP address of JP1/AJS3 - Web Console

Before changing the IP address of JP1/AJS3 - Web Console, perform the following.

Preparation

Make sure that the following operations are not performed from another host to the Web Console server whose IP address is to be changed.

- Logging in to or performing operations in JP1/AJS3 - Web Console
- Executing APIs

The procedure for changing the IP address of JP1/AJS3 - Web Console is as follows.

1. Log off from Web GUI.
2. If the following services are running on the host of JP1/AJS3 - Web Console, stop them.
 - The JP1/AJS3 Web Application Server service
 - The JP1/AJS3 HTTP Server service

3. Change the IP address of the host of JP1/AJS3 - Web Console.

Change the IP address of the Web Console server.

Note that it must be possible to perform name resolution for the IP address of the Web Console server from the other hosts that communicate with the relevant server (such as devices that log in from Web GUI).

Change the `hosts` files, etc., on those hosts so that the changed IP address is found from the host name of the Web Console server.

For notes on changing the settings of the `hosts` file, etc., see [\(1\) Notes on changing the IP addresses](#).

4. Perform the following procedure as required.

No.	Condition	Work performed
1	If the connection source restriction function is enabled on the manager host that performs communication with the Web Console server whose IP address was changed	• Reconfigure the restricting connection sources If restricting connection sources are enabled on the manager host to which JP1/AJS3 - Web Console connects, it is necessary to change the connection permission configuration file. On the connection-destination manager host, change the IP address in the manager connection permission configuration file, and then execute the <code>jajs_pmtcon</code> command. For details on how to change the IP addresses for which connections are to be permitted, see 7.11.2 Changing the hosts that are permitted to access JP1/AJS3.

5. If necessary, start the services you stopped in step 2.

(5) Procedure for changing the IP address of JP1/AJS3 - View

The procedure for changing the IP address of JP1/AJS3 - View is as follows.

1. Log off from JP1/AJS3 - View.
2. Change the IP address of the JP1/AJS3 - View host.
3. Perform the following procedure as required.

No.	Condition	Work performed
1	If the connection source restriction function is enabled on the manager host to which JP1/AJS3 - View connects	• Reconfigure the restricting connection sources On the connection-destination manager host, change the IP address in the manager connection permission configuration file, and then execute the <code>jajs_pmtcon</code> command. For details on how to change the IP addresses for which connections are to be permitted, see 7.11.2 Changing the hosts that are permitted to access JP1/AJS3.

4. If necessary, start JP1/AJS3 - View and then connect to the Manager host.

If you want to connect to the physical host of JP1/AJS3 - Manager by specifying the IP address for **Host to connect** on the Login screen of JP1/AJS3 - View, be sure to connect by using the IP address corresponding to the physical host name.

7.9.3 Changing the date and time of the system

(1) For JP1/AJS3 - Manager and JP1/AJS3 - Agent

This subsection explains the procedure for changing the system's date and time of the system during JP1/AJS3 - Manager and JP1/AJS3 - Agent operation.

After the JP1/AJS3 service starts, if you change the system date and time to a large degree, for example, the change will affect the execution schedules of jobnets. If you need to significantly change the system date and time, do so when the JP1/AJS3 service is not running. Note that, if you move the system time backward, a repeated period arises in the system time flow. In this case, wait until the repeated period passes, and then start the service. If you need to start the service without waiting for the current time to match the old system time, reorganize the database environment and then cold-start the JP1/AJS3 service.

If you use the Network Time Protocol (NTP) or similar to adjust the server time in small increments, you will not need to stop and then cold-start the services as described below. When you use NTP or similar, we recommend that you make millisecond adjustments, adjusting the time continuously so that the clock does not show the same time twice.

If you change the system time on the host where JP1/AJS3 - Agent Minimal Edition is running, the change can affect the number of jobs executed per day. For cautionary notes on changing the system, see *G.4(2) Change of the system time* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.

(a) Advancing the system time

To advance the system time to the current time:

1. End the JP1/AJS3 services.
2. Advance the system time.

3. Start the JP1/AJS3 services.

(b) Moving the system time backward and waiting until the repeated period passes

To return the system time to the current time:

1. End the JP1/AJS3 services.
2. Return the time of the system.
3. When the time of the system reaches the actual time, start the JP1/AJS3 services.
For example, assume that 02:00 is returned to 01:00 in step 2. After the system time becomes 02:00, start the JP1/AJS3 services.

(c) Moving the system time backward and starting JP1/AJS3 immediately

If the system time is ahead of the current time and you move it back to the current time and immediately restart JP1/AJS3, the time at which JP1/AJS3 stopped becomes later than the time at which JP1/AJS3 restarted. In this case, you must perform the following tasks in JP1/AJS3 - Manager:

- Rebuild the database environment
- Delete the performance log file
- Delete the aggregation results of the number of job executions

After moving the system time back to the current time, if you want to restart JP1/AJS3 immediately, perform the following procedure:

1. End the JP1/AJS3 services.
2. If the performance report output function is enabled, delete the performance log files.
For details, see [5.3.1 Overview of the performance report output function](#).
3. (If the management portal execution environment has been set up and aggregation of the number of job executions is enabled) Terminate the JP1/AJS3 System Control Manager service.
4. (If the management portal execution environment has been set up and aggregation of the number of job executions is enabled) Delete the following folders or directories:

In Windows:

- Physical host:
`Mgr_Data_Path#\jobagg`
- Logical host:
`shared-folder\jp1ajs2\sys\jobagg`

In UNIX:

- Physical host:
`/var/opt/jp1ajs2/sys/jobagg`
- Logical host:
`shared-directory/jp1ajs2/sys/jobagg`

For details about the management portal execution environment, see [6.7.2 Settings for the Web GUI \(Management Portal\)](#) in the *JP1/Automatic Job Management System 3 Configuration Guide*.

5. Return the time of the system.
6. Re-create the database environment.
For details, see 23.4.1(6) *Setting up an embedded database again* in the *JP1/Automatic Job Management System 3 Configuration Guide*.
7. Start the JP1/AJS3 services in cold-start mode.
8. (If the management portal execution environment has been set up and aggregation of the number of job executions is enabled) Restart the JP1/AJS3 System Control Manager service.

#

The path indicated by *Mgr_Data_Path* differs depending on the installation folder.

If the installation folder is the default installation folder or is in a folder protected by the system:

`%ALLUSERSPROFILE%\Hitachi\JP1\JP1_DEFAULT\JP1AJS2`

A folder protected by the system is the path to a folder in any of the following:

- *system-drive*\Windows
- *system-drive*\Program Files
- *system-drive*\Program Files (x86)

The default value for `%ALLUSERSPROFILE%` is *system-drive*\ProgramData.

If the installation folder is other than the above:

JP1/AJS3 - Manager-installation-folder

Cautionary notes

- If you move the system time backward on a JP1/AJS3 - Agent host, you cannot search for JP1 events that were received before the monitoring of event reception was started.
- In the job definition, if **Normal if file was updated** is specified as a condition for the end judgment of a job and, after the system date and time is changed, if the file is updated before the actual date and time when the file was created, the file update cannot be detected, and the job might end abnormally.

During the end judgment, the file-update date and time obtained when the job started and the file-update date and time obtained when the job ended are compared.

For example, suppose a job starts at 11:00 every day and, after a file is updated at 12:00, the job ends at 13:00 and then end judgment is performed. At 14:00 on October 10, the JP1/AJS3 service is stopped, and then the system date and time is changed to 10:00 on October 9.

The file-update date and time obtained at 11:00 on October 9 when the job started is 12:00 on October 10, which is the date and time when the file was updated by the job prior to when the system date and time was changed. The file-update date and time obtained at 13:00 on October 9 when the job ended is 12:00 on October 9, which is the date and time when the file was updated by the job after the system date and time was changed. During the end judgment, no file update is detected, so the job is not recognized as having ended normally.

For this reason, after you change the system date and time while the JP1/AJS3 service is stopped, before executing a job, you will need to adjust the file-update date and time to match the current system date and time, for example, by manually updating the file.

(2) For JP1/AJS3 - Web Console

The following shows how to change the system date/time of JP1/AJS3 - Web Console. Note that a change to the system date/time is also applied to the system time zone settings.

1. Terminate the JP1/AJS3 - Web Console services.

Terminate the following two services:

- JP1/AJS3 HTTP Server service
- JP1/AJS3 Web Application Server service

2. Change the system date/time.

If you change the system date/time to a past date/time, you must also delete the directory that contains work files.
The directory that contains work files is as follows:

In Windows:

System-folder-for-Web-Console-server\rcmd

In UNIX:

System-directory-for-Web-Console-server/rcmd

3. Start the JP1/AJS3 - Web Console services.

Start the following two services:

- JP1/AJS3 Web Application Server service
- JP1/AJS3 HTTP Server service

7.9.4 Using JP1/AJS3 in a time zone with daylight saving time

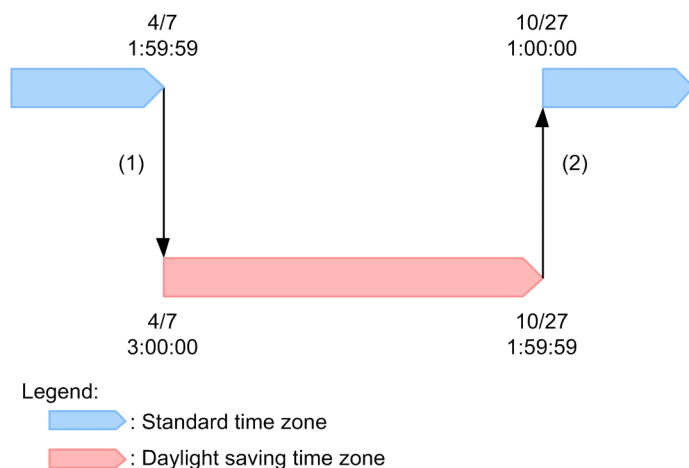
When you use JP1/AJS3 in a time zone where daylight saving time applies, the following start times are affected:

- Start times of jobnets registered for execution by JP1/AJS3 - View
- Start times of jobnets registered for execution by the `ajsenry` command
- Start times of submits jobs registered by the `jpqjbsub` command with the `-st` option specified
- Start times of processing to delete job information

In addition, a JP1/AJS3 manager host that is operating in a daylight saving time zone cannot be used as a management portal execution environment.

The following describes the effects of switching from standard time to daylight saving time, and vice versa. Take these effects into consideration when you define the start times for each process. The following figure uses Eastern U.S. standard time in 1994 (TZ=EST5EDT) as an example of a time zone with daylight saving time.

Figure 7–22: Example of switching between standard time and daylight saving time



Supplementary note

Although the displayed time changes as a result of the switch between standard time and daylight saving time, the flow of time is continuous.

When one second elapses from 1:59:59 on April 7 in standard time, the displayed time becomes 3:00:00 on April 7 in daylight saving time. When one second elapses from 1:59:59 on October 27 in daylight saving time, the displayed time becomes 1:00:00 on October 27 in standard time.

(1) Switching from standard time to daylight saving time

The timing with which processes start after the system switches from standard time to daylight saving time is determined from the start time set for the process, and the time at which the transition from standard time to daylight saving time takes place. The following explanation is based on the example shown in [Figure 7-22](#). When the time reaches 2:00:00 on April 7th, the clock switches to daylight saving time. At this point, the new time will be 3:00:00 on April 7th (this is transition (1) 4/7 1:59:59 → 4/7 3:00:00 in [Figure 7-22](#)). This means that the period from 2:00:00 to 2:59:59 is skipped over. If you set up a process to start within this period, it will start at 3:00:00 daylight saving time. If you set it up to start at 3:00:00 or later standard time, the process will start at 3:00:00 or later after the transition to daylight saving time has taken place. This means that the process will start, in relative terms, one hour ahead of its scheduled start time. The following table shows how processes are scheduled around the transition from standard time to daylight saving time.

Table 7–8: Scheduling at the transition from standard time to daylight saving time

Start time setting	1:59:59 or earlier	2:00:00 to 2:59:59	3:00:00 or later
Actual start time	Executed at 1:59:59 or earlier standard time	Executed at 3:00:00 daylight saving time	Executed at 3:00:00 or later daylight saving time

(2) Switching from daylight saving time to standard time

The timing with which processes start after the system switches from daylight saving time to standard time is determined from the start time set for the process, and the time at which the transition from daylight saving time to standard time takes place. The following explanation is based on the example shown in [Figure 7-22](#). When the time reaches 2:00:00 (DST) on October 27th, the clock switches to standard time. At this point the new time will be 1:00:00 standard time on October 27th (this is transition (2) 10/27 1:59:59 → 10/27 1:00:00 in [Figure 7-22](#)). The result is an extra hour in standard time, from 1:00:00 to 2:00:00. However, processes that were scheduled to start between 1:00:00 and 1:59:59 are started at the scheduled time in daylight saving time, and are not started again after the transition from daylight saving time to standard time. If you set up a process to start at 2:00:00 daylight saving time or later, it will start at 2:00:00 in standard time, after the transition from daylight saving time to standard time has taken place. This means that the process will start, in relative terms, one hour later than its scheduled start time. The following table shows how processes are scheduled around the transition from daylight saving time to standard time.

Table 7–9: Scheduling at the transition from daylight saving time to standard time

Start time setting	0:59:59 or earlier	1:00:00 to 1:59:59	2:00:00 or later
Actual start time	Executed at 0:59:59 daylight saving time or earlier	Executed between 1:00:00 and 1:59:59 daylight saving time	Executed at 2:00:00 standard time or later

Cautionary notes

- If JP1/AJS3 - View and JP1/AJS3 - Manager run on different hosts, make sure that both hosts use the same time zone. For details, see [2.2.2\(2\) Operation with multiple manager hosts](#) in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide* and [Cautionary notes](#) in [4.2.1 Types of JP1/AJS3 services](#) in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.

- When you use the `ajsentry` command to register a jobnet for execution, the schedule of the jobnet depends on the time zone setting used when you execute the `ajsentry` command. For details, see 2.2.2(2) *Operation with multiple manager hosts* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.
- When you register a submit job for execution using the `jpgjobsub` command with the `-st` option specified, the job's start time depends on the time zone setting of the manager host that registers the job.

(3) About the displayed start and end times of a unit execution period during which daylight saving time starts or ends

(a) Display of the (scheduled) execution start and end times

If JP1/AJS3 is operating in a time zone that uses daylight saving time, the (scheduled) execution start and end times are individually displayed based on the time zone that is used at that time. Therefore, if daylight saving time starts or ends between the (scheduled) unit execution start and end times, the displayed start and end times will differ from the actual length of the execution time.

Figure 7-22 shows an example of times that are displayed. Note that, in this example, the execution times in both time zones are 20 minutes.

Table 7–10: Example of a time zone that switches from standard time to daylight saving time

Time zone	Execution start time (scheduled execution start time)	Execution end time (scheduled end time)	Execution time
Time zone that does not use daylight saving time	4/7 1:50:00	4/7 2:10:00	20 minutes
Time zone that uses daylight saving time	4/7 1:50:00	4/7 3:10:00	20 minutes

In this example, the (scheduled) execution start time is displayed in standard time because JP1/AJS3 is operating in standard time at that time. However, the (scheduled) execution end time is displayed in daylight saving time. Therefore, the end time will appear to move forward.

Table 7–11: Example of a time zone that switches from daylight saving time to standard time

Time zone	Execution start time (scheduled execution start time)	Execution end time (scheduled end time)	Execution time
Time zone that does not use daylight saving time	10/27 0:50:00	10/27 1:10:00	20 minutes
Time zone that uses daylight saving time	10/27 1:50:00	10/27 1:10:00	20 minutes

In this example, the (scheduled) execution start time is displayed in daylight saving time because JP1/AJS3 is operating in daylight saving time at that time. However, the (scheduled) execution end time is displayed in standard time. Therefore, the end time will appear to move backward.

(b) Display of the time zone for an execution schedule

If JP1/AJS3 is operating in a time zone that uses daylight saving time, the time zone might not be displayed correctly for a job or jobnet in the following locations: the Daily Schedule window of JP1/AJS3 - View or the **Chart** tab in the **Dashboard** screen of JP1/AJS3 - Web Console. If a day on which daylight saving time starts or ends is displayed in that window or tab, the displayed start time and (scheduled) end time of a job or jobnet differ from their actual times. This is because the actual start time and (scheduled) end time are displayed in standard time or daylight saving time, whereas

the execution schedule is displayed in relative time from the base time. To check the actual start time and (scheduled) end time, use the **Execution result list** in the Daily Schedule window or the **List** tab in the **Dashboard** screen.

The following shows examples of displayed times based on [Figure 7-22](#). In the following examples, the flow of time is divided into hours, with each one-hour period identified by a number, called an *index*, for convenience.

■ **When standard time changes to daylight saving time**

The following table shows the relationship between indexes and displayed times for time zones that use or do not use daylight saving time. In the time zone using daylight saving time, the times for jobs and jobnets executed after 3:00 appear as one hour behind the actual execution times.

Table 7–12: Relationship between the indexes and displayed times when standard time changes to daylight saving time

Time zone	Index				
	0	1	2	3	...
Time zone that does not use daylight saving time	0:00:00 to 0:59:59	1:00:00 to 1:59:59	2:00:00 to 2:59:59	3:00:00 to 3:59:59	...
Time zone that uses daylight saving time	0:00:00 to 0:59:59 ^{#1}	1:00:00 to 1:59:59 ^{#1}	3:00:00 to 3:59:59 ^{#2}	4:00:00 to 4:59:59 ^{#2}	...

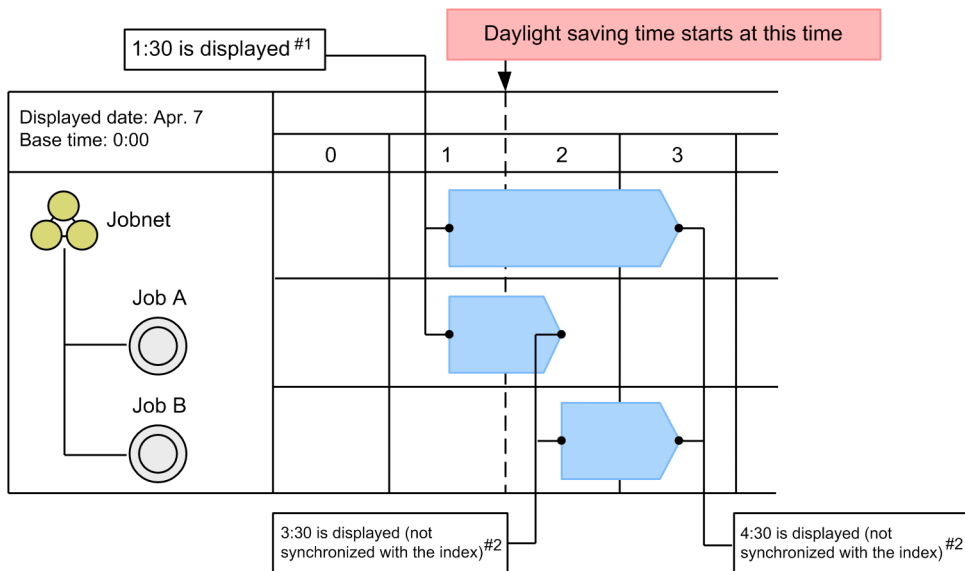
- #1
Time displayed in standard time
- #2
Time displayed in daylight saving time

The following figure shows an example of the relationship between execution schedules and displayed times in a case where standard time changes to daylight saving time.

■ Execution schedule

Unit name	(Scheduled) start time	(Scheduled) end time
Jobnet	1:30:00 on Apr. 7 #1	4:30:00 on Apr. 7 #2
Job A	1:30:00 on Apr. 7 #1	3:30:00 on Apr. 7 #2
Job B	3:30:00 on Apr. 7 #2	4:30:00 on Apr. 7 #2

■ Times displayed when standard time changes to daylight saving time



#1: Time displayed in standard time

#2: Time displayed in daylight saving time

■ In a case where daylight saving time changes to standard time

The following table shows the relationship between indexes and displayed times for time zones that use or do not use daylight saving time. In the time zone using daylight saving time, the times for jobs and jobnets executed after 1:00 (after switchover to standard time) appear as one hour ahead of their actual execution times.

Table 7–13: Relationship between the indexes and displayed times when daylight saving time changes to standard time

Time zone	Index				
	0	1	2	3	...
Time zone that does not use daylight saving time	0:00:00 to 0:59:59	1:00:00 to 1:59:59	2:00:00 to 2:59:59	3:00:00 to 3:59:59	...
Time zone that uses daylight saving time	0:00:00 to 0:59:59 ^{#2}	1:00:00 to 1:59:59 ^{#2}	1:00:00 to 1:59:59 ^{#1}	2:00:00 to 2:59:59 ^{#1}	...

#1

Time displayed in standard time

#2

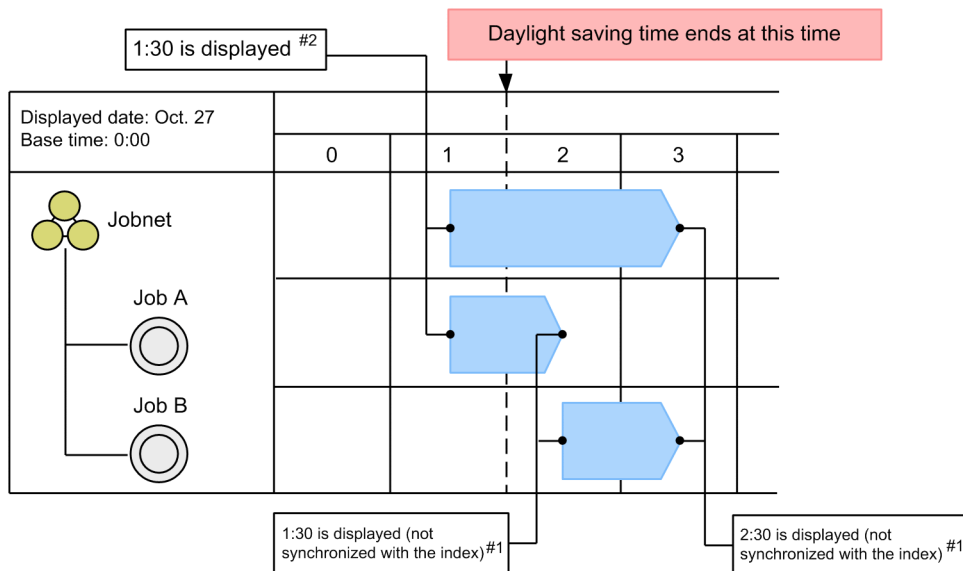
Time displayed in daylight saving time

The following figure shows an example of the relationship between execution schedules and displayed times in a case where daylight saving time changes to standard time.

■ Execution schedule

Unit name	(Scheduled) start time	(Scheduled) end time
Jobnet	1:30:00 on Oct. 27 #2	2:30:00 on Oct. 27 #1
Job A	1:30:00 on Oct. 27 #2	1:30:00 on Oct. 27 #1
Job B	1:30:00 on Oct. 27 #1	2:30:00 on Oct. 27 #1

■ Times displayed when daylight saving time changes to standard time



#1: Time displayed in standard time

#2: Time displayed in daylight saving time

7.9.5 Changing to FQDN host names for event jobs and custom event jobs in a DNS environment

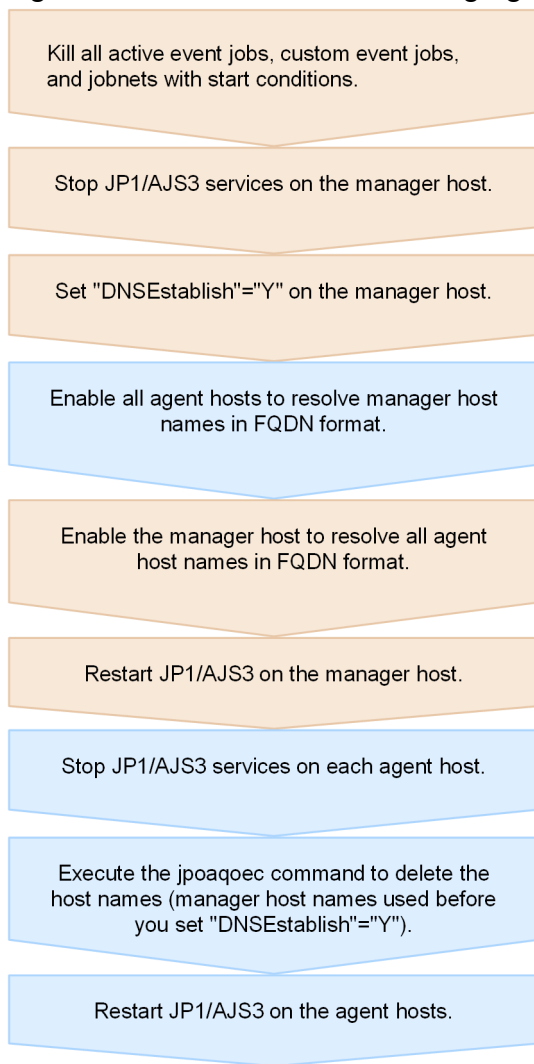
The following describes the settings you need to change to use host names in Fully Qualified Domain Name (FQDN) format as the execution agent names for event jobs and custom event jobs being used in a DNS environment.

There is no need to perform these settings if there is no duplication of host names within the network or within different domains, or if event jobs and custom event jobs are not used in your system.

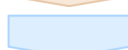
For details about operation in a DNS environment and whether settings need to be changed, see *2.3.8 Operation in a DNS environment* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.

The following figure shows the work flow for changing to operation with FQDN host names in a DNS environment.

Figure 7–23: Work flow for changing to FQDN host names



Legend:

-  : Task performed in JP1/AJS3 - Manager
-  : Task performed in JP1/AJS3 - Agent

To convert the manager host name sent from the manager to the agents into FQDN format in a DNS environment, follow the steps below.

1. Kill all active event jobs, custom event jobs, and jobnets with start conditions.
2. Stop the JP1/AJS3 service on the manager host.

In Windows:

From the Windows **Control Panel**, select **Administrative Tools** and then **Services**, and stop the following service:

JP1/AJS3 service

In UNIX:

Execute the following commands to check that all processes have stopped.

Before you execute the `/etc/opt/jp1ajs2/jajs_stop` command, make sure that the command script is edited to stop JP1/AJS3 processes automatically.

```
# /etc/opt/jp1ajs2/jajs_stop
```



```
# /opt/jplajs2/bin/jajs_spmd_status
```

3. On the manager host, execute the following command to set the environment setting parameter:

```
jajs_config -k "[{JP1_DEFAULT|logical-host-name}\JP1AJS2\SCHEDULER\EV\MANAGER]" "DNSEstablish"="Y"
```

Specify Y to use FQDN host names in a DNS environment. If you replace Y with N, FQDN host names will not be used. Instead of the FQDN host name, the manager host name^{#1} will be sent to the agents. The default is N.

4. Enable all agent hosts to resolve manager host names in FQDN format.

5. Enable the manager host to resolve all agent host names in FQDN format.

6. Restart JP1/AJS3 on the manager host.

The settings you performed in step 3 take effect.

7. Stop the JP1/AJS3 service on each agent host.

8. Execute the jpoagoec command on each agent host.

An agent host stores the name of a manager host with which the agent host communicated in the past. By running the jpoagoec -p command on the agent host, check the manager host name stored by the agent host. If the manager host name^{#1} output in the results of the jpoagoec -p command is the name from before the settings were changed to the FQDN format, run the jpoagoec -d command to delete the stored manager host name^{#2}.

For details about the jpoagoec command, see *jpoagoec* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

9. Restart JP1/AJS3 on the agent host.

#1

Manager host name refers to a name that you can check as follows:

Physical host

The name that is output at execution of the hostname command on the manager host.

Logical host

- In Windows:

The host name indicated by the xxxxx portion of the JP1/AJS3_xxxxx service name, which is displayed by selecting **Services**, or **Administrative Tools** and then **Services**, from the **Control Panel** on the manager host

- In UNIX:

The host name that appears with the jajs_spmd process, which is displayed by executing the ps command

#2

If you start the JP1/AJS3 service on an agent host and execute an event job or a custom event job without first clearing the manager host name used previously, the agent host will record two host names (FQDN and non-FQDN host name) for the same manager host. If an event job or a custom event job is executed while JP1/AJS3 - Manager is in this state, the following problems might occur:

- If the JP1/AJS3 service is restarted on the manager host while a jobnet with start conditions is being executed, monitored events that occur after the restart will be detected twice.
- When the option for continuing execution of active event jobs is enabled, if the JP1/AJS3 service is restarted in hot-start mode on the manager host while an event job or a custom event job is being executed, the same event will be incorrectly detected multiple times.

To avoid these problems, before you start the JP1/AJS3 service on an agent host, execute the `jpoagoc` command to clear recorded manager host names.

7.9.6 Changing the language environment of the system

This subsection explains how to change the language and the character encoding of a system.

For details about the languages and types of character encoding that can be used for a system, see *2.4.2 Language type and character encoding of the system* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.

The following descriptions explain how to change the language for JP1/AJS3 - Manager, JP1/AJS3 - Agent, JP1/AJS3 - View, and JP1/AJS3 - Web Console, respectively.

(1) For JP1/AJS3 - Manager

(a) In Windows

You will need to re-install JP1/AJS3 - Manager. To convert the definition information:

1. To change the language from Japanese to Chinese, remove multi-byte characters from the definition information.
2. Back up the definition information.
For details about backup, see *2. Backup and Recovery*.
You cannot use the `ajsrgeexport` and `ajsrgeimport` commands to back up and recover the registered execution-schedule information. After performing recovery, you must re-register the jobnet for execution.
3. To change the character encoding without changing the language, convert the character encoding of the backed up definition information by using the OS's function for converting the character encoding.
4. Re-install JP1/AJS3 - Manager.
The language environment is automatically set, based on the locale of the OS.
You cannot change the character encoding.
5. Recover the definition information.
For details about recovery, see *2. Backup and Recovery*.
6. Register the jobnet for execution.

(b) In UNIX

You will need to re-install JP1/AJS3 - Manager. To convert the definition information:

1. To change the language from Japanese to Chinese, remove multi-byte characters from the definition information.
2. Back up the definition information.
For details about backup, see *2. Backup and Recovery*.
You cannot use the `ajsrgeexport` and `ajsrgeimport` commands to back up and recover the registered execution-schedule information. After performing recovery, you must re-register the jobnet for execution.
3. To change the character encoding without changing the language, convert the character encoding of the backed up definition information by using the OS's function for converting the character encoding.

4. Re-install JP1/AJS3 - Manager.

Specify the language environment when you install JP1/AJS3 - Manager. The character encoding is set to the default value of the system.

5. If necessary, change the character encoding from the default.

For details about how to change the character encoding to a value other than the default, see *13.4.1 Setting the language environment* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

6. Recover the definition information.

For details about recovery, see *2. Backup and Recovery*.

7. Register the jobnet for execution.

(2) For JP1/AJS3 - Agent

(a) In Windows

You will need to re-install JP1/AJS3 - Agent. Convert the definition information by following the backup and restoration procedures.

(b) In UNIX

You do not need to re-install JP1/AJS3 - Agent. To change the language:

1. Stop the JP1 services and any commands that are running.

2. Change the character encoding to be used in JP1/Base.

3. Open the JP1/AJS3 environment definition file (`jplajs_env.conf`) in a text editor such as the vi editor.

The storage location of `jplajs_env.conf` is as follows:

- For a physical host:

`/etc/opt/jplajs2/conf/jplajs_env.conf`

- For a logical host:

`shared-directory/jplajs2/conf/jplajs_env.conf`

4. In the line where `LANG=` is specified, set the character encoding to be used for JP1/AJS3.

If the value of the `LANG` environment variable is a character encoding that can be used for JP1/AJS3, specify the same value as the `LANG` environment variable.

If the value of the `LANG` environment variable is a character encoding that cannot be used for JP1/AJS3, specify `C` as the character encoding to be used for JP1/AJS3.

For details about the types of character encoding that can be used for JP1/AJS3, see *2.4.2(2) Values that can be specified in the LANG environment variable* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.

5. Save the file.

6. If the language is Chinese, specify yes for the environment setting parameter `AJSI18N`.

7. Cold-start the JP1/AJS3 services.

(3) For JP1/AJS3 - View

You will need to re-install JP1/AJS3 - View. Convert the definition information by following the backup and restoration procedures.

(4) For JP1/AJS3 - Web Console

(a) In Windows

No procedure is required to change the language type.

(b) In Linux

If automatic startup of the JP1/AJS3 HTTP Server service and JP1/AJS3 Web Application Server service (JP1/AJS3 - Web Console) is set, change the language type setting for startup. For details about how to set automatic startup, see *15.10.1(6)(a) Setting automatic startup of the JP1/AJS3 HTTP Server service or the JP1/AJS3 Web Application Server service (JP1/AJS3 - Web Console)* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

7.9.7 Upgrade the version of the OS on the host that runs JP1/AJS3

You can perform an in-place upgrade^{#1} only if the following conditions are met:

- The OS permits in-place upgrades.
- The prerequisite product permits in-place upgrades.
- It is not OS that do not support in-place upgrades^{#2}.

#1

Perform a major version upgrade of the OS while retaining the JP1/AJS3 installation and carrying over the settings.

#2

Refer to the release notes for OSs that do not support in-place upgrades, as this information is provided there.

7.10 Changing an operation profile

You can change an operation profile by:

- Applying a new operation profile
- Changing the settings in an existing operation profile
- Invalidating an existing operation profile

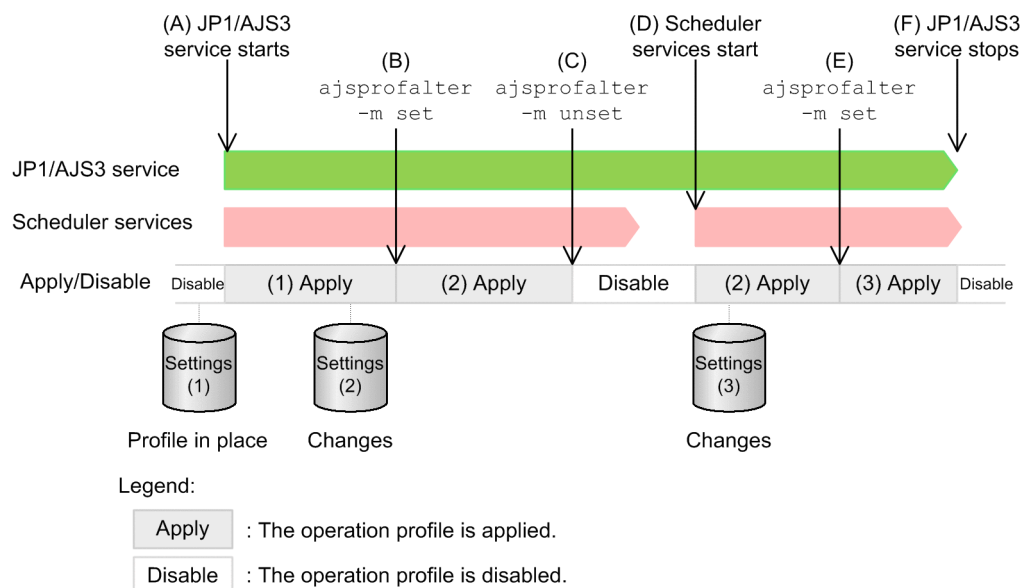
The following describes the timing when the changes are applied, and the procedure for changing an operation profile.

For details about operation profiles, see *21.1 Setting up functions by using operation profiles* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

7.10.1 Timing when changes to an operation profile take effect

The following figure shows when the changes to an operation profile take effect.

Figure 7–24: Timing when changes to an operation profile take effect



Changes to an operation profile take effect as follows:

When the JP1/AJS3 service starts

Of the scheduler services configured in the host, the changes are applied to the scheduler services that have an operation profile stored in the environment settings file storage folder ((A) in the figure).

No changes are applied to scheduler services without an operation profile.

When the `ajspofalter -m set` command is executed

The operation profile for the scheduler service set in the `-F` option is reloaded and applied ((B) and (E) in the figure).

When the `ajspofalter -m unset` command is executed

The operation profile for the scheduler service specified in the `-F` option is disabled ((C) in the figure).

When a scheduler service starts

If the environment settings file storage folder contains an operation profile for the scheduler service being activated, the profile is read and applied ((D) in the figure).

No changes are applied if the scheduler service being activated does not have an operation profile.

When the JP1/AJS3 service stops

The operation profiles for all scheduler services configured in the host are disabled ((F) in the figure).

7.10.2 Procedure for changing an operation profile

The following describes how to change the settings in an operation profile.

Execute the `ajspofstatus` command to check the status of the operation profile you want to change. For command details, see *ajspofstatus* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

Operation profiles are stored in the following environment settings file storage folder:

- In Windows:

Physical host

`JP1/AJS3-Manager-installation-folder\conf`

Logical host

`shared-folder-name\jp1ajs2\conf`

- In UNIX:

Physical host

`/etc/opt/jp1ajs2/conf`

Logical host

`shared-directory-name/jp1ajs2/conf`

(1) Applying or changing an operation profile

To apply an operation profile, follow the steps below. Use the same procedure to change the settings in an existing operation profile:

1. Create a new operation profile or change an existing operation profile.

Create or change the operation profile, and save it in the environment settings file storage folder. For details about operation profiles, see 21.1 *Setting up functions by using operation profiles* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

2. Apply the operation profile settings.

Apply the settings in the operation profile as follows:

- When the JP1/AJS3 service is inactive
Start the JP1/AJS3 service. The operation profiles of all the scheduler services configured in the host take effect.
- When the JP1/AJS3 service is active (scheduler services stopped)
Perform either of the following:
 - Start the scheduler services. The operation profile for each scheduler service takes effect.

- Execute the `ajspofalter -m set` command. The execution agent profile for the scheduler service you specified in the `-F` option takes effect.

- When the JP1/AJS3 service is active (scheduler services running)
Execute the `ajspofalter -m set` command. The settings in the operation profile for the scheduler service you specified in the `-F` option take effect.

(2) Disabling an operation profile

You can disable an operation profile temporarily or permanently, as described below.

(a) Temporarily disabling an operation profile

1. Execute the `ajspofalter -m unset` command.

The operation profile for the scheduler service you specified in the `-F` option is disabled.

Cautionary notes

You can re-apply a temporarily disabled operation profile by:

- Restarting the JP1/AJS3 service
- Restarting the temporarily disabled scheduler service
- Executing the `ajspofalter -m set` command

(b) Permanently disabling an operation profile

1. Execute the `ajspofalter -m unset` command.

The operation profile for the scheduler service you specified in the `-F` option is disabled.

2. Remove or delete the operation profile from the environment settings file storage folder.

When you perform this step, the disabled operation profile will not be applied when you restart the JP1/AJS3 service or scheduler services.

7.10.3 Changing an execution agent profile

Using the `ajspofalter` command, you can change the settings in an execution agent profile while JP1/AJS3 services are active.

Changes executed by the `ajspofalter` command take effect immediately, but do not affect jobs in *Now queuing* or *Now running* status. Also, depending on when you execute the command, profile changes might not be applied to standard jobs (including queueless jobs) and HTTP connection jobs in *Waiting to execute* status or to event jobs and custom event jobs in *Waiting for prev. to end* status. For this reason, we recommend that you make changes to an execution agent profile when no jobs are running.

If you change the execution agent profile while a monitoring generation is in *Now monitoring* or *Interrupted monitoring* status, the changes are not applied immediately to the event job and the custom event job defined as the start condition.

The relationship between when profile changes are executed and when they are applied is described next.

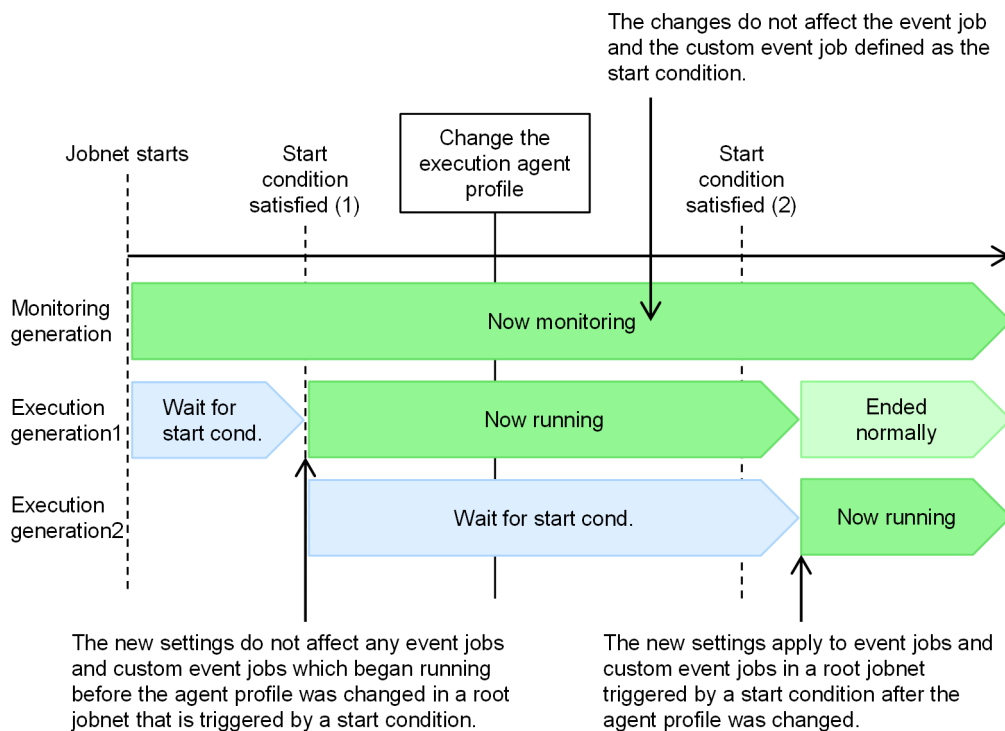
(1) Profile changes during monitoring for a start condition

If you change an execution agent profile by the `ajsprowalter` command while a start condition is being monitored, the new settings will not affect the event job and the custom event job defined as the start condition. To apply the new settings to the event job and the custom event job, you must perform either of the following:

- Terminate start condition monitoring, and then re-register the jobnet for execution.
- Perform a restricted termination of the JP1/AJS3 service or scheduler service, and then restart the service and resume monitoring.

The following figure shows an example of the system behavior when changes are made to the settings in an execution agent profile while start conditions are being monitored.

Figure 7–25: Changing profile settings while a start condition is being monitored



As this figure illustrates, if you change the settings in an execution agent profile while a start condition is being monitored, the new settings do not affect the event job and the custom event job defined in the start condition. They apply only to event jobs and custom event jobs in the root jobnet triggered by the start condition after the profile settings are changed.

(2) Profile changes during, before, or after start condition monitoring is interrupted

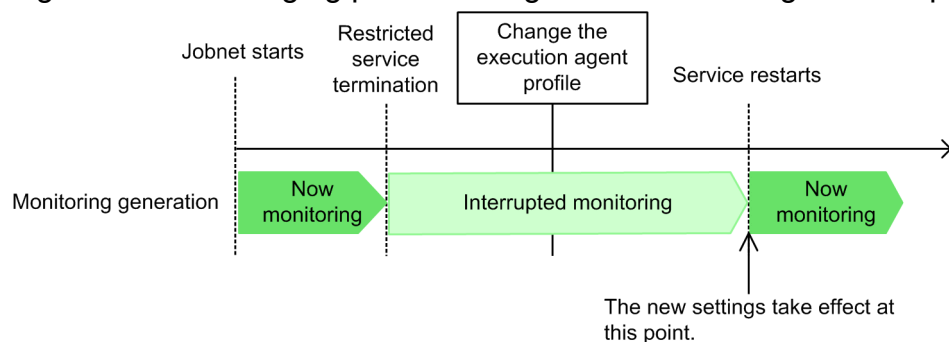
Start condition monitoring is interrupted when you perform a restricted termination of the JP1/AJS3 service or schedule service. If you then change the settings in the execution agent profile by the `ajsprowalter` command, the changes do not take effect until you restart the service. Monitoring resumes with new settings.

You can perform a restricted termination of the JP1/AJS3 service or scheduler service in the following ways:

- Execute the `ajstop` command with the `-s`, `-n`, `-j`, or `-k` option specified.
- Execute the `jajs_spmd_stop` command with the `-job` option specified.
- Perform a planned shutdown by linking with JP1/Power Monitor.

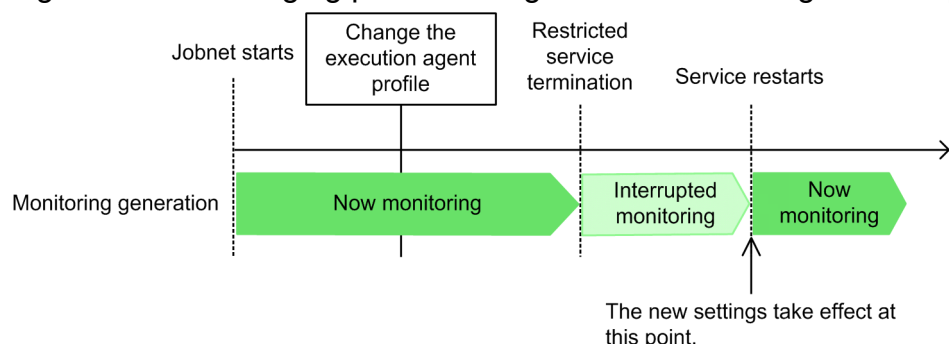
The following figure shows an example of the system behavior when changes are made to the settings in an execution agent profile while monitoring is interrupted.

Figure 7–26: Changing profile settings while monitoring is interrupted



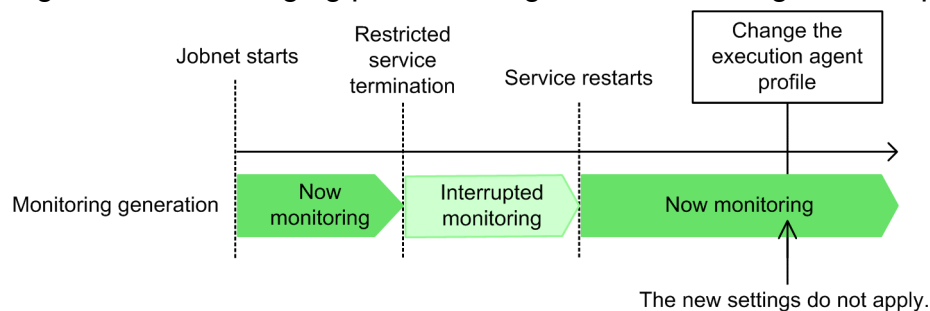
If you change the settings in an execution agent profile while start condition monitoring is interrupted, the new profile settings do not affect the monitoring process. They apply only after you restart the service and monitoring resumes.

Figure 7–27: Changing profile settings before monitoring is interrupted



If you change the settings in an execution agent profile before start condition monitoring is interrupted, the new profile settings do not affect the monitoring process. They apply only after you restart the service and monitoring resumes.

Figure 7–28: Changing profile settings after monitoring is interrupted



If you change the settings in an execution agent profile after start condition monitoring resumes following an interruption, the new profile settings do not affect the monitoring process.

7.10.4 Changing a unit-attribute profile

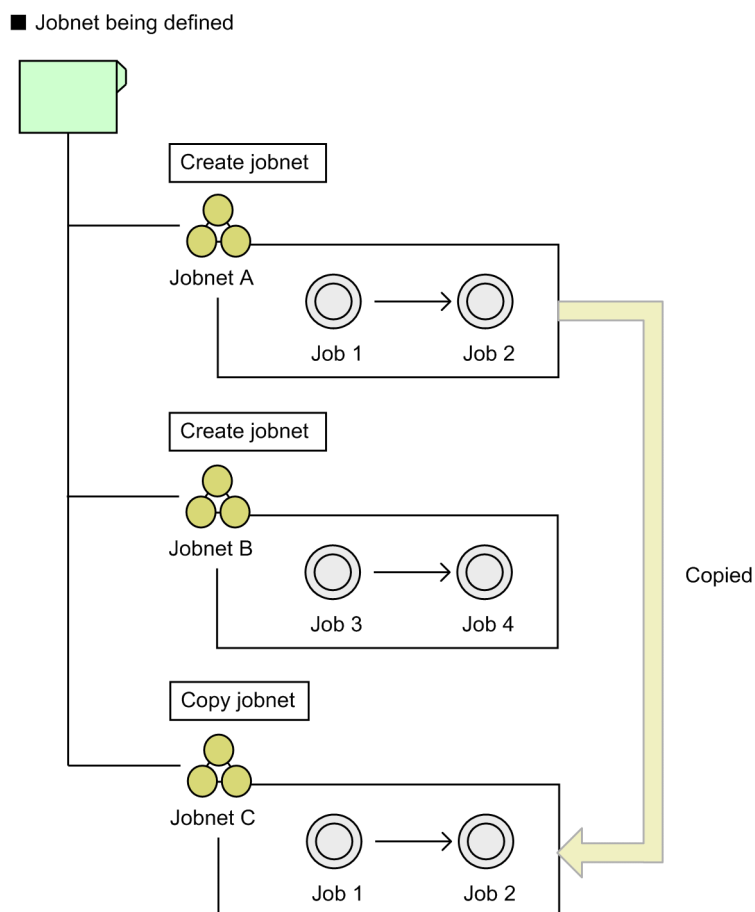
The following describes how the settings defined in the upper-level unit-attribute inheritance function and execution-user fixing function are applied when the unit-attribute profile is changed during jobnet definition or execution.

(1) Upper-level unit-attribute inheritance function

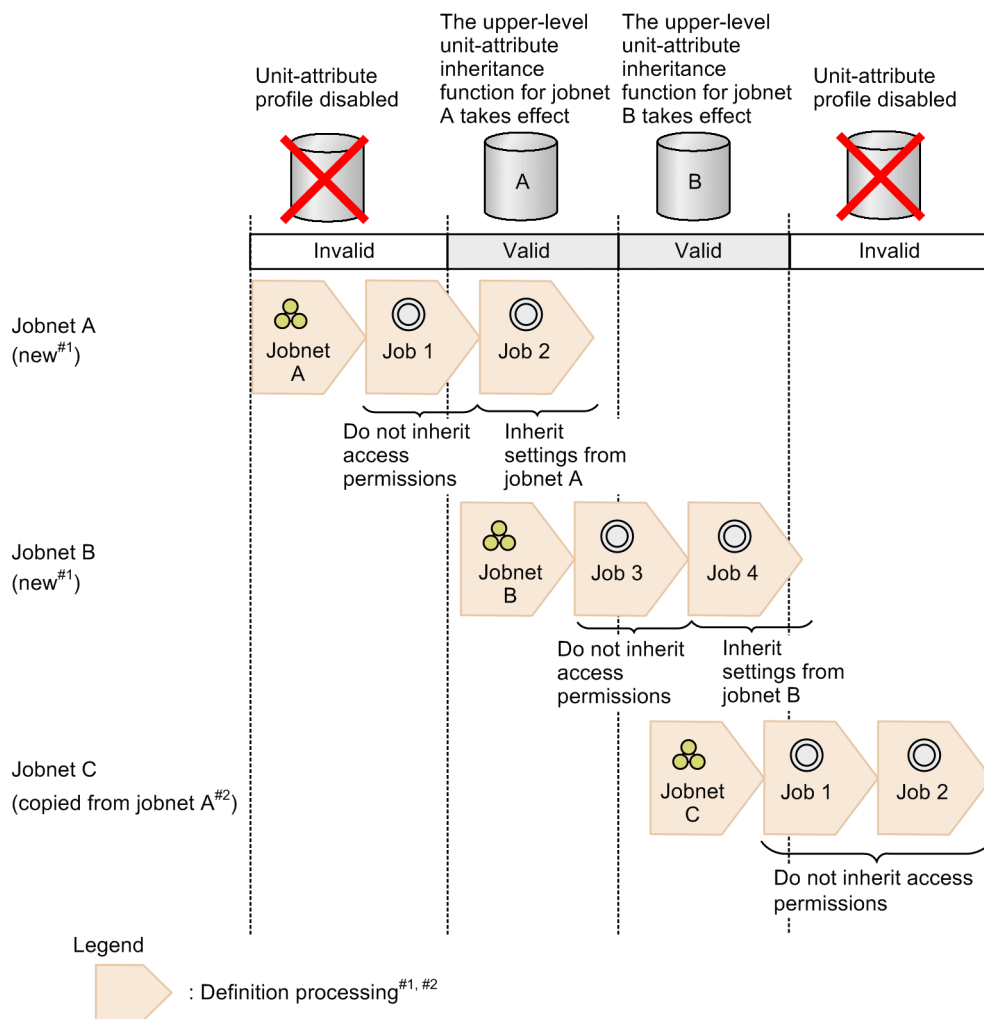
When you create, copy, or release a job group or jobnet that contains multiple units, you must define the units in order, starting from the highest level. If the settings in the upper-level unit-attribute inheritance function are changed while the system is processing the unit creation, copying, or release entry, the new settings apply immediately to the lower units you are defining.

The following figure shows an example of changing the settings in the upper-level unit-attribute inheritance function while the system is performing jobnet creation or copy processing.

Figure 7–29: Example of changing the settings in the upper-level unit-attribute inheritance function during jobnet creation or copy processing



■ Example of changing an operation profile



#1: When you use the `ajsdefine` command to create a new unit, processing starts when command execution starts and ends when command execution ends.

When you use JP1/AJS3 - View to create a new unit, processing starts when you open the Define Details dialog box and ends when you click the **OK** button and the dialog box closes.

#2: When you use the `ajscopy` command to copy a unit, processing starts when command execution starts and ends when command execution ends.

When you use JP1/AJS3 - View to copy a unit, processing starts when you copy the unit and ends when you paste the unit to create a new unit.

In this example, suppose that you create jobnets A and B in a job group, and then copy jobnet A to create a new jobnet C. Now let's consider the inheritance of job access permissions when the settings for the validity of the unit-attribute profile and the upper-level unit-attribute inheritance function are changed during the jobnet creation or copy processing. This is illustrated in *Example of changing an operation profile* above.

When you create jobnet A, job 1 does not inherit access permissions because the unit-attribute profile is invalid when the definition processing for job 1 starts. When definition processing for job 2 starts, the upper-level unit-attribute inheritance function set for jobnet A applies, so job 2 inherits access permissions from jobnet A.

When you create jobnet B, the upper-level unit-attribute inheritance function set for jobnet A applies when definition processing for job 3 starts, so job 3 under jobnet B does not inherit access permissions from its upper-level unit. When definition processing for job 4 starts, the upper-level unit-attribute inheritance function set for jobnet B applies, so job 4 inherits access permissions from jobnet B.

When you create jobnet C by copying jobnet A, the upper-level unit-attribute inheritance function set for jobnet B applies when definition processing for job 1 starts, so job 1 under jobnet C does not inherit access permissions from its

upper-level unit (jobnet C). When definition processing for job 2 starts, job 2 does not inherit access permissions from jobnet C because the unit-attribute profile is invalid.

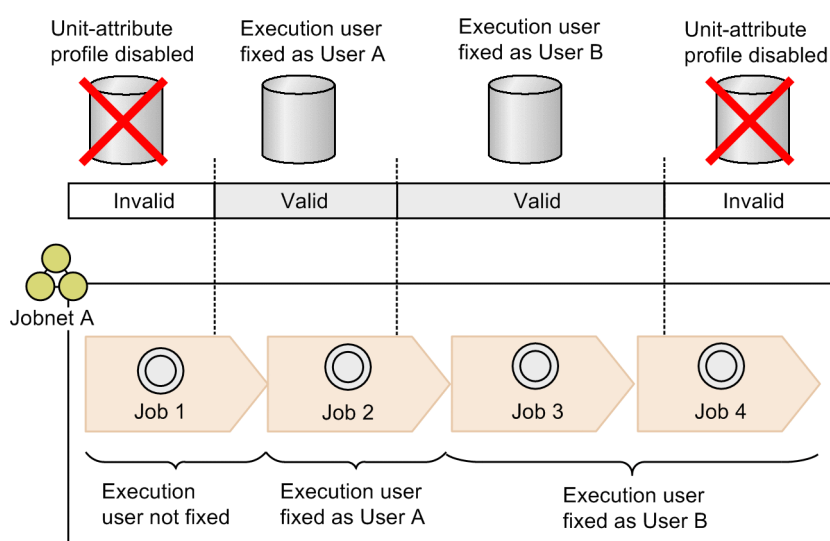
When the settings performed by the upper-level unit-attribute inheritance function are changed in this way during unit definition processing, some of the jobs in the created or copied unit may be executed by an unexpected execution user if their owner is not fixed. In this case, by fixing the job execution owner using the execution-user fixing function, you can ensure that all jobs are executed by the same execution user.

(2) Execution-user fixing function

If the settings in the execution-user fixing function are changed during jobnet execution, the execution user of each job is determined by the function settings when the job starts running.

The following figure shows an example of changing the settings in the execution-user fixing function while a jobnet is being executed.

Figure 7–30: Example of changing the settings in the execution-user fixing function during jobnet execution



In this example, the validity of the unit-attribute profile and the settings performed by the execution-user fixing function change while jobnet A is being executed. When job 1 starts running, the unit-attribute profile is invalid, so the job execution user is not fixed. When job 2 starts running, the execution user is fixed as User A by the execution-user fixing function, so job 2 is executed by User A. When jobs 3 and 4 start running, the execution user is fixed as User B by the execution-user fixing function, so they are executed by User B. The unit-attribute profile is deleted and becomes invalid after execution of job 4, but this does not affect the execution user of job 4.

7.11 Changing the setting for restricting connection sources

The setting for restricting connection sources can be changed in the following two ways:

- Enabling or disabling restricting connection sources.
- Changing the hosts that are permitted to connect to JP1/AJS3.

For details about the connection source restriction, see 2.3.9 *Restricting hosts that can access JP1/AJS3* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.

This section describes how to change the settings.

7.11.1 Enabling and disabling restricting connection sources

You can use the `CONNECTIONRESTRICTION` environment setting parameter to enable or disable the connection source restriction function. Before you change the setting of this parameter, make sure that all of the following services are stopped: the JP1/AJS3 service, the JP1/AJS3 Queueless Agent service, the JP1/AJS3 System Control Manager service, and the JP1/AJS3 System Control Agent service. If you change the parameter setting while some of these services are running and then start other services, it might cause a parameter setting mismatch between the already running services and the later started services.

By default, restricting connection sources in JP1/AJS3 is disabled. For details about how to enable this setting, see 21.2 *Restricting connections to JP1/AJS3* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

The following describes the steps for disabling restricting connections sources in JP1/AJS3:

1. Stop the JP1/AJS3 services.

In Windows:

In Windows Control Panel, open the **Services** administrative tool, and stop the following service:

- JP1/AJS3 service
- JP1/AJS3 Queueless Agent service^{#1}
- JP1/AJS3 System Control Manager service^{#2}
- JP1/AJS3 System Control Agent service^{#2}

In UNIX:

Execute the following commands to confirm that all processes have stopped:

```
# /opt/jplajs2/bin/jajs_spmd_stop
# /opt/jplajs2/bin/jajs_spmd_status
# /opt/jplajs2/bin/ajsqlstop#1
# /opt/jplajs2/bin/ajsqlstatus#1
# /opt/jplajs2/bin/ajssysctlstop#2
# /opt/jplajs2/bin/ajssysctlstatus#2
```

^{#1}

This operation needs to be executed only if queueless jobs are used.

If the host is a logical host, detach the logical host from the queueless agent service by using an `ajsqldetach` command or another method, without stopping the service.

#2

You only need to execute these commands when using the Web GUI (Management Portal).

2. Execute the following command to set the CONNECTIONRESTRICTION environment setting parameter:

```
jajs_config -k "[{JP1_DEFAULT|logical-host-name}#\JP1AJS2COMMON] " "CONNECTIONRESTRICTION"="none"
```

#

Specify JP1_DEFAULT for the physical host. For *logical-host-name*, specify the name of a logical host.

For details about the CONNECTIONRESTRICTION environment setting parameter, see 20.11.2(5) CONNECTIONRESTRICTION in the *JP1/Automatic Job Management System 3 Configuration Guide*.

3. Restart the services that you stopped in step 1.

Restricting of connection sources is disabled.

If you detached the logical host from the queueless agent service in step 1, execute the `ajsqlattach` command to attach the logical host.

4. Delete or move the connection permission configuration file.

If necessary, delete or move the connection permission configuration file.

7.11.2 Changing the hosts that are permitted to access JP1/AJS3

To change the hosts that are permitted to access JP1/AJS3, change the settings in the connection permission configuration file. The connection permission configuration file is stored in the following environment settings file storage folders:

In Windows:

Physical host:

- JP1/AJS3 - Manager
JP1/AJS3-Manager-installation-folder\conf
- JP1/AJS3 - Agent
JP1/AJS3-Agent-installation-folder\conf

Logical host:

shared-folder\jp1ajs2\conf

In UNIX:

Physical host:

/etc/opt/jp1ajs2/conf

Logical host:

shared-directory/jp1ajs2/conf

(1) Changing the settings in the manager connection permission configuration file

Changes to the settings in the manager connection permission configuration file take effect when the following conditions are satisfied:

Physical host:

- Either the JP1/AJS3 service or the JP1/AJS3 System Control Manager service is started when both of these services are stopped.
- If the following command is executed while either of the above services is running:

```
jajs_pmtcon -m -u
```

Logical host:

- Either the JP1/AJS3 service or the JP1/AJS3 System Control Manager service is started when both of these services are stopped.
- If the following command is executed while either of the above services is running:

```
jajs_pmtcon -h logical-host-name -m -u
```

The following describes how to change the settings for if, for example, you want to permit connections from a new host whose IP address is 192.168.31.3 while the JP1/AJS3 service is running.

1. Change the manager connection permission configuration file.

Add the IP address (192.168.31.3) of the new host whose connection you want to permit to the manager connection permission configuration file.

2. Execute the jajs_pmtcon command.

Execute the following command:

```
jajs_pmtcon [-h logical-host-name] -m -u
```

The settings in the manager connection permission configuration file take effect, and the host with IP address 192.168.31.3 is now able to connect to the manager host.

(2) Changing the settings in the agent connection permission configuration file

Changes to the settings in the agent connection permission configuration file take effect when the following conditions are satisfied:

Physical host:

- Any of the following services are started when they are all stopped: the JP1/AJS3 service, JP1/AJS3 Queueless Agent service, and JP1/AJS3 System Control Agent service.
- The following command is executed while any of the preceding services are running:

```
jajs_pmtcon -a -u
```

Logical host:

- The JP1/AJS3 service and JP1/AJS3 System Control Agent service are stopped, no logical host is attached to the queueless agent service, and either the JP1/AJS3 service or JP1/AJS3 System Control Agent service is started or a logical host is attached to the queueless agent service.
- If the following command is executed while the JP1/AJS3 service or the JP1/AJS3 System Control Agent service is running or the logical host is attached to the queueless agent service:

```
jajs_pmtcon -h logical-host-name -a -u
```

Cautionary notes

- If you change the settings while any of the JP1/AJS3 service, the JP1/AJS3 Queueless Agent service, and the JP1/AJS3 System Control Agent service are running, and then start other services, the changes will not take effect. In that case, for the changes to take effect, you must execute the `jajs_pmtcon` command.
- If a job is running, do not delete the IP address of the requester manager host from the agent connection permission configuration file.

You can check whether a job is running by using one of the following methods:

- The **Search** window of JP1/AJS3 - View
- The `jpoagtjobshow` command
- The `jpqjobshow` command

Suppose that, while the JP1/AJS3 service is running, you want to change the hosts that are permitted to connect to JP1/AJS3 - Agent as follows:

- Deny connection of the permitted host whose IP address is `192.168.31.2`.
- Permit connection of a new host whose IP address is `192.168.31.3`.

To do so, do the following:

1. Change the agent connection permission configuration file.

Delete `192.168.31.2` from the agent connection permission configuration file and add `192.168.31.3`.

2. Confirm that the manager host with IP address is `192.168.31.2` (the host whose connection you want to deny) is not running any jobs.

Use one of the following methods to confirm that this host is not running any jobs:

- The **Search** window of JP1/AJS3 - View
- The `jpoagtjobshow` command
- The `jpqjobshow` command

3. Execute the `jajs_pmtcon` command.

Execute the following command:

```
jajs_pmtcon [-h logical-host-name] -a -u
```

The settings in the agent connection permission configuration file take effect, and the host with IP address `192.168.31.2` is no longer able to connect to the agent host, and the host with IP address is `192.168.31.3` is now able to the agent host.

You can specify the same settings for multiple agent hosts by executing a jobnet that performs the following two processes:

- Transfers the agent connection permission configuration file to the agent host.
- Executes the following command:

```
jajs_pmtcon [-h logical-host-name] -a -u
```


7.12 Changing the SSL communication settings

This section explains how to enable or disable SSL communication, and how to change the system configuration.

For details about SSL communication (communication encryption function), see *2.3.6 Encryption of JP1/AJS3 communications with SSL* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.

7.12.1 Enabling or disabling SSL communication

The following describes how to switch the settings of the manager host, agent hosts, JP1/AJS3 - View host, and Web Console server to enable or disable SSL communication.

For the manager host:

Specify the SSL communication settings of the manager host by following the procedure for configuring settings in JP1/Base. For details about how to enable or disable SSL communication, see the *JP1/Base User's Guide*.

For an agent host:

Specify the SSL communication settings of an agent host by following the procedure for configuring settings in JP1/Base. For details about how to enable or disable SSL communication, see the *JP1/Base User's Guide*.

For the JP1/AJS3 - View host:

Enable or disable SSL communication for each communication-destination manager host by editing the file that specifies the names of the hosts that use unencrypted communication (`nossllhost.conf`).

Remove (from `nossllhost.conf`) the names of the hosts for which SSL communication is to be enabled, and specify (in `nossllhost.conf`) the names of the hosts for which SSL communication is to be disabled.

For details about the file that specifies the names of the hosts that use unencrypted communication (`nossllhost.conf`), see *21.4.6 Details on the settings in the unencrypted-communication host settings file (nossllhost.conf)* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

For the Web Console server:

Enable or disable SSL communication between Web GUI and Web Console server by editing the HTTP server definition file (`httpsd.conf`).

To disable SSL communication, comment out the SSL communication settings in `httpsd.conf`. To enable SSL communication, do not comment out the SSL communication settings in `httpsd.conf`.

For details about the HTTP server definition file (`httpsd.conf`) in Windows, see *3.4.5 Details on the settings in the HTTP server definition file (httpsd.conf)* in the *JP1/Automatic Job Management System 3 Configuration Guide*. For details about the HTTP server definition file (`httpsd.conf`) in UNIX, see *13.3.5 Details on settings in the HTTP server definition file (httpsd.conf)* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

Enable or disable SSL communication between Web Console server and manager host for each communication-destination manager host by editing the file that specifies the names of the hosts that use unencrypted communication (`nossllhost.conf`).

Remove (from `nossllhost.conf`) the names of the hosts for which SSL communication is to be enabled, and specify (in `nossllhost.conf`) the names of the hosts for which SSL communication is to be disabled.

For details about the file that specifies the names of the hosts that use unencrypted communication (`nossllhost.conf`), see *21.4.6 Details on the settings in the unencrypted-communication host settings file (nossllhost.conf)* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

7.12.2 Changing the configuration of a system where SSL communication is enabled

When you change the configuration of a system where SSL communication is enabled (for example, when adding hosts or replacing a server), you need to acquire and deploy the server certificate of the host again. If the CA of the issuer of the reacquired server certificate is different from that of the original certificate, you also need to acquire and deploy the root certificate.

Acquire and deploy the server certificate and root certificate by referring to the procedure in *21.4 Setting up the communication using SSL* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

7.13 Modifying the execution environment for QUEUE jobs and submit jobs

You can set or change the information required for executing QUEUE jobs and submit jobs, such as information about an agent host, the default queue, and execution-locked resources[#], during JP1/AJS3 operation. You will need to change the execution environment for QUEUE jobs and submit jobs if you want to perform the following operation:

- During operation, add or delete an agent host on which QUEUE jobs and submit jobs are executed.
- Set or change the settings of the agent host and queues during operation.
- Set or change the relationship of queue connections.

Only a user with JP1_JPQ_Admin permission can perform this operation.

Execution-locked resource settings are valid only if submit jobs are used.

7.13.1 Adding, deleting, and changing an agent host and queue

During JP1/AJS3 operation, you can add and delete an agent host and default queue, or change agent host and default queue settings. In addition, you can also add or delete a queue, and change queue settings.

To perform these operations, use the following commands. For details about the commands, see *4. Commands Used for Special Operation* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

- `jpqagtadd`
Adds an agent host. When this command is executed, a default queue is created for the agent.
- `jpqagtdel`
Deletes an agent host. When this command is executed, the default queue for the agent is deleted.
- `jpqqueadd`
Adds a queue.
- `jpqquedel`
Deletes a queue.
- `jpqagtalt`
Changes the maximum number of concurrently executable jobs.
- `jpqquealt`
Changes default queue and queue settings.
- `jpqqueopen` and `jpqqueclose`
Opens and closes a queue.

If you want to change an agent host name while JP1/AJS3 is running, see [7.9.1\(3\) Procedure for changing the host name of JP1/AJS3 - Agent](#).

7.13.2 Disconnecting and connecting a default queue or a queue

During JP1/AJS3 operation, you can disconnect an existing default queue or a queue. You can also connect a disconnected default queue and queue to another agent host. In addition, you can connect an added default queue or queue to an agent host.

To perform these operations, use the commands listed below. For details about the commands, see *4. Commands Used for Special Operation* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

- `jpgagtlink`
Connects a default queue and queue to an agent host.
- `jpgagtunlink`
Disconnects a default queue and queue from an agent host.

7.13.3 Changing execution-locked resources

During JP1/AJS3 operation, you can change execution-locked resources. Changes in the execution-locked resources are valid only when submit jobs are used.

To change execution-locked resources, use the following commands. For details about the commands, see *4. Commands Used for Special Operation* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

- `jpgresadd`
Adds an execution-locked resource name.
- `jpgresdel`
Deletes an execution-locked resource name.
- `jpgresshow`
Lists execution-locked resource names registered on a specified manager host.

8

Operating Methods

This chapter describes how to operate JP1/AJS3 efficiently and provides know-how for using the system.

8.1 Operating methods related to start conditions

This section describes operating methods related to start conditions, and provides know-how for using the system.

8.1.1 Stopping a jobnet that is monitoring start conditions

You can stop a jobnet with start conditions that are in the *Now monitoring* status by forcibly ending the jobnet.

To forcibly end a jobnet with start conditions:

1. Forcibly terminate the monitoring generations in *Now monitoring* status to stop monitoring start conditions.
2. Forcibly terminate the execution generations in *Now running* or *Wait for start cond.* status.
3. Cancel the execution registration of the jobnet.

You can also use a command or JP1/AJS3 - View to perform this operation.

(1) Stopping by using a command

To use a command to forcibly end a jobnet with start conditions that are in the *Now monitoring* status, and to cancel the execution registration:

1. Execute the following command:

```
ajskill target-jobnet-name
```

The monitoring generations in *Now monitoring* status are automatically determined and killed, and their status changes from *Now monitoring* to *Monitor terminated*.

At the same time, execution generations in *Wait for start cond.* status (generations whose start conditions are not satisfied or only partially satisfied) are cleared.

2. If execution generations in *Now running* or *Wait for start cond.* status remain, repeat step 1.

The execution generations in *Now running* status are automatically determined and killed, and their status changes from *Now running* to *Killed*. At the same time, the status of the next execution generations in *Wait for start cond.* status changes to *Now running*.

3. Repeat step 1 until the status of all execution generations in *Now running* status is *Killed*.

4. Execute the following command:

```
ajsleave target-jobnet-name
```

The execution registration of the jobnet is canceled.

Supplementary note

The `ajsshow` command is useful for checking whether any execution generations in *Now running* or *Wait for start cond.* status remain. Execute the `ajsshow` command in the following format:

```
ajsshow -g a -f "%C %#" target-jobnet-name
```

In the `-g` option, specify `a` as the argument to output the execution results of all generations of the jobnet specified in *target-jobnet-name*.

In the `-f` option, specify the format identifier `%C` to output the status of the jobnet and the format identifier `%#` to output the execution ID of the jobnet.

For details about the `ajsshow` command, see `ajsshow` in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

(2) Stopping by using JP1/AJS3 - View

To use JP1/AJS3 - View to forcibly terminate a jobnet with start conditions in *Now monitoring* status, and to cancel the execution registration:

1. Display the Daily Schedule window or the Monthly Schedule window of JP1/AJS3 - View.
2. In the execution result list, select the monitoring generations in *Now monitoring* status. Next, choose **Operations** and then **Kill**.
The monitoring generations in *Now monitoring* status are killed, and their status changes from *Now monitoring* to *Monitor terminated*.
At the same time, execution generations in *Wait for start cond.* status (generations whose start conditions are not satisfied or only partially satisfied) are cleared.
3. If execution generations in *Now running* or *Wait for start cond.* status remain, in the execution result list, select the execution generations in *Now running* status. Next, choose **Operations** and then **Kill**.
The execution generations in *Now running* status are killed, and their status changes from *Now running* to *Killed*. At the same time, the status of the next execution generations in *Wait for start cond.* status changes to *Now running*.
4. Repeat step 3 until the status of all execution generations in *Now running* status is *Killed*.
5. In the list area of the JP1/AJS3 - View window, select the jobnets whose execution registration you want to cancel. Next, choose **Operations** and then **Cancel Registration**.
The execution registrations of the selected jobnets are canceled.

(3) Stopping by using Web GUI (Job Portal)

To use Web GUI (Job Portal) to forcibly terminate a jobnet with start conditions in *Now monitoring* status, and to cancel the execution registration:

1. In the List Screen of the Web GUI (Job Portal), select a jobnet for which you want to unregister execution, and then click the **Execution Generation** button.
The Execution Generation dialog box is displayed.
2. Select the monitoring generations in *Now monitoring* status, and then click the **Kill** button.
The monitoring generations in *Now monitoring* status are killed, and their status changes from *Now monitoring* to *Monitor terminated*.
At the same time, execution generations in *Wait for start cond.* status (generations whose start conditions are not satisfied or only partially satisfied) are cleared.
3. From the **Change Plan** drop-down list, select **Prohibit Execution of Retention Generations**.
Scheduled executions of all execution generations in *Wait for start cond.* status are unregistered at one time, and the status of these execution generations changes to *Killed*.
4. Select the remaining execution generations in *Now running*, *Being held*, and other statuses, and then click the **Kill** button.

The execution generations in *Now running*, *Being held*, and other statuses are killed, and their statuses change to *Killed*.

5. Click **Close** button.

The Execution Generation dialog box closes and the List Screen appears.

6. In the List Screen, select the jobnets for which you want to unregister execution, and then select **Leave**.

The Cancel Registration dialog box appears.

7. In the Cancel Registration dialog box, select the **All** radio button in the **Cancel method** area, and then click the **OK** button.

The execution registrations of the selected jobnets are canceled.

8.1.2 Changing an event job and a custom event job definition in the start conditions of a jobnet registered for execution

After a jobnet with start conditions has been registered for execution, you can use either of the two methods below to change an event job and a custom event job definition in the start conditions. The time the changes take effect are determined by the method.

- Cancel the execution registration of the jobnet with start conditions

Cancel the execution registration of the jobnet, and then re-register the jobnet for execution. The new definition takes effect when the jobnet is registered. If you do not cancel the execution registration, the new definition does not take effect until the next scheduled execution.

- Stop the scheduler service

Stop the scheduler service, and then restart it. When the scheduler service is stopped, the monitoring generations are set to the *Interrupted monitoring* status. The new definition takes effect when the scheduler service is restarted.

To stop the scheduler service, use one of the following methods.

(a) Execute the `ajsstop` command.

Execute the command as follows:

```
ajsstop -F scheduler-service-name [-s|-n|-j|-k]
```

For the command syntax, see `ajsstop` in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

(b) Execute the `jajs_spmd_stop` command.

Execute the command as follows:

```
jajs_spmd_stop -n jajs_schd -F scheduler-service-name -job
```

For the command syntax, see `jajs_spmd_stop` in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

(c) In JP1/Power Monitor, set the program to wait for termination of a JP1/AJS3 jobnet, and then shut down the host using any of the following methods:

- Execute a local power control job, specifying **Planned termination** as its **Termination request type**.
- Execute a remote power control job, specifying **Power off: Planned termination** as its **Request type**.
- Shut down the host from JP1/Power Monitor, specifying **Planned termination**.

8.2 Operating methods related to event jobs and custom event jobs

This section describes the operating methods related to event jobs and custom event jobs, and provides know-how for using the system.

8.2.1 Continuing the execution of event jobs and custom event jobs if the JP1/AJS3 service stops

If the JP1/AJS3 service on the agent host or on the manager host stops, the status of jobs in *Now running* status changes to *Ended abnormally*, and the jobnet is interrupted. For event jobs and custom event jobs, however, you can use the option to continue execution of active event jobs to continue their operation. This option inherits the *Now running* status of an event job and a custom event job when the service stops so that the execution of the event job and the custom event job can continue after the service is restarted.

If a failover occurs because power fails or a process is forcibly terminated, the *Now running* status of event jobs and custom event jobs that exists when the service stops is always inherited even if this option is not used.

For details about how to specify the setting for using the option to continue execution of active event jobs, see 6.3.6 *Resuming event jobs and custom event jobs that stopped when the JP1/AJS3 service stopped* in the *JP1/Automatic Job Management System 3 Configuration Guide* (in Windows) or 15.3.6 *Resuming event jobs and custom event jobs that stopped when the JP1/AJS3 service stopped* in the *JP1/Automatic Job Management System 3 Configuration Guide* (in UNIX).

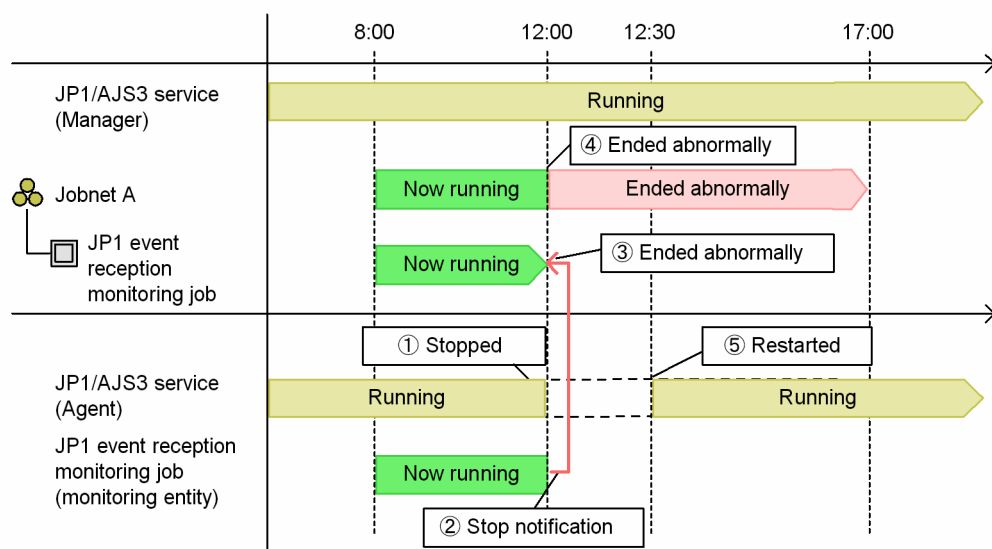
This subsection describes operation when the option to continue execution of active event jobs is used and when it is not used.

(1) For a manager and agent system configuration

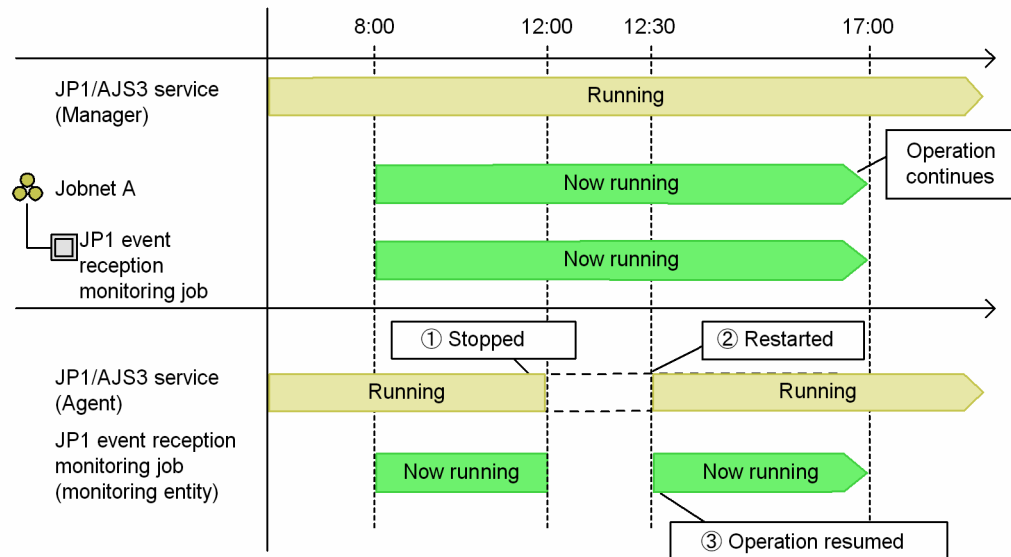
The following example shows operation when the option to continue execution of active event jobs is used, and when it is not used. This example assumes that the JP1/AJS3 service on the agent host is not running from 12:00 to 12:30 due to maintenance of the agent host in a manager and agent system configuration. This example also assumes that the jobnet is scheduled to start at 8:00 and end at 17:00.

