# HITACHI
## Inspire the Next

**Job Management Partner 1/Automatic Job Management System 3**

**Administration Guide**

3020-3-S07-04(E)

■ **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*.

For Windows Server 2008:

P-2A12-3K97  Job Management Partner 1/Automatic Job Management System 3 - Manager  version 09-00

P-2A12-3397  Job Management Partner 1/Automatic Job Management System 3 - Agent  version 09-00

P-2A2C-6L97  Job Management Partner 1/Base  version 09-00

For Windows 7, Windows Server 2008 and Windows Vista:

P-2A12-3497  Job Management Partner 1/Automatic Job Management System 3 - View  version 09-00

For Windows Server 2003 and Windows Server 2003(x64):

P-2412-3K97  Job Management Partner 1/Automatic Job Management System 3 - Manager  version 09-00

P-2412-3397  Job Management Partner 1/Automatic Job Management System 3 - Agent  version 09-00

P-242C-6L97  Job Management Partner 1/Base  version 09-00

For Windows Server 2003, Windows Server 2003(x64), and Windows XP Professional:

P-2412-3497  Job Management Partner 1/Automatic Job Management System 3 - View  version 09-00

For HP-UX(IPF):

P-1J12-2792  Job Management Partner 1/Automatic Job Management System 3 - Manager  version 09-00

P-1J12-2992  Job Management Partner 1/Automatic Job Management System 3 - Agent  version 09-00

P-1J2C-6L92  Job Management Partner 1/Base  version 09-00

For Solaris 9(SPARC), and Solaris 10(SPARC):

P-9312-2792  Job Management Partner 1/Automatic Job Management System 3 - Manager  version 09-00

P-9312-2992  Job Management Partner 1/Automatic Job Management System 3 - Agent  version 09-00

P-9D2C-6L92  Job Management Partner 1/Base  version 09-00

For AIX:

P-1M12-2792  Job Management Partner 1/Automatic Job Management System 3 - Manager  version 09-00

P-1M12-2992  Job Management Partner 1/Automatic Job Management System 3 - Agent  version 09-00

P-1M2C-6L92  Job Management Partner 1/Base  version 09-00

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# Summary of amendments

The following table lists changes in this manual (3020-3-S07-04(E)) and product changes related to this manual.

| Changes | Location |
|---|---|
| Descriptions have been changed. For details, see Appendix C. | *Appendix C* |

In addition to the above changes, minor editorial corrections have been made.

# Preface

This manual describes how to operate Job Management Partner 1/Automatic Job Management System 3 (abbreviated hereafter to *JP1/AJS3*). Read this manual in conjunction with the manual *Job Management Partner 1/Automatic Job Management System 3 Overview*, which describes the JP1/AJS3 functions, the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*, which describes JP1/AJS3 design, and the *Job Management Partner 1/Automatic Job Management System 3 System Design (Work Tasks) Guide*.

## Intended readers

This manual is intended for:

- Those who wish to operate an automatic job execution system with JP1/AJS3 and those who design automatic job execution systems.

- Those who operate an automatic job execution system with JP1/AJS3.

## 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 Recovering Databases*

Chapter 3 describes how to back up and recover JP1/AJS3 databases.

*4. Backing Up and Restoring Jobnets*

Chapter 4 describes how to back up and restore the definition information of jobnets and the registration status of each jobnet.

*5. Monitoring Jobnets*

Chapter 5 describes the execution results of jobnets and how to monitor jobnet execution time.

*6. Monitoring Capacities*

Chapter 6 describes how to monitor capacities in JP1/AJS3.

*7. Starting and Stopping JP1/AJS3 Services*

Chapter 7 describes how to start and stop JP1/AJS3 services.

*8. Changing the Settings During Operation*

Chapter 8 describes how to change the environment and settings during JP1/AJS3 operation.

*9. Operating Methods*

Chapter 9 provides know-how for operating JP1/AJS3 efficiently.

*10. Database Maintenance*

Chapter 10 describes how to maintain the JP1/AJS3 database.

*11. Operation in a Cluster System*

Chapter 11 describes the flow of processing when JP1/AJS3 is used in a cluster system.

## Related publications

This manual is part of a related set of manuals. The manuals in the set are listed below (with the manual numbers):

**About JP1/AJS:**

- *Job Management Partner 1/Automatic Job Management System 3 Overview* (3020-3-S02(E))

- *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide* (3020-3-S03(E))

- *Job Management Partner 1/Automatic Job Management System 3 System Design (Work Tasks) Guide* (3020-3-S04(E))

- *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1* (3020-3-S05(E))

- *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2* (3020-3-S06(E))

- *Job Management Partner 1/Automatic Job Management System 3 Troubleshooting* (3020-3-S08(E))

- *Job Management Partner 1/Automatic Job Management System 3 Operator's Guide* (3020-3-S09(E))

- *Job Management Partner 1/Automatic Job Management System 3 Command*

*Reference 1* (3020-3-S10(E))

- *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2* (3020-3-S11(E))

- *Job Management Partner 1/Automatic Job Management System 3 Linkage Guide* (3020-3-S12(E))

- *Job Management Partner 1/Automatic Job Management System 3 Messages 1* (3020-3-S13(E))

- *Job Management Partner 1/Automatic Job Management System 3 Messages 2* (3020-3-S14(E))

- *Job Management Partner 1/Automatic Job Management System 3 - Definition Assistant Description, Operator's Guide and Reference* (3020-3-S17(E))

- *Job Management Partner 1/Automatic Job Management System 3 - Web Operation Assistant Description, Operator's Guide and Reference* (3020-3-S18(E))

- *Job Management Partner 1/Automatic Job Management System 3 for Enterprise Applications Description, User's Guide and Reference* (3020-3-S29(E))

- *Job Management Partner 1/Automatic Job Management System 2 for Oracle E-Business Suite Description, User's Guide and Reference* (3020-3-F27(E))

**About JP1:**

- *Job Management Partner 1/Base User's Guide* (3020-3-R71(E))

- *Job Management Partner 1/Base Messages* (3020-3-R72(E))

- *Job Management Partner 1/Base Function Reference* (3020-3-R73(E))

- *Job Management Partner 1/Integrated Management - Manager Overview and System Design Guide* (3020-3-R76(E))

- *Job Management Partner 1/Integrated Management - Manager Configuration Guide* (3020-3-R77(E))

- *Job Management Partner 1/Integrated Management - Manager Administration Guide* (3020-3-R78(E))

- *Job Management Partner 1/Integrated Management - Manager GUI Reference* (3020-3-R79(E))

- *Job Management Partner 1/Integrated Management - Manager Command and Definition File Reference* (3020-3-R80(E))

- *Job Management Partner 1/Integrated Management - Manager Messages* (3020-3-R81(E))

- *Job Management Partner 1/Script Description and Reference* (3020-3-K55(E)),

for Windows systems

- *Job Management Partner 1/File Transmission Server/FTP Description, Reference, and Operator's Guide* (3020-3-S36(E)), for Windows systems

- *Job Management Partner 1/File Transmission Server/FTP Description, Reference, and Operator's Guide* (3020-3-S37(E)), for UNIX systems

- *Job Management Partner 1/Software Distribution Description and Planning Guide* (3020-3-S79(E)), for Windows systems

- *Job Management Partner 1/Software Distribution Setup Guide* (3020-3-S80(E)), for Windows systems

- *Job Management Partner 1/Software Distribution System Administrator's Guide Volume 1* (3020-3-S81(E)), for Windows systems

- *Job Management Partner 1/Software Distribution System Administrator's Guide Volume 2* (3020-3-S82(E)), for Windows systems

- *Job Management Partner 1/Software Distribution Automatic Installation Tool Description and Reference* (3020-3-S83(E)), for Windows systems

- *Job Management Partner 1/Software Distribution Administrator Kit Description and Operator's Guide* (3020-3-S84(E))

- *Job Management Partner 1/Software Distribution Client Description and User's Guide* (3020-3-S85(E)), for UNIX systems