Figure 8–1: Operation when the option to continue execution of active event jobs is used, and when it is not used

■ Operation when the option to continue execution of active event jobs is not used



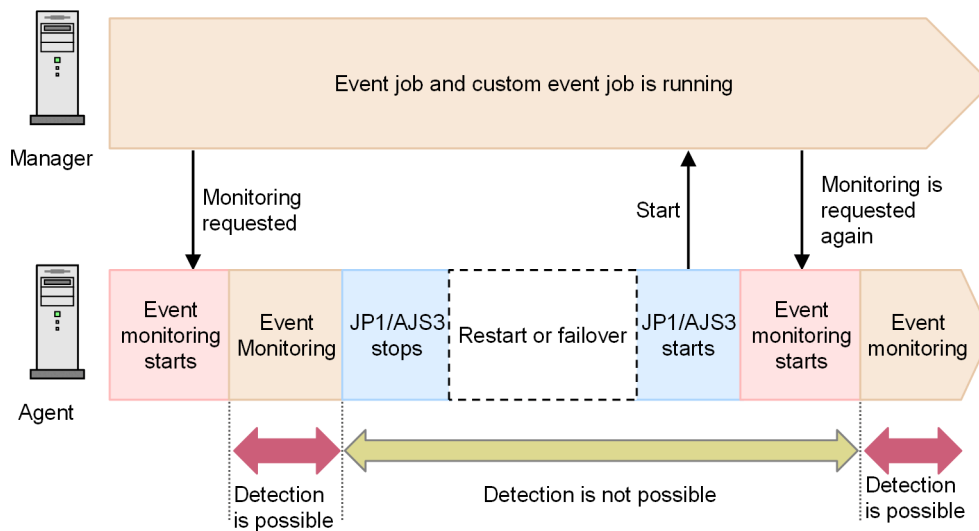
■ Operation when the option to continue execution of active event jobs is used



If the JP1/AJS3 service on the agent host stops when the option to continue execution of active event jobs is not enabled, the manager host is notified that the agent has stopped. In this case, the status of the event job and the custom event job that was in *Now running* status when the service stopped changes to *Ended abnormally* status, and then the jobnet terminates.

However, if the JP1/AJS3 service on the agent host stops when the option to continue execution of active event jobs is enabled, the *Now running* status of the event job and the custom event job does not change. When the service is restarted, the *Now running* status is inherited and the execution of the event job and the custom event job resumes. Note that, as shown in the following figure, JP1/AJS3 cannot detect any events that occur from when the JP1/AJS3 service is stopped until all the following are performed: a failover is performed, the service is started, and event monitoring is started.

Figure 8–2: Time period during which events can be detected



(2) For a standalone configuration

When the option to continue execution of active event jobs is used in a standalone configuration, it works the same way as in a manager and agent system configuration. In particular, when the service stops, the *Now running* status of the event job and the custom event job does not change and will be inherited when the service is restarted. In this case, however, you need to restart the service in hot-start mode (specify *hot* in the *STARTMODE* environment setting parameter). For details about the service start modes, see *20.4 Setting up the scheduler service environment* in the *JP1/Automatic Job Management System 3 Configuration Guide* or *6.2.1 Temporarily changing the start mode of JP1/AJS3*.

(3) Cautionary notes

- You cannot use the option to continue execution of active event jobs in a version of JP1/AJS2 - Manager earlier than 08-50.
- You cannot use the option to continue execution of active event jobs in JP1/AJS2 - Agent 06-00-/D or earlier.
- Set the option to continue execution of active event jobs for each manager on physical and logical hosts.
- If the option to continue execution of active event jobs is used under the following two conditions, the manager host cannot be stopped as scheduled because the jobs remain in *Now running* status on the manager:
 - A manager and agent system configuration in which JP1/AJS3 waits for all running jobs to be ended by the `jajs_spmd_stop` command (with `-job` specified) or the power control job (planned termination) is being used.
 - The manager host stops.
- If you restart JP1/AJS3 on the agent host while event jobs and custom event jobs are running, the manager sends an event monitoring request to the agent to automatically continue event monitoring. If many event jobs and custom event jobs are running, note that some time might be required until the agent is ready to detect events.
- If the option that continues the execution of event jobs is used to continue the execution of file monitoring jobs, the status of a monitored file is not inherited even when the status passing option for inheriting file monitoring job statuses is enabled. As a result, no events can be detected from the time an agent is stopped on which a file monitoring job is running until the agent is restarted and event monitoring is resumed. For details about the status passing option for inheriting file monitoring job statuses, see *7.6.2 Notes on the Monitoring Files job* in the *JP1/Automatic Job Management System 3 System Design (Work Tasks) Guide*.
- If the option to continue execution of active event jobs is used to continue execution of a custom event job, inheritance of the monitored status and other operational specifications depend on the specifications of the linked program. For details, see the applicable documentation for the linked program.

(4) Supplementary notes

- For an event job and a custom event job for which the timeout period is set, any counting for the timeout period is cleared when the service stops. Counting for the timeout period starts from 0 the moment the service is restarted.
- For an execution interval control job, the waiting time already counted is cleared when the service stops. Counting starts from 0 the moment the service is restarted.
- If **Find event before exec.** is enabled for a JP1 event reception monitoring job and monitored JP1 events are received between the time the service is stopped and the time it is restarted, events are assumed to have been detected after the service was restarted. This applies to only when the service is restarted within the time period specified for the event detection time.
- If a file is created in the interval between stopping and restarting the service when **Establish for existing files** is specified for a file monitoring job that monitors the creation of files, the monitoring condition is satisfied after the restart.

8.3 Operating methods related to wait conditions

This section describes operating methods related to wait conditions, and provides know-how for using the system.

8.3.1 Temporarily changing wait conditions

You can enable and disable the waiting process of a unit with wait conditions for any particular unit whose end is being waited for.

When you disable waiting for a particular unit, the wait status with respect to that unit changes to *Wait complete (manual)* and the unit with wait conditions no longer waits for that unit. If the wait method is AND, and you change the wait status to *Wait complete (manual)* with respect to all units whose end is being waited for, the unit with wait conditions will immediately start executing. If the wait method is OR, the unit with wait conditions will start executing when you change the wait status to *Wait complete (manual)* for any one of the units whose end is being waited for.

When you enable waiting for a particular unit, the wait status with respect to that unit changes to *Wait incomplete (manual)* and the unit with wait conditions will wait for that unit. If a unit with wait conditions has finished executing, and you re-execute it with waiting enabled, the unit will restart in *Wait incomplete (manual)* status and resume waiting.

For details about enabling and disabling wait conditions, see 4.5.15 *Temporarily changing the wait condition settings for a jobnet or job* in the manual *JPI/Automatic Job Management System 3 Overview*.

8.3.2 Changing wait conditions without canceling registration

Using either of the following methods, you can change the wait conditions of a unit in a jobnet that is already running without unregistering the jobnet:

- Suspend the unit with wait conditions

Suspend the unit and then redefine its wait conditions. For details about suspending a unit, see 4.5.17 *Changing job and jobnet definitions without unregistering the jobnet* in the manual *JPI/Automatic Job Management System 3 Overview*.

- Release the root jobnet

Release the root jobnet and change its wait conditions in either of the following ways:

Release the root jobnet containing the unit with wait conditions

Make a release entry for a predefined root jobnet to be switched in. As the release target jobnet, specify the root jobnet that contains the unit with wait conditions that you want to change. Once the release takes place, the root jobnet will run using the jobnet definition of the predefined release source jobnet and the wait condition settings will be replaced.

Release the root jobnet containing the unit whose end is being waited for

Make a release entry for a predefined root jobnet to be switched in. As the release target jobnet, specify the root jobnet containing the unit whose end is being waited for. Once the release takes place, the root jobnet will run using the jobnet definition of the predefined release source jobnet.

If the definition of the release source jobnet does not contain a unit whose name matches that of the unit whose end is being waited for, after the release the unit with wait conditions will terminate abnormally due to an error in the definition of the unit whose end is being waited for. In order to change the wait condition in this case, you must make a release entry for the root jobnet containing the unit with wait conditions. Specify the same release time as for the root jobnet containing the unit whose end is being waited for.

When you set a release entry for the root jobnet containing the unit whose end is being waited for, the system recreates the execution schedules from the release time onward. This means that no schedule exists for a short time after the release time. As a result, the unit with wait conditions might sometimes start running in accordance with the option you selected in **If not waiting for any generations** for the particular unit whose end is being waited for. Make sure the root jobnet containing the unit whose end is being waited for will be released before the unit with wait conditions starts running.

For details about releasing a jobnet, see [7.3 Switching a jobnet definition while the jobnet is registered for execution](#).

8.3.3 Checking the wait status from the status and wait status of the units whose end is being waited for

When you are monitoring a unit with wait conditions in a window such as the Jobnet Monitor window in JP1/AJS3 - View, you can open the Wait Conditions Statuses window to check the status of the units being waited for. Similarly, when you are monitoring a unit with wait conditions in a window such as the Monitor dialog box of the Web GUI (Job Portal), you can open the Wait Conditions Statuses dialog box to check the status of the units being waited for. In the Wait Conditions Statuses window of JP1/AJS3 - View and the Wait Conditions Statuses dialog box of the Web GUI (Job Portal), you can view a list of the units being waited for and check the execution status and the wait status of each of these units.

From the Wait Conditions Statuses window in JP1/AJS3 - View, you can open the Jobnet Monitor window and monitor the units whose end is being waited for.

For details about how to check wait conditions, see [2.2.5\(8\) Checking units whose ends are being waited for](#) in the *JP1/Automatic Job Management System 3 System Design (Work Tasks) Guide*.

For details about the Wait Conditions Statuses window in JP1/AJS3 - View, see [12.12 Wait Conditions Statuses window](#) in the *JP1/Automatic Job Management System 3 Operator's Guide*. For details about the Wait Conditions Statuses dialog box in Web GUI (Job Portal), see [15.2.31 Wait Conditions Statuses dialog box](#) in the *JP1/Automatic Job Management System 3 Operator's Guide*.

(1) Checking the wait status when a unit whose end is being waited for uses a start condition

If the Wait Conditions Statuses window in JP1/AJS3 - View or Wait Conditions Statuses dialog box in Web GUI (Job Portal) displays a unit which uses a start condition and whose end is being waited for, information for the monitoring generation is displayed as the information for that unit. You can determine the wait conditions from the status and wait status of the monitoring generation.

For example, if **Do not execute** is specified for **Abnormal end for an execution generation**, you will be able to determine the following from the status of the monitoring generation and its wait status.

Example 1: If the status of the monitoring generation is *Monitor-end normal* and the wait status is *Wait complete*:

The wait has been completed normally.

Example 2: If the status of the monitoring generation is *Monitoring* and the wait status is *Wait incomplete*:

The wait has not been completed because the monitoring generation has not finished execution. Open the Monthly Schedule or Daily Schedule window and check whether any of the execution generations has ended abnormally.

Example 3: If the status of the monitoring generation is *Monitor-end normal* and the wait status is *Wait incomplete*:

The execution generation has not finished execution. The status of the execution generation might be *Now running* or *Ended with warning*. Open the Monthly Schedule or Daily Schedule window and identify the execution generation that has not terminated normally.

8.3.4 Searching for a unit with wait conditions

In the Search window of JP1/AJS3 - View, you can search for a unit with wait conditions by specifying as the search key the name of a unit whose end is being waited for. The **Simple Search** command allows automatic input of search conditions for finding a particular unit with wait conditions.

For details about how to search for units in JP1/AJS3 - View, see *10.2 Finding and displaying units* in the *JP1/Automatic Job Management System 3 Operator's Guide*.

9

Database Maintenance

This chapter describes how to maintain the JP1/AJS3 database.

9.1 Estimating a maintenance time

If you are using a JP1/AJS3 database, you periodically need to make unavailable areas usable again or reorganize the database by using the automatic maintenance function or the `ajsembdbreclaim` command. If the automatic maintenance function is enabled, the system performs maintenance of the embedded database every day at the specified time. If you use the `ajsembdbreclaim` command, you can execute the command at any time or register the command as a job to perform maintenance periodically.

To estimate when to execute the `ajsembdbreclaim` command and when to perform reorganization, analyze the database area. Estimate when to perform reorganization based on the values measured in the procedure below.

When estimating the reorganization time, consider weekly and monthly peak days and weekly and monthly increases.

9.1.1 Analyzing the database area

Execute the `ajsembdbstatus` command to check the database status.

If the analysis result of the `ajsembdbstatus` command indicates that there are few segments and many free pages, perform database maintenance.

For details about the `ajsembdbstatus` command, see *ajsembdbstatus* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

If you execute the `ajsembdbreclaim` command in a state in which large quantities of unavailable areas occur in the database, a lot of data is sent to the system log. If large quantities of unavailable areas occur because maintenance has not been performed for a long time, estimate the system log size necessary for executing the `ajsembdbreclaim` command. The necessary system log size is the maximum value obtained when the expression below is calculated for each table and index. To check the values for the individual items in the expression, execute the `ajsembdbstatus` command with the `-db` and `-d` options specified.

$((\text{Collect On Segment}) + (\text{Collect Prearranged Page}^{\#}) / 10) \times 0.004$ (units: megabytes)

#:

For tables other than the AJSJINF table, substitute the value of the *Collect Prearranged Page* in the *Base row segment*.

For the AJSJINF table, add the value of the *Collect Prearranged Page* in the *Base row segment* to that in the *BINARY segment*, and then substitute the value in the formula.

Note that the AJSJINF table exists only when the backup enhancement function is enabled.

If, as a result of estimating the necessary system log capacity, you determine that the system log will be insufficient, add a system log by executing the `ajsembdbaddlog` command, and then execute the `ajsembdbreclaim` command.

For details about the `ajsembdbaddlog` command, see *ajsembdbaddlog* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

For details about the `ajsembdbreclaim` command, see *ajsembdbreclaim* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

For details about the *Collect On Segment* / *Collect Prearranged Page* / *Collect On Page*, see *ajsembdbstatus* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

9.1.2 Messages indicating an area shortage

When the storage efficiency of data in the JP1/AJS3 database decreases, a message is output to the Windows event log or `syslog` file. If a message is output, use the `ajsembdbstatus` command to analyze the database status, and reorganize the database as required. For details about the output message, see [5.2.1 How to check the database usage](#).

If the message is still output immediately after you perform database maintenance or reorganization, you need to increase the RD area. For details about how to increase the RD area, see *ajsembdbaddarea* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

9.2 Performing maintenance

This section describes how to perform maintenance by using the automatic maintenance function and the `ajsembdbreclaim` command, and how to reorganize the database.

9.2.1 Using the automatic maintenance function

This subsection describes how to use the automatic maintenance function for maintenance.

The automatic maintenance function automatically performs maintenance once a day at the specified time.

If you need advanced scheduling, for example, to perform maintenance after a specific job, we recommend that you define the `ajsembdbreclaim` command as a JP1/AJS3 job. For details, see [9.2.2\(1\) Executing the `ajsembdbreclaim` command automatically](#).

The `DBAUTOMAINTENANCE` environment setting parameter specifies whether the automatic maintenance function is to be used. For details about the setup, see [6.8.1 Setting up the automatic maintenance function for embedded databases in the JP1/Automatic Job Management System 3 Configuration Guide](#) (for Windows) or [15.9.1 Setting up the automatic maintenance function for embedded databases in the JP1/Automatic Job Management System 3 Configuration Guide](#) (for UNIX).

9.2.2 Executing the `ajsembdbreclaim` command

This subsection describes how to use the `ajsembdbreclaim` command for maintenance.

(1) Executing the `ajsembdbreclaim` command automatically

By defining the `ajsembdbreclaim` command as a JP1/AJS3 job, you can execute the `ajsembdbreclaim` command automatically according to a schedule. We recommend that you set a schedule to execute the `ajsembdbreclaim` command as a job once a day.

The following shows an operation example for executing the `ajsembdbreclaim` command automatically.

(a) Definition method

The following shows an example definition that executes the `ajsembdbreclaim` command at 23:00 on the fifth open day of every week.

1. Create a unit definition file with the following contents.

In Windows:

```
unit= ajsembdbreclaim-netwin,,jpladmin,;
{
    ty=n;
    sd=1,*5;
    st=1,23:00;
    cy=1,(5,d);
    sh=1,ca;
    unit= ajsembdbreclaim-jobwin;
    {
        ty=pj;
```

```

        sc="C:\Program Files\HITACHI\JP1AJS2\tools\ajsembdbreclaim";
        prm="-m manager";
    }
}

```

In UNIX:

```

unit= ajsembdbreclaim-netunix,,jpladmin,;
{
    ty=n;
    sd=1,*5;
    st=1,23:00;
    cy=1,(5,d);
    sh=1,ca;
    unit= ajsembdbreclaim-jobunix;
    {
        ty=j;
        sc="/opt/jplajs2/tools/ajsembdbreclaim";
        prm="-m manager";
    }
}

```

2. Execute the following command to define the unit:

```
ajsdefine unit-definition-file-name
```

The following is an example command for creating a unit definition file named `ajsembdbreclaim.txt`:

```
ajsdefine ajsembdbreclaim.txt
```

3. Execute the following command to register the unit for planned execution:

```
ajsentry -s unit-name
```

The following is an example command:

```
ajsentry -s /ajsembdbreclaim-netwin
```

Empty pages will be automatically reclaimed according to the defined schedule.

Note that you can also use JP1/AJS3 - View to register the unit for planned execution.

(2) Executing the ajsembdbreclaim command manually

The following describes how to execute the `ajsembdbreclaim` command manually. For details about the `ajsembdbreclaim` command, see *ajsembdbreclaim* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

Note that if you execute the `ajsembdbreclaim` command while the embedded database is online, the database server waits for transactions to complete before the `ajsembdbreclaim` command is executed. Therefore, avoid executing the `ajsembdbreclaim` command when the system is heavily loaded with job and jobnet executions. Also, avoid executing the command while operations on units are being performed by commands or from JP1/AJS3 - View or when usage states of scheduler services and retention states of jobnets with start conditions are being aggregated from the management portal.

For Windows hosts:

```
JP1/AJS3-Manager-installation-folder\tools\ajsembdbreclaim
```

For UNIX hosts:

```
/opt/jplajs2/tools/ajsembdbreclaim
```

Command examples

- To run the command for all the scheduler services on the manager (JP1/AJS3 - Manager), enter the following command:
`ajsembdbreclaim -m manager`
- To run the command for the scheduler service, enter the following command:
`ajsembdbreclaim -m scheduler -F AJSROOT1`

9.2.3 Reorganizing a database

This subsection describes how to reorganize a database.

(1) Using the `ajsembdborg` command to reorganize the database

To reorganize the database manually:

For details about the commands used in the following procedure, see 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*, and 2. *Commands Used during Setup* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

1. Terminate the JP1/AJS3 scheduler services.

Use the `jaajs_spmd_stop` or `ajsstop` command to terminate the applicable JP1/AJS3 scheduler services. Terminate all scheduler services for which information is managed in the embedded database to be reorganized. You can use the `ajsembdbidlist` command to check the association between scheduler services and embedded database directories.

Command format (for `jaajs_spmd_stop` command):

```
jaajs_spmd_stop [-h logical-host-name] -n jaajs_schd -F scheduler-service-name
```

Command example:

```
jaajs_spmd_stop -n jaajs_schd -F AJSROOT2
```

Command format (for `ajsstop` command):

```
ajsstop -F scheduler-service-name
```

Command example:

```
ajsstop -F AJSROOT2
```

2. Terminate the JP1/AJS3 agent management.

Use the `jaajs_hstd_stop` command to terminate the agent management.

Command format:

- In Windows:
`jaajs_hstd_stop [-h logical-host-name] -n agentm`
- In UNIX:
`jaajs_hstd_stop [-h logical-host-name] -n ajsagtmd`

Command example:

- In Windows:

```
jaajs_hstd_stop -n agentm
```

- In UNIX:

```
jaajs_hstd_stop -n ajsagtmp
```

3. Stop all connected JP1/AJS3 - View and commands.

Make sure that no JP1/AJS3 - View and scheduler commands are running.

4. Use the `ajsembdbreclaim` command to reclaim empty segments.

If you perform reorganization when there are only a few empty segments, the work area might be insufficient, causing reorganization to fail. To avoid this problem, we recommend that you reclaim empty segments beforehand.

Command example:

- In Windows:

```
JP1/AJS3-Manager-installation-folder\tools\ajsembdbreclaim -m manager
```

- In UNIX:

```
/opt/jplajs2/tools/ajsembdbreclaim -m manager
```

5. Use the `ajsembdbbrorg` command to reorganize the database.

Command example

- In Windows:

```
ajsembdbbrorg -k unld -F AJSROOT2 -d C:\tmp
```

```
ajsembdbbrorg -k reld -F AJSROOT2 -d C:\tmp
```

- In UNIX:

```
ajsembdbbrorg -k unld -F AJSROOT2 -d /tmp
```

```
ajsembdbbrorg -k reld -F AJSROOT2 -d /tmp
```

For reorganizing the agent management database

- In Windows:

```
ajsembdbbrorg -k unld -agent -d C:\tmp
```

```
ajsembdbbrorg -k reld -agent -d C:\tmp
```

- In UNIX:

```
ajsembdbbrorg -k unld -agent -d /tmp
```

```
ajsembdbbrorg -k reld -agent -d /tmp
```

Note

Make sure that the directory specified by the `-d` option has enough free space.

To use the data acquired by `-k unld` for executing `-k reld`, specify the same directory in the `-d` option for both `-k unld` and `-k reld`.

If an error occurs in `-k unld`, do not use the resulting file for executing `-k reld`. If you do so, the contents of the database might be corrupted.

If an error occurs in `-k reld`, the contents of the database might be corrupted. In this case, correct the cause of the error, and then re-execute the `ajsembdbbrorg` command with the `-k reld` option. Before you start the JP1/AJS3 services, make sure that the `ajsembdbbrorg` command terminated normally.

If the KPFA11756-E message is output by `-k reld`, the database area of the embedded database is insufficient, for example, in terms of the number of units or saved generations. Estimate the amount of the required database area, and then expand the insufficient area. For details about the estimating, see *23.2 Estimating the database area* in the *JP1/Automatic Job Management System 3 Configuration Guide*. After expanding the insufficient area, execute the `ajsembdbbrorg` command with the `-k reld` option.

6. Start the JP1/AJS3 agent management.

Use the `jajs_hstd` command to start the agent management.

Command format:

- In Windows:
`jajs_hstd [-h logical-host-name] -n agentm`
- In UNIX:
`jajs_hstd [-h logical-host-name] -n ajsagtmd`

Command example:

- In Windows:
`jajs_hstd -n agentm`
- In UNIX:
`jajs_hstd -n ajsagtmd`

7. Start the JP1/AJS3 scheduler services.

Use the `jajs_spmd` or `ajsstart` command to start the applicable JP1/AJS3 scheduler services. Also start related services.

Command format (for `jajs_spmd` command):

```
jajs_spmd [-h logical-host-name] -n jajs_schd -F scheduler-service-name
```

Command example:

```
jajs_spmd -n jajs_schd -F AJSROOT2
```

Command format (for `ajsstart` command):

```
ajsstart -F scheduler-service-name
```

Command example:

```
ajsstart -F AJSROOT2
```

(2) Using a script to reorganize the database

The following describes the procedure for using a script to reorganize the embedded database as a batch operation. Each step in the procedure is followed by a usage example.

For details about the commands used in the procedure, see 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*, and 2. *Commands Used during Setup* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

Supplementary notes

- Because the reorganization procedure performs the same operations as described in (1) *Using the `ajsembdborg` command to reorganize the database*, we recommend that you always use the procedure in (1) to reorganize the database.
- The following procedure is not applicable to an embedded database for which the backup enhancement function is enabled. Use the procedure described in (1) to reorganize the database.

(a) Reorganization procedure

To reorganize an embedded database:

1. Set the environment variables required to execute commands for the embedded database.

The following table describes the environment variables you need to set.

Table 9–1: Environment variable that need to be set

Environment variable	Value to be specified
JP1_HOSTNAME	Specify the logical host name if you are using the database in a cluster system.
PATH	This is the directory in which commands for the embedded database are stored. In Windows: Specify <i>embedded-database-practical-directory\bin</i> In UNIX: Specify <i>embedded-database-practical-directory/bin</i>
PDCONFPATH	This is the directory in which definition files for the embedded database are stored. In Windows: Specify <i>embedded-database-practical-directory\conf</i> In UNIX: Specify <i>embedded-database-practical-directory/conf</i>
PDDIR	Specify the name of the embedded database practical directory.
PDLANG	Specify ANY.
PDUSER	Specify the user name and password of the embedded database administrator (the owner of the tables of the scheduler database) in <i>user-name/password</i> format. Example: PDUSER="root"/"root"
PDUXPLDIR	In Windows only, specify the name of the work directory for the embedded database.
SHLIB_PATH#	In UNIX only, specify <i>embedded-database-practical-directory/lib</i> .

#

This is LD_LIBRARY_PATH in Solaris or Linux, and LIBPATH in AIX.

Example of environment variable settings in Windows:

```
x:\> set PDDIR=c:\Program Files\HITACHI\JP1AJS2\embdb\_JF0
x:\> set PDCONFPATH=%PDDIR%\conf
x:\> set PDUXPLDIR=%PDDIR%\uxpldir

x:\> set PDUSER="root"/"root"
x:\> set PDLANG=ANY
x:\> set JP1_HOSTNAME=lhost1
x:\> set PATH=%PATH%;%PDDIR%\bin
```

Example of environment variable settings in UNIX (HP-UX):

```
# PDDIR=/opt/jp1ajs2/embdb/_JF0
# PDCONFPATH=$PDDIR/conf
# PDUSER=' "root"/"root" '
# PDLANG=ANY
# SHLIB_PATH=$PDDIR/lib
# PATH=$PATH:$PDDIR/bin

# export PDDIR PDCONFPATH PDUSER PDLANG SHLIB_PATH PATH
```

2. Terminate the JP1/AJS3 scheduler services.

Use the `jajs_spmd_stop` command or `ajsstop` command to stop the target JP1/AJS3 scheduler services. Terminate all scheduler services that use the RD area that will be reorganized.

Command format (for `jajs_spmd_stop` command):

```
jajs_spmd_stop [-h logical-host-name] -n jajs_schd -F scheduler-service-name
```

Command example:

```
jajs_spmd_stop -n jajs_schd -F AJSROOT2
```

Command format (for `ajsstop` command):

```
ajsstop -F scheduler-service-name
```

Command example:

```
ajsstop -F AJSROOT2
```

3. Terminate the JP1/AJS3 agent management.

Use the `jajs_hstd_stop` command to terminate the agent management.

Command format:

- In Windows:

```
jajs_hstd_stop [-h logical-host-name] -n agentm
```

- In UNIX:

```
jajs_hstd_stop [-h logical-host-name] -n ajsagtmp
```

Command example:

- In Windows:

```
jajs_hstd_stop -n agentm
```

- In UNIX:

```
jajs_hstd_stop -n ajsagtmp
```

4. Stop the connected JP1/AJS3 - View and all commands.

Make sure that JP1/AJS3 - View and scheduler commands are not running.

5. Use the `ajsembdbreclaim` command to reclaim empty segments.

If you perform reorganization when there are only a few empty segments, the work area might be insufficient, causing reorganization to fail. To avoid this problem, we recommend that you reclaim empty segments beforehand.

Command example:

- In Windows:

```
JP1/AJS3-Manager-installation-folder\tools\ajsembdbreclaim -m manager
```

- In UNIX:

```
/opt/jplajs2/tools/ajsembdbreclaim -m manager
```

6. Execute the following script.

A sample reorganization script is provided. Create a copy in the work directory and use the copy.

- In Windows:

```
JP1/AJS3-installation-folder\tools\ajsembdbcond-sample.bat
```

- In UNIX:

```
/opt/jplajs2/tools/ajsembdbcond-sample
```

For details about the `ajsembdbcond` script, see *(b) Format of the reorganization script* below.

Script example:

```
ajsembdbcond
```

(When the script is renamed to ajsembdbcond.)

7. Start the JP1/AJS3 agent management.

Use the `jajs_hstd` command to start the agent management.

Command format:

- In Windows:
`jajs_hstd [-h logical-host-name] -n agentm`
- In UNIX:
`jajs_hstd [-h logical-host-name] -n ajsagtmp`

Command example:

- In Windows:
`jajs_hstd -n agentm`
- In UNIX:
`jajs_hstd -n ajsagtmp`

8. Start the JP1/AJS3 scheduler services.

Use the `jajs_spmd` or `ajsstart` command to start the applicable JP1/AJS3 scheduler services.

Command format (for `jajs_spmd` command):

```
jajs_spmd [-h logical-host-name] -n jajs_schd -F scheduler-service-name
```

Command example:

```
jajs_spmd -n jajs_schd -F AJSROOT2
```

Command format (for `ajsstart` command):

```
ajsstart -F scheduler-service-name
```

Command example:

```
ajsstart -F AJSROOT2
```

(b) Format of the reorganization script

The reorganization script allows you to reorganize the tables and indexes of the embedded database.

Format

```
ajsembdbcond-sample [-u user-name -p password]
```

Arguments

- u *user-name*
Specify the name of the user (the owner of the tables) reorganizing the tables. If you do not specify the user name, the user name specified in the script is used.
- p *password*
Specify the password of the user reorganizing the tables. If you do not specify the password, the password of the user specified in the script is used.

Supplementary note

Specify the user name and password as follows:

In Windows: "root"

In UNIX: \"root\"

The values enclosed in double quotation marks (") will be treated as case-sensitive.

(c) Customizing the reorganization scripts

The following describes how to customize reorganization scripts. Before customizing the script file, create a copy of the file in the work directory and edit the copy. Use a separate script file for each embedded database environment. The following describes the items you can customize.

CUSTOM_PDDIR=embedded-database-practical-directory

Specify the name of the embedded database practical directory.

If the PDDIR environment variable has been set, it overrides this item.

If you do not specify CUSTOM_PDDIR in the script file and the PDDIR environment variable has not been set, the script does not reorganize tables.

CUSTOM_PDCONFPATH=directory-containing-the-system-definition-files-for-the-embedded-database

Specify the name of the directory containing the system definition files for the embedded database.

If the PDCONFPATH environment variable has been set, it overrides this item.

If you do not specify CUSTOM_PDCONFPATH in the script file and the PDCONFPATH environment variable has not been set, the script does not reorganize tables.

CUSTOM_PDUXPLDIR=work-directory-for-the-embedded-database

This item needs to be specified only in Windows. Specify the name of the work directory for the embedded database.

If the PDUXPLDIR environment variable has been set, it overrides this item.

If you do not specify PDUXPLDIR in the script file and the PDUXPLDIR environment variable has not been set, the script does not reorganize tables.

CUSTOM_EMBDB_USER=table-owner-name

Specify the name of the user executing the reorganization command.

Specify the owner of the tables.

If a user name is specified for CUSTOM_EMBDB_USER and you specify a user name in the script argument, the value of the argument has priority.

CUSTOM_EMBDB_PASS=table-owner's-password

Specify the password of the user executing the reorganization command.

CUSTOM_TABLE_LIST=table-name

Specify a list of table names to be reorganized separated by a space.

If you do not specify this item, the script does not reorganize tables.

CUSTOM_TABLE_RDAREA=table-storage-RD-area

Specify the RD area containing the tables to be reorganized.

If you do not specify this item, the script does not reorganize tables that are to be reorganized.

CUSTOM_INDEX_RDAREA=index-storage-RD-area

Specify the RD area containing the indexes of the tables to be reorganized.

If you do not specify this item, the script does not reorganize tables.

CUSTOM_TEMP_DIR=temporary-file-directory

Specify the full path name of the folder in which reorganization command control files and data files unloaded from the database will be stored.

If you do not specify this item, C:\TEMP is assumed in Windows, and /tmp is assumed in UNIX.

If multiple embedded database environments or scheduler services have been set up, specify a unique temporary file directory for each environment or service to prevent loss of data from the concurrent execution of scripts.

`CUSTOM_LOG_FILE=log-output-file`

Specify the full path name of the file to which the script execution results are to be output. Because a maximum size cannot be specified for the log file, if this item is specified, delete the log file as required.

If you do not specify this item, the script execution results are output to the standard output.

Supplementary notes

- Users who can execute the script

Only the embedded database system administrator can execute the commands used in the script. You must execute the script as an OS user who has administrator permissions for the embedded database system.

- Specify the user name and password as follows:

In Windows: "root"

In UNIX: \"root\"

The values enclosed in double quotation marks (") will be treated as case-sensitive.

- Action to be taken if an error occurs

If the reloading of unloaded data fails during the reorganization of tables, the tables and indexes in the database might become empty. If the tables and indexes have become empty, you will need to manually reload the unloaded data.

If an error occurs during reorganization, the RD area remains blocked. After you correct the error, release the RD area from its blocked status.

The following table describes the status of tables if an error occurs during a reload.

Table 9–2: Table status when an error occurs (during a reload), and the recovery methods

Message output immediately before an error occurs	Status of a table in the RD area	Recovery methods
None	The status is the same as before reorganization.	Re-execute reorganization of the table.
KFPL00721-I	The table has been deleted.	Re-execute reloading of the table.
KFPL00712-I KFPL00732-I	Table creation has not finished.	Re-execute reloading of the table.
KFPL00714-I KFPL00734-I	Table creation has finished.	Re-execute reloading of the table.
KFPL00715-I	Index creation has not finished.	Re-execute reloading of the table.
KFPL00716-I	Index creation has finished.	No action is necessary.

Example: Re-executing a reload

If the reloading of data fails, the unloaded data file is stored in the folder specified in the following script parameter:

`CUSTOM_TEMP_DIR`

If no folder is specified, C:\TEMP is assumed in Windows and /tmp is assumed in UNIX.

The following files are created in the folder:

`roorg_ctrl`: Control file required for the reorganization of tables

For 08-10-01 or an earlier version:

`unldfile`: Table data

For 08-10-02 or a later version:

unldfile *table-name*: Table data

Use these files to re-execute the reload.

If the reloading of a UNIT table fails, the command for re-executing reorganization is as follows.

Command example

In Windows: pdrorg -k reld -t AJSUNIT C:\tmp\rorg_ctrl

In UNIX: pdrorg -k reld -t AJSUNIT /tmp/rorg_ctrl

See [Table 9-2](#) and determine the table for which reloading has failed.

9.3 Reorganizing a database when QUEUE jobs and submit jobs are used

If QUEUE jobs or submit jobs are used, you need to reorganize the ISAM database at the appropriate time according to the number of jobs. This section describes how to reorganize the ISAM database.

9.3.1 Reorganizing the ISAM database

The ISAM database consists of a *data file*, which contains the data, and a *key file*, which manages data indexing for faster access. In ISAM, when you delete records, the area for the deleted records becomes unavailable, but file sizes are not automatically reduced.

When the ISAM database is used, file sizes grow with continued daily operation, with the result that the larger file sizes and file fragmentation degrade the execution performance of jobs. In addition, if the system is forced to stop because of a sudden power failure, the ISAM file index might become inconsistent.

You can eliminate these problems by reorganizing the ISAM database at an appropriate time according to the number of QUEUE jobs and submit jobs.

Note that JP1/AJS3 - Agent does not need reorganization because it does not have a JP1/AJS3 database.

Cautionary notes

- Reorganization using the automatic reorganization script (`jqautocond`) in a maintenance mode
The drive or partition containing the work directory of the target physical host or logical host requires free space that is about twice as large as the largest ISAM file that will be reorganized. The script uses the following directory as the work directory during reorganization.
In Windows:
Work folder used when the manager process is executed in the execution environment for QUEUE jobs and submit jobs
In UNIX:
Work directory used when the manager process specified in the `WorkPath` environment setting parameter is executed
In addition, the drive or partition containing the database directory for the execution environment for QUEUE jobs and submit jobs requires free space that is about as large as the largest ISAM file that will be reorganized.
- Reorganization using the `jqdbcond` command
Before performing reorganization, back up and save the files. The `jqdbcond` uses the directory specified in the `-d` option as its work directory. The drive or partition containing the directory specified in the `-d` option requires free space that is about twice as large as the largest ISAM key file that will be reorganized in the job execution environment. The drive or partition containing the directory for the job execution environment database requires free space that is about as large as the largest ISAM file that will be reorganized in the job execution environment. If the `-d` option is not specified, the command uses the standard work directory of the OS. For more information, see the explanation of the `Jiscond` command in the *JP1/Base User's Guide*.

(1) Reorganization using the `jajs_maintain` command

In JP1/AJS2 - Manager 07-00 or later and JP1/AJS3 - Manager, you can use the `jajs_maintain` command to perform ISAM database maintenance (reorganization) by placing the manager functionality in reduced-operation mode. When the functionality is in reduced-operation mode, a database disconnection request is sent to the running service, after which the ISAM database can be reorganized safely after the database is disconnected.

To reorganize the ISAM database, we recommend that you use the `jajs_maintain` command.

For details about the `jajs_maintain` command, see *jajs_maintain* in 4. *Commands Used for Special Operation* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

(2) Reorganization using the `jpqautocond` script

For the database for the execution environment for QUEUE jobs and submit jobs, job information records for which the specified number of days for saving job information has passed are automatically deleted. When the records are deleted, the area for the records becomes unavailable. Although the data storage area is reused, the unavailable area remains in the key file unless the key reuse functionality for the ISAM file is enabled. You can release the used disk area by reorganizing the database. Database reorganization also improves performance that might be degraded when access to a database that contains many unavailable areas requires more inputs and outputs.

To reorganize the job execution environment database, use the `jpqautocond` script.

You can also use the `jpqdbcond` command to reorganize the database for the execution environment for QUEUE jobs and submit jobs. Before using this command, however, you need to back up the database. For details about the `jpqdbcond` command, see *jpqdbcond* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

(a) Displaying the percentage of unused area and when to perform reorganization

You can use the `jpqdbcond -l` command to check the percentage of unused area in the database for the execution environment for QUEUE jobs and submit jobs. If the ISAM file is being used, you can use the `jpqdbcond -L` command to check the percentage of unused area. Note, however, that the value of the percentage of unused area displayed by the `jpqdbcond -L` command includes an error. Use the `jpqdbcond -L` command only if there are not many jobs running.

The following gives an idea of how much unavailable area increases each day when the key reuse functionality for the ISAM database is not enabled. If 10,000 jobs are executed a day and job information is saved for 7 days, unavailable area will increase by a maximum of 86 MB each day after the job information retention period has expired. This unavailable area includes area in the re-used data file.

If the size of the unavailable area in the key file becomes large during operation, performance might degrade because the time required for file input and output for database access increases.

To make sure that the file size does not exceed 20 MB, monitor the `JPQJOBINFO.K02` file in the database for the execution environment for QUEUE jobs and submit jobs. If you continue operation after 20 MB is exceeded, performance could suddenly degrade.

When the key reuse functionality is used, the file size will most likely not reach 20 MB. However, we recommend that you monitor the file size because 20 MB might be reached if the usage efficiency within the key file degrades because of extended operation.

To determine when to reorganize a database, also use the number of days for saving job information. For details about the number of days for saving job information, see 20.5 *Setting up the job execution environment* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(b) Outputting the unused area size and unused area threshold

You can use the `jpqdbcond -i` command to check the size of the unused area in the database for the execution environment for QUEUE jobs and submit jobs. The unused area size is output as a notification message.

You can also use the `jpqdbcond -t` command to check whether the size of the unused area has reached a threshold. If the unused area size reaches the threshold, a warning message is output.

The warning message can be output to the following destinations, of which one or more can be selected:

- Standard error output
- Windows event log or syslog
- JP1 event

By defining and executing the `jpgqdbcond -t` command as a job when not many jobs are running, you can periodically check the status of the ISAM file.

(c) Reorganization procedure

To reorganize the database for the execution environment for QUEUE jobs and submit jobs:

1. Stop the JP1/AJS3 service.

2. Set the `JP1_HOSTNAME` environment variable.

To reorganize the database on a logical host, specify the logical host name for the `JP1_HOSTNAME` environment variable.

When you want to reorganize the database on the physical host, do not set the `JP1_HOSTNAME` environment variable.

3. Execute the following script or the `jpgqdbcond` command.

In Windows:

```
JP1/AJS3-installation-folder\bin\jpgqautocond.bat
```

In UNIX:

```
/opt/jp1ajs2/bin/jpqautocond
```

Cautionary note

Do not execute the following scripts and command at the same time:

- `jpgqautocond`
- `jpgqdbcond -x -k`
- `jajs_maintain -m manager`

10

Operation in a Cluster System

This chapter describes the flow of processing when JP1/AJS3 is used in a cluster system.

10.1 Overview of cluster systems

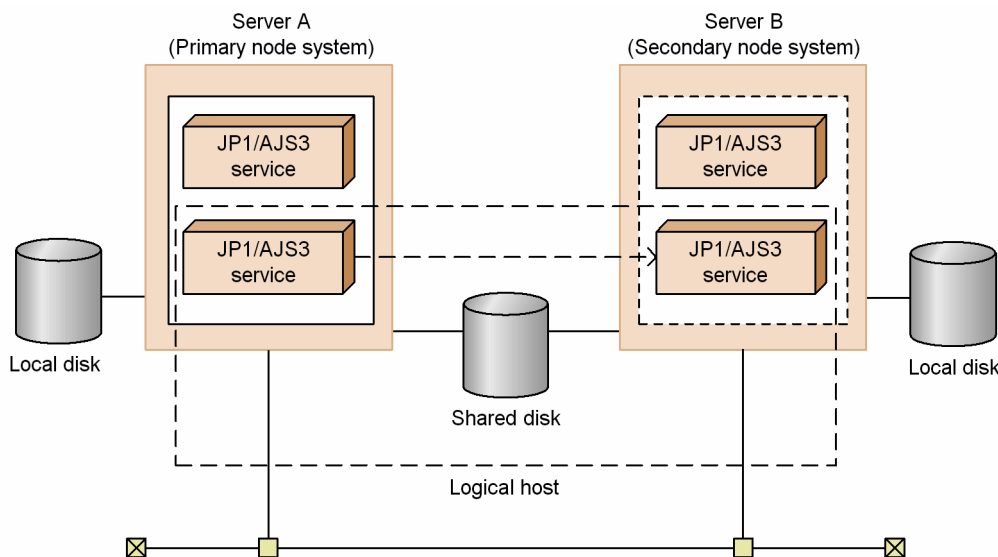
A cluster system consists of multiple server systems operated as a single system. The purpose of a cluster system is to provide uninterrupted service even if an error occurs. The server that is currently executing tasks is the *primary node* and the other systems that are on standby are *secondary nodes*. If an error occurs in the current system, a secondary node takes over and continues the operation. This prevents operation from being interrupted even if an error occurs.

A cluster system is also referred to as a *node switching system* because the primary node that executes tasks is switched over to a secondary node.

In JP1/AJS3, in addition to errors occurring in the system, cluster operation can be used for errors occurring in JP1/AJS3 service processes. JP1/AJS3 supports cluster operation by virtually defining multiple logical hosts on a single host so that JP1/AJS3 services can be started on each logical host. Furthermore, cluster operation in which shared disks and IP addresses are inherited by each logical host is also supported.[#]

The following figure shows operation when multiple JP1/AJS3 services run on a single host in a cluster system.

Figure 10–1: Starting multiple JP1/AJS3 services



This section describes the prerequisites for cluster systems supported by JP1/AJS3, system configurations, processing procedures for a cluster configuration, and actions to be taken if a failover occurs. For details about the setup for using a cluster system, see 8. *Setup for Operation in a Cluster System* in the *JP1/Automatic Job Management System 3 Configuration Guide* (on a Windows host) or see 17. *Setup for Operation in a Cluster System* in the *JP1/Automatic Job Management System 3 Configuration Guide* (on a UNIX host).

#

For JP1/AJS3 - Web Console, multiple logical hosts cannot be virtually defined for one host. This is because only one JP1/AJS3 - Web Console service can run on one host. JP1/AJS3 - Web Console supports cluster operation by allowing the cluster nodes to inherit the processing of the service, as well as the shared disk resources and IP addresses, from each other.

For details about the prerequisites and system configurations of the cluster system supported by JP1/AJS3 - Web Console, see [10.1.3 Cluster configurations supported by JP1/AJS3 - Web Console](#).

Supplementary note on defining jobs that use user programs

When you define a job that uses a user program, you must be careful about re-execution. For example, if you re-execute a database update job, the same update is performed twice. If you re-execute a print job, the same data

is printed twice. We recommend that you adjust the jobs with user programs for failovers, such as outputting the execution log or defining a judgment job, to prevent multiple executions of the same job.

10.1.1 Prerequisites for JP1/AJS3, and the scope supported by JP1/AJS3

When a cluster configuration is used, JP1/AJS3 operates in a logical host environment to support a failover. For JP1/AJS3 to operate in a logical host environment, the cluster software must manage allocation, deletion, and monitoring of the shared disk and logical IP address correctly.

Cautionary note

Depending on the system configuration and environment settings, even the cluster software supported by JP1/AJS3 may be unable to satisfy the prerequisites described in this subsection. If it does not satisfy the prerequisites, change the system configuration and environment settings so that the prerequisites are satisfied.

(1) Prerequisites for a logical host environment

The following are the prerequisites for using JP1/AJS3 in a cluster system.

1. The cluster software must be able to control prerequisites 2 to 4 below.
2. A shared disk that enables data to pass from the primary node to the secondary node must be available.

The details are as follows:

- The shared disk must be allocated before JP1/Base and JP1/AJS3 start.
 - The shared disk must not be deallocated while JP1/Base and JP1/AJS3 are running.
 - The shared disk must be deallocated after JP1/AJS3 and JP1/Base stop.
 - The shared disk must be locked so that it is accessible only from the primary node.
 - The files must be protected by the journal functionality of a file system so that they will not be lost if the system goes down or another problem occurs.
 - In a failover, the integrity of the information written to the files must be assured and that information must be inherited.
 - Forced failover must be possible if a process is using the shared disk.
 - If an error is detected on the shared disk, the cluster software must control recovery measures, which must be transparent to JP1/Base and JP1/AJS3. If JP1/Base and JP1/AJS3 need to be started or stopped in extended recovery measures, the cluster software must issue the start and stop requests to JP1/Base and JP1/AJS3.
3. For logical IP addresses, the following conditions must be satisfied:
 - Communication using a logical IP address that can be inherited must be possible.
 - A unique logical IP address must be obtained from a logical host name.
 - A logical IP address must have been assigned before JP1/Base and JP1/AJS3 start.
 - A logical IP address must not be deleted while JP1/Base and JP1/AJS3 are running.
 - The correspondence between logical host names and logical IP addresses must not change while JP1/Base and JP1/AJS3 are running.
 - The logical IP address must be deleted after JP1/AJS3 and JP1/Base have stopped.
 - When a network error is detected, the cluster software must control recovery measures, which must be transparent to JP1/Base and JP1/AJS3. If JP1/Base and JP1/AJS3 need to be started or stopped in extended recovery measures, the cluster software must issue the start and stop requests to JP1/Base and JP1/AJS3.

4. For concurrent execution, a separate IP address must be assigned to each logical host.
5. A logical host name must be set in the `hosts` file and on the name server so that TCP/IP communication is possible. When the DNS is used, host names that are not in FQDN format must be available.
6. JP1/Base, which is a prerequisite program for JP1/AJS3, must be in an environment in which a cluster system can be used.

If the above prerequisites are not satisfied, a problem may occur during operation of JP1/AJS3. For example, the following problems may occur.

- If data written on the primary node is damaged when a failover occurs:
A problem such as an error, data loss, or start failure occurs and JP1/AJS3 cannot operate normally.
- If recovery is not performed even when an error occurs in the NIC:
A communication error occurs and JP1/AJS3 does not operate normally until the cluster software switches over the NIC or performs a failover to the other server occurs.

(2) Prerequisites for a physical host environment

The following table shows the prerequisites for using JP1/AJS3 in a physical host environment. These prerequisites must be satisfied even when you want to execute only JP1/AJS3 in a logical host environment.

Table 10–1: Prerequisites for a physical host environment

Physical host component	Prerequisites
Server main unit	• Two or more servers are used to create a cluster system. • The CPU is capable of handling the expected processing even when multiple logical hosts are concurrently activated. • The servers have sufficient memory for handling the expected processing even when multiple logical hosts are concurrently activated.
Disk	• The files in the disk are protected by the journal functionality of the file system so that they will not be lost if the system fails.
Network	• The IP address for the host name (acquired by the <code>hostname</code> command) can be used for communication (the cluster software does not disable communication). • The mappings between host names and IP addresses are not changed while JP1/AJS3 is operating (the cluster software or name server does not change the mappings). • In Windows, the NIC for the host name has the highest priority in the settings for network binding (the highest priority is not given to other NICs such as a NIC for the heartbeat LAN).
OS and cluster software	• The versions of the OS cluster software are supported by JP1/AJS3. • The patches and service packs prerequisites for JP1/AJS3 and cluster software have already been applied. • Each server has the same environment so that the same processing can be executed if a failover occurs.

(3) Scope supported by JP1/AJS3

When JP1/AJS3 operates in a logical host environment, the scope supported by JP1/AJS3 is its own operations only. JP1/AJS3 does not control a logical host environment.

If the prerequisites for the logical and physical host environments described above are not satisfied, or if there is a problem with the control of the logical host environment, any problem with operation of JP1 is also out of the supported scope. In this case, the problem needs to be handled on the cluster software or OS that controls the logical host environment.

Cautionary notes

- In an environment where the local host cannot obtain the IP address from the local host name, you cannot execute jobs (standard jobs, HTTP connection jobs, action jobs, event jobs, custom jobs, or custom event jobs), commands of the job execution control, and commands in a queueless job execution environment.
- If a logical host name is the same as the physical host name, you cannot use the queueless job execution facility or the definition pre-check function.

(4) Requirements for a logical host name

The following are the requirements for logical host names.

- A logical host name must not be more than 32 bytes.
- A logical host name must be set in the `hosts` file and on the name server so that TCP/IP communication is possible. When the DNS is used, host names that are not in FQDN format must be available.
- The logical host names must be handled in JP1/Base, which is a prerequisite program for JP1/AJS3. For details, see the *JP1/Base User's Guide*.

By specifying logical host names, you can start JP1/AJS3 services and execute commands on each logical host. Use either of the following methods to specify a logical host name:

- JP1_HOSTNAME environment variable
- Logical host specification option of a command (normally, the `-h` option)

For details, see the explanation of commands in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference* or 2. *Commands Used during Setup* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

If the logical host specification option is not specified, the command is executed with the logical host name set in the JP1_HOSTNAME environment variable. Note that the variable setting JP1_HOSTNAME="" will be ignored.

10.1.2 System configurations supported by JP1/AJS3

This subsection describes the configurations of cluster systems supported by JP1/AJS3.

(1) Conditions for the system configuration

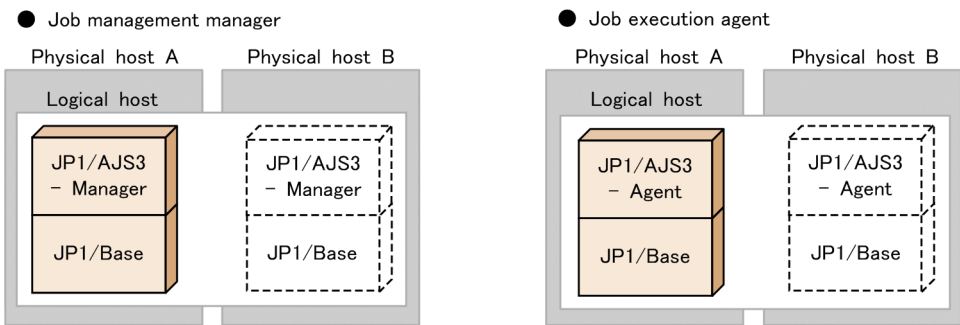
A cluster system in which JP1/AJS3 operates must satisfy the following conditions:

- A logical host must have a shared disk and a logical IP address that can be passed from the primary node to the secondary node. The shared disk and logical IP address must satisfy the conditions shown in [10.1.1 Prerequisites for JP1/AJS3, and the scope supported by JP1/AJS3](#).
- All the hosts that make up the cluster system must use the same OS. A failover cannot be performed if they do not use the same OS.
- JP1/AJS3 - Manager and JP1/AJS3 - Agent cannot be installed on the same server.

(2) Examples of supported system configurations

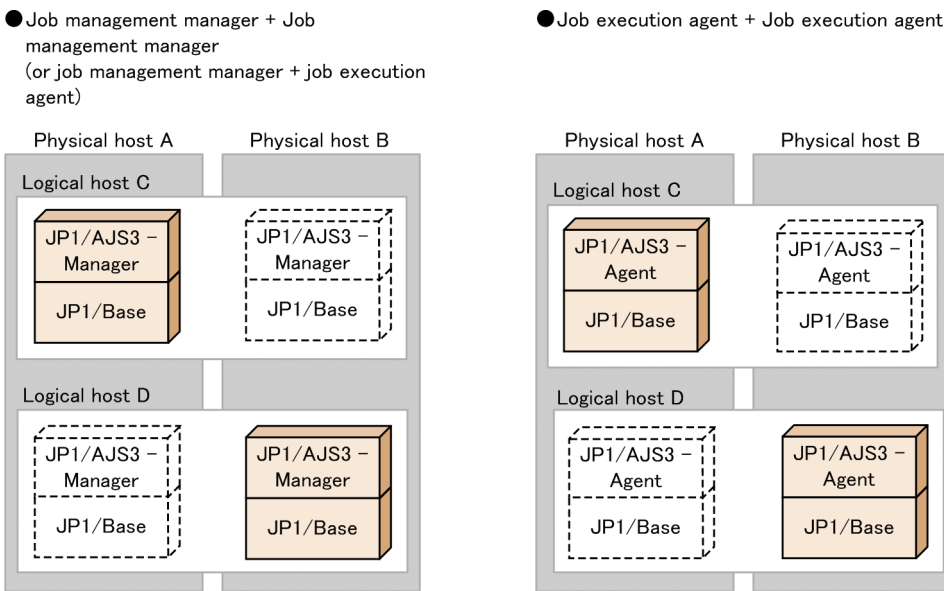
(a) Active-standby configuration

The following figure shows an example of an active-standby configuration.



(b) Active-active configuration

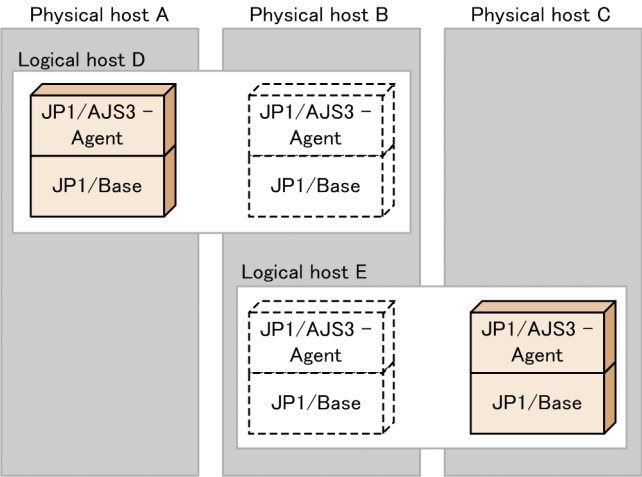
The following figure shows an example of an active-active configuration.



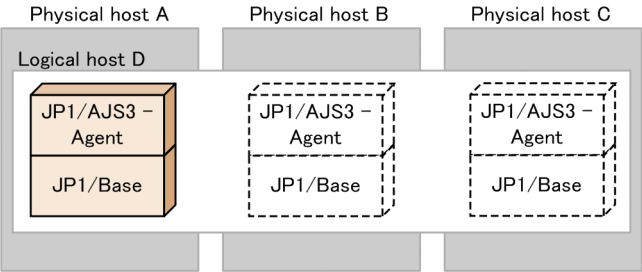
(c) Three-node configuration

The following figure shows an example of a three-node configuration.

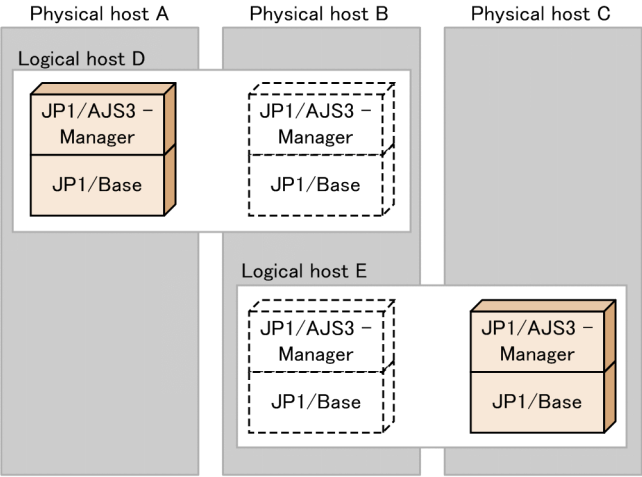
● Job execution agent + Wait + Job execution agent



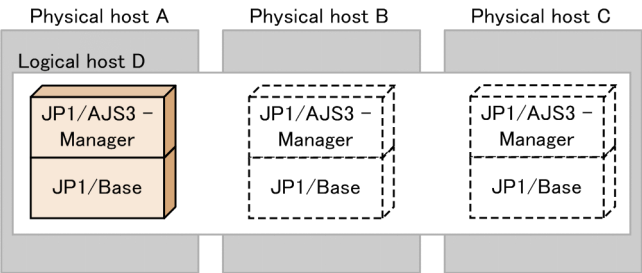
● Job execution agent + Wait + Wait



● Job execution manager + Wait + Job execution manager



● Job execution manager + Wait + Wait



Remarks on JP1/AJS3 operation in a cluster system that uses three or more nodes:

JP1/AJS3 operates in a logical host environment managed by cluster software (with a shared disk and logical IP address). The operation does not differ depending on the number of nodes.

There will be no particular problem with JP1/AJS3 operation in a cluster system consisting of three or more nodes, as long as the logical host environment is normally managed by cluster software.

10.1.3 Cluster configurations supported by JP1/AJS3 - Web Console

JP1/AJS3 - Web Console supports cluster operation performed by cluster software. If you set up JP1/AJS3 - Web Console in a cluster configuration, even when a failure occurs on the Web Console server, the Web Console server can be failed over, allowing you to continue monitoring business operations on a client.

(1) Prerequisites for a cluster system

The following are the prerequisites for using JP1/AJS3 - Web Console in a cluster system.

1. The cluster software must be able to control prerequisites 2 to 4 below.
2. A shared disk that enables data to pass from the primary node to the secondary node must be available.

The details are as follows:

- The shared disk must be allocated before JP1/AJS3 - Web Console start.
 - The shared disk must not be deallocated while JP1/AJS3 - Web Console are running.
 - The shared disk must be deallocated after JP1/AJS3 - Web Console stop.
 - The shared disk must be locked so that it is accessible only from the primary node.
 - The files must be protected by the journal functionality of a file system so that they will not be lost if the system goes down or another problem occurs.
 - In a failover, the integrity of the information written to the files must be assured and that information must be inherited.
 - Forced failover must be possible if a process is using the shared disk.
 - If an error is detected on the shared disk, the cluster software must control recovery measures, which must be transparent to JP1/AJS3 - Web Console. If JP1/AJS3 - Web Console need to be started or stopped in extended recovery measures, the cluster software must issue the start and stop requests to JP1/AJS3 - Web Console.
3. The IP address used in cluster operation must meet the following conditions:
 - Communication must be possible using the IP address used in cluster operation, which can be inherited.
 - The IP address used in cluster operation must be uniquely identified from the host name used in cluster operation.
 - The IP address used in cluster operation must have been assigned before JP1/AJS3 - Web Console is started.
 - The IP address used in cluster operation must not be deleted during execution of JP1/AJS3 - Web Console.
 - The mapping between the host name and IP address used in cluster operation must not be changed during execution of JP1/AJS3 - Web Console.
 - The IP address used in cluster operation must be deleted after JP1/AJS3 - Web Console is stopped.
 - When a network error is detected, the cluster software must control recovery measures, which must be transparent to JP1/AJS3 - Web Console. If JP1/AJS3 - Web Console need to be started or stopped in extended recovery measures, the cluster software must issue the start and stop requests to JP1/AJS3 - Web Console.

4. The host name used in cluster operation must be set in the `hosts` file or on the name server so that TCP/IP communication is possible.

If the above prerequisites are not satisfied, a problem may occur during operation of JP1/AJS3 - Web Console. For example, the following problems may occur.

- If data written on the primary node is damaged when a failover occurs:
A problem such as an error, data loss, or start failure occurs and JP1/AJS3 - Web Console cannot operate normally.
- If recovery is not performed even when an error occurs in the NIC:
A communication error occurs and JP1/AJS3 - Web Console does not operate normally until the cluster software switches over the NIC or performs a failover to the other server occurs.

(2) Supported system configurations

The following are examples of cluster configurations:

If a cluster system is set up for JP1/AJS3 - Web Console and for JP1/AJS3 - Manager independently, they will fail over without affecting each other if a failure occurs.

Therefore, we recommend that you set up JP1/AJS3 - Web Console and JP1/AJS3 - Manager on different cluster systems.

Figure 10–2: If you set up a cluster by installing JP1/AJS3 - Web Console and JP1/AJS3 - Manager on different hosts

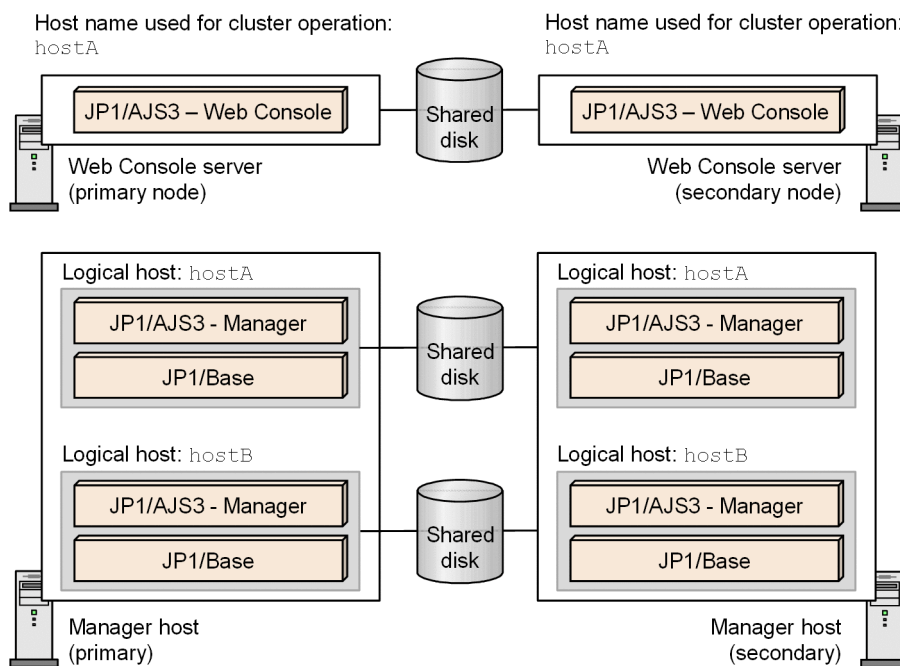
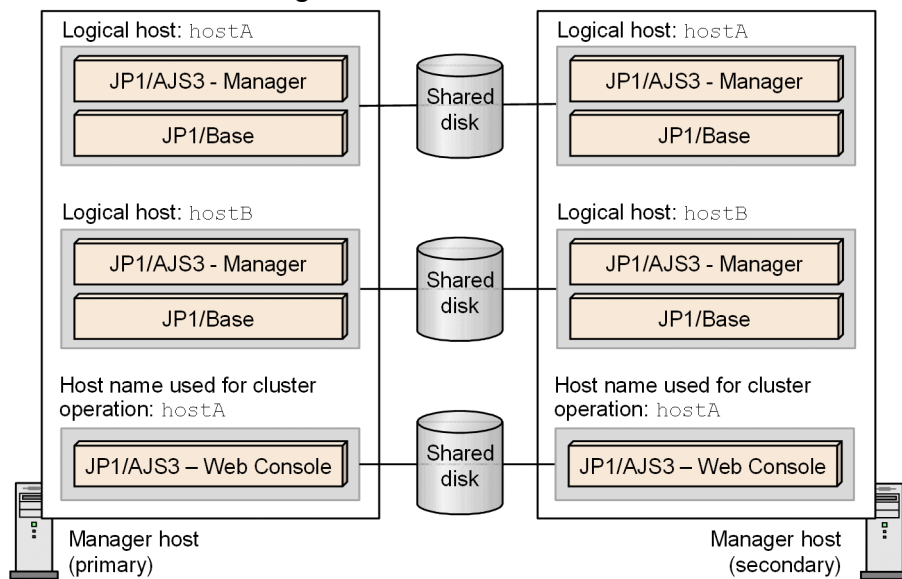


Figure 10–3: If you separately set up clusters by installing JP1/AJS3 - Web Console and JP1/AJS3 - Manager on the same host



Cautionary note

JP1/AJS3 - Web Console supports active-standby configuration in a cluster configuration, but does not support active-active configuration.

10.2 Overview of node switching when an error occurs

If an error occurs in the current host, node switching occurs and the secondary node takes over the processing.

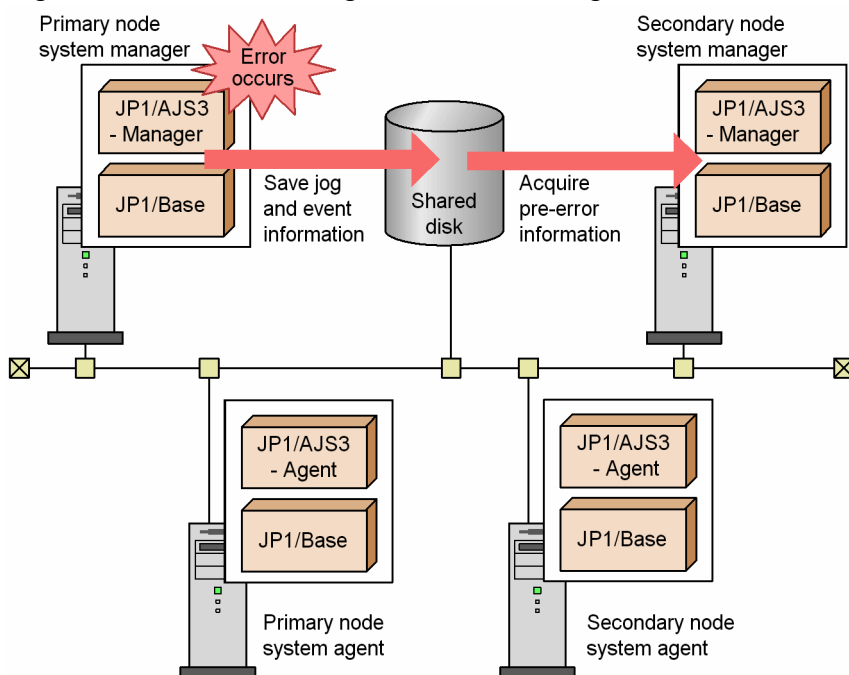
This section explains the processing that is performed when a failover occurs during operation.

10.2.1 Node switching caused by an error in JP1/AJS3 - Manager

This subsection describes the flow of processing if an error occurs in JP1/AJS3 - Manager and the failover is performed, and how to inherit information when a start condition, an event job or a custom event job is defined.

The following figure shows the processing that is performed when node switching occurs in JP1/AJS3 - Manager during operation.

Figure 10–4: Processing if node switching occurs in JP1/AJS3 - Manager



The flow of events in the system processing is as follows:

1. An error occurs on the primary node system manager, and the JP1/AJS3 service of JP1/AJS3 - Manager stops.
2. The contents of the shared disk are inherited by the secondary node.
3. The JP1/AJS3 service of the secondary node system manager starts.
4. The status of jobs and jobnets changes automatically when the JP1/AJS3 service starts, according to the service start mode.

To check the service start mode, execute the following commands, and then check the start mode output to the environment setting parameter `STARTMODE`.

```
/opt/jplbase/bin/jbsgetcnf  
-h {JP1_DEFAULT|logical-host-name}# \
```

```
-c JP1AJSMANAGER \  
-n scheduler-service-name
```

#

In the {JP1_DEFAULT|*logical-host-name*} part, specify JP1_DEFAULT if the host is a physical host, and the logical host name if the host is a logical host.

The status changes and the processing flow of the system after the changes are described below for each service start mode.

- When the service start mode is set to *Cold-start*:

The secondary node system manager inherits only the definition information for the jobnets and jobs immediately before the failover occurs. All jobnets are placed in the *Not registered* status. To restart the operation, re-register the jobnets for execution.

Perform a cold start when it is safer to restart the jobnet from the beginning than to have the operator check the job statuses. Also, make sure that there is no harm in starting identical jobs or executing a job twice.

- When the service start mode is set to *Warm-start*:

The secondary node system manager inherits the status immediately before the failover occurs. The secondary node system manager changes the status of the job (*Waiting to execute*, *Now queuing*, or *Now running*) to the actual status when the service is started. However, if no job is executed, the job status is switched to *Not executed* + *Ended*. If a job is being executed or the status of a job cannot be acquired, the status is switched to *Unknown end status*.

The status of the jobnet is changed to *Interrupted* status.

The jobnets that were not started will be started on schedule. For the jobnets that abnormally terminated because of a warm start, check the changed statuses and then manually re-execute the jobnets. If the start condition is monitored, the secondary node system manager will inherit the events received before the error occurs.

Perform a warm start when you want to have the operator check the statuses of the jobs that were being executed to decide whether to continue the operation.

- When the service start mode is set to *Hot-start*:

The secondary node system manager inherits the status immediately before the failover occurs. The secondary node system manager gets information about the jobs in *Now running* status from the servers where the jobs were running, and automatically reproduces the actual status of each job if possible.

If the actual status of each job is successfully acquired, the jobnet resumes execution automatically as defined, without needing to be re-executed. If a start condition was being monitored, the secondary node system manager inherits information about events received before the failover occurred.

If the secondary node system manager fails to get information from the servers where the jobs were running, the jobs are placed in *Ended abnormally* status. In this case, you must check the job statuses and manually re-execute the jobnet.

Specify a hot start to resume operation after a failover.

For details about the STARTMODE environment setting parameter that changes the service start mode, see 20.4 *Setting up the scheduler service environment* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

For details about the setting procedure, see 4.2 *Environment setting parameter settings* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

For details about job statuses when a failover occurs, see 6.2.1(3) *Jobnet and job statuses for each start mode*.

5. Manually re-execute the jobs and jobnets whose status was changed in step 4 if needed, and resume the system operation.

Operating a cluster system when a start condition is changed:

If you change a start condition during operation, the change becomes effective in the next execution schedule. Therefore, if node switching occurs in JP1/AJS3 - Manager of the current system and the secondary node takes over the processing, monitoring continues with the old start condition.

For example, imagine that schedule rule 1 defines 11:00 as the start time and schedule rule 2 defines 13:00 as the start time.

When you change the start condition to 11:30, schedule rule 1 is monitored using the old start condition and schedule rule 2 is monitored using the new start condition.

If node switching occurs between 11:00 and 12:00, schedule rule 1 inherits monitoring using the old start condition (only when the restart is within the valid time period). Schedule rule 2 is monitored using the new start condition.

Operating a cluster system while JP1/AJS3 - View is connected:

The ajsmonsvr process is generated when JP1/AJS3 - View is connected. If there is a remaining ajsmonsvr process accessing the shared disk at node switching, the shared disk cannot be unmounted. To stop the ajsmonsvr process, stop the ajsinetd process.

Note that cluster middle software forcibly terminates any process accessing the shared disk at node switching. Therefore, you do not need to explicitly stop the ajsinetd process. However, you should stop the ajsinetd process if an unfavorable event occurs such as displaying a message when the process is forcibly terminated.

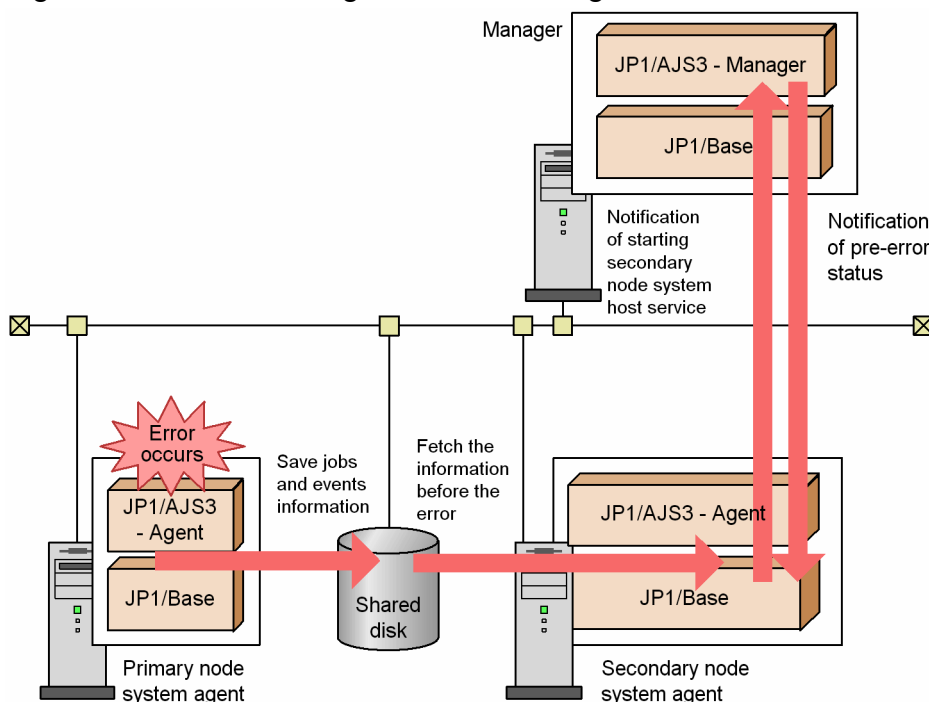
Operating a cluster system while a submit job is executed:

When a failover has occurred during execution of a submit job registered by a job execution control command, if the job is being executed with JP1/AJS3 - Manager, the job is forcibly terminated. Note, however, that if termination of the job is not reported, the status of the job becomes *Waiting to execute*, *Being held*, or *Killed* according to the specified setting in effect when the job was submitted. If the job was submitted by the `jpqjobsub` command, the status of the job becomes the status specified in the `-rs` option. The default is *Being held*.

10.2.2 Node switching caused by an error in JP1/AJS3 - Agent

The following figure shows the processing if node switching occurs in JP1/AJS3 - Agent during operation.

Figure 10–5: Processing if node switching occurs in JP1/AJS3 - Agent



The flow of events in system processing is as follows:

1. An error occurs on the primary node system agent, and the JP1/AJS3 service for JP1/AJS3 - Agent stops.
The status of the job being executed when node switching occurs remains *Now Running*. This status is managed by JP1/AJS3 - Manager.
2. The contents of the shared disk are inherited by the secondary node system agent.
3. The JP1/AJS3 service of the secondary node system agent starts.
4. JP1/AJS3 - Manager is notified that the JP1/AJS3 service of the secondary node system agent has started.
5. JP1/AJS3 - Manager reports the status of the job that was being executed to JP1/AJS3 - Agent on the secondary node system agent.
The job that is reported at this point is the one being executed when the error occurred (the status of this job was not reported to JP1/AJS3 - Manager previously). Note that the status of jobs being executed when failure occurs will be changed to *Killed* or *Unknown end status*, and the jobnet containing the job will be placed in an abnormal status.

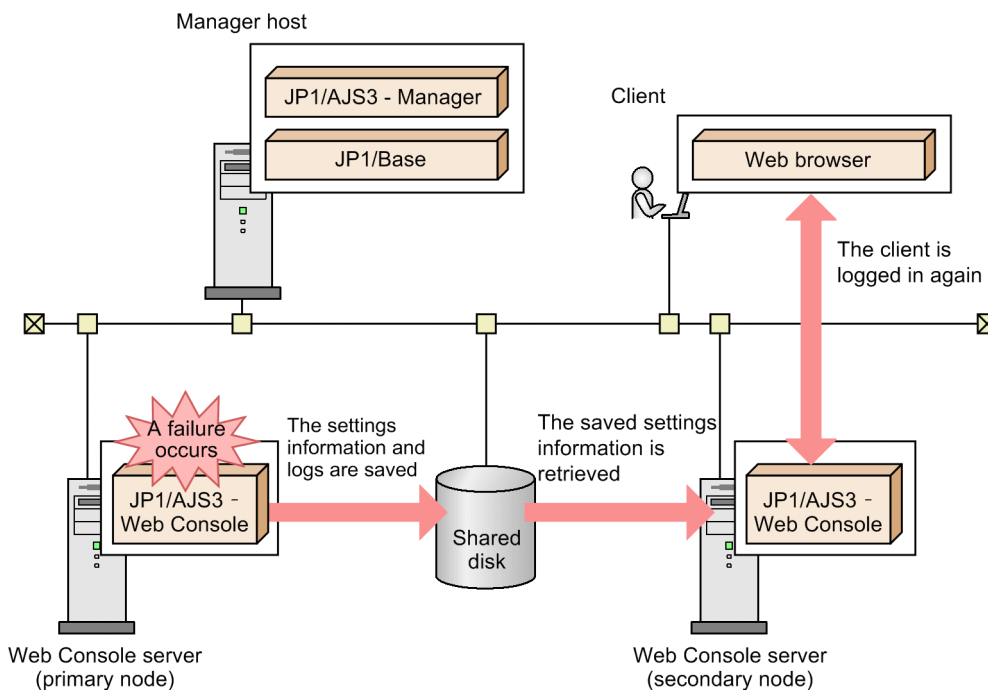
For details about the job status inherited when a failover occurs, see [6.2.1\(4\) Job statuses on the manager host when an agent host is restarted](#).

This concludes the processing by the system. After this procedure, re-execute the *Killed* jobs and the jobnet containing such jobs and continue operation.

10.2.3 Node switching caused by an error in JP1/AJS3 - Web Console

The following figure shows the processing that is performed when node switching occurs in an instance of JP1/AJS3 - Web Console running on a different host from the host of JP1/AJS3 - Manager.

Figure 10–6: Processing if node switching occurs in JP1/AJS3 - Web Console



The flow of events in the system processing is as follows:

1. The system starts the JP1/AJS3 HTTP Server service and JP1/AJS3 Web Application Server service on the Web Console server (secondary node).
2. Users log in to JP1/AJS3 - Manager again from the clients (such as the Web GUI).
If a failover occurs, connections with clients, such as the Web GUI, are disconnected. Consequently, if a request is being processed on a client or if operations are being performed by using the Web GUI when the failover occurs, an error occurs on the relevant client. After the failover, log in again and then continue processing on the secondary node.

10.3 Monitoring JP1/AJS3 processes in a cluster system

This section describes how to monitor JP1/AJS3 processes when JP1/AJS3 is used in a cluster system.

If Windows Server Failover Clustering (WSFC) is used in a Windows environment, set WSFC to monitor the JP1/AJS3 service.

10.3.1 Monitoring JP1/AJS3 processes

In JP1/AJS3, you can start or terminate the scheduler service only. Therefore, if only the processes of the scheduler service are terminated, the entire JP1/AJS3 is active.

You can use the `jajs_spmc_status` command to monitor the major processes of the JP1/AJS3 service.

You can use the `jajs_status` command to monitor the processes of the scheduler service.

Cautionary note

You can use the `jajs_spmc` command to start the processes of only the scheduler service. Also, you can use the `jajs_spmc_stop` command to stop the processes of only the scheduler service. Therefore, when you start or stop only the scheduler service, make sure that the process monitoring does not assume the start or stop of the scheduler service to be an error.

10.3.2 Action to take if an error is detected during monitoring of the JP1/AJS3 process

Specify the setting so that if an error is detected during monitoring of the JP1/AJS3 process, the cluster software fails over the JP1/AJS3 on a logical host.

If you want to try to restart the JP1/AJS3 on the same node before a failover is performed, specify the setting to restart JP1/AJS3.