- *Job Management Partner 1/Software Distribution SubManager Description and Administrator's Guide* (3020-3-L42(E)), for UNIX systems

- *Job Management Partner 1/Software Distribution Manager Description and Administrator's Guide* (3000-3-841(E))

- *Job Management Partner 1/NQSEXEC System Administrator's Guide* (3020-3-F30(E))

- *Job Management Partner 1/Consolidated Management 2/Extensible SNMP Agent Description, Operator's Guide and Reference* (3020-3-L04(E)), for UNIX systems

- *Job Management Partner 1/Open Job Entry Description, User's Guide and Reference* (6190-3-365(E)), for VOS3 systems

- *Job Management Partner 1/Open Job Entry Description, User's Guide and Reference* (9000-3-365(E)), for MVS systems

- *Job Management Partner 1/Open Job Entry Description, User's Guide and Reference* (9000-3-366(E)), for OSIV/MSP systems

- *Job Management Partner 1/Open Job Entry for Midrange Computer Description and User's Guide* (9000-3-367(E))

## Conventions: Abbreviations

This manual uses the following abbreviations for product names:

| Abbreviation | | Full name or meaning |
|---|---|---|
| JP1/AJS3 | JP1/AJS3 - Manager | Job Management Partner 1/Automatic Job Management System 3 - Manager |
| | JP1/AJS3 - Agent | Job Management Partner 1/Automatic Job Management System 3 - Agent |
| | JP1/AJS3 - View | Job Management Partner 1/Automatic Job Management System 3 - View |
| JP1/AJS2 | JP1/AJS2 - Manager | Job Management Partner 1/Automatic Job Management System 2 - Manager |
| | JP1/AJS2 - Agent | Job Management Partner 1/Automatic Job Management System 2 - Agent |
| | JP1/AJS2 - View | Job Management Partner 1/Automatic Job Management System 2 - View |
| JP1/AJS2 - Advanced Manager | | Job Management Partner 1/Automatic Job Management System 2 - Advanced Manager[#] |
| JP1/AJS2 - Client Toolkit | | Job Management Partner 1/Automatic Job Management System 2 - Client Toolkit[#] |
| JP1/AJS3 - Definition Assistant | | Job Management Partner 1/Automatic Job Management System 3 - Definition Assistant |
| JP1/AJS3 - Web Operation Assistant | | Job Management Partner 1/Automatic Job Management System 3 - Web Operation Assistant |
| JP1/AJS3 for Enterprise Applications | | Job Management Partner 1/Automatic Job Management System 3 for Enterprise Applications |
| JP1/AJS2 for Oracle E-Business Suite | | Job Management Partner 1/Automatic Job Management System 2 for Oracle E-Business Suite |
| NNM | HP NNM | HP Network Node Manager Software version 7.5 or earlier |
| | | HP Network Node Manager Software Starter Edition version 7.5 or earlier |
| JP1/FTP | | Job Management Partner 1/File Transmission Server/FTP |

| Abbreviation | | Full name or meaning |
|---|---|---|
| JP1/IM | JP1/IM - Manager | Job Management Partner 1/Integrated Management - Manager |
| | JP1/IM - View | Job Management Partner 1/Integrated Management - View |
| | JP1/IM - Central Console | Job Management Partner 1/Integrated Manager - Central Console[#] |
| | JP1/IM - Central Scope | Job Management Partner 1/Integrated Manager - Central Scope[#] |
| JP1/OJE | | Job Management Partner 1/Open Job Entry |
| JP1/OJE for Midrange Computer | | Job Management Partner 1/Open Job Entry for Midrange Computer |
| JP1/SES | | Job Management Partner 1/System Event Service |
| JP1/OJE for VOS3 | | VOS3 Job Management Partner 1/Open Job Entry |
| MSCS | | Microsoft(R) Cluster Server |
| 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 |
| IE | | Microsoft(R) Internet Explorer(R) |
| Microsoft Mail | | Microsoft(R) Mail |
| MSMQ | | Microsoft(R) Message Queue Server |
| Outlook | Outlook 2000 | Microsoft(R) Outlook(R) 2000 |
| | Outlook 2002 | Microsoft(R) Outlook(R) 2002 |
| | Outlook 2003 | Microsoft(R) Outlook(R) 2003 |
| | Outlook 2007 | Microsoft(R) Outlook(R) 2007 |
| | Outlook Express | Microsoft(R) Outlook(R) Express |

| Abbreviation | | Full name or meaning |
| --- | --- | --- |
| Microsoft SQL Server | | Microsoft(R) SQL Server |
| | | Microsoft(R) SQL Server Enterprise Edition |
| Windows 7 | | Microsoft(R) Windows(R) 7 Enterprise |
| | | Microsoft(R) Windows(R) 7 Professional |
| | | Microsoft(R) Windows(R) 7 Ultimate |
| Windows Server 2003 | Windows Server 2003 | Microsoft(R) Windows Server(R) 2003, Enterprise Edition Operating System |
| | | Microsoft(R) Windows Server(R) 2003, Standard Edition Operating System |
| | Windows Server 2003 (x64) | Microsoft(R) Windows Server(R) 2003, Enterprise x64 Edition |
| | | Microsoft(R) Windows Server(R) 2003, Standard x64 Edition |
| Windows Server 2008 | | Microsoft(R) Windows Server(R) 2008 Datacenter |
| | | Microsoft(R) Windows Server(R) 2008 Enterprise |
| | | Microsoft(R) Windows Server(R) 2008 Standard |
| Windows Vista | | Microsoft(R) Windows Vista(R) Business |
| | | Microsoft(R) Windows Vista(R) Enterprise |
| | | Microsoft(R) Windows Vista(R) Ultimate |
| Windows XP Professional | | Microsoft(R) Windows(R) XP Professional Operating System |
| AIX | | AIX 5L 5.3 |
| | | AIX V6.1 |
| HP-UX | HP-UX (IPF) | HP-UX 11i V2(IPF) |
| | | HP-UX 11i V3(IPF) |
| Solaris | | Solaris 9(SPARC) |
| | | Solaris 10(SPARC) |

| Abbreviation | Full name or meaning |
|---|---|
| SAP BW | SAP Business Information Warehouse |
| SAP R/3 | SAP R/3(R) |

#: Version 7

- In this manual, *JP1/AJS* is sometimes used generically, referring to JP1/AJS3 and JP1/AJS2.

- *Windows* is sometimes used generically, referring to Windows 7, Windows Server 2008, Windows Vista, Windows Server 2003, and Windows XP Professional.

- *UNIX* is sometimes used generically, referring to HP-UX, Solaris, and AIX.

This manual also uses the following abbreviations:

| Abbreviation | Full name or meaning |
|---|---|
| ACL | Access Control List |
| DB | Database |
| DBMS | Database Management System |
| DNS | Domain Name System |
| EUC | Extended UNIX Code |
| FQDN | Fully Qualified Domain Name |
| FTP | File Transfer Protocol |
| GUI | Graphical User Interface |
| IPF | Itanium(R) Processor Family |
| ISAM | Indexed Sequential Access Method |
| LAN | Local Area Network |
| MAPI | Messaging Application Programming Interface |
| MIB | Management Information Base |
| MIME | Multipurpose Internet Mail Extensions |
| NAT | Network Address Translator |
| NFS | Network File System |
| NIC | Network Interface Card |

| Abbreviation | Full name or meaning |
|---|---|
| OS | Operating System |
| RDB | Relational Database |
| SNMP | Simple Network Management Protocol |
| SMTP | Simple Mail Transfer Protocol |
| SUP | Service Using Program |
| TCP/IP | Transmission Control Protocol/Internet Protocol |
| UAC | User Account Control |
| UNC | Universal Naming Convention |
| WAN | Wide Area Network |
| WOW64 | Windows On Windows 64 |
| WSDL | Web Services Description Language |

## JP1 program reorganization in version 8

The following changes have been made to the JP1 product suite in version 8:

- JP1/AJS2 - Advanced Manager has been eliminated, and the database provided by JP1/AJS2 - Advanced Manager has been integrated into JP1/AJS2 - Manager in JP1 Version 8.

- JP1/AJS2 - Client Toolkit has been eliminated.

- JP1/AJS2 - View is provided only in the Windows version.

## Conventions: Diagrams

This manual uses the following conventions in diagrams:

● Computer (terminal)　　●Computer　　●Printer　　●Network
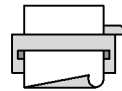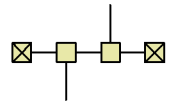
● Communication lines　　●Data flow　　●Control flow　　●Screen　　●Program
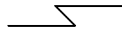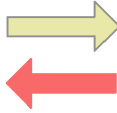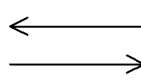
●Jobnet　　●Job　　●Event job　　●Judgment job　　●OR job

●Job group　　●Planning group　　●Jobnet connector　　●AJS3 unit monitoring object　　●Business scope

●Process or operation flow

# Conventions: Fonts and symbols

Font and symbol conventions are classified as:

- General font conventions
- Conventions in syntax explanations

These conventions are described below.

**General font conventions**

The following table lists the general font conventions:

| Font | Convention |
|------|------------|
| **Bold** | Bold type indicates text on a window, other than the window title. Such text includes menus, menu options, buttons, radio box options, or explanatory labels. For example, bold is used in sentences such as the following:<br>• From the **File** menu, choose **Open**.<br>• Click the **Cancel** button.<br>• In the **Enter name** entry box, type your name. |
| *Italics* | Italics are used to indicate a placeholder for some actual text provided by the user or system. Italics are also used for emphasis. For example:<br>• Write the command as follows:<br>  copy *source-file target-file*<br>• Do *not* delete the configuration file. |
| `Code font` | A code font indicates text that the user enters without change, or text (such as messages) output by the system. For example:<br>• At the prompt, enter `dir`.<br>• Use the `send` command to send mail.<br>• The following message is displayed:<br>  `The password is incorrect.` |

Examples of coding and messages appear as follows (although there may be some exceptions, such as when coding is included in a diagram):

```
MakeDatabase
...
StoreDatabase temp DB32
```

In examples of coding, an ellipsis (...) indicates that one or more lines of coding are not shown for purposes of brevity.

**Conventions in syntax explanations**

Syntax definitions appear as follows:

**S**tore**D**atabase [temp|<u>perm</u>] (*database-name ...*)

The following table lists the conventions used in syntax explanations:

| Example font or symbol | Convention |
|------------------------|------------|
| `StoreDatabase` | Code-font characters must be entered exactly as shown. |
| *database-name* | This font style marks a placeholder that indicates where appropriate characters are to be entered in an actual command. |
| **SD** | Bold code-font characters indicate the abbreviation for a command. |
| <u>Perm</u> | Underlined characters indicate the default value. |
| [ ] | Square brackets enclose an item or set of items whose specification is optional. |

| Example font or symbol | Convention |
|---|---|
| \| | Only one of the options separated by a vertical bar can be specified at the same time. |
| ... | An ellipsis (...) indicates that the item or items enclosed in ( ) or [ ] immediately preceding the ellipsis may be specified as many times as necessary. |
| () | Parentheses indicate the range of items to which the vertical bar (\|) or ellipsis (...) is applicable. |

**Conventions for mathematical expressions**

This manual uses the following symbols in mathematical expressions:

| Symbol | Meaning |
|---|---|
| x | Multiplication sign |
| / | Division sign |
| ↑ ↑ | The calculation result is rounded up to the next whole number. Example: The result of ↑ 34 / 3 ↑ is 12. |
| ~ (tilde) | The item shown before this symbol must be specified in accordance with the conventions shown for angle brackets, double parentheses, and double angle brackets (below). |
| < > (angle brackets) | Indicates the characters and lexical elements that can be specified. <characters> One or more Kanji characters, katakana characters, upper-case alphabetic characters, lower-case alphabetic characters, or numeric characters <numeric> 0, 1, 2, 3, 4, 5, 6, 7, 8, or 9 <alphabetic character> A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, \, #, or @ <alphanumeric character> Alphabetic or numeric character <symbolic name> No more than eight alphanumeric characters beginning with an alphabetic character <unsigned integer> One or more numeric characters <hexadecimal character> 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, or F <file name> A system-determined name assigned to a file <path> The directories contained in the path, with each name separated by a forward slash (/) or backslash (\). The path notation is OS-dependent. |

| Symbol | Meaning |
|---|---|
| (( )) (double parentheses) | Indicates the range of specifiable values. |
| << >> (double angle brackets) | Indicates the default assumed by the system when a value is unspecified. Example: If you do not specify *days-to-keep-form* ~<numeric> ((0 to 365)) <<365>>, 365 is assumed as the number of days to keep the form. |
| MAX | Choose the largest of the calculation results. Example: The result of MAX (3 x 6, 4 + 7) is 18. |

## Conventions: KB, MB, GB, and TB

This manual uses the following conventions:

- 1 KB (kilobyte) is 1,024 bytes.
- 1 MB (megabyte) is $1,024^2$ bytes.
- 1 GB (gigabyte) is $1,024^3$ bytes.
- 1 TB (terabyte) is $1,024^4$ bytes.

## Conventions: Meaning of "directory" and "folder"

As a general rule, Windows folder names are used in this manual if they are identical to UNIX directory names.

## Conventions: Meaning of "member of the Administrators group"

The term *member of the Administrators group* in this manual refers to a user who is a member of the Administrators group on the local PC only. The privileges of local users, domain users, and Active Directory users are no different as long as these users are members of the Administrators group on the local PC.

## Conventions: Version numbers

The version numbers of Hitachi program products are usually written as two sets of two digits each, separated by a hyphen. For example:

- Version 1.00 (or 1.0) is written as 01-00.
- Version 2.05 is written as 02-05.
- Version 2.50 (or 2.5) is written as 02-50.
- Version 12.25 is written as 12-25.

The version number might be shown on the spine of a manual as *Ver. 2.00,* but the same version number would be written in the program as *02-00.*

## Default installation folders of JP1/AJS3 for Windows

The default installation folders of JP1/AJS3 for Windows are as follows:

Default installation folders of JP1/AJS3 - Manager:

*system-drive*`\Program Files`[1]`\HITACHI\JP1AJS2`

and

*system-drive*`\Program Files`[1]`\HITACHI\JP1AJS2CM`

Default installation folder of JP1/AJS3 - Agent:

*system-drive*`\Program Files`[1]`\HITACHI\JP1AJS2`

Default installation folder of JP1/AJS3 - View:

*system-drive*`\Program Files`[2]`\HITACHI\JP1AJS2V`

[1]

For 64-bit versions of Windows Server 2008 and Windows Server 2003 (x64), replace `Program Files` with `Program Files (x86)`.

[2]

For 64-bit versions of Windows 7, Windows Server 2008, Windows Vista, and Windows Server 2003 (x64), replace `Program Files` with `Program Files (x86)`.

## Online manual

JP1/AJS3 - View comes with an online manual that you can read in either of the following browsers:

- Microsoft Internet Explorer version 6.0 or later
- Windows Internet Explorer Version 7.0 or later

The online manual has the same contents as the following manuals:

- *Job Management Partner 1/Automatic Job Management System 3 Overview*
- *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*
- *Job Management Partner 1/Automatic Job Management System 3 System Design (Work Tasks) Guide*
- *Job Management Partner 1/Automatic Job Management System 3 Configuration*

*Guide 1*

- *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

- *Job Management Partner 1/Automatic Job Management System 3 Administration Guide*

- *Job Management Partner 1/Automatic Job Management System 3 Troubleshooting*

- *Job Management Partner 1/Automatic Job Management System 3 Operator's Guide*

- *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*

- *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*

- *Job Management Partner 1/Automatic Job Management System 3 Linkage Guide*

- *Job Management Partner 1/Automatic Job Management System 3 Messages 1*

- *Job Management Partner 1/Automatic Job Management System 3 Messages 2*

In JP1/AJS3 - View, you can view the manual by choosing **Help** and then **Contents**. You can also press the **F1** key to view the manual contents. Your Web browser must be associated with a file that has the extension htm; otherwise, the online manual will not be displayed correctly. If this happens, associate the htm file with the Web browser.