Note the following if you set the cluster software to restart JP1/AJS3.

- JP1/AJS3 must be started by the cluster software, instead of by the process management of JP1/AJS3. Because the process management restarts JP1/AJS3 after an error is detected, the restart functionality might be affected and might be unable to operate correctly. To restart JP1/AJS3 more securely, the cluster software needs to perform the restart.
- In UNIX, after you stop JP1 (`jajs_stop.cluster` command), execute a forced stop (`jajs_killall.cluster` command) for clean-up and then start JP1 (`jajs_start.cluster` command).
- Set up JP1/AJS3 so that it starts and stops when JP1/Base starts and stops.

10.4 Utility for a cluster system (UNIX only)

If you are using JP1/AJS3 in a cluster system, and the JP1/AJS3 processes for logical hosts do not terminate, you can use the shell script for forcibly stopping JP1/AJS3 to forcibly stop the process for each JP1/AJS3 logical host.

10.4.1 Script for forcibly stopping JP1/AJS3 (jajs_killall.cluster)

This subsection gives an overview of the shell script for forcibly stopping JP1/AJS3 (`jajs_killall.cluster`).

For details about the syntax of the `jajs_killall.cluster` shell script for forcibly stopping JP1/AJS3, see *jajs_killall.cluster (UNIX only)* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

The following table lists the platforms and products supported by the shell script for forcibly stopping JP1/AJS3.

Table 10–2: Platforms and products supported by the shell script for forcibly stopping JP1/AJS3

	HP-UX	Solaris	AIX	Linux
JP1/AJS3 - Manager	Y	Y	Y	Y
JP1/AJS3 - Agent	Y	Y	Y	Y

Legend:

Y: Supported

Cautionary notes

- Use the `jajs_killall.cluster` command only when the process does not terminate after the service is terminated by the `jajs_stop.cluster` command.
- To try to restart JP1/AJS3 on the same node, after stopping JP1/AJS3 by executing `jajs_stop.cluster`, execute a forced stop (`jajs_killall.cluster` command) for clean-up and then start JP1/AJS3 by executing `jajs_start.cluster` command.
- The shell script for forcibly stopping JP1/AJS3 stops the processes for logical hosts. However, this shell script does not terminate the following JP1/AJS3 processes:
 - `jpocwtmqmai`MQ monitoring process when JP1/AJS3 is linked with MQSeries.
You do not need to fail over the above processes together with the JP1/AJS3 service when a cluster system is used. Stop them as required.

Supplementary note

This command outputs a log entry to a file on the shared disk. If the shared disk cannot be accessed, the log cannot be output and therefore JP1/AJS3 cannot be forcibly stopped. In this case, change the output destination for logs to a directory on the physical disk.

To change the output destination for logs to a directory on the physical disk:

1. Use an editor such as `vi` to open the following file (the shell script for forcibly stopping JP1/AJS3):
`/etc/opt/jplajs2/jajs_killall.cluster`
2. Change the file as follows:

Before change

```
LOGDIR=`jbsgetcnf -h "$JP1_HOSTNAME" | grep '^"JP1AJS2 LOGDIR"=' | \
    sed -e 's/^[^=]*=/' -e 's/^"/' -e 's/"$/'`
COMNAME=`basename "$0"`
```

After change

```
LOGDIR="/var/opt/jplajs2/log"      # Specifies a directory on a physical disk
COMNAME=`basename "$0"`
```

10.5 Logical host use in a non-cluster environment

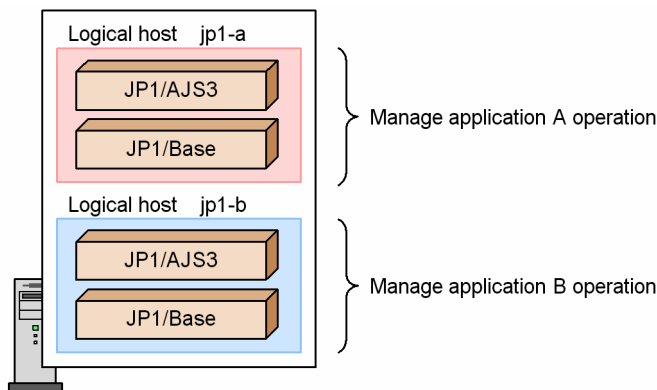
A logical host is a logical server environment that acts as the execution environment when you run JP1 in a cluster system. Running JP1 on a logical host typically involves linking with cluster software in the cluster system, and performing failover on a logical host basis.

However, by allocating space on the disk and a dedicated IP address to the logical host, and setting it up as a logical host for JP1, you can create a logical host environment that is not linked to the cluster software and is not subject to failover.

By setting up separate instances of JP1 on each logical host, you can start and run multiple instances of JP1 concurrently on a single server.

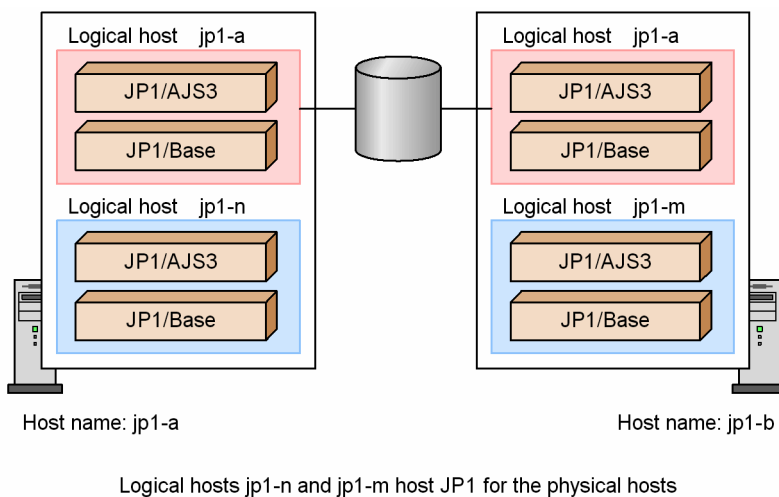
You can use logical hosts that do not fail over in system configurations similar to the following:

Using multiple instances of JP1 to handle separate applications



When you run more than one application on a single host, the operation of each application can be managed separately in a dedicated logical host.

Using JP1 programs designed for physical hosts in a cluster configuration where the logical host name must match the physical host name



In some cluster systems, the logical host name must be the same as the physical host name (the host name displayed by the `hostname` command). In this kind of configuration, you cannot run JP1/AJS3 in a physical host environment. Therefore, if you want to do things such as run JP1/AJS3 or monitor logs such as the syslog on each server, do so from the logical host on each server that will not fail over. Note, however, that the logical hosts that do not fail over must have different names from the physical hosts. Note, however, that if a logical host name is the same as

the physical host name (the host name displayed by the `hostname` command), you cannot use the queueless job execution facility or the definition pre-check function.

For further information about setting up and running logical hosts in a non-cluster environment, see the *JP1/Base User's Guide*.

10.5.1 Estimations for running a logical host in a non-cluster environment

If you run JP1/AJS3 concurrently on multiple hosts (a physical host and one or more logical hosts), consider the following points and estimate the amount of resources required in the entire system, and then allocate sufficient resources to each instance of JP1/AJS3. If sufficient resources are not allocated, programs might not operate correctly or processing might be delayed due to degraded performance.

- Because each JP1/AJS3 program running on each host uses system resources (memory, disks, CPU, communication ports, processes, and semaphores), make sure that the amount of the resources that will be in the entire system does not exceed the limit.
- Starting just JP1/AJS3 consumes a fixed amount of system resources that creates a load on the entire system. Accordingly, processing does not improve proportionately to the number of JP1/AJS3 programs started. Adjust the number of JP1/AJS3 programs that can start concurrently based on the system performance considerations.
- Make sure that the total number of JP1 events that can occur or jobs that can be executed is within the range of operation permitted for the system containing the physical host and logical hosts.

For details about how to estimate the resource usage on a logical host, see 3.2 *Estimating system performance* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*, and then estimate those system resources whose setting values change according to the number of logical hosts.

10.5.2 Setting up for logical host use in a non-cluster environment

This subsection provides an overview of setting up and using a logical host that is not subject to failover.

When you set up a logical host that is not subject to failover, you can perform the same procedure as when setting up a logical host to run in a normal cluster system.

For details about the procedure and functions, see the chapter that describes operation in a cluster system in the applicable JP1 manual. JP1 settings for a logical host and logical host operation are the same for all JP1 programs, except where the subject is failover and cluster software linkage.

To use JP1/AJS3 in a logical host environment that is not subject to failover (no cluster software is linked):

1. Prepare the logical host environment.

Prepare the disk area and IP address for the logical host.

- Disk area for the logical host
Create a storage directory on a local disk for sole use by JP1/AJS3 on the logical host. If you specify a directory that is being used by an instance of JP1/AJS3 on the physical host or another logical host, JP1 will not operate correctly.
- IP address for the logical host
The logical host can use an alias IP as the IP address. Note, however, that a unique IP address must be able to be resolved from the logical host name.

For the logical host, assign an IP address that is not the same as the IP address of the physical host. The prerequisites for the logical host environment are the same as for running JP1/AJS3 in a cluster system. However, because the logical host does not fail over, some of the prerequisites do not apply, such as the ability to inherit data between servers. Note that the sections about shared disks and logical IP addresses in the setup described for a normal cluster system correspond to the disk area creation and IP address allocation in regard to a logical host in a non-cluster system.

2. Set up JP1/AJS3 in the logical host environment.

Set up JP1/AJS3 in the logical host environment in the same manner as for a primary node in the cluster system. When setting up logical hosts that will fail over in a cluster system, you must set up JP1/AJS3 on both the primary node and the secondary node. However, in the case of a logical host that will not be failed over, you only set up JP1/AJS3 on the server where it will run. Note that you must set up JP1/Base before setting up JP1/AJS3.

For details about setting up a logical host for use in a normal cluster system, see the following references:

For Windows

See *8.2 Setting up the operating environment for cluster system operation* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

For UNIX

See *17.2 Setting up the operating environment for cluster system operation* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

Cautionary note

Before you attempt to start JP1/AJS3 services in Windows, make sure that JP1/AJS3 Database_ *JFn*[#] is not running. If JP1/AJS3 Database_ *JFn* is running, stop it and then start the JP1/AJS3 services.

#

_ *JFn* refers to the embedded database setup ID used for JP1/AJS3 services on a logical host.

10.5.3 Logical host use in a non-cluster environment

JP1/AJS3 operations and backup and recovery procedures are the same on a logical host that does not fail over as on a logical host in a cluster system. However, the logical host will not fail over with the cluster software.

(1) Startup and shutdown order

Start services on the logical host in the following order:

1. JP1/Base
2. JP1/AJS3

Stop services on the logical host in the following order:

1. JP1/AJS3
2. JP1/Base

(2) Performing operations for JP1/AJS3 on a logical host

When you execute a command for an instance of JP1/AJS3 set up on a logical host, specify the logical host name explicitly.

(3) Example of setting up automatic start and stop

If you want JP1/AJS3 services for logical hosts to automatically start and stop when the system starts or stops, you need to specify the settings described below. The setting method differs for each OS supported by JP1/AJS3. The following describes the setting method for each OS.

To delete a logical host, delete the automatic start and stop scripts created for the logical host and the link setting.

(a) In Windows

Using a text editor, open the file *JP1/Base-installation-folder\conf\boot\Jp1svprm.dat* used by JP1/Base startup control and add the following lines:

```
:
JP1/Base-settings
:

[Jp1AJS2_logical-host-name]
Name=JP1/AJS2_logical-host-name
ServiceName=JP1_AJS2_logical-host-name
StopCommand=jajs_spm_d_stop.exe -h logical-host-name
```

The command specified in `StopCommand` is executed when JP1/Power Monitor shuts down the host.

The `StopCommand` is available only when JP1/AJS3 and JP1/Power Monitor are installed on the same host.

(b) In HP-UX

1. Create the automatic start and stop scripts for the logical host.

Example automatic start and stop scripts (`/sbin/init.d/jp1_service_cluster`):

```
#!/bin/sh

case $1 in
start_msg)
    echo "Start JP1 Service $JP1_HOSTNAME"
    ;;

stop_msg)
    echo "Stop JP1 Service $JP1_HOSTNAME"
    ;;

'start')
    :
    JP1/Base-start-processing
    :
    if [ -x /etc/opt/jplajs2/jajs_start.cluster ]
    then
        /etc/opt/jplajs2/jajs_start.cluster logical-host-name jajs_spm
d-command-option
    fi
    ;;

'stop')
    if [ -x /etc/opt/jplajs2/jajs_stop.cluster ]
    then
```

```

        /etc/opt/jplajs2/jajs_stop.cluster logical-host-name jajs_spmc
_stop-command-option
        :
        JP1/Base-stop-processing
        :
        ;;

esac

exit 0

```

2. Link to the scripts you created in step 1.

Start script

Execute the following command to set up the link:

```
ln -s /sbin/init.d/jpl_service_cluster /sbin/rc2.d/SXXX_JP1_SERVICE
```

The higher the value in *XXX*, the later the start script is executed.

Configure settings so that, when the OS starts, JP1/AJS3 starts after initialization of the embedded database finishes, because the embedded database is initialized under `/sbin/rc2.d`. If multiple embedded databases are installed, as many files as embedded databases will be created. If the embedded database setup identifier is `_JF0` and the installation directory is `/opt/jplajs2/embdb/_JF0`, the file name becomes `S899HiRDB_E.opt.jplajs2.embdb._JF0`.

Stop script

Execute the following command to set up the link:

```
ln -s /sbin/init.d/jpl_service_cluster /sbin/rc1.d/KXXX_JP1_SERVICE
```

The higher the value in *XXX*, the later the stop script is executed.

Typically, set the values so that a JP1 service that starts earlier stops later.

3. Set permissions for the created file.

Execute the following commands to set permissions:

```

chmod u=rx,go=r /sbin/init.d/jpl_service_cluster
chown root:sys /sbin/init.d/jpl_service_cluster
chmod u=rx,go=r /sbin/rc2.d/SXXX_JP1_SERVICE
chown -h root:sys /sbin/rc2.d/SXXX_JP1_SERVICE
chmod u=rx,go=r /sbin/rc1.d/KXXX_JP1_SERVICE
chown -h root:sys /sbin/rc1.d/KXXX_JP1_SERVICE

```

(c) In Solaris

1. Create the automatic start and stop scripts for the logical host.

Example automatic start and stop scripts (`/etc/init.d/jpl_service_cluster`)

```

#!/bin/sh

case $1 in
start_msg)
    echo "Start JP1 Service $JP1_HOSTNAME"
    ;;
stop_msg)

```

```

        echo "Stop JP1 Service $JP1_HOSTNAME"
        ;;
'start')
        :
        JP1/Base-start-processing
        :
        if [ -x /etc/opt/jplajs2/jajs_start.cluster ]
        then
                /etc/opt/jplajs2/jajs_start.cluster logical-host-name option-o
f-jajs_spmc command
        fi
        ;;
'stop')
        if [ -x /etc/opt/jplajs2/jajs_stop.cluster ]
        then
                /etc/opt/jplajs2/jajs_stop.cluster logical-host-name option-of
-jajs_spmc_stop-command
        fi
        :
        JP1/Base-stop-processing
        :
        ;;
esac
exit 0

```

2. Link to the scripts you created in step 1.

Start script

Execute the following command to set up the link:

```
ln -s /etc/init.d/jp1_service_cluster /etc/rc2.d/SXX_JP1_SERVICE
```

The higher the value in *XX*, the later the start script is executed.

Configure settings so that, when the OS starts, JP1/AJS3 starts after initialization of the embedded database finishes, because the embedded database is initialized under `/etc/rc2.d`. If multiple embedded databases are installed, as many files as embedded databases will be created. If the embedded database setup identifier is `_JF0` and the installation directory is `/opt/jplajs2/embdb/_JF0`, the file name becomes `S91HiRDB_E.opt.jplajs2.embdb._JF0`.

Stop script

Execute the following command to set up the link:

```
ln -s /etc/init.d/jp1_service_cluster /etc/rc0.d/KXX_JP1_SERVICE
```

The higher the value in *XX*, the later the stop script is executed.

Typically, set the values so that a JP1 service that starts earlier stops later.

3. Set permissions for the created file.

Execute the following commands to set permissions:

```

chmod u=rx,go=r /etc/rc2.d/SXX_JP1_SERVICE
chown -h root:sys /etc/rc2.d/SXX_JP1_SERVICE

```



```
chmod u=rx,go=r /etc/rc0.d/KXX_JP1_SERVICE
chown -h root:sys /etc/rc0.d/KXX_JP1_SERVICE
```

(d) In AIX

- Initialization process

Use the `mkitab` command to make the following entries in the `/etc/inittab` file.

```
# mkitab -i JP1/Base-record "jplajs2:2:wait:/etc/opt/jplajs2/jajs_start.cl
uster logical-host-name option-of-jajs_spm-d-command"
```

Configure settings so that, when the OS starts, JP1/AJS3 starts after initialization of the embedded database finishes, because the embedded database is initialized under `/etc/rc.d/rc2.d`. If multiple embedded databases are installed, as many files as embedded databases will be created. If the embedded database setup identifier is `_JF0` and the installation directory is `/opt/jplajs2/emddb/_JF0`, the file name becomes `S910HiRDB_E.opt.jplajs2.emddb._JF0`.

- Shutdown process

Add the following code to the `/etc/rc.shutdown` file, in a position later than code that shuts down programs for which JP1/AJS3 is a prerequisite.

```
test -x /etc/opt/jplajs2/jajs_stop.cluster && /etc/opt/jplajs2/jajs_stop.c
luster logical-host-name option-of-jajs_spm-d-stop-command
:
JP1/Base-stop-processing
:
exit 0
```

If this script terminates abnormally, the OS shutdown process will be canceled. Enter `exit 0` on the last line so that the script terminates normally.

(e) In Linux

- Create the automatic start and stop scripts for the logical host.

Example automatic start and stop scripts (`/etc/rc.d/init.d/jp1_service_cluster`):

```
#!/bin/sh

case $1 in
start_msg)
echo "Start JP1 Service $JP1_HOSTNAME"
;;

stop_msg)
echo "Stop JP1 Service $JP1_HOSTNAME"
;;

'start')
:
JP1/Base-start-processing
:
if [ -x /etc/opt/jplajs2/jajs_start.cluster ]
then
/etc/opt/jplajs2/jajs_start.cluster logical-host-name jajs_spm
d-command-option
touch /var/lock/subsys/_JP1_SERVICE
```

```

        fi
        ;;
'stop')
    if [ -x /etc/opt/jplajs2/jajs_stop.cluster ]
    then
        /etc/opt/jplajs2/jajs_stop.cluster logical-host-name jajs_spmc
        _stop-command-option
        rm -f /var/lock/subsys/_JP1_SERVICE
    fi
        :
        JP1/Base-stop-processing
        :
    ;;
esac

exit 0

```

2. Link to the scripts you created in step 1.

Start script

Execute the following command to set up the link:

```

ln -s /etc/rc.d/init.d/jp1_service_cluster /etc/rc.d/rc3.d/SXX_JP1_SERVICE
ln -s /etc/rc.d/init.d/jp1_service_cluster /etc/rc.d/rc5.d/SXX_JP1_SERVICE

```

The higher the value in *XX*, the later the start script is executed.

Configure settings so that, when the OS starts, JP1/AJS3 starts after initialization of the embedded database finishes, because the embedded database is initialized under */etc/rc3.d* and */etc/rc5.d*. If multiple embedded databases are installed, as many files as embedded databases will be created. If the embedded database setup identifier is *_JF0* and the installation directory is */opt/jplajs2/embdb/_JF0*, the file name becomes *S91HiRDB_E.opt.jplajs2.embdb._JF0*.

Stop script

Execute the following command to set up the link:

```

ln -s /etc/rc.d/init.d/jp1_service_cluster /etc/rc.d/rc0.d/KXX_JP1_SERVICE
ln -s /etc/rc.d/init.d/jp1_service_cluster /etc/rc.d/rc6.d/KXX_JP1_SERVICE

```

The higher the value in *XX*, the later the stop script is executed.

Typically, set the values so that a JP1 service that starts earlier stops later.

3. Set permissions for the created file.

Execute the following commands to set permissions:

```

chmod u=rwx,go=rx /etc/rc.d/init.d/jp1_service_cluster
chown root:root /etc/rc.d/init.d/jp1_service_cluster
chmod u=rwx,go=rx /etc/rc.d/rc3.d/SXX_JP1_SERVICE
chown -h root:root /etc/rc.d/rc3.d/SXX_JP1_SERVICE
chmod u=rwx,go=rx /etc/rc.d/rc5.d/SXX_JP1_SERVICE
chown -h root:root /etc/rc.d/rc5.d/SXX_JP1_SERVICE
chmod u=rwx,go=rx /etc/rc.d/rc0.d/KXX_JP1_SERVICE
chown -h root:root /etc/rc.d/rc0.d/KXX_JP1_SERVICE
chmod u=rwx,go=rx /etc/rc.d/rc6.d/KXX_JP1_SERVICE
chown -h root:root /etc/rc.d/rc6.d/KXX_JP1_SERVICE

```

Cautionary note

If the JP1 service is set to automatically stop, make sure that it also automatically starts. If only automatic stopping is specified, the stop script will not start.

(4) Setting up automatic start and stop on both the physical host and logical host

If you want JP1/AJS3 services to automatically start and stop on both the physical host and logical host, you must specify the settings described below in addition to the automatic start and stop settings on the logical host.

The setting method differs for each OS supported by JP1/AJS3. The following describes the setting method for each OS.

(a) In a Windows environment

Use startup control to define the order in which the services are started and stopped.

If you want to change the startup sequence and stop sequence for the physical host and logical host, change the definition in startup control.

For details about startup control, see the *JP1/Base User's Guide*.

(b) In HP-UX, Solaris and Linux environments

The sequence for automatic start and automatic stop is determined by the value of the number part (*XX* in *SXX* or *KXX*) of the automatic start and stop scripts. The higher the *XX* value, the later the script is executed. Symbolic links to the automatic start and stop scripts for the physical host are automatically created during installation. To implement the automatic start and stop of services for the physical host, change the name of the symbolic link created for the logical host, and then adjust the start and stop sequences for the physical host and logical host.

Note that the automatic start and stop scripts for the physical host are already provided. The following table lists the symbolic links to the automatic start and stop scripts for the physical host.

Table 10–3: Symbolic links to the automatic start and automatic stop scripts for the JP1/AJS3 physical host

OS name	Start script	Stop script
HP-UX	/sbin/rc2.d/S907jp1ajs2	/sbin/rc1.d/K093jp1ajs2
Solaris	/etc/rc2.d/S99_JP1_80_AJS2	/etc/rc0.d/K01_JP1_20_AJS2
Linux	/etc/rc.d/rc3.d/S99_JP1_80_AJS2 /etc/rc.d/rc5.d/S99_JP1_80_AJS2	/etc/rc.d/rc0.d/K01_JP1_20_AJS2 /etc/rc.d/rc6.d/K01_JP1_20_AJS2

Check the value of *XX* (number) in *SXX* or *KXX* in the above table and *XX* (number) in *SXX* or *KXX* of the automatic start and stop scripts for the logical host. Determine the start sequence for the physical host and logical host according to the relationship of these values. In addition, do not change values for symbolic links to automatic start or automatic stop scripts. Because the initialization handling of embedded database is carried out in OS starting, set it so that JP1/AJS3 starts later than the initialization process of the embedded database.

The following table lists the scripts for initializing an embedded database.

Table 10–4: Initialization scripts for embedded DB

OS name	Initialization scripts for embedded DB
HP-UX	<i>/sbin/rc2.d/S899HiRDB_E.embedded-database-practical-directory</i>
Solaris	<i>/etc/rc2.d/S91HiRDB_E.embedded-database-practical-directory</i>
Linux	<i>/etc/rc.d/rc3.d/S91HiRDB_E.embedded-database-practical-directory</i> <i>/etc/rc.d/rc5.d/S91HiRDB_E.embedded-database-practical-directory</i>

Note

If multiple embedded databases are installed, as many files as embedded databases will be created under the directory. If the embedded database setup identifier is `_JF0` and the installation directory is `/opt/jplajs2/embdb/_JF0`, the file name becomes `SxxxHiRDB_E.opt.jplajs2.embdb._JF0`.

For example, if you want the logical host to start first, set a value for `XX` in `SXX` (the symbolic link name for the automated startup script to be created for the logical host) as follows:

- In HP-UX
A value larger than 899 and smaller than 905.
- In Solaris and Linux
A value larger than 91 and smaller than 99.

Note that JP1/Base must have already started because it is a prerequisite product for JP1/AJS3.

The end processing of the embedded database is performed when the OS stops. Therefore, specify settings so that JP1/AJS3 stops before the end processing of the embedded database. The following table lists the end processing scripts for the embedded database.

Table 10–5: List of the end processing scripts of the embedded database

OS name	End processing script
HP-UX	<i>/sbin/rc1.d/K094HiRDB_E.embedded-database-practical-directory</i>
Solaris	<i>/etc/rc0.d/K090HiRDB_E.embedded-database-practical-directory</i>
Linux	<i>/etc/rc.d/rc0.d/K09HiRDB_E.embedded-database-practical-directory</i> <i>/etc/rc.d/rc6.d/K09HiRDB_E.embedded-database-practical-directory</i>

Note

If multiple embedded databases are installed, as many files as embedded databases will be created under the directory. If the embedded database setup identifier is `_JF0` and the installation directory is `/opt/jplajs2/embdb/_JF0`, the file name becomes `KxxxHiRDB_E.opt.jplajs2.embdb._JF0`.

For example, if you want the logical host to stop after the physical host, set a value for `XX` in `KXX` (the symbolic link name for the automatic stop script to be created for the logical host) as follows:

- In HP-UX
A value greater than 0941 and less than 0949
- In Solaris and Linux
A value greater than 01 and less than 09

Note that JP1/AJS3 must be stopped first because JP1/Base is a prerequisite product for JP1/AJS3.

(c) In AIX environment

Because the initialization handling of embedded database is carried out in OS starting, set it so that JP1/AJS3 starts later than the initialization process of the embedded database. The following table lists the scripts for initializing an embedded database in AIX environment.

Table 10–6: Initialization scripts for embedded DB in AIX environment

OS name	Initialization scripts
AIX	<i>/etc/rc.d/rc2.d/S910HiRDB_E.embedded-database-practical-directory</i>

Note

If multiple embedded databases are installed, as many files as embedded databases will be created under the directory. If the embedded database setup identifier is `_JF0` and the installation directory is `/opt/jplajs2/embdb/_JF0`, the file name becomes `S910HiRDB_E.opt.jplajs2.embdb._JF0`.

10.6 Cautionary notes on using a cluster system

This section provides cautionary notes on using a cluster system.

10.6.1 Cautionary notes on cluster system operation

The following are cautionary notes on using a cluster system.

(1) Cautionary notes applicable to all JP1/AJS3 programs

- In JP1/AJS3, only logical host names that are 32 bytes or less can be used. Accordingly, if you create a logical host in JP1/Base, make sure that the name is 32 bytes or less. If you use a kill command (`jajs_killall.cluster` command) in UNIX, the first 15 bytes of the logical host names must be unique. For details, see [\(3\) Cautionary notes applicable to UNIX](#).
- When you set up JP1/AJS3 in a cluster system, you need to stop the JP1/AJS3 services running on the physical host and existing logical hosts. If you attempt setup while JP1/AJS3 services are running, the JP1/AJS3 services will no longer operate correctly, and you will need to restart the server.
- To start multiple instances of JP1/AJS3 in a cluster system, you need a system resource for each logical host on which a JP1/AJS3 instance is started.
- Only one queueless agent service or queueless file transfer service is assigned on a machine. However, these services are available in a cluster system because separate processing on each logical host is enabled by using the cluster software to move the shared disk and the logical IP address.
- Some cluster software has error simulation functionality built in. If the simulation functionality is used for JP1/AJS3, the cluster software might assume an error without stopping JP1/AJS3 or without waiting for JP1/AJS3 to stop; such a situation might cause unintended operations, such as the unsuccessful restarting of JP1/AJS3. You can avoid this problem by using the cluster software to adjust the restart interval. Note, however, that you cannot use the error simulation functionality with cluster software that is unable to adjust the restart interval.
- Some cluster software might monitor the start time or stop time of a JP1/AJS3 service and cause a timeout if the start or stop process is not completed within a specified time period. Because the start and stop times of JP1/AJS3 services vary depending on the environment (for example, the number of scheduler services), adjust the timeout value of the cluster software appropriately for the environment.

To determine the start time or stop time of JP1/AJS3 services, use the start or stop time when a service or command is used rather than the time when the cluster software is used.
- Immediately after a JP1/AJS3 service has stopped, some JP1/AJS3 processes might remain. If the cluster software has been set up to restart JP1/AJS3, the restart might fail. However, you can avoid the problem by increasing the restart interval for the cluster software or the number of times restart is performed.
- Duplication of the database (ISAM) and internal files used for QUEUE jobs and submit jobs is not supported. Use a RAID disk to ensure reliability of the disk system.
- A disk mounted on a file system connected to a network, such as NFS, cannot be used as a shared disk in a cluster system.
- If you set up JP1/AJS3 in a cluster system, the same connection source restriction settings are applied to the physical hosts and logical hosts. If you want to use separate settings for physical hosts and logical hosts, you must change the connection source restriction settings on the logical hosts. Even if the same settings can be used, add a logical host IP address to the connection permission configuration files on both the physical and logical hosts. This is because the logical host IP address is newly assigned to the logical host as the local host IP address. For details about how to change the connection source restriction settings, see [7.11 Changing the setting for restricting connection sources](#).

- If the same IP address is used for the physical host and logical host, operation instructions from the logical host might be assumed to be operation instructions from the physical host. To avoid this, for **Server host** in the user mapping definition, specify the host name of both the physical and logical hosts or specify an asterisk (*).

(2) Cautionary notes applicable to Windows

- During cluster system operation, if a JP1/AJS3 process in a JP1/AJS3 service running on a logical host terminates abnormally, JP1/AJS3 stops all processes rather than continuing in reduced-operation mode. If JP1/AJS3 has been set up to restart a JP1/AJS3 process that has terminated abnormally, the restart settings are disabled.
- Do not set the JP1_HOSTNAME environment variable as a system environment variable or user environment variable. If you do so, the service might not be able to start. Set the JP1_HOSTNAME environment variable from the command prompt or in a batch file. For details about how to specify a logical host name, see [10.1.1\(4\) Requirements for a logical host name](#).
- If a JP1/AJS3 service on a logical host is stopped by choosing **Services** in the Windows Control Panel window or by choosing **Administrative Tools** and then **Services**, some cluster software might assume an error without waiting for JP1/AJS3 to stop. This might cause unintended operations, such as the unsuccessful restarting of JP1/AJS3.

(3) Cautionary notes applicable to UNIX

- During cluster system operation, if a JP1/AJS3 process in a JP1/AJS3 service running on a logical host terminates abnormally, terminate all processes, rather than continuing in the reduced-operation mode. If JP1/AJS3 has been set up to restart a JP1/AJS3 process that has terminated abnormally, cancel the restart setting because the restart takes precedence. For details about how to set the restart, see [6.3.1 Restarting an abnormally terminated JP1/AJS3 process](#). If a JP1/AJS3 process in a JP1/AJS3 service started on a logical host with the -HA option specified terminates abnormally, JP1/AJS3 terminates all processes rather than continuing in reduced-operation mode. If JP1/AJS3 has been set up to restart a JP1/AJS3 process that has terminated abnormally, the restart settings are disabled.
- To start or stop the physical host in an environment in which the JP1_HOSTNAME environment variable has been set, use a shell in which the JP1_HOSTNAME environment variable is temporarily deleted. For details about how to set up automatic start and termination, see [15.10.1\(10\) Setting automatic startup and termination of the JP1/AJS3 service that do not depend on the JP1_HOSTNAME environment variable](#) in the *JP1/Automatic Job Management System 3 Configuration Guide*.
- When using the kill command (`jajs_killall.cluster` command) in UNIX, specify a unique logical host name of 32 bytes. This command checks the first 32 bytes of the logical host name, and kills the corresponding process. If there are logical hosts that have names of 33 or more bytes, all logical hosts whose names have the same first 32 bytes are subject to the kill operation.
- In AIX, when a memory shortage occurs, the system issues SIGKILL and the JP1/AJS3 process might be terminated. To prevent this problem, set the environment variables as follows for the physical and logical hosts that are used for JP1/AJS3, and then start JP1/AJS3:
 - PSALLOC=early
 - NODISCLAIM=true

(4) Cautionary notes on the execution environment for event jobs and custom event jobs

- When a cluster environment is set up, the FileWriteMode environment setting parameter, which defines the file update mode of the logical host, is set to `sync` (synchronous update mode), the recommended value. To use asynchronous update mode, use the `jajs_config` command to change the value of the FileWriteMode environment setting parameter to `nosync` after setting up a cluster environment.

For details about the `FileWriteMode` environment setting parameter, see 20.6.2(2) *FileWriteMode (for manager process)* in the *JP1/Automatic Job Management System 3 Configuration Guide* or 20.6.2(21) *FileWriteMode (for agent process)* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

- When a cluster environment is set up, the `EVProcessHA` environment parameter, which defines the detailed process termination option, is set to `Y`, the recommended value. When a detailed process of event/action control terminates, you might want operations to continue in reduced mode without terminating the event/action control agent process. In such a case, use the `jajs_config` command to change the value of the `EVProcessHA` environment parameter to `N` after setting up a cluster environment.

For details about the `EVProcessHA` environment setting parameter, see 20.6.2(22) *EVProcessHA* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

- If the mail system linkage function that uses Outlook is enabled, a mail system can be linked with only one instance of JP1/AJS3 on the physical host or logical host. Note that the environment setting parameters for the mail system linkage function that uses Outlook must be defined on the physical host even if you link the mail system with JP1/AJS3 on the logical host. If you want to execute a mail reception monitoring job for the mail system linkage function on a UNIX host, define the `ExecMode` environment setting parameter on the physical host and other environment setting parameters on the logical host.

For details about environment setting parameters, see 2.3.4 *Setting up the environment for the mail system linkage* in the *JP1/Automatic Job Management System 3 Linkage Guide* (for Windows) or 2.4.2 *Setting up the environment for an email reception monitoring job* in the *JP1/Automatic Job Management System 3 Linkage Guide* (for UNIX).

Note that, for the mail system linkage function that uses Outlook or that runs on a UNIX host, linkage with a mail system on the standby node is not possible.

(5) Cautionary notes on the execution environment for QUEUE jobs and submit jobs

- During cluster system operation, if you stop a JP1/AJS3 service while a job is running on the primary node, the job is killed, and operation switches to the secondary node. However, the secondary node does not immediately recognize that the killed job has ended. A few minutes will be required for the status of the job to change to the ended status.
- When using the `jpgqreguser` command to register VOS3 user information to link with JP1/OJE for VOS3, you need to register the user information on both the primary node and the secondary node. If you have added, changed, or deleted user information on the primary node, you also need to add, change, or delete user information on the secondary node. To do so, use the procedure in the cautionary notes on operation in a cluster system in the *jpgqreguser* in 2. *Commands Used during Setup* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

(6) Cautionary notes on the queueless job execution environment

For cautionary notes on the queueless job execution environment, see 8.2.7(3) *Notes on automatic attachment and detachment of logical hosts performed when queueless jobs are used* in the *JP1/Automatic Job Management System 3 Configuration Guide* (in Windows) or 17.2.7 *Setting up the queueless job execution environment* in the *JP1/Automatic Job Management System 3 Configuration Guide* (in UNIX).

(7) Cautionary note on the definition pre-check function

For cautionary notes on the definition pre-check function, see 8. *Definition Pre-Check* in the *JP1/Automatic Job Management System 3 System Design (Work Tasks) Guide*.

(8) Cautionary notes on using a logical host in a non-cluster environment

Because a logical host in a non-cluster system does not inherit the management information on the shared disk, it cannot be failed over. For this reason, do not use such a logical host in a multiple-host environment where a logical host IP is passed from one host to another.

(9) Cautionary notes on the execution environment of flexible jobs

- Destination agents and broadcast agents do not support cluster configurations.

Regarding the availability of the destination agent and broadcast agent, see *2.9 Executing jobs in a cloud environment* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide* or *2.10 Considerations for executing a job by broadcast execution* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.

- In a configuration that does not use a relay agent, if a failover occurs in JP1/AJS3 - Manager while a flexible job is being executed on another host, the status of the flexible job becomes *Killed*. On the other hand, in a configuration that does use a relay agent, the execution of flexible jobs continues (Flexible jobs remain in the *Now running* status). Therefore, we recommend that you use a relay agent if you want to use flexible jobs in a cluster system.

11

Disaster Recovery in JP1/AJS3

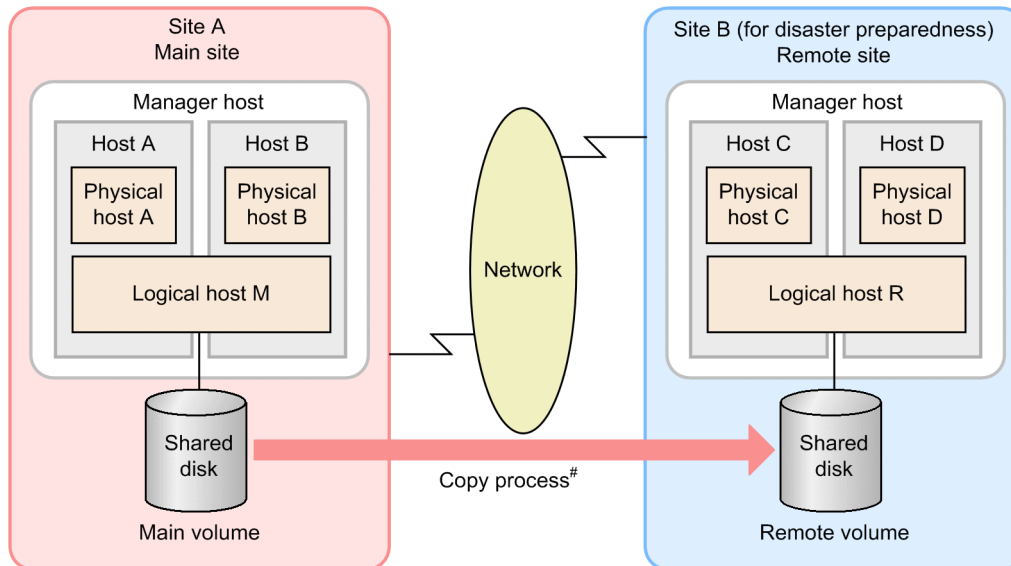
This chapter describes the disaster recovery mode of JP1/AJS3, the preconditions for its use, and the necessary system configuration. This chapter also describes how to change the environment in which disaster recovery operates.

11.1 Disaster recovery in JP1/AJS3

JP1/AJS3 can prepare for an unexpected event like a large-scale disaster by creating an environment equivalent to the one in daily use in a remote location, and copying the contents of the regularly updated shared disk to its counterpart in the remote location. The disk copying process uses the copy and mirroring functions of the hardware.

The following figure shows an overview of disaster recovery operation in JP1/AJS3.

Figure 11–1: Overview of JP1/AJS3 disaster recovery operation



#: The copy process between the shared disks uses the disk copy and mirroring functionality of the hardware. It is not a function of JP1/AJS3.

In JP1/AJS3 disaster recovery, the site in daily use is called the *main site*, and the site prepared in case of disaster is called the *remote site*.

The process involves creating systems with equivalent environments at the main site and the remote site, and using the disk copy and mirroring functionality of the hardware to copy the contents of the shared disk used by the logical host at the main site to the shared disk at the remote site. The shared disk at the main site is called the *main volume*, and the shared disk at the remote site is called the *remote volume*.

11.1.1 How disaster recovery works

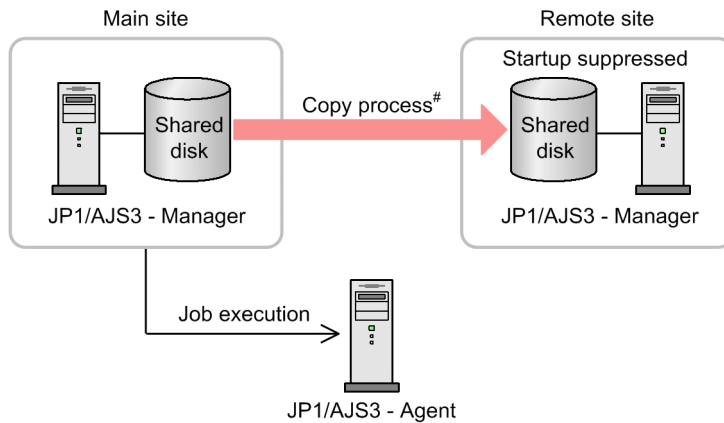
This subsection describes how disaster recovery works in the context of JP1/AJS3.

(1) Begin operation on main site and copying between shared disks

After building the disaster recovery environment, begin operation on the main site and initiate the process of copying data between the main and remote sites.

The JP1/AJS3 services on the logical host (for disaster recovery operation) at the remote site do not start running while the JP1/AJS3 system is still operating at the main site.

Figure 11–2: Initiating operation at main site and copying between shared disks



#: The copy process between the shared disks uses the disk copy and mirroring functionality of the hardware. It is not a function of JP1/AJS3.

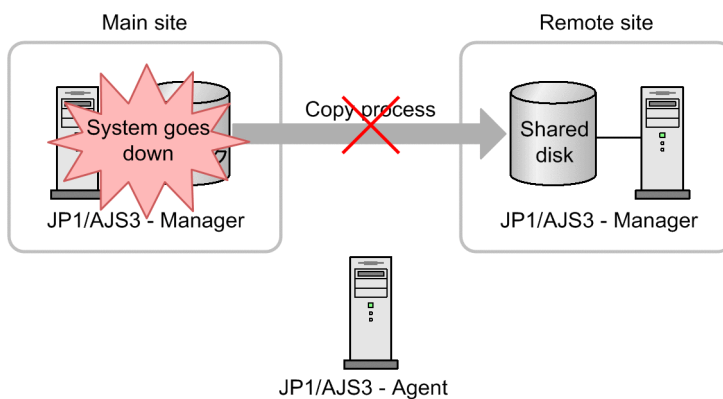
Supplementary note

Because the logical host prepared for disaster recovery at the remote site does not run any JP1/AJS3 services while the JP1/AJS3 system is operating at the main site, you cannot connect to the logical host at the remote site using JP1/AJS3 - View, or other products.

(2) A major event causes the main site to go down

If the system at the main site stops running due to a large-scale disaster or other event, use a hardware operation at the remote site to stop the copy process between shared disks. Then, change the status of the remote volume to write-enabled.

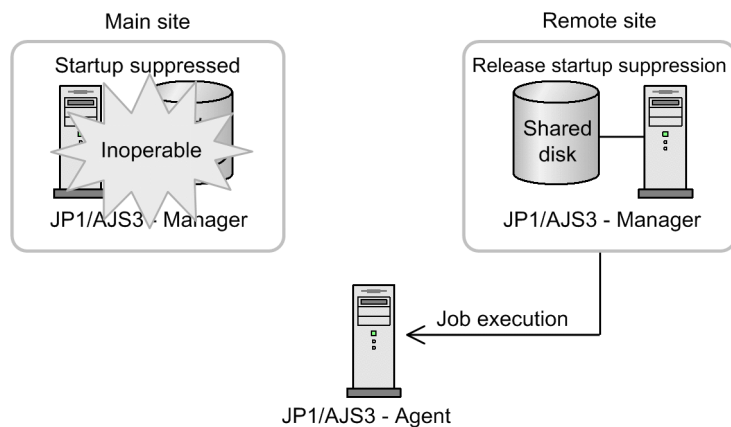
Figure 11–3: The main site goes down in the event of a large-scale disaster



(3) Switch operation to the remote site

Operation switches to the main site, from which point the logical host on the remote site becomes the active site. Suppression of the JP1/AJS3 services on the remote site is then released, a disaster recovery restart is performed for the JP1/AJS3 services on the remote site, and work task operation resumes.

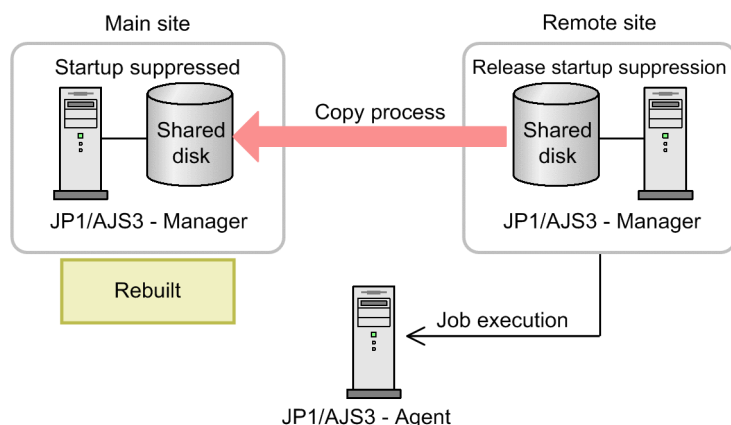
Figure 11–4: Switching operation to remote site



(4) Rebuild the main site

Rebuild the JP1/AJS3 system on the disaster-affected main site. When this is done, begin copying data from the remote site back to the main site.

Figure 11–5: Rebuilding the main site



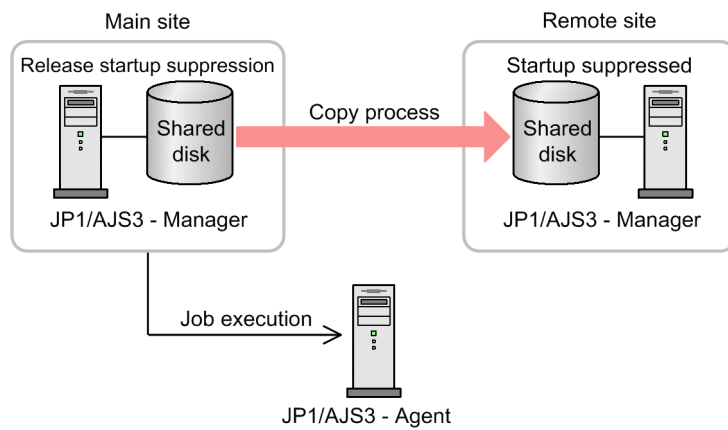
Supplementary note

Until the system is recovered on the main site, use the standard JP1/AJS3 backup process to take backups of the system on the remote site.

(5) Return operation to the main site

Stop the JP1/AJS3 services at the remote site, and make sure that no jobs are running. Having done so, stop the process of copying data from the remote site to the main site. Next, use a hardware operation to change the status of the main volume to write-enabled, and then switch operation so that the logical host on the main site becomes the active site. (This action is referred to as *returning operation*.) When this process is completed, the hold placed on the JP1/AJS3 services on the main site is released, and a hold is instead placed on the JP1/AJS3 services on the remote site. A remote copy process is initiated from the main site to the remote site, the JP1/AJS3 services are started on the main site, and work task operation is resumed. The first time that the JP1/AJS3 services start after returning operation, the services are subject to a disaster recovery start.

Figure 11–6: Returning operation to the main site



11.1.2 Disaster recovery prerequisites scope of support

This subsection describes the prerequisites for running JP1/AJS3 in disaster recovery mode, and the scope in which this type of operation is supported.

(1) Prerequisites

The following prerequisites apply to the disaster recovery operation of JP1/AJS3:

- The hardware used as the shared disks conforms to the following specifications:
 - The main volume and remote volumes both guarantee the sequence of write operations.
 - The hardware guarantees consistency between the main and remote volumes when the copy process between the shared disks stops.
 - Data cannot be written to the remote volume at the remote site while data is being copied between the shared disks.
- The main site and remote site both run version 09-10 or later of JP1/AJS3 - Manager. However, for a configuration in which the logical host names are the same at the main site and remote site, JP1/AJS3 - Manager must be version 10-50 or later.
- The configuration of the JP1/AJS3 databases is a standard configuration or a standard configuration without ISAM.
- JP1/AJS3 is running in a logical host environment.
- When running JP1/AJS3 in a cluster system, the conditions described in *10.1.1 Prerequisites for JP1/AJS3, and the scope supported by JP1/AJS3* are met.

(2) Support scope

JP1/AJS3 supports the following scope in terms of disaster recovery operation:

- The shared disks used by logical hosts running JP1/AJS3 - Manager
- Creation of a disaster recovery environment from a new logical host running JP1/AJS3 version 09-10 or later
You cannot create a disaster recovery environment from a logical host running JP1/AJS3 version 09-00 or earlier.

Problems that occur in the course of JP1/AJS3 operation are outside the scope of support if the conditions described in *(1) Prerequisites* are not met.

11.1.3 Configuration of a disaster recovery system compatible with JP1/AJS3

This subsection describes the configuration of a disaster recovery system in which JP1/AJS3 can run.

(1) Conditions for disaster recovery environments

A disaster recovery environment for JP1/AJS3 must satisfy the following conditions:

- The hosts at the main site and remote site must be running the same operating system and version. Both hosts must also run the same versions of JP1/AJS3 - Manager and its prerequisite JP1/Base, which must be installed in the equivalent drive and folder on each host.

For details about the prerequisite operating systems and programs for JP1/AJS3, see 2.1.2 *JP1/AJS3 prerequisites* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.

- The machines at the main site and remote site must have similar specifications.

To allow work task activity to continue seamlessly after operation is switched, we recommend that you use machines with similar specifications for the manager hosts at the main site and remote site. While there is no need for the specifications to be identical provided that both meet or exceed the system requirements for JP1/AJS3, consider the processing performance after switching operation when designing the disaster recovery system.

- The language types (for example the `LANG` environment variable) used by JP1/AJS3 and JP1/Base must be the same at the main site and remote site.
- The hosts at the main site and remote site must share the same date and time settings.
- JP1/Base must have the same configuration at the main site and remote site.
- The names of the agent hosts used at the main site must be resolvable from the remote site.

If the names of the agent hosts in use by the main site cannot be resolved at the remote site, the system might take a long time to start disaster recovery operation when operation is switched to the remote site, or connections to the agent hosts might time out. For this reason, the remote site must have `jp1hosts`, `jp1hosts2`, or `hosts` files or a DNS configuration that allows it to resolve the host names correctly. For details about the `jp1hosts` or `jp1hosts2` file, see the *JP1/Base User's Guide*.

- To use the same logical host name for the main site and remote site, the main site and remote site must be in a one-to-one correspondence.

Supplementary note

Depending on the method used to connect the main site to the remote site, a LAN connection might be required between the hosts. Depending on the hardware, you might also need to install software to take advantage of the disk copy and mirroring functionality of the shared disks.

For details, see the documentation for the hardware you are using.

(2) Example system configuration

An example configuration of a JP1/AJS3 disaster recovery system is described below.

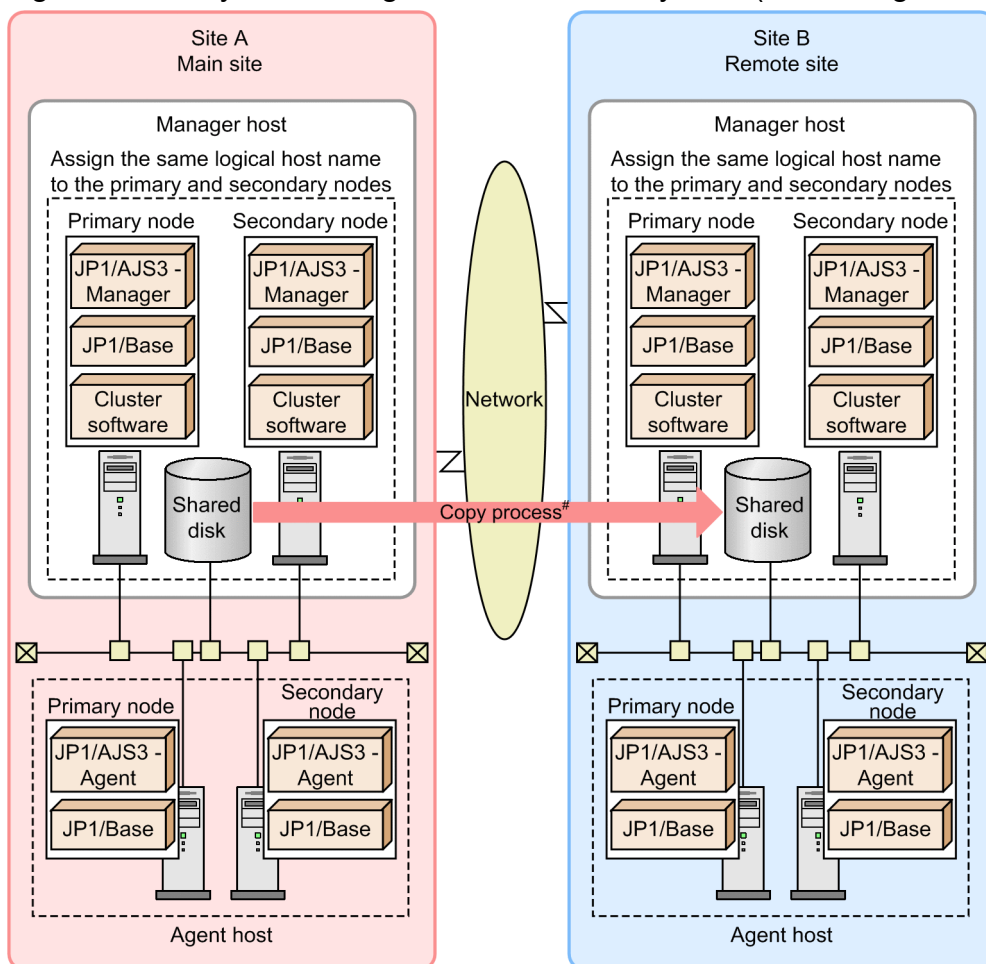
(a) Example for cluster configuration

The following shows an example configuration for a cluster system.

■ When using different agent hosts

The following figure shows an example of a system configuration in which the main site and the remote site use a different set of agent hosts.

Figure 11–7: System configuration in cluster system (without agent sharing)

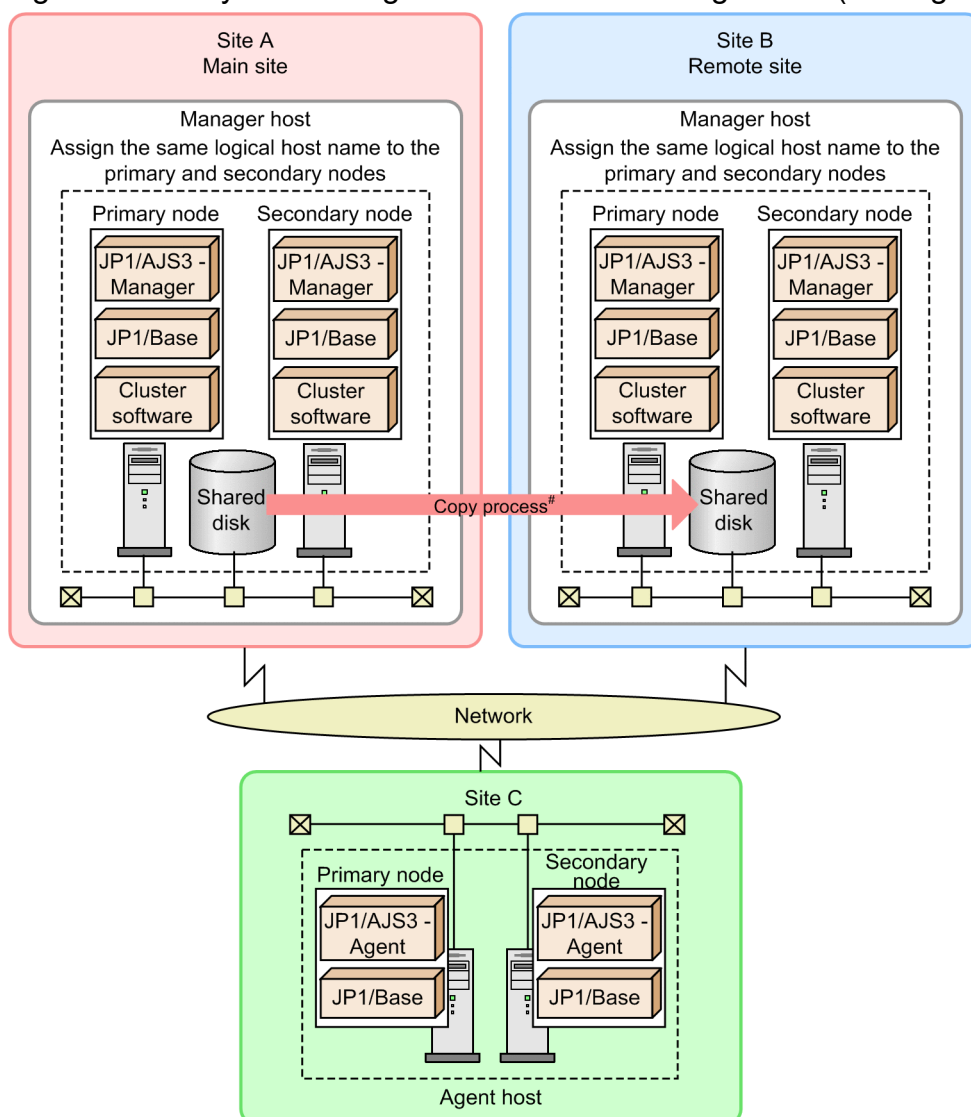


#: The copy process between the shared disks uses the disk copy and mirroring functionality of the hardware. It is not a function of JP1/AJS3.

■ When using the same agent hosts

The following figure shows an example of a system configuration in which the main site shares its agent hosts with the remote site.

Figure 11–8: System configuration in cluster configuration (with agent sharing)



#: The copy process between the shared disks uses the disk copy and mirroring functionality of the hardware. It is not a function of JP1/AJS3.

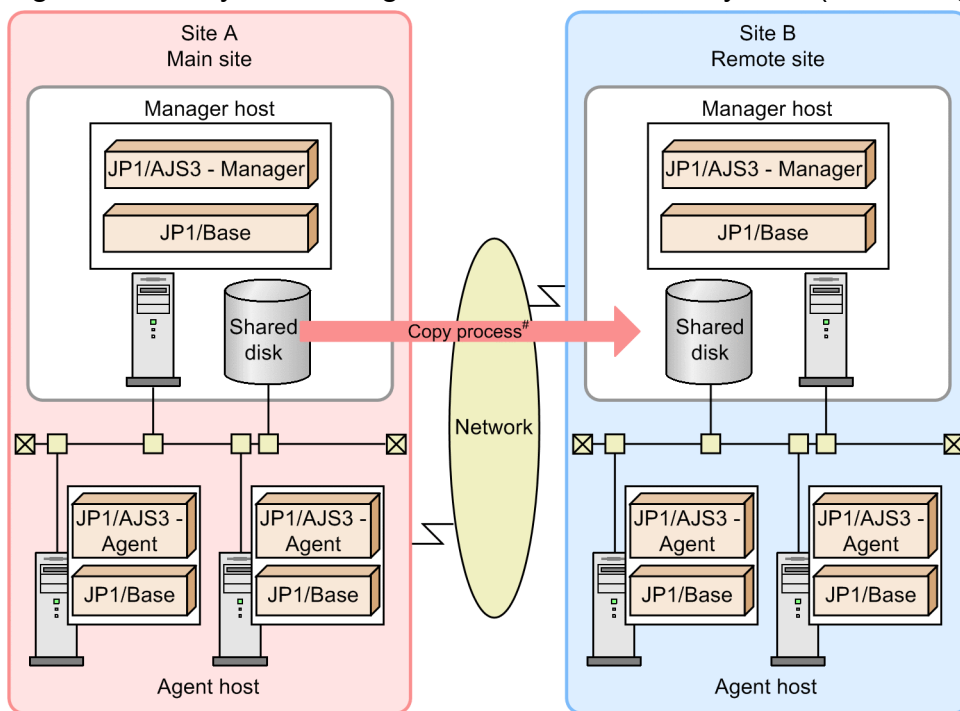
(b) Example for non-cluster configuration

The following shows an example configuration for a non-cluster system.

■ When using different agent hosts

The following figure shows an example of a system configuration in which the main site and the remote site use a different set of agent hosts.

Figure 11–9: System configuration in non-cluster system (without agent sharing)

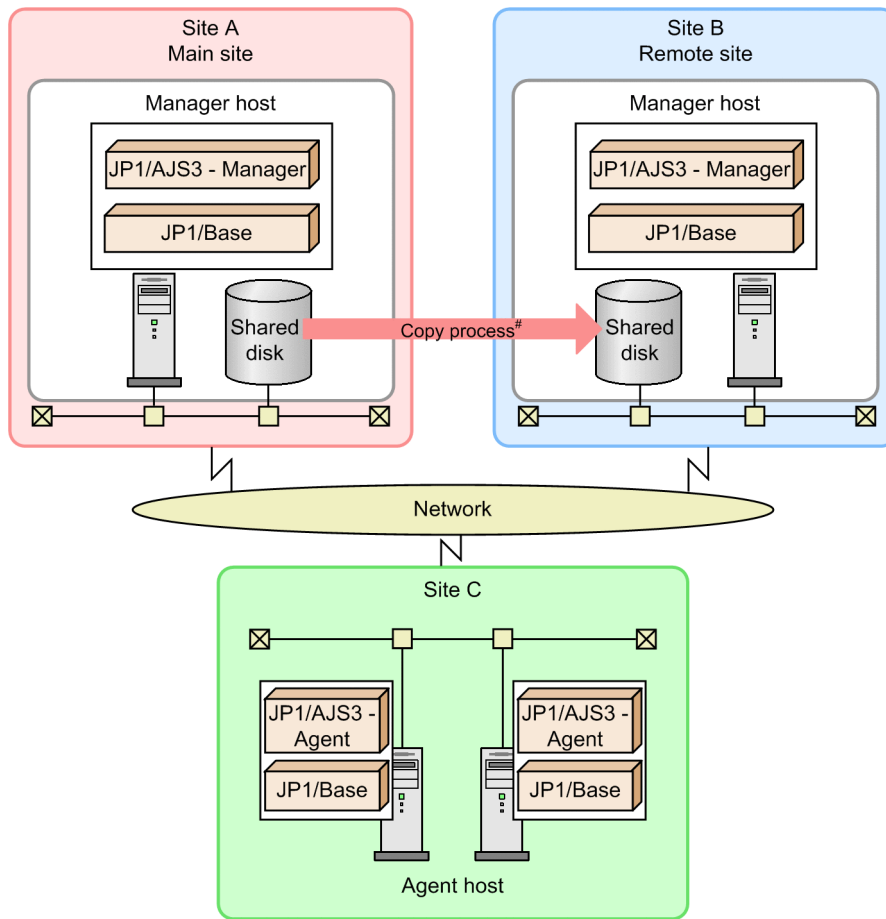


#: The copy process between the shared disks uses the disk copy and mirroring functionality of the hardware. It is not a function of JP1/AJS3.

■ When using the same agent hosts

The following figure shows an example of a system configuration in which the main site shares its agent hosts with the remote site.

Figure 11–10: System configuration in non-cluster system (with agent sharing)



#: The copy process between the shared disks uses the disk copy and mirroring functionality of the hardware. It is not a function of JP1/AJS3.

(c) If a cluster configuration and non-cluster configuration co-exist

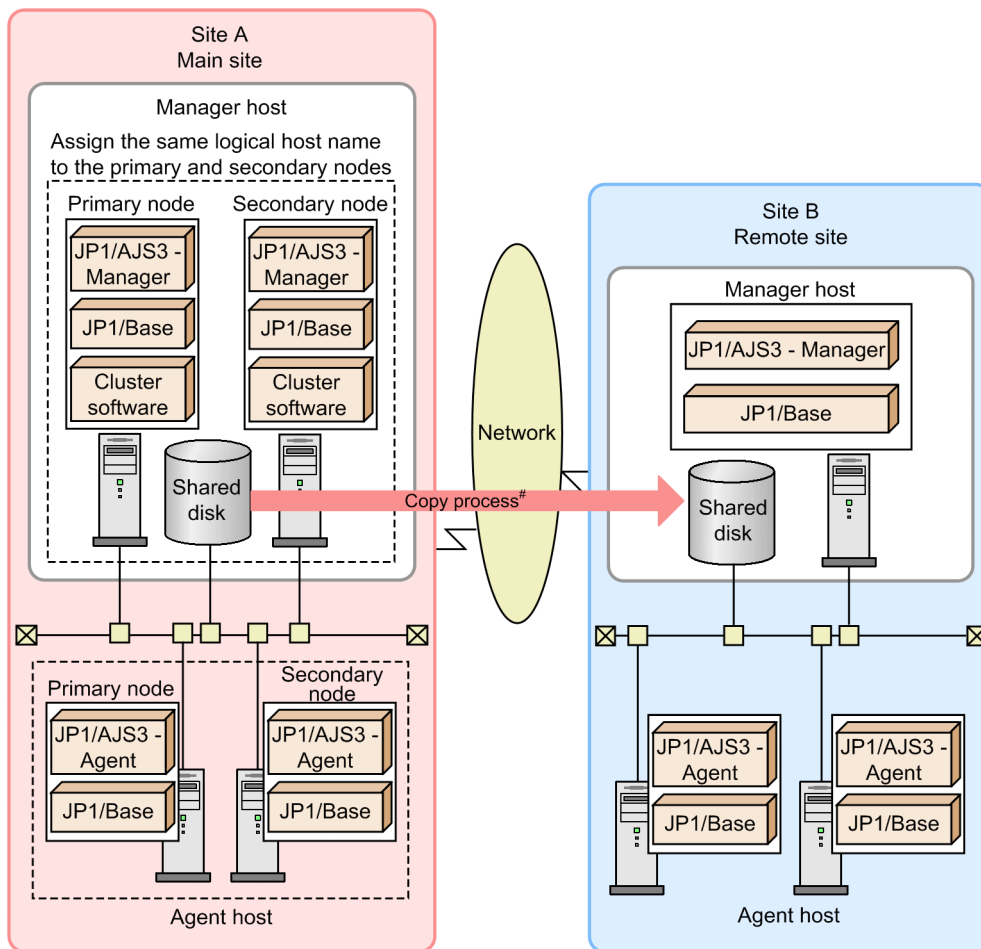
You can set up a system consisting of a cluster configuration and non-cluster configuration. For example, the main site has a cluster configuration and the remote site has a non-cluster configuration, or the main site has a non-cluster configuration and the remote site has a cluster configuration.

The following example is for when the main site has a cluster configuration and remote site has a non-cluster configuration:

■ When using different agent hosts

The following figure shows an example of a system configuration in which the main site and the remote site use a different set of agent hosts.

Figure 11–11: System configuration when the main site has a cluster configuration and remote site has a non-cluster configuration (without agent sharing)

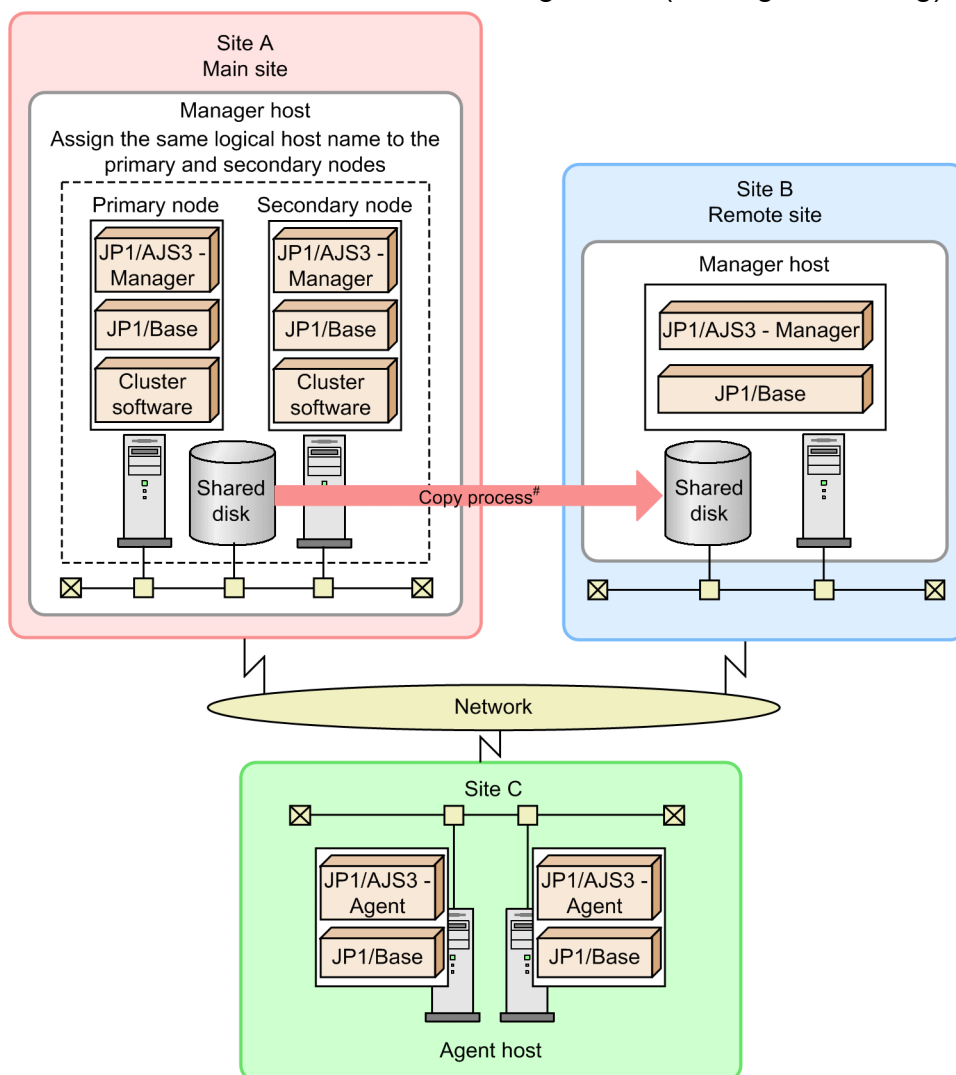


#: The copy process between the shared disks uses the disk copy and mirroring functionality of the hardware. It is not a function of JP1/AJS3.

■ When using the same agent hosts

The following figure shows an example of a system configuration in which the main site shares its agent hosts with the remote site.

Figure 11–12: System configuration when the main site has a cluster configuration and remote site has a non-cluster configuration (with agent sharing)



#: The copy process between the shared disks uses the disk copy and mirroring functionality of the hardware. It is not a function of JP1/AJS3.

11.1.4 Transferring necessary data that is not in the JP1/AJS3 shared directories

Data that is on the shared disk but not in the JP1/AJS3 shared directories must be transferred to the remote site while the system is operating normally. Because this data is not included in the copy process from the main site to the remote site, it must be transferred in a separate operation.

If the logical host names are different at the main site and remote site, make sure that the correct logical host name is specified when transferring data to the remote site.

(1) Data necessary for work tasks that is not located in the JP1/AJS3 shared directories

The following table lists the data that is not found in the JP1/AJS3 shared directories but is necessary for work task operation.

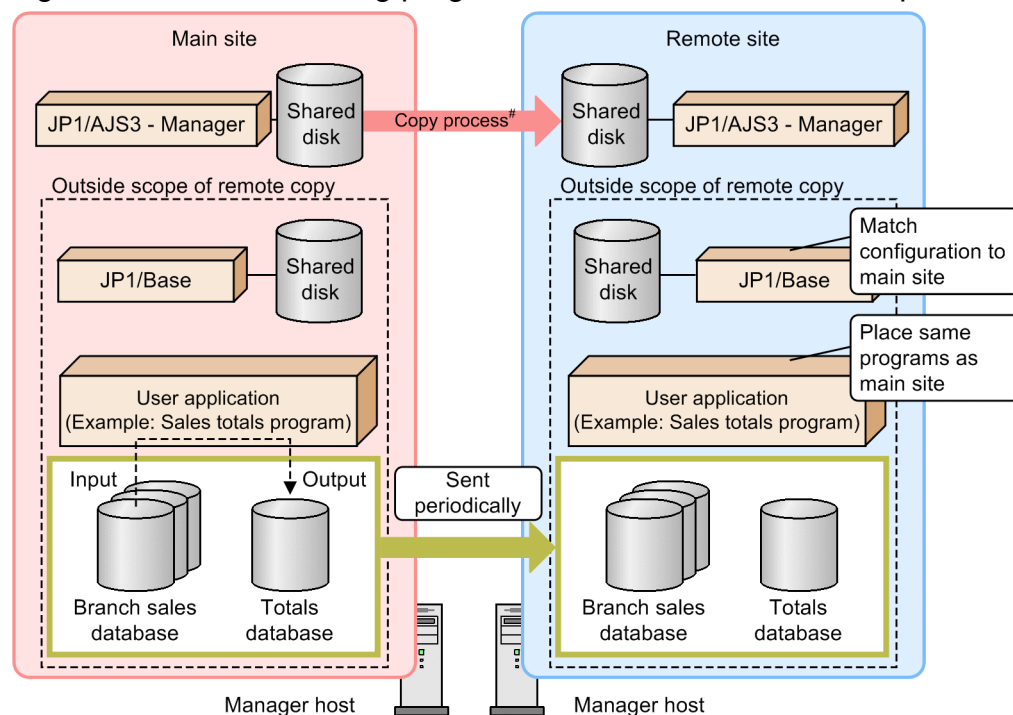
Table 11–1: Data necessary for work tasks that is not located in JP1/AJS3 shared directories

No.	Necessary data	Method of placement on remote site
1	User applications executed as jobs	Place the data on the remote site during normal operation.
2	Data and files required by user applications	Place the data on the remote site during normal operation.
3	Execution environment for user applications	Configure the environment on the remote site to allow user applications to be executed. Necessary settings might include OS user names and JP1/Base user mapping settings.

(2) Transferring data necessary for work tasks that is not located in the JP1/AJS3 shared directories

The following figure shows an example of how to transfer program data and files that are not part of JP1/AJS3.

Figure 11–13: Transferring program data and files that are not part of JP1/AJS3



#: The copy process between the shared disks uses the disk copy and mirroring functionality of the hardware. It is not a function of JP1/AJS3.

Supplementary note

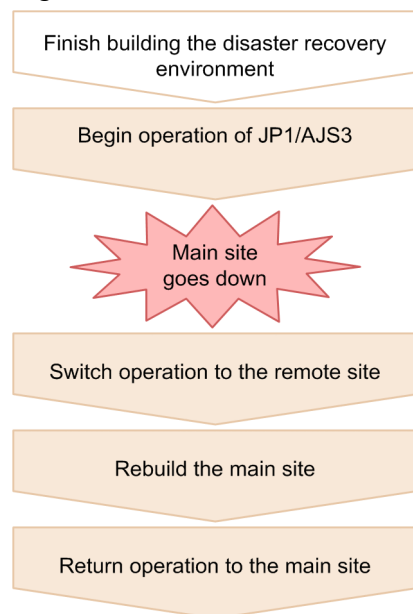
The logical hosts of JP1/Base and JP1/AJS3 can use the same shared disk. In this configuration, the copy and mirroring functionality is applied to the shared disk. For details, see [11.2.1\(1\)\(a\) Tasks to be performed before switching operation](#).

Tolerance for site failures should be incorporated into the design of work tasks that access servers beyond the local host. For example, when designing a user application that communicates with the manager host, the application should include the appropriate error-handling capabilities or the ability to connect to the new manager host after operation switches to the remote site.

11.2 Switching operation

The following figure shows the flow of disaster recovery operation, from the point when JP1/AJS3 begins operating in disaster recovery mode until operation switches to the remote site and back again.

Figure 11–14: Flow of switching operation



After the disaster recovery environment has been constructed, the JP1/AJS3 system begins operating as normal. If a major event causes the main site to shut down, system operation switches to the remote site and work task activity resumes. If the disaster-affected site is able to be restored, the main site can be rebuilt and operation switched back.

The operations that take place during disaster recovery operation are described below.

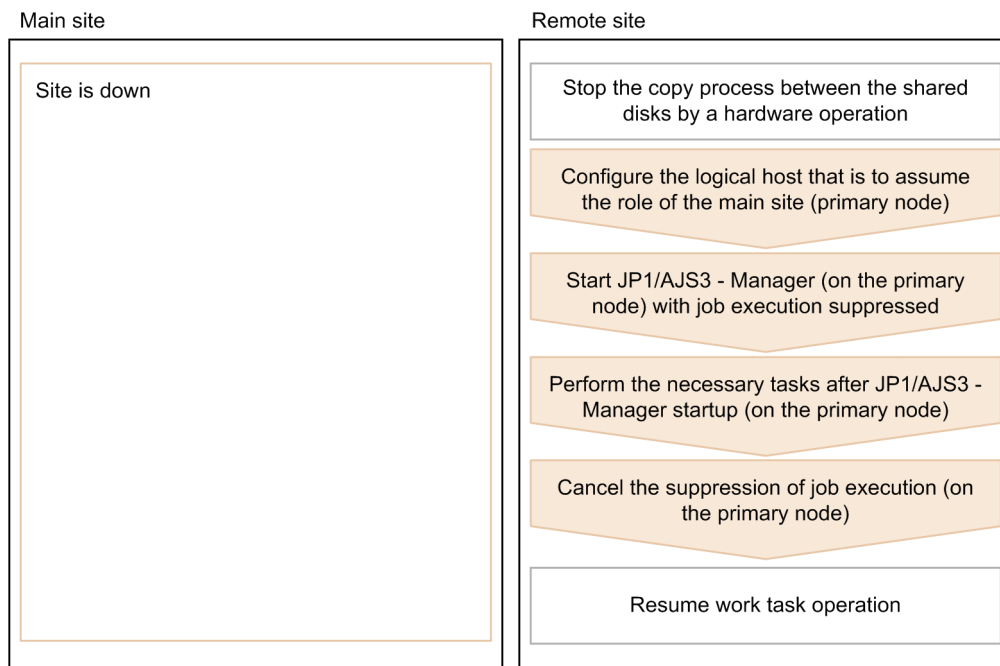
11.2.1 Switching operation to the remote site

If a large-scale disaster or other unexpected event renders the main site inoperative, system operation switches to the remote site and work task activity resumes.

This subsection describes the procedure for switching operation from the main site to the remote site.

The following figure shows the flow of switching operation from the main site to the remote site:

Figure 11–15: Flow of switching operation to remote site



In the interval after operation is switched but before copying between shared disks resumes, remember to take backups of the JP1/AJS3 data to prepare for any contingency. Until the main site is rebuilt, back up the JP1/AJS3 system at the remote site and restore it from the backup information if the system fails. For details about backup and recovery, see [2. Backup and Recovery](#).

(1) Tasks for switching operation

The following explains the tasks to be performed before switching operation and the procedure for switching operation.

Cautionary notes

- The following procedure is applicable whether or not the logical host names at the main site and remote site are the same.
- If the logical host names at the main site and remote site are the same, specify the logical host name of the main site for *logical-host-at-remote-site* as a command argument in the procedure.

(a) Tasks to be performed before switching operation

If the logical host of JP1/Base is used on the same shared disk as the logical host of JP1/AJS3, you need to perform operations for JP1/Base before performing the JP1/AJS3 operation-switch procedure. The procedures for JP1/Base vary depending on whether the main site and remote site use the same logical host names and IP addresses.

The operations for each case are described below. The logical hosts of JP1/Base and JP1/AJS3 can be used on the same shared disk only when JP1/Base is used as a prerequisite product for JP1/AJS3 only.

■ If the main site and remote site use the same logical host names and IP addresses

If the event database is inherited, operations for JP1/Base are not required. However, the event database might be damaged due to a disaster. Recovery operations might be required depending on the situation. The actions to be taken are described for each message that is output to the integrated trace log. Follow the procedure and perform the recovery operations. If the event database is not inherited, initialize the event database, according to the procedure described in *If KAJP1059-E is displayed*.

If KAJP1059-E is displayed:

The event service cannot start because the event database is damaged. Execute the following command to initialize the event DB. The initialization deletes the data of the event database.

```
jevdbinit {-b | -n}
```

Executing the `jevdbinit` command deletes the event database and then creates it again. The serial numbers in the event database before deletion are inherited. If you want to backup the damaged event database before initialization, specify the `-b` option. If you do not want to backup the database, specify the `-n` option. You can check the contents of the backup database by using the `jevexport` command to output the contents to a csv file. For details about the `jevdbinit` command and the database backup, see the descriptions of the `jevdbinit` command in the *JP1/Base User's Guide*.

When the `jevdbinit` command is executed, if the serial numbers in the event dataset cannot be inherited, the initialization fails. If the KAJP1789-E message is displayed, specify 0 for the start number to be specified by the `-s` option, and then create the event database gain.

```
jevdbinit -s 0 {-b | -n}
```

If KAJP1057-W or KAJP1058-W is displayed:

The event database might contain invalid records and the search performance might degrade. When restart occurs, initialize the event database by following the procedure described in *If KAJP1059-E is displayed*.