Cautionary note

Depending on the OS settings, the online manual might appear in the active window of the browser when you launch the manual from the **Start** menu.

## Organization of JP1/AJS3 manuals and choosing the right manuals

There are fourteen JP1/AJS3 manuals. The following table summarizes their contents.

Note that *Job Management Partner 1/Automatic Job Management System 3* is not listed in the table.

| No. | Manual | Contents |
|-----|--------|----------|
| 1 | *Overview* (3020-3-S02(E)) | • JP1/AJS3 features<br>• Description of functions |
| 2 | *System Design (Configuration) Guide* (3020-3-S03(E)) | • Information that must be considered when designing a system<br>• Cautionary notes on designing a system |

| No. | Manual | Contents |
|-----|--------|----------|
| 3 | *System Design (Work Tasks) Guide* (3020-3-S04(E)) | • Information that must be considered when constructing jobs and jobnets<br>• Cautionary notes on designing jobs and jobnets |
| 4 | *Configuration Guide 1* (3020-3-S05(E)) | • Installation and setup procedures<br>• Environment setup procedure by operation type |
| 5 | *Configuration Guide 2* (3020-3-S06(E)) | • Description of environment setting parameters |
| 6 | *Administration Guide* (3020-3-S07(E)) | • Information required to operate a system<br>• Know-how useful for JP1/AJS3 operation |
| 7 | *Troubleshooting* (3020-3-S08(E)) | • How to troubleshoot errors<br>• Data required when an error occurs |
| 8 | *Operator's Guide* (3020-3-S09(E)) | • How to operate JP1/AJS3 - View<br>• How to operate JP1/AJS3 Console View<br>• Description of windows and dialog boxes |
| 9 | *Command Reference 1* (3020-3-S10(E)) | • Command syntax |
| 10 | *Command Reference 2* (3020-3-S11(E)) | • Syntax of commands used for setup and special operations<br>• Syntax and coding examples of information definition files |
| 11 | *Linkage Guide* (3020-3-S12(E)) | • Description of functions that can be used when linked with other products and the setup method |
| 12 | *Messages 1* (3020-3-S13(E)) | • Messages output by JP1/AJS3 (messages beginning with KAVC to KAVT) |
| 13 | *Messages 2* (3020-3-S14(E)) | • Messages output by JP1/AJS3 (messages beginning with KAVU to KNAD) |

Use the following illustration and table as a guide to determine the manuals you need to read.

Organization of JP1/AJS3 manuals

**Planning**

Overview

Linkage with other products
- Linkage Guide

↓

**Design**

System Design (Configuration) Guide

System Design (Work Tasks) Guide

↓

**Configuration**

Configuration Guide 1

Configuration Guide 2

↓

**Operation**

Administration Guide

Troubleshooting

↔

**Reference**

Operator's Guide

Command Reference 1

Command Reference 2

Messages 1

Messages 2

| Purpose | Required reading | Read as necessary |
|---|---|---|
| To learn about JP1/AJS3's functionalities | • *Overview* (3020-3-S02(E)) | • *Linkage Guide* (3020-3-S12(E)) |
| To configure a system (including installation and setup) that automatically runs jobs | • *System Design (Configuration) Guide* (3020-3-S03(E))<br>• *Configuration Guide 1* (3020-3-S05(E)) | • *Configuration Guide 2* (3020-3-S06(E))<br>• *Linkage Guide* (3020-3-S12(E)) |
| To design work tasks that will be automated (including job definitions and schedule definitions) | • *System Design (Work Tasks) Guide* (3020-3-S04(E)) | • *Operator's Guide* (3020-3-S09(E)) |

| Purpose | Required reading | Read as necessary |
|---|---|---|
| To learn about monitoring and maintaining a running system. | • *Administration Guide* (3020-3-S07(E)) | • *Troubleshooting* (3020-3-S08(E))<br>• *Messages 1* (3020-3-S13(E))<br>• *Messages 2* (3020-3-S14(E)) |
| To learn about what action to take for problems that occur during operation. | • *Troubleshooting* (3020-3-S08(E)) | • *Messages 1* (3020-3-S13(E))<br>• *Messages 2* (3020-3-S14(E)) |
| To learn about operating JP1/AJS3 | • *Operator's Guide* (3020-3-S09(E)) | • *Command Reference 1* (3020-3-S10(E))<br>• *Command Reference 2* (3020-3-S11(E)) |

## Regular expressions available in JP1/AJS3

Regular expressions can be used in some items in dialog boxes and commands. For details about regular expressions in Windows, see the *Job Management Partner 1/Base User's Guide*. For details about regular expressions in UNIX, see your UNIX documentation.

The regular expressions that you can use when executing an event job on a Windows host depend on the JP1/Base settings. For details on setting regular expressions for event job execution, see the explanation about extending the available regular expressions in the *Job Management Partner 1/Base User's Guide*.

Searching may take a long time if you often use the regular expression .* (which means match any character or characters). In long messages, use .* only where necessary. In UNIX, you can use [^ ]* (repeat characters other than space characters) instead of .* when you want to find a match other than space characters. Using [^ ]* reduces the search time.

## About NNM linkage

JP1/AJS3 supports linkage with the following products:

- HP Network Node Manager Software version 6 or earlier

- HP Network Node Manager Starter Edition Software version 7.5 or earlier

In this manual, these products are indicated as *HP NNM*.

Note that linkage with the following products is not supported:

- HP Network Node Manager i Software v8.10

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## 11. Operation in a Cluster System      243

# Chapter

# 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
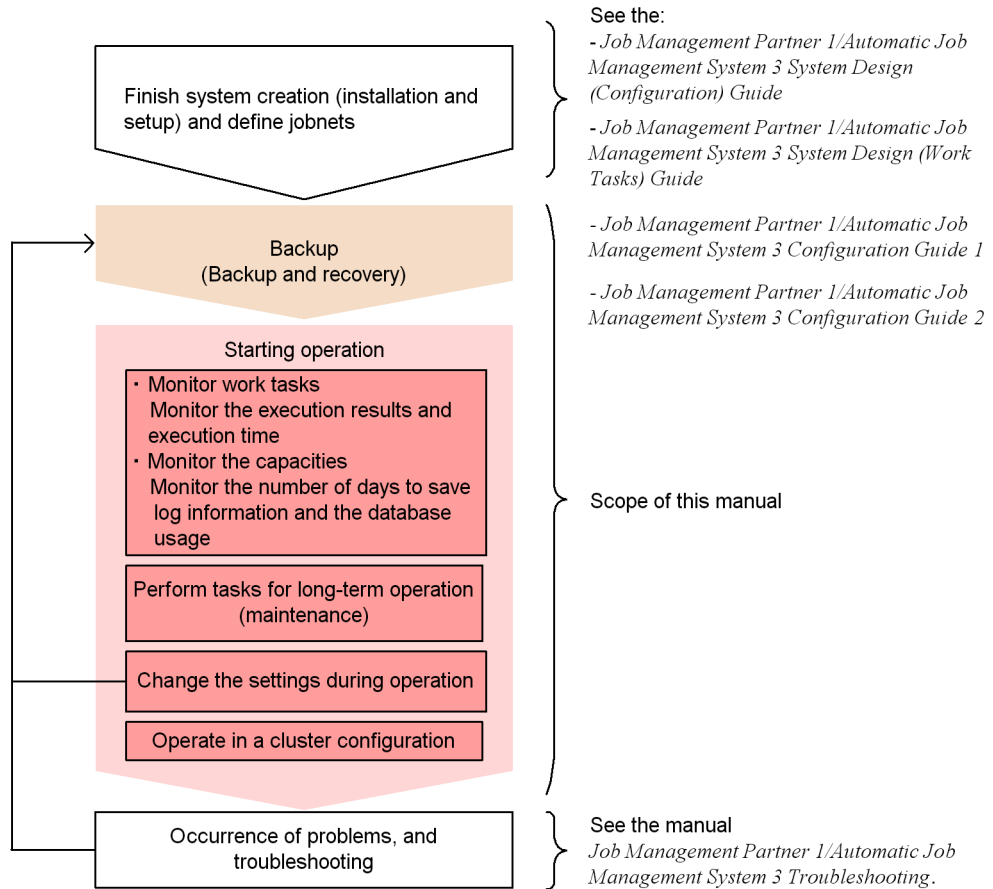
## 1.2 Operation tasks performed during operation