If KAJP1075-W is displayed:

The repetition prevention table is in an invalid state. Stop the event service, and then execute the `jevdbmkrep` command to reconfigure the repetition prevention table. For details about the `jevdbmkrep` command, see the descriptions of the `jevdbmkrep` command in the *JP1/Base User's Guide*.

■ If the main site and remote site use the same logical host names and different IP addresses

Perform the following operations:

- Change the settings of JP1/Base according to the IP address change of the logical host.
- Initialize the JP1/Base event database.

For details about the operations to change the settings of JP1/Base, see the operations when changing IP addresses in the *JP1/Base User's Guide*. For details about how to initialize the event database of JP1/Base, see the procedure described in *If KAJP1059-E is displayed* in *If the main site and remote site use the same logical host names and IP addresses* above.

■ If the main site and remote site use different logical host names and IP addresses

Perform the following operations:

- Change the settings of JP1/Base according to the change in the host names and the IP addresses of the logical host.
- Initialize the JP1/Base event database.

For details about the operations to change the settings of JP1/Base, see the operations when changing host names and IP addresses in the *JP1/Base User's Guide*. For details about how to initialize the event database of JP1/Base, see the procedure described in *If KAJP1059-E is displayed* in *If the main site and remote site use the same logical host names and IP addresses*.

(b) Procedure for switching operation

When switching operation, stop the copy processing between shared disks by performing a hardware operation, and then change the status of the remote site so that data can be written to the remote volume. To switch operation:

1. On the primary node of the remote site, configure a logical host to assume the role of the main site host.

As a user with administrator permissions (in Windows) or a superuser (in UNIX), log in to the host at the remote site and execute the following command:

```
jajs_rpsite -m CHANGE -h logical-host-at-remote-site
```

2. If the logical host names at the main and remote sites are different, remove the logical host name of the main site from the event action control agent.

Perform this step only when the logical host names at the main and remote sites are different.

If an event job or a custom event job was running that targeted the logical host of the main site, the event action control agent will retain the logical host name of the main site.

If an event job or a custom event job was running that targeted an agent in an environment in which the agent is shared by the main site and the remote site, the event action control agent on the agent host will retain the logical host name of the main site.

Therefore, if the logical host names at the main and remote sites are different, you must remove the logical host name of the main site from the event action control agent on the host running the event job or the custom event job.

To remove the name, perform the following operations on the shared agent or on the logical host at the remote site:

- (1) Display a list of manager host names recorded by the event action control agent.

Execute the following command to check whether the event action control agent has recorded the logical host name of the main site:

Execute the command on the logical host at the remote site:

```
jpoagoec -p -h logical-host-at-remote-site
```

Execute the command on the shared agent (physical host):

```
jpoagoec -p
```

Execute the command on the shared agent (logical host):

```
jpoagoec -p -h logical-host
```

- (2) If the logical host name of the main site appears in the list displayed in step (1), execute the following command:

Execute the command on the logical host at the remote site:

```
jpoagoec -d logical-host-at-main-site -h logical-host-at-remote-site
```

Execute the command on the shared agent (physical host):

```
jpoagoec -d logical-host-at-main-site
```

Execute the command on the shared agent (logical host):

```
jpoagoec -d logical-host-at-main-site -h logical-host
```

For details about the `jpoagoec` command, see `jpoagoec` in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

3. Check the status of ISAM files in the database of the execution environment for QUEUE jobs and submit jobs. If necessary, re-create the ISAM files.

For operation in the standard configuration, you must confirm that the status of the ISAM files copied to the remote site is valid. For details about how to check the status of ISAM files, see *2.11.1 Procedure for checking the status of ISAM files* in the manual *JP1/Automatic Job Management System 3 Troubleshooting*.

If the status of the ISAM files is invalid, a problem such as a job startup failure might disable further operation on the remote site. If such a problem occurs, re-create the ISAM files according to *2.11.2 Procedure for re-creating the execution environment database for QUEUE jobs and submit jobs* in the manual *JP1/Automatic Job Management System 3 Troubleshooting*. However, use the following procedure to restart the JP1/AJS3 service.

4. Start JP1/AJS3 - Manager on the primary node at the remote site.

(i) When performing a disaster recovery start of JP1/AJS3 - Manager

A *disaster recovery start* refers to starting JP1/AJS3 - Manager with job execution suspended.

For some jobs, the job execution status at the main site is not carried over when you start JP1/AJS3 - Manager at the remote site. By starting JP1/AJS3 - Manager with job execution temporarily suspended, you can change the status of jobs and jobnets or rerun them as needed.

To perform a disaster recovery start of JP1/AJS3 - Manager:

- In Windows:

Run JP1/AJS3 with `-disaster` specified as a startup parameter. For details about how to temporarily change the startup behavior of JP1/AJS3, see [6.2.1 Temporarily changing the start mode of JP1/AJS3](#).

- In UNIX:

Execute the following command:

```
jajs_spmd -h logical-host-at-remote-site -disaster
```

For details about the `jajs_spmd` command, see `jajs_spmd` in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

If you specify a hot start or warm start the first time you start the JP1/AJS3 services after switching sites, the startup mode automatically changes to a disaster recovery start. At this time, execute the `jajs_spmd_status` command to confirm that all processes are running normally.

If an error occurs during the startup of JP1/AJS3 - Manager, depending on the timing of the error, the JP1/AJS3 service might stop or the scheduler service might stop immediately after the JP1/AJS3 has started and a disaster recovery start might be canceled. In this case, correct the cause of the error, and then by either method shown below to explicitly restart the service by using a disaster recovery start:

To restart the JP1/AJS3 service:

If you are using Windows, start JP1/AJS3 with the `-disaster` option specified for the startup parameter. If you are using UNIX, execute the `jajs_spmd` command with the `-disaster` option specified.

To restart only the scheduler service:

Execute the `jajs_spmd -n jajs_schd` command with the `-disaster` option specified. Alternatively, execute the `ajssstart` command with the `-D` option specified.

(ii) When performing a cold start of JP1/AJS3 - Manager

The procedure for cold-starting JP1/AJS3 - Manager depends on the system configuration. For details about the configuration of a disaster recovery system, see [11.1.3 Configuration of a disaster recovery system compatible with JP1/AJS3](#).

- When using the same agent hosts (with agent sharing)

In Windows:

Run JP1/AJS3 with `-cold` specified as a startup parameter. For details about how to temporarily change the startup behavior of JP1/AJS3, see [6.2.1 Temporarily changing the start mode of JP1/AJS3](#).

In UNIX:

Execute the following command:

```
jajs_spmd -h logical-host-at-remote-site -cold
```

For details about the `jajs_spmd` command, see `jajs_spmd` in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

- When using different agent hosts (without agent sharing)

Perform the following operations:

(1) Configure JP1/AJS3 so that the scheduler service does not start automatically when JP1/AJS3 - Manager starts.

Specify `no` as the value of the `AUTOSTART` environment setting parameter for the scheduler service running on the logical host at the remote site.

If the logical host is configured to run multiple instances of the scheduler service, specify `no` for the `AUTOSTART` environment setting parameter of each scheduler service.

This step is not required if `no` is already specified for the scheduler service.

For details about the `AUTOSTART` environment setting parameter, see *20.4 Setting up the scheduler service environment* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(2) Start JP1/AJS3 - Manager.

In Windows:

Run JP1/AJS3 with `-cold` specified as a startup parameter. For details about how to temporarily change the startup behavior of JP1/AJS3, see *6.2.1 Temporarily changing the start mode of JP1/AJS3*.

In UNIX:

Execute the following command:

```
jajs_spmd -h logical-host-at-remote-site -cold
```

For details about the `jajs_spmd` command, see `jajs_spmd` in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

(3) Delete the information retained by the event action control manager.

Execute the following command:

```
jpomanevreset -h logical-host-at-remote-site -F scheduler-service-name -all -s
```

If the logical host is configured to run multiple instances of the scheduler service, execute the command for each scheduler service.

For details about the `jpomanevreset` command, see `jpomanevreset` in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

(4) Execute the following command to start the scheduler services.

```
jajs_spmd -h logical-host-at-remote-site -n jajs_schd -F scheduler-service-name -cold
```

If the logical host is configured to run multiple instances of the scheduler service, execute the command for each scheduler service.

For details about the `jajs_spmd` command, see `jajs_spmd` in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

(5) Configure the scheduler services to start automatically again.

Change the value of the `AUTOSTART` environment setting parameter back to `yes` (start automatically) for the scheduler services running on the logical host at the remote site.

This step is not required for scheduler services for which no change was made in step (1).

5. After starting JP1/AJS3 - Manager, perform the necessary tasks on the primary node at the remote site.

Prepare the JP1/AJS3 system for operation at the remote site by altering the definition of the execution agent to suit the remote site environment and checking job statuses.

For details about the tasks you need to perform after starting JP1/AJS3 - Manager, see *11.2.1(2) Tasks to perform after JP1/AJS3 - Manager startup*.

6. Cancel the suppression of job execution at the remote site.

Execute the following command to cancel the suppression of job execution.

```
ajsalter -s none -F scheduler-service-name
```

After canceling the suppression of job execution, resume work tasks at the remote site.

You do not need to perform this step if you elected to perform a cold start of JP1/AJS3 - Manager.

(2) Tasks to perform after JP1/AJS3 - Manager startup

This subsection describes the tasks that you need to perform after starting JP1/AJS3 - Manager at the remote site when switching operation.

The tasks you need to perform after starting JP1/AJS3 - Manager differ depending on whether the logical host names at the main and remote sites are the same.

Carry out the tasks listed in the following table to suit your particular system.

Table 11–2: Tasks to perform after JP1/AJS3 - Manager starts

No.	Task	Description	Logical host names are different	Logical host names are the same	Reference
1	Changing the connection-target logical host	Change the logical host to which JP1/AJS3 - View and other products connect to the logical host of the remote site.	Y	C#1	See (a) <i>Changing the connection-target logical host</i>
2	Changing the execution host names of execution agents	Changing the definitions of execution host names for execution agents to match the host configuration at the remote site.	Y	Y	See (b) <i>Defining execution agents</i>
3	Checking and modifying unit statuses	Check the job statuses that were in effect when the main site went down, and change or rerun jobs whose status was not carried over to the remote site.	Y	Y	See (c) <i>Checking job execution statuses</i>
4		If the system contains either of the following remote jobnets, check its status and restart it if necessary: - A remote jobnet defined at the main site - A remote jobnet that specifies the logical host at the main site as its execution manager	Y	Y	See (d) <i>Checking the status of remote jobnets</i>
5		If you are using jobnet connectors to control the execution order of root jobnets under different scheduler services, check the status of jobnet connectors, connection-target jobnets, and connection-target planning groups, and restart them if necessary.	Y	Y	See (e) <i>Switching sites when controlling the execution order of root jobnets in different scheduler services</i>
6	Deleting information related to the main site retained by the agent hosts	If the main site and remote site use the same agent hosts, execute the <code>jpomanevreset</code> command to delete information about the main site from the agent hosts.	Y	C#2	See (f) <i>Deleting information about the main site from agent hosts</i>

No.	Task	Description	Logical host names are different	Logical host names are the same	Reference
7	Attaching the logical host to the queueless agent service	If you use queueless jobs, execute the <code>ajsqlattach</code> command to attach (connect) the logical host of the remote site to the queueless agent service.	Y	Y	See (g) <i>Attaching the logical host to the queueless agent service</i>
8	Changing the names of the hosts which queueless jobs will be executed	If you use queueless jobs, change the names of the hosts on which queueless jobs will be executed to match the host configuration at the remote site.	Y	Y	See (h) <i>Changing the names of the hosts on which queueless jobs will be executed</i>

Legend:

Y: The task is required.

C: The task is required depending on the condition.

#1

The task is required if the IP address of the connection-target logical host is different after switching operation.

#2

The task is required if an event job or a custom event job was being executed when the main site went down.

Perform the task if either of the following conditions exists:

- When you check the job statuses in No. 3, the status of an event job or a custom event job is *Unknown end status*.
- When you execute the `jpoagtjobshow` command on the agent host, the status of an event job or a custom event job on the logical host at the remote site is *Now running*.

(a) Changing the connection-target logical host

When switching operation, change the connection-target logical host for JP1/AJS3 - View and other products to the logical host at the remote site. Whether the change is required depends on whether the logical host names at the main and remote sites are the same.

If the logical host names at the main and remote sites are different:

Switching operation also changes the logical host name. Therefore, change the connection target for JP1/AJS3 - View and other products from the logical host on the main site to the logical host on the remote site.

You need to change the connection-target host for the following connections:

- Connections from JP1/AJS3 - View
- Connections from JP1/AJS3 - Definition Assistant
- Execution of remote commands
- Connection destinations for logging or jobs that monitor JP1 events

If the logical host names at the main and remote sites are the same:

No operation is required if the IP address of the logical host to be used is the same after switching operation.

If the IP address for the logical host is different, change the connection-target host shared by the main and remote sites (such as a shared agent) to the logical host at the remote site.

To do this, change the communication settings on the shared host, including name resolution by DNS and the `hosts` file. Note that you might need to restart the system depending on the communication settings.

You need to change the connection-target host for the following connections:

- Connections from JP1/AJS3 - Manager (execution of remote commands)
- Connections from JP1/AJS3 - Agent
- Connections from JP1/AJS3 - View
- Connections from JP1/AJS3 - Definition Assistant

(b) Defining execution agents

Change the host name definitions for execution agents to match the agent host configuration at the remote site. To check the definition of an execution agent, use the `ajsagtprint` or `ajsagtshow` command.

To change the definition of an execution agent, execute the `ajsagtal` command. To add an execution agent, use the `ajsagtadd`.

For details about these commands, see the manual *JP1/Automatic Job Management System 3 Command Reference*.

(c) Checking job execution statuses

This step is required if you perform a disaster recovery start of JP1/AJS3 - Manager.

Use JP1/AJS3 - View or commands to check the job statuses that were in effect when the main site went down. If a job's status was not carried over to the remote site, change the status manually or rerun the job.

Pay particular attention to jobs that were running when the main site went down. The status of these jobs does not carry over to the remote site.

For details about the job statuses that apply when operation resumes at the remote site, see the description of the statuses of jobnets and jobs when a disaster recovery start is performed in [6.2.1\(3\)\(a\) Statuses when a JP1/AJS3 service on the manager host is restarted](#).

For details about how to check and change job execution statuses and how to rerun a job, see the *JP1/Automatic Job Management System 3 Operator's Guide*.

When monitoring of a start condition has stopped, generations in *Wait for start cond.* status that were started by the start condition are processed as follows depending on the status of the waiting generation:

- A generation of a jobnet is in *Wait for start cond.* status despite the start conditions being satisfied because concurrent execution is disabled and another instance of the jobnet is already running
The generation retains its *Wait for start cond.* status after operation is switched, and the running jobnet enters *Interrupted* status. At this point, the generation of the jobnet in *Wait for start cond.* status starts executing.
- Start conditions are not satisfied or only partially satisfied
The generation of the jobnet disappears after operation is switched.

(d) Checking the status of remote jobnets

If a remote jobnet is defined on the main site or specifies the logical host of the main site as its transfer destination host, use the following procedure to check the status of the jobnet and resume its operation if needed.

■ If the remote jobnet is defined on the main site

1. From JP1/AJS3 - View, log in to JP1/AJS3 - Manager on the transfer destination host.
Log in to the host defined as the execution manager for the remote jobnet.

2. Search for the unit name that identifies a remote jobnet, and examine the status of the jobnets that correspond to remote jobnets in Now running status.
If multiple instances of a remote jobnet with the same name are registered for execution, the search produces multiple results. In this case, you can identify the corresponding jobnet from its execution start time and its definition.
3. Check the execution status of the jobnet that corresponds to the remote jobnet.
Based on the result, take the appropriate action such as rerunning the remote jobnet.
To run the jobnet again when the logical host names at the main and remote sites are different, specify the remote site manager host name for **Target manager in** the remote jobnet definition on the forwarding source host.

■ If the remote jobnet specifies the logical host of the main site as its transfer destination host

If you start JP1/AJS3 - Manager in disaster recovery mode

1. From JP1/AJS3 - View, log in to JP1/AJS3 - Manager on the remote site.
2. Search for the unit name that identifies a remote jobnet, and examine the status of the jobnets that correspond to remote jobnets in Now running status.
If multiple instances of a remote jobnet with the same name are registered for execution, the search produces multiple results. In this case, you can identify the corresponding jobnet from its execution start time and its definition.
3. Check the execution status of the jobnet that corresponds to the remote jobnet.
Based on the result, take the appropriate action such as rerunning the remote jobnet.
To run the jobnet again when the logical host names at the main and remote sites are different, specify the remote site manager host name for **Target manager in** the remote jobnet definition on the forwarding source host.

If you cold-start JP1/AJS3 - Manager

1. From JP1/AJS3 - View, log in to the JP1/AJS3 - Manager where remote jobnets are defined.
2. Forcibly terminate any remote jobnets that specify the logical host of the main site as their execution manager.
This must be done manually because a remote jobnet has no way of detecting when the corresponding jobnet at the forwarding target host has finished executing.
3. Rerun the remote jobnet as needed.
To run the jobnet again when the logical host names at the main and remote sites are different, specify the remote site manager host name for **Target manager in** the remote jobnet definition on the forwarding source host.

(e) Switching sites when controlling the execution order of root jobnets in different scheduler services

If you use jobnet connectors to control the order of root jobnet execution in different scheduler services, check the statuses of the jobnet connectors and the jobnets or planning groups serving as their connection destinations, and resume their operation as necessary.

The procedure differs depending on whether the unit is scheduled to execute that day or on a later day. The procedure for each scenario is described below.

■ For units scheduled to execute that day

Check the status of the following units that specify the logical host at the main site as their connection host.

- Jobnet connectors
- Connection-destination jobnets

- Connection-destination planning groups

Check the status of jobnets with jobnet connectors and their connection destination jobnets, and manually control the execution sequence as needed.

■ For units scheduled to execute on a later day

If the logical host names at the main and remote sites are different, change the connection host of the following units that specify the logical host at the main site as their connection host:

- Jobnet connectors
- Connection-destination jobnets
- Connection-destination planning groups

To change the connection host of a unit:

1. Identify the units whose connection host needs changing.

Check the following units:

- All root jobnets defined under a connection-destination root jobnet or planning group
- Jobnet connectors

You can view the connection-destination jobnets that are registered for execution and jobnet connectors by executing the following command for each scheduler service on the manager host at the remote site:

```
ajsshow -v start-date -w end-date -i "%JJ %CH:%CF:%CN" -ER /
```

The meaning of the format indicators is as follows:

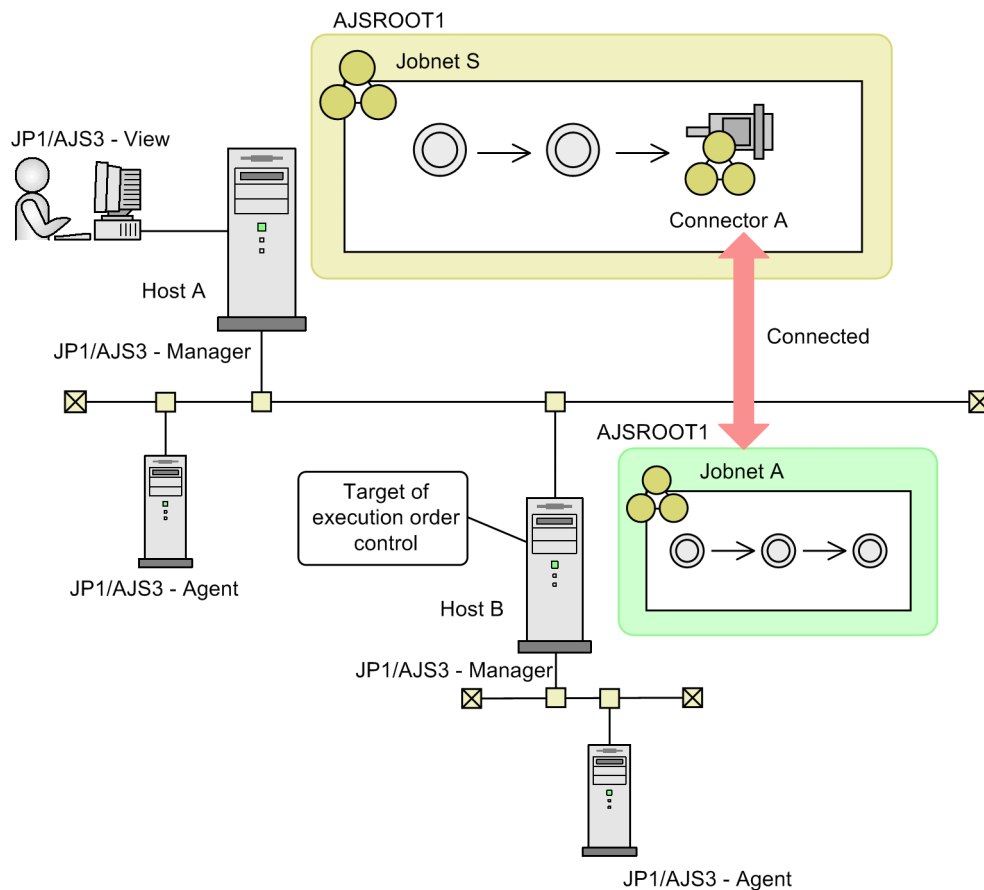
- %JJ: Full path name of unit
- %CH: Name of connection-destination host
- %CF: Name of scheduler service at connection destination
- %CN: Full path name of connection-destination unit

Units whose connection host needs changing are those for which another scheduler service appears as the full path name of connection-destination unit in the command output. Units that do not appear in the command output must be identified manually.

2. Change the unit definitions.

How you do this depends on the version of JP1/AJS3 - Manager on which execution order is being controlled, and the type of unit that serves as the connection destination. In this context, the JP1/AJS3 - Manager on which execution order is being controlled is the JP1/AJS3 - Manager where the connection-destination unit is registered. This is Host B in the example in the following figure:

Figure 11–16: JP1/AJS3 - Manager subject to execution order control



When the JP1/AJS3 - Manager subject to execution order control is 09-00 or later and the connection destination is a jobnet connector or root jobnet

You can use the jobnet release function to replace the definition of any unit scheduled for a future date without canceling its registration.

First, copy the root jobnet that includes the connection-destination jobnet and the jobnet connector, and then modify the copy by specifying the host name of the remote site as the connection host of the jobnet and jobnet connector.

You can then change the jobnet definition by performing a release registration to replace the original jobnet definition with the one you modified.

For details about the jobnet release function, see [7.3 Switching a jobnet definition while the jobnet is registered for execution](#).

When the JP1/AJS2 - Manager subject to execution order control is 08-50 or earlier, and the connection destination is a planning group or a unit whose registration has been cancelled by a cold start or other process

Cancel registration of the unit you want to modify. If the unit is a planning group, cancel all the jobnets in that planning group. Then, change the connection host of the unit to the host name of the remote site, and then register the unit again.

(f) Deleting information about the main site from agent hosts

If the main site and remote site use the same agent hosts, agent hosts that monitor jobs based on requests from the main site retain information about the main site even after operation switches to the remote site.

Execute the following command on the manager host at the remote site to clear the information about the main site from an agent host.

```
jpomanevreset -h logical-host-at-remote-site -F scheduler-service-name -dh logical-host-at-main-site -a agent-host-name
```

Make sure that the agent host specified in the `-a` option is running. If you specify an agent host that is not running, does not exist, or cannot communicate with the manager host, the command might take a long time to execute.

For details about the `jpomanevreset` command, see `jpomanevreset` in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

(g) Attaching the logical host to the queueless agent service

When using queueless jobs, execute the following command to attach (connect) the logical host of the remote site to the queueless agent service.

```
ajsqlattach -h logical-host-at-remote-site
```

(h) Changing the names of the hosts on which queueless jobs will be executed

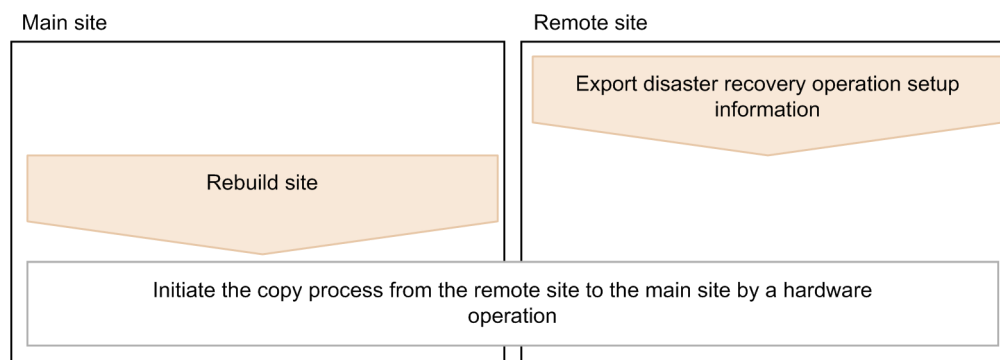
Change the names of the execution hosts specified in **Exec-agent** to the names of the host on which the queueless jobs will be executed at the remote site.

11.2.2 Rebuilding the main site

This subsection describes how to rebuild the main site after operation has switched to the remote site, and start the copying process that prepares the main site to inherit the interim job progress from the remote site.

The following figure shows the flow of rebuilding the main site.

Figure 11–17: Flow of rebuilding main site



To rebuild and resume activity at the main site:

Cautionary notes

- The following procedure is applicable whether or not the logical host names at the main site and remote site are the same.
- If the logical host names at the main site and remote site are the same, specify the logical host name of the main site for *logical-host-at-remote-site* as a command argument in the procedure.

1. Export the disaster recovery operation setup information at the remote site.

Execute the following command:

```
jajs_rpenvexport -h logical-host-at-remote-site -d output-directory
```

2. Rebuild the main site.

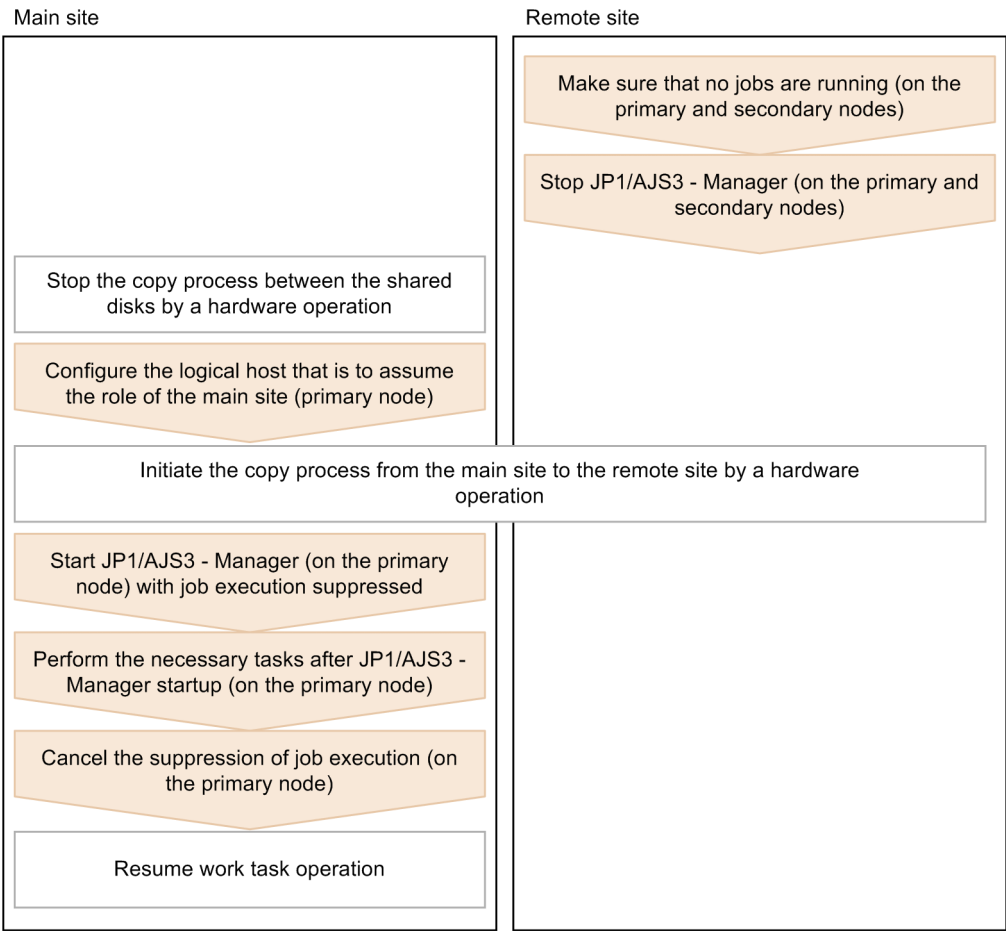
Rebuild the main site using the same procedure you used to build the remote site when setting up the JP1/AJS3 system, with reference to *9.2.3 Setting up the remote site in the JP1/Automatic Job Management System 3 Configuration Guide* (for Windows) or *18.2.3 Setting up the remote site in the JP1/Automatic Job Management System 3 Configuration Guide* (for UNIX).

After rebuilding the main site, use a hardware operation to initiate the copy process from the remote site to the main site.

11.2.3 Returning operation to the main site

This subsection describes how to resume operation at the rebuilt main site. The flow of this procedure is shown in the following figure.

Figure 11–18: Flow of resuming operation at main site



(1) Tasks for resuming operation

The following explains the tasks to be performed before resuming operation, and the procedure for resuming operation.

Cautionary notes

- The following procedure is applicable whether or not the logical host names at the main site and remote site are the same.
- If the logical host names at the main site and remote site are the same, specify the logical host name of the main site for *logical-host-at-remote-site* as a command argument in the procedure.

(a) Tasks to be performed before resuming operation

If the logical host of JP1/Base is used on the same shared disk as the logical host of JP1/AJS3, you need to perform operations for JP1/Base before performing the JP1/AJS3 operation-switch procedure. The procedures for JP1/Base vary depending on whether the main site and remote site use the same logical host names and IP addresses.

The operations for each case are described below. The logical hosts of JP1/Base and JP1/AJS3 can be used on the same shared disk only when JP1/Base is used as a prerequisite product for JP1/AJS3 only.

■ If the main site and remote site use the same logical host names and IP addresses

If the event database is inherited, operations for JP1/Base are not required. However, the event database might be damaged due to a disaster. Recovery operations might be required depending on the situation. The actions to be taken are described for each message that is output to the integrated trace log. Follow the procedure and perform the recovery operations. If the event database is not inherited, initialize the event database by following the procedure described in *If KAJP1059-E is displayed*.

If KAJP1059-E is displayed:

The event service cannot start because the event database is damaged. Execute the following command to initialize the event DB. The initialization deletes the data of the event database.

```
jevdbinit {-b|-n}
```

Executing the `jevdbinit` command deletes the event database and then creates it again. The serial numbers in the event database before deletion are inherited. If you want to backup the damaged event database before initialization, specify the `-b` option. If you do not want to backup the database, specify the `-n` option. You can check the contents of the backup database by using the `jevexport` command to output the contents to a csv file. For details about the `jevdbinit` command and the database backup, see the descriptions of the `jevdbinit` command in the *JP1/Base User's Guide*.

When the `jevdbinit` command is executed, if the serial numbers in the event dataset cannot be inherited, the initialization fails. If the KAJP1789-E message is displayed, specify 0 for the start number to be specified by the `-s` option, and then create the event database gain.

```
jevdbinit -s 0 {-b | -n}
```

If KAJP1057-W or KAJP1058-W is displayed:

The event database might contain invalid records and the search performance might degrade. When restart occurs, initialize the event database by following the procedure described in *If KAJP1059-E is displayed*.

If KAJP1075-W is displayed:

The repetition prevention table is in an invalid state. Stop the event service, and then execute the `jevdbmkrep` command to reconfigure the repetition prevention table. For details about the `jevdbmkrep` command, see the descriptions of the `jevdbmkrep` command in the *JP1/Base User's Guide*.

■ If the main site and remote site use the same logical host names and different IP addresses

Perform the following operations:

- Change the settings of JP1/Base according to the IP address change of the logical host.

- Initialize the JP1/Base event database.

For details about the operations to change the settings of JP1/Base, see the operations when changing IP addresses in the *JP1/Base User's Guide*. For details about how to initialize the event database of JP1/Base, see the procedure described in *If KAJP1059-E is displayed in If the main site and remote site use the same logical host names and IP addresses*.

■ If the main site and remote site use different logical host names and IP addresses

Perform the following operations:

- Change the settings of JP1/Base according to the change in the host names and the IP addresses of the logical host.
- Initialize the JP1/Base event database.

For details about the operations to change the settings of JP1/Base, see the operations when changing host names and IP addresses in the *JP1/Base User's Guide*. For details about how to initialize the event database of JP1/Base, see the procedure described in *If KAJP1059-E is displayed in If the main site and remote site use the same logical host names and IP addresses*.

(b) Procedure for resuming operation

The procedure for resuming operation at the main site is shown below. In a non-cluster environment, perform only the tasks for the primary node.

1. Make sure that no jobs are running on the primary or secondary nodes of the remote site.

Make sure that no jobs are running.

Be sure to also terminate jobnet connectors that are controlling the order of jobnet execution between different scheduler services, and the jobnets at the forwarding destination hosts of those jobnet connectors.

2. Stop JP1/AJS3 - Manager on the primary and secondary nodes of the remote site.

If the logical host is attached (connected) to the queueless agent service of the remote site, execute the following command to detach (disconnect) it:

```
ajsqldetach -h logical-host-at-remote-site -k
```

For details about the `ajsqldetach` command, see `ajsqldetach` in *4. Commands Used for Special Operation* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

After JP1/AJS3 - Manager is stopped, use hardware operations to stop the copy process between the shared disks and write-enable the main volume at the main site.

3. On the primary node at the main site, set up the logical host that is to operate as the main site.

Execute the following command:

```
jajs_rpsite -m CHANGE -h logical-host-at-main-site
```

After changing the definition of the main site, initiate the copy process from the main site to the remote site by way of a hardware operation.

4. If the logical host names at the main and remote sites are different, remove the logical host name of the remote site from the event action control agent.

Perform this step only when the logical host names at the main and remotes site are different.

If you executed event jobs or custom event jobs on the logical host of the remote site, the event action control agent retains the logical host name of the remote site.

Therefore, if the logical host names at the main and remote sites are different, clear the logical host name of the remote site from the event action control agent on the logical host at the main site. Clear the logical host name before you return operation to the main site.

To do so, perform the following steps on the shared agent or logical host of the main site.

(1) Display a list of manager host names recorded by the event action control agent.

Execute the following command to check whether the event action control agent has retained the logical host name of the remote site.

Execute the command on the logical host at the main site:

```
jpoagoec -p -h logical-host-at-main-site
```

Execute the command on the shared agent (physical host):

```
jpoagoec -p
```

Execute the command on the shared agent (logical host):

```
jpoagoec -p -h logical-host
```

(2) If the logical host name of the remote site appears in the command output in step (1), execute the following command:

Execute the command on the logical host at the main site:

```
jpoagoec -d logical-host-at-remote-site -h logical-host-at-main-site
```

Execute the command on the shared agent (physical host):

```
jpoagoec -d logical-host-at-remote-site
```

Execute the command on the shared agent (logical host):

```
jpoagoec -d logical-host-at-remote-site -h logical-host
```

For details about the `jpoagoec` command, see `jpoagoec` in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

5. Check the status of ISAM files in the database of the execution environment for QUEUE jobs and submit jobs. If necessary, re-create the ISAM files.

For operation in the standard configuration, you must confirm that the status of the ISAM files copied to the remote site is valid. For details about how to check the status of ISAM files, see 2.11.1 *Procedure for checking the status of ISAM files* in the manual *JP1/Automatic Job Management System 3 Troubleshooting*.

If the status of the ISAM files is invalid, a problem such as a job startup failure might disable further operation on the remote site. If such a problem occurs, re-create the ISAM files according to 2.11.2 *Procedure for re-creating the execution environment database for QUEUE jobs and submit jobs* in the manual *JP1/Automatic Job Management System 3 Troubleshooting*. However, use the following procedure to restart the JP1/AJS3 service.

6. On the primary node at the main site, perform a disaster recovery restart of JP1/AJS3 - Manager.

In disaster-recovery mode, JP1/AJS3 - Manager starts with job execution suppressed.

To perform a disaster recovery start of JP1/AJS3 - Manager:

In Windows:

Run JP1/AJS3 with `-disaster` specified as a startup parameter. For details about how to temporarily change the startup behavior of JP1/AJS3, see 6.2.1 *Temporarily changing the start mode of JP1/AJS3*.

In UNIX:

Execute the following command:

```
jaajs_spmc -h logical-host-at-main-site -disaster
```

For details about the `jaajs_spmc` command, see `jaajs_spmc` in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

If you specify a hot start or warm start the first time you start the JP1/AJS3 services after switching sites, the startup mode automatically changes to a disaster recovery start.

7. After starting JP1/AJS3 - Manager, perform the necessary tasks on the primary node at the main site.

Prepare the JP1/AJS3 system for operation at the main site, by altering the definition of the execution agent to suit the main site environment and checking job statuses.

The tasks you need to perform after starting JP1/AJS3 - Manager in disaster recovery mode at the main site are the same as those performed when switching operation to the remote site. With reference to [11.2.1\(2\) Tasks to perform after JP1/AJS3 - Manager startup](#), configure the main site according to how you use the system.

8. Cancel the suppression of job execution on the primary node at the main site.

Execute the following command to cancel the suppression of job execution.

```
ajsalter -s none -F scheduler-service-name
```

After canceling the suppression of job execution, resume work tasks at the main site.

11.3 Changing the configuration during disaster recovery operation

This section describes steps to take when you change the configuration of the main site when running JP1/AJS3 in disaster recovery mode.

11.3.1 Procedures for changing disaster recovery operation settings

The procedure for changing the disaster recovery environment depends on the setting you want to change. There are settings that:

- You can carry over to the remote site by using the functions for importing and exporting the disaster recovery operation setup information
- You have to change manually at the main and remote sites
- You need to change at the main site only
- You can change different-name and same-name configurations for logical hosts at the main and remote sites

The procedure for changing disaster recovery settings is described in [11.3.2 Changing the settings of a disaster recovery environment](#).

Each approach is described below.

(1) Settings carried over to the remote site by the functions for importing and exporting the disaster recovery operation setup information

After making any of the changes listed in [Table 11-3](#) to the main site, you can carry those changes over to the remote site by using the functions for importing and exporting the disaster recovery operation setup information.

Note that some settings can only be changed manually at the remote site.

The following table lists the settings you can carry over to the remote site using the functions for importing and exporting the disaster recovery operation setup information:

Table 11–3: Settings supported by the functions for importing and exporting the disaster recovery operation setup information

No.	Category	Target	Description
1	General	Environment settings parameters	Changes to the environment setting parameters of a logical host in a disaster recovery environment
2	Scheduler	Addition or deletion of scheduler service [#]	Settings related to scheduler services
3	Embedded DB	Embedded database settings	• Expanding the area (table area and index area) of the embedded database • Expanding the system files of the embedded database (system log file or syncpoint dump file)
4	Submit jobs	Assumed JP1 user function	Registering assumed JP1 users for the assumed JP1 user function
5	Related and linked products	JP1/OJE for VOS3 linkage	Registering VOS3 user information for use in JP1/OJE for VOS3 linkage

#

This setting must be performed manually at the remote site. For details, see *(2) Settings you have to change manually at the main and remote sites*.

(2) Settings you have to change manually at the main and remote sites

After you change the configuration at the main site and use the functions for importing and exporting the disaster recovery operation setup information to carry some of the changes you made over to the remote site, apply the remaining changes manually at the remote site.

For details about the features you need to manually configure at both sites, see *9.2.3(3) Specifying specific settings on the remote site* in the *JP1/Automatic Job Management System 3 Configuration Guide* (for Windows) or *18.2.3(3) Specifying specific settings on the remote site* in the *JP1/Automatic Job Management System 3 Configuration Guide* (for UNIX).

(3) Settings you need to change at the main site only

Settings to which neither *(1) Settings carried over to the remote site by the functions for importing and exporting the disaster recovery operation setup information* nor *(2) Settings you have to change manually at the main and remote sites* applies do not need to be changed at the remote site. These settings are carried over to the remote site by the disk copy and mirroring functionality of the hardware.

(4) Changing different-name and same-name configurations for logical hosts at the main and remote sites

To change the different-name configuration to the same-name configuration for logical hosts at the main and remote sites, and vice versa:

1. Exit disaster recovery mode.

For details about how to exit disaster recovery mode, see *11.4 Exiting disaster recovery mode*.

2. Rebuild the logical host for JP1/AJS3.

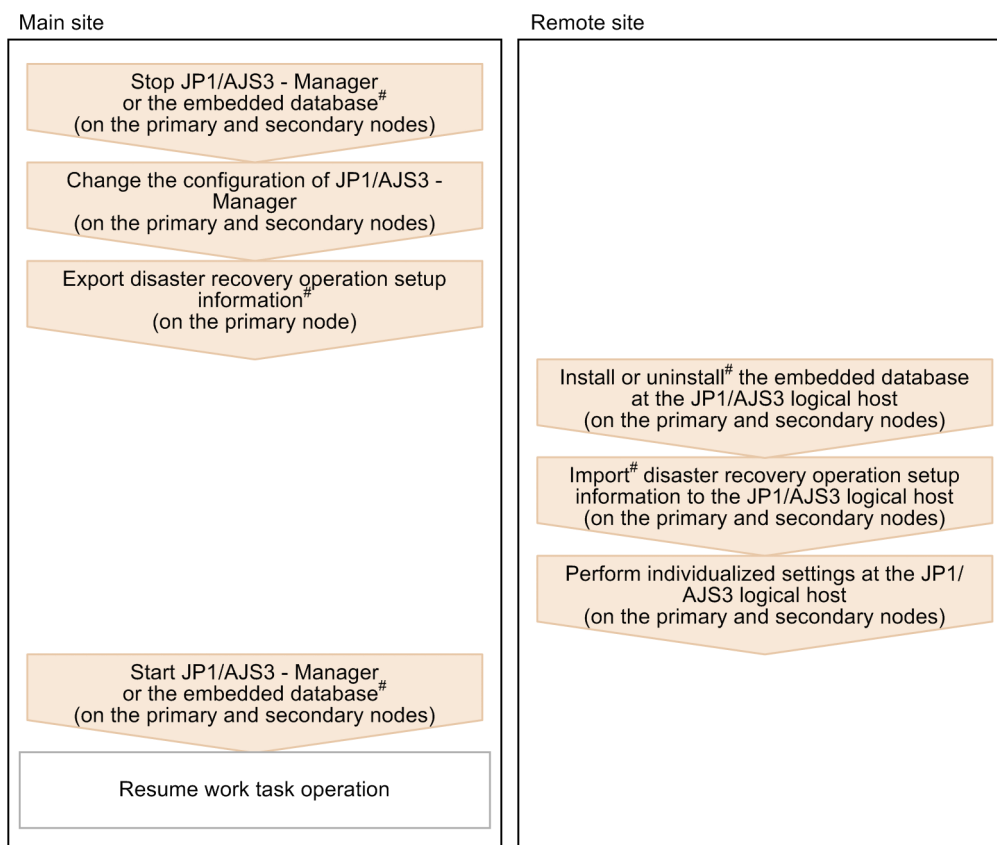
3. Set up disaster recovery mode again.

For the setup procedure, see *9. Setup Required for Disaster Recovery Operation* in the *JP1/Automatic Job Management System 3 Configuration Guide* (for Windows) or *18. Setup Required for Disaster Recovery Operation* in the *JP1/Automatic Job Management System 3 Configuration Guide* (for UNIX).

11.3.2 Changing the settings of a disaster recovery environment

The following figure shows the flow of changing the settings or configuration of a disaster recovery environment.

Figure 11–19: Flow of changing settings or configuration of a disaster recovery environment



#: Perform these tasks only as needed.

Use the procedure below to change the configuration of JP1/AJS3 in a disaster recovery environment.

In a non-cluster environment, only perform the tasks designated for the primary node.

Cautionary note

Perform these tasks while JP1/AJS3 - Manager and the embedded database are stopped at the remote site.

1. Stop JP1/AJS3 - Manager and the embedded database on the primary and secondary nodes of the main site as needed.
2. Make the necessary changes on the primary and secondary nodes of the main site.

Make the changes on the primary and secondary nodes. The procedure is the same as for a cluster system. For details, see 8. *Setup for Operation in a Cluster System* in the *JP1/Automatic Job Management System 3 Configuration Guide* (for Windows) or 17. *Setup for Operation in a Cluster System* in the *JP1/Automatic Job Management System 3 Configuration Guide* (for UNIX).

After you finish changing the settings at the main site, execute the `ajsembdbidlist` command and keep a record of the following information related to the embedded DB on the main site logical host:

- Folder where embedded database is installed
- Setup identifiers

For details about the `ajsembdbidlist` command, see `ajsembdbidlist` in 2. *Commands Used during Setup* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

3. On the primary node at the main site, export the disaster recovery operation setup information as needed.
Execute the following command:

```
jajs_rpenvexport -h logical-host-at-main-site -d output-directory
```

For details about the `jajs_rpenvexport` command, see *jajs_rpenvexport* in 2. *Commands Used during Setup* in the manual *JPI/Automatic Job Management System 3 Command Reference*.

4. On the primary node at the remote site, install or uninstall the embedded database as needed.

If you added or deleted a scheduler service when you configured the main site, you will need to install or uninstall the corresponding embedded database at the remote site. Check the details of the embedded database you recorded in step 2, and match the configuration between the main and remote sites.

When installing an embedded database

Execute the following command:

```
ajsembdbinstl -s directory-of-embedded-DB-installation-media  
              -mh logical-host-at-remote-site  
              -i installation-folder-of-embedded-DB  
              -id setup-identifier
```

When uninstalling an embedded database

Execute the following command:

```
ajsembdbuninstl -mh logical-host-at-remote-site  
               -id setup-identifier
```

For details about the `ajsembdbinstl` command and the `ajsembdbuninstl` command, see 2. *Commands Used during Setup* in the manual *JPI/Automatic Job Management System 3 Command Reference*.

5. On the primary node at the remote site, import the disaster recovery operation setup information as needed.

Before importing the disaster recovery operation setup information, you must check whether embedded databases are stopped. Run the following command for the embedded databases configured at remote sites, and check that each embedded database is stopped (Check that the value for UNIT-STAT is STOP).

```
ajsembdbstatus -s ust -id setup-identifier
```

If an embedded database is running, run the `ajsembdbstop` command to stop it. If, however, an embedded database is paused (UNIT-STAT is PAUSE), run the `ajsembdbstart` command with the `-Rf` option specified to release the embedded database from the startup-suppressed status.

For details about the `ajsembdbstatus`, `ajsembdbstop` and `ajsembdbstart` command, see 3. *Commands Used for Normal Operations* in the manual *JPI/Automatic Job Management System 3 Command Reference*.

To import the disaster recovery operation setup information, copy the disaster recovery operation setup information you exported in step 3 to the remote site, and then run the following command:

```
jajs_rpenvimport -h logical-host-at-remote-site  
                -d input-directory
```

For details about the `jajs_rpenvimport` command, see *jajs_rpenvimport* in 2. *Commands Used during Setup* in the manual *JPI/Automatic Job Management System 3 Command Reference*.

6. On the primary node at the remote site, perform individual settings as needed.

Not all settings related to the disaster recovery environment are included in the import information. Information that is outside the scope of the import function must be set individually. For details, see 9.2.3(3) *Specifying specific settings on the remote site* in the *JPI/Automatic Job Management System 3 Configuration Guide* (for Windows) or 18.2.3(3) *Specifying specific settings on the remote site* in the *JPI/Automatic Job Management System 3 Configuration Guide* (for UNIX).

7. Repeat steps 4 to 6 on the secondary node at the remote site.
8. If you stopped JP1/AJS3 - Manager or the embedded database in step 1, start them again on the primary and secondary nodes at the main site.
Having configured the environment, resume work task activity at the main site.

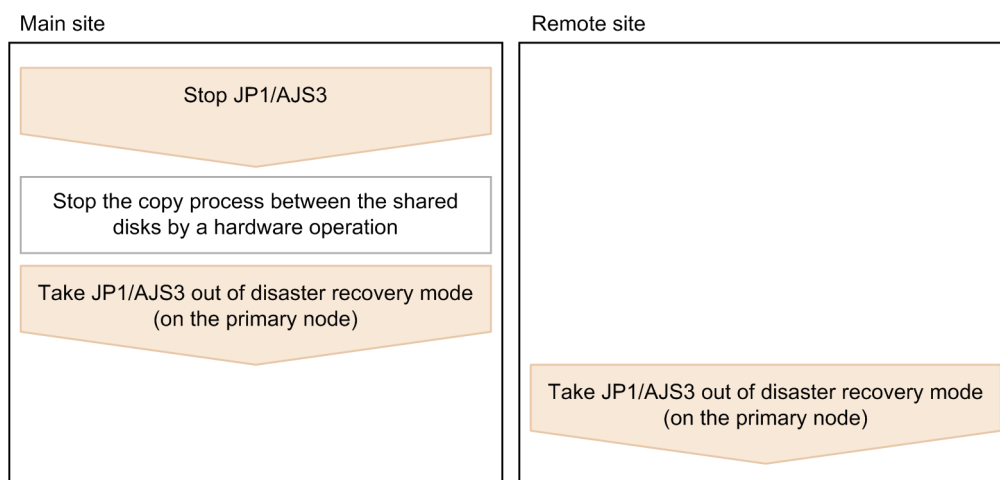
11.4 Exiting disaster recovery mode

This subsection describes how to exit disaster recovery mode.

11.4.1 Exiting disaster recovery mode (when the logical host names at the main and remote sites are different)

Use the procedure in the following figure to exit disaster recovery mode when the logical host names at the main and remote sites are different.

Figure 11–20: Exiting disaster recovery mode (when the logical host names at the main and remote sites are different)



To stop the JP1/AJS3 system from operating in disaster recovery mode:

1. Stop JP1/AJS3 at the main site.

After JP1/AJS3 has stopped, use a hardware operation to stop the copy process between the shared disks.

2. On the primary node at the main site, take JP1/AJS3 out of disaster recovery mode.

Execute the following command at the main site:

```
jajs_rpsite -m UNSET -h logical-host-at-main-site
```

3. On the primary node at the remote site, take JP1/AJS3 out of disaster recovery mode.

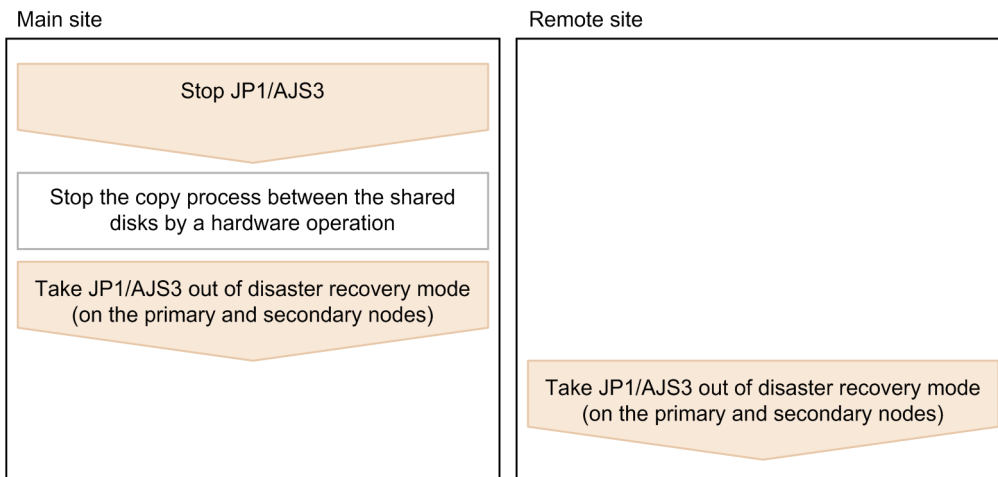
Execute the following command at the remote site:

```
jajs_rpsite -m UNSET -h logical-host-at-remote-site
```

11.4.2 Exiting disaster recovery mode (when the logical host names at the main and remote sites are the same)

Use the procedure in the following figure to exit disaster recovery mode when the logical host names at the main and remote sites are the same.

Figure 11–21: Exiting disaster recovery mode (when the logical host names at the main and remote sites are the same)



To stop the JP1/AJS3 system from operating in disaster recovery mode:

1. Stop JP1/AJS3 at the main site.

After JP1/AJS3 has stopped, use a hardware operation to stop the copy process between the shared disks.

2. On the primary and secondary nodes at the main site, exit disaster recovery mode.

Execute the following command on both the primary and secondary nodes at the main site:

```
jajs_rpsite -m UNSET -h logical-host
```

3. On the primary and secondary nodes at the remote site, exit disaster recovery mode.

Execute the following command on both the primary and secondary nodes at the remote site:

```
jajs_rpsite -m UNSET -h logical-host
```

Cautionary note

If the main site and the remote site use the same logical host name and the same IP address, make sure that both sites do not exist in the same network after you exit disaster recovery mode. Start the two sites alternatively, or disconnect either site from the network.

12

Operation in a Configuration Using an External Database

JP1/AJS3 can also operate with an external database provided in a cloud environment. Using the external database can alleviate the burden on the system performing everyday operations.

This chapter mainly describes how to specify the settings for operating a JP1/AJS3 system and how to restore the system from a system failure in a configuration that uses the external database.

12.1 Changing the ODBC settings and the settings of an ODBC file data source

This section describes the procedure for changing the ODBC file data source name, the database name, and the contents of an ODBC file data source.

After you specify the ODBC file data source name, database name, and the contents of the ODBC file data source during setup of JP1/AJS3 that connects to an external database, you might need to change them later. The following table shows the items that you can change after operation has started.

Table 12–1: Items that can be changed after operation starts

No.	Category	Item that can be changed	Reason for change
1	Environment setting parameters (specified by using the <code>jajs_setup</code> command during setup)	ODBC file data source name	The location of an ODBC file data source needs to be changed because of, for example, reorganization of disk contents.
2		Database name	The database name needs to be changed.
3	Item specified in the ODBC file data source	Address and port number of the connection-destination server	The address of the connection-destination server is changed in the cloud service being used.
4		User name	The password needs to be changed periodically according to the security policies.
5		Password	

Cautionary note

When you change settings for the ODBC file data source, make sure that the correspondence between the scheduler services and databases does not change.

12.1.1 Procedure for changing the items specified during setup (when the `jajs_setup` command was run)

The following shows the procedure for changing the ODBC file data source name or database name that was specified when the `jajs_setup` command was run.

1. Run the `jajs_extdb` command, and check whether the ODBC file data source name or database name that you want to change is used by agent management and by the scheduler service.

Execute the following command.

```
jajs_extdb -v
```

The following shows an output example.

Host	JP1_DEFAULT
Database Type	SQLSVR
Agent management	
Status	ENABLE
ODBC File Data Source Name	/odbc/ajsdatasource.dsn
Database Name	AJSROOT1DB
Scheduler Service	AJSROOT1

Status	ENABLE
ODBC File Data Source Name	/odbc/ajsdatasource.dsn
Database Name	AJSROOT1DB
Scheduler Service	AJSROOT2
Status	ENABLE
ODBC File Data Source Name	/odbc/ajsdatasource2.dsn
Database Name	AJSROOT2DB

Make sure that the ODBC File Data Source Name or Database Name that is output for agent management and for the scheduler service in the output example is the change target.

For details about the `jajs_extdb` command, see *jajs_extdb* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

2. Stop the JP1/AJS3 service or the relevant scheduler service.

If the name of the change target is output for agent management, stop the JP1/AJS3 service. If the name of the change target is not output for agent management control, stop the relevant scheduler service.

3. Run the `jajs_config` command to change the environment setting parameter for the change target that you checked in step 1.

According to the checking result in step 1, change the applicable environment setting parameters:

To change the information about agent management:

Change the `AJSODBC_DSNNAME` and `AJSODBC_DBNAME` environment setting parameters under the `[JP1_DEFAULT\JP1AJS2\HOST\AGENTMANAGER]` definition key.

For details about the environment setting parameters, see 20.13.2(1) *AJSODBC_DSNNAME* in the *JP1/Automatic Job Management System 3 Configuration Guide*, and 20.13.2(2) *AJSODBC_DBNAME* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

To change the information about a scheduler service:

Change the `AJSODBC_DSNNAME` and `AJSODBC_DBNAME` environment setting parameters under the `[JP1_DEFAULT\JP1AJSMANAGER\scheduler-service-name]` definition key.

For details about the environment setting parameters, see 20.4.2(124) *AJSODBC_DSNNAME* in the *JP1/Automatic Job Management System 3 Configuration Guide*, and 20.4.2(125) *AJSODBC_DBNAME* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

4. Run the `jajs_extdb` command, and then confirm that the new ODBC file data source name or database name is correct.

Execute the following command.

```
jajs_extdb -v
```

For details about the `jajs_extdb` command, see *jajs_extdb* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

5. Restart the JP1/AJS3 service or scheduler service that you stopped in step 2.

12.1.2 Procedure for changing the items specified in the ODBC file data source

The following shows the procedure for changing the items specified in an ODBC file data source:

1. Run the `jajs_extdb` command, and check whether the ODBC file data source name that you want to change is used by agent management and by the scheduler service.

Execute the following command.

```
jajs_extdb -v
```

The following shows an output example.

Host	JP1_DEFAULT
Database Type	SQLSVR
Agent management	
Status	ENABLE
ODBC File Data Source Name	/odbc/ajsdatasource.dsn
Database Name	AJSROOT1DB
Scheduler Service	
Status	ENABLE
ODBC File Data Source Name	/odbc/ajsdatasource.dsn
Database Name	AJSROOT1DB
Scheduler Service	
Status	ENABLE
ODBC File Data Source Name	/odbc/ajsdatasource2.dsn
Database Name	AJSROOT2DB

Check whether the ODBC File Data Source Name that is output for the agent management and/or a scheduler service in the output example is the change target.

For details about the `jajs_extdb` command, see *jajs_extdb* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

2. Stop the JP1/AJS3 services on all manager hosts on which the following exist: agent management of the change target, and the scheduler service of the change target.
3. On the manager host, change the settings in the ODBC file data source.
- The following table lists the items that can be changed.

Table 12–2: Items that can be changed in the ODBC file data source

No.	Item to be specified	Item in the ODBC file data source
1	Connection-destination server address [#] and port number	SERVER
2	User name	UID
3	Password	PWD

[#]

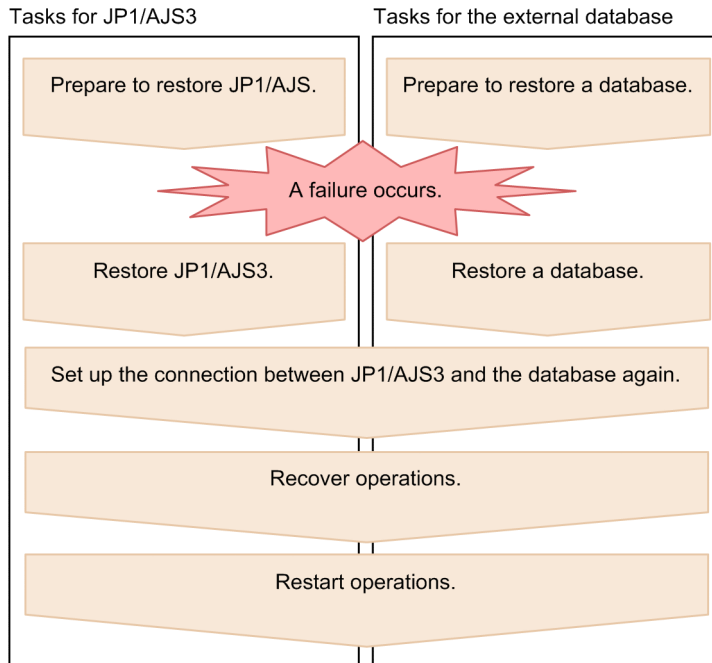
Connection between JP1/AJS3 and the external database does not depend on the JP1/Base communication settings. Therefore, make sure that the IP address can be resolved by using the OS functions such as the `hosts` file and the DNS.

4. Restart the JP1/AJS3 services on all manager hosts on which the following exist: agent management of the change target, and the scheduler service of the change target.

12.2 Recovery from a failure in an environment that uses an external database

The following figure shows the flow for restoring a JP1/AJS3 system so that system operation can continue even if a failure occurs in the JP1/AJS3 system and that connects to the external database, or in the external database itself.

Figure 12–1: The flow for restoring a JP1/AJS3 system so that system operation can continue



Obtain setting information in advance in preparation of conducting failure recovery. If the failure occurred in the JP1/AJS3 system that is connected to an external database or in the external database itself, recover each of the environments. After operation recovery work is complete, restart operations.

The descriptions of procedures for conducting failure recovery are as follows:

12.2.1 Preparations for recovery from a failure in a JP1/AJS3 system that connects to an external database

This subsection describes the preparations for recovery from a failure in a JP1/AJS3 system that connects to an external database, and provides cautionary notes on recovery. The required preparation tasks are as follows:

- Create a backup of a JP1/AJS3 system set up to use the external database
- Check the environment information of the manager host

(1) Creating a backup of a JP1/AJS3 system set up to use an external database

After you have completed setting up a JP1/AJS3 system to use an external database, you must create a backup of the JP1/AJS3 system by using snapshots or other methods. When you create a backup, make sure that the JP1/AJS3 service is not running.

For details about setting up JP1/AJS3, see 24. *Performing setup for using an external database in a cloud environment* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(2) Checking the environment information of the manager host

If a failure occurs on a manager host, to perform job processing on the manager host again, you must restore the same operating environment that was used by the manager host before the failure occurred. When you restore the operating environment, if the settings of the manager host have been changed after the backup of the JP1/AJS3 system was created, you must also change the settings accordingly. The following table shows the settings that are required to restore the same operating environment.

Table 12–3: Settings required to restore the same operating environment

No.	Type of information	Item	Required settings
1	System settings	Host name	Host name of the manager host
2		IP address	IP address of the manager host
3		Language environment	Language environment of the manager host
4		Port number	Set the port number in the <code>services</code> file.
5		Firewall settings	Set up a firewall for the port.
6	General	Trace log file size	Set the sizes of the following trace log files: - JP1/AJS3 trace log file - Trace log file for the JP1/AJS3 Check Manager service or the JP1/AJS3 Check Agent service
7		Environment setting parameters	Set the environment setting parameters for physical hosts.
8		Shell	Shell customization
9		AJS administrator	Designating the AJS administrator
10		JP1/AJS3 connection source restriction	The following settings files: - connection permission configuration file - manager connection permission configuration file <code>permitted_host_manager.conf</code> - agent connection permission configuration file <code>permitted_host_agent.conf</code>
11		Execution agent information [#]	Information about the execution agents and information about addition, deletion, and modification of execution agent groups
12	Scheduler	Adding or deleting a scheduler service	The names of the following directories that were specified when they were added: - The name of the database directory - Temporary directory name - Job information directory name - Job information directory name
13			Use the following command to obtain the environment setting parameter: <pre>jbsgetcnf -c JP1AJSMANAGER -n schedule r-service-name</pre>
14		Local date and time for the JP1/AJS3 scheduler service	Use the <code>ajslcaldate</code> command to change the local date and time for the JP1/AJS3 scheduler service.

No.	Type of information	Item	Required settings
15	Events and actions	Destination host for the JP1 event-sending job	Set up communication when the JP1 event-sending job is used to send JP1 events to another host.
16		Linkage with mail systems	Set up the mail system linkage function.
17	Definition pre-check	Definition pre-check function	Either set up or remove the setup of the definition pre-check function.
18	Prerequisite products, related products, and linkage products	Transfer destination host for the JP1 event service	Specify the settings when you use the JP1 event reception monitoring job to monitor JP1 events transferred from other hosts.
19	System management	Process definition	Settings in the following startup process definition files: • jplajs_dbmd.conf • jplajs_hstd.conf • jplajs_agtd.conf • jplajs_schd.conf • jplajs_spmc.conf
20			Settings in the following extended startup process definition files: • jplajs_dbmd_0700.conf • jplajs_hstd_0700.conf • jplajs_agtd_0700.conf • jplajs_schd_0700.conf • jplajs_service_0700.conf
21		Process startup settings	Settings in the JP1/AJS3 environment definition file (jplajs_env.conf)
22	Operation profile	Unit-attribute profile	Settings in the unit-attribute profile
23		Execution agent profile	Settings in the execution agent profile
24	JP1/AJS3 - View settings	Customization of windows and dialog boxes	Common user profile (under /etc/opt/jplajs2/conf/profiles)
25			Customization of the customization file (jajsDisableMenu) that disables the menus of JP1/AJS3 - View windows displayed in JP1/AJS3 - Manager
26			Customization of the executable-command settings file (jajsExecutableCommand)
27			Customization of the View customization settings file (jajsCustomizeView)
28	User assets	ODBC file data source	ODBC file data source specified during setup of the scheduler service for the external database
29		User application	User applications executed as jobs
30		Data and files required by user applications	The environment variable file, standard input file, file to transfer, end judgment file, and other files
31		Execution environment for user applications	OS user name, user mapping settings in JP1/Base, and other settings

#

If the agent management database is restored with insufficient settings, this information is required to restore the same operating environment that existed before a failure occurred. After you have restored the agent management database, you must complete the necessary settings based on this information.

(3) Cautionary note

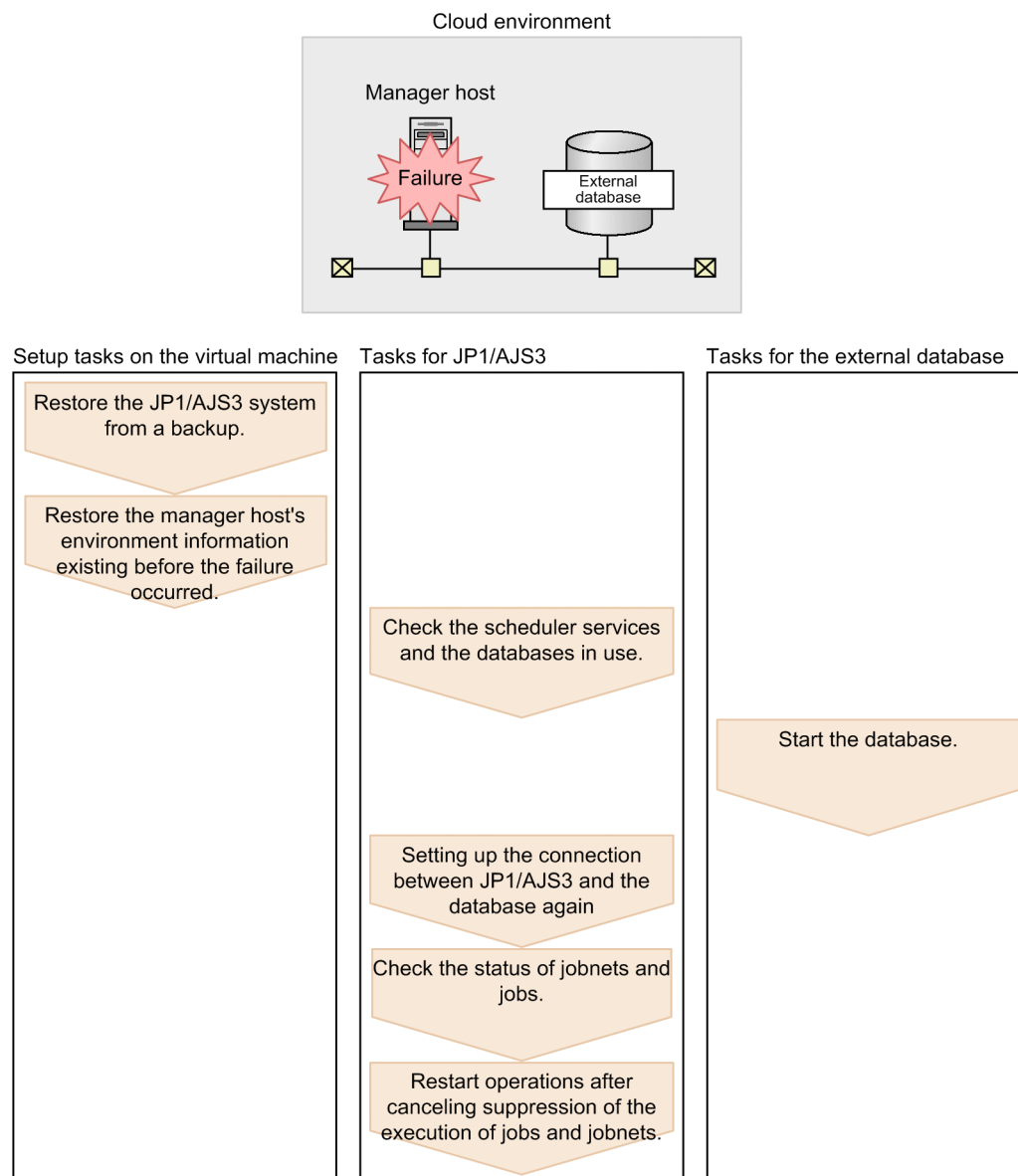
The following types of information cannot be taken over to the restored environment. However, if the failed environment can be referenced from the restored environment, the relevant log files can be referenced.

- Log files cannot be taken over to the restored environment. If log files are necessary, you must back them up before a failure occurs.
- JP1 events cannot be taken over to the restored environment. Therefore, even if you use the JP1 event reception monitoring job, you cannot search for events that were generated before the failure occurred.

12.2.2 Procedure for recovery from a failure in a JP1/AJS3 system that connects to an external database

The following figure shows an overview of recovery from a failure occurring in a JP1/AJS3 system that connects to an external database.

Figure 12–2: Overview of recovery from a failure occurring in a JP1/AJS3 system that connects to an external database



The following shows the procedure for recovery from a failure in a JP1/AJS3 system that connects to an external database.

1. Restore the JP1/AJS3 system from a backup of a JP1/AJS3 system that has been set up completely.
2. Apply the environment information that you checked on the manager host before the failure occurred to the restored JP1/AJS3 system.
For details about the environment information to be checked on the manager host before a failure occurs, see [12.2.1\(2\) Checking the environment information of the manager host](#).
3. Run the `jajs_extdb` command to check the scheduler services used on the manager host and the databases in use. Execute the following command.

```
jajs_extdb -v
```


For details about the `jajs_extdb` command, see *jajs_extdb* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

4. Start all the databases that you checked in step 3.

5. Run the `jajs_extdb` command with the `-p` option specified to set up the connection between the manager host and the agent management database again.

Execute the following command.

```
jajs_extdb -p -a
```

6. Run the `jajs_extdb` command with the `-p` option specified to set up a connection between the scheduler service and the database again.

Run the following command for each of the scheduler services that you checked in step 3:

```
jajs_extdb -p -F scheduler-service-name
```

7. Start the JP1/AJS3 services.

8. Check the jobnets' and jobs' statuses existing when the failure occurred, and then change the statuses or rerun the jobnets and jobs as necessary.

When the `jajs_extdb` command is run, the scheduler service starts in disaster-recovery mode. In this case, the scheduler service starts in the status in which execution is suppressed, and the statuses of jobs and jobnets are changed. Use JP1/AJS3 - View or a command to check the status of each job, and then, if necessary, change the statuses of jobs or rerun jobs. Pay particular attention to the statuses of jobs that were running when the failure occurred. Discontinuation of JP1/AJS3 operation might have prevented the restored environment from inheriting the statuses of such jobs.

For details about the status in which jobnets and jobs are placed when JP1/AJS3 is started in disaster-recovery mode, see the description of the statuses of jobnets and jobs when a disaster recovery start is performed in [6.2.1\(3\)\(a\) Statuses when a JP1/AJS3 service on the manager host is restarted](#).

For details about how to check and change job execution statuses and how to rerun a job, see the *JP1/Automatic Job Management System 3 Operator's Guide*.

When monitoring of a start condition has stopped, generations in *Wait for start cond.* status that were started by the start condition are processed as follows depending on the status of the waiting generation:

- A generation of a jobnet is in *Wait for start cond.* status despite the start conditions being satisfied because concurrent execution is disabled and another instance of the jobnet is already running

For the generations of a jobnet in *Wait for start cond.* status, the status remains the same in the restored environment. For the generation that is already running, the status changes to *Interrupted*. After the status of this generation changes to *Interrupted*, execution of the generations in *Wait for start cond.* status will restart.

- Start conditions are not satisfied or only partially satisfied

After the failure is corrected, all generations of this jobnet disappear.

9. Delete the manager host information that is related to event jobs and custom event jobs and remains on the agent host.

Run the following command on the manager host to delete the manager host information that existed when the failure occurred and remains on the agent host.

For the `-a` option, specify the execution host name that corresponds to the target execution agent name.

```
jpomanevreset -h logical-host-name -F scheduler-service-name -dh manager-host-name -a execution-host-name
```

If the manager host to be recovered is a physical host, you do not need to specify the `-h` option.

If the manager host to be recovered is a logical host, specify the manager host name of the logical host for the `-h` option and `-dh` option.

10. Run the `jajs_extdb` command to clear the execution-suppression start status of the scheduler service.

Run the following command for each of the scheduler services that you checked in step 3:

```
jajs_extdb -r -F AJSROOT1
```

11. Run the `ajsalter` command to cancel suppression of the execution of jobs and jobnets, and then resume operations.

Run the following command for each of the scheduler services that you checked in step 3:

```
ajsalter -F scheduler-service-name -s none
```

For details about the `ajsalter` command, see *ajsalter* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

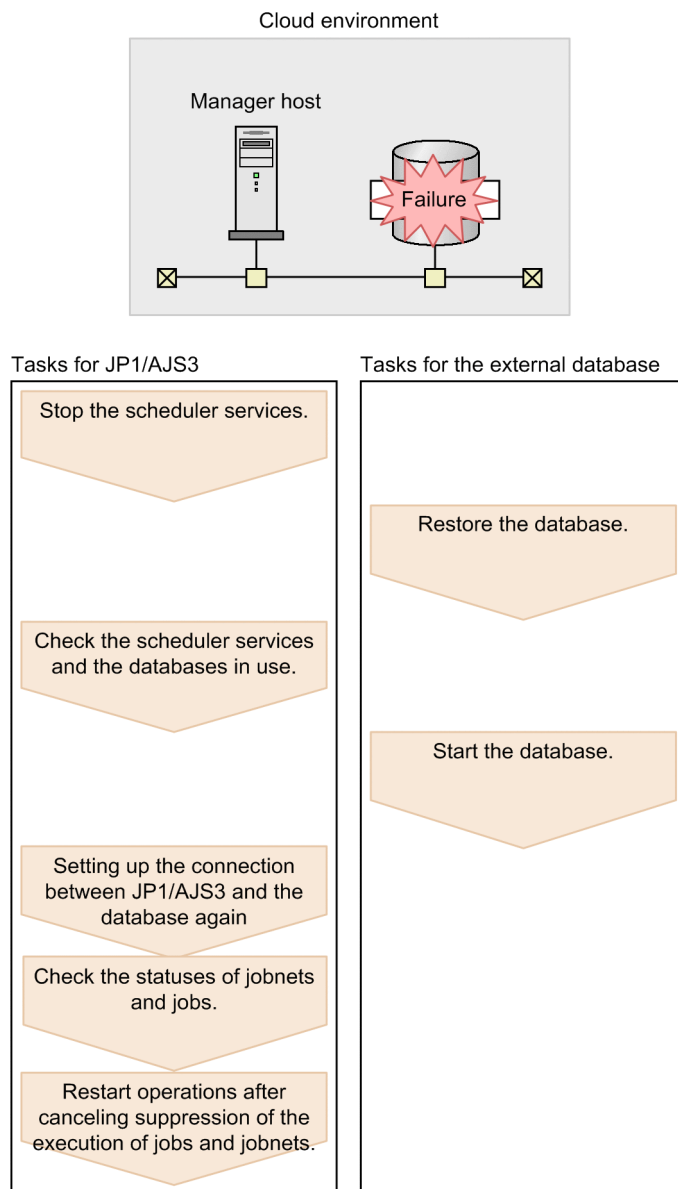
12.2.3 Preparation for recovery from a database failure

For details about how to create a backup that is necessary for recovery from a database failure, see the documentation for the cloud environment that you are using.

12.2.4 Procedure for recovery from a database failure

The following figure shows an overview of recovery from a database failure.

Figure 12–3: Overview of recovery from a database failure



The following shows the procedure for restoring the system if a failure occurs in instances of the external database.

1. Stop the scheduler service or the JP1/AJS3 service.

If you restore a database instance that is used as the agent management database, you must stop the JP1/AJS3 service beforehand.

If you restore only the database instances for a scheduler service, stop all scheduler services that are connected to the database instances in which a failure occurred. For details on how to stop a scheduler service, see [7.5.2 Stopping the scheduler service](#).

2. Restore all database instances in which a failure occurred.

For details about how to restore a database, see the documentation for the cloud environment that you are using.

3. Run the `jajs_extdb` command to check the scheduler services used on the manager host and the database instances in use.

Execute the following command:

```
jajs_extdb -v
```

4. Start the restored database instances.

5. Execute the `jajs_extdb` command with the `-p` option specified.

To restore the database that is managed by the agent, execute the following command, and then set up the connection between the manager host and the agent management database again.

```
jajs_extdb -p -a
```

To restore the database of the scheduler service, execute the following command for all of the scheduler services in step 3, and then set up a connection between the scheduler service and the database again.

```
jajs_extdb -p -F scheduler-service-name
```

6. Start the scheduler service or JP1/AJS3 service.

If you have restored the database instance that is used as the agent management database, you must start the JP1/AJS3 service.

If you have restored only the database instances for a scheduler service, start only the scheduler service that you stopped in step 1. For details about how to start a scheduler service, see [7.5.1 Starting the scheduler service](#).

Note that you need to perform the following steps only if you have restored the database instances for a scheduler service.

7. Check the status of jobnets and jobs that existed when the failure occurred, and then change the status or rerun the jobnets and jobs as necessary.

When the `jajs_extdb` command is run, the scheduler service starts in disaster-recovery mode. In this case, the scheduler service starts in the status in which execution is suppressed, and the statuses of jobs and jobnets are changed. Use JP1/AJS3 - View or a command to check the status of each job, and then, if necessary, change the statuses of jobs or rerun jobs. Pay particular attention to the statuses of jobs that were running when the failure occurred. Discontinuation of JP1/AJS3 operation might have prevented the restored environment from inheriting the statuses of such jobs.

For details about the status in which jobnets and jobs are placed when JP1/AJS3 is started in disaster-recovery mode, see the description of the statuses of jobnets and jobs when a disaster recovery start is performed in [6.2.1\(3\)\(a\) Statuses when a JP1/AJS3 service on the manager host is restarted](#).

For details about how to check and change job execution statuses and how to rerun a job, see the *JP1/Automatic Job Management System 3 Operator's Guide*.

When monitoring of a start condition has stopped, generations in *Wait for start cond.* status that were started by the start condition are processed as follows depending on the status of the waiting generation:

- A generation of a jobnet is in *Wait for start cond.* status despite the start conditions being satisfied because concurrent execution is disabled and another instance of the jobnet is already running
For the generations of a jobnet in *Wait for start cond.* status, the status remains the same in the restored environment. For the generation that is already running, the status changes to *Interrupted*. After the status of this generation changes to *Interrupted*, execution of the generations in *Wait for start cond.* status will restart.
- Start conditions are not satisfied or only partially satisfied
After the failure is corrected, all generations of this jobnet disappear.

8. Delete the manager host information that is related to event jobs and custom event jobs and remains on the agent host.

Run the following command on the manager host to delete the manager host information that existed when the failure occurred and remains on the agent host.

For the `-a` option, specify the execution host name that corresponds to the target execution agent name.

```
jpomanevreset -h logical-host-name -F scheduler-service-name -dh manager-host-name -a execution-host-name
```

If the manager host to be recovered is a physical host, you do not need to specify the `-h` option.

If the manager host to be recovered is a logical host, specify the manager host name of the logical host for the `-h` option and `-dh` option.

9. Run the `jajs_extdb` command to clear the execution-suppression start status of the scheduler service.

Run the following command for each of the scheduler services that you checked in step 3:

```
jajs_extdb -r -F scheduler-service-name
```

For details about the `jajs_extdb` command, see *jajs_extdb* in *3. Commands Used for Normal Operations* in the manual *JPI/Automatic Job Management System 3 Command Reference*.

10. Run the `ajsalter` command to cancel suppression of the execution of jobs and jobnets, and then resume operations.

Run the following command for each of the scheduler services that you checked in step 3:

```
ajsalter -F scheduler-service-name -s none
```

For details about the `ajsalter` command, see *ajsalter* in *3. Commands Used for Normal Operations* in the manual *JPI/Automatic Job Management System 3 Command Reference*.

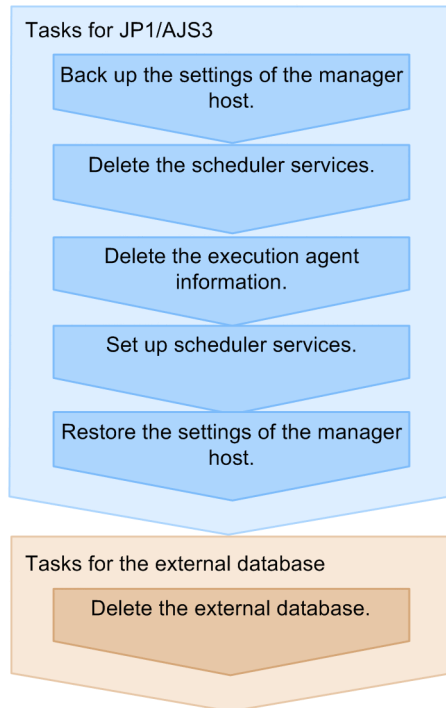
12.3 Operations required for switchover from an external database back to the embedded database

This section describes how to switch the database used in JP1/AJS3 from an external database back to the embedded database.

An embedded database environment and external database environment cannot coexist on the same host. Therefore, when you switch the database back to the embedded database, you must delete the external database environment, and then add scheduler services that will use the embedded database.

The following figure shows an overview of switchover from an external database to the embedded database.

Figure 12–4: Overview of switchover from an external database to the embedded database



The following shows the procedure for switchover from the external database back to the embedded database.

1. Back up the settings of the manager host.

Back up the following types of information that were used for the external database:

- Execution agent information
- Definition information about the units other than those in the root job group[#]
- Root job group information[#]
- Calendar information of the root job group[#]

[#]

If multiple scheduler services are set up on the manager host, perform the backup procedure for each scheduler service.

For details about the procedure for backing up the settings of the manager host, see [2.2.3 Backing up the JP1/AJS3 - Manager setup information](#).

2. Back up the registered execution-schedule information for jobnets.

If multiple scheduler services are set up on the manager host, perform the backup procedure for each scheduler service.

For details on how to back up, see [3.4 Backing up and recovering the execution registration status of jobnets by using the `ajsrlexport` and `ajsrimport` commands](#).

3. Delete the scheduler services that connect to the external database.

For details about the procedure for deleting a scheduler service, see [24.4.2 Deleting a scheduler service](#) in the *JP1/Automatic Job Management System 3 Configuration Guide*.

4. Run the `jajs_extdb` command to check the database of the agent management control on the relevant host. Execute the following command.

```
jajs_extdb -v
```

For details about the `jajs_extdb` command, see `jajs_extdb` in [3. Commands Used for Normal Operations](#) in the manual *JP1/Automatic Job Management System 3 Command Reference*.

5. Run the `jbsunsetcnf` command to delete the execution agent information.

Delete the environment setting parameters under the `[JP1_DEFAULT\JP1AJS2\HOST\AGENTMANAGER]` definition key.

Execute the following command.

```
jbsunsetcnf -i -h JP1_DEFAULT -c "JP1AJS2\HOST\AGENTMANAGER"
```

For details about the `jbsunsetcnf` command, see the *JP1/Base User's Guide*.

6. Specify the settings required for changing the database configuration to *standard configuration*.

Restore the JP1/AJS3 startup process definition file (`jplajs_spmf.conf`) and extended startup process definition file (`jplajs_service_0700.conf`) to the status that existed before you edit them during setup for use of the external database.

In addition, if necessary, change the database configuration from *standard configuration without ISAM* to *standard configuration*.

7. Set up the scheduler services to be connected to the embedded database.

For details about the procedure for setting up a scheduler service, in Windows, see [6.1.1\(1\) Adding a scheduler service](#) in the *JP1/Automatic Job Management System 3 Configuration Guide*. In UNIX, see [15.1.1\(1\) Adding a scheduler service](#) in the *JP1/Automatic Job Management System 3 Configuration Guide*.

Important

There is no need to start the embedded database as described in the first step of the procedure for adding a scheduler service.

8. Import the backed up external database information into the embedded database.

Import the external database settings that you backed up in steps 1 and 2 into the embedded database. For details on how to restore, see [2.3.4\(8\) Recovering the execution agent information](#), [2.3.4\(9\) Recovering the unit definition](#), and [3.4 Backing up and recovering the execution registration status of jobnets by using the `ajsrlexport` and `ajsrimport` commands](#).

9. If necessary, delete the database that you checked in step 5.

The database instance created for JP1/AJS3 from the external database is not deleted automatically. If the database instance is no longer necessary, manually delete it.

12.4 Changing the settings of a host on which JP1/AJS3 is operating with the external database

For details about the procedure for changing the settings of a host on which JP1/AJS3 is operating with the external database, see [7.9 Changing the JP1/AJS3 host settings](#).

Note that in some cases, you can skip some steps in the procedure as follows:

When changing the name of the JP1/AJS3 - Manager host:

You can skip the following steps in [7.9.1\(2\) Procedure for changing the host name of JP1/AJS3 - Manager](#):

- Step for backing up the jobnet definition
- Step for backing up the execution agent definition
- Step for backing up the execution environment definition for QUEUE jobs and submit jobs
- Step for re-creating the execution environment for QUEUE jobs and submit jobs
- Step for again setting up the database environment
- Step for recovering the jobnet definition that you backed up
- Step for recovering the execution agent definition that you backed up

When changing the system date and time:

You can skip the step for re-creating the database environment in [7.9.3\(1\)\(c\) Moving the system time backward and starting JP1/AJS3 immediately](#).

13

Case Studies

This chapter presents a number of operating scenarios for JP1/AJS3. It describes how to configure and operate JP1/AJS3 in each scenario, and proposes solutions to specific problems.

Use these case studies as a reference when creating and operating a JP1/AJS3 system.

13.1 List of case studies

The following table lists the scenarios and challenges assumed in the case studies.

Table 13–1: List of case studies

No	Case study	Reference
1	Acquiring information about job execution activity by specific users.	13.1.1
2	Preventing execution of jobs that are invalid due to an incorrectly specified execution agent or other reason.	13.1.2
3	Saving the results of a daily job to a different file each day.	13.1.3
4	Reinstating a temporary schedule change that was cleared by a release registration.	13.1.4
5	Using an alias for the execution host name of an event job in a manager/agent configuration.	13.1.5
6	Limiting JP1/AJS3 - Manager resources to those used for job operation	13.1.6
7	Isolating the business operations of each scheduler service on a single manager host.	13.1.7
8	Editing units defined by JP1/AJS3 - View and comparing definitions before and after editing	13.1.8
9	Executing jobs in an auto-scaling cloud environment	13.1.9
10	Executing a single job on multiple agent hosts	13.1.10
11	Restricting operations that can be performed from the Web GUI (Job Portal) or user applications	13.1.11
12	Graphically viewing the JP1/AJS3 operating status	13.1.12
13	Checking the JP1/AJS3 operational status by using the Web GUI	13.1.13

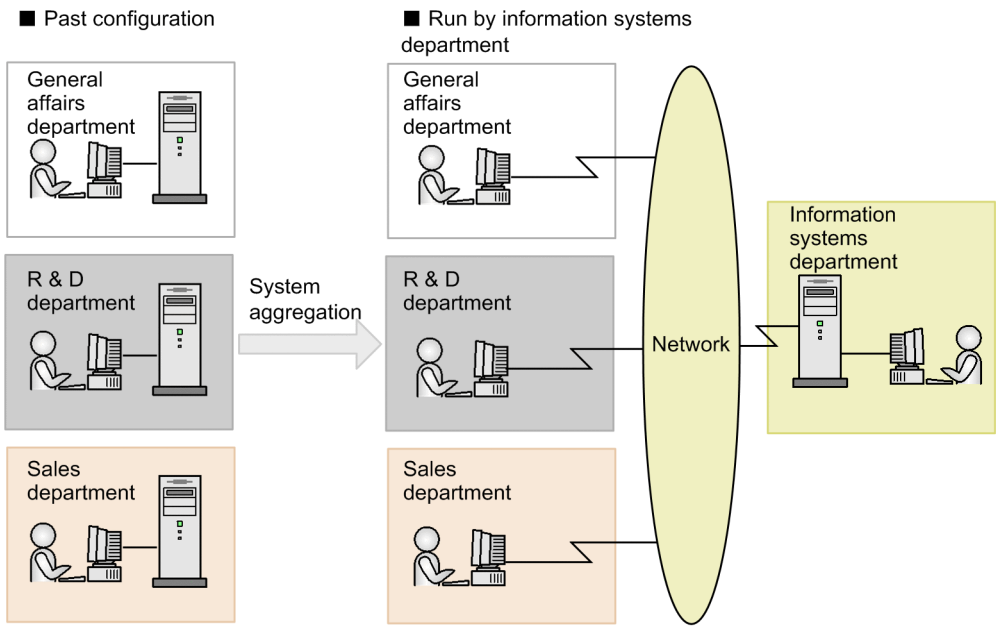
13.1.1 Acquiring information about job execution activity by specific users

When a company's information systems department uses JP1/AJS3 - Manager on an integrated basis, you might need to find out who uses JP1/AJS3 and to what extent by examining the history of job activity for individual users. This case study describes how to collect a history of job activity at the user level.

(1) Background

Traditionally, each department in an organization built and operated its own systems. However, this approach incurred significant operating costs and offered no benefits in terms of information sharing and resource allocation. To overcome this issue, organizations are now optimizing information systems through consolidation by making the applications in the information systems department available to all departments.

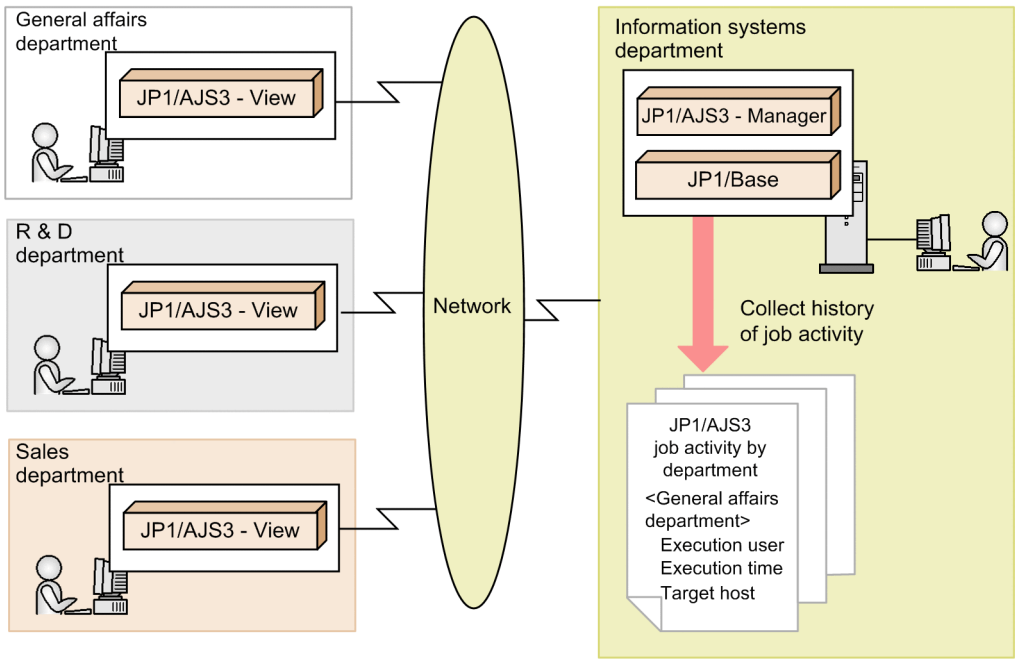
Figure 13–1: Example of information systems integration



(2) Goals

With JP1/AJS3 being used on an integrated basis in the information systems department, you want to collect information that identifies who executed what job, when and where the job was executed, and how long it ran.

Figure 13–2: Example of collecting job histories



(3) Approach

By viewing the JP1 events (job normal end events, job abnormal end events, and job warning end events) output by JP1/AJS3, you can acquire information about the circumstances surrounding the execution of a particular job.

The following table lists the aspects of job history you can acquire, and the JP1 event attributes that correspond to each type of information.

Table 13–2: Job activity history and associated JP1 events

No.	Information sought	Corresponding JP1 event attribute
1	Who?	- User who registered the jobnet - Execution JP1 user at target host[#]
2	When?	- Start time - End time - Start time at target host - End time at target host
3	What?	- Root jobnet name - Nested jobnet/Job name - Unit type
4	Where?	- Name of jobnet source host - Name of target host
5	How long?	Job execution time at the execution destination [#]

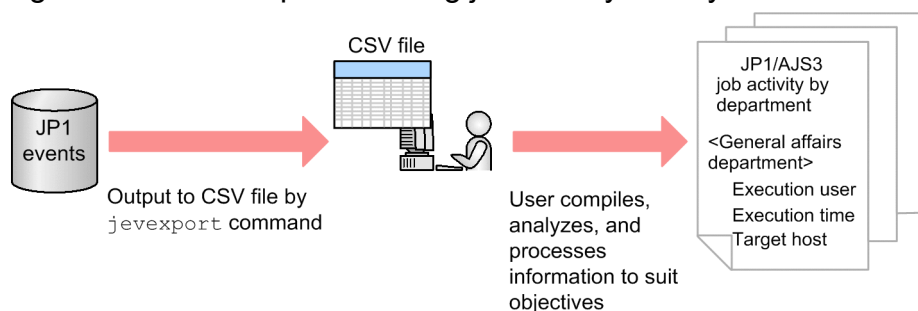
#

Output by JP1/AJS3 - Manager version 09-50 or later.

(4) Function overview

Users can compile the history of job activity in any format by using the `jevexport` command to output the JP1 events output by JP1/AJS3 to a CSV file.

Figure 13–3: Example of editing job activity history



(5) Configuration example

This example shows how to configure JP1/AJS3 to collect the history of job activity for the week (from 7 days ago until the previous day) at 1:00 a.m. every Sunday, from August 1st 2011.

1. Create a filter file to be used with the `jevexport` command.

Configure the filter file to do the following:

- Extract the following job end events:
 - Job normal end events (event ID: 4106)
 - Job abnormal end events (event ID: 4107)
 - Job warning end events (event ID: 4109)

For details about the JP1 event attribute values, see [A.2 JP1 event attributes](#).

- Extract events generated from 7 days ago until the previous day (in effect the last 8 days excluding today).

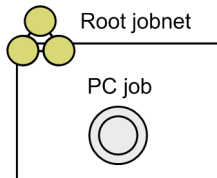
For example, create the filter file as follows:

```
B.ID IN 4106 4107 4109
B.TIME WITHIN D 8
EXCLUDE
B.TIME WITHIN D 1
```

For details about filter files, see the *JP1/Base User's Guide*.

2. Create a jobnet in JP1/AJS3.

Create a jobnet with the following characteristics:



The schedule rules of the root jobnet

Set the following schedule:

- Start date: First Sunday in August, 2011
- Start time: 01:00
- Processing cycle: Weekly

Detailed definition of the PC job

Define the job as follows:

- File name: `jvexport`
- Parameters: `-o output-file-name -f filter-file-name`

3. Register the jobnet you created in step 2 for planned execution.

The PC job will execute at 1:00 a.m. every Sunday after August 1, 2011. When the PC job finishes executing, the past week's history of job activity is output to the file specified by *output-file-name*.

4. Use a spreadsheet or other software to compile the information in the output file.

(6) Manual references

Type	Item	Location
Overview	Filter file	<i>JP1/Base User's Guide</i>
	JP1 event attribute values	A.2 JP1 event attributes
Commands (<code>jvexport</code> command)		<i>JP1/Base User's Guide</i>

(7) Cautionary notes

- The JP1 event that reports the job execution time at the target host gets its value by subtracting the start time of the job from the end time. Therefore, the value of this attribute will be zero if the job runs for less than a second.
- The JP1 event that reports the job execution time at the target host works in units of seconds. The effects of this rounding are cumulative, and the value becomes less accurate as the number of jobs increases. In this type of scenario, use the value as a reference only.

13.1.2 Preventing execution of jobs that are invalid due to an incorrectly specified execution agent or other reason

Operation of JP1/AJS3 - Manager is sometimes shared across departments in such a way that each department is permitted use of specific execution agents. In such a scenario, if you specify the wrong execution agent in a job definition, the job will be executed by an execution agent that the department does not have permission to use. This case study describes how to avoid this situation altogether.

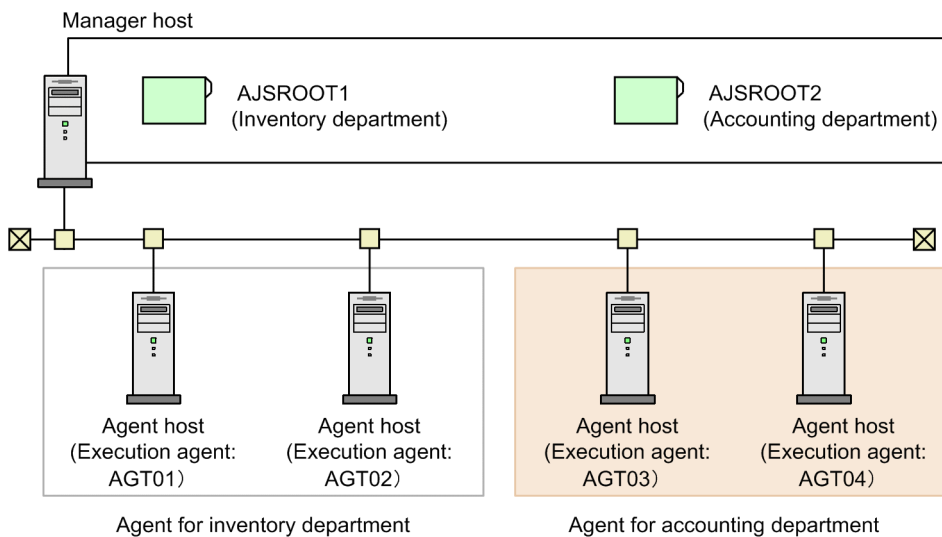
(1) Operation

The JP1/AJS3 system operates as follows:

- Multiple departments share a manager host
- Each department is restricted to specific execution agents
- Each department has its own scheduler service

The following figure shows an example in which the inventory and accounting departments use separate execution agents and scheduler services.

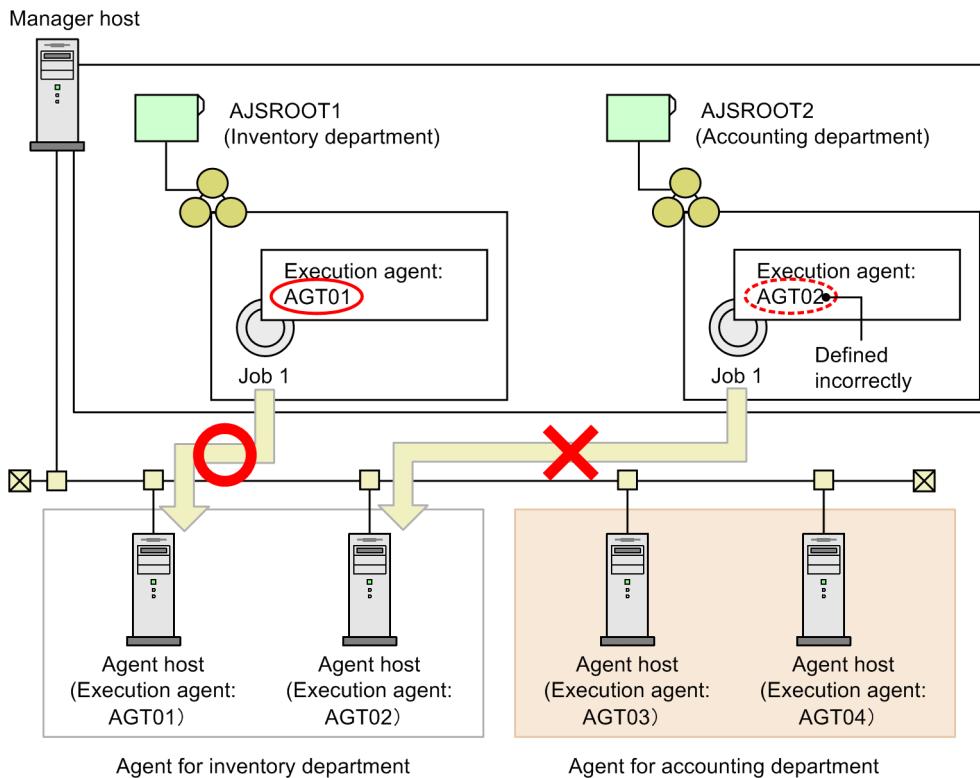
Figure 13–4: Example using different execution agents and scheduler services



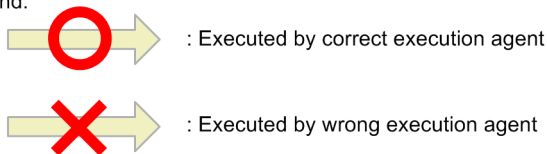
(2) Problem

You want to prevent departments from executing jobs using an execution agent allocated to another department.

Figure 13–5: Example of job execution using an execution agent allocated to another department



Legend:



(3) Solution

By using the execution agent restriction function, you can prevent a job from being executed on an execution agent without permission. By this process, you can avoid the problems that arise when you use an execution agent intended for use by another department.

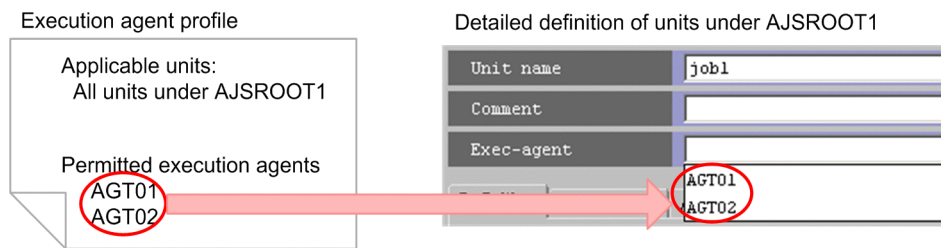
To use the execution agent restriction function, you create an execution agent profile and assign it to the scheduler service. An execution agent profile defines the execution agents permitted for each unit type.

When you set an execution agent profile, the JP1/AJS3 system checks the execution agent of a unit when:

- The unit is defined

An **Exec-agent** combo box appears in the Define Details dialog box when you define a unit in JP1/AJS3 - View. This box displays a list of the execution agents permitted by the execution agent profile. Because you can only select an execution agent that appears in the combo box, there is no way a user can choose the wrong execution agent.

Figure 13–6: Execution agent restriction (at unit definition)

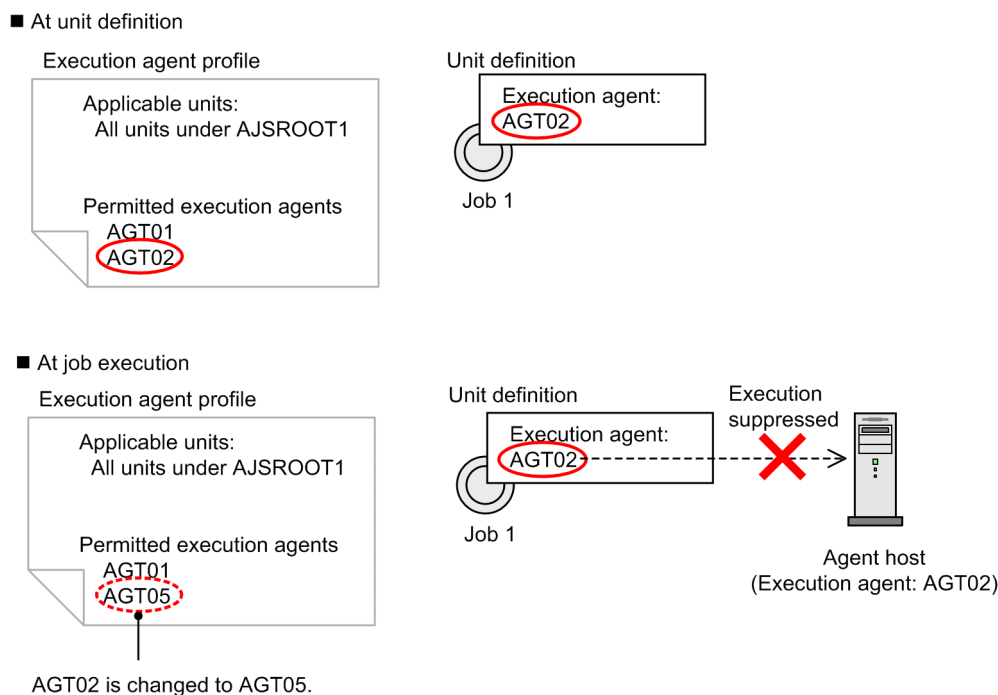


In the Define Details dialog box, if you enter an execution agent that does not appear in the list into the **Exec-agent** combo box and then click **OK**, an error occurs. However, you can configure the execution agent profile to display a warning message instead, and permit the unit to be defined.

- The job is executed

Job execution is suppressed if the execution agent specified for the job is not permitted by the execution agent profile. If you change the execution agent profile after defining the unit, the execution agent is checked against the latest version of the execution agent profile.

Figure 13–7: Execution agent restriction (at job execution)



In this example, AGT02 was permitted as an execution agent for job 1 in the execution agent profile when the unit was defined, but is no longer permitted when the time comes to execute the job. If you leave the unit definition unchanged and attempt to execute job 1 using AGT02, execution is suppressed according to the execution agent profile. To execute the job, amend the unit definition to specify AGT05 as the execution agent for job 1.

(4) Timing

Use this functionality in the following scenarios:

- One JP1/AJS3 - Manager host is used by multiple departments
- You want to reduce job execution errors resulting from improperly defined jobs

(5) Manual references

Type	Item	Location
Overview	Execution agent restriction	2.5.1(6) Execution agent restriction in the JP1/Automatic Job Management System 3 System Design (Configuration) Guide
Configuration		21.1.1 Setting execution agent restrictions in the JP1/Automatic Job Management System 3 Configuration Guide

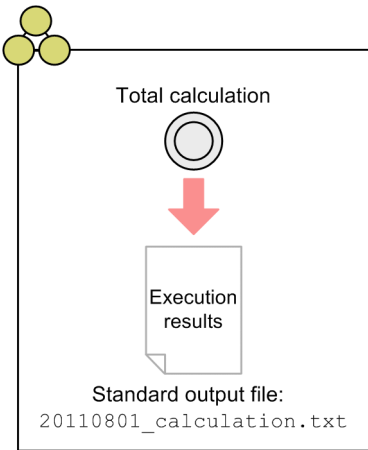
13.1.3 Saving the results of a daily job to a different file each day

If you want a daily job to output its results to a standard output file that includes the date in its file name, you would have to manually change the job definition each day. This incurs not only operating costs, but a risk that the definition might not be changed on a given day. This case study describes how to automatically change the date in the file name of the standard output file.

(1) Operation

The *total calculation* job collects the order information for the execution date, and outputs the calculation results to a standard output file. The name of the output file name includes a character string representing the date (for example 20110801_calculation.txt). This allows you to identify the date on which the data was collected from the file name.

Figure 13–8: Image of total calculation job



In this case, the date portion of the standard output file name in the detailed definition of the *total calculation* job needs to be manually changed each day.

(2) Problem

To reduce operating costs and eliminate the risk that the file name might go unchanged, you want the standard output file name in the detailed definition of the *total calculation* job to change automatically to reflect the date.

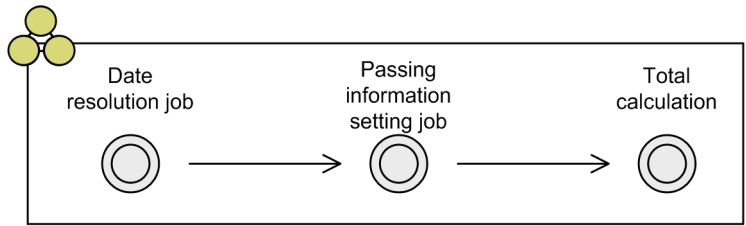
(3) Solution

You can automatically change the name of the standard output file by using a passing information setting job to assign the date to a macro variable, and passing that macro variable to the *total calculation* job.

(4) Configuration example

By defining a jobnet with the structure shown below, you can have the file name of the standard output file reflect the date to which the total applies.

Figure 13–9: Flow of jobnet execution



To define the jobnet:

1. In a jobnet, define a job (date resolution job) that outputs the current date to a standard output file.
Create a job (date resolution job) that outputs the date information to a standard output file in the format `DATE=YYYYMMDD` (where *YYYY*: year, *MM*: month, and *DD*: day.) Specify `$JP1AJS2_JPQSTDOUTTEMP$` in the **Standard output** field for the date resolution job.

2. Define a passing information setting job.

Define a passing information setting job.

Define the job in the Define Details - [Passing Info Settings Job] - [Passing Info] dialog box as follows:

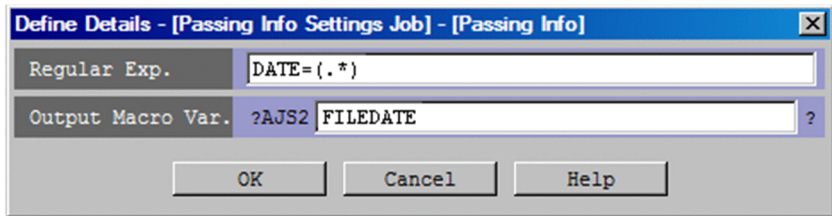
Regular Exp.: Specify a regular expression that extracts the date portion `YYYYMMDD` from the standard output file of the date resolution job.

Output Macro Var.: Specify the name of the macro variable that will store the extracted information.

Definition example:

Regular Exp.: `DATE=(.*)`

Output Macro Var.: `FILEDATE`



3. Define the total calculation job.

In the **Standard output** field, specify the macro variable name.

Standard output: `?AJS2FILEDATE?_calculation.txt`

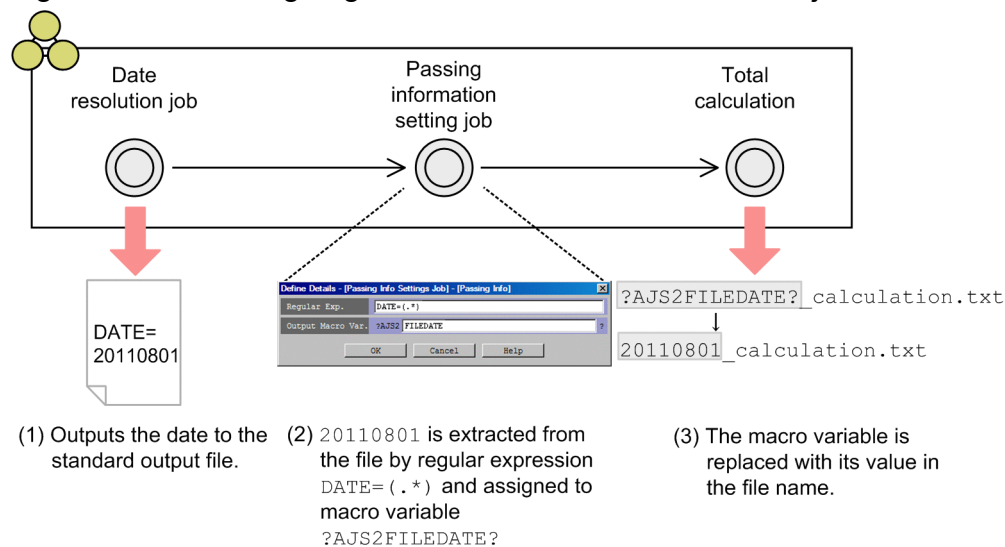
4. Relate the jobs in order of the date resolution job, the passing information setting job, and then the total calculation job.

5. Register the jobnet for execution.

When you execute the jobnet on August 1, 2011, a value of `20110801` is assigned to the `?AJS2FILEDATE?` variable in the standard output file name of the total calculation job. As a result, the total calculation job creates the file `20110801_calculation.txt`.

The following figure shows the flow of assigning the date to the standard output file name of the total calculation job.

Figure 13–10: Assigning the date to the total calculation job standard output file name



(5) Manual references

Type	Item	Location
Overview	Passing information setting job	3.1.1(1)(g) Passing information setting job in the manual JP1/Automatic Job Management System 3 Overview
	Example of defining a passing information setting job	2.4.9 Passing information that changes dynamically to a succeeding unit (example of defining a jobnet that uses a passing information setting job) in the JP1/Automatic Job Management System 3 System Design (Work Tasks) Guide
Dialog boxes		12.4.40 Define Details - [Passing Information Settings Job] dialog box in the JP1/Automatic Job Management System 3 Operator's Guide 12.4.41 Define Details - [Passing Info Settings Job] - [Passing Info] dialog box in the JP1/Automatic Job Management System 3 Operator's Guide

13.1.4 Reinstating a temporary schedule change that was cleared by a release registration

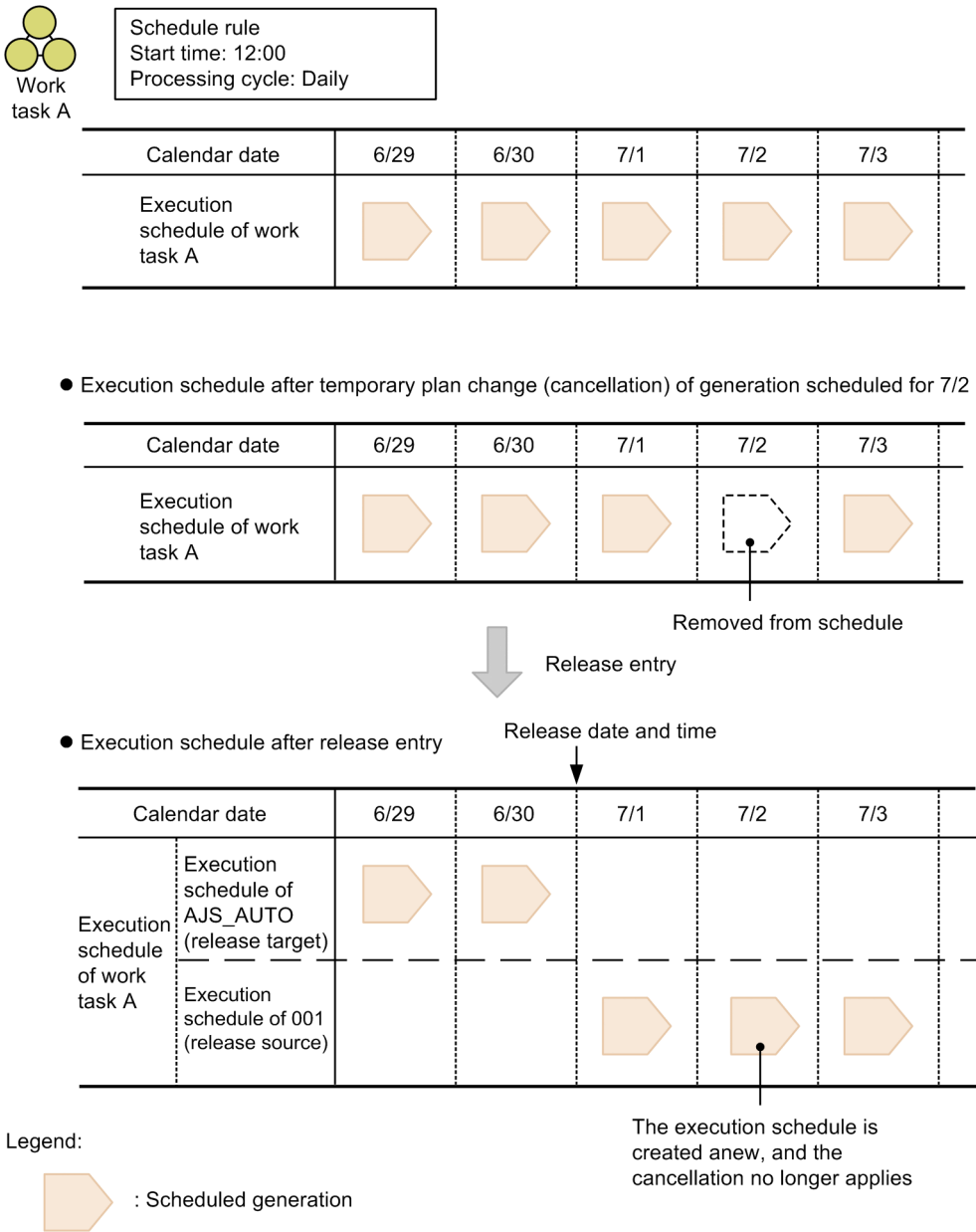
If you perform a release registration of a jobnet whose schedule has been temporarily changed, the temporary change no longer applies after the release date. Manually reinstating the schedule change in this scenario requires time and effort. This case study describes how to reinstate a temporary schedule change for a jobnet after the jobnet is released.

(1) Operation

You perform a release entry to switch the definition of a jobnet during operation, and use a temporary plan change to change the schedule of a registered jobnet.

When you register a root jobnet for release, the execution schedule beyond the release date and time is regenerated subject to the definition of the release source jobnet, and any temporary changes you made to the schedule of the release target jobnet are lost.

Figure 13–11: Example of release registration after temporary schedule change



In this example, the schedule rule of the root jobnet *work task A* has it execute at 12:00 each day. The user cancels the generation scheduled for 7/2, removing it from the schedule. When the user subsequently releases a jobnet definition with the release ID 001 specifying *work task A* as its release target, generations scheduled for 7/1 (the release date) onward are produced according to the jobnet definition associated with release ID 001, and the generation scheduled for 7/2 is no longer canceled.

For the cancellation to apply to the execution schedule after the jobnet is released, you need to manually reinstate it in the schedule of the jobnet associated with release ID 001.

(2) Problem

You want temporary schedule changes to be reflected in the execution schedule of a jobnet after release entry.

(3) Solution

You can use the functionality for managing temporary change operations to automatically record and manage temporary changes. This functionality allows you to view a list of temporary changes, and reinstate a temporary change by selecting it from the list.

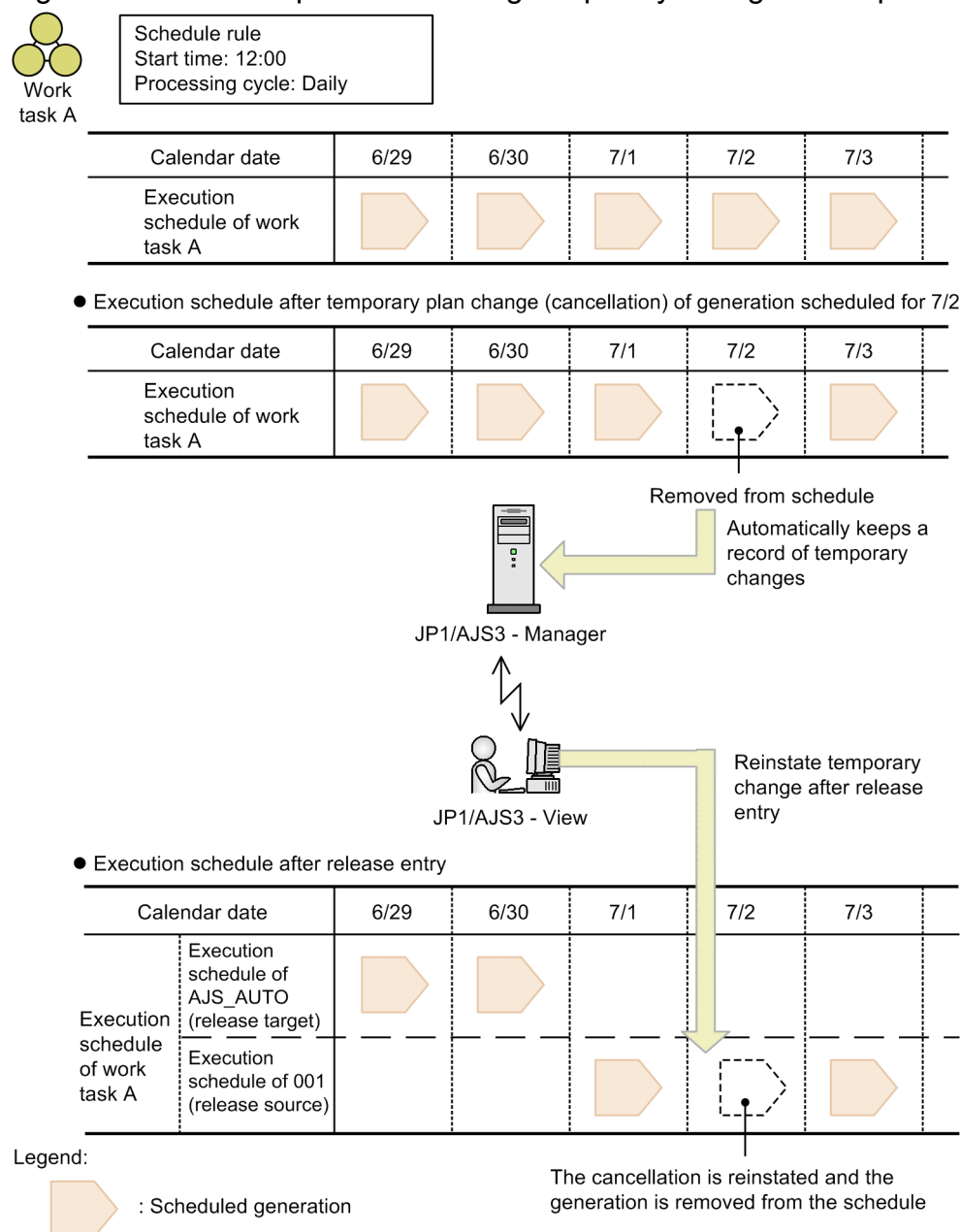
This provides the following advantages:

- You no longer need to manage past temporary changes manually.
- A temporary change made to a jobnet before its release can be easily, quickly, and reliably applied to generations of the jobnet generated after its release entry.

In JP1/AJS3 - View, you can view a list of past temporary changes in the Temporary Changes dialog box. When you release a root jobnet, you can access the Temporary Changes dialog box from the Register for Release dialog box, and reinstate any temporary changes you had made to the release target jobnet.

The following figure shows an example of reinstating a temporary change made before releasing a jobnet.

Figure 13–12: Example of reinstating temporary change made prior to release



The schedule rule of the root jobnet *work task A* has it execute at 12:00 each day. When the user performs a temporary plan change that cancels the generation scheduled for 7/2, JP1/AJS3 - Manager automatically keeps a record of the change. When the user subsequently releases a jobnet definition with the release ID 001 specifying *work task A* as its release target, he or she can reinstate the cancellation for *work task A* by selecting it in the Temporary Changes dialog box. This applies the cancellation to the generation of release ID 001 scheduled for 7/2 and removes it from the schedule.

(4) Manual references

Type	Item	Location
Overview	Re-execution of a temporary change	4.5.16 Displaying and re-executing temporary change operations for a job or jobnet in the manual JP1/Automatic Job Management System 3 Overview
	How to use the jobnet release function	7.3.8(3) Recommended methods of operation

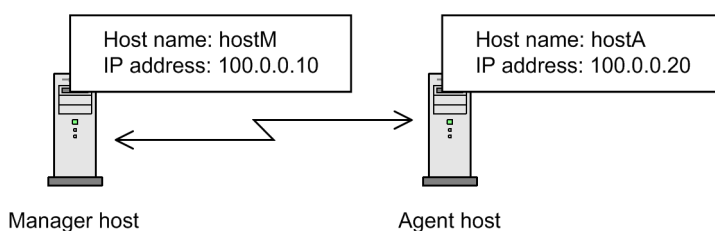
Type	Item	Location
Configuration		• 6.1.9 Settings for using the temporary change operation management function in the JP1/Automatic Job Management System 3 Configuration Guide (for Windows) • 15.1.9 Settings for using the temporary change operation management function in the JP1/Automatic Job Management System 3 Configuration Guide (for UNIX)
Operating procedures		9.17 Displaying and re-executing temporary changes in the JP1/Automatic Job Management System 3 Operator's Guide
Dialog boxes		• 12.3.27 Register for Release dialog box in the JP1/Automatic Job Management System 3 Operator's Guide • 12.3.40 Temporary Changes dialog box in the JP1/Automatic Job Management System 3 Operator's Guide

13.1.5 Using an alias for the execution host name of an event job in a manager/agent configuration

When you use the JP1/AJS3 system in a manager/agent configuration, you might need to specify an alias host name as the execution host for an event job. This case study describes how to specify an agent host by an alias host name.

(1) Goals

In a manager/agent configuration like the following, you want to specify an alias host name as the execution host (agent host) of an event job.



For details about manager/agent configurations, see 2.2.2 *Examples of manager/agent system configurations* in the JP1/Automatic Job Management System 3 System Design (Configuration) Guide.

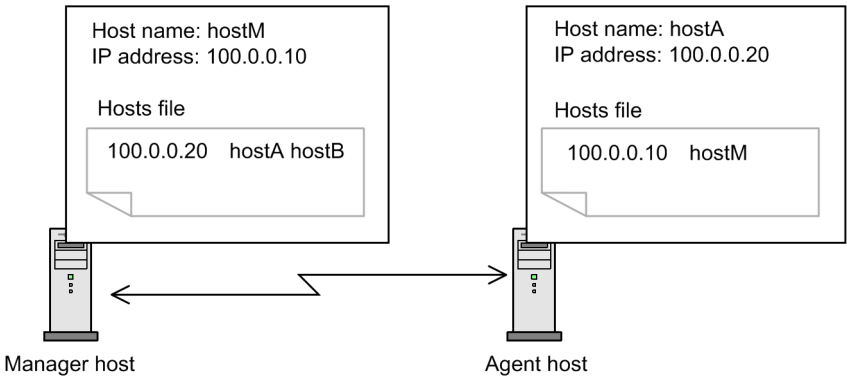
(2) Solution

Communication between the manager host and agent host is based on the IP addresses resolved from their host names. For this reason, the environment must be configured so that the manager host can correctly resolve the host name of the agent host and vice versa.

If you define an alias *hostB* for the agent host with the host name *hostA*, configure the *hosts* file, DNS, *jp1hosts*, or *jp1hosts2* file so that the alias of the agent host and its real name resolve to the same IP address.

The following figure shows an example of configuring the *hosts* file. Configure the file as follows.

Figure 13–13: Example of hosts file defining an alias host name



(3) Timing

Use this procedure when setting up the manager host and agent host.

(4) Manual references

Type	Item	Location
Overview	Manager/agent configuration	2.2.2 Examples of manager/agent system configurations in the JP1/Automatic Job Management System 3 System Design (Configuration) Guide
	Use of alias host names in a manager/agent configuration	2.2.2(4) Notes on manager/agent system configurations in the JP1/Automatic Job Management System 3 System Design (Configuration) Guide
	jplhosts or jplhosts2	JP1/Base User's Guide

13.1.6 Limiting JP1/AJS3 - Manager resources to those used for job operation

Even if you use JP1/AJS3 - Manager only for job execution, the functions you do not use still use system resources, increasing the load on the host. This case study describes how to reduce resources used by JP1/AJS3 by restricting the functionality of JP1/AJS3 - Manager to job execution.

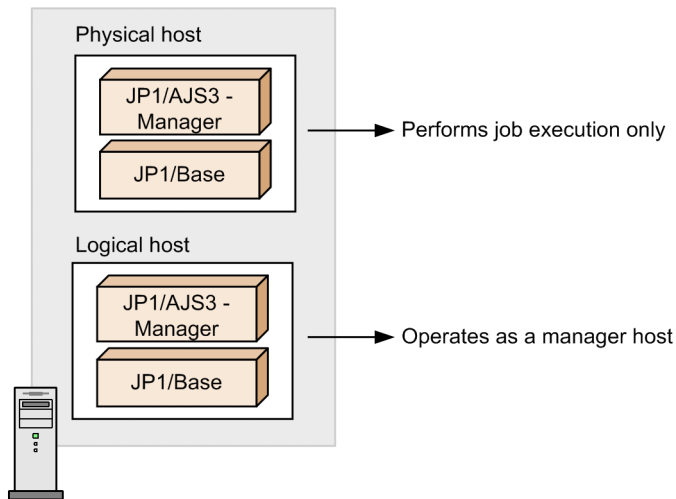
(1) Operation

A logical host is set up on a physical host, and instances of JP1/AJS3 - Manager are installed on the physical and logical hosts. Each host is utilized as follows:

- Physical host
 - Executes jobs but does not provide the functionality of a manager host.
- Logical host
 - Serves as a manager host.

The following figure shows this type of host configuration.

Figure 13–14: Host configuration



(2) Goal

To reduce the use of resources by JP1/AJS3.

(3) Solution

Suppress startup of some JP1/AJS3 processes. For example, in [Figure 13-14](#), you can prevent the embedded database from starting automatically on the physical host, limiting the functionality of JP1/AJS3 - Manager on the physical host to that which is essential for job execution.

This process reduces the memory used by the JP1/AJS3 system, and also cuts down the startup time.

(4) Timing

Perform the settings before starting operation.

(5) Configuration procedure

The procedures for Windows and UNIX are described below. Make sure that you back up the configuration and definition files before modifying them. To undo your changes, restore the backup file to its original location. For details, see [2.3.4 Recovering the JP1/AJS3 - Manager setup information](#).

(a) In Windows

1. If the embedded database uses a method from a version earlier than 10-00, change the value set in the system common definition file.

Open the following file in a text editor such as Notepad, and change the setting. Do not perform this step if the embedded database uses a method from version 10-00 or later.

```
embedded-database-practical-directory\conf\pdsys
```

Before

```
set pd_mode_conf = AUTO
```

After

```
set pd_mode_conf = MANUAL2
```

2. Change the entries in the JP1/AJS3 startup process definition file.

Open the startup process definition file in a text editor such as Notepad, and delete lines beginning with `jajs_dbmd`, `jajs_hstd`, and `jajs_schd`.

Path of startup process definition file:

JP1/AJS3-installation-folder\conf\jplajs_spmd.conf

Before

```
jajs_dbmd|jajs_dbmd.exe|||1800|
jajs_hstd|jajs_hstd.exe|||1800|
jajs_agtd|jajs_agtd.exe|||1800|
jajs_schd|jajs_schd.exe|||1800|
```

After

```
jajs_agtd|jajs_agtd.exe|||1800|
```

Remarks

If you use a logical host for job execution and want to prevent certain processes from starting on the logical host, edit the startup process definition file at the following location:

shared-folder-specified-by-jajs_setup_cluster-command\jplajs2\conf\jplajs_spmd.conf

3. Change the entries in the JP1/AJS3 extended startup process definition file.

Open the extended startup process definition file in a text editor such as Notepad, and delete lines beginning with `jajs_dbmd`, `jajs_hstd`, and `jajs_schd`. Also delete the `jajs_hstd` portion of the line beginning with `jajs_agtd`.

The following are the location of the startup process definition file and an example of the changes.

Path of extended startup process definition file:

JP1/AJS3-installation-folder\conf\jplajs_service_0700.conf

Before

```
jajs_dbmd|jajs_dbmd.exe||0|3|3|21600|0|2||1|||||
jajs_hstd|jajs_hstd.exe||1|3|20|21600|0|0|jajs_dbmd|1|||||
jajs_agtd|jajs_agtd.exe|-HA|1|3|3|21600|0|0|jajs_hstd|1|||||
jajs_schd|jajs_schd.exe|-HA|1|3|10|21600|0|1|jajs_agtd|1|||||
```

After

```
jajs_agtd|jajs_agtd.exe|-HA|1|3|3|21600|0|0||1|||||
```

Remarks

If you use a logical host for job execution and want to prevent certain processes from starting on the logical host, edit the extended startup process definition file at the following location:

shared-folder-specified-by-jajs_setup_cluster-command\jplajs2\conf\jplajs_service_0700.conf

4. Restart the JP1/AJS3 service.

(b) In UNIX

1. If the embedded database uses a method from a version earlier than 10-00, change the value set in the system common definition file.

Open the following file in an editor such as `vi`, and change the setting. Do not perform this step if the embedded database uses a method from version 10-00 or later.

Before

```
set pd_mode_conf = AUTO
```

After

```
set pd_mode_conf = MANUAL2
```

2. Change the entries in the JP1/AJS3 startup process definition file.

Open the startup process definition file in a text editor (such as the vi editor), and then delete lines that begin with `jajs_dbmd`, `jajs_hstd`, and `jajs_schd`.

The following are the location of the startup process definition file and an example of the changes.

Path of startup process definition file:

```
/etc/opt/jplajs2/conf/jplajs_spmd.conf
```

Before

```
jajs_dbmd|/opt/jplajs2/bin/jajs_dbmd|||1800|
jajs_hstd|/opt/jplajs2/bin/jajs_hstd|||1800|
jajs_agtd|/opt/jplajs2/bin/jajs_agtd|||1800|
jajs_schd|/opt/jplajs2/bin/jajs_schd|||1800|
```

After

```
jajs_agtd|/opt/jplajs2/bin/jajs_agtd|||1800|
```

Remarks

If you use a logical host for job execution and want to prevent certain processes from starting on the logical host, edit the startup process definition file at the following location:

shared-directory-specified-by-jajs_setup_cluster-command/jplajs2/conf/jplajs_spmd.conf

3. Change the entries in the JP1/AJS3 extended startup process definition file.

Open the extended startup process definition file in a text editor such as vi, and delete lines beginning with `jajs_dbmd`, `jajs_hstd`, and `jajs_schd`. Also delete the `jajs_hstd` portion of the line beginning with `jajs_agtd`.

The following are the location of the startup process definition file and an example of the changes.

Path of extended startup process definition file:

```
/etc/opt/jplajs2/conf/jplajs_service_0700.conf
```

Before

```
jajs_dbmd|/opt/jplajs2/bin/jajs_dbmd||0|3|3|21600|0|2||1|||||
jajs_hstd|/opt/jplajs2/bin/jajs_hstd||1|3|20|21600|0|0|jajs_dbmd|1|||||
jajs_agtd|/opt/jplajs2/bin/jajs_agtd|-HA|1|3|3|21600|0|0|
jajs_hstd|1|||||
jajs_schd|/opt/jplajs2/bin/jajs_schd|-HA|1|3|10|21600|0|1|
jajs_agtd|1|||||
```

After

```
jajs_agtd|/opt/jplajs2/bin/jajs_agtd|-HA|1|3|3|21600|0|0||1|||||
```

Remarks

If you use a logical host for job execution and want to prevent certain processes from starting on the logical host, edit the extended startup process definition file at the following location:

*shared-directory-specified-by-jajs_setup_cluster-command/jp1ajs2/
conf/jp1ajs_service_0700.conf*

4. Restart the JP1/AJS3 service.

(6) Manual references

Type	Item	Location
Overview	Process list	• <i>B.2 Processes (for Windows)</i> in the manual <i>JP1/Automatic Job Management System 3 Troubleshooting</i> • <i>B.3 Processes (for UNIX)</i> in the manual <i>JP1/Automatic Job Management System 3 Troubleshooting</i>
Configuration		<i>23.1 Preparation for using an embedded database in the JP1/Automatic Job Management System 3 Configuration Guide</i>

(7) Cautionary notes

- In this configuration, if you suppress the processes started by JP1/AJS3, the information that is output when the `jajs_spmd_status` command is executed will change. The following are examples of the output of the `jajs_spmd_status` command when some processes are prevented from starting.

In Windows

```
KNAD3690-I Processing to report the status of JP1/AJS3 has started.
Running processes are as follows:
Process name      Process ID
  jajs_agtd        xxxx
   queuea         xxxx
  evactiona        xxxx
KNAD3691-I All the processes have started.
```

In UNIX

```
KNAD3690-I Processing to report the status of JP1/AJS3 has started.
Running processes are as follows:
Process name      Process ID
  jajs_agtd        xxxx
   jpqmon          xxxx
  jpoagent         xxxx
KNAD3691-I All the processes have started.
```

- In this configuration, if you suppress the processes started by JP1/AJS3, the available commands will be the commands provided by JP1/AJS3 - Agent. For details about the commands provided by JP1/AJS3 - Agent, see *1.5 Commands* in the manual *JP1/Automatic Job Management System 3 Command Reference*.
- If you configure these settings, you will no longer be able to set the Windows logical host to be automatically attached or detached when a queueless job is used.
For details about how to configure JP1/AJS3 to automatically attach and detach logical hosts, see *8.2.7 Setting up the queueless job execution environment* in the *JP1/Automatic Job Management System 3 Configuration Guide*.
- To create a logical host after specifying this configuration on the physical host, perform one of the following procedures, depending on your operation:
 - If you want to limit the operations performed on the logical host to job execution:

On the logical host, check whether the JP1/AJS3 startup process definition file and extended startup process definition file have changed to the state that indicates the configuration procedure explained in this subsection has been performed. If the files have not changed, perform the configuration procedure.

- If you do not want to limit the operations performed on the logical host to job execution:

On the logical host, recover the JP1/AJS3 startup process definition file and extended startup process definition file from the following model files:

In Windows:

shared-folder-specified-by-the-jajs_setup_cluster-command\jplajs2\conf\jplajs_spmd.conf.model

shared-folder-specified-by-the-jajs_setup_cluster-command\jplajs2\conf\jplajs_service_0700.conf.model

In UNIX:

shared-directory-specified-by-the-jajs_setup_cluster-command/jplajs2/conf/jplajs_spmd.conf.model

shared-directory-specified-by-the-jajs_setup_cluster-command/jplajs2/conf/jplajs_service_0700.conf.cluster.model

- If you apply this setting, you will no longer be able to check the operating information of JP1/AJS3 in the Web GUI (Management Portal).

13.1.7 Isolating the business operations of each scheduler service on a single manager host

For the independent operations of their businesses, the corporate departments require independent resources (execution agents or scheduler services). However, if each department operates its own manager host, information sharing and resource reuse becomes difficult, resulting in excessive management and operating costs.

This subsection describes how corporate departments can use a single manager host for the independent operation of their businesses.

(1) Operation

Assume that each department has following types of users.

Table 13–3: Example of users

No	Department	User role
1	Sales	Job administrator: Designs, organizes, and runs jobs that are used by the sales department.
2	General affairs	Job administrator: Designs, organizes, and runs jobs that are used by the general affairs department.
3	Information systems	JP1/AJS3 system administrator: Manages the entire JP1/AJS3 system.

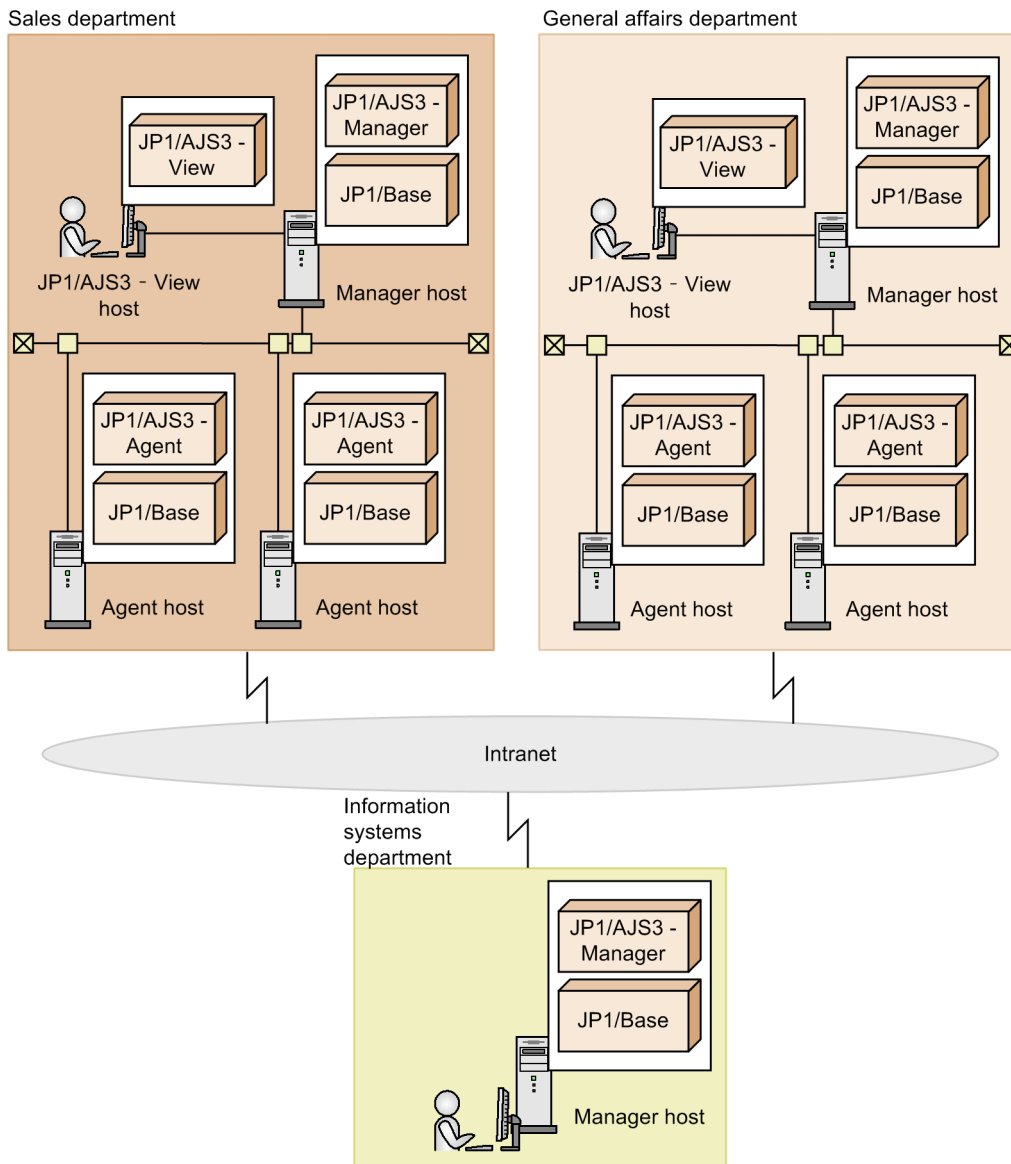
This company uses JP1/AJS3 as follows to enable each department to independently operate its businesses.

- Each department operates a separate manager host and agent hosts.
- The job administrator of each department uses a separate JP1/AJS3 - View to perform job operations.

- The JP1/AJS3 system administrator in the information systems department manages the entire JP1/AJS3 system.

The following figure shows an example in which each department operates its own manager host and agent hosts.

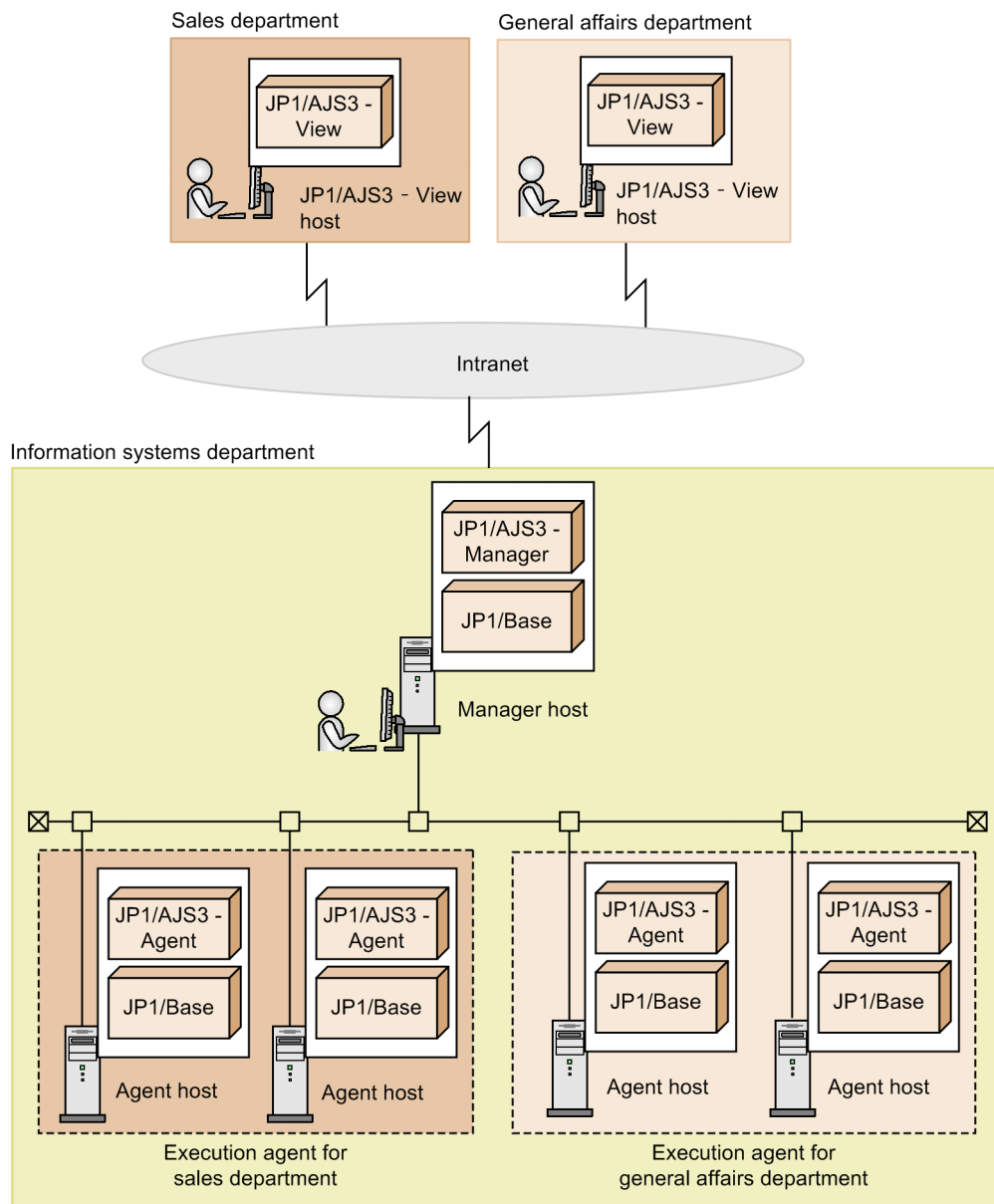
Figure 13–15: An example in which each department operates its own manager host and agent hosts



(2) Goal

The goal is to consolidate the separate manager hosts on a single manager host, and make it possible for each department to independently operate its businesses.

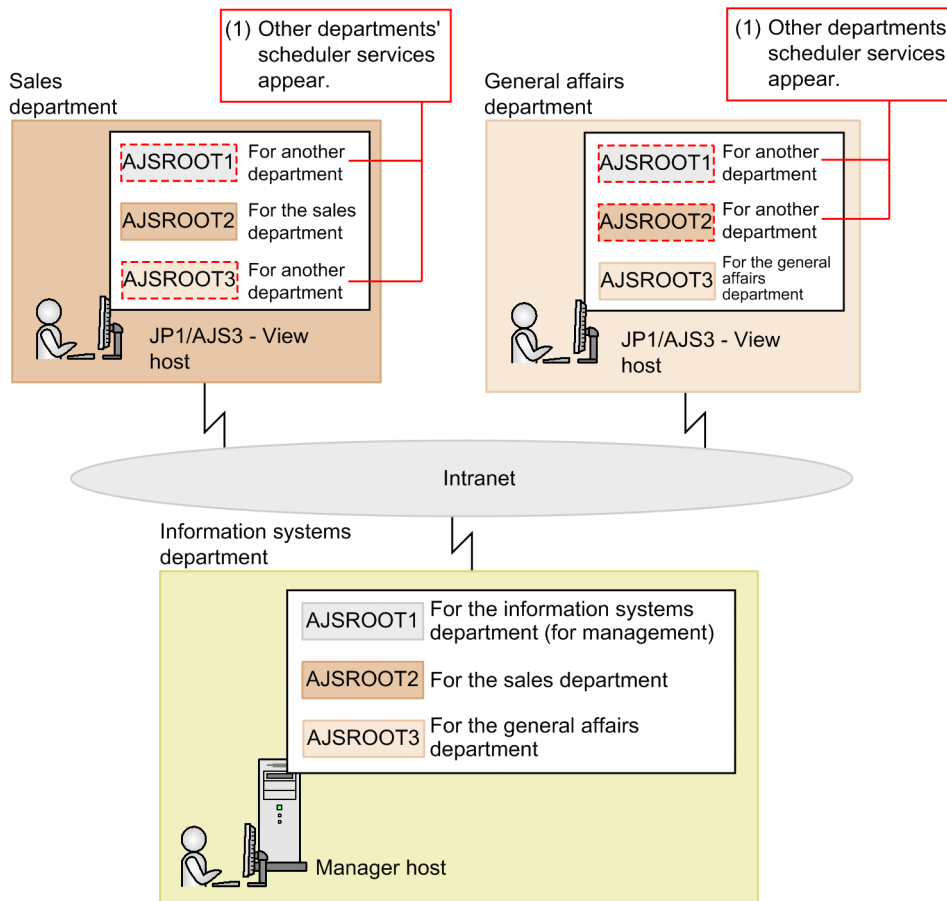
Figure 13–16: Configuration example of an integrated JP1/AJS3 system



Specifically, the following objectives must be achieved:

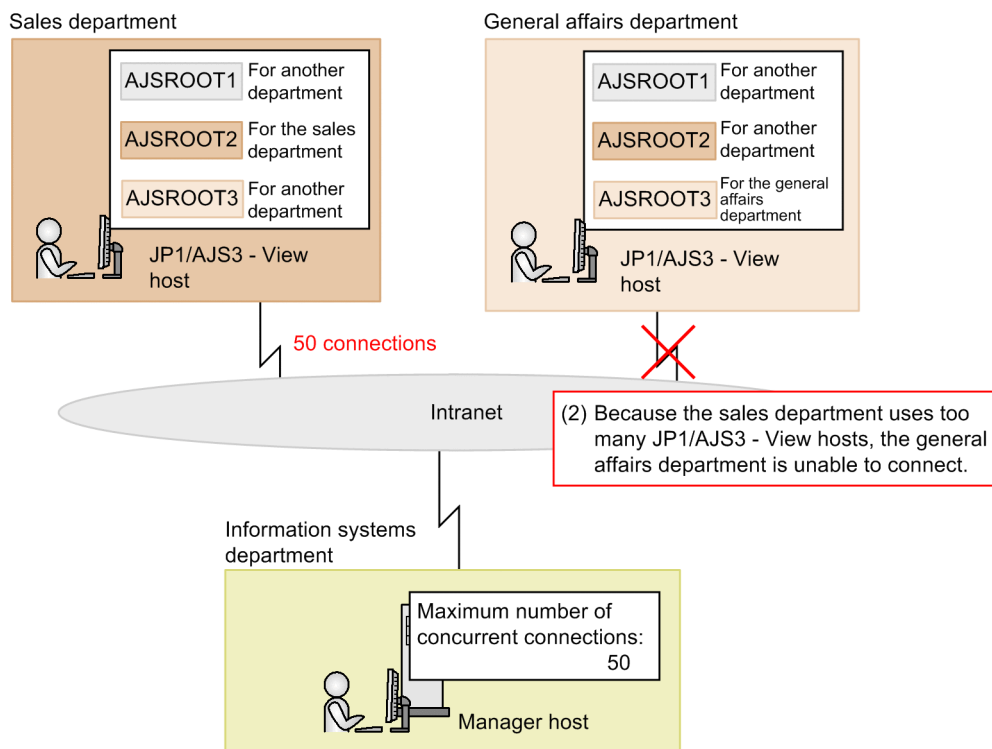
1. JP1/AJS3 - View does not display the scheduler services of other departments.

If a single manager host is used, the default setting enables all scheduler services, including those of other departments, to be displayed. A department that independently operates its businesses does not need information about the scheduler services of other departments.

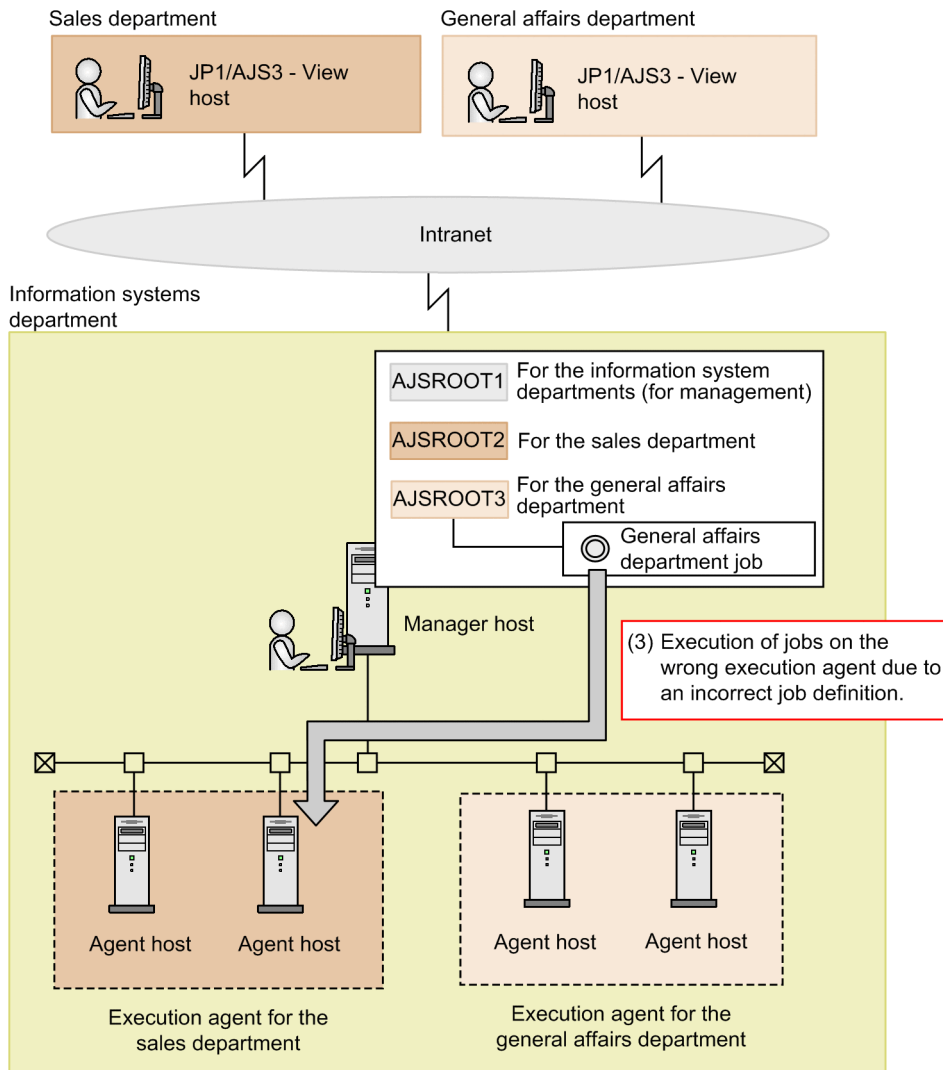


2. The number of concurrent JP1/AJS3 - View connections for each department must be limited.

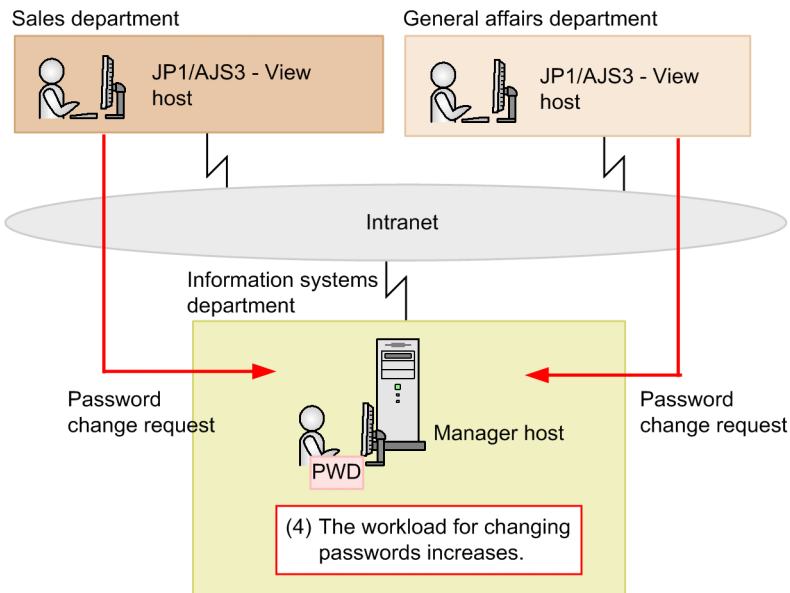
By default, a single manager host can accept no more than 50 connections from JP1/AJS3 - View hosts. If one department is concurrently using JP1/AJS3 - View on 50 host connections, other departments will not be able to use JP1/AJS3 - View.



3. A job belonging to one department must not be executed by an execution agent belonging to another department.
If job execution agents are not defined properly, jobs might be executed on another department's execution agent.



4. The job administrator of each department must be able to change passwords.
If a single manager host is used, only the JP1/AJS3 system administrator can manage JP1/Base. Accordingly, the JP1/AJS3 system administrator's workload increases because the system administrator becomes responsible for changing the passwords of JP1 users.



Legend:



: A user that is able to change passwords

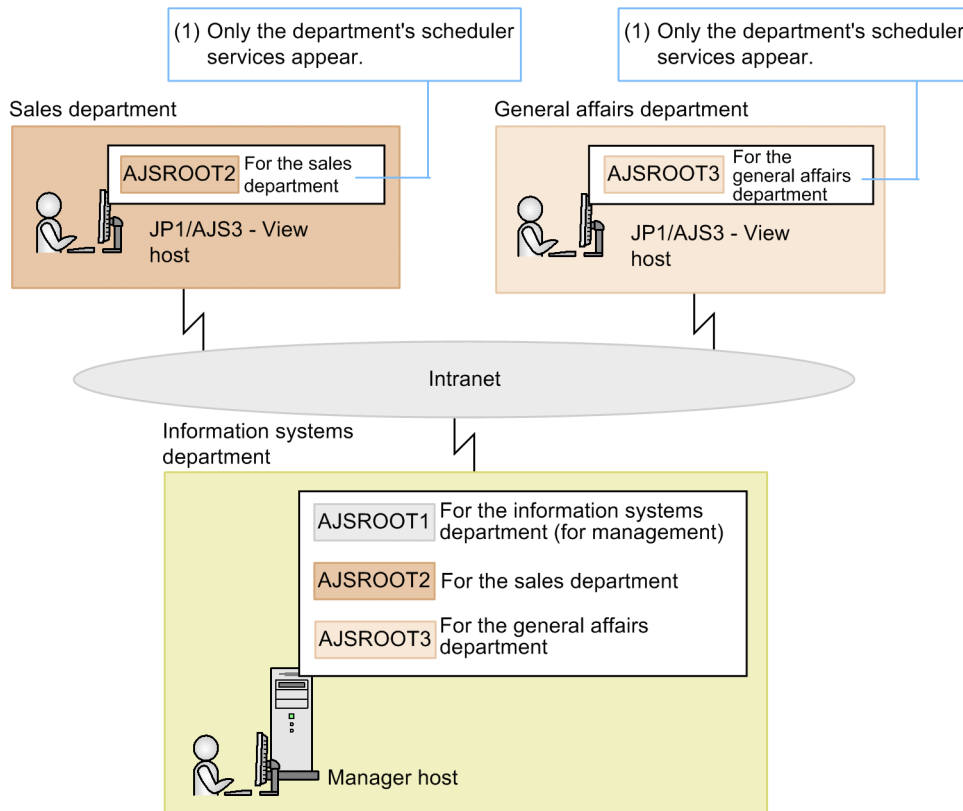
(3) Solution

This subsection presents a method for achieving each of the objectives in (2) *Goal*. Performing this settings will make it possible for each department to operate its businesses independently.