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) | *5. Monitoring Jobnets* |
| | Changing the definitions during operation<br>• Suppressing execution of jobs and jobnets<br>• Changing a jobnet definition during operation | *8. Changing the Settings During Operation* |
| Operation tasks related to system operation | Backup and recovery (for continuous operation)<br>• Backing up the setup information of a system that uses JP1/AJS3<br>• Backing up and restoring databases<br>• Backing up and restoring jobnets | *2. Backup and Recovery*<br>*3. Backing Up and Recovering Databases*<br>*4. Backing Up and Restoring Jobnets* |
| | Capacity monitoring<br>• Monitoring the log file sizes and logged information<br>• Monitoring the database usage | *6. Monitoring Capacities* |
| | Starting and stopping services | *7. Starting and Stopping JP1/AJS3 Services* |
| | Changing the settings during operation<br>• Changing the job execution environment (execution agent information)<br>• Changing a host name and IP address | *8. Changing the Settings During Operation* |
| | Performing tasks for long-term operation (maintenance) | *10. Database Maintenance* |
| | Operation in a cluster configuration (for higher availability) | *11. Operation in a Cluster System* |

| Operation tasks performed during operation | | Section in the manual |
|---|---|---|
| Operational know-how | Providing know-how for JP1/AJS3 operation | *9. Operating Methods* |

4

| Operational know-how | Providing know-how for JP1/AJS3 operation | *9. Operating Methods* |

**Chapter**

# 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).

*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 *Job Management Partner 1/Base User's Guide*. | 2.2.1 | 2.3.2 |
| JP1/AJS3 - Manager | Files used by JP1/AJS3 | 2.2.2(1) | 2.3.3(2) |
| | Execution-agent information | 2.2.2(2) | 2.3.3(7) |
| | Execution environment definition for QUEUE jobs and submitted jobs | 2.2.2(3) | 2.3.3(5) |
| | Definition of units for other than a root job group | 2.2.2(4)(a) | 2.3.3(8)(a) |
| | Information for a root job group | 2.2.2(4)(b) | 2.3.3(8)(b) |
| | Calendar information for a root job group | 2.2.2(4)(c) | 2.3.3(8)(c) |
| | Setup information for JP1/AJS3 Console | 2.2.2(5) | 2.3.3(9) |
| | Execution registration status of a root jobnet | 4.4.4 | 4.4.5 |
| JP1/AJS3 - Agent | Files used in JP1/AJS3 | 2.2.3(1) | 2.3.4(2) |
| JP1/AJS3 - View | Environment settings files | 2.2.4(1) | 2.3.5(2) |
| | Custom job icons | 2.2.4(2) | 2.3.5(3) |
| | Icon image folders | 2.2.4(3) | 2.3.5(4) |
| | Icon image files and background image files for JP1/AJS3 Console View | 2.2.4(4) | 2.3.5(6) |

| Setup information | Detailed information | Procedure described in the manual | |
|---|---|---|---|
| | | For backup, see: | For recovery, see |
| Other setup information | Service account[#1] | 2.2.5(1)(a) | 2.3.6(1)(a) |
| | Login scripts[#2] | 2.2.5(2)(a) | 2.3.6(2)(a) |
| | Adjustment values of kernel parameters[#2] | 2.2.5(2)(b) | 2.3.6(2)(b) |
| | Commands that collect troubleshooting data | 2.2.5(1)(b) 2.2.5(2)(c) | 2.3.6(1)(b) and 2.3.6(2)(c) |
| | Tools for supporting cluster software | 2.2.5(1)(c) 2.2.5(2)(d) | 2.3.6(1)(c) and 2.3.6(2)(d) |
| | User-created tools for linking mail systems[#2] | 2.2.5(2)(e) | 2.3.6(2)(e) |

#1

Only in Windows.

#2

Only in UNIX.

## 2.1.1  Overview of backup

The following provides an overview of backup.

### (1)  Backup procedure

The following figure shows the backup procedure.

7

*Figure 2-1:* Backup procedure
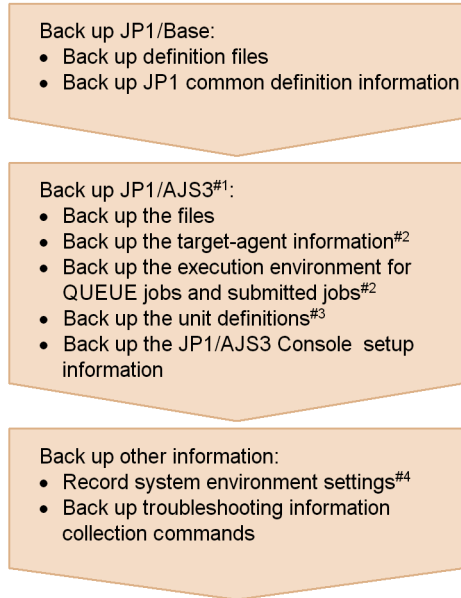
Back up JP1/Base:
- Back up definition files
- Back up JP1 common definition information

Back up JP1/AJS3[#1]:
- Back up the files
- Back up the target-agent information[#2]
- Back up the execution environment for QUEUE jobs and submitted jobs[#2]
- Back up the unit definitions[#3]
- Back up the JP1/AJS3 Console  setup information

Back up other information:
- Record system environment settings[#4]
- Back up troubleshooting information collection commands

#1 For JP1/AJS3 - Agent, back up only the files.
#2 Back up this information as required only if it has been created.
#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

Executing host

Standby host

Back up JP1/Base:
- Back up the definition files
- Back up the JP1 common definition information

Back up JP1/AJS3#1:
- Back up the files
- Back up the target-agent information#2
- Back up the execution environment for QUEUE jobs and submitted jobs#2
- Back up the unit definitions#3
- Back up the JP1/AJS3 Console  setup information

Back up other information:
- Back up the system environment settings#4
- Back up the commands that collect troubleshooting data
- Back up the cluster-capable tools#2

Back up JP1/Base:
- Back up the definition files
- Back up the JP1 common definition information

Back up JP1/AJS3#1:
- Back up the files
- Back up the target-agent information#2
- Back up the execution environment for QUEUE jobs and submitted jobs#2
- Back up the unit definitions#3
- Back up the JP1/AJS3 Console  setup information

Back up other information:
- Back up the system environment settings#4
- Back up the commands that collect troubleshooting data
- Back up the cluster-capable tools#2

#1 For JP1/AJS3 - Agent, back up only the files.
#2 Back up this information as required only if it has been created.
#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

Executing host                           Standby host

Back up JP1/Base:
- Back up definition files
- Back up JP1 common definition information[1]

Back up JP1/AJS3[2]:
- Back up the files
- Back up the target-agent information[3]
- Back up the execution environment for QUEUE jobs and submitted jobs[3]
- Back up the unit definitions[4]
- Back up the JP1/AJS3 Console setup information

Back up other information:
- Record system environment settings[5]
- Back up troubleshooting information collection commands
- Back up cluster-capable tools[3]

#1 When backing up JP1 common definition information, back up physical host (JP1_DEFAULT) definition information in addition to logical host definition information.
#2 For JP1/AJS3 - Agent, back up only the files.
#3 Back up this information as required only if it has been created.
#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).
When mail linkage, message queue linkage, or HP NNM linkage is used, set it up as required to link again.

## 2.1.2 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
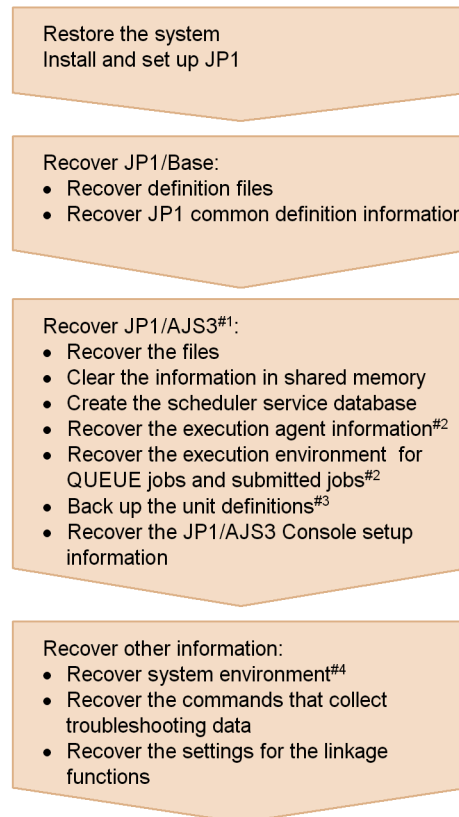
Restore the system
Install and set up JP1

Recover JP1/Base:
- Recover definition files
- Recover JP1 common definition information

Recover JP1/AJS3[#1]:
- Recover the files
- Clear the information in shared memory
- Create the scheduler service database
- Recover the execution agent information[#2]
- Recover the execution environment  for QUEUE jobs and submitted jobs[#2]
- Back up the unit definitions[#3]
- Recover the JP1/AJS3 Console setup information

Recover other information:
- Recover system environment[#4]
- Recover the commands that collect troubleshooting data
- Recover the settings for the linkage functions

#1 For JP1/AJS3 - Agent, recover only the files.
#2 Recover this information as required only if it has been created.
#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).
   When mail linkage, message queue linkage, or HP NNM linkage is used, set it up as required to link again.

### (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



Executing host

Standby host

Restore the system
Install and set up JP1

Restore the system
Install and set up JP1

Recover JP1/Base:
- Recover the definition files
- Recover the JP1 common definition information

Recover JP1/Base:
- Recover the definition files
- Recover the JP1 common definition information

Recover JP1/AJS3[#1]:
- Recover the files
- Clear the information in shared memory
- Create the scheduler service database
- Recover the execution agent information[#2]
- Recover the execution environment  for QUEUE jobs and submitted jobs[#2]
- Back up the unit definitions[#3]
- Recover the JP1/AJS3 Console setup information

Recover JP1/AJS3[#1]:
- Recover the files
- Clear the information in shared memory
- Create the scheduler service database
- Recover the execution agent information[#2]
- Recover the execution environment  for QUEUE jobs and submitted jobs[#2]
- Back up the unit definitions[#3]
- Recover the JP1/AJS3 Console setup information

Recover other information:
- Recover the system environment[#4]
- Recover the commands that collect troubleshooting data
- Recover the cluster-capable tools[#2]
- Recover the settings for the linkage functions

Recover other information:
- Recover the system environment[#4]
- Recover the commands that collect troubleshooting data
- Recover the cluster-capable tools[#2]
- Recover the settings for the linkage functions

#1 For JP1/AJS3 - Agent, recover only the files.
#2 Recover this information as required only if it has been created.
#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

Executing host

Standby host

Restore the system
Install and set up JP1
Recover the physical host environment

Restore the system:
Install and set up JP1
Recover the physical host environment

Recover JP1/Base:
- Recover definition files
- Recover JP1 common definition information[#1]

Recover JP1/Base:
- Recover JP1 common definition information[#1]

Recover JP1/AJS3[#2]:
- Recover the files
- Clear the information in shared memory
- Create the scheduler service database
- Recover the execution agent information[#3]
- Recover the execution environment  for QUEUE jobs and submitted jobs[#3]
- Back up the unit definitions[#4]
- Recover the JP1/AJS3 Console setup information

Recover other information:
- Recover system environment[#5]
- Recover troubleshooting information collection commands
- Recover cluster-capable tools[#3]

#1 For JP1 common definition information, recover the physical host (JP1_DEFAULT) definition information first and then the logical host definition information.
#2 For JP1/AJS3 - Agent, recover only the files.
#3 Recover this information as required only if it has been created.
#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).
When mail linkage, message queue linkage, or HP NNM linkage is used, set it up as required to link again.

## 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, and JP1/AJS3 - View procedures. Combine the procedures according to the products that will be used. When you back up JP1/AJS3 - Manager and JP1/ AJS3 - Agent, you must also back up JP1/Base.

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 member of the Administrators group of the OS (in Windows) or a user with superuser permissions (in UNIX) must perform backup.

### 2.2.1 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 *Job Management Partner 1/Base User's Guide*.

### 2.2.2 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 submitted jobs (only if QUEUE jobs and submitted jobs are used)

- Backing up the unit definition

- Backing up the JP1/AJS3 Console setup information (only when the JP1/AJS3 Console functionality is used)

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 |
|---|---|
| *JP1/AJS3-folder*[#1]\jp1ajs_env.conf | JP1/AJS3 environment definition file |
| *JP1/AJS3-folder*[#1]\jp1ajs_spmd.conf | JP1/AJS3 process management definition file |
| *JP1/AJS3-folder*[#1]\jp1ajs_service_0700.conf | Extended startup process definition file |
| *JP1/AJS3-folder*[#1]\jp1ajs_spmd_pre.conf[#2] | JP1/AJS3 pre-start process definition file |
| *JP1/AJS3-folder*[#1]\Agent.conf | Agent management control settings file |
| *JP1/AJS3-folder*[#1]\Profiles[#3] | Folder containing the customization information for windows and dialog boxes used in JP1/AJS3 - View |
| *JP1/AJS3-folder*[#1]\jpqsetup.conf[#4] | Configuration definition file for the execution environment for QUEUE jobs and submitted jobs |
| *JP1/AJS3-Manager-installation-folder*\conf\jpoov.conf[#2] | Definition file for linkage with HP NNM |

#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*\jp1ajs2\conf

#2

This file exists only if the function is used.

#3

If you are using the common user profile, back up the entire folder.

15

#4

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

### (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]/jp1ajs_env.conf | JP1/AJS3 environment definition file |
| *JP1/AJS3-directory*[1]/jp1ajs_spmd.conf | JP1/AJS3 process management definition file |
| *JP1/AJS3-directory*[1]/jp1ajs_service_0700.conf | Extended startup process definition file |
| *JP1/AJS3-directory*[1]/jp1ajs_spmd_pre.conf[2] | JP1/AJS3 pre-start process definition file |
| *JP1/AJS3-directory*[1]/Agent.conf | Agent management control settings file |
| *JP1/AJS3-directory*[1]/Schedule.conf | Scheduler service environment settings file |
| *JP1/AJS3-directory*[1]/EVAction.conf | Definition file for the event and action execution environment |
| *JP1/AJS3-directory*[1]/profiles[4] | Directory containing customization information for windows and dialog boxes used in JP1/AJS3 - View |
| *JP1/AJS3-directory*[1]/Queue.conf | Execution environment settings file for QUEUE jobs and submitted jobs |
| *JP1/AJS3-directory*[1]/jpqsetup.conf[3] | Configuration definition file for the execution environment for QUEUE jobs and submitted jobs |
| *JP1/AJS3-directory*[1]/Queueless.conf | Queueless job execution environment settings file |
| /etc/opt/jp1ajs2/jajs_start | Automatic start script[5] |
| /etc/opt/jp1ajs2/jajs_stop | Automatic stop script[5] |
| /etc/opt/jp1ajs2/jajs_start.cluster | Logical host start script[5] |
| /etc/opt/jp1ajs2/jajs_stop.cluster | Logical host stop script[5] |

| File name | Description |
|---|---|
| /etc/opt/jp1ajs2/jajs_killall.cluster | Logical host forced stop script[#5] |
| /etc/opt/jp1ajs2/conf/jpoov.conf[#2] | Definition file for linkage with HP NNM |

#1

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

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

#2

This file exists only if the function is used.