1. JP1/AJS3 - View does not display the scheduler services of other departments.

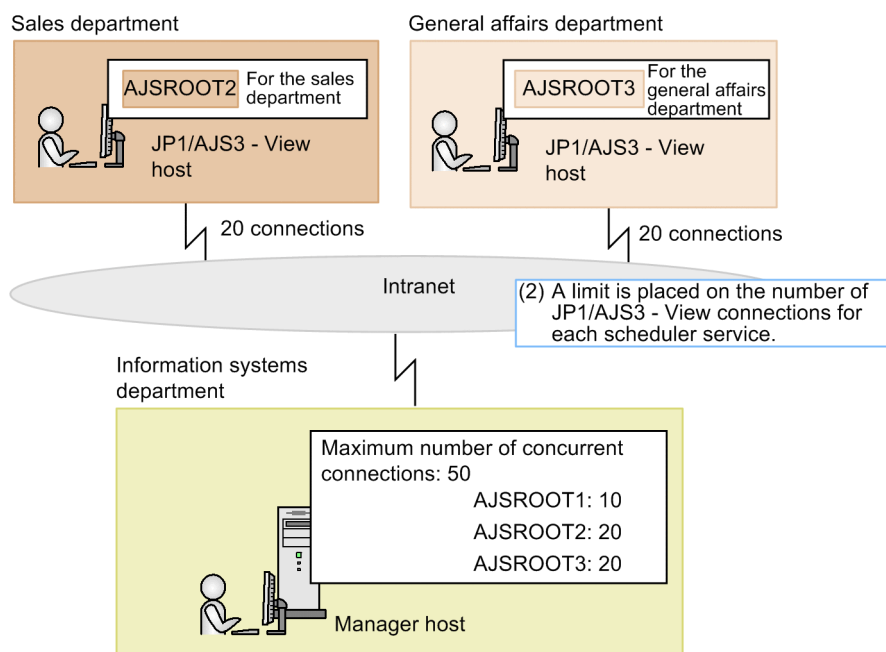
The scheduler service reference restriction function allows the JP1/AJS3 - View used by a department to display only the scheduler services to which the department has access permission.

JP1/AJS3 - View for the sales department displays only the scheduler services used by the sales department, whereas JP1/AJS3 - View for the general affairs department displays only the scheduler services used by the general affairs department.



2. The number of concurrent JP1/AJS3 - View connections for each department must be restricted.

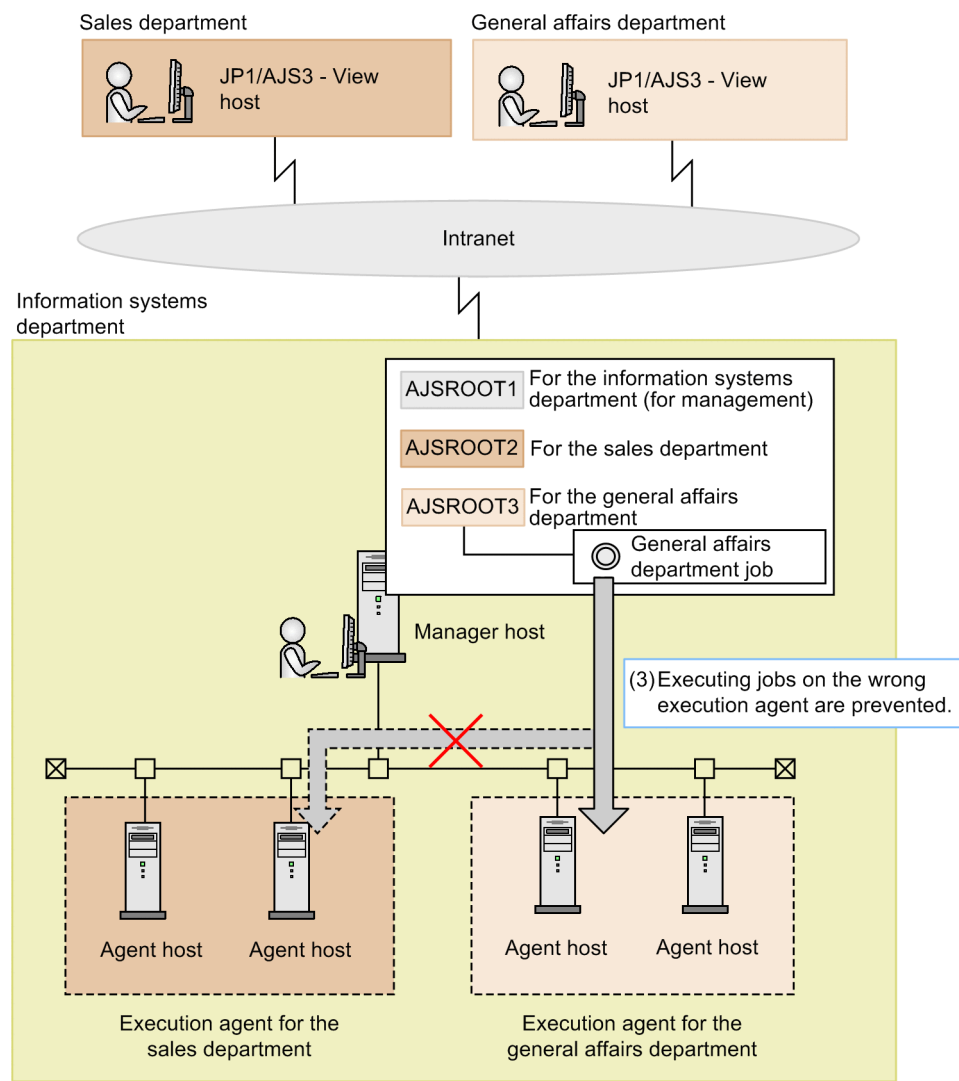
Setting the maximum number of concurrent JP1/AJS3 - View connections for each scheduler service places a limit on the number of JP1/AJS3 - View hosts that each department can use. This setting prevents any one department from using too many JP1/AJS3 - View hosts at the same time and ensures that each department is able to connect from JP1/AJS3 - View.



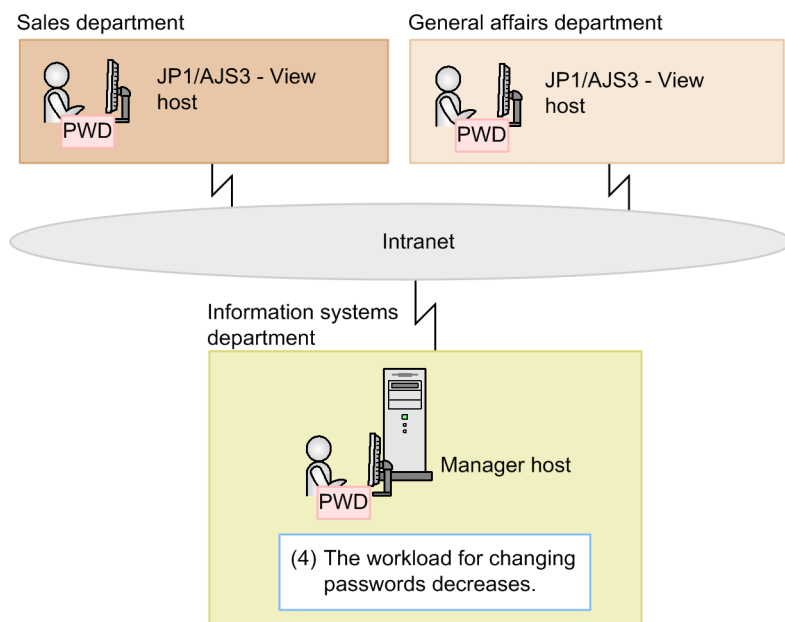
3. A job belonging to one department must not be executed by an execution agent belonging to another department.

The execution agent restriction function is used to prohibit job execution on unauthorized execution agents. This setting prevents the execution of a job on an execution agent that belongs to another department.

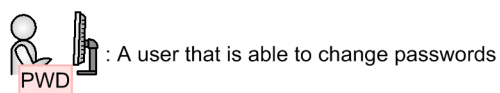
For details about the case study for the execution agent restriction function, see *13.1.2 Preventing execution of jobs that are invalid due to an incorrectly specified execution agent or other reason.*



- The job administrator of each department must be able to change passwords.
The function for changing JP1 user passwords in JP1/AJS3 - View permits a job administrator to change the passwords of the JP1 users in JP1/AJS3 - View. This setting reduces the workload of the JP1/AJS3 system administrator.



Legend:



(4) Configuration example

This subsection describes the steps for setting the following functions:

1. The scheduler service reference restriction function
2. A function for limiting the maximum number of concurrent connections for a scheduler service
3. Execution agent restriction function
4. A function for changing JP1 user passwords in JP1/AJS3 - View

Suppose that the manager agent configuration has been changed as shown in [Figure 13-16](#).

The JP1 users are assumed to be those in the following table.

Table 13–4: Example JP1 users

No	JP1 user name	Department	User role
1	userA	Sales	Job administrator: Designs, organizes, and runs jobs that are used by the sales department.
2	userB	General affairs	Job administrator: Designs, organizes, and runs jobs that are used by the general affairs department.
3	jp1admin	System administration	JP1/AJS3 system administrator: Manages JP1/AJS3 and JP1/Base.

The JP1/AJS3 system administrator performs the following operations on the manager host.

(a) Example of setting the scheduler service reference restriction function

This subsection describes how to set the scheduler service reference restriction function.

- 1. Stop the JP1/AJS3 services.
- 2. Execute the following command to set the HIDEOTHERSERVICE environment setting parameter:

```
jaajs_config -k [JP1_DEFAULT\JP1AJSMANAGER] "HIDEOTHERSERVICE"="yes"
```

The function is enabled.

- 3. Define the JP1 permission level and JP1 resource group appropriate for each JP1 user in JP1/Base.
The definition is as follows.

Table 13–5: JP1 user definition

No	JP1 user name	JP1 permission level	JP1 resource group name
1	userA	JP1_AJS_Manager	Sales
2	userB	JP1_AJS_Manager	GeneralAffairs
3	jpladmin	JP1_AJS_Admin	*

For the job administrators *userA* and *userB*, define *JP1_AJS_Manager* as the JP1 permission level. This permission level enables these users to define, execute, and edit units.

For the JP1/AJS3 system administrator *jpladmin*, define *JP1_AJS_Admin* as the JP1 permission level. In addition to defining, executing, and editing units, this permission level enables the user to change definitions for owner names and JP1 resource group names for units even without owner permission.

- 4. Create new scheduler services used by each department
To create a new scheduler service, execute the `jaajs_setup` command or manually create the service.
Suppose that the new scheduler service *AJSROOT2* has been created for the sales department and the new scheduler service *AJSROOT3* has been created for the general affairs department.
- 5. Restart the JP1/AJS3.
- 6. For each scheduler service, execute the following command to define the owner and JP1 resource group for the root job group of the scheduler service:

```
ajschange -F service-name -G -o owner-name -g JP1-resource-group-name /
```

Specify the scheduler service name, owner name, and JP1 resource group name as follows.

Table 13–6: Owner and JP1 resource group definitions for the root job group of the scheduler service

No	Scheduler service name (root job group name)	Owner	JP1 resource group name
1	AJSROOT1	jpladmin	system
2	AJSROOT2	jpladmin	Sales
3	AJSROOT3	jpladmin	GeneralAffairs

For the owner name, specify *jpladmin*, the user name of the JP1/AJS3 system administrator, for all of the root job groups. This setting prevents the job administrators in the departments from changing the owner and JP1 resource group definitions for the root job group.

For the JP1 resource group, define the same name as the name of the JP1 resource group of the JP1 users that use a particular scheduler service. If departments do not use *AJSROOT1* (default scheduler service), define a JP1 resource group name that is not *Sales* or *GeneralAffairs*.

Cautionary notes

- Make sure that the JP1 user name of the JP1/AJS3 system administrator is defined as the owner of the root job group.
If the owner of the root job group is not defined, the definition of the owner and JP1 resource group for the root job group can be changed in any department. If this happens, scheduler services used by the department might not be displayed in the department's JP1/AJS3 - View.
- Make sure that a JP1 resource group name is defined for each root job group. If a name is not defined, even the user *jp1admin*, which has access permission for all JP1 resource groups, will not be displayed in JP1/AJS3 - View.

7. Set preferences and customize JP1/AJS3 - View as necessary.

Set preferences and customize JP1/AJS3 - View so that job administrators can run jobs.

The following are necessary considerations for the setting process:

- If you want to allow job administrators *userA* and *userB* to apply a setting that will be enabled for all JP1 users, log in to JP1/AJS3 - View as both *userA* and as *userB* and specify the setting.
- Consider whether to use the upload or download functionality of the common user profile. If neither functionality is used, disable the **common user profile** menu in JP1/AJS3 - View.

(b) Example of setting the maximum number of concurrent JP1/AJS3 - View connections for each scheduler service

This subsection describes how to set the maximum number of concurrent connections in JP1/AJS3 - View for scheduler services.

1. Stop the JP1/AJS3 services.
2. Execute the following command to set the `SERVICEMAXSESSION` environment setting parameter for a scheduler service:

```
jajs_config -k [JP1_DEFAULT\JP1AJSMANAGER\scheduler-service-name] "SERVICE  
MAXSESSION"=dword:maximum-concurrent-connections (hexadecimal)
```

For example, if you want to permit a maximum of 20 concurrent connections for the scheduler service *AJSROOT2* used by the sales department, execute the following command:

```
jajs_config -k [JP1_DEFAULT\JP1AJSMANAGER\AJSROOT2] "SERVICEMAXSESSION"=dw  
ord:00000014
```

3. Restart the JP1/AJS3.

The maximum number of concurrent connections of JP1/AJS3 - View for the scheduler service is defined.

(c) Example of setting the execution agent restriction function

This subsection describes how to set the execution agent restriction function.

1. Create an execution agent profile and edit it.
Create an execution agent profile for each scheduler service and specify the names of the execution agents for which you want to permit execution.
2. Enable the execution agent restriction function.

Use one of the following methods to enable the execution agent restriction function:

- Restart the JP1/AJS3 service.
- Restart the scheduler service.
- Execute the `ajsprowalter` command.

(d) Example settings for the function used to change JP1 user passwords in JP1/AJS3 - View

This subsection describes how to set the function used to change JP1 user passwords in JP1/AJS3 - View.

1. Stop the JP1/AJS3 services.
2. Execute the following command to set the `CHANGEPASSWORD` and `CHANGEPWDLOG` environment setting parameter:

```
jajs_config -k [JP1_DEFAULT\JP1AJSMANAGER] "CHANGEPASSWORD"="yes"
jajs_config -k [JP1_DEFAULT\JP1AJSMANAGER] "CHANGEPWDLOG"="all"
```

3. Restart the JP1/AJS3.

The function is enabled in JP1/AJS3 - View.

(5) Manual references

Type	item	Location
Overview	Execution agent restriction	• 2.5.1(6) <i>Execution agent restriction in the JP1/Automatic Job Management System 3 System Design (Configuration) Guide</i>
	Unit owner and JP1 resource group	• 7.2 <i>Settings for restricting access to units in the manual JP1/Automatic Job Management System 3 Overview</i> • 6.4 <i>Setting access permissions in the JP1/Automatic Job Management System 3 System Design (Work Tasks) Guide</i>
Configuration	Restricting the viewing of scheduler services	• 6.1.10 <i>Settings for preventing scheduler services for which the user does not have access permission from appearing in JP1/AJS3 - View in the JP1/Automatic Job Management System 3 Configuration Guide (for Windows)</i> • 15.1.11 <i>Settings for preventing scheduler services for which the user does not have access permission from appearing in JP1/AJS3 - View in the JP1/Automatic Job Management System 3 Configuration Guide (for UNIX)</i>
	Maximum number of concurrent connections for JP1/AJS3 - View for a scheduler service	• 6.1.11 <i>Settings for restricting the maximum number of allowed concurrent sessions for scheduler services in the JP1/Automatic Job Management System 3 Configuration Guide (for Windows)</i> • 15.1.12 <i>Settings for restricting the maximum number of allowed concurrent sessions for scheduler services in the JP1/Automatic Job Management System 3 Configuration Guide (for UNIX)</i>
	Adding a scheduler service	• 6.1.1(1) <i>Adding a scheduler service in the JP1/Automatic Job Management System 3 Configuration Guide (for Windows)</i> • 15.1.1(1) <i>Adding a scheduler service in the JP1/Automatic Job Management System 3 Configuration Guide (for UNIX)</i>
	Execution agent restriction	• 21.1.1 <i>Setting execution agent restrictions in the JP1/Automatic Job Management System 3 Configuration Guide</i>
	Function used to change JP1 user passwords in JP1/AJS3 - View	• 6.9.3 <i>Settings for permitting changing JP1 user passwords in JP1/AJS3 - View in the JP1/Automatic Job Management System 3 Configuration Guide (for Windows)</i>

Type	item	Location
Configuration	Function used to change JP1 user passwords in JP1/AJS3 - View	15.10.3 Settings for permitting changing JP1 user passwords in JP1/AJS3 - View in the JP1/Automatic Job Management System 3 Configuration Guide (for UNIX)
Operating procedures	Customizing JP1/AJS3 - View	11. Customizing Windows and Dialog Boxes Used for JP1/AJS3 - View in the JP1/Automatic Job Management System 3 Operator's Guide
Dialog boxes	Change Password	12.3.50 Change Password dialog box in the JP1/Automatic Job Management System 3 Operator's Guide
Commands	jajs_config	jajs_config in 2. Commands Used during Setup in the manual JP1/Automatic Job Management System 3 Command Reference
	jajs_setup	jajs_setup in 2. Commands Used during Setup in the manual JP1/Automatic Job Management System 3 Command Reference
	ajschange	ajschange in 3. Commands Used for Normal Operations in the manual JP1/Automatic Job Management System 3 Command Reference

13.1.8 Editing units defined by JP1/AJS3 - View and comparing definitions before and after editing

After editing units defined by JP1/AJS3 - View, you can compare the definition before and after editing to confirm that the unit definition was edited correctly. An example would be a case where you copy a master jobnet and define the copy as another jobnet.

This subsection describes how to use JP1/AJS3 - View to output unit definition information files before and after editing units and collect appropriate differential data.

(1) Operation

JP1/AJS3 - View users who want to check differences before and after units are edited need to execute the `ajsprint` command to collect unit definition information files. However, logging in to the manager host to execute the command increases time and effort, and JP1/AJS3 users need the necessary permissions. A JP1/AJS3 - View user who does not have the necessary permissions have to ask the JP1/AJS3 - Manager administrator to execute the command.

If unit definition information files can be collected by executing the `ajsprint` command, differences might be generated in relation line information output to files. This is because the `ajsprint` command outputs relation line information entries in ascending order of unit ID.

The following describes the operations above by using an example company:

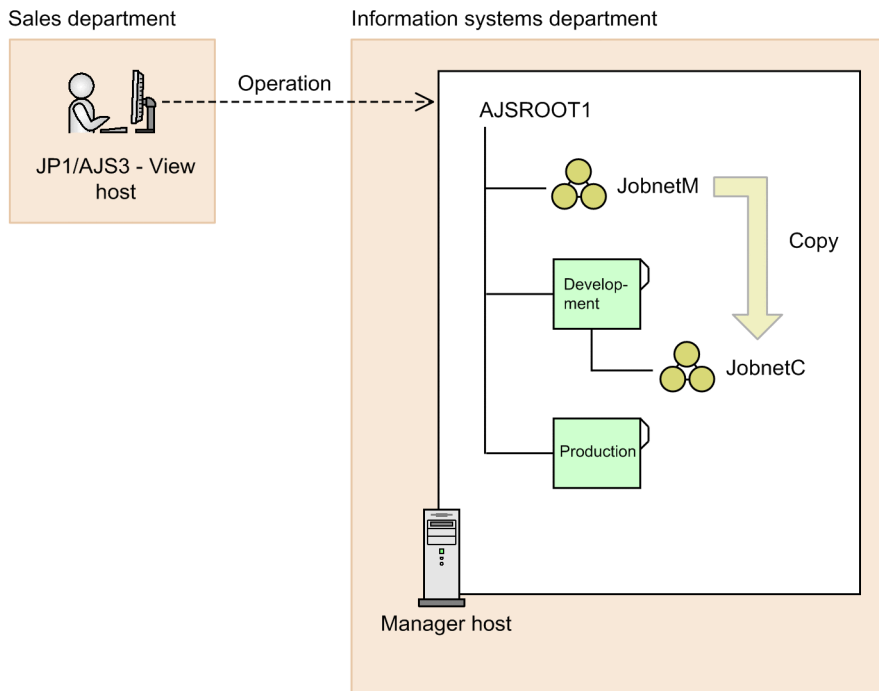
The sales department and information system department of this company have the following types of users.

Table 13–7: Examples of users

Department	User role
Sales	Job administrator: Uses JP1/AJS3 - View to design, organize, and run jobs that are used by the sales department.
Information systems	JP1/AJS3 system administrator: Manages the entire JP1/AJS3 system including JP1/AJS3 - Manager and JP1/AJS3 - View.

If a job needs to be customized in the sales department, the following operation is performed:

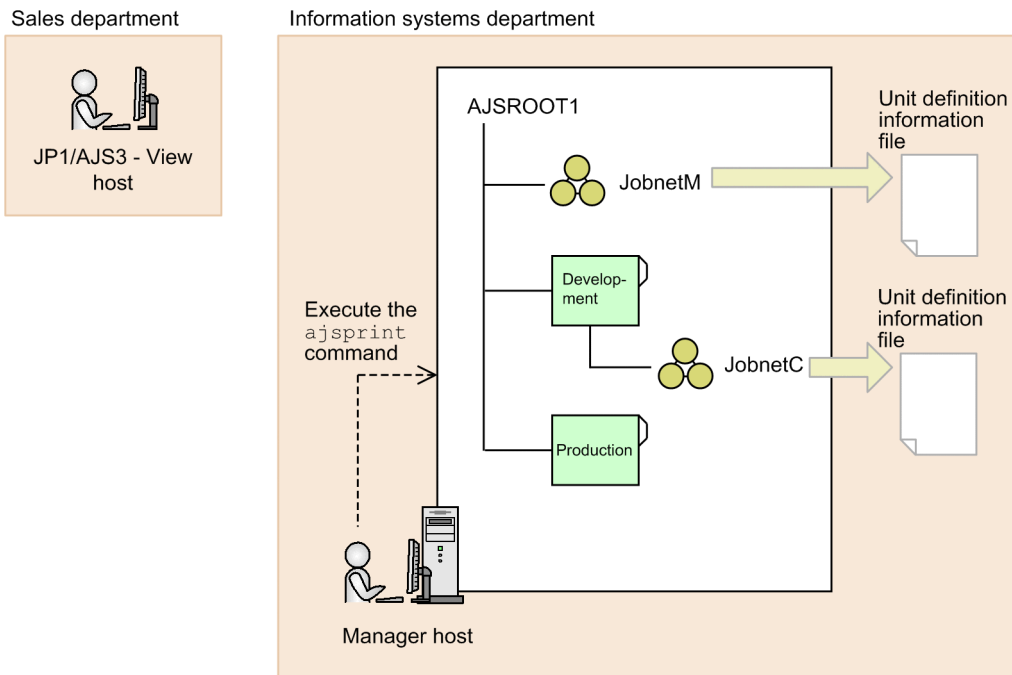
1. In the sales department, a person in charge copies the master jobnet (Jobnet M) provided as a job template to a development job group. The name of the jobnet copy is Jobnet C.



2. Edit the definition of Jobnet C.
3. When a test run of Jobnet C is completed, the person in charge of the sales department asks the information systems department to collect unit definition information files for Jobnets M and C.
4. In the information systems department, a person in charge logs in to the manager host OS and executes the following commands:

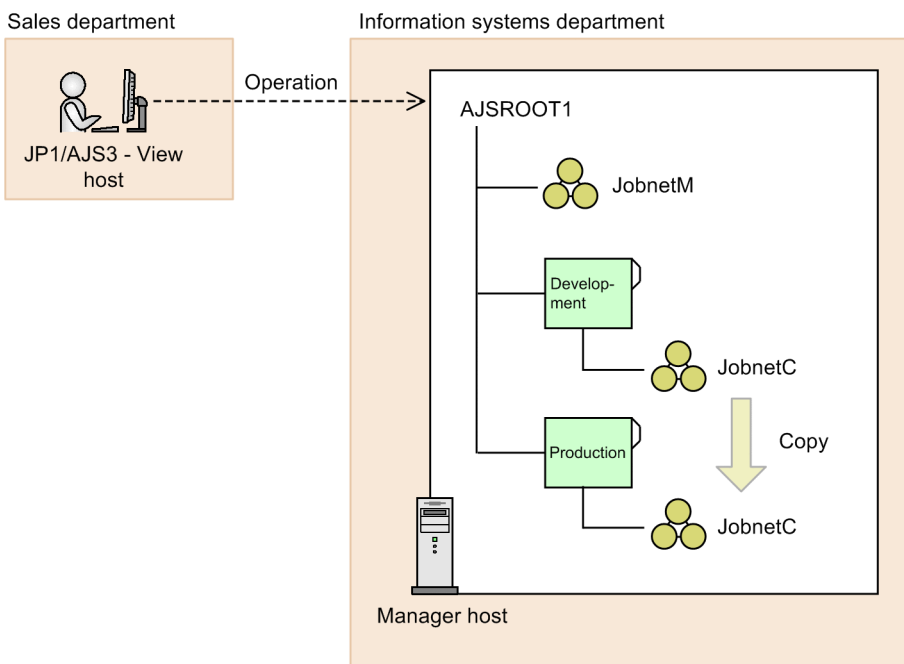
```
ajsprint -F AJSROOT1 /JobnetM > /tmp/unit_definition_information_JobnetM.txt  
ajsprint -F AJSROOT1 /Development/JobnetC > /tmp/unit_definition_information_JobnetC.txt
```

The person in charge sends the collected unit definition information files to the sales department.



5. The person in charge of the sales department uses a differential-data collection tool to compare the unit definition information files to confirm that there are no problems in the changes.
At this time, even if relation lines have not been edited, differences might be generated in the relation line information output to the unit definition information files. In this case, visually check the output to confirm that there are no problems.

6. Copy Jobnet C to the production job group and register it for execution.



(2) Problem

The method described in (1) *Operation* has the following two problems:

1. You want to reduce the time and effort required for collecting unit definition information files.

To collect unit definition information files, the sales department must ask the information systems department for operations. This requires considerable time and effort.

Workload in the information systems department also increases because a person in charge needs to log in to the manager host OS and execute a command each time a request is issued.

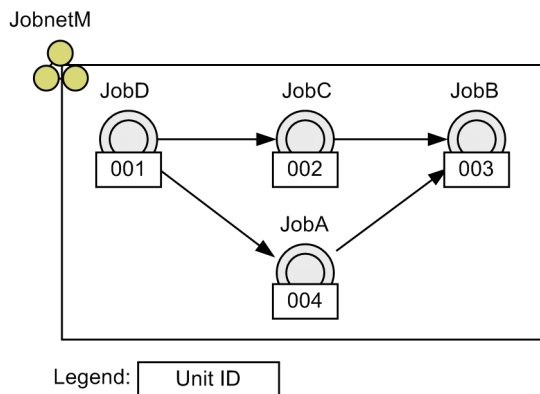
2. You want to appropriately collect differences from the relation line information before and after editing when comparing the output results of the `ajspoint` command.

The order of relation line information entries output to a unit definition information file is determined according to the following rules:

- Entries are output in ascending order of unit ID of succeeding units.
- If succeeding units are the same, entries are output in ascending order of unit ID of preceding units.

Unit IDs are determined by the order in which units are created. However, if a unit is created by copying another unit, the lower units are created in a batch, causing their unit IDs to be re-assigned in ascending order of unit name. Therefore, for Jobnets M and C, even if relation lines are not edited, the order of relation line information entries output to a unit definition information file differs before and after editing.

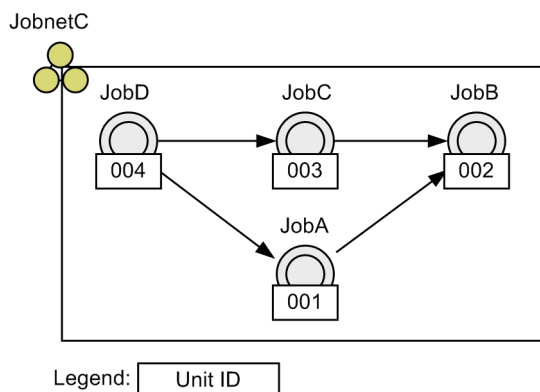
For example, if you create Jobs D, C, B, and A in Jobnet M, unit IDs are assigned to the jobs in the order in which they were created.



In this case, the relation line information is output to the unit definition information file as follows:

```
ar= (f=JobD, t=JobC, seq) ;
ar= (f=JobC, t=JobB, seq) ;
ar= (f=JobA, t=JobB, seq) ;
ar= (f=JobD, t=JobA, seq) ;
```

On the other hand, for Jobnet C, which was created by copying Jobnet M, unit IDs are re-assigned in ascending order of unit name.



Therefore, the relation line information is output to the unit definition information file for Jobnet C as follows:

```
ar= (f=JobD, t=JobA, seq) ;
ar= (f=JobA, t=JobB, seq) ;
ar= (f=JobC, t=JobB, seq) ;
ar= (f=JobD, t=JobC, seq) ;
```

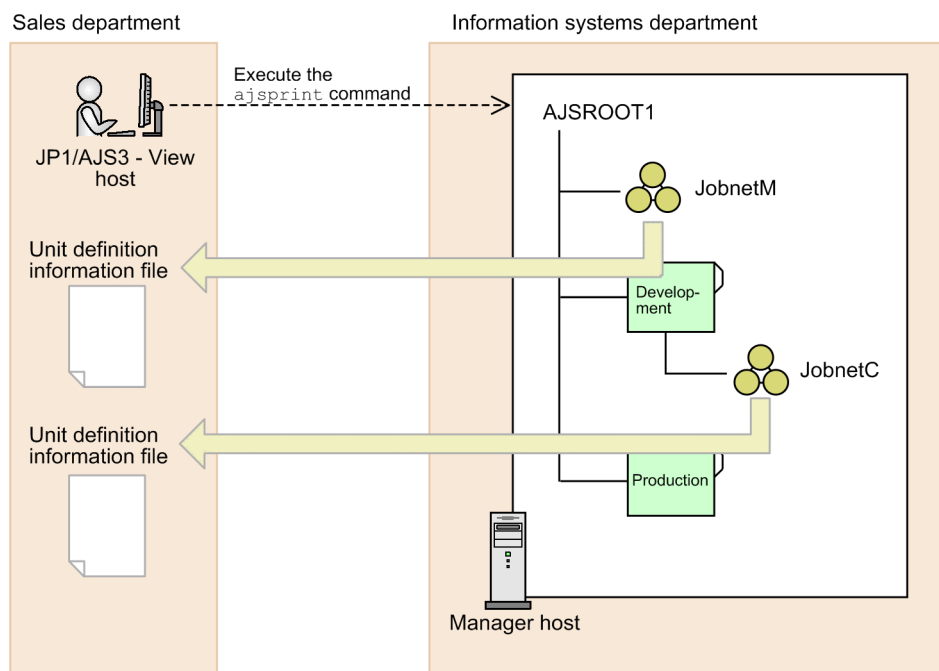
When you compare the unit definition information files for Jobnets M and C, unexpected differences are generated in relation line information.

(3) Solution

This subsection describes the solution for each item in (2) *Problem*.

1. Use the function for executing commands from JP1/AJS3 - View.

You can register the `ajsprint` command in JP1/AJS3 - View to execute the command on the manager host. The command execution results can be output to the JP1/AJS3 - View host. This eliminates the time and effort required by the sales department to ask the information systems department for operation, and the information systems department to execute commands.



2. Use the `-s` option that fixes the order of relation line information entries output by the `ajsprint` command.

If you specify the `-s` option when executing the `ajsprint` command, relation line information entries are output according to the following rules, rather than in ascending order of unit ID:

- Entries are output in ascending order of unit name of preceding units.
- If preceding unit names are the same, entries are output in ascending order of unit name of succeeding units.

As a result, relation line information is output as follows to the unit definition information files for both Jobnets M and C:

```
ar= (f=JobA, t=JobB, seq) ;
ar= (f=JobC, t=JobB, seq) ;
ar= (f=JobD, t=JobA, seq) ;
ar= (f=JobD, t=JobC, seq) ;
```

In other words, specifying the `-s` option prevents unexpected differences from being generated in relation line information in the unit definition information files for Jobnets M and C.

(4) Configuration example

This subsection describes how to execute the `ajsprint -s` command from JP1/AJS3 - View.

The basic procedure is as follows:

Operations for the information systems department

1. In JP1/AJS3 - Manager, set permissions for executing the `ajsprint` command from JP1/AJS3 - View.

Operations for the sales department

1. Register the `ajsprint` command in JP1/AJS3 - View.
2. Execute the `ajsprint` command from JP1/AJS3 - View.

The following describes the procedure for each department:

(a) Settings required for the information systems department (JP1/AJS3 - Manager)

The following describes how to specify the necessary settings for the information systems department (JP1/AJS3 - Manager). This procedure is required the first time only.

1. Determine the commands permitted to be executed from JP1/AJS3 - View and the JP1 users permitted to execute the commands.

Consider the following points:

- Commands permitted to be executed
Determine which commands should be permitted to be executed from JP1/AJS3 - View. In this example, execution of only the `ajsprint` command is permitted.
- Users permitted to execute commands
Determine which JP1 users are permitted to execute commands from JP1/AJS3 - View. Command execution permissions can be set for each JP1 user or for all JP1 users.
In this example, only the JP1 user (*Sales*) provided for the sales department is permitted to execute commands.

2. Create and edit an executable command settings file (`jajsExecutableCommand`).

Create an executable command settings file (`jajsExecutableCommand`), and then specify commands that can be executed from JP1/AJS3 - View.

Because only the `ajsprint` command is permitted in this example, specify as follows in the executable command settings file:

```
ajsprint
```

3. Store the executable command settings file in an appropriate location.

The location to store the executable command settings file varies depending on whether the command execution is permitted for individual JP1 users or all JP1 users.

If the manager host runs Windows (physical host) and JP1/AJS3 - Manager is installed in the default installation folder, store the executable command settings file for the JP1 user (*Sales*) in the following location:

```
%ALLUSERSPROFILE%\Hitachi\JP1\JP1_DEFAULT\JP1AJS2\conf\profiles\  
(jajsExecutableCommand)\sales\
```

(b) Settings required for the sales department (JP1/AJS3 - View)

The following describes how to specify the necessary settings for the sales department (JP1/AJS3 - View):

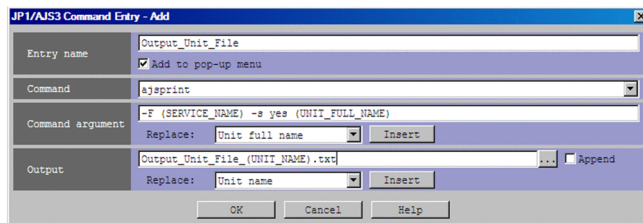
■ Registering the command

Register the `ajsprint -s` command in JP1/AJS3 - View. This procedure is required the first time only.

To register the command:

1. Log in to JP1/AJS3 - Manager from JP1/AJS3 - View as the JP1 user *Sales*.
2. From the **Options** menu, select **JP1/AJS3 Command Settings**.
The JP1/AJS3 Command Settings dialog box is displayed.
3. Click **Add** button.
The JP1/AJS3 Command Entry dialog box is displayed.
4. In the JP1/AJS3 Command Entry dialog box, specify each item.

The following shows an example of entering information in the JP1/AJS3 Command Entry dialog box:



Entry name

Enter `Output_Unit_File`, and then select the **Add to pop-up menu** check box.

Command

Select **ajsprint**.

Command argument

Enter the command argument follows:

```
-F (SERVICE_NAME) -s yes (UNIT_FULL_NAME)
```

Character strings in parentheses indicate variables. To insert a variable, select the item you want to insert from the drop-down list for **Replace**, and then click **Insert**.

Output

Enter the name of the unit definition information file that is output by the `ajsprint` command. In this example, enter the name of the unit definition information file as follows:

```
Output_Unit_File_(UNIT_NAME).txt
```

The character string in parentheses indicates a variable. To insert a variable, select the item you want to insert from the drop-down list for **Replace**, and then click **Insert**.

5. Click **OK** button.
The JP1/AJS3 Command Entry dialog box closes.
The information you have registered appears in the JP1/AJS3 Command Settings dialog box.
6. Click **Close** button.
A message asking you whether you want to save the command settings appears.
7. Click **Yes** button.
The settings are saved and the JP1/AJS3 Command Settings dialog box closes.

■ Executing the command

Execute the registered command to collect unit definition information files for Jobnets M and C. Assume that Jobnet C is already created.

To execute the command:

1. Log in to JP1/AJS3 - Manager from JP1/AJS3 - View as the JP1 user *Sales*.
2. In the list area of the JP1/AJS3 - View window (main window), select *JobnetM*. In the pop-up menu displayed by right-clicking, select **JP1/AJS3 Command**, and then **Output Unit Definition Information File**.
The unit definition information file for Jobnet M is output to the JP1/AJS3 - View host.
The following shows the output destination and the name of the unit definition information file for Jobnet M:

```
%ALLUSERSPROFILE%  
\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\command\sales\unit_definition_information_  
JobnetM.txt
```
3. Perform step 2 for Jobnet C.
4. Use a differential-data collection tool to compare the unit definition information files for Jobnets M and C, and then confirm that there are no problems in the differences.

(5) Manual references

Type	item	Location
Overview	Executable command settings file <code>jajsExecutableCommand</code>	4.5.4 JP1/AJS3 commands that can be executed from JP1/AJS3 - View in the JP1/Automatic Job Management System 3 System Design (Configuration) Guide
Configuration		• 11.1.1 Types of customization methods in the JP1/Automatic Job Management System 3 Operator's Guide • 11.3.18 Allowing execution of JP1/AJS3 commands in the JP1/Automatic Job Management System 3 Operator's Guide
Operating procedures	Registering JP1/AJS3 commands	10.4.1 Registering JP1/AJS3 commands in the JP1/Automatic Job Management System 3 Operator's Guide
	Executing a JP1/AJS3 command	10.4.2 Executing a JP1/AJS3 command in the JP1/Automatic Job Management System 3 Operator's Guide
Dialog boxes		• 12.3.53 JP1/AJS3 Command Settings dialog box in the JP1/Automatic Job Management System 3 Operator's Guide • 12.3.54 JP1/AJS3 Command Entry dialog box in the JP1/Automatic Job Management System 3 Operator's Guide • 12.3.55 JP1/AJS3 Command Execution Result dialog box in the JP1/Automatic Job Management System 3 Operator's Guide

13.1.9 Executing jobs in an auto-scaling cloud environment

As the use of cloud services spreads, the need for efficient job operation (for example, starting only the required instances in a cloud and stopping those instances when processing finishes) is growing.

Imagine a company that previously used the JP1/AJS3 system in an on-premises environment introduces a cloud service. Assume that jobs are defined in the conventional on-premises environment and executed in an auto-scaling cloud environment. In such a case, this company might use flexible jobs that can be executed on an agent that is not directly

managed by the manager host. In addition, the company might install a relay agent so that the manager host in the on-premises environment and an agent host in the cloud environment can communicate.

The following describes a case in which flexible jobs are defined in the on-premises environment and executed in an auto-scaling cloud environment.

(1) Operation

Assume that the following users are in each department.

Table 13–8: Example of users

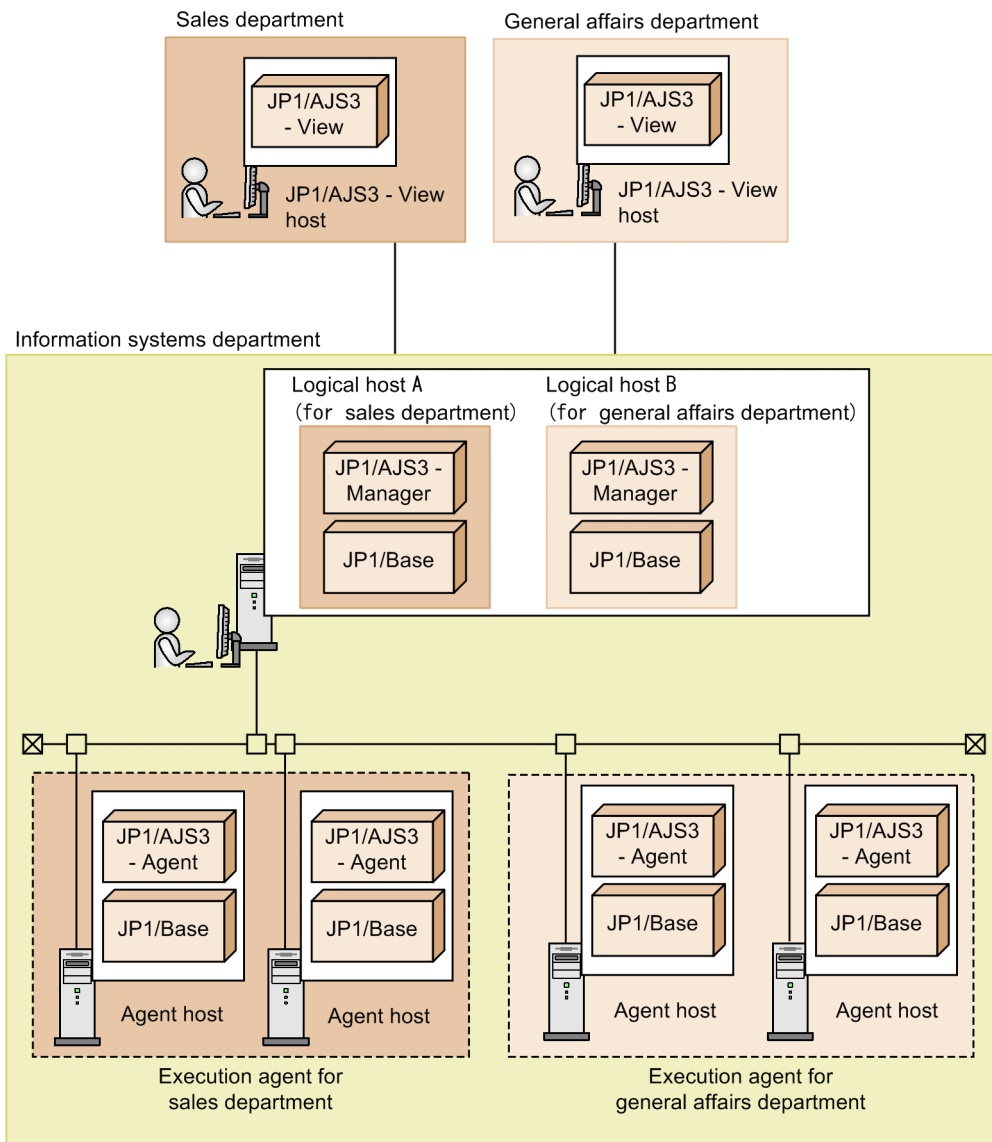
No.	Department to which the user belongs	Role of the user
1	Sales department	Job operations manager: Designs, configures, and operates jobs in the sales department.
2	General affairs department	Job operations manager: Designs, configures, and operates jobs in the general affairs department.
3	Information systems department	JP1/AJS3 system administrator Manages the entire JP1/AJS3 system.

In this company, JP1/AJS3 is implemented as follows to allow individual departments to execute their own tasks separately:

- Logical hosts are set up on a physical host. A logical host is set up for each department and used as the manager host by each department.
- Each department operates its own agent hosts.
- In each department, the job operations manager executes jobs by using JP1/AJS3 - View.
- The JP1/AJS3 system administrator of the information systems department manages the entire JP1/AJS3 system.

The following figure shows an example in which the manager host and agent hosts are operated in the on-premises environment of each department.

Figure 13–17: Example in which the manager host and agent hosts are operated in the premises environment of each department



(2) Goal

- Execute jobs by deploying only agent hosts in the auto-scaling cloud environment.
- Make minimal changes to the existing system configuration and firewall settings.

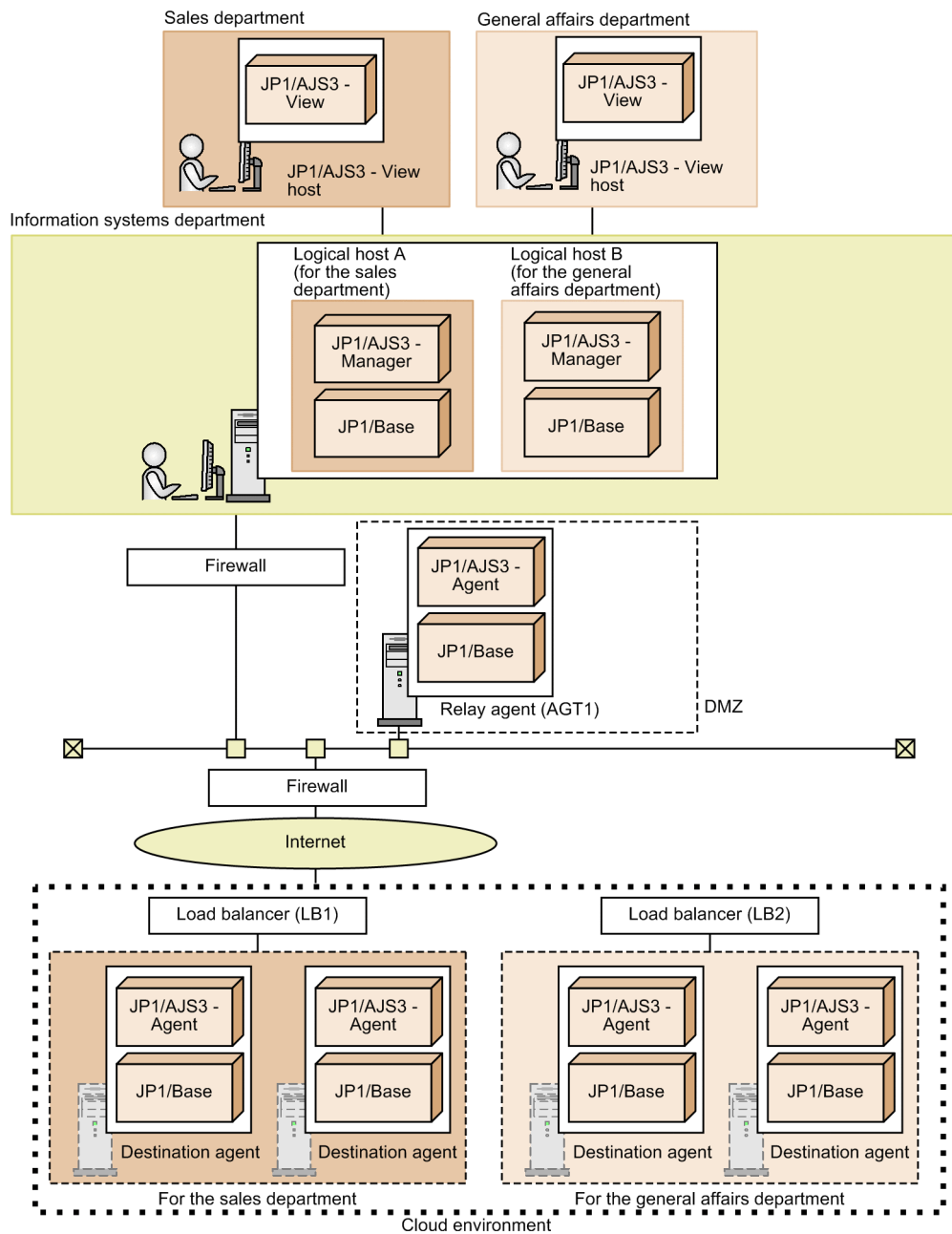
(3) Solution

By using Flexible jobs, you can execute jobs on agent hosts that are not directly managed by the manager host (such as the agent hosts in the auto-scaling cloud environment).

In addition, if you set up an agent that relays job execution requests (a relay agent), you can use the cloud environment as the job execution environment while minimizing the changes that need to be made to various settings.

The following figure shows an example in which a cloud is used as the job execution environment.

Figure 13–18: Example in which a cloud is used as the job execution environment



(4) Configuration procedure

1. Set up the relay agent (AGT1).
2. In the cloud environment, set up the destination agents.
3. In the cloud environment, set up the load balancers (LB1 and LB2) and configure the settings for auto-scaling.
4. In the on-premises environment, use JP1/AJS3 - Manager to create a jobnet in which flexible jobs are defined.
For example, when you define flexible jobs for the sales department, define LB1 as the destination and AGT1 as the relay agent. When you define flexible jobs for the general affairs department, define LB2 as the destination and AGT1 as the relay agent.
5. Register the created jobnet (in which flexible jobs are defined) for execution.

(5) Manual references

Type	item	Location
Overview	Flexible job	<i>3.1.1(1)(a) Standard job in the manual JP1/Automatic Job Management System 3 Overview</i>
	Example definition of flexible jobs	<i>2.4.10 Executing jobs in a cloud environment (example of defining a jobnet that uses flexible jobs) in the JP1/Automatic Job Management System 3 System Design (Work Tasks) Guide</i>
	Notes on using flexible Jobs	<i>7.8 Notes on using flexible jobs in the JP1/Automatic Job Management System 3 System Design (Work Tasks) Guide</i>
	Example system configuration	<i>2.9 Executing jobs in a cloud environment in the JP1/Automatic Job Management System 3 System Design (Configuration) Guide</i>
Configuration		<i>21.3 Setup to execute flexible jobs in the JP1/Automatic Job Management System 3 Configuration Guide</i>
Dialog boxes		<i>12.4.12 Define Details - [Flexible Job] dialog box in the JP1/Automatic Job Management System 3 Operator's Guide</i>

(6) Cautionary notes

If a relay agent receives many job execution requests from multiple manager hosts, the load on the relay agent might increase. In such cases, consider setting up multiple relay agents for load distribution.

13.1.10 Executing a single job on multiple agent hosts

This subsection describes how to execute a job on all agent hosts in a cloud environment at a fixed time every day as a broadcast execution of a flexible job.

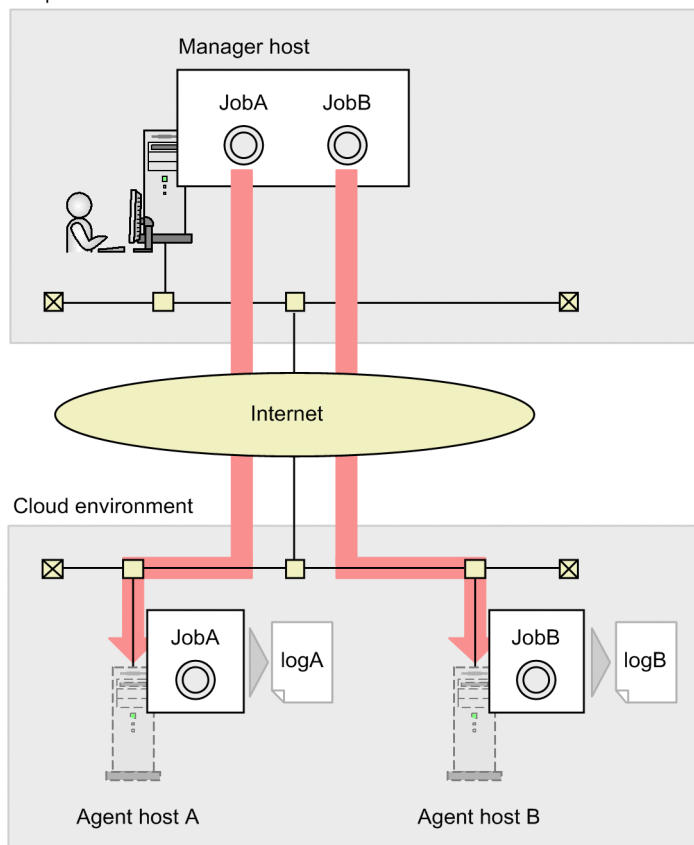
(1) Operation

In a company, the system management department collects log data from all agent hosts in a cloud environment at a fixed time every day.

In version 11-00 or earlier, to carry out this task, a job must be defined for each agent host from which log data is to be collected.

Figure 13–19: Example in which a job is defined for each agent host

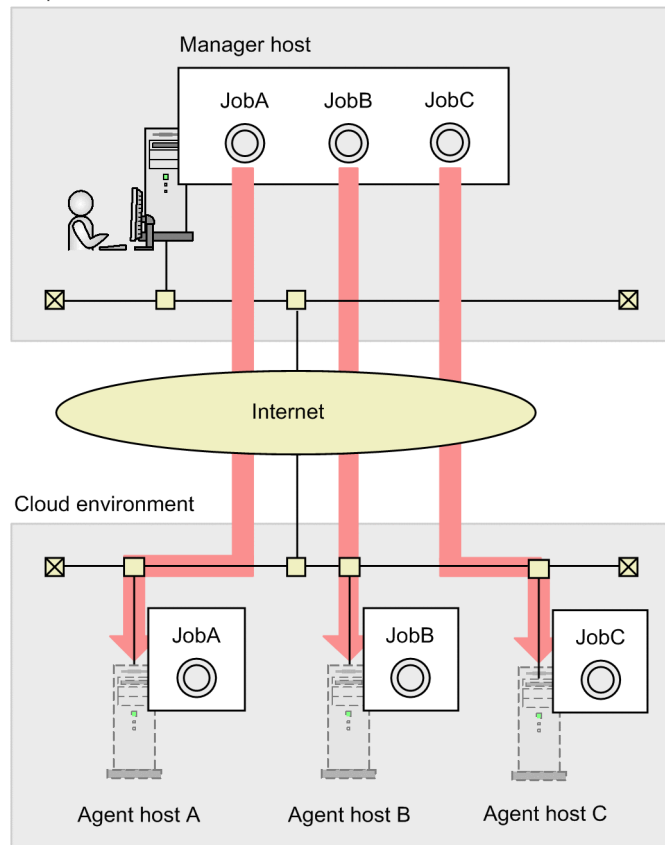
On-premise environment



Furthermore, if agent hosts are added or deleted by auto-scaling, jobs must also be added or deleted.

Figure 13–20: Example in which jobs are added or deleted

On-premise environment



In the above figure, Agent host C is added as a result of scaling out. Therefore, Job C must also be added.

(2) Problem

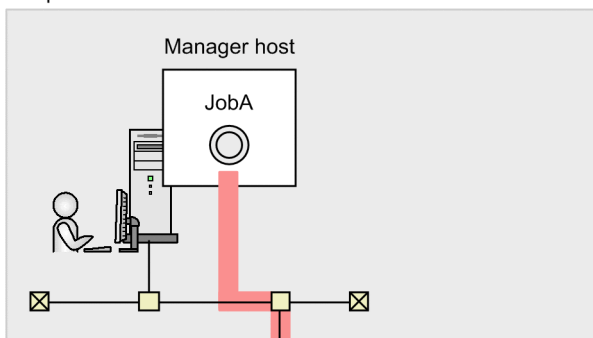
- Execute a single job on multiple agent hosts.
- Add or delete agent hosts without having to manually add or delete jobs.

(3) Solution

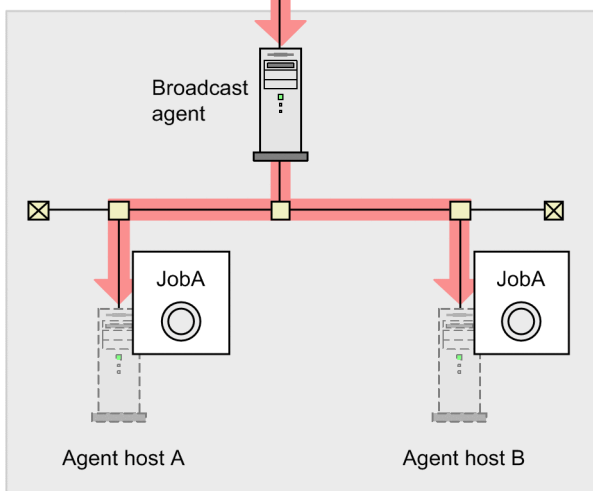
You can use broadcast execution of a flexible job to execute a single job on multiple agents simultaneously. This requires a broadcast agent.

Figure 13–21: Example in which a broadcast agent distributes a job to multiple agent hosts

On-premise environment

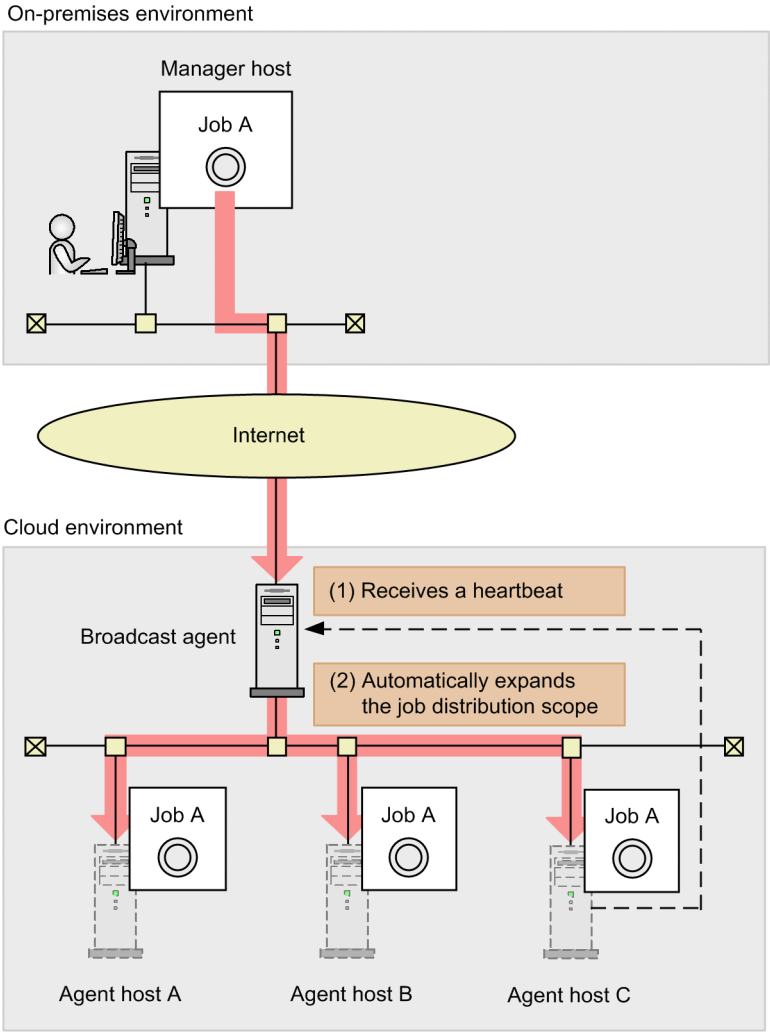


Cloud environment



If agent hosts are added or deleted by auto-scaling, the broadcast agent receives heartbeats from destination agents, and automatically expands or shrinks the job distribution scope. Therefore, there is no need to add or delete jobs.

Figure 13–22: Example in which a broadcast agent automatically expands the distribution scope



(4) Configuration procedure

- 1. Set up the broadcast agent.
- 2. Set up the destination agents.
- 3. In JP1/AJS3, create a jobnet in which flexible jobs are defined.
- 4. Register the created jobnet (in which flexible jobs are defined) for execution.

(5) Manual references

Type	item	Location
Overview	Flexible job	3.1.1(1)(a) Standard job in the manual JP1/Automatic Job Management System 3 Overview
	Example of defining a flexible job for broadcast execution	2.4.11 Executing a job on multiple execution agents simultaneously (example of defining a jobnet that uses flexible jobs) in the JP1/Automatic Job Management System 3 System Design (Work Tasks) Guide

Type	item	Location
Overview	Notes on using flexible Jobs	<i>7.8 Notes on using flexible jobs in the JPI/Automatic Job Management System 3 System Design (Work Tasks) Guide</i>
	Example of a system configuration used for broadcast execution	<i>2.10 Considerations for executing a job by broadcast execution in the JPI/Automatic Job Management System 3 System Design (Configuration) Guide</i>
Configuration		<i>21.3.2 Setup procedure to execute a job by broadcast execution in the JPI/Automatic Job Management System 3 Configuration Guide</i>
Dialog boxes		<i>12.4.12 Define Details - [Flexible Job] dialog box in the JPI/Automatic Job Management System 3 Operator's Guide</i>

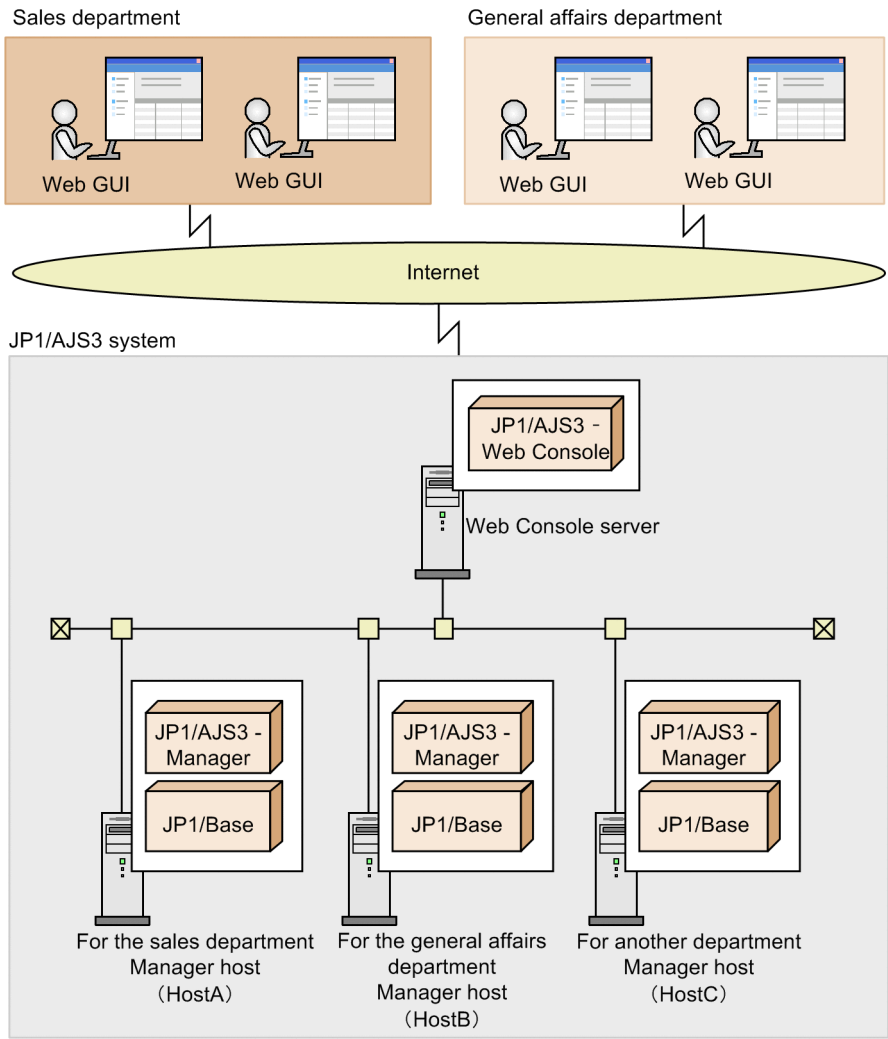
13.1.11 Restricting operations that can be performed from the Web GUI (Job Portal) or user applications

If multiple users are using the Web GUI (Job Portal) or user applications to monitor job processing, some users might perform unauthorized operations on units or the manager host. In such a situation, you can restrict operations that specific users can perform. This subsection describes how to restrict operations that can be performed from the Web GUI (Job Portal) and user applications.

(1) Operation

Assume that there is a company in which a separate manager host is used for each department. In some departments, multiple operators use the Web GUI (Job Portal) to monitor job processing. The following figure shows an example of a system in which a separate manager host is used for each department and multiple operators use the Web GUI (Job Portal) to monitor job processing.

Figure 13–23: Example of a system in which a separate manager host is used for each department and multiple operators use the Web GUI (Job Portal) to monitor job processing



The following table describes the manager hosts used in the preceding example.

No.	Host name	Description
1	HostA	The manager host used by the Sales department. Operation of this host is monitored by using the Web GUI (Job Portal).
2	HostB	The manager host used by the General Affairs department. Operation of this host is monitored by using the Web GUI (Job Portal).
3	HostC	The manager host used by other departments. Operation of this host is monitored by using the JP1/AJS3 - View.

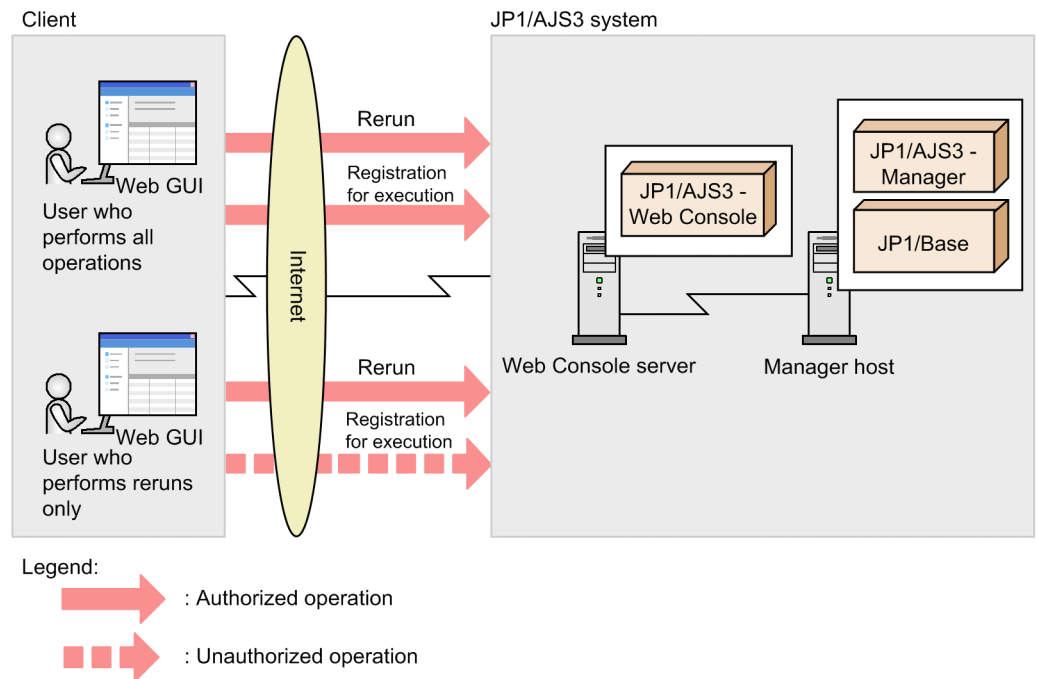
(2) Problem

Unauthorized operations might be performed from the Web GUI (Job Portal) or user applications.

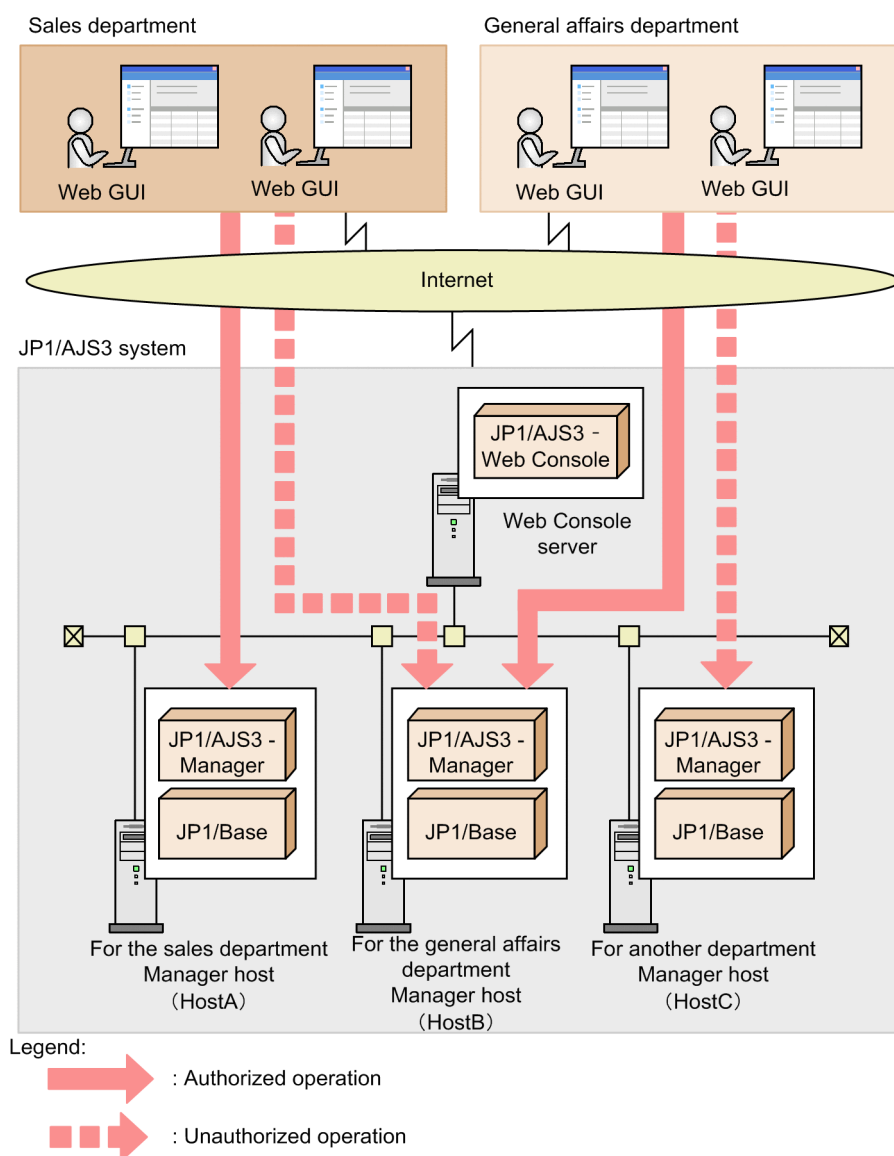
Specifically, the following problems must be resolved:

1. Some users who use the Web GUI (Job Portal) might perform unauthorized operations on units.

If multiple users use the Web GUI (Job Portal), the default settings allow all users to perform all operations on any units monitored by the Web GUI (Job Portal). Therefore, some users might perform unauthorized operations. For example, a user who is appointed to perform only reruns might inadvertently register a unit for execution.



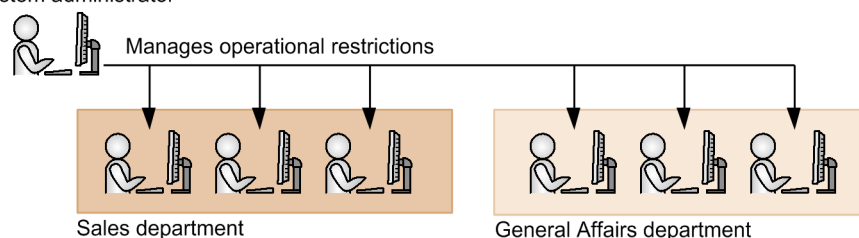
2. An operator in a department might inadvertently perform operations on the manager host of another department.
If each department uses a separate manager host, the default settings allow all users to log in to any manager host from the Web GUI (Job Portal) and to run API functions on any manager host from a user application. All JP1 users can perform all operations on any manager host. Therefore, a user might inadvertently log in to the manager host of another department and unintentionally perform operations on that manager host.



3. If there are many Web GUI (Job Portal) users, it is difficult for the system administrator to manage all operational restrictions.

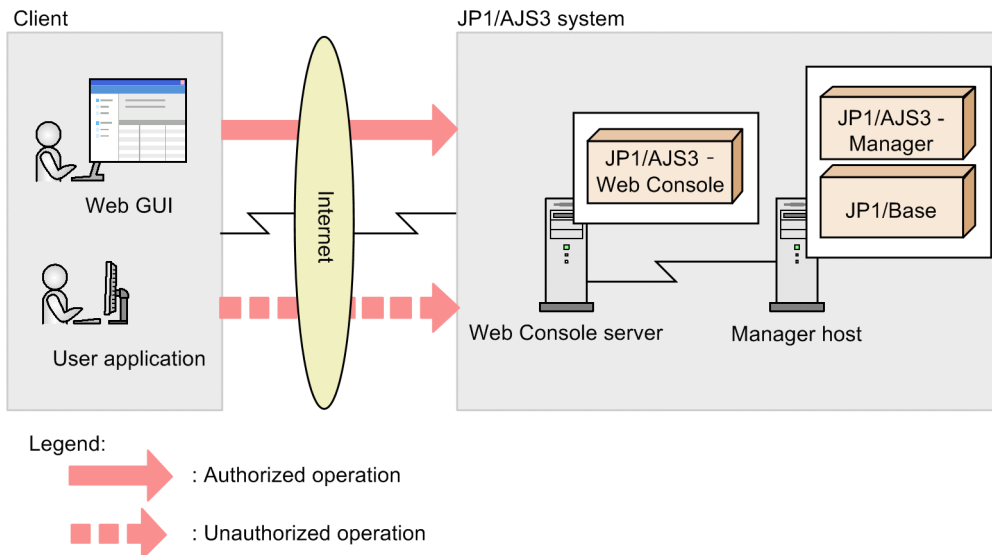
If the Web GUI (Job Portal) is used in multiple departments and only the system administrator manages all operational restrictions for users who belong to the departments, a heavy burden is placed on the system administrator.

System administrator



4. Unauthorized API functions might be run.

If only the Web GUI (Job Portal) is used to perform operations without using user applications, unauthorized API functions might be run from unauthorized user applications, because the default settings do not restrict execution of API functions.



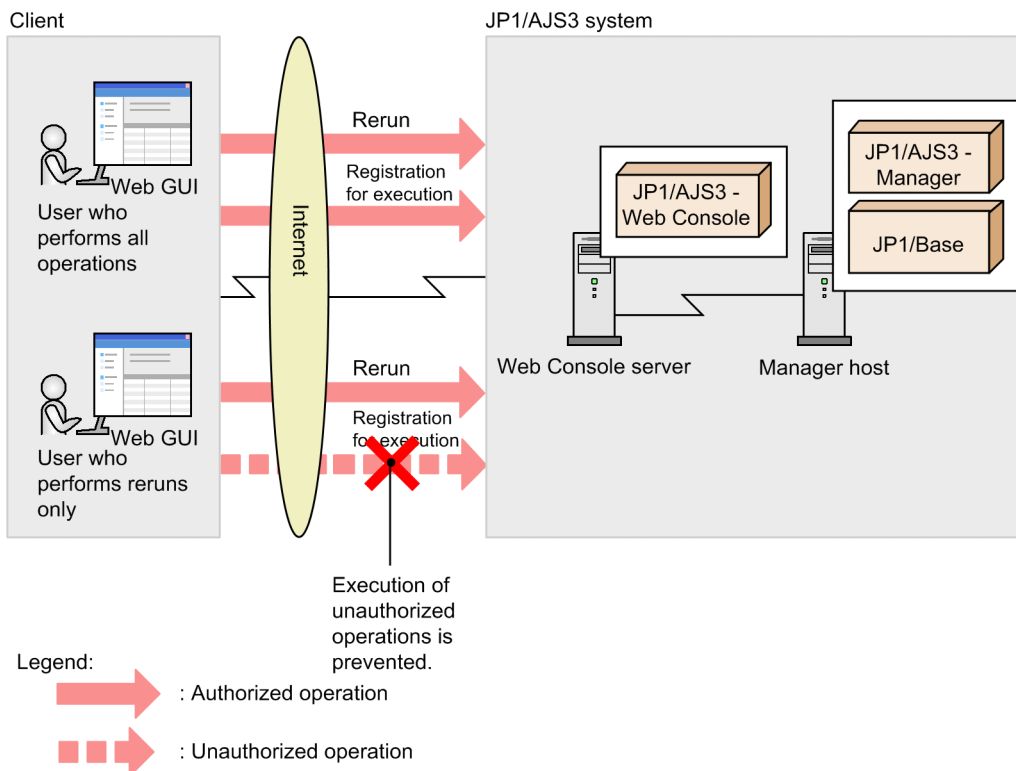
(3) Solution

This subsection describes the solution for each item in (2) *Problem*. You can restrict operations that can be performed by users from the Web GUI (Job Portal) or user applications by specifying the following settings:

1. For each JP1 user, restrict operations that can be performed from the Web GUI (Job Portal), so that unauthorized operations are not performed.

By enabling the operation restriction function of the Web GUI (Job Portal), you can set operational restrictions for each JP1 user who logs in. If a user for which operational restrictions are set logs in, the buttons, menus, and other items for performing the restricted operations are hidden.

If the operation restriction function is enabled on the Web Console server, the function is enabled on all manager hosts to which the Web Console server can connect.



2. Prevent the users in a department from performing operations on the manager hosts of other departments.

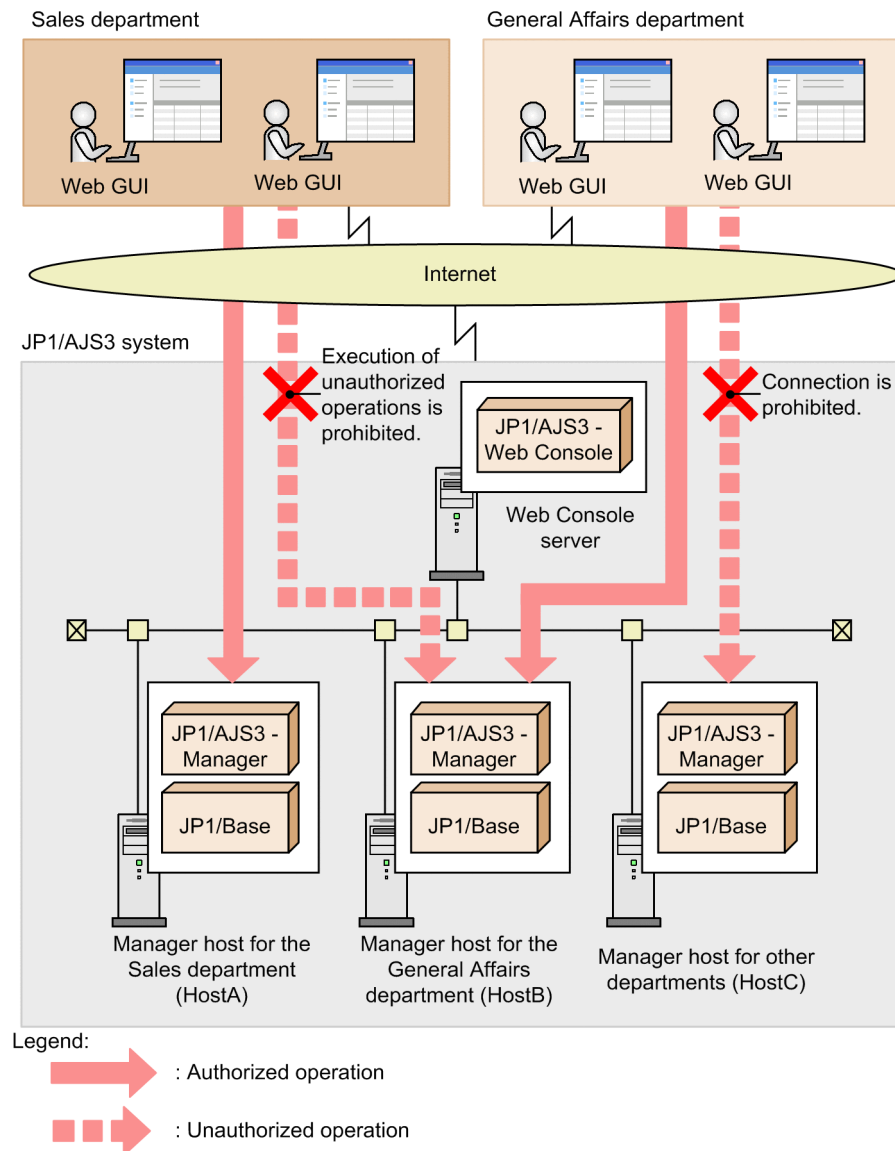
Performing operations on the hosts of other departments can be prevented by using the following two functions:

Connection-destination host restriction function of the Web Console server:

The manager hosts to which the Web Console server is permitted to connect can be specified. If this function is used, users can log in to only the specified manager hosts from the Web GUI (Job Portal) and can run API functions from user applications on the specified manager hosts only. By permitting connection to only the manager hosts to be monitored by using the Web GUI (Job Portal), you can prevent login to other manager hosts.

Operation restriction function of the Web GUI (Job Portal):

The operational restrictions on JP1 users can be specified on each manager host. For the JP1 users for whom operational restrictions are not set, the default settings (permit only viewing) are applied. By granting permission of operations to only the JP1 users that are used by the operators in a department, you can prevent the operators of the other departments from performing operations on units.



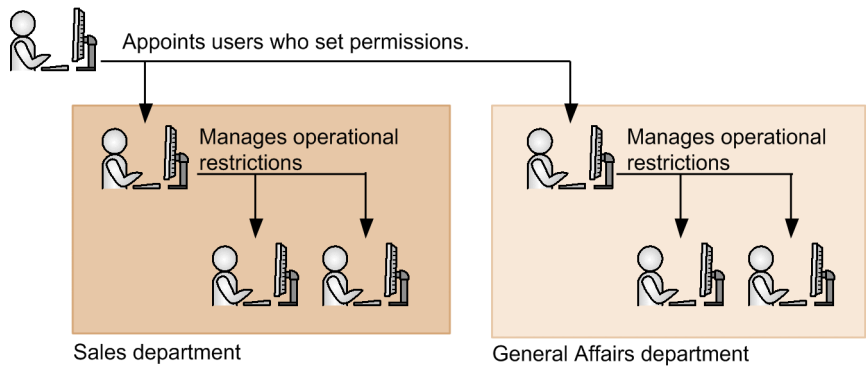
3. Allow a user in each department to manage the operational restrictions on the users in the department.