#3

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

#4

If you are using the common user profile, back up each directory.

#5

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 manager-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 submitted jobs

If a definition file has been used for the `jpqimport` command that creates the execution environment for QUEUE jobs and submitted 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 submitted jobs, copy the definition to the `jpqsetup.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 submitted jobs.

   `jpqexport -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 `jpqsetup.conf` as the file to be set by the `jpqimport` 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 `jpqsetup.conf`.

   The definition of the execution environment for QUEUE jobs and submitted jobs is output to the file specified by *file-name* in step 1. Copy the contents of the output file to `jpqsetup.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 *4. 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
```

To back up the definition of many units, consider splitting the unit definition by job group or jobnet. 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 *2.2 Setting up the scheduler service environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

**(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

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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.

### (5) Backing up the JP1/AJS3 Console setup information

When the JP1/AJS3 Console functionality is used, back up the JP1/AJS3 Console setup information by copying it or by using another appropriate method.

Cautionary note

To back up the JP1/AJS3 Console data directory, be sure to stop the JP1/AJS3 Console Manager service first.

#### (a) In Windows

The following table lists the files you need to back up in Windows.

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

| File name | Description |
|-----------|-------------|
| *JP1/AJS3-Console-folder*[#]`\database` | JP1/AJS3 Console data directory |
| *JP1/AJS3-Console-installation-folder*`\conf\ajs2cm.conf` | JP1/AJS3 Console Manager environment settings file |
| *JP1/AJS3-Console-installation-folder*`\conf\ajs2ca.conf` | JP1/AJS3 Console Agent environment settings file |

\#

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

- For a physical host

  In Windows Server 2008:

  `%ALLUSERSPROFILE%\HITACHI\JP1\JP1_DEFAULT\JP1AJS2`

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

  In Windows Server 2003:

  *JP1/AJS3-Console-installation-folder*

- For a logical host

  *shared-folder*`\jp1ajs2cm`

**(b) In UNIX**

The following table lists the files you need to back up in UNIX.

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

| File name | Description |
|---|---|
| *JP1/AJS3-Console-directory*[1]`/database` | JP1/AJS3 Console data directory |
| `/etc/opt/jp1ajs2cm/conf/ajs2cm.conf` | JP1/AJS3 Console Manager environment settings file |
| `/etc/opt/jp1ajs2cm/jajscm_start` | Script for automatically starting JP1/AJS3 Console Manager[2] |
| `/etc/opt/jp1ajs2cm/jajscm_stop` | Script for automatically stopping JP1/AJS3 Console Manager[2] |
| `/etc/opt/jp1ajs2/conf/ajs2ca.conf` | JP1/AJS3 Console Agent environment settings file |
| `/etc/opt/jp1ajs2/jajsca_start` | Script for automatically starting JP1/AJS3 Console Agent[2] |
| `/etc/opt/jp1ajs2/jajsca_stop` | Script for automatically stopping JP1/AJS3 Console Agent[2] |

#1

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

- For a physical host: `/var/opt/jp1ajs2cm`
- For a logical host: *shared-directory*`/jp1ajs2cm`

#2

Back up the automatic start and stop scripts as required.

## 2.2.3 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  2-6:*  JP1/AJS3 - Agent files to be backed up (in Windows)

| File name | Description |
|---|---|
| *JP1/AJS3-folder*[#1]\jp1ajs_env.conf | JP1/AJS3 environment definition file |
| *JP1/AJS3-folder*[#1]\jp1ajs_spmd.conf | JP1/AJS3 process management definition file |
| *JP1/AJS3-folder*[#1]\jp1ajs_service_0700.conf | Extended startup process definition file |
| *JP1/AJS3-Agent-installation-folder*\conf\jpoov.conf[#2] | Definition file for linkage with HP NNM |

#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.

### (b) In UNIX

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

*Table  2-7:*  JP1/AJS3 - Agent files to be backed up (in UNIX)

| File name | Description |
|---|---|
| *JP1/AJS3-directory*[#1]/jp1ajs_env.conf | JP1/AJS3 environment definition file |
| *JP1/AJS3-directory*[#1]/jp1ajs_spmd.conf | JP1/AJS3 process management definition file |
| *JP1/AJS3-directory*[#1]/jp1ajs_service_0700.conf | Extended startup process definition file |
| *JP1/AJS3-directory*[#1]/EVAction.conf | Event action definition file |
| *JP1/AJS3-directory*[#1]/Queue.conf | Execution environment settings file for QUEUE jobs and submitted jobs |

| File name | Description |
|---|---|
| *JP1/AJS3-directory*[#1]/Queueless.conf | Queueless job execution environment settings file |
| /etc/opt/jp1ajs2/jajs_start | Automatic start script[#2] |
| /etc/opt/jp1ajs2/jajs_stop | Automatic stop script[#2] |
| /etc/opt/jp1ajs2/jajs_start.cluster | Logical host start script[#2] |
| /etc/opt/jp1ajs2/jajs_stop.cluster | Logical host stop script[#2] |
| /etc/opt/jp1ajs2/jajs_killall.cluster | Logical host forced stop script[#2] |
| /etc/opt/jp1ajs2/conf/jpoov.conf[#3] | 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

Back up the script as required.

#3

This file exists only if the function is used.

## 2.2.4 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)
- Backing up the icon image files and background image files created by users for JP1/AJS3 Console View (only if icon image files and background image files have been created and placed in the default storage location)

The following describes how to perform these tasks.

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

Back up the folders that contain the JP1/AJS3 - View environment settings files.

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

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

*Table  2-8:*  JP1/AJS3 - View folders to be backed up

| Folder name | Description |
|---|---|
| In Windows 7, Windows Server 2008, and Windows Vista:<br>• *JP1/AJS3-View-installation-folder*\conf<br>• %ALLUSERSPROFILE%[#]\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\conf<br>In Windows Server 2003 and Windows XP Professional:<br>• *JP1/AJS3-View-installation-folder*\conf | JP1/AJS3 - View environment settings folder |
| In Windows 7, Windows Server 2008, and Windows Vista:<br>• %ALLUSERSPROFILE%[#]\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\custom.dir<br>In Windows Server 2003 and Windows XP Professional:<br>• *JP1/AJS3-View-installation-folder*\custom.dir | JP1/AJS3 - View custom job registration information folder |
| • *JP1/AJS3-View-installation-folder*\addin.dir | JP1/AJS3 - View add-in program registration information folder |

#

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

### (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  2-9:*  Files to be backed up when using custom jobs

| File name | Description |
|---|---|
| *JP1/AJS3-View-installation-folder*\image\custom\CUSTOM_PC_USER_*any-name*.gif | gif file for custom PC job icons |
| *JP1/AJS3-View-installation-folder*\image\custom\CUSTOM_UX_USER_*any-name*.gif | gif file for custom Unix job icons |

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### (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 2-10:* Folder to be backed up when icon images have been created

| Folder name | Description |
|---|---|
| *JP1/AJS3-View-installation-folder*\image\extend\user_*any-name* | Folder that contains user-created icon image files |

### (4) Backing up the icon image files and background image files created by users for JP1/AJS3 Console View

Back up the icon image files and background image files created by users for JP1/AJS3 Console View. You can use any backup method, such as copying the files. Note that this task is not required if no icon image files or background image files have been created. This take is also not required if an icon image file or background image file has been created at a location other than the default storage location.

*Table 2-11:* JP1/AJS3 Console View files to be backed up

| File name | Description |
|---|---|
| *JP1/ AJS3-View-installation-folder*\image\console\icon\user_*any-name*.gif | User-created icon image file |
| *JP1/ AJS3-View-installation-folder*\image\console\background\user _*any-name*.gif (.jpg) | User-created background image file |

## 2.2.5 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 commands that collect troubleshooting data | Y | Y |

| Task | Windows | UNIX |
|---|---|---|
| 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 |

Legend:

Y: Required

N/A: Not applicable

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 commands that collect troubleshooting data

If necessary, back up the commands provided for collecting troubleshooting data.

Example:

*any-folder*\jajs_log.bat

#### (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 |
|---|---|
| *any-file-name* | Cluster-capable tool |

### *(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 commands that collect troubleshooting data

Back up the commands provided for collecting troubleshooting data. The following table lists the commands you need to back up.

*Table  2-14:*  Troubleshooting data collection commands to be backed up

| File name | Description |
|---|---|
| *any-directory*/jbs_log.sh | Data collection command for JP1/Base |
| *any-directory*/jajs_log.sh | Data collection command for JP1/AJS3 |

#### (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  2-15:*  Cluster-capable tool to be backed up

| File name | Description |
|---|---|
| *any-file-name* | 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.

## 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, and JP1/AJS3 - View procedures. Combine the procedures according to the products that are used. When you recover the backup information for JP1/AJS3 - Manager and JP1/ AJS3 - Agent, you must first recover JP1/Base.

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 member of the Administrators group of the OS (in Windows) or a user with superuser permissions (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, however, make sure that the configuration in the backup information matches that on the host to which it will be restored. If the configurations are different, alter the backup information as necessary.

### 2.3.1 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 and set up JP1/Base. For details about how to set up JP1/Base, see the *Job Management Partner 1/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, 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 *3.1 Required setup for JP1/AJS3 - Manager* in the *Job Management Partner 1/Automatic Job Management*

*System 3 Configuration Guide 1* (in Windows) or *12.1 Required setup for JP1/AJS3 - Manager* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1* (in UNIX).

### 2.3.2 Recovering the JP1/Base setup information

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

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

After setting up JP1/Base, recover the physical host environment and logical host environment. For details about the settings required for recovery, see the *Job Management Partner 1/Base User's Guide*.

### 2.3.3 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 2-16:* 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 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 submitted jobs (only if QUEUE jobs and submitted 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 |
| Recovering the JP1/AJS3 Console setup information (only if the JP1/AJS3 Console functionality is used) | 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 *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1* (in Windows) or *12.1.2 Setting up JP1/AJS3 - Manager* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1* (in UNIX).

### *(2) 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).

### *(3) 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/jp1ajs2/bin/jajs_spmd_status
    ```

    •   To check a logical host:

    ```
    # /opt/jp1ajs2/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/jp1ajs2/bin/ajsshmdel
```

### (4) 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 *(3) 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 *C.2(3) Setting up the embedded database environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1*.

For details about how to create an embedded database environment on the primary node in a logical host environment, see *D.2(3) Setting up the embedded database environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1*. For details about how to create an embedded database environment on the secondary node, see *D.3(3) Setting up the embedded database environment* in the *Job Management Partner 1/Automatic*

*Job Management System 3 Configuration Guide 1*.

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 *C.2(5) Setting up the scheduler database in an embedded database environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1*.

For details about how to set up the JP1/AJS3 environment on the primary node in a logical host environment, see *D.2(5) Setting up the scheduler database in an embedded database environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1*. For details about how to set up the JP1/AJS3 environment on the secondary node, see *D.3(5) Setting up the scheduler database in an embedded database environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1*.

## *(5) Creating an execution environment for QUEUE jobs and submitted jobs*

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

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

To create an execution environment:

1. Delete the files in the folder containing the queue information database.

   (a) For a physical host

   - In Windows Server 2008:

     ```
     del
     system-drive\ProgramData\Hitachi\JP1\JP1_DEFAULT\JP1AJS2\d
     atabase\queue\*
     ```

   - In Windows Server 2003:

     ```
     del JP1/
     AJS3-Manager-installation-folder\jp1ajs2\database\queue\*
     ```

   - In UNIX:

     ```
     rm /var/opt/jp1ajs2/database/queue/*
     ```

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(b) For a logical host

- In Windows:

```
del shared-folder\jp1ajs2\database\queue\*
```

- In UNIX:

```
rm shared-directory/jp1ajs2/database/queue/*
```

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

```
jpqimport -dt isam -ci jpqsetup.conf  [-mh logical-host-name]
```

Cautionary note

For the configuration definition file (jpqsetup.conf) for the execution environment of QUEUE jobs and submitted jobs, use the recovered file.

To recover a logical host definition, specify the logical host name in the -mh option.

### (6) Starting JP1/AJS3

Restart the JP1/AJS3 services with a cold start.

### (7) 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 manager-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.

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### *(8) 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 of the root job group* and *(c) Backing up the calendar information of 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.

### *(9) Recovering and setting up the JP1/AJS3 Console setup information*

When the JP1/AJS3 Console functionality is used, perform the operations below.

Cautionary note

Before you start recovery and setup, make sure that the following conditions exist:

- JP1/AJS3 Console Manager, JP1/AJS3 Console Agent, and other JP1 series programs that require JP1/Base are not running.

- The shared disk is mounted (to recover the setup information for a logical host).

#### (a) Recovering the JP1/AJS3 Console setup information

Restore the JP1/AJS3 Console backup files to their original locations.

#### (b) Setting up JP1/AJS3 Console

Set up JP1/AJS3 Console Manager and JP1/AJS3 Console Agent.

## 2.3.4 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, 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 *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1* (in Windows) or *12.2.2 Setting up JP1/AJS3 - Agent* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1*

(in UNIX).

### *(2) 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).

### *(3) Starting JP1/AJS3*

After recovery, cold-start JP1/AJS3.

## 2.3.5 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)

- Setting up JP1/AJS3 Console View (only if the JP1/AJS3 Console functionality is used)

- Recovering the icon image files and background image files for JP1/AJS3 Console View (only if the icon image files and background image files were created for JP1/AJS3 Console View)

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 folders containing the backup files to their original locations.

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 folders you need to recover.

*Table 2-17:* JP1/AJS3 - View folders to be recovered

| Folder name | Description |
|---|---|
| In Windows 7, Windows Server 2008, and Windows Vista:<br>• *JP1/AJS3-View-installation-folder*\conf<br>• %ALLUSERSPROFILE%[#]\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\conf<br>In Windows Server 2003 and Windows XP Professional:<br>• *JP1/AJS3-View-installation-folder*\conf | JP1/AJS3 - View environment settings folder |
| In Windows 7, Windows Server 2008, and Windows Vista:<br>• %ALLUSERSPROFILE%[#]\Hitachi\JP1\JP1_DEFAULT\JP1AJS2V\custom.dir<br>In Windows Server 2003 and Windows XP Professional:<br>• *JP1/AJS3-View-installation-folder*\custom.dir | JP1/AJS3 - View custom job registration information folder |
| • *JP1/AJS3-View-installation-folder*\addin.dir | JP1/AJS3 - View add-in program registration information folder |

#

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

### (3) Recovering the custom job icons

Restore the backed-up gif files for icons to their original locations.

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 2-18:* JP1/AJS3 - View files to be recovered

| File name | Description |
|---|---|
| *JP1/ AJS3-View-installation-folder*\image\custom\CUSTOM_ PC_USER_*any-name*.gif | gif file for custom PC job icons |
| *JP1/ AJS3-View-installation-folder*\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 original locations.

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 2-19:* Folder to be recovered when icon images have been created

| Folder name | Description |
|---|---|
| *JP