With the operation restriction function of the Web GUI (Job Portal), you can appoint users who manage operational restrictions (*users who set permissions*) for each manager host.

By appointing only the JP1 user used by the department administrator as a *user who sets permissions* for each department, the administrator of a department can manage the operational restrictions on the users in the department.

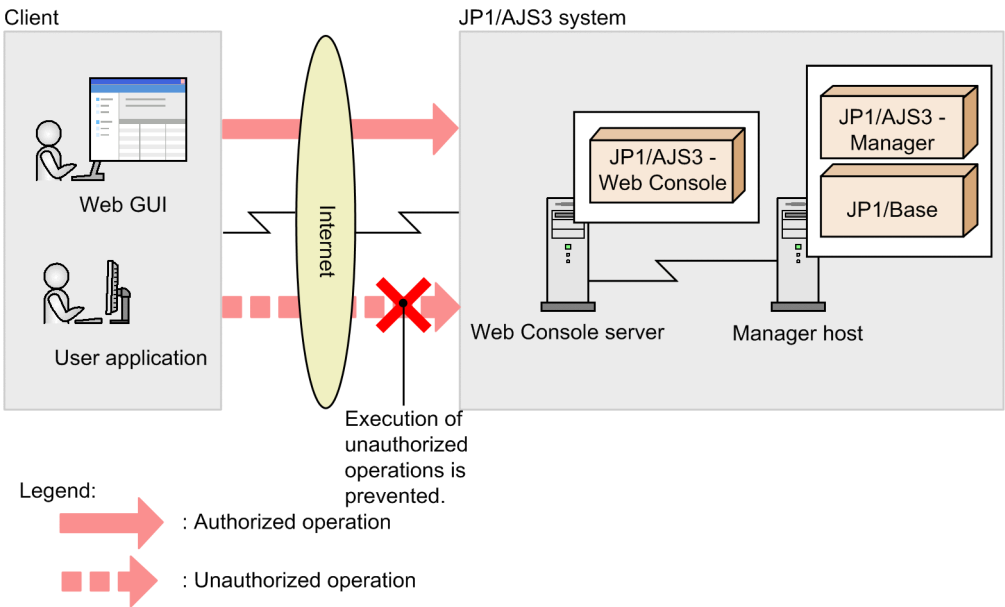
This also can prevent the operation restriction settings of a department from being changed by the administrator of another department.

System administrator



4. Restrict execution of API functions from user applications.

By enabling the API execution restriction function, execution of API functions can be restricted. If only the Web GUI (Job Portal) is used to perform operations without using user applications, by restricting execution of API functions, you can prevent unauthorized operations from user applications.



(4) Configuration procedure

The following describes what the system administrator and the user who sets permissions must perform to set up functions.

Tasks of the system administrator

The system administrator enables the operation restriction function of the Web GUI (Job Portal) and the API execution restriction function. The system administrator also specifies the names of the manager hosts to which the Web Console server can connect, and appoints users who set permissions for each manager host.

Tasks of the user who sets permissions

A user who sets permissions uses the Web GUI (Job Portal) to set operational restrictions on users for each manager host.

The JP1 users are assumed to be those in the following table.

Table 13–9: Example JP1 users

No.	JP1 user name	User role	Duty
1	jp1admin	System administrator	Manages the entire JP1/AJS3 system
2	admin1	Administrator of the Sales department	To perform monitoring and operation and manage operational restrictions on users as a user who sets permissions by using the Web GUI (Job Portal)
3	admin2	Administrator of the General Affairs department	To perform monitoring and operation and manage operational restrictions on users as a user who sets permissions by using the Web GUI (Job Portal)
4	user1	Operator in the Sales department	Monitors the operating status and reruns units by using the Web GUI (Job Portal)

The following describes the procedure for the tasks that each type of user must perform.

(a) Tasks of the system administrator

The system administrator enables the operation restriction function of the Web GUI (Job Portal) and the API execution restriction function by editing the environment setting file (`ajs3web.conf`) of JP1/AJS3 - Web Console. The system administrator also specifies the names of manager hosts to which the Web Console server can connect, and appoints users who set permissions for each manager host.

The following shows the procedure of the tasks that the system administrator must perform.

1. Stop the JP1/AJS3 HTTP Server and JP1/AJS3 Web Application Server services.
2. Back up the `ajs3web.conf` file, and store the backup file in any folder.
3. Copy the model file (`ajs3web.conf.model`), and then rename the copy of the file to `ajs3web.conf`.
4. Open the `ajs3web.conf` file by using a text editor.
5. Delete the semicolon (;) prefixed to the `GUI_OPERATION_RESTRICTION` parameter, and then specify `yes` as the value of the parameter.
6. Delete the semicolon (;) prefixed to the `PERMITTED_AJS_MANAGER_HOST` parameter, and then, for the parameter, specify the names of manager hosts to which the Web Console server is permitted to connect.
You can specify the following manager host names:
Physical host:
Host name that is output when the `hostname` command is run on a manager host
Logical host:
Logical host name that was specified when the logical host environment was set up
For example, in the system example shown earlier, if you want only the Sales department's and General Affairs department's manager hosts to be connectible manager hosts, specify the parameter as follows:
`PERMITTED_AJS_MANAGER_HOST=HostA,HostB`
7. Delete the semicolon (;) prefixed to the `API_EXECUTION_RESTRICTION` parameter, and then specify `yes` as the value of the parameter.
8. Specify the JP1 users to be appointed as users who set permissions.

Here, you specify `jp1admin`, which is used by the system administrator, and the JP1 user used by the administrator of each department as the user who sets permissions as follows:

Manager host of the Sales department:

```
[HostA]
WEB_CONSOLE_SETTING_USER=jp1admin,admin1
```

Manager host of the General Affairs department:

```
[HostB]
WEB_CONSOLE_SETTING_USER=jp1admin,admin2
```

- 9. Save the `ajs3web.conf` file.
- 10. Start the JP1/AJS3 HTTP Server and JP1/AJS3 Web Application Server services.

(b) Tasks of the user who sets permissions

A user who sets permissions sets the users' operational permissions by applying the operating permission configuration file from the Web GUI (Job Portal). The following shows the procedure for the tasks that the user who sets permissions must perform.

- 1. Log in with the Web GUI (Job Portal) by specifying a manager host for which you want to set operational restrictions.
- 2. From the **Management** menu at the top of the screen, select **Operating Permission Settings**, and then **Acquire Model File**.
The model file for the operating permission configuration file (`operationpermission_model.csv`) is downloaded.
- 3. Copy the downloaded model file, and then rename it to a desired name.
- 4. Save the renamed operating permission configuration file to any folder as the master operating permission configuration file.
- 5. Open the master operating permission configuration file (CSV file) with spreadsheet software or a similar program.
- 6. Modify the definitions to be changed.

The following table shows an example of operational restrictions, and the table is followed by the contents of the operating permission configuration file that sets those operational restrictions.

Table 13–10: Operational restrictions to be set using the operating permission configuration file

Name	JP1 user name	Section the user belongs to	Position	Operational restrictions
Taro Hitachi	jp1admin	Operational section	Manager of operators	Permit all operations
Hanako Hitachi	jp1user1	Operational section	Operator	Permit all operations other than definition editing
Jiro Hitachi	jp1user2	Development section	Developer	Permit only viewing and definition editing
Other users				Permit only viewing

An example of coding

```
FileVersion=1.0,,,,,,,,,,,,,,,,,,,,,
#,Option 1,Option 2,Option 3,Option 4,Option 5,Option 6,Option 7,Option 8,
Option 9,Option 10,JP1 User Name,Classification,Register for Execution,Can
```

```

cel Registration,Add,Change Plan (Change Time),Change Plan (Execute Immediately),Change Plan (Execution Prohibited),Change Plan (Release Change),Delay monitoring changed,Rerun,Interrupted,Kill,Change Status>Edit Definition,Hold,Hold Release
,Hitachi,Operational section,Manager of operators,Taro Hitachi,,,,,,,,jpladmin,A,,,,,,,,,
,Hitachi,Operational section,Operator,Hanako Hitachi,,,,,,,,jpluser1,C,1,1,1,1,1,1,1,1,1,1,0,1,1
,Hitachi,Development section,Developer,Jiro Hitachi,,,,,,,,jpluser2,C,0,0,0,0,0,0,0,0,0,0,1,0,0
,Default setting,,,,,,,,*,R,,,,,,,,

```

7. Save the operating permission configuration file in CSV format.
8. From the **Management** menu at the top of the Web GUI (Job Portal) screen, select **Operating Permission Settings**, and then **Apply**.
The Apply Operating Permission Settings dialog box opens.
9. From **Select**, select the operating permission configuration file that you edited, and then click the **OK** button.



Note

After you select the operating permission configuration file, if you change the file contents and then apply the file, the changes might not be applied or communication might time out because a request cannot be sent. If you change the contents of the operating permission configuration file after selecting the file, reselect the file.

10. Notify all Web GUI (Job Portal) users that re-login is required.



Note

The specified or changed settings in the operating permission configuration file are not applied to the relevant Web GUI (Job Portal) users until they log in again. If possible, restart the JP1/AJS3 HTTP Server service and the JP1/AJS3 Web Application Server service.

(5) Manual references

Type	Item	Location
Overview	Operation restriction function of the Web GUI (Job Portal)	<i>14.2 Settings for restricting the operations that Web GUI (Job Portal) users can perform in the JP1/Automatic Job Management System 3 Operator's Guide</i>
Configuration	Environment-settings file (ajs3web.conf)	3.4.3 Details on the settings in the environment-settings file (ajs3web.conf) in the JP1/Automatic Job Management System 3 Configuration Guide (for Windows) 13.3.3 Details on settings in the environment-settings file (ajs3web.conf) in the JP1/Automatic Job Management System 3 Configuration Guide (for UNIX)
	Operating permission configuration file	<i>15.4.2 Customizing the operation restriction settings for each user in the JP1/Automatic Job Management System 3 Operator's Guide</i>
Dialog boxes	Apply Operating Permission Settings	<i>15.2.30 Apply Operating Permission Settings dialog box in the JP1/Automatic Job Management System 3 Operator's Guide</i>

(6) Cautionary notes

- Immediately after you enable the operation restriction function of the Web GUI (Job Portal) on a Web Console server, all JP1 users can perform only viewing operations on all manager hosts to which the Web Console server can connect.
- This note applies if there are users who have logged in to the Web GUI (Job Portal) by specifying an IP address or alias name instead of a host name. If there are such users, when you specify the host names of connectible manager hosts, after those users have logged in to the Web GUI (Job Portal) by specifying a host name, in the Set Monitoring Targets dialog box you must respecify the monitoring targets.

13.1.12 Graphically viewing the JP1/AJS3 operating status

In everyday operations of JP1/AJS3, the need to understand the JP1/AJS3 operating status might arise. This subsection describes how to use the performance report output function to improve the visibility of information such as the amount of data processed by scheduler services and the execution statuses of jobs.

(1) Background

In a company, a JP1/AJS3 system is managing jobs with only one scheduler service, AJSROOT1. You (as an employee of the company) want to check whether the jobs have been run as planned in everyday operations.

(2) Goals

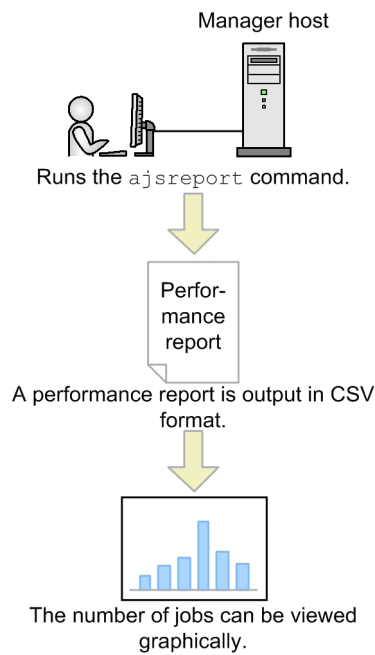
To check whether the jobs are run as planned in everyday operations, you need to check the number of executions for each job type, such as root jobnet, event job, and ordinary job. Also, you need to graphically view such information on a daily or hourly basis.

(3) Approach

By using the performance report output function, you can improve the visibility of information such as the amount of data processed by scheduler services and the job execution statuses.

Here, you output the amount of processed data and execution status of jobs for the AJSROOT1 scheduler service to a performance report on a per-minute basis. Because each performance report is output in CSV format, you can use Excel or a similar program to aggregate or analyze reports, and to graphically view the number of executions by job type or by hour.

Figure 13–24: Overview of tasks from outputting a performance report to viewing it graphically



(4) Configuration procedure

The procedure for outputting a performance report is as follows:

1. Estimate the size of performance log files.
2. Enable the performance report output function.
Do not perform this step if JP1/AJS3 - Manager version 12-00 or later.
3. Run the `ajsreport` command to output a performance report in CSV format.
4. Open the performance report with Excel or a similar program, and aggregate or analyze the data in the report.

(5) Manual references

Type	Item	Location
Overview		5.3 Checking the operating status of JP1/AJS3
Estimates	Performance log file	3.4.8 Estimating the size of performance log files in the JP1/Automatic Job Management System 3 System Design (Configuration) Guide
Configuration		• 6.6 Settings related to the output of performance reports in the JP1/Automatic Job Management System 3 Configuration Guide (for Windows) • 15.7 Settings related to the output of performance reports in the JP1/Automatic Job Management System 3 Configuration Guide (for UNIX)
Commands (<code>ajsreport</code> command)		ajsreport in 3. Commands Used for Normal Operations in the manual JP1/Automatic Job Management System 3 Command Reference

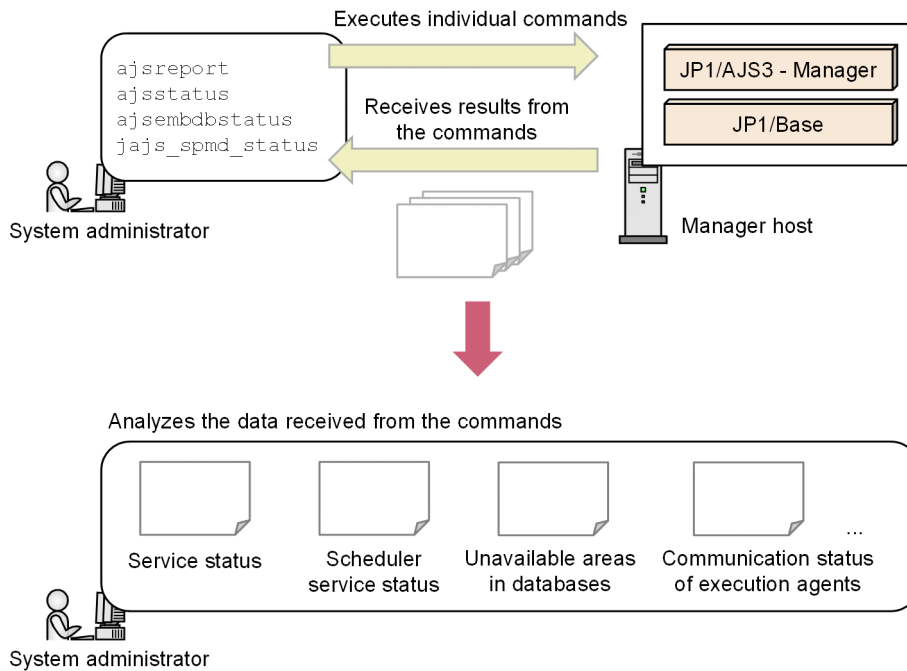
13.1.13 Checking the JP1/AJS3 operational status by using the Web GUI

To check whether the JP1/AJS3 system is operating stably during everyday business operation, you must obtain multiple types of information. This section describes how you can use the Web GUI (Management Portal) to check whether the JP1/AJS3 system is operating stably.

(1) Background

In JP1/AJS3, the types of information necessary to check whether the system is operating stably can be obtained separately by using commands. However, command-based operations can sometimes become quite complex.

Figure 13–25: Example of using commands to check JP1/AJS3 operational status



Suppose that you are using commands to monitor the status of the JP1/AJS3 system in your company and want to simplify the daily system monitoring procedure in order to operate the JP1/AJS3 system in a more stable manner.

(2) Goals

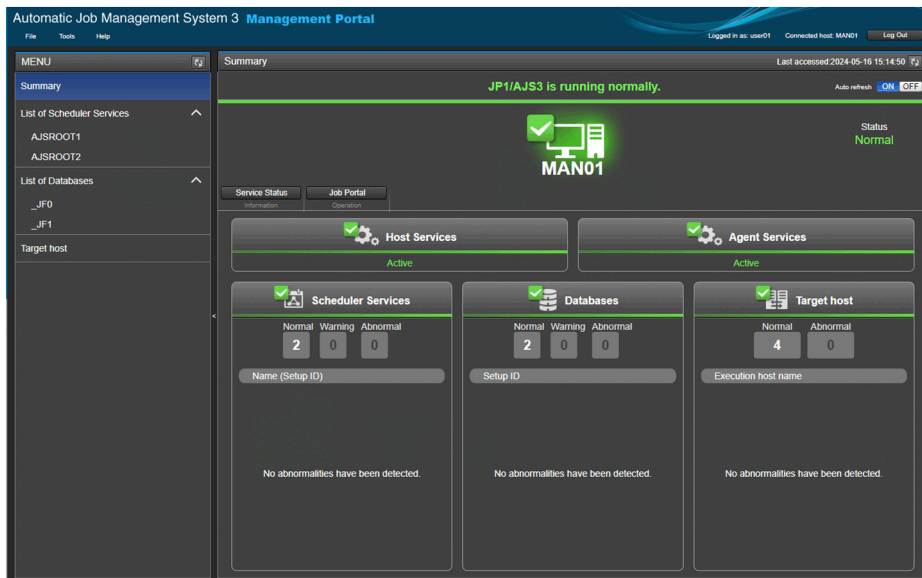
- Easily check information about whether the JP1/AJS3 system is operating stably in a visual manner by using a GUI.
- Quickly locate problems in the JP1/AJS3 system so that they can be resolved in a shorter time.

(3) Approach

Set up the Web GUI (Management Portal) so that you can check the JP1/AJS3 operating information from a web browser.

The following figure shows an example of the screen displayed when using the Web GUI (Management Portal) to check JP1/AJS3 status information.

Figure 13–26: Example of the screen displayed when using the Web GUI (Management Portal) to check JP1/AJS3 status information



With the Web GUI (Management Portal), you can check the following information from a web browser:

- Whether the JP1/AJS3 services are running
- Whether databases have a large number of unavailable areas
- Whether there are factors that might stop job execution
- Whether the manager and agent hosts can communicate with each other
- Operational conditions of the JP1/AJS3 system including the usage states of scheduler services and the number of job executions

(4) Configuration example

To use the Web GUI (Management Portal), set it up on both the manager host and agent host.

When setup of the Web GUI (Management Portal) is complete, log in to it from a web browser to check the JP1/AJS3 status as a routine part of your work.

(a) Example of setting up the Web GUI (Management Portal)

The following shows the procedure for setup on the manager host and agent host:

1. Specify the following additional settings[#] so that the JP1/AJS3 status can be obtained:
 - Settings for detecting factors that might stop job execution
 - Settings for reducing a delay in job distribution
 - Settings for outputting performance reports
2. Install JP1/AJS3 - Web Console.
3. On the manager host, set up the Web GUI (Management Portal).
4. On the agent host, set up the Web GUI (Management Portal).

#:

The Web GUI (Management Portal) can be used even if the preceding three additional settings are not specified. However, if these additional settings are not specified, some of the JP1/AJS3 operating information will not be obtained with the Web GUI (Management Portal).

- Settings for detecting factors that might stop job execution
- Settings for reducing a delay in job distribution
- Settings for outputting performance reports

(b) Example of using the Web GUI (Management Portal)

The following shows the procedure for checking the JP1/AJS3 statuses from a web browser:

1. Use a web browser to log in to the Web GUI (Management Portal).
2. On the **Summary** screen of the Web GUI (Management Portal), check the JP1/AJS3 summary status.
If the JP1/AJS3 summary status is normal, you do not need to check any more items.
3. If the JP1/AJS3 summary status is abnormal, move to other screens that show detailed information and identify the location of abnormality.
4. Address the abnormality by using JP1/AJS3 - View, the Web GUI (Job Portal), or commands.

(5) Manual references

Type	Item	Location
Overview	Overview of Web GUI (Management Portal)	• 8. <i>System Monitoring</i> in the manual <i>JP1/Automatic Job Management System 3 Overview</i> • 9.2.3 <i>Management Portal screens</i> in the manual <i>JP1/Automatic Job Management System 3 Overview</i> • 4.6.3 <i>Considering the Management Portal execution environment</i> in the <i>JP1/Automatic Job Management System 3 System Design (Configuration) Guide</i>
Estimates	Estimation of the amount of data that will be used by the Web GUI (Management Portal)	• 3.1.3 <i>Response of Web GUI</i> in the <i>JP1/Automatic Job Management System 3 System Design (Configuration) Guide</i> • 3.2.1 <i>Estimating the data flow on the network</i> in the <i>JP1/Automatic Job Management System 3 System Design (Configuration) Guide</i>
	Estimation of the size of log files that will be used for the Web GUI (Management Portal)	3.4.7 <i>Estimating the size of log files for Web Console server</i> in the <i>JP1/Automatic Job Management System 3 System Design (Configuration) Guide</i>
Configuration	Setup of the manager host	• 6.7.2(1) <i>Procedure for setup on the manager host</i> in the <i>JP1/Automatic Job Management System 3 Configuration Guide</i> • 15.8.2(1) <i>Procedure for setup on the manager host</i> in the <i>JP1/Automatic Job Management System 3 Configuration Guide</i>
	Setup of the agent host	• 6.7.2(2) <i>Procedure for setup on the agent host</i> in the <i>JP1/Automatic Job Management System 3 Configuration Guide</i> • 15.8.2(2) <i>Procedure for setup on the agent host</i> in the <i>JP1/Automatic Job Management System 3 Configuration Guide</i>
	Settings for obtaining the JP1/AJS3 information	• 21.5 <i>Setting up the job distribution delay reduction function</i> in the <i>JP1/Automatic Job Management System 3 Configuration Guide</i> • 21.7 <i>Settings for detecting factors that might stop job execution</i> in the <i>JP1/Automatic Job Management System 3 Configuration Guide</i>

Type	Item	Location
Configuration	Settings for obtaining the JP1/AJS3 information	15.7 Settings related to the output of performance reports in the <i>JP1/Automatic Job Management System 3 Configuration Guide</i>
Dialog boxes		16. Management Portal of the Web GUI in the <i>JP1/Automatic Job Management System 3 Operator's Guide</i>

(6) Cautionary notes

- When the Web GUI (Management Portal) is used, whether the communication encryption function is enabled depends on the physical host settings. Therefore, the setting of whether the communication encryption function is enabled must be shared by servers that communicate with each other, among the Web Console server, manager host's physical host, and agent host's physical host. However, if you set `INETD` for the `AJS3SSL` environment setting parameter, you can disable encryption for communication between the manager host and agent host even when encryption is enabled for communication between the Web Console server and manager host. If you specify a logical host as the connection destination of the Management Portal when using the Web GUI (Management Portal), the following note also applies. In this case, you must make sure that the SANs of the server certificate on the physical host include the physical host name and the names of all logical hosts that exist on the physical host. For details, see 2.3.6 *Encryption of JP1/AJS3 communications with SSL* in the *JP1/Automatic Job Management System 3 System Design (Configuration) Guide*.
- The host connected from the Web GUI (Management Portal) can be used in a cluster environment. In this case, however, the JP1/AJS3 System Control Manager service and JP1/AJS3 System Control Agent service are excluded from the failover-target resources. Therefore, you must specify the settings to achieve either of the following statuses:
 - The JP1/AJS3 System Control Manager service and JP1/AJS3 System Control Agent service are running on both the active and standby server machines.
 - The JP1/AJS3 System Control Manager service and JP1/AJS3 System Control Agent service are automatically started by, for example, cluster software settings or the `jaajs_start.cluster.model` setting when the logical hosts of the active and standby servers start.

For details, see 8.2.11 *Settings for using the host connected from the Web GUI (Management Portal) in a cluster environment* in the *JP1/Automatic Job Management System 3 Configuration Guide* (for Windows) or 17.2.12 *Settings for using the host connected from the Web GUI (Management Portal) in a cluster environment* in the *JP1/Automatic Job Management System 3 Configuration Guide* (for UNIX).

Appendixes

A. JP1 Events Issued by JP1/AJS3

This appendix describes the JP1 events issued by JP1/AJS3.

A.1 List of JP1 events

JP1 events are listed below.

Table A–1: List of JP1 events

Event ID	Event name	Event occurrence	Message ID
00004100	Scheduler service start event	Scheduler service started	KAVS0200-I
00004101	Scheduler service end event	Scheduler service ended	KAVS0201-I
00004102	Jobnet start event	Jobnet or jobnet connector started	KAVS0260-I
00004103	Jobnet normal end event	Jobnet or jobnet connector ended normally	KAVS0261-I
00004104	Jobnet abnormal end event	Jobnet or jobnet connector ended abnormally	KAVS0262-E
00004105	Job start event	Job started	KAVS0263-I
00004106	Job normal end event	Job ended normally	KAVS0264-I
00004107	Job abnormal end event	Job ended abnormally	KAVS0265-E
00004108	Jobnet warning end event	Jobnet or jobnet connector ended with a warning	KAVS0268-W
00004109	Job warning end event	Job ended with a warning	KAVS0269-W
0000410A	Queued job canceled event	The scheduler service was restarted (in hot-start mode) while jobs were being queued by using job execution control or while jobs were not being queued by using job execution control although job submission had started	KAVS0266-I
00004110	Abnormal end event for scheduler log process (log-daemon abnormal end event)	Log program ended abnormally	KAVS0202-E
00004111	Scheduler log file swap event	Log files swapped	KAVS0203-I
00004120	Held jobnet event	Jobnet held	KAVS0270-I
00004121	Held job event	Job held	KAVS0271-I
00004122	Jobnet delayed start event	Jobnet entered <i>Delayed start</i> status	KAVS0275-I
00004123	Jobnet delayed end event	Jobnet entered <i>Delayed end</i> status	KAVS0276-I
00004124	Next scheduled queued event	N/A	KAVS0277-I
00004125	Job submission start event	Job submission started	KAVS0278-I
00004126	Event job execution-request start event	Event job and custom event job execution-request started	KAVS0242-I
00004127	Job delayed end event	Job entered <i>Delayed end</i> status	KAVS0248-I
00004130	Scheduler service restart event (daemon restart event)	Scheduler service restarted	KAVS0204-E

Event ID	Event name	Event occurrence	Message ID
00004131	Jobnet shutdown event	Jobnet entered <i>Shutdown</i> status	KAVS0272-E KAVS0273-E
00004140	Jobnet start-condition monitoring start event	Monitoring of a jobnet's start condition started	KAVS0240-I
00004141	Jobnet start-condition monitoring end event	Monitoring of a jobnet's start condition ended	KAVS0241-I
00004142	Jobnet skipped event	Jobnet entered <i>Skipped so not exec.</i> Status	KAVS0279-E
00004143	Connection-destination jobnet unregistered event	Connection-destination jobnet not registered when jobnet connector execution started	KAVS0243-E
00004144	Jobnet connector unregistered event	Jobnet connector not registered for execution when execution of the connection-destination jobnet started	KAVS0244-E
00004145	End of start-condition monitoring wait event	Monitored generation waiting for start time	KAVS1420-I
00004146	Jobnet waiting-process start event	Jobnet with wait conditions started waiting	KAVS4950-I
00004147	Jobnet waiting-process end event	Wait condition of a jobnet with wait conditions was satisfied	KAVS4955-I
00004148	Jobnet waiting-process retained event	Wait condition of a jobnet with wait conditions unable to be satisfied	KAVS4957-E
00004149	Jobnet waiting-process resumed event	Jobnet with wait conditions is now able to wait for a unit to complete execution	KAVS4958-I
0000414A	Job waiting-process start event	Job with wait conditions started waiting	KAVS4951-I
0000414B	Job waiting-process end event	Wait condition of a job with wait conditions was satisfied	KAVS4956-I
0000414C	Job waiting-process retained event	Wait condition of a job with wait conditions unable to be fulfilled	KAVS4971-E
0000414D	Job waiting-process resumed event	Job with wait conditions is now able to wait for a unit to complete execution	KAVS4973-I
0000414E	Waiting process blocked event	Unit with wait conditions was unable to wait due to an error	KAVS4962-E
00004150	Start event for scheduler database reorganization	Reorganization of the scheduler database started	KAVS1500-I ^{#1}
00004151	Normal end event for scheduler database reorganization	Reorganization of the scheduler database ended normally	KAVS1501-I ^{#1}
00004152	Abnormal end event for scheduler database reorganization	Reorganization of the scheduler database ended abnormally	KAVS1502-E ^{#1}
00004153	Information event about scheduler's ISAM unused area size	Information received about the ISAM unused area size used by the scheduler service	KAVS1503-I ^{#1}
00004154	Threshold warning event about scheduler's ISAM unused area size	Size of the unused area for ISAM files used by the scheduler reaches the threshold	KAVS1504-W ^{#1}
00004155	Wait start event for the automatic retry interval	The wait for the automatic retry interval started	KAVS4675-I
00004156	Start event for automatic retry execution	Execution of automatic retry started	KAVS4676-I

Event ID	Event name	Event occurrence	Message ID
00004157	Error event that disables automatic retry execution	An error that disabled execution occurred during automatic retry	KAVS4677-E
00004158	Start event for submitting jobs for automatic retry	Automatic retry of submitting jobs started	KAVS4678-I
00004159	Warning event indicating that the specified number of generations retained for the jobnets with start conditions was reached	The number of generations retained for the jobnets with start conditions has reached the specified value	KAVS1157-W ^{#5}
00004160	Start event for reorganizing the database for the job execution environment	Reorganization of the job execution environment database started	KAVU5980-I ^{#1}
00004161	Normal end event for reorganizing the database for the job execution environment	Reorganization of the job execution environment database ended normally	KAVU5981-I ^{#1}
00004162	Abnormal end event for reorganizing the database for the job execution environment	Reorganization of the job execution environment database ended abnormally	KAVU5982-E ^{#1}
00004163	Information event about ISAM unused area size for the job execution environment	Information received about the size of the unused area for ISAM files used by the job execution environment	KAVU5983-I ^{#1}
00004164	Threshold warning event about ISAM unused area size for the job execution environment	Size of the unused area for ISAM files used by the job execution environment reaches the threshold	KAVU5984-W ^{#1}
00004165	Threshold warning event about the number of jobs in the <i>Now queuing</i> or <i>Now running</i> status	The number of jobs in the <i>Now queuing</i> or <i>Now running</i> status exceeds the value specified for the <code>AlertContentJob</code> environment setting parameter	KAVU4524-W ^{#6}
00004170	Abnormal termination event for the RDB connection wait function of the scheduler service	RDB connection wait function has terminated abnormally	KAVS0998-E
00004171	Start event for the RDB connection wait function of the scheduler service	RDB connection wait function has started	KAVS0999-W
00004190	Command or JP1/AJS3 - View operation start event	Command or JP1/AJS3 - View operation started	KAVS0715-I ^{#7}
00004191	Command or JP1/AJS3 - View operation end event	Command or JP1/AJS3 - View operation ended	KAVS0716-I ^{#7}
000041A0	Log file trap event	Data that matches the monitoring condition of the target log file is output to the log file	N/A
000041A1	Event action control - manager start event	Event action control - manager started	KAVT0498-I
000041A2	Event action control - manager end event	Event action control - manager stops	KAVT0499-I
000041A3	Event action control - agent start event	Event action control - agent started	KAVT0900-I
000041A4	Event action control - agent end event	Event action control - agent stops	KAVT0901-I
000041A5	Threshold warning event about the number of unreported information items for the scheduler service of the event/action control manager	The number of unreported information items for the scheduler service managed by the event/action control manager exceeds the value specified for the <code>AlarmUnreportedInfoEvent</code> environment setting parameter	KAVT0365-W ^{#8}
000041B0 ^{#2}	Event indicating that communication with a broadcast-execution destination agent is impossible	Communication could not be performed with a broadcast-execution destination agent during broadcast execution of a flexible job	KAVS8100-E

Event ID	Event name	Event occurrence	Message ID
000041B1 ^{#2}	Event indicating that the monitoring of the execution time of a broadcast-execution destination agent timed out	The execution time of a flexible job, executed by broadcast execution on a destination agent, exceeded the time specified for the <code>FXJOB_MONITOR_TIMEOUT</code> environment setting parameter	KAVS8101-E
000041B2 ^{#2}	Event indicating that an attempt to confirm the start of a job on a broadcast-execution destination agent timed out	The time set for the <code>FXJOB_START_TIMEOUT</code> environment setting parameter elapsed before the start of a flexible job was confirmed on a broadcast-execution destination agent	KAVS8116-E
000041B3 ^{#2}	Event indicating that the execution of a flexible job ended (ended normally) on a broadcast-execution destination agent	Execution of a flexible job ended (ended normally) on a broadcast-execution destination agent	KAVS8138-I
000041B4 ^{#2}	Event indicating that the execution of a flexible job ended (ended with a warning) on a broadcast-execution destination agent	Execution of a flexible job ended (ended with a warning) on a broadcast-execution destination agent	KAVS8138-I
000041B5 ^{#2}	Event indicating that the execution of a flexible job ended (ended abnormally) on a broadcast-execution destination agent	Execution of a flexible job ended (ended abnormally) on a broadcast-execution destination agent	KAVS8138-I
000041B6 ^{#3}	Event indicating that execution of a flexible job ended (ended normally) on all broadcast-execution destination agents	Execution of a flexible job ended (ended normally) on all broadcast-execution destination agents	KAVS8149-I
000041B7 ^{#3}	Event indicating that execution of a flexible job ended (ended with a warning) on all broadcast-execution destination agents	Execution of a flexible job ended (ended with a warning) on all broadcast-execution destination agents	KAVS8149-I
000041B8 ^{#3}	Event indicating that execution of a flexible job ended (ended abnormally) on all broadcast-execution destination agents	Execution of a flexible job ended (ended abnormally) on all broadcast-execution destination agents	KAVS8149-I
000041B9 ^{#3}	Event indicating that execution of a flexible job ended (when there was no broadcast-execution destination agent)	A flexible job was executed by broadcast execution, but no destination agents exist	KAVS8159-W
000041F0 ^{#4}	Process abnormal end event (compatible event)	Process ended abnormally	KNAD3737-E
000041F1 ^{#4}	Process start timeout event (compatible event)	Start of a process times out	KNAD3613-W
000041F2 ^{#4}	Process restart completion event (compatible event)	Restart of a process completes	KNAD3616-I
000041F3 ^{#4}	Pre-start failure event (compatible event)	Pre-start process fails	KNAD3953-E
000041C0 ^{#4}	JP1/AJS3 start completed event	JP1/AJS3 started	KNAD3604-I
000041C1 ^{#4}	JP1/AJS3 stop event	JP1/AJS3 stopped	KNAD3743-I
000041C2 ^{#4}	Managed process start completed event	Managed process startup completed	KNAD3617-I
000041C3 ^{#4}	Managed process stop event	Managed process stopped	KNAD3746-I
000041C4 ^{#4}	Managed process abnormal end event	Managed process ended abnormally during operation	KNAD3737-E
000041C5 ^{#4}	Managed process start timeout event	Managed process timed out without a start notification	KNAD3613-W
000041C6 ^{#4}	Managed process restart completed event	Restart of a managed process that ended abnormally completed	KNAD3616-I

Event ID	Event name	Event occurrence	Message ID
000041C7#4	Pre-start process failure event	Pre-start process failed	KNAD3953-E

Legend:

N/A: Not applicable

#1

Output only when a JP1 event is specified for output in the `jpgdbcond` command.

#2

This event is issued only if the `FXBC_JP1EVSEND_AGENT_TRIGGER` environment setting parameter is used to enable issuance of JP1 events. For details about the `FXBC_JP1EVSEND_AGENT_TRIGGER` environment setting parameter, see *20.9.2(8) FXBC_JP1EVSEND_AGENT_TRIGGER* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#3

This event is issued only if the `FXBC_JP1EVSEND_JOB_TRIGGER` environment setting parameter is used to enable issuance of JP1 events. For details about the `FXBC_JP1EVSEND_JOB_TRIGGER` environment setting parameter, see *20.9.2(9) FXBC_JP1EVSEND_JOB_TRIGGER* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#4

This event occurs only when JP1 event output is specified. For details, see *6.3.2 Issuing a JP1 event when a JP1/AJS3 process starts, stops, or terminates abnormally*.

#5

This event is issued only when the `CONDGENWARNINT` environment setting parameter is set to issue JP1 events. For details about the `CONDGENWARNINT` environment setting parameter, see *20.4.2(118) CONDGENWARNINT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#6

This event is issued only when the `AlarmContentJobEventInterval` environment setting parameter is set to issue JP1 events. For details about the `AlarmContentJobEventInterval` environment setting parameter, see *20.5.2(14) AlarmContentJobEventInterval* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#7

This event is issued only when the `COMMANDEVENT` environment setting parameter is set to issue JP1 events. For details about the `COMMANDEVENT` environment setting parameter, see *20.4.2(85) COMMANDEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#8

This event is issued only when the `AlarmUnreportedInfoEventInterval` environment setting parameter is set to issue JP1 events. For details about the `AlarmUnreportedInfoEventInterval` environment setting parameter, see *20.6.2(12) AlarmUnreportedInfoEventInterval* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

A.2 JP1 event attributes

JP1 event attributes are classified as basic attributes and extended attributes. Basic attributes include the event ID, detailed information, and other attributes. Extended attributes include common information such as the severity level and user name, and event-specific information such as the operating system and the version of the AJS action performed.

Note that the detailed information for the basic attributes is truncated for compatibility with JP1 Version 5 and earlier products. Use the extended attributes when referencing the detailed information.

JP1 event attributes are summarized in the tables below.

(1) Attributes of the scheduler service start event

The attributes of the scheduler service start event are as follows.

Table A–2: Attributes of the scheduler service start event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004100
		Message	N/A	KAVS0200-I Scheduler service started. (<i>scheduler-service-name</i>)
		Detailed information	N/A	VRID STTM CODIR ERDIR SCDIR SRVID The meaning of each symbol is as follows: VRID: Protocol version ID STTM: Start time CODIR: Directory for unit definitions ERDIR: Directory for job error information SCDIR: Directory for schedule and monitoring information SRVID: Scheduler service name
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	- In Windows: Account for the JP1/AJS3 service (default: SYSTEM) - In UNIX: root If the JP1_USERNAME environment variable is set, its value is used.
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/AJS2 - Manager Scheduler service
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	JP1/AJS2 - Manager Scheduler service
		Object ID	OBJECT_ID	Scheduler service name
		Occurrence	OCCURRENCE	START
		Start time	START_TIME	Start time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600

Legend:

N/A: Not applicable

(2) Attributes of the scheduler service end event

The attributes of the scheduler service end event are as follows.

Table A–3: Attributes of the scheduler service end event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004101
		Message	N/A	KAVS0201-I Scheduler service ended. (<i>scheduler-service-name</i>)
		Detailed information	N/A	VRID EDTM RTN EDTYP SRVID The meaning of each symbol is as follows: VRID: Protocol version ID EDTM: End time RTN: Return code EDTYP: Stop method SRVID: Scheduler service name
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	- In Windows: Account for the JP1/AJS3 service (default: SYSTEM) - In UNIX: root If the JP1_USERNAME environment variable is set, its value is used.
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/AJS2 - Manager Scheduler service
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	JP1/AJS2 - Manager Scheduler service
		Object ID	OBJECT_ID	Scheduler service name
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	Start time
		End time	END_TIME	End time
		Return code	RESULT_CODE	Return code
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600

Legend:

N/A: Not applicable

(3) Attributes of the jobnet start event

The attributes of the jobnet start event are as follows.

Table A–4: Attributes of the jobnet start event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004102
		Message	N/A	KAVS0260-I Jobnet started. (name: <i>jobnet-name</i> : <i>execution-ID</i>)
		Detailed information	N/A	VRID STTM PATH NAME RKIND LVL EUSR SCTM EHST SRVID The meaning of each symbol is as follows: VRID: Protocol version ID STTM: Start time PATH: Upper-level unit name NAME: Unit name RKIND: Recovery type LVL: Level EUSR: Source user name SCTM: Scheduled run-time# EHST: Source host name SRVID: Scheduler service name # Not set for a jobnet connector
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOBNET
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-or-jobnet-connector-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name</i>
		Occurrence	OCCURRENCE	START
		Start time	START_TIME	Start time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet or jobnet connector name (set only for a nested jobnet or jobnet connector)
		Execution ID	A3	Execution ID
		Comment	A6#	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Recovery type	B0	r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Scheduled execution date & time	B5	Scheduled execution date & time (not set for a jobnet connector)
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `NETCOMMENTEVENT`.

For details about the `NETCOMMENTEVENT` environment setting parameter, see 20.4.2(111) *NETCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(4) Attributes of the jobnet normal end event

The attributes of the jobnet normal end event are as follows.

Table A–5: Attributes of the jobnet normal end event

Attribute type	Type	Attribute name	Contents
Basic	Event ID	N/A	00004103
	Message	N/A	KAVS0261-I Jobnet ended normally. (name: <i>jobnet-name</i> : <i>execution-ID</i>)
	Detailed information	N/A	VRID STTM PATH NAME RKIND LVL EUSR EHST SRVID The meaning of each symbol is as follows: VRID: Protocol version ID STTM: Start time PATH: Upper-level unit name NAME: Unit name RKIND: Recovery type LVL: Level EUSR: Source user name EHST: Source host name SRVID: Scheduler service name

Attribute type		Type	Attribute name	Contents
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOBNET
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-or-jobnet-connector-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-or-jobnet-connector-name</i>
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	Start time
		End time	END_TIME	End time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet or jobnet connector name (set only for a nested jobnet or jobnet connector)
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `NETCOMMENTEVENT`.

For details about the `NETCOMMENTEVENT` environment setting parameter, see 20.4.2(111) `NETCOMMENTEVENT` in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(5) Attributes of the jobnet abnormal end event

The attributes of the jobnet abnormal end event are as follows.

Table A–6: Attributes of the jobnet abnormal end event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004104
		Message	N/A	KAVS0262-E Jobnet ended abnormally. (name: <i>jobnet-name</i> : <i>execution-ID</i>)
		Detailed information	N/A	VRID STTM PATH NAME RKIND LVL EUSR EDTM EHST SRVID The meaning of each symbol is as follows: VRID: Protocol version ID STTM: Start time PATH: Upper-level unit name NAME: Unit name RKIND: Recovery type LVL: Level EUSR: Source user name EDTM: End time EHST: Source host name SRVID: Scheduler service name
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOBNET
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-or-jobnet-connector-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-or-jobnet-connector-name</i>
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	Start time
		End time	END_TIME	End time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Nested jobnet or job name	A2	Nested jobnet or jobnet connector name (set only for a nested jobnet or jobnet connector)
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Status	B4	a: Ended abnormally q: Invalid exe. seq. i: Interrupted c: Killed
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `NETCOMMENTEVENT`.

For details about the `NETCOMMENTEVENT` environment setting parameter, see *20.4.2(111) NETCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(6) Attributes of the job start event

The attributes of the job start event are as follows.

Table A–7: Attributes of the job start event

Attribute type		Type	Attribute name	Contents
Basic	Event ID	N/A		00004105
	Message	N/A		KAVS0263-I Job started. (name: <i>job-name</i> : <i>execution-ID</i> , host: <i>host-name</i> , JOBID: <i>job-number</i>)
	Detailed information	N/A		VRID STTM PATH NAME RKIND DUSR EUSR EGRP EHST JTYP JHST SRVID The meaning of each symbol is as follows: VRID: Protocol version ID

Attribute type		Type	Attribute name	Contents
Basic		Detailed information	N/A	STTM: Start time PATH: Upper-level unit name NAME: Unit name RKIND: Recovery type DUSR: Run-time user name EUSR: Source user name EGRP: Job group name EHST: Source host name JTYP: Job execution status JHST: Job run-time host SRVID: Scheduler service name
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name : /jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	START
		Start time	START_TIME	Start time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the user who registered the jobnet	B2	User who registered the jobnet
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Name of the host where the jobnet was registered	B3	When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Host name for execution destination	C0	Name of the host on which the job was executed
		Execution group name	C1	Always blank
		Job execution status	C6	Always r
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)
		Queuing attribute	H4	Displays whether the queuing attribute exists: q: Exists. n: Does not exist.

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `JOBCOMMENTEVENT`.

For details about the `JOBCOMMENTEVENT` environment setting parameter, see 20.4.2(112) *JOBCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(7) Attributes of the job normal end event

The attributes of the job normal end event are as follows.

Table A–8: Attributes of the job normal end event

Attribute type		Type	Attribute name	Contents
Basic	Event ID	N/A		00004106
	Message	N/A		KAVS0264-I Job ended normally. (name: <i>job-name</i> , : <i>execution-ID</i> , host : <i>host-name</i> , code : <i>code</i> , JOBID : <i>job-number</i>)
	Detailed information	N/A		VRID STTM PATH NAME RKIND DUSR EUSR EGRP EDTM RTN UCPUT SCPUT EHST JTYP JHST RQID ASTTM AEDTM AUCPU ASCPU SRVID The meaning of each symbol is as follows: VRID: Protocol version ID STTM: Start time PATH: Upper-level unit name NAME: Unit name RKIND: Recovery type DUSR: Run-time user name EUSR: Source user name EGRP: Job group name

Attribute type		Type	Attribute name	Contents
Basic		Detailed information	N/A	EDTM: End time RTN: Return code UCPUT: User CPU time SCPUT: System CPU time EHST: Source host name JTYP: Job execution status JHST: Job run-time host RQID: Request ID ASTTM: Agent start time AEDTM: Agent end time AUCPU: Agent user CPU time ASCPU: Agent system CPU time SRVID: Scheduler service name
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name : /jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	Start time
		End time	END_TIME	End time
		Return code	RESULT_CODE	Return code
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 ^{#1}	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Name of the user who registered the jobnet	B2	User who registered the jobnet
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Host name for execution destination	C0 ^{#9}	Name of the host on which the job was executed
		Execution group name	C1	Always blank
		Request ID	C2	Job number
		Queue name	C3	Queue name (for a queuing job) or agent name (for a Unix job, PC job, flexible job, or HTTP connection job)
		User CPU time	C4	Always 0 (zero)
		System CPU time	C5	Always 0 (zero)
		Job execution status	C6	Always r
		Start time at the execution destination	E0 ^{#2, #3}	Start time at the target host
		End time at the execution destination	E1 ^{#3}	End time at the target host
		User CPU time at the execution destination	E2	Always 0 (zero)
		System CPU time at the execution destination	E3	Always 0 (zero)
		JP1 user who executed the job at the execution destination	E4 ^{#4, #5, #6}	Name of the JP1 user who executed the job on the target host, as set in Executed by
		Job execution time at the execution destination	E5 ^{#3, #7}	How long the job took to execute at the target host (seconds)
		Start time of retry execution	E6 ^{#8}	Retry execution start time
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)
		Queuing attribute	H4	Displays whether the queuing attribute exists: q: Exists. n: Does not exist.

Legend:

N/A: Not applicable

#1

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `JOBCOMMENTEVENT`.

For details about the `JOBCOMMENTEVENT` environment setting parameter, see *20.4.2(112) JOBCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#2

No value is set if the job failed to start and execution was not started on the target host.

#3

No value is set for a judgment job and OR job.

#4

Event jobs are always executed by the OS user who started JP1/AJS3, regardless of the JP1 user name set as the execution user.

#5

Set as the registered JP1 user for judgment jobs and OR jobs.

#6

No value is set if the target host could not acquire the information.

#7

No value is set when the *target host start time* or *target host end time* attribute is blank.

#8

Blank if no retry has been executed yet.

#9

If it ends before the job starts on the execution host, for example, because the job status changed, it might be displayed as blank.

(8) Attributes of the job abnormal end event

The attributes of the job abnormal end event are as follows.

Table A–9: Attributes of the job abnormal end event

Attribute type	Type	Attribute name	Contents
Basic	Event ID	N/A	00004107
	Message	N/A	KAVS0265-E Job ended abnormally. (name: <i>job-name</i> , : <i>execution-ID</i> , status : <i>status</i> , code : <i>code</i> , JOBID : <i>job-number</i>)
	Detailed information	N/A	VRID STTM PATH NAME RKIND DUSR EUSR EGRP EDTM RTN UCPUT SCPUT EDST EHST JTYP JHST RQID ASTTM AEDTM AUCPU ASCPU SRVID The meaning of each symbol is as follows: VRID: Protocol version ID STTM: Start time PATH: Upper-level unit name NAME: Unit name RKIND: Recovery type

Attribute type		Type	Attribute name	Contents
Basic		Detailed information	N/A	DUSR: Run-time user name EUSR: Source user name EGRP: Job group name EDTM: End time RTN: Return code UCPUT: User CPU time SCPUT: System CPU time EDST: Termination status EHST: Source host name JTYP: Job execution status JHST: Job run-time host RQID: Request ID ASTTM: Agent start time AEDTM: Agent end time AUCPU: Agent user CPU time ASCPU: Agent system CPU time SRVID: Scheduler service name
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name : /jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	Start time
		End time	END_TIME	End time
		Return code	RESULT_CODE	Return code
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 ^{#1}	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Recovery type	B0	r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the user who registered the jobnet	B2	User who registered the jobnet
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Status	B4	a: Ended abnormally f: Failed to start c: Killed ?: Unknown end status
		Host name for execution destination	C0 ^{#9}	Name of the host on which the job was executed
		Execution group name	C1	Always blank
		Request ID	C2	Job number
		Queue name	C3	Queue name (for a queuing job) or agent name (for a Unix job, PC job, flexible job, or HTTP connection job)
		User CPU time	C4	Always 0 (zero)
		System CPU time	C5	Always 0 (zero)
		Job execution status	C6	Always r
		Start time at the execution destination	E0 ^{#2, #3}	Start time at the target host
		End time at the execution destination	E1 ^{#3}	End time at the target host
		User CPU time at the execution destination	E2	Always 0 (zero)
		System CPU time at the execution destination	E3	Always 0 (zero)
		JP1 user who executed the job at the execution destination	E4 ^{#4, #5, #6}	Name of the JP1 user who executed the job on the target host, as set in Executed by
		Job execution time at the execution destination	E5 ^{#3, #7}	How long the job took to execute at the target host (seconds)
		Start time of retry execution	E6 ^{#8}	Retry execution start time
		Unit ID	H2	Unit ID (decimal number)

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Unit type	H3	Unit type (string specified as a parameter in the unit definition file)
		Queuing attribute	H4	Displays whether the queuing attribute exists: q: Exists. n: Does not exist.

Legend:

N/A: Not applicable

#1

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `JOBCOMMENTEVENT`.

For details about the `JOBCOMMENTEVENT` environment setting parameter, see 20.4.2(112) *JOBCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#2

No value is set if the job failed to start and execution was not started on the target host.

#3

No value is set for a judgment job and OR job.

#4

Event jobs are always executed by the OS user who started JP1/AJS3, regardless of the JP1 user name set as the execution user.

#5

Set as the registered JP1 user for judgment jobs and OR jobs.

#6

No value is set if the target host could not acquire the information.

#7

No value is set when the *target host start time* or *target host end time* attribute is blank.

#8

Blank if no retry has been executed yet.

#9

If it ends before the job starts on the execution host, for example, because the agent stopped or the job status changed, it might be displayed as blank.

(9) Attributes of the jobnet warning end event

The attributes of the jobnet warning end event are as follows.

Table A–10: Attributes of the jobnet warning end event

Attribute type	Type	Attribute name	Contents
Basic	Event ID	N/A	00004108
	Message	N/A	KAVS0268-W Jobnet ended with warning. (name: <i>jobnet-name: execution-ID</i>)
	Detailed information	N/A	VRID STTM PATH NAME RKIND LVL EUSR EDTM EHST SRVID

Attribute type		Type	Attribute name	Contents
Basic		Detailed information	N/A	The meaning of each symbol is as follows: VRID: Protocol version ID STTM: Start time PATH: Upper-level unit name NAME: Unit name RKIND: Recovery type LVL: Level EDTM: End time EHST: Source host name SRVID: Scheduler service name
Extended	Common information	Severity	SEVERITY	Warning
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOBNET
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-or-jobnet-connector-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-or-jobnet-connector-name</i>
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	Start time
		End time	END_TIME	End time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet or jobnet connector name (set only for a nested jobnet or jobnet connector)
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `NETCOMMENTEVENT`.

For details about the `NETCOMMENTEVENT` environment setting parameter, see 20.4.2(111) `NETCOMMENTEVENT` in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(10) Attributes of the job warning end event

The attributes of the job warning end event are as follows.

Table A–11: Attributes of the job warning end event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004109
		Message	N/A	KAVS0269-W Job ended with warning. (name: <i>job-name</i> : <i>execution-ID</i> , code: <i>code</i> , host: <i>host-name</i>)
		Detailed information	N/A	VRID STTM PATH NAME RKIND DUSR EUSR EGRP EDTM RTN UCPUT SCPUT EHST JTYP JHST RQID ASTTM AEDTM AUCPU ASCPU SRVID The meaning of each symbol is as follows: VRID: Protocol version ID STTM: Start time PATH: Upper-level unit name NAME: Unit name RKIND: Recovery type DUSR: Run-time user name EUSR: Source user name EGRP: Job group name EDTM: End time RTN: Return code UCPUT: User CPU time SCPUT: System CPU time EHST: Source host name JTYP: Job execution status JHST: Job run-time host RQID: Request ID ASTTM: Agent start time AEDTM: Agent end time AUCPU: Agent user CPU time ASCPU: Agent system CPU time SRVID: Scheduler service name

Attribute type		Type	Attribute name	Contents
Extended	Common information	Severity	SEVERITY	Warning
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	Start time
		End time	END_TIME	End time
		Return code	RESULT_CODE	Return code
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 ^{#1}	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the user who registered the jobnet	B2	User who registered the jobnet
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Host name for execution destination	C0 ^{#9}	Name of the host on which the job was executed
		Execution group name	C1	Always blank

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Request ID	C2	Job number
		Queue name	C3	Queue name (for a queuing job) or agent name (for a Unix job, PC job, flexible job, or HTTP connection job)
		User CPU time	C4	Always 0 (zero)
		System CPU time	C5	Always 0 (zero)
		Job execution status	C6	Always r
		Start time at the execution destination	E0 ^{#2, #3}	Start time at the target host
		End time at the execution destination	E1 ^{#3}	End time at the target host
		User CPU time at the execution destination	E2	Always 0 (zero)
		System CPU time at the execution destination	E3	Always 0 (zero)
		JP1 user who executed the job at the execution destination	E4 ^{#4, #5, #6}	Name of the JP1 user who executed the job on the target host, as set in Executed by
		Job execution time at the execution destination	E5 ^{#3, #7}	How long the job took to execute at the target host (seconds)
		Start time of retry execution	E6 ^{#8}	Retry execution start time
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)
		Queuing attribute	H4	Displays whether the queuing attribute exists: q: Exists. n: Does not exist.

Legend:

N/A: Not applicable

#1

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `JOBCOMMENTEVENT`.

For details about the `JOBCOMMENTEVENT` environment setting parameter, see *20.4.2(112) JOBCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#2

No value is set if the job failed to start and execution was not started on the target host.

#3

No value is set for a judgment job and OR job.

#4

Event jobs are always executed by the OS user who started JP1/AJS3, regardless of the JP1 user name set as the execution user.

#5

Set as the registered JP1 user for judgment jobs and OR jobs.

#6

No value is set if the target host could not acquire the information.

#7

No value is set when the *target host start time* or *target host end time* attribute is blank.

#8

Blank if no retry has been executed yet.

#9

If it ends before the job starts on the execution host, for example, because the job status changed, it might be displayed as blank.

(11) Attributes of the queued job canceled event

The attributes of the queued job canceled event are as follows.

Table A–12: Attributes of the queued job canceled event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	0000410A
		Message	N/A	KAVS0266-I To submit Job again, it is canceled. (name: <i>job-name</i> : <i>execution-ID</i> , JOBID: <i>job-number</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name</i> : <i>/jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	END
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0900
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Nested jobnet or job name	A2	Job name
		Execution ID	A3	Execution ID
		Comment	A6 ^{#1}	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the user who registered the jobnet	B2	User who registered the jobnet
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Host name for execution destination	C0	Always blank
		Execution group name	C1	Always blank
		Request ID	C2	Job number
		Queue name	C3 ^{#2}	Agent name
		User CPU time	C4	Always 0 (zero)
		System CPU time	C5	Always 0 (zero)
		Job execution status	C6	Always r
		Start time at the execution destination	E0	Always blank
		End time at the execution destination	E1	Always blank
		User CPU time at the execution destination	E2	Always 0 (zero)
		System CPU time at the execution destination	E3	Always 0 (zero)
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)
		Queuing attribute	H4	Displays whether the queuing attribute exists: q: Exists. n: Does not exist.

Legend:

N/A: Not applicable

#1

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `JOBCOMMENTEVENT`.

For details about the `JOBCOMMENTEVENT` environment setting parameter, see *20.4.2(112) JOBCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#2

If no job submission has been completed, this item is blank.

(12) Attributes of the log-daemon abnormal end event

The attributes of the log-daemon abnormal end event are as follows.

Table A–13: Attributes of the log-daemon abnormal end event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004110
		Message	N/A	KAVS0202-E Log daemon ended abnormally. (code: <i>code</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	- In Windows: Account for the JP1/AJS3 service (default: SYSTEM) - In UNIX: root If the <code>JP1_USERNAME</code> environment variable is set, its value is used.
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/AJS2 - Manager Scheduler service
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	JP1/AJS2 - Manager Scheduler service
		Object ID	OBJECT_ID	N/A
		Occurrence	OCCURRENCE	END
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600

Legend:

N/A: Not applicable

(13) Attributes of the scheduler log file swap event

The attributes of the scheduler log file swap event are as follows.

Table A–14: Attributes of the scheduler log file swap event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004111
		Message	N/A	KAVS0203-I Log file (<i>old-scheduler-log-file-name</i>) has been changed to <i>new-scheduler-log-file-name</i> .
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	- In Windows: Account for the JP1/AJS3 service (default: SYSTEM) - In UNIX: root If the JP1_USERNAME environment variable is set, its value is used.
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/AJS2 - Manager Scheduler service
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	JP1/AJS2 - Manager Scheduler service
		Object ID	OBJECT_ID	N/A
		Occurrence	OCCURRENCE	EXCEPTION
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600
		Name of log file before exchange	D0	Name of the old scheduler log file
		Name of log file after exchange	D1	Name of the new scheduler log file

Legend:

N/A: Not applicable

(14) Attributes of the held jobnet event

The attributes of the held jobnet event are as follows.

Table A–15: Attributes of the held jobnet event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004120
		Message	N/A	KAVS0270-I Jobnet cannot be executed while being held. (name: <i>jobnet-name</i> : <i>execution-ID</i>)
		Detailed information	N/A	VRID STTM PATH NAME RKIND LVL EUSR EHST SRVID

Attribute type		Type	Attribute name	Contents
Basic		Detailed information	N/A	The meaning of each symbol is as follows: VRID: Protocol version ID STTM: Start time PATH: Upper-level unit name NAME: Unit name RKIND: Recovery type LVL: Level EUSR: Source user name EHST: Source host name SRVID: Scheduler service name
Extended	Common information	Severity	SEVERITY	Notice
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOBNET
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name</i>
		Occurrence	OCCURRENCE	PAUSE
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Scheduled execution date & time	B5	Scheduled execution date & time

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `NETCOMMENTEVENT`.

For details about the `NETCOMMENTEVENT` environment setting parameter, see 20.4.2(111) `NETCOMMENTEVENT` in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(15) Attributes of the held job event

The attributes of the held job event are as follows.

Table A–16: Attributes of the held job event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004121
		Message	N/A	KAVS0271-I Job cannot be executed while being held. (name: <i>job-name</i> : <i>execution-ID</i>)
		Detailed information	N/A	VRID STTM PATH NAME RKIND DUSR EUSR EGRP JHST SRVID The meaning of each symbol is as follows: VRID: Protocol version ID STTM: Start time PATH: Upper-level unit name NAME: Unit name RKIND: Recovery type DUSR: Run-time user name EUSR: Source user name EGRP: Job group name JHST: Job run-time host SRVID: Scheduler service name
Extended	Common information	Severity	SEVERITY	Notice
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name/job-name</i>

Attribute type		Type	Attribute name	Contents
Extended	Common information	Occurrence	OCCURRENCE	PAUSE
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the user who registered the jobnet	B2	User who registered the jobnet
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsenry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Execution group name	C1	Always blank
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)
		Queuing attribute	H4	Displays whether the queuing attribute exists: q: Exists. n: Does not exist.

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `JOBCOMMENTEVENT`.

For details about the `JOBCOMMENTEVENT` environment setting parameter, see 20.4.2(112) *JOBCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(16) Attributes of the jobnet delayed start event

The attributes of the jobnet delayed start event are as follows.

Table A–17: Attributes of the jobnet delayed start event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004122
		Message	N/A	KAVS0275-I Start of a jobnet delayed. (name: <i>jobnet-name</i> : <i>execution-ID</i>)
		Detailed information	N/A	VRID STTM STRTM JNST PATH NAME RKIND LVL EUSR EHST SRVID The meaning of each symbol is as follows: VRID: Protocol version ID STTM: Start time STRTM: Start delayed JNST: Jobnet status PATH: Upper-level unit name NAME: Unit name RKIND: Recovery type LVL: Level EUSR: Source user name EHST: Source host name SRVID: Scheduler service name
Extended	Common information	Severity	SEVERITY	Warning
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOBNET
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name</i>
		Occurrence	OCCURRENCE	LATESTART
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Recovery type	B0	r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Status	B4	<code>term-wait</code> : Waiting for prev. to end <code>time-wait</code> : Waiting for start time <code>holding</code> : Being held <code>shutdown</code> : Shutdown
		Scheduled execution date & time	B5	Scheduled execution date & time
		Start-delayed time	B6	Time when start delayed
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `NETCOMMENTEVENT`.

For details about the `NETCOMMENTEVENT` environment setting parameter, see *20.4.2(111) NETCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(17) Attributes of the termination delay event

The attributes of the termination delay event are as follows.

Table A–18: Attributes of the termination delay event

Attribute type	Type	Attribute name	Contents
Basic	Event ID	N/A	00004123
	Message	N/A	KAVS0276-I End of a jobnet delayed. (name: <i>jobnet-name</i> : <i>execution-ID</i>)
	Detailed information	N/A	VRID STTMR STTM SEDTM JNST PATH NAME RKIND LVL EUSR EHST SRVID The meaning of each symbol is as follows: VRID: Protocol version ID STTMR: Scheduled start time STTM: Actual start time SEDTM: Termination delay JNST: Jobnet status

Attribute type		Type	Attribute name	Contents
Basic		Detailed information	N/A	PATH: Upper-level unit name NAME: Unit name RKIND: Recovery type LVL: Level EUSR: Source user name EHST: Source host name SRVID: Scheduler service name
Extended	Common information	Severity	SEVERITY	Warning
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOBNET
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name</i>
		Occurrence	OCCURRENCE	LATEEND
		Start time	START_TIME	Start time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Status	B4	term-wait: Waiting for prev. to end time-wait: Waiting for start time holding: Being held running: Now running

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Status	B4	AB-cont: Running + Abend WA-cont: Running + Warning shutdown: Shutdown
		Scheduled execution date & time	B5	Scheduled execution date & time
		End-delayed time	B7	Time when the termination delay was detected
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `NETCOMMENTEVENT`.

For details about the `NETCOMMENTEVENT` environment setting parameter, see 20.4.2(111) *NETCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(18) Attributes of the next scheduled queued event

The attributes of the next scheduled queued event are as follows.

Table A–19: Attributes of the next scheduled queued event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004124
		Message	N/A	KAVS0277-I Start time for next execution schedule has been reached. (name: <i>jobnet-name: execution-ID</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Notice
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOBNET
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name</i>
		Occurrence	OCCURRENCE	EXCEPTION
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Scheduled execution date & time	B5	Scheduled execution date & time
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `NETCOMMENTEVENT`.

For details about the `NETCOMMENTEVENT` environment setting parameter, see 20.4.2(111) `NETCOMMENTEVENT` in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(19) Attributes of the job submission start event

The attributes of the job submission start event are as follows.

Table A–20: Attributes of the job submission start event

Attribute type		Type	Attribute name	Contents
Basic	Event ID	N/A		00004125
	Message	N/A		KAVS0278-I Job submit started. (name: <i>job-name</i> : <i>execution-ID</i>)
	Detailed information	N/A		VRID STTM PATH NAME RKIND DUSR EUSR EGRP EHST JTYP JHST SRVID The meaning of each symbol is as follows: VRID: Protocol version ID STTM: Start time PATH: Upper-level unit name NAME: Unit name RKIND: Recovery type

Attribute type		Type	Attribute name	Contents
Basic		Detailed information	N/A	DUSR: Run-time user name EUSR: Source user name EGRP: Job group name EHST: Source host name JTYP: Job execution status JHST: Job run-time host SRVID: Scheduler service name
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	START
		Start time	START_TIME	Start time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the user who registered the jobnet	B2	User who registered the jobnet
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Host name for execution destination	C0	Always blank

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Execution group name	C1	Always blank
		Job execution status	C6	Always r
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)
		Queuing attribute	H4	Displays whether the queuing attribute exists: q: Exists. n: Does not exist.

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `JOBCOMMENTEVENT`.

For details about the `JOBCOMMENTEVENT` environment setting parameter, see 20.4.2(112) *JOBCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(20) Attributes of the event job execution-request start event

The attributes of the event job execution-request start event are as follows.

Table A–21: Attributes of the event job execution-request start event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004126
		Message	N/A	KAVS0242-I The execution request of the event job started. (name: <i>job-name</i> : <i>execution-ID</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	START
		Start time	START_TIME	Start time
	Specific	Platform	PLATFORM	In Windows: NT In UNIX: UNIX

Attribute type		Type	Attribute name	Contents
Extended	information	Version of AJS action	ACTION_VERSION	0800
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the user who registered the jobnet	B2	User who registered the jobnet
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Host name for execution destination	C0	Always blank
		Execution group name	C1	Always blank
		Job execution status	C6	Always r
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)
		Queuing attribute	H4	Displays whether the queuing attribute exists: q: Exists. n: Does not exist.

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `JOBCOMMENTEVENT`.

For details about the `JOBCOMMENTEVENT` environment setting parameter, see *20.4.2(112)JOBCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(21) Attributes of the job delayed end event

The attributes of the job delayed end event are as follows.

Table A–22: Attributes of the job delayed end event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004127
		Message	N/A	KAVS0248-I End of a Job delayed. (name: <i>job-name: execution-ID</i>)
		Detailed information	N/A	VRID STTM SEDTM JST PATH NAME RKIND LVL EUSR EHST SRVID The meaning of each symbol is as follows VRID: Protocol version ID STTM: Actual start time SEDTM: Termination delay JST: Job status PATH: Upper-level unit name NAME: Unit name RKIND: Recovery type LVL: Level EUSR: Source user name EHST: Source host name SRVID: Scheduler service name
Extended	Common information	Severity	SEVERITY	Warning
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	LATEEND
		Start time	START_TIME	Start time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0850
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 ^{#1}	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Status	B4	running: Now running
		End-delayed time	B7	Time when the termination delay was detected
		Host name for execution destination	C0	Name of the host on which the job was executed
		Start time of retry execution	E6 ^{#2}	Retry execution start time
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)

Legend:

N/A: Not applicable

#1

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `JOBCOMMENTEVENT`.

For details about the `JOBCOMMENTEVENT` environment setting parameter, see 20.4.2(112) *JOBCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#2

Blank for an execution other than a retry execution.

(22) Attributes of the daemon restart event

The attributes of the daemon restart event are as follows.

Table A–23: Attributes of the daemon restart event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004130
		Message	N/A	KAVS0204-E Scheduler service (<i>scheduler-service-name</i>) ended (name: <i>process-name</i> , code: <i>return-code</i>), but Scheduler service restart.
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	- In Windows: Account for the JP1/AJS3 service (default: SYSTEM) - In UNIX: root If the <code>JP1_USERNAME</code> environment variable is set, its value is used.

Attribute type		Type	Attribute name	Contents
Extended	Common information	Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/AJS2 - Manager Scheduler service
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	JP1/AJS2 - Manager Scheduler service
		Object ID	OBJECT_ID	Scheduler service name
		Occurrence	OCCURRENCE	START
		Start time	START_TIME	Start time
		Return code	RESULT_CODE	Return code
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600
		Process name	D2	Name of stopped daemon

Legend:

N/A: Not applicable

(23) Attributes of the jobnet shutdown event

The attributes of the jobnet shutdown event are as follows.

Table A–24: Attributes of the jobnet shutdown event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004131
		Message	N/A	KAVS0272-E Jobnet (<i>jobnet-name: execution-ID</i>) cannot be executed - error (<i>maintenance-information</i>) occurred. KAVS0273-E Jobnet (<i>jobnet-name: execution-ID</i>) cannot be scheduled - error (<i>maintenance-information</i>) occurred.
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOBNET
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name</i>
		Occurrence	OCCURRENCE	EXCEPTION

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Shutdown day & time	B8	Shutdown day & time
		Maintenance information	B9	Maintenance information

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `NETCOMMENTEVENT`.

For details about the `NETCOMMENTEVENT` environment setting parameter, see *20.4.2(111) NETCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(24) Attributes of the jobnet start-condition monitoring start event

The attributes of the jobnet start-condition monitoring start event are as follows.

Table A–25: Attributes of the jobnet start-condition monitoring start event

Attribute type		Type	Attribute name	Contents
Basic	Event ID	N/A		00004140
	Message	N/A		KAVS0240-I Monitoring of a jobnet's start conditions started. (name: <i>jobnet-name</i> : <i>execution-ID</i>)
	Detailed information	N/A		VRID STTM PATH NAME RKIND LVL EUSR SCTM EHST SRVID The meaning of each symbol is as follows: VRID: Protocol version ID STTM: Start time PATH: Upper-level unit name NAME: Unit name RKIND: Recovery type

Attribute type		Type	Attribute name	Contents
Basic		Detailed information	N/A	LVL: Level EUSR: Source user name SCTM: Scheduled run-time EHST: Source host name SRVID: Scheduler service name
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOBNET
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name</i>
		Occurrence	OCCURRENCE	START
		Start time	START_TIME	Start time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0671
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Scheduled execution date & time	B5	Scheduled execution date & time

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `NETCOMMENTEVENT`.

For details about the `NETCOMMENTEVENT` environment setting parameter, see *20.4.2(111) NETCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(25) Attributes of the jobnet start-condition monitoring end event

The attributes of the jobnet start-condition monitoring end event are as follows.

Table A–26: Attributes of the jobnet start-condition monitoring end event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004141
		Message	N/A	KAVS0241-I Monitoring of a jobnet's start conditions ended. (name: <i>jobnet-name</i> ; execution-ID, status: <i>status</i>)
		Detailed information	N/A	VRID STTM PATH NAME RKIND LVL EUSR EDTM EHST SRVID The meaning of each symbol is as follows: VRID: Protocol version ID STTM: Start time PATH: Upper-level unit name NAME: Unit name RKIND: Recovery type LVL: Level EUSR: Source user name EDTM: End time EHST: Source host name SRVID: Scheduler service name
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOBNET
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name</i>
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	Start time
		End time	END_TIME	End time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0671
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Status	B4	u: Unmonitored + Ended c: Monitor terminated i: Interrupted monitoring n: Monitor-end normal

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `NETCOMMENTEVENT`.

For details about the `NETCOMMENTEVENT` environment setting parameter, see *20.4.2(111) NETCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(26) Attributes of the jobnet skipped event

The attributes of the jobnet skipped event are as follows.

Table A–27: Attributes of the jobnet skipped event

Attribute type		Type	Attribute name	Contents
Basic	Event ID	N/A		00004142
	Message	N/A		KAVS0279-E Jobnet ended with execution-deferred status. (name: <i>jobnet-name</i> : <i>execution-ID</i>)
	Detailed information	N/A		VRID STTM PATH NAME RKIND LVL EUSR EDTM EHST SRVID The meaning of each symbol is as follows: VRID: Protocol version ID STTM: Start time PATH: Upper-level unit name

Attribute type		Type	Attribute name	Contents
Basic		Detailed information	N/A	NAME: Unit name RKIND: Recovery type LVL: Level EUSR: Source user name EDTM: End time EHST: Source host name SRVID: Scheduler service name
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOBNET
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name</i>
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	Start time
		End time	END_TIME	End time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0671
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `NETCOMMENTEVENT`.

For details about the `NETCOMMENTEVENT` environment setting parameter, see 20.4.2(111) `NETCOMMENTEVENT` in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(27) Attributes of the connection-destination jobnet unregistered event

The attributes of the connection-destination jobnet unregistered event are as follows.

Table A–28: Attributes of the connection-destination jobnet unregistered event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004143
		Message	N/A	KAVS0243-E Cannot terminate the jobnet(<i>jobnet-connector-name: execution-ID</i>) - jobnet for the connection destination is not registered.
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	User who submitted the job (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOBNET
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-connector-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-connector-name</i>
		Occurrence	OCCURRENCE	EXCEPTION
		Start time	START_TIME	Start time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0810
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Jobnet connector name
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the host where the jobnet was registered	B3	Source host name
		Unit ID	H2	Unit ID (decimal number)

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Unit type	H3	nc

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `NETCOMMENTEVENT`.

For details about the `NETCOMMENTEVENT` environment setting parameter, see 20.4.2(111) `NETCOMMENTEVENT` in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(28) Attributes of the jobnet connector unregistered event

The attributes of the jobnet connector unregistered event are as follows.

Table A–29: Attributes of the jobnet connector unregistered event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004144
		Message	N/A	KAVS0244-E Cannot start the jobnet for the connection destination(<i>jobnet-name: execution-ID</i>) - jobnet connector is not registered.
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOBNET
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name</i>
		Occurrence	OCCURRENCE	EXCEPTION
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0810
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Name of the host where the jobnet was registered	B3	Source host name
		Scheduled execution date & time	B5	Scheduled execution date & time
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	n

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `NETCOMMENTEVENT`.

For details about the `NETCOMMENTEVENT` environment setting parameter, see 20.4.2(111) `NETCOMMENTEVENT` in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(29) Attributes of the end of start-condition monitoring wait event

The attributes of the end of start-condition monitoring wait event are as follows.

Table A–30: Attributes of the end of start-condition monitoring wait event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004145
		Message	N/A	KAVS1420-I A jobnet with a preset start condition (name: <i>jobnet-name</i> : <i>execution-ID</i>) will wait for the termination of its monitoring status generation(<i>execution-ID-of-monitored-generation</i>).
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Notice
		User name	USER_NAME	User who submitted the job (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOBNET
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name</i>
		Occurrence	OCCURRENCE	EXCEPTION
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0900
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Execution ID of monitoring status generation	A5	Execution ID of the generation being monitored
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Scheduled execution date & time	B5	Scheduled execution date & time
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `NETCOMMENTEVENT`.

For details about the `NETCOMMENTEVENT` environment setting parameter, see 20.4.2(111) `NETCOMMENTEVENT` in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(30) Attributes of the jobnet waiting-process start event

The attributes of the jobnet waiting-process start event are as follows.

Table A–31: Attributes of the jobnet waiting-process start event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004146
		Message	N/A	KAVS4950-I The wait for the end of the preceding jobnet (name: <i>full-unit-name: execution-ID</i>) has begun.
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	User who submitted the job (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2

Attribute type		Type	Attribute name	Contents
Extended	Common information	Object type	OBJECT_TYPE	JOBNET
		Object name	OBJECT_NAME	Scheduler service name: <i>/nested-jobnet-name-or-jobnet-connector-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/nested-jobnet-name-or-jobnet-connector-name</i>
		Occurrence	OCCURRENCE	START
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0950
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name or jobnet connector name (set only for a nested jobnet or jobnet connector)
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed
		Scheduled execution date & time	B5	Scheduled execution date & time Note that this attribute is not set for jobnet connectors. If <code>yes</code> is specified for the <code>PREWAITNOSCHUNITS</code> environment setting parameter and a unit that is not scheduled for execution performs a wait, a null string is set as the value.
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `NETCOMMENTEVENT`.

For details about the `NETCOMMENTEVENT` environment setting parameter, see 20.4.2(111) *NETCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(31) Attributes of the jobnet waiting-process end event

The attributes of the jobnet waiting-process end event are as follows.

Table A–32: Attributes of the jobnet waiting-process end event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004147
		Message	N/A	KAVS4955-I The wait conditions for the jobnet (name: <i>full-unit-name:execution-ID</i>) were approved. (approval factor: <i>reason-code</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOBNET
		Object name	OBJECT_NAME	Scheduler service name: <i>/nested-jobnet-name-or-jobnet-connector-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/nested-jobnet-name-or-jobnet-connector-name</i>
		Occurrence	OCCURRENCE	END
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0950
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name or jobnet connector name (set only for a nested jobnet or jobnet connector)
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsenentry</code> command is used to register execution: Name of the host on which the command is executed
		Unit ID	H2	Unit ID (decimal number)

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Unit type	H3	Unit type (string specified as a parameter in the unit definition file)
		Approval factor	I0	Code number for the reason under which the wait condition was satisfied

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `NETCOMMENTEVENT`.

For details about the `NETCOMMENTEVENT` environment setting parameter, see *20.4.2(111) NETCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(32) Attributes of the jobnet waiting-process retained event

The attributes of the jobnet waiting-process retained event are as follows.

Table A–33: Attributes of the jobnet waiting-process retained event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004148
		Message	N/A	KAVS4957-E A jobnet (name: <i>full-unit-name:execution-ID</i>) cannot finish waiting because the unit whose end was to be waited for (name: <i>full-unit-name:execution-ID</i>) is in a state for which waiting is not possible. (cause number: <i>reason-code</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOBNET
		Object name	OBJECT_NAME	Scheduler service name: <i>/nested-jobnet-name-or-jobnet-connector-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/nested-jobnet-name-or-jobnet-connector-name</i>
		Occurrence	OCCURRENCE	EXCEPTION
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0950
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Nested jobnet or job name	A2	Nested jobnet or jobnet connector name (set only for a nested jobnet or jobnet connector)
		Execution ID	A3	Execution ID
		Comment	A6 ^{#1}	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed
		Scheduled execution date & time	B5	Scheduled execution date & time Note that this attribute is not set for jobnet connectors. If <code>yes</code> is specified for the <code>PREWAITNOSCHUNITS</code> environment setting parameter and a unit that is not scheduled for execution performs a wait, a null string is set as the value.
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)
		Unit whose end is to be waited for	I1	Name of the unit whose end is being waited for ^{#2}
		Execution ID of the unit whose end was to be waited for	I2	Execution ID of the unit whose end is being waiting for ^{#2, #3}
		Cause number	I3	Cause number

Legend:

N/A: Not applicable

#1

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `NETCOMMENTEVENT`.

For details about the `NETCOMMENTEVENT` environment setting parameter, see 20.4.2(111) *NETCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#2

Set as *** when the value cannot be computed.

#3

If the specified unit whose end is being waited for uses a start condition, the execution ID of the monitoring generation is set.

(33) Attributes of the jobnet waiting-process resumed event

The attributes of the jobnet waiting-process resumed event are as follows.

Table A–34: Attributes of the jobnet waiting-process resumed event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004149
		Message	N/A	KAVS4958-I The jobnet (name: <i>full-unit-name:execution-ID</i>) is now able to wait for the end of the unit (name: <i>name-of-unit-whose-end-is-being-waited-for:execution-ID</i>).
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Notice
		User name	USER_NAME	User who submitted the job (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOBNET
		Object name	OBJECT_NAME	Scheduler service name: <i>/jobnet-name-or-jobnet-connector-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	Scheduler service name: <i>/jobnet-name-or-jobnet-connector-name</i>
		Occurrence	OCCURRENCE	EXCEPTION
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0950
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 ^{#1}	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed
		Scheduled execution date & time	B5	Scheduled execution date & time Note that this attribute is not set for jobnet connectors. If <code>yes</code> is specified for the <code>PREWAITNOSCHUNITS</code> environment setting parameter and a unit that is not scheduled for execution performs a wait, a null string is set as the value.

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)
		Unit whose end is to be waited for	I1	Name of the unit whose end is being waited for
		Execution ID of the unit whose end was to be waited for	I2	Execution ID of the unit whose end is being waiting for ^{#2}

Legend:

N/A: Not applicable

#1

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `NETCOMMENTEVENT`.

For details about the `NETCOMMENTEVENT` environment setting parameter, see *20.4.2(111) NETCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#2

If the specified unit whose end is being waited for uses a start condition, the execution ID of the monitoring generation is set.

(34) Attributes of the job waiting-process start event

The attributes of the job waiting-process start event are as follows.

Table A–35: Attributes of the job waiting-process start event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	0000414A
		Message	N/A	KAVS4951-I The wait for the end of the preceding job (name: <i>full-unit-name:execution-ID</i>) has begun.
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name: /jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	<i>scheduler-service-name: /jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	START
	Specific	Platform	PLATFORM	In Windows: NT In UNIX: UNIX

Attribute type		Type	Attribute name	Contents
Extended	Information	Version of AJS action	ACTION_VERSION	0950
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `JOBCOMMENTEVENT`.

For details about the `JOBCOMMENTEVENT` environment setting parameter, see 20.4.2(112) *JOBCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(35) Attributes of the job waiting-process end event

The attributes of the job waiting-process end event are as follows.

Table A–36: Attributes of the job waiting-process end event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	0000414B
		Message	N/A	KAVS4956-I The wait conditions for the job (name: <i>full-unit-name:execution-ID</i>) were approved. (approval factor: <i>reason-code</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2

Attribute type		Type	Attribute name	Contents
Extended	Common information	Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name:/jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	<i>scheduler-service-name:/jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	END
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0950
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 [#]	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)
		Approval factor	I0	Code number for the reason under which the wait condition was satisfied

Legend:

N/A: Not applicable

#

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `JOBCOMMENTEVENT`.

For details about the `JOBCOMMENTEVENT` environment setting parameter, see *20.4.2(112) JOBCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(36) Attributes of the job waiting-process retained event

The attributes of the job waiting-process retained event are as follows.

Table A–37: Attributes of the job waiting-process retained event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	0000414C
		Message	N/A	KAVS4971-E A job (name: <i>full-unit-name:execution-ID</i>) cannot finish waiting because the unit whose end is to be waited for (name: <i>full-unit-name:execution-ID</i>) is in a state for which waiting is not possible. (cause number: <i>reason-code</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name: /jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	<i>scheduler-service-name: /jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	EXCEPTION
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0950
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 ^{#1}	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)
		Unit whose end is to be waited for	I1	Name of the unit whose end is being waited for ^{#2}

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Execution ID of the unit whose end was to be waited for	I2	Execution ID of the unit whose end is being waited for ^{#2, #3}
		Cause number	I3	Cause number

Legend:

N/A: Not applicable

#1

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `JOBCOMMENTEVENT`.

For details about the `JOBCOMMENTEVENT` environment setting parameter, see 20.4.2(112) *JOBCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#2

Set as *** when the value cannot be computed.

#3

If the specified unit whose end is being waited for uses a start condition, the execution ID of the monitoring generation is set.

(37) Attributes of the job waiting-process resumed event

The attributes of the job waiting-process resumed event are as follows.

Table A–38: Attributes of the job waiting-process resumed event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	0000414D
		Message	N/A	KAVS4973-I A job (name: <i>full-unit-name:execution-ID</i>) is now able to wait for the end of a unit (name: <i>name-of-unit-whose-end-is-being-waited-for:execution-ID</i>).
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Notice
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name: /jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	<i>scheduler-service-name: /jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	EXCEPTION
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0950

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 ^{#1}	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)
		Unit whose end is to be waited for	I1	Name of the unit whose end is being waited for
		Execution ID of the unit whose end was to be waited for	I2	Execution ID of the unit whose end is being waiting for ^{#2}

Legend:

N/A: Not applicable

#1

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `JOBCOMMENTEVENT`.

For details about the `JOBCOMMENTEVENT` environment setting parameter, see 20.4.2(112) *JOBCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#2

If the specified unit whose end is being waited for uses a start condition, the execution ID of the monitoring generation is set.

(38) Attributes of the waiting process blocked event

The attributes of the waiting process blocked event are as follows.

Table A–39: Attributes of the waiting process blocked event

Attribute type	Type	Attribute name	Contents
Basic	Event ID	N/A	0000414E
	Message	N/A	KAVS4962-E

Attribute type		Type	Attribute name	Contents
Basic		Message	N/A	Waiting related to a unit (name: <i>full-unit-name:execution-ID</i>) was blocked because an error occurred. (cause number: <i>reason-code</i>) : <i>maintenance-information-1 maintenance-information-2 maintenance-information-3 maintenance-information-4</i>
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	- In Windows: Account for the JP1/AJS3 service (default: SYSTEM) - In UNIX: root If the JP1_USERNAME environment variable is set, its value is used.
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	Scheduler service name: <i>/unit-name-in-message</i>
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	SERVICE
		Object ID	OBJECT_ID	Scheduler service name: <i>/unit-name-in-message</i>
		Occurrence	OCCURRENCE	EXCEPTION
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0950
		Cause number	I3	Cause number

Legend:

N/A: Not applicable

(39) Attributes of the start event for scheduler database reorganization

The attributes of the start event for scheduler database reorganization are as follows.

Table A–40: Attributes of the start event for scheduler database reorganization

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004150
		Message	N/A	KAVS1500-I Database condensing of the scheduler service (<i>service-name</i>) started. <i>start-time</i> .
		Detailed information	N/A	VRID STTM CODIR SRVID The meaning of each symbol is as follows: VRID: Protocol version ID STTM: Start time CODIR: Directory for unit definitions SRVID: Scheduler service name

Attribute type		Type	Attribute name	Contents
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	root
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/AJS2 - Manager ISAM Condense
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	SERVICE
		Object ID	OBJECT_ID	JP1/AJS2 - Manager ISAM Condense
		Occurrence	OCCURRENCE	START
		Start time	START_TIME	Start time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0671

Legend:

N/A: Not applicable

(40) Attributes of the normal end event for scheduler database reorganization

The attributes of the normal end event for scheduler database reorganization are as follows.

Table A–41: Attributes of the normal end event for scheduler database reorganization

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004151
		Message	N/A	KAVS1501-I Database condensing of the scheduler service (<i>service-name</i>) ended normally. <i>start-time</i> - <i>end-time</i> (<i>required-time</i>)
		Detailed information	N/A	VRID STTM EDTM CODIR SRVID RTN The meaning of each symbol is as follows: VRID: Protocol version ID STTM: Start time EDTM: End time CODIR: Directory for unit definitions SRVID: Scheduler service name RTN: Return code
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	root
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/AJS2 - Manager ISAM Condense

Attribute type		Type	Attribute name	Contents
Extended	Common information	Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	SERVICE
		Object ID	OBJECT_ID	JP1/AJS2 - Manager ISAM Condense
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	Start time
		End time	END_TIME	End time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0671
		Time required	F0	Required time (seconds)

Legend:

N/A: Not applicable

(41) Attributes of the abnormal end event for scheduler database reorganization

The attributes of the abnormal end event for scheduler database reorganization are as follows.

Table A–42: Attributes of the abnormal end event for scheduler database reorganization

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004152
		Message	N/A	KAVS1502-E Database condensing of the scheduler service (<i>service-name</i>) ended abnormally. <i>start-time</i> - <i>end-time</i> (<i>required-time</i>)
		Detailed information	N/A	VRID EDTM CODIR SRVID RTN The meaning of each symbol is as follows: VRID: Protocol version ID EDTM: End time CODIR: Directory for unit definitions SRVID: Scheduler service name RTN: Return code
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	root
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/AJS2 - Manager ISAM Condense
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	SERVICE
		Object ID	OBJECT_ID	JP1/AJS2 - Manager ISAM Condense
		Occurrence	OCCURRENCE	END

Attribute type		Type	Attribute name	Contents
Extended	Common information	Start time	START_TIME	Start time
		End time	END_TIME	End time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0671

Legend:

N/A: Not applicable

(42) Attributes of the information event about the scheduler service's ISAM unused area size

The attributes of the information event about the scheduler service's ISAM unused area size are as follows.

Table A–43: Attributes of the information event about the scheduler service's ISAM unused area size

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004153
		Message	N/A	KAVS1503-I The ISAM unused area size on scheduler service (<i>service-name</i>) is <i>size</i> MB.
		Detailed information	N/A	VRID STTM CODIR SRVID The meaning of each symbol is as follows: VRID: Protocol version ID STTM: Start time CODIR: Directory for unit definitions SRVID: Scheduler service name
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	root
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/AJS2 - Manager ISAM Condense
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	SERVICE
		Object ID	OBJECT_ID	JP1/AJS2 - Manager ISAM Condense
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	Start time
		End time	END_TIME	End time
	Specific	Platform	PLATFORM	In Windows: NT In UNIX: UNIX

Attribute type		Type	Attribute name	Contents
Extended	information	Version of AJS action	ACTION_VERSION	0671
		ISAM unused area size	F1	ISAM unused area size (MB)

Legend:

N/A: Not applicable

(43) Attributes of the threshold warning event about the scheduler service's ISAM unused area size

The attributes of the threshold warning event about the scheduler service's ISAM unused area size are as follows.

Table A–44: Attributes of the threshold warning event about the scheduler service's ISAM unused area size

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004154
		Message	N/A	KAVS1504-W The ISAM unused area size of the scheduler service (<i>service-name</i>) is <i>size</i> MB, which exceeds the <i>size</i> MB threshold value.
		Detailed information	N/A	VRID STTM CODIR SRVID The meaning of each symbol is as follows: VRID: Protocol version ID STTM: Start time CODIR: Directory for unit definitions SRVID: Scheduler service name
Extended	Common information	Severity	SEVERITY	Warning
		User name	USER_NAME	root
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/AJS2 - Manager ISAM Condense
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	SERVICE
		Object ID	OBJECT_ID	JP1/AJS2 - Manager ISAM Condense
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	Start time
		End time	END_TIME	End time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0671
		ISAM unused area size	F1	ISAM unused area size (MB)

Attribute type		Type	Attribute name	Contents
Extended	Specific information	ISAM unused area size threshold value	F2	ISAM unused area size threshold value (MB)

Legend:

N/A: Not applicable

(44) Attributes of the wait start event for the automatic retry interval

The attributes of the wait start event for the automatic retry interval are as follows.

Table A–45: Attributes of the wait start event for the automatic retry interval

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004155
		Message	N/A	KAVS4675-I A retry wait interval will now begin because the job ended abnormally. (name: <i>job-name</i> : <i>execution-ID</i> , code: <i>code</i> , host: <i>host-name</i> , JOBID: <i>job-number</i> , retry: <i>number-of-retry-executions</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name</i> : / <i>jobnet-name</i> / <i>job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: / <i>root-jobnet-name</i>
		Object ID	OBJECT_ID	<i>scheduler-service-name</i> : / <i>jobnet-name</i> / <i>job-name</i>
		Occurrence	OCCURRENCE	START
		Start time	START_TIME ^{#1}	Start time
		Return code	RESULT_CODE	Return code
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	1000
		Job group name	A0	Scheduler service name: / <i>job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 ^{#2}	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the user who registered the jobnet	B2	User who registered the jobnet
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsenry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Host name for execution destination	C0	Name of the host on which the job was executed
		Execution group name	C1	Always blank
		Request ID	C2	Job number
		Queue name	C3	Queue name (for a queuing job) or agent name (for a Unix job, PC job, flexible job, or HTTP connection job)
		User CPU time	C4	Always 0 (zero)
		System CPU time	C5	Always 0 (zero)
		Job execution status	C6	Always r
		Start time at the execution destination	E0 ^{#3, #4}	Start time at the target host
		End time at the execution destination	E1 ^{#4}	End time at the target host
		User CPU time at the execution destination	E2	Always 0 (zero)
		System CPU time at the execution destination	E3	Always 0 (zero)
		JP1 user who executed the job at the execution destination	E4 ^{#5, #6, #7}	Name of the JP1 user who executed the job on the target host, as set in Executed by
		Job execution time at the execution destination	E5 ^{#4, #8}	How long the job took to execute at the target host (seconds)
		Start time of retry execution	E6 ^{#9}	Retry execution start time
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)
		Queuing attribute	H4	Displays whether the queuing attribute exists:

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Queuing attribute	H4	q: Exists. n: Does not exist.

Legend:

N/A: Not applicable

#1

The time when the first job execution started is set.

#2

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `JOBCOMMENTEVENT`.

For details about the `JOBCOMMENTEVENT` environment setting parameter, see 20.4.2(112) *JOBCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#3

No value is set if the job failed to start and execution was not started on the target host.

#4

No value is set for a judgment job and OR job.

#5

Event jobs are always executed by the OS user who started JP1/AJS3, regardless of the JP1 user name set as the execution user.

#6

Set as the registered JP1 user for judgment jobs and OR jobs.

#7

No value is set if the target host could not acquire the information.

#8

No value is set when the *target host start time* or *target host end time* attribute is blank.

#9

Blank if no retry has been executed yet.

(45) Attributes of the start event for automatic retry execution

The attributes of the start event for automatic retry execution are as follows.

Table A–46: Attributes of the start event for automatic retry execution

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004156
		Message	N/A	KAVS4676-I Job started as retry execution. (name: <i>job-name</i> : <i>execution-ID</i> , host: <i>host-name</i> , JOBID: <i>job-number</i> , retry: <i>number-of-retry-executions</i>)
		Detailed information	N/A	N/A
Extended	Common	Severity	SEVERITY	Information

Attribute type		Type	Attribute name	Contents
Extended	Information	User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name: /jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	<i>scheduler-service-name: /jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	START
		Start time	START_TIME ^{#1}	Start time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	1000
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 ^{#2}	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the user who registered the jobnet	B2	User who registered the jobnet
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Host name for execution destination	C0	Name of the host on which the job was executed
		Execution group name	C1	Always blank
		Job execution status	C6	Always r
		Start time of retry execution	E6	Retry execution start time
		Unit ID	H2	Unit ID (decimal number)

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Unit type	H3	Unit type (string specified as a parameter in the unit definition file)
		Queuing attribute	H4	Displays whether the queuing attribute exists: q: Exists. n: Does not exist.

Legend:

N/A: Not applicable

#1

The time when the first job execution started is set.

#2

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `JOBCOMMENTEVENT`.

For details about the `JOBCOMMENTEVENT` environment setting parameter, see 20.4.2(112) *JOBCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(46) Attributes of the error event that disables automatic retry execution

The attributes of the error event that disables automatic retry execution are as follows.

Table A–47: Attributes of the error event that disables automatic retry execution

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004157
		Message	N/A	KAVS4677-E An error that cannot be recovered by retry execution occurred. (name: <i>job-name: execution-ID</i> , code: <i>end-code</i> , host: <i>host-name</i> , JOBID: <i>job-number</i> , retry: <i>number-of-retry-executions</i> , cause code: <i>cause-code</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name: /jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	<i>scheduler-service-name: /jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	EXCEPTION
		Start time	START_TIME ^{#1}	Start time
		End time	END_TIME	End time
		Return code	RESULT_CODE	Return code

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	1000
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 ^{#2}	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the user who registered the jobnet	B2	User who registered the jobnet
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Host name for execution destination	C0 ^{#9}	Name of the host on which the job was executed
		Request ID	C2	Job number
		Queue name	C3	Queue name (for a queuing job) or agent name (for a Unix job, PC job, flexible job, or HTTP connection job)
		Start time at the execution destination	E0 ^{#3, #4}	Start time at the target host
		End time at the execution destination	E1 ^{#4}	End time at the target host
		JP1 user who executed the job at the execution destination	E4 ^{#5, #6, #7}	Name of the JP1 user who executed the job on the target host, as set in Executed by
		Job execution time at the execution destination	E5 ^{#4, #8}	How long the job took to execute at the target host (seconds)
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)
		Queuing attribute	H4	Displays whether the queuing attribute exists: q: Exists. n: Does not exist.

Legend:

N/A: Not applicable

#1

The time when the first job execution started is set.

#2

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `JOBCOMMENTEVENT`.

For details about the `JOBCOMMENTEVENT` environment setting parameter, see 20.4.2(112) *JOBCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

#3

No value is set if the job failed to start and execution was not started on the target host.

#4

No value is set for a judgment job and OR job.

#5

Event jobs are always executed by the OS user who started JP1/AJS3, regardless of the JP1 user name set as the execution user.

#6

Set as the registered JP1 user for judgment jobs and OR jobs.

#7

No value is set if the target host could not acquire the information.

#8

No value is set when the *target host start time* or *target host end time* attribute is blank.

#9

If it ends before the job starts on the execution host, for example, because the agent stopped, it might be displayed as blank.

(47) Attributes of the start event for submitting jobs for automatic retry

The attributes of the start event for submitting jobs for automatic retry are as follows.

Table A–48: Attributes of the start event for submitting jobs for automatic retry

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004158
		Message	N/A	KAVS4678-I Job submit started as retry execution. (name: <i>job-name</i> : <i>execution-ID</i> , Retry: <i>number-of-retry-executions</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name</i> : / <i>jobnet-name</i> / <i>job-name</i>

Attribute type		Type	Attribute name	Contents
Extended	Common information	Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	Scheduler service name: <i>/root-jobnet-name</i>
		Object ID	OBJECT_ID	<i>scheduler-service-name: /jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	START
		Start time	START_TIME ^{#1}	Start time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	1000
		Job group name	A0	Scheduler service name: <i>/job-group-name</i>
		Root jobnet name	A1	Root jobnet name
		Nested jobnet or job name	A2	Nested jobnet name (set only for a nested jobnet)
		Execution ID	A3	Execution ID
		Comment	A6 ^{#2}	Comment on the unit (No value is set if no comment on the unit can be obtained from the scheduler database.)
		Recovery type	B0	n: Normal r: Recovery
		Jobnet levels	B1	Number of levels (where the root jobnet is level 0)
		Name of the user who registered the jobnet	B2	User who registered the jobnet
		Name of the host where the jobnet was registered	B3	When JP1/AJS3 - View or JP1/AJS3 - Web Console is used to register execution: Name of the JP1/AJS3 - Manager host to be connected When the <code>ajsentry</code> command is used to register execution: Name of the host on which the command is executed When a remote jobnet is executed on this host: Name of the host on which the remote jobnet is defined
		Host name for execution destination	C0	Always blank
		Execution group name	C1	Always blank
		Job execution status	C6	Always r
		Submit time of retry execution	E7	Retry execution start time
		Unit ID	H2	Unit ID (decimal number)
		Unit type	H3	Unit type (string specified as a parameter in the unit definition file)
		Queuing attribute	H4	Displays whether the queuing attribute exists: q: Exists. n: Does not exist.

Legend:

N/A: Not applicable

#1

The time when the first job execution started is set.

#2

This attribute is output only when the output value of the comment on the unit is specified in the environment setting parameter `JOBCOMMENTEVENT`.

For details about the `JOBCOMMENTEVENT` environment setting parameter, see 20.4.2(112) *JOBCOMMENTEVENT* in the *JP1/Automatic Job Management System 3 Configuration Guide*.

(48) Attributes of the warning event indicating that the specified number of generations retained for the jobnets with start conditions was reached

The attributes of the warning event indicating that the specified number of generations retained for the jobnets with start conditions was reached are as follows.

Table A–49: Attributes of the warning event indicating that the specified number of generations retained for the jobnets with start conditions was reached

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004159
		Message	N/A	KAVS1157-W The number of retained generations of the jobnets with start conditions in the scheduler service (<i>scheduler-service-name</i>) reached the specified number (<i>specified-number-of-generations</i>).
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Warning
		User name	USER_NAME	- In Windows: Account for the JP1/AJS3 service (default: SYSTEM) - In UNIX: root If the <code>JP1_USERNAME</code> environment variable is set, its value is used.
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	Scheduler service name
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	SERVICE
		Object ID	OBJECT_ID	Scheduler service name
		Occurrence	OCCURRENCE	EXCEPTION
		Source host name	JP1_SOURCEHOST	Host name of the scheduler service for which the event occurred
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	1210

Legend:

N/A: Not applicable

(49) Attributes of the start event for reorganizing the database for the job execution environment

The attributes of the start event for reorganizing the database for the job execution environment are as follows.

Table A–50: Attributes of the start event for reorganizing the database for the job execution environment

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004160
		Message	N/A	KAVU5980-I Database condensing of the job execution environment started. <i>start-time</i>
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	root
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/AJS2 - Manager ISAM Condense
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	SERVICE
		Object ID	OBJECT_ID	JP1/AJS2 - Manager ISAM Condense
		Occurrence	OCCURRENCE	START
		Start time	START_TIME	Start time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0671

Legend:

N/A: Not applicable

(50) Attributes of the normal end event for reorganizing the database for the job execution environment

The attributes of the normal end event for reorganizing the database for the job execution environment are as follows.

Table A–51: Attributes of the normal end event for reorganizing the database for the job execution environment

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004161

Attribute type		Type	Attribute name	Contents
Basic		Message	N/A	KAVU5981-I Database condensing of the job execution environment ended normally. <i>start-time - end-time (required-time)</i>
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	root
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/AJS2 - Manager ISAM Condense
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	SERVICE
		Object ID	OBJECT_ID	JP1/AJS2 - Manager ISAM Condense
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	Start time
		End time	END_TIME	End time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0671
		Time required	F0	Required time (seconds)

Legend:

N/A: Not applicable

(51) Attributes of the abnormal end event for reorganizing the database for the job execution environment

The attributes of the abnormal end event for reorganizing the database for the job execution environment are as follows.

Table A–52: Attributes of the abnormal end event for reorganizing the database for the job execution environment

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004162
		Message	N/A	KAVU5982-E Database condensing of the job execution environment ended abnormally. <i>start-time - end-time (required-time)</i>
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	root
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE

Attribute type		Type	Attribute name	Contents
Extended	Common information	Object name	OBJECT_NAME	JP1/AJS2 - Manager ISAM Condense
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	SERVICE
		Object ID	OBJECT_ID	JP1/AJS2 - Manager ISAM Condense
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	Start time
		End time	END_TIME	End time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0671

Legend:

N/A: Not applicable

(52) Attributes of the information event about ISAM unused area size for the job execution environment

The attributes of the information event about ISAM unused area size for the job execution environment are as follows.

Table A–53: Attributes of the information event about ISAM unused area size for the job execution environment

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004163
		Message	N/A	KAVU5983-I The ISAM unused area size on job execution environment is <i>size</i> MB.
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	root
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/AJS2 - Manager ISAM Condense
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	SERVICE
		Object ID	OBJECT_ID	JP1/AJS2 - Manager ISAM Condense
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	Start time
		End time	END_TIME	End time

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0671
		ISAM unused area size	F1	ISAM unused area size (MB)

Legend:

N/A: Not applicable

(53) Attributes of the threshold warning event about ISAM unused area size for the job execution environment

The attributes of the threshold warning event about ISAM unused area size for the job execution environment are as follows.

Table A–54: Attributes of the threshold warning event about ISAM unused area size for the job execution environment

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004164
		Message	N/A	KAVU5984-W The ISAM unused area size of the job execution environment is <i>size</i> MB, which exceeds the <i>size</i> MB threshold value.
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Warning
		User name	USER_NAME	root
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/AJS2 - Manager ISAM Condense
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	SERVICE
		Object ID	OBJECT_ID	JP1/AJS2 - Manager ISAM Condense
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	Start time
		End time	END_TIME	End time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0671
		ISAM unused area size	F1	ISAM unused area size (MB)
		ISAM unused area size threshold value	F2	ISAM unused area size threshold value (MB)

Legend:

N/A: Not applicable

(54) Attributes of the threshold warning event about the number of jobs in the Now queuing or Now running status

The attributes of the threshold warning event about the number of jobs in the *Now queuing* or *Now running* status are as follows.

Table A–55: Attributes of the threshold warning event about the number of jobs in the Now queuing or Now running status

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004165
		Message	N/A	KAVU4524-W The registered jobs exceed the warning number for the system (<i>warning-number</i>), as stipulated in environment setting (<i>logical-host-name</i>). (<i>scheduler-service-name</i> , <i>maximum-number</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Warning
		User name	USER_NAME	- In Windows: Account for the JP1/AJS3 service (default: SYSTEM) - In UNIX: root If the JP1_USERNAME environment variable is set, its value is used.
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	Scheduler service name
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	SERVICE
		Object ID	OBJECT_ID	Scheduler service name
		Occurrence	OCCURRENCE	EXCEPTION
		Source host name	JP1_SOURCEHOST	Host name of the scheduler service for which the event occurred
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	1210

Legend:

N/A: Not applicable

(55) Attributes of the abnormal termination event for the RDB connection wait function of the scheduler service

The attributes of the abnormal termination event for the RDB connection wait function of the scheduler service are as follows.

Table A–56: Attributes of the abnormal termination event for the RDB connection wait function of the scheduler service

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004170
		Message	N/A	KAVS0998-E The system will wait because the database could not be connected. (Scheduler service: <i>scheduler-service-name</i> , Waittime: <i>maximum-wait-time</i> , Host: <i>host-name</i>)
		Detailed information	N/A	VRID or RTN The meaning of each symbol is as follows: VRID: Version ID RTN: Return value
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	- In Windows: Account for the JP1/AJS3 service (default: SYSTEM) - In UNIX: root If the JP1_USERNAME environment variable is set, its value is used.
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/AJS2 - Manager RDB
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	JP1/AJS2 - Manager Schedule service
		Object ID	OBJECT_ID	AJS service name
		Occurrence	OCCURRENCE	END
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0711
		Database type	G0	EmbedDB
		Maximum wait time	G1	RDBCONNECTWAITTIME value
		return code from RDB	G2	Return code from the RDB

Legend:

N/A: Not applicable

(56) Attributes of the start event for the RDB connection wait function of the scheduler service

The attributes of the start event for the RDB connection wait function of the scheduler service are as follows.

Table A–57: Attributes of the start event for the RDB connection wait function of the scheduler service

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004171
		Message	N/A	KAVS0999-W The database could not be connected within the specified time. (Scheduler service: <i>scheduler-service-name</i> , Waittime: <i>maximum-wait-time</i> , Host: <i>host-name</i>)
		Detailed information	N/A	VRID The meaning of each symbol is as follows: VRID: Version ID
Extended	Common information	Severity	SEVERITY	Warning
		User name	USER_NAME	- In Windows: Account for the JP1/AJS3 service (default: SYSTEM) - In UNIX: root If the JP1_USERNAME environment variable is set, its value is used.
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/AJS2 - Manager RDB
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	JP1/AJS2 - Manager Schedule service
		Object ID	OBJECT_ID	AJS service name
		Occurrence	OCCURRENCE	START
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0711
		Database type	G0	EmbedDB
		Maximum wait time	G1	RDBCONNECTWAITTIME value
		return code from RDB	G2	Return code from the RDB

Legend:

N/A: Not applicable

(57) Attributes of the command or JP1/AJS3 - View operation start event

The attributes of the command or JP1/AJS3 - View operation start event are as follows.

Table A–58: Attributes of the command or JP1/AJS3 - View operation start event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004190
		Message	N/A	KAVS0715-I

Attribute type		Type	Attribute name	Contents
Basic		Message	N/A	The command or JP1/AJS2 - View operation started. (Operation name: <i>command-name</i>) <i>command-name</i> : Upper-case command name from which the prefix <i>ajs</i> is removed For example, if the command name is <i>ajsentry</i> , <i>ENTRY</i> is set.
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	One of the following user names: - Name of the user who executed the command. - Name of the JP1 user who is using JP1/AJS3 - View. - Name of the JP1 user who called the API of JP1/AJS3 - Web Console When the operation is performed by executing a command, the value of the <i>JP1_USERNAME</i> environment variable is set. If the environment variable has not been set, the name of the OS user who executed the command is set. If a JP1 user who has not been authorized attempted to perform the operation, a NULL string is set.
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	COMMAND
		Object name	OBJECT_NAME	Command name
		Root object type	ROOT_OBJECT_TYPE	COMMAND
		Root object name	ROOT_OBJECT_NAME	Command name
		Object ID	OBJECT_ID	COMMAND
		Occurrence	OCCURRENCE	START
		Start time	START_TIME	Start time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0800
		Scheduler service name	H1	Scheduler service name
		Host name for execution request	H5	Name of the host that requested the operation
		Message ID	H6	Always - (hyphen)
		Option	H7	Option specified when the command was executed

Legend:

N/A: Not applicable

(58) Attributes of the command or JP1/AJS3 - View operation end event

The attributes of the command or JP1/AJS3 - View operation end event are as follows.

Table A–59: Attributes of the command or JP1/AJS3 - View operation end event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	00004191
		Message	N/A	KAVS0716-I The command or JP1/AJS2 - View operation ended. (Operation name: <i>command-name</i>) <i>command-name</i> : Upper-case command name formed after the prefix <i>ajs</i> is removed For example, if the command name is <i>ajsentry</i> , <i>ENTRY</i> is set.
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	One of the following user names: - Name of the user who executed the command. - Name of the JP1 user who is using JP1/AJS3 - View. - Name of the JP1 user who called the API of JP1/AJS3 - Web Console When the operation is performed by executing a command, the value of the <i>JP1_USERNAME</i> environment variable is set. If the environment variable has not been set, the name of the OS user who executed the command is set. If a JP1 user unauthorized to perform the operation attempts the operation, a NULL string is set.
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	COMMAND
		Object name	OBJECT_NAME	Command name
		Root object type	ROOT_OBJECT_TYPE	COMMAND
		Root object name	ROOT_OBJECT_NAME	Command name
		Object ID	OBJECT_ID	COMMAND
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	Start time
		End time	END_TIME	End time
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0800
		Scheduler service name	H1	Scheduler service name
		Host name for execution request	H5	Name of the host that requested the operation
		Message ID	H6	ID of the message for the operation result. 0 (zero) if the operation terminates normally.
		Option	H7	Option specified when the command was executed

Legend:

N/A: Not applicable

(59) Attributes of the log file trap event

The attributes of the log file trap event are as follows.

Table A–60: Attributes of the log file trap event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041A0
		Message	N/A	One line of logged data
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Notice
		Product name	PRODUCT_NAME	In Windows: /HITACHI/JP1/NT_LOGTRAP In UNIX: /HITACHI/JP1/UX_LOGTRAP
		Object type	OBJECT_TYPE	LOGFILE
		Object name	OBJECT_NAME	Log file name
		Root object type	ROOT_OBJECT_TYPE	LOGFILE
		Root object name	ROOT_OBJECT_NAME	Log file name
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Product name	PPNAME	In Windows: /HITACHI/JP1/NT_LOGTRAP In UNIX: /HITACHI/JP1/UX_LOGTRAP
		Execution ID	T1	Number identifying the execution of the Log file trap job

Legend:

N/A: Not applicable

(60) Attributes of the event action control - manager start event

The attributes of the event action control - manager start event are as follows.

Table A–61: Attributes of the event action control - manager start event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041A1
		Message	N/A	KAVT0498-I JP1/AJS2 event action manager will now start.
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	- In Windows: Account for the JP1/AJS3 service (default: SYSTEM) - In UNIX: root If the JP1_USERNAME environment variable is set, its value is used.
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2

Attribute type		Type	Attribute name	Contents
Extended	Common information	Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/Automatic Job Management System 2 EVAction Manager
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	JP1/Automatic Job Management System 2 EVAction Manager
		Occurrence	OCCURRENCE	START
		Start time	START_TIME	Start time of the event action control - manager
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600

Legend:

N/A: Not applicable

(61) Attributes of the event action control - manager end event

The attributes of the event action control - manager end event are as follows.

Table A–62: Attributes of the event action control - manager end event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041A2
		Message	N/A	KAVT0499-I JP1/AJS2 event action manager will now end.
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	- In Windows: Account for the JP1/AJS3 service (default: SYSTEM) - In UNIX: root If the JP1_USERNAME environment variable is set, its value is used.
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/Automatic Job Management System 2 EVAction Manager
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	JP1/Automatic Job Management System 2 EVAction Manager
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	End time of the event action control - manager

Attribute type		Type	Attribute name	Contents
Extended	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600

Legend:

N/A: Not applicable

(62) Attributes of the event action control - agent start event

The attributes of the event action control - agent start event are as follows.

Table A–63: Attributes of the event action control - agent start event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041A3
		Message	N/A	KAVT0900-I JP1/AJS2 event action agent will now start.
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	- In Windows: Account for the JP1/AJS3 service (default: SYSTEM) - In UNIX: root If the JP1_USERNAME environment variable is set, its value is used.
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/Automatic Job Management System 2 EVAction Agent
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	JP1/Automatic Job Management System 2 EVAction Agent
		Occurrence	OCCURRENCE	START
		Start time	START_TIME	Start time of the event action control - agent
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600

Legend:

N/A: Not applicable

(63) Attributes of the event action control - agent end event

The attributes of the event action control - agent end event are as follows.

Table A–64: Attributes of the event action control - agent end event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041A4
		Message	N/A	KAVT0901-I JP1/AJS2 event action agent will now end.
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	- In Windows: Account for the JP1/AJS3 service (default: SYSTEM) - In UNIX: root If the JP1_USERNAME environment variable is set, its value is used.
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	JP1/Automatic Job Management System 2 EVAction Agent
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	JP1/Automatic Job Management System 2 EVAction Agent
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	End time of the event action control - agent
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	0600

Legend:

N/A: Not applicable

(64) Attributes of the threshold warning event about the number of unreported information items for the scheduler service of the event/action control manager

The attributes of the threshold warning event about the number of unreported information items for the scheduler service of the event/action control manager are as follows.

Table A–65: Attributes of the threshold warning event about the number of unreported information items for the scheduler service of the event/action control manager

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041A5
		Message	N/A	KAVT0365-W The number of unreported information for the scheduler service(<i>scheduler-service-name</i>) has exceeded the warning threshold(<i>warning-number</i>). (<i>logical-host-name</i> , <i>maximum-number</i>)

Attribute type		Type	Attribute name	Contents
Basic		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Warning
		User name	USER_NAME	- In Windows: Account for the JP1/AJS3 service (default: SYSTEM) - In UNIX: root If the JP1_USERNAME environment variable is set, its value is used.
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	Scheduler service name
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	SERVICE
		Object ID	OBJECT_ID	Scheduler service name
		Occurrence	OCCURRENCE	EXCEPTION
		Source host name	JP1_SOURCEHOST	Host name of the scheduler service for which the event occurred
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	1210

Legend:

N/A: Not applicable

(65) Attributes of the event indicating that communication with a broadcast-execution destination agent is impossible

The attributes of the event indicating that communication with a broadcast-execution destination agent is impossible are as follows.

Table A–66: Attributes of the event indicating that communication with a broadcast-execution destination agent is impossible

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041B0
		Message	N/A	KAVS8100-E Cannot communicate with the execution environment for flexible jobs.(<i>maintenance-information-1, maintenance-information-2, maintenance-information-3, maintenance-information-4</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB

Attribute type		Type	Attribute name	Contents
Extended	Common information	Object name	OBJECT_NAME	<i>scheduler-service-name: /jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	<i>scheduler-service-name: /root-jobnet-name</i>
		Object ID	OBJECT_ID	<i>scheduler-service-name: /jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	END
		Result code	RESULT_CODE	Result code
		Source host name	JP1_SOURCEHOST	Name of the destination agent host for which the event occurred
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	1110
		Execution ID	A3	Execution ID
		Flexible job ID	FX_ID	Identifier of a flexible job
		Destination host name	FX_DSTAGTNAME	Host name of a destination agent
		Destination IP address	FX_DSTAGTIP	IP address of a destination agent
		Manager host name	FX_MGRNAME	Name of the manager host

Legend:

N/A: Not applicable

(66) Attributes of the event indicating that the monitoring of the execution time of a broadcast-execution destination agent timed out

The attributes of the event indicating that the monitoring of the execution time of a broadcast-execution destination agent timed out are as follows.

Table A–67: Attributes of the event indicating that the monitoring of the execution time of a broadcast-execution destination agent timed out

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041B1
		Message	N/A	KAVS8101-E Status monitoring of the flexible job will be stopped. (<i>unit-full-name:execution-ID, maintenance-information</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name: /jobnet-name/job-name</i>

Attribute type		Type	Attribute name	Contents
Extended	Common information	Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	<i>scheduler-service-name : /root-jobnet-name</i>
		Object ID	OBJECT_ID	<i>scheduler-service-name : /jobnet-name /job-name</i>
		Occurrence	OCCURRENCE	END
		Result code	RESULT_CODE	Result code
		Source host name	JP1_SOURCEHOST	Name of the destination agent host for which the event occurred
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	1110
		Execution ID	A3	Execution ID
		Flexible job ID	FX_ID	Identifier for the execution result of a flexible job
		Destination host name	FX_DSTAGTNAME	Host name of a destination agent
		Destination IP address	FX_DSTAGTIP	IP address of a destination agent
		Manager host name	FX_MGRNAME	Name of the manager host

Legend:

N/A: Not applicable

(67) Attributes of the event indicating that an attempt to confirm the start of a job on a broadcast-execution destination agent timed out

The attributes of the event indicating that an attempt to confirm the start of a job on a broadcast-execution destination agent timed out are as follows.

Table A–68: Attributes of the event indicating that an attempt to confirm the start of a job on a broadcast-execution destination agent timed out

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041B2
		Message	N/A	KAVS8116-E Status monitoring will stop, because the start of the flexible job could not be confirmed. (<i>unit-full-name:execution-ID, maintenance-information</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name : /jobnet-name /job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET

Attribute type		Type	Attribute name	Contents
Extended	Common information	Root object name	ROOT_OBJECT_NAME	<i>scheduler-service-name : /root-jobnet-name</i>
		Object ID	OBJECT_ID	<i>scheduler-service-name : /jobnet-name /job-name</i>
		Occurrence	OCCURRENCE	END
		Result code	RESULT_CODE	Result code
		Source host name	JP1_SOURCEHOST	Name of the destination agent host for which the event occurred
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	1110
		Execution ID	A3	Execution ID
		Flexible job ID	FX_ID	Identifier for the execution result of a flexible job
		Destination host name	FX_DSTAGTNAME	Host name of a destination agent
		Destination IP address	FX_DSTAGTIP	IP address of a destination agent
		Manager host name	FX_MGRNAME	Name of the manager host

Legend:

N/A: Not applicable

(68) Attributes of the event indicating that the execution of a flexible job ended (ended normally) on a broadcast-execution destination agent

The attributes of the event indicating that the execution of a flexible job ended (ended normally) on a broadcast-execution destination agent are as follows.

Table A–69: Attributes of the event indicating that the execution of a flexible job ended (ended normally) on a broadcast-execution destination agent

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041B3
		Message	N/A	KAVS8138-I The flexible job was executed. (<i>unit-full-name : execution-ID , return-code, destination-agent-host-name , maintenance-information</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI /JP1 /AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name : /jobnet-name /job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	<i>scheduler-service-name : /root-jobnet-name</i>

Attribute type		Type	Attribute name	Contents
Extended	Common information	Object ID	OBJECT_ID	<i>scheduler-service-name : /jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	END
		Result code	RESULT_CODE	Result code
		Source host name	JP1_SOURCEHOST	Name of the destination agent host for which the event occurred
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	1110
		Execution ID	A3	Execution ID
		Flexible job ID	FX_ID	Identifier for the execution result of a flexible job
		Destination host name	FX_DSTAGTNAME	Host name of a destination agent
		Destination IP address	FX_DSTAGTIP	IP address of a destination agent
		Standard error	FX_STDERR	Data that a user program executed on a destination agent sent to the standard error output
		Start time	FX_STARTTIME	Job execution start time on a destination agent
		End time	FX_ENDTIME	Job execution end time on a destination agent
		Manager host name	FX_MGRNAME	Name of the manager host

Legend:

N/A: Not applicable

(69) Attributes of the event indicating that the execution of a flexible job ended (ended with a warning) on a broadcast-execution destination agent

The attributes of the event indicating that the execution of a flexible job ended (ended with a warning) on a broadcast-execution destination agent are as follows.

Table A–70: Attributes of the event indicating that the execution of a flexible job ended (ended with a warning) on a broadcast-execution destination agent

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041B4
		Message	N/A	KAVS8138-I The flexible job was executed. (<i>unit-full-name : execution-ID , return-code, destination-agent-host-name , maintenance-information</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Warning
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB

Attribute type		Type	Attribute name	Contents
Extended	Common information	Object name	OBJECT_NAME	<i>scheduler-service-name : /jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	<i>scheduler-service-name : /root-jobnet-name</i>
		Object ID	OBJECT_ID	<i>scheduler-service-name : /jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	END
		Result code	RESULT_CODE	Result code
		Source host name	JP1_SOURCEHOST	Name of the destination agent host for which the event occurred
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	1110
		Execution ID	A3	Execution ID
		Flexible job ID	FX_ID	Identifier for the execution result of a flexible job
		Destination host name	FX_DSTAGTNAME	Host name of a destination agent
		Destination IP address	FX_DSTAGTIP	IP address of a destination agent
		Standard error	FX_STDERR	Data that a user program executed on a destination agent sent to the standard error output
		Start time	FX_STARTTIME	Job execution start time on a destination agent
		End time	FX_ENDTIME	Job execution end time on a destination agent
		Manager host name	FX_MGRNAME	Name of the manager host

Legend:

N/A: Not applicable

(70) Attributes of the event indicating that the execution of a flexible job ended (ended abnormally) on a broadcast-execution destination agent

The attributes of the event indicating that the execution of a flexible job ended (ended abnormally) on a broadcast-execution destination agent are as follows.

Table A–71: Attributes of the event indicating that the execution of a flexible job ended (ended abnormally) on a broadcast-execution destination agent

Attribute type	Type	Attribute name	Contents
Basic	Event ID	N/A	000041B5
	Message	N/A	KAVS8138-I The flexible job was executed. (<i>unit-full-name : execution-ID , return-code, destination-agent-host-name , maintenance-information</i>)
	Detailed information	N/A	N/A

Attribute type		Type	Attribute name	Contents
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name: /jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	<i>scheduler-service-name: /root-jobnet-name</i>
		Object ID	OBJECT_ID	<i>scheduler-service-name: /jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	END
		Result code	RESULT_CODE	Result code
		Source host name	JP1_SOURCEHOST	Name of the destination agent host for which the event occurred
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	1110
		Execution ID	A3	Execution ID
		Flexible job ID	FX_ID	Identifier for the execution result of a flexible job
		Destination host name	FX_DSTAGTNAME	Host name of a destination agent
		Destination IP address	FX_DSTAGTIP	IP address of a destination agent
		Standard error	FX_STDERR	Data that a user program executed on a destination agent sent to the standard error output
		Start time	FX_STARTTIME	Job execution start time on a destination agent
		End time	FX_ENDTIME	Job execution end time on a destination agent
		Manager host name	FX_MGRNAME	Name of the manager host

Legend:

N/A: Not applicable

(71) Attributes of the event indicating that execution of a flexible job ended (ended normally) on all broadcast-execution destination agents

The attributes of the event indicating that execution of a flexible job ended (ended normally) on all broadcast-execution destination agents are as follows.

Table A–72: Attributes of the event indicating that execution of a flexible job ended (ended normally) on all broadcast-execution destination agents

Attribute type	Type	Attribute name	Contents
Basic	Event ID	N/A	000041B6

Attribute type		Type	Attribute name	Contents
Basic		Message	N/A	KAVS8149-I Broadcast execution has finished. (<i>return-code , manager-host-name , full-unit-name , execution-ID , maintenance-information</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Information
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name : /jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	<i>scheduler-service-name : /root-jobnet-name</i>
		Object ID	OBJECT_ID	<i>scheduler-service-name : /jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	END
		Result code	RESULT_CODE	Result code
		Source host name	JP1_SOURCEHOST	Host name of the broadcast agent for which the event occurred
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	1110
		Execution ID	A3	Execution ID
		Flexible job ID	FX_ID	Identifier for the execution result of a flexible job
		Start time	FX_STARTTIME	Job execution start time on a destination agent
		End time	FX_ENDTIME	Job execution end time on a destination agent
		Manager host name	FX_MGRNAME	Name of the manager host

Legend:

N/A: Not applicable

(72) Attributes of the event indicating that execution of a flexible job ended (ended with a warning) on all broadcast-execution destination agents

The attributes of the event indicating that execution of a flexible job ended (ended with a warning) on all broadcast-execution destination agents are as follows.

Table A–73: Attributes of the event indicating that execution of a flexible job ended (ended with a warning) on all broadcast-execution destination agents

Attribute type	Type	Attribute name	Contents
Basic	Event ID	N/A	000041B7

Attribute type		Type	Attribute name	Contents
Basic		Message	N/A	KAVS8149-I Broadcast execution has finished. (<i>return-code , manager-host-name , full-unit-name , execution-ID , maintenance-information</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Warning
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name : /jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	<i>scheduler-service-name : /root-jobnet-name</i>
		Object ID	OBJECT_ID	<i>scheduler-service-name : /jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	END
		Result code	RESULT_CODE	Result code
		Source host name	JP1_SOURCEHOST	Host name of the broadcast agent for which the event occurred
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	1110
		Execution ID	A3	Execution ID
		Flexible job ID	FX_ID	Identifier for the execution result of a flexible job
		Start time	FX_STARTTIME	Job execution start time on a destination agent
		End time	FX_ENDTIME	Job execution end time on a destination agent
		Manager host name	FX_MGRNAME	Name of the manager host

Legend:

N/A: Not applicable

(73) Attributes of the event indicating that execution of a flexible job ended (ended abnormally) on all broadcast-execution destination agents

The attributes of the event indicating that execution of a flexible job ended (ended abnormally) on all broadcast-execution destination agents are as follows.

Table A–74: Attributes of the event indicating that execution of a flexible job ended (ended abnormally) on all broadcast-execution destination agents

Attribute type	Type	Attribute name	Contents
Basic	Event ID	N/A	000041B8

Attribute type		Type	Attribute name	Contents
Basic		Message	N/A	KAVS8149-I Broadcast execution has finished. (<i>return-code , manager-host-name , full-unit-name , execution-ID , maintenance-information</i>)
		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Error
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name : /jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	<i>scheduler-service-name : /root-jobnet-name</i>
		Object ID	OBJECT_ID	<i>scheduler-service-name : /jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	END
		Result code	RESULT_CODE	Result code
		Source host name	JP1_SOURCEHOST	Host name of the broadcast agent for which the event occurred
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	1110
		Execution ID	A3	Execution ID
		Flexible job ID	FX_ID	Identifier for the execution result of a flexible job
		Start time	FX_STARTTIME	Job execution start time on a destination agent
		End time	FX_ENDTIME	Job execution end time on a destination agent
		Manager host name	FX_MGRNAME	Name of the manager host

Legend:

N/A: Not applicable

(74) Attributes of the event indicating that execution of a flexible job ended (when there was no broadcast-execution destination agent)

The attributes of the event indicating that execution of a flexible job ended (when there was no broadcast-execution destination agent) are as follows.

Table A–75: Attributes of the event indicating that execution of a flexible job ended (when there was no broadcast-execution destination agent)

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041B9
		Message	N/A	KAVS8159-W There is no destination agent for broadcast execution. (<i>manager-host-name, full-unit-name, execution-ID, maintenance-information</i>)

Attribute type		Type	Attribute name	Contents
Basic		Detailed information	N/A	N/A
Extended	Common information	Severity	SEVERITY	Warning
		User name	USER_NAME	User who registered the jobnet (JP1 user name)
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	JOB
		Object name	OBJECT_NAME	<i>scheduler-service-name: /jobnet-name/job-name</i>
		Root object type	ROOT_OBJECT_TYPE	JOBNET
		Root object name	ROOT_OBJECT_NAME	<i>scheduler-service-name: /root-jobnet-name</i>
		Object ID	OBJECT_ID	<i>scheduler-service-name: /jobnet-name/job-name</i>
		Occurrence	OCCURRENCE	END
		Result code	RESULT_CODE	Result code
		Source host name	JP1_SOURCEHOST	Host name of the broadcast agent for which the event occurred
	Specific information	Platform	PLATFORM	In Windows: NT In UNIX: UNIX
		Version of AJS action	ACTION_VERSION	1110
		Execution ID	A3	Execution ID
		Flexible job ID	FX_ID	Identifier for the execution result of a flexible job
		Start time	FX_STARTTIME	Job execution start time on a destination agent
		End time	FX_ENDTIME	Job execution end time on a destination agent
		Manager host name	FX_MGRNAME	Name of the manager host

Legend:

N/A: Not applicable

(75) Attributes of the process abnormal end event (compatible event)

The attributes of the process abnormal end event are as follows.

Table A–76: Attributes of the process abnormal end event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041F0
		Message	N/A	KNAD3737-E JP1/AJS3 : <i>managed-process-name</i> terminated abnormally.
Extended	Common information	Severity	SEVERITY	Error
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SPMD
		Object name	OBJECT_NAME	Name of the process that ended abnormally
		Occurrence	OCCURRENCE	NOTICE

Legend:

N/A: Not applicable

(76) Attributes of the process start timeout event (compatible event)

The attributes of the process start timeout event are as follows.

Table A–77: Attributes of the process start timeout event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041F1
		Message	N/A	KNAD3613-W JP1/AJS3 timeout occurred in <i>managed-process-name</i> . continue
Extended	Common information	Severity	SEVERITY	Warning
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SPMD
		Object name	OBJECT_NAME	Name of the process that failed to start within the timeout period
		Occurrence	OCCURRENCE	NOTICE

Legend:

N/A: Not applicable

(77) Attributes of the process restart completion event (compatible event)

The attributes of the process restart completion event are as follows.

Table A–78: Attributes of the process restart completion event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041F2
		Message	N/A	KNAD3616-I The restart of the JP1/AJS3 of <i>managed-process-name</i> has completed.
Extended	Common information	Severity	SEVERITY	Information
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SPMD
		Object name	OBJECT_NAME	Name of the process that restarted
		Occurrence	OCCURRENCE	NOTICE

Legend:

N/A: Not applicable

(78) Attributes of the pre-start failure event (compatible event)

The attributes of the pre-start failure event are as follows.

Table A–79: Attributes of the pre-start failure event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041F3
		Message	N/A	KNAD3953-E JP1/AJS3 pre-startup: <i>pre-startup-process-name</i> Fail
Extended	Common information	Severity	SEVERITY	Error
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SPMD
		Object name	OBJECT_NAME	Failed command name
		Occurrence	OCCURRENCE	NOTICE

Legend:

N/A: Not applicable

(79) Attributes of the JP1/AJS3 start completed event

The attributes of the JP1/AJS3 start completed event is as follows.

Table A–80: Attributes of the JP1/AJS3 start completed event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041C0
		Message	N/A	KNAD3604-I JP1/AJS3 startup has finished
Extended	Common information	Severity	SEVERITY	Information
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SPMD
		Object name	OBJECT_NAME	JP1/AJS2
		Occurrence	OCCURRENCE	NOTICE

Legend:

N/A: Not applicable

(80) Attributes of the JP1/AJS3 stop event

The Attributes of the JP1/AJS3 stop event are as follows.

Table A–81: Attributes of the JP1/AJS3 stop event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041C1
		Message	N/A	KNAD3743-I JP1/AJS3 has terminated
Extended	Common	Severity	SEVERITY	Information

Attribute type		Type	Attribute name	Contents
Extended	Information	Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SPMD
		Object name	OBJECT_NAME	JP1/AJS2
		Occurrence	OCCURRENCE	NOTICE

Legend:

N/A: Not applicable

(81) Attributes of the managed process start completed event

The attributes of the managed process start completed event are as follows.

Table A–82: Attributes of the managed process start completed event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041C2
		Message	N/A	KNAD3617-I The JP1/AJS3 <i>managed-process-name</i> startup has finished
Extended	Common information	Severity	SEVERITY	Information
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SPMD
		Object name	OBJECT_NAME	Name of the process that started
		Occurrence	OCCURRENCE	NOTICE

Legend:

N/A: Not applicable

(82) Attributes of the managed process stop event

The attributes of the managed process stop event are as follows.

Table A–83: Attributes of the managed process stop event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041C3
		Message	N/A	KNAD3746-I The JP1/AJS3 <i>managed-process-name</i> terminated
Extended	Common information	Severity	SEVERITY	Information
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SPMD
		Object name	OBJECT_NAME	Name of the process that stopped
		Occurrence	OCCURRENCE	NOTICE

Legend:

N/A: Not applicable

(83) Attributes of the managed process abnormal end event

The attributes of the managed process abnormal end event are as follows.

Table A–84: Attributes of the managed process abnormal end event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041C4
		Message	N/A	KNAD3737-E The JP1/AJS3 <i>managed-process-name</i> terminated abnormally.
Extended	Common information	Severity	SEVERITY	Error
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SPMD
		Object name	OBJECT_NAME	Name of the process that ended abnormally
		Occurrence	OCCURRENCE	NOTICE

Legend:

N/A: Not applicable

(84) Attributes of the managed process start timeout event

The attributes of the managed process start timeout event are as follows.

Table A–85: Attributes of the managed process start timeout event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041C5
		Message	N/A	KNAD3613-W JP1/AJS3 timeout occurred in <i>managed-process-name</i> continue
Extended	Common information	Severity	SEVERITY	Warning
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SPMD
		Object name	OBJECT_NAME	Name of the process that failed to start within the timeout period
		Occurrence	OCCURRENCE	NOTICE

Legend:

N/A: Not applicable

(85) Attributes of the managed process restart completed event

Attributes of the managed process restart completed event are as follows.

Table A–86: Attributes of the managed process restart completed event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041C6
		Message	N/A	KNAD3616-I JP1/AJS3 <i>managed-process-name</i> completed the restart up
Extended	Common information	Severity	SEVERITY	Information
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SPMD
		Object name	OBJECT_NAME	Name of the process that restarted
		Occurrence	OCCURRENCE	NOTICE

Legend:

N/A: Not applicable

(86) Attributes of the pre-start process failure event

The attributes of the pre-start process failure event are as follows.

Table A–87: Attributes of the pre-start process failure event

Attribute type		Type	Attribute name	Contents
Basic		Event ID	N/A	000041C7
		Message	N/A	KNAD3953-E JP1/AJS3 pre-startup : <i>pre-startup-process-name</i> Fail
Extended	Common information	Severity	SEVERITY	Error
		Product name	PRODUCT_NAME	/HITACHI/JP1/AJS2
		Object type	OBJECT_TYPE	SPMD
		Object name	OBJECT_NAME	Failed command name
		Occurrence	OCCURRENCE	NOTICE

Legend:

N/A: Not applicable

B. Backing Up and Recovering Databases

This appendix describes how to back up and recover JP1/AJS3 databases.

If a failure occurs in a database, you can recover the database by performing either of the following three actions:

- Recover the database by using backup files created by using the backup enhancement function.
For an embedded database for which the backup enhancement function is enabled, restore the database by using the `jajs_dbbackup` command and the `jajs_dbrestore` command.
- Recover the database without using the system log.
Use backup files created at any previous point (while JP1/AJS3 was not running) to recover the database.
- Recover the database by using the unload log file.
Use backup files and the unload log file to recover the database.

For details about how to back up and recover a database by using the backup enhancement function, see [2.5 Backing up and recovering JP1/AJS3 - Manager by using the backup enhancement function](#).

The following describes the backup and recovery method that does not use the system log, and the backup and recovery method that uses an unload log file.

B.1 Backup and recovery when the system log is not used

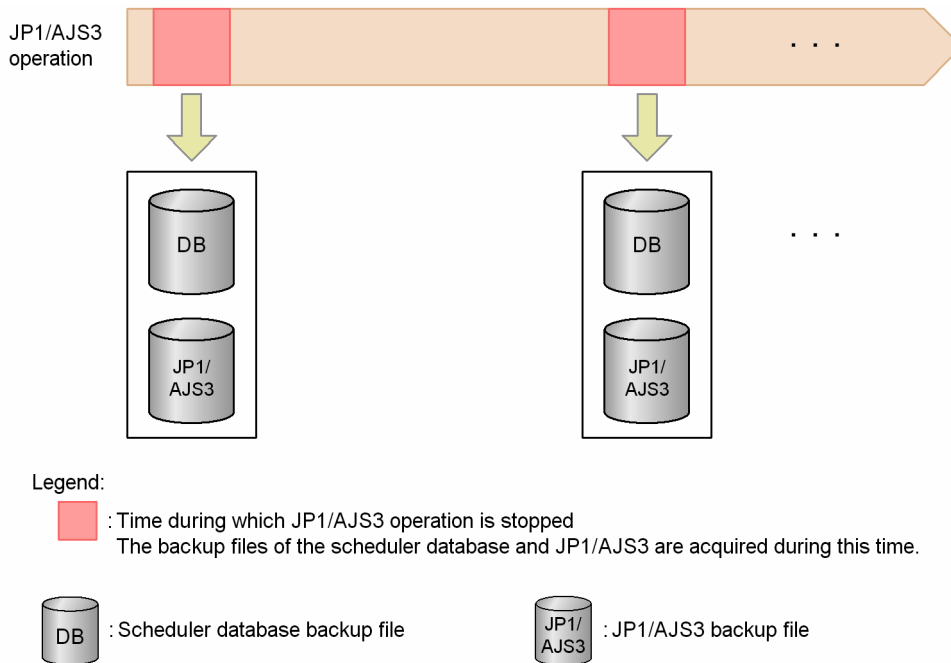
If an error occurs, backup files created at a predetermined time (when JP1/AJS3 stops) are used to restore the database. No system logs are used.

(1) When backup files are created

If an error occurs in a JP1/AJS3 environment, you must synchronize the JP1/AJS3 environment and the scheduler database environment during the restore processing. If you are able to stop JP1/AJS3 operation to do this, in addition to the JP1/AJS3 backup file that is created, execute the `ajsembdbbackup` command to create a backup file of the scheduler database. After the backup files have been created, you can use any method to delete older backup files.

The following figure shows the timing for creating backup files.

Figure B–1: Timing for creating backup files (when the system log not used)



(2) Managing backup files

You need to save backup files because they are needed to restore the database. When new backup files are created, previous backup files are no longer required. Delete them if appropriate.

(3) Procedure for creating a backup file

To create a backup file:

1. Stop the scheduler service that uses the target scheduler database, and stop all JP1/AJS3 services that access the scheduler database.
2. Start the embedded database.
 - In Windows:

Confirm that the target JP1/AJS3 Database `_JFn` service (where *n* is a value from 0 to 9, or A to Z) is running. If the target service is not running, start it. Next, execute the `ajsembddbstatus` command with the `-s ust -id _JFn` option (where *n* is a value from 0 to 9, or A to Z) specified and confirm that the embedded database is running (that is, `UNIT-STAT` indicates `ONLINE`). If the embedded database is not running, execute the `ajsembdbstart` command with the `-id _JFn` option specified.
 - In UNIX:

Execute the `ajsembdbstart` command with the `-id _JFn` option (where *n* is a value from 0 to 9, or A to Z) specified. Then execute the `ajsembddbstatus` command with the `-s ust -id _JFn` option (where *n* is a value from 0 to 9, or A to Z) specified and confirm that the embedded database is running (that is, `UNIT-STAT` indicates `ONLINE`).
3. Execute the `ajsembdbbackup` command to create a backup file.

Do not specify the `-s` option in the `ajsembdbbackup` command.
4. Execute the `ajsembdbstop` command to stop the embedded database.

5. Start the services you stopped in step 1, and resume normal operation.

For details about the `ajsembdbbackup` command, see *ajsembdbbackup* in 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

Note that if you attempt to create a backup file while the scheduler service is running or when the scheduler database is being referenced or updated, the `ajsembdbbackup` command might result in an error.

(4) Procedures for restoring the database if an error occurs

The following describes the procedures for restoring the database by type of error.

For details about the `ajsembdbbackup` and `ajsembdbrestore` commands used to restore the database, see 3. *Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*. For details about the `ajsembdbbuild`, `ajsembdbsetup`, and `ajsembdbunset` commands, see 2. *Commands Used during Setup* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

(a) Procedure when a disk error occurred in the data area

The following describes the procedure for restoring the database when a disk error has occurred in the data area.

When you restore the database in a cluster environment, perform the procedure below in an environment in which the primary node has been set up. Do not perform the procedure on the secondary node.

To restore the database:

1. On the physical host and all logical hosts, stop all JP1/AJS3 services that access the scheduler database.
2. Execute the `ajsembdbunset` command to delete the database environment.
Specify the `-e` option in the `ajsembdbunset` command.
3. Correct the error.
4. Execute the `ajsembdbbuild` command to re-create the database environment.
When executing the `ajsembdbbuild` command, make sure that you specify the same information in it that was specified to create the database environment before the error occurred. If the specified information is different, an error occurs during the restore processing for the scheduler database and the database cannot be restored.
5. Execute the `ajsembdbsetup` command to set up the scheduler database.
When executing the `ajsembdbsetup` command, make sure that you specify the same information in it that was specified for migration to the embedded database before the error occurred. If the specified information is different, an error occurs during the restore processing for the scheduler database and the database cannot be restored.
6. Execute the `ajsembdbstop` command to stop the embedded database.
7. Execute the `ajsembdbstart` command with the `-r` option specified to start the embedded database in the mode for restoring system areas.
8. Execute the `ajsembdbrestore` command with the `-M` option specified to restore the embedded database system area.
9. Execute the `ajsembdbstop` command to stop the embedded database.
10. Execute the `ajsembdbstart` command to start the embedded database.

11. Execute the `ajsembdbstr` command to restore the scheduler database.
Do not specify the `-ld` and `-l` options in the `ajsembdbstr` command.
12. Execute the `ajsembdbbackup` command.
Execute the `ajsembdbbackup` command to create a backup file.
13. Execute the `ajsembdbstop` command to stop the embedded database.
14. Start the services you stopped in step 1.

(b) Procedure when a disk error occurred in the system log file for the database

If an error occurred in the system log file for the database, you need to re-create the database as described in *(a) Procedure when a disk error occurred in the data area*. For details, see (a).

(c) Procedure when errors occurred simultaneously in JP1/AJS3 and the database

Below is the procedure for restoring the database when simultaneous errors have occurred in JP1/AJS3 and the database.

When you restore the database in a cluster environment, perform the procedure below in an environment in which the primary node has been set up. Do not perform the procedure on the secondary node.

To restore the database:

1. Correct the errors.
2. Recover JP1/AJS3 from the backup file.
For details about how to recover JP1/AJS3, see *2. Backup and Recovery*.
3. Stop the scheduler service that uses the target scheduler database, and stop all JP1/AJS3 services that access the scheduler database.
4. Start the embedded database.
 - In Windows:
Confirm that the target JP1/AJS3 Database `_JFn` service (where *n* is a value from 0 to 9, or A to Z) is running. If the target service is not running, start it. Next, execute the `ajsembdbstatus` command with the `-s ust -id _JFn` option (where *n* is a value from 0 to 9, or A to Z) specified and confirm that the embedded database is running (that is, `UNIT-STAT` indicates `ONLINE`). If the embedded database is not running, execute the `ajsembdbstart` command with the `-id _JFn` option specified.
 - In UNIX:
Execute the `ajsembdbstart` command with the `-id _JFn` option (where *n* is a value from 0 to 9, or A to Z) specified. Then execute the `ajsembdbstatus` command with the `-s ust -id _JFn` option (where *n* is a value from 0 to 9, or A to Z) specified and confirm that the embedded database is running (that is, `UNIT-STAT` indicates `ONLINE`).
5. Execute the `ajsembdbstop` command to stop the embedded database.
6. Execute the `ajsembdbstart` command with the `-r` option specified to start the embedded database in the mode for restoring system areas.
7. Execute the `ajsembdbstr` command with the `-M` option specified to restore the embedded database system area.
8. Execute the `ajsembdbstop` command to stop the embedded database.

9. Execute the `ajsembdbstart` command to start the embedded database.
10. Execute the `ajsembdbstr` command to restore the scheduler database.
Do not specify the `-ld` or `-l` option in the `ajsembdbstr` command.
11. Execute the `ajsembdbstop` command to stop the embedded database.
12. Start the services you stopped in step 3.
If necessary, cold-start the JP1/AJS3 services.

When this procedure has been completed, you can restore the database to the state existing at the time the backup file was created in synchronization with JP1/AJS3.

(d) Procedure when a disk error occurred in JP1/AJS3

Use the procedure in *(c) Procedure when errors occurred simultaneously in JP1/AJS3 and the database* to restore the database.

B.2 Backup and recovery when an unload log is used

If an error occurs, backup files and unload log files are used to restore the database.

(1) How to create backup files

When an unload log is used, you can use the following two methods to create backup files:

- Creating a backup file when the JP1/AJS3 service is not running
In this method, you must stop JP1/AJS3 operation before you create a backup file of the scheduler database. You can use this backup file to restore the database to the state existing at the time the backup file was created. If you use the backup file and the unload log file, you can also restore any updates made to the scheduler database after creation of the backup file.
- Creating a backup file when the JP1/AJS3 service is running
In this method, you can create backup files of the scheduler database while JP1/AJS3 is running. Note, however, that you cannot restore the database simply by using the backup files created with this method. To restore the database, you must also use unload log files.

The following table describes the advantages and disadvantages of each backup method.

Table B–1: Advantages and disadvantages of each backup method

Backup method	Advantages	Disadvantages
Creating a backup file when the JP1/AJS3 service is not running	• The scheduler database can be restored regardless of whether unload log files exist. • The scheduler database can be restored to the state existing at the time the backup file was created. • By using unload log files, you can also restore the updates made to the scheduler database after creation of the backup file.	JP1/AJS3 operation must be stopped before a backup file is created.
Creating backup files when the JP1/AJS3 service is running	Backup files can be created while JP1/AJS3 is running.	• If the unload log files that were created after the creation of a backup file are lost, the

Backup method	Advantages	Disadvantages
Creating backup files when the JP1/AJS3 service is running	Backup files can be created while JP1/AJS3 is running.	scheduler database cannot be restored from the backup files created with this method. The scheduler database cannot be restored to the state existing at the time a backup file was created.

(2) When backup files are created

If an error occurs in the JP1/AJS3 environment, you must synchronize the JP1/AJS3 environment and the scheduler database environment during the restore processing. If you are able to stop JP1/AJS3 operation to do this, in addition to the JP1/AJS3 backup file that is created, execute the `ajsembddbbackup` command without the `-s` option to create a backup file of the scheduler database. When JP1/AJS3 is running, periodically execute the `ajsembddbbackup` command with the `-s` option specified to create a backup file of the scheduler database.

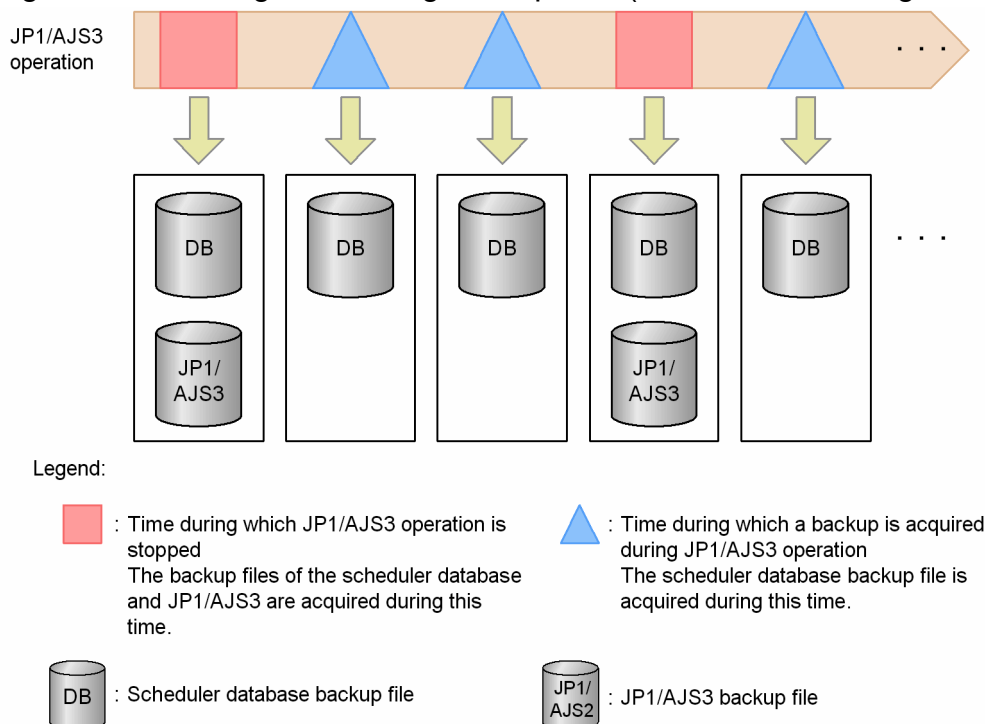
A backup file must be created before the disk that contains the directory where unload log files are created becomes full. When this disk is full, an attempt to create a backup file fails. Free space for at least one unload log file is required for a backup file to be created.

Note that no problem occurs if a backup file is created earlier than the time described above.

After a backup file has been created, you can delete the unload log files created before the backup file was created and the previously created backup files. For details about how to delete unload log files and backup files, see [\(3\) Managing backup files and unload log files](#).

The following figure shows the timing for creating backup files.

Figure B–2: Timing for creating backup files (when an unload log used)



(3) Managing backup files and unload log files

You need to save and manage the backup files and unload log files because you will need them to restore the database.

The following describes how to manage both types of files.

(a) Unload log files

As JP1/AJS3 operation continues, the number of unload log files created continues to grow, risking a shortage of free space on the disk containing the directory where unload log files are created. The following describes how to prevent this problem.

- Delete old unload log files

Because restoration of the scheduler database uses unload log files created after the backup file was created, unload log files created before the backup file was created are no longer required. You must create a backup file before the disk containing the directory where unload log files are created becomes full, and then use any method to delete the unload log files created before the backup file was created. To decide which unload log files to delete, compare the time the `ajsembddbbackup` command was executed and the time each unload log file was created, and delete the unload log files that were created before the command was executed.

- Move unload log files to another disk

Use any method to move unload log files to another disk to increase the amount of free space on the disk that contains the directory where unload log files are created. When you move the unload log files, do not move the directory where unload log files are created.

Note that the problem with this method is that restoration using the `ajsembdbbrstr` command takes a long time because many unload log files are used. Therefore, use this method as a temporary solution when, for example, a backup file cannot be created quickly.

(b) Backup files

If unload log files can no longer be used, the database cannot be restored from a backup file created while the JP1/AJS3 service was running. You must also save the backup file that was created when the JP1/AJS3 service was inactive.

(4) Procedure for creating backup files

The following describes how to create a backup file for each of the backup methods.

(a) Creating a backup file when the JP1/AJS3 services are not running

To create a backup file when the JP1/AJS3 services are not running:

1. Stop the scheduler service that uses the target scheduler database, and stop all JP1/AJS3 services that access the scheduler database.
2. Start the embedded database.
 - In Windows
Confirm that the target JP1/AJS3 Database `_JFn` service (where *n* is a value from 0 to 9, or A to Z) is running. If the target service is not running, start it. Next, execute the `ajsembddbstatus` command with the `-s ust -id _JFn` option (where *n* is a value from 0 to 9, or A to Z) specified and confirm that the embedded database is running (that is, `UNIT-STAT` indicates `ONLINE`). If the embedded database is not running, execute the `ajsembdbstart` command with the `-id _JFn` option specified.
 - In UNIX

Execute the `ajsembddbstart` command with the `-id _JFn` option (where *n* is a value from 0 to 9, or A to Z) specified. Then execute the `ajsembddbstatus` command with the `-s ust -id _JFn` option (where *n* is a value from 0 to 9, or A to Z) specified and confirm that the embedded database is running (that is, `UNIT-STAT` indicates `ONLINE`).

3. Execute the `ajsembddbbackup` command to create a backup file.

Do not specify the `-s` option in the `ajsembddbbackup` command.

4. Execute the `ajsembddbstop` command to stop the embedded database.

5. Start the services you stopped in step 1.

For details about the `ajsembddbbackup` command, see *ajsembddbbackup* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

Note that if you attempt to create a backup file while the scheduler service is running or the scheduler database is being referenced or updated, the `ajsembddbbackup` command might result in an error.

(b) Creating a backup file when the JP1/AJS3 services are running

Execute the `ajsembddbbackup` command with the `-s` option specified.

You can use this backup method while JP1/AJS3 is running. However, because the `ajsembddbbackup` command and jobs are executed at the same time, there will be some degradation in performance of the command and the jobs. When you execute the command, make sure that as few jobs as possible are being executed.

For details about the `ajsembddbbackup` command, see *ajsembddbbackup* in *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

(5) Procedures for restoring the database if an error occurs

The following describes the procedures for restoring the database by type of error.

For details about the `ajsembdboplog`, `ajsembddbbackup`, and `ajsembdbrstr` commands used to restore the database, see *3. Commands Used for Normal Operations* in the manual *JP1/Automatic Job Management System 3 Command Reference*. For details about the `ajsembdbbuild`, `ajsembdbsetup`, and `ajsembdbunset` commands, see *2. Commands Used during Setup* in the manual *JP1/Automatic Job Management System 3 Command Reference*.

(a) Procedure when a disk error occurred in the data area

The following describes the procedure for restoring the database when a disk error has occurred in the data area.

When you restore the database in a cluster environment, perform the procedure below in an environment in which the primary node has been set up. Do not perform the procedure on the secondary node.

To restore the database:

1. Create an unload log file.

To restore the database to the state existing before the error occurred, you must create an unload log file from the system log file containing the last updates made to the database before the error occurred.

You can create the unload log file by executing the `ajsembdboplog` command.

The following shows an example of specifying the `ajsembdboplog` command:

```
ajsembdboplog -f -g log4#1 -o /unloadlog/unloadlog_file#2
```

Before you execute the `ajsembdboplog` command to create an unload log file, back up all unload log files that have been created in the unload log file directory since the backup file used to restore the database was created.

#1

To determine the value to be specified in the `-g` option, execute the `ajsembdbstatus` command with the `-l` option specified.

If the embedded database is running, specify a system log group for which the second character (from the left) in the *Status* column is `c`. If the embedded database is not running, specify a system log group for which the sixth character (from the left) in the *Status* column is `c`. If the second character is `n` and the sixth character is a hyphen (`-`) in the *Status* column for all system log groups, back up the unload log files that have been output, but do not execute the `ajsembdboplog` command.

The following shows an example of executing the `ajsembdbstatus` command when the `_JF0` embedded database is running.

```
ajsembdbstatus -l -id _JF0
```

Group	Type	Server	Gen No.	Status	Run ID	Block No.	Ex-Status
log1	sys	ajs2	1	<u>os</u> ----u	47576555	1	63 -u-----
log2	sys	ajs2	2	<u>os</u> ----u	47576555	64	64 -u-----
log3	sys	ajs2	3	<u>os</u> ----u	47576555	65	65 -u-----
log4	sys	ajs2	4	<u>oc-d--u</u>	47576555	66	66 -x-----
log5	sys	ajs2	0	<u>os</u> ----u	00000000	0	0 -u-----
log6	sys	ajs2	0	<u>os</u> ----u	00000000	0	0 -u-----
log7	sys	ajs2	0	<u>os</u> ----u	00000000	0	0 -u-----
log8	sys	ajs2	0	<u>os</u> ----u	00000000	0	0 -u-----
log9	sys	ajs2	0	<u>os</u> ----u	00000000	0	0 -u-----
log10	sys	ajs2	0	<u>os</u> ----u	00000000	0	0 -u-----
log11	sys	ajs2	0	<u>os</u> ----u	00000000	0	0 -u-----
log12	sys	ajs2	0	<u>os</u> ----u	00000000	0	0 -u-----

In the *Status* column (underlined part), find the item whose second character is `c`. In the above example, this item is on line `log4` under the *Group* column. Thus, the value you need to specify in the `-g` option is `log4`.

#2

This example assumes that the output destination file name (unload log file name) is `/unloadlog/unloadlog_file`.

Note that this step is unnecessary if you want to restore the database to the state existing at the time the backup file was created.

2. On the physical host and all logical hosts, stop all JP1/AJS3 services that access the scheduler database.

3. Execute the `ajsembdbunset` command to delete the database environment.

Specify the `-e` option in the `ajsembdbunset` command.

4. Correct the error.

5. Execute the `ajsembdbbuild` command to re-create the database environment.

When executing the `ajsembdbbuild` command, make sure that you specify the same information in it that was specified to create the database environment before the error occurred. If the specified information is different, an error occurs during the restore processing for the scheduler database and the database cannot be restored.

6. Execute the `ajsembddbsetup` command to set up the scheduler database.

When executing the `ajsembddbsetup` command, make sure that you specify the same information in it that was specified for migration to the embedded database before the error occurred. If the specified information is different, an error occurs during the restore processing for the scheduler database and the database cannot be restored.

7. Execute the `ajsembdbstop` command to stop the embedded database.

8. Execute the `ajsembdbstart` command with the `-r` option specified to start the embedded database in the mode for restoring system areas.

9. Execute the `ajsembdbbrstr` command with the `-M` option specified to restore the embedded database system area.

10. Execute the `ajsembdbstop` command to stop the embedded database.

11. Execute the `ajsembdbstart` command to start the embedded database.

12. Execute the `ajsembdbbrstr` command to restore the scheduler database.

To restore the database to the state existing before the error occurred, use the `-l` or `-ld` option of the `ajsembdbbrstr` command to specify either the unload log files you backed up in step 1 or the directory containing these files.

Do not specify any unload log file that was created after the database environment was re-created.

Note that if you want to restore the database to the state existing at the time the backup file was created while the JP1/AJS3 service was not running, you do not need to specify the `-ld` or `-l` option.

13. Execute the `ajsembdbbackup` command.

Execute the `ajsembdbbackup` command to create the backup file.

14. Execute the `ajsembdbstop` command to stop the embedded database.

15. Start the services you stopped in step 2.

(b) Procedure when a disk error occurred in the system log file for the database

You need to re-create the database as described in *(a) Procedure when a disk error occurred in the data area*.

In the procedure in *(a) Procedure when a disk error occurred in the data area*, step 1 can be performed only if system log files are duplicated.

(c) Procedure when errors occurred simultaneously in JP1/AJS3 and the database

Below is the procedure for restoring the database when simultaneous errors have occurred in JP1/AJS3 and the database.

When you restore the database in a cluster environment, perform the procedure below in an environment in which the primary node has been set up. Do not perform the procedure on the secondary node.

To restore the database:

1. Correct the errors.

2. Recover JP1/AJS3 from the backup file.

For details about how to recover JP1/AJS3, see *2. Backup and Recovery*.

3. Stop the scheduler service that uses the target scheduler database, and stop all JP1/AJS3 services that access the scheduler database.

4. Start the embedded database.

- In Windows

Confirm that the target JP1/AJS3 Database `_JFn` service (where *n* is a value from 0 to 9, or A to Z) is running. If the target service is not running, start it. Next, execute the `ajsembdbstatus` command with the `-s ust -id _JFn` option (where *n* is a value from 0 to 9, or A to Z) specified and confirm that the embedded database is running (that is, `UNIT-STAT` indicates `ONLINE`). If the embedded database is not running, execute the `ajsembdbstart` command with the `-id _JFn` option specified.

- In UNIX

Execute the `ajsembdbstart` command with the `-id _JFn` option (where *n* is a value from 0 to 9, or A to Z) specified. Then execute the `ajsembdbstatus` command with the `-s ust -id _JFn` option (where *n* is a value from 0 to 9, or A to Z) specified and confirm that the embedded database is running (that is, `UNIT-STAT` indicates `ONLINE`).

5. Execute the `ajsembdbstop` command to stop the embedded database.

6. Execute the `ajsembdbstart` command with the `-r` option specified to start the embedded database in the mode for restoring system areas.

7. Execute the `ajsembdbbrstr` command with the `-M` option specified to restore the embedded database system area.

8. Execute the `ajsembdbstop` command to stop the embedded database.

9. Execute the `ajsembdbstart` command to start the embedded database.

10. Execute the `ajsembdbbrstr` command to restore the scheduler database.

In this case, you need the backup file created when the JP1/AJS3 service was stopped.

Do not specify the `-ld` or `-l` option in the `ajsembdbbrstr` command.

11. Execute the `ajsembdbstop` command to stop the embedded database.

12. Start the services you stopped in step 3.

If necessary, cold-start the JP1/AJS3 services.

When this procedure has been completed, you can restore the database to the state existing at the time the backup file was created in synchronization with JP1/AJS3.

(d) Procedure when a disk error occurred in JP1/AJS3

Use the procedure in *(c) Procedure when errors occurred simultaneously in JP1/AJS3 and the database* to restore the database.

C. Version Revisions

For details on the version revisions, see *B. Version Revisions* in the manual *JP1/Automatic Job Management System 3 Overview*.

D. Reference Material for This Manual

For details on reference information that would be helpful in reading this manual, see *C. Reference Material for This Manual* in the manual *JP1/Automatic Job Management System 3 Overview*.

E. Glossary

For the glossary, see *D. Glossary* in the manual *JP1/Automatic Job Management System 3 Overview*.

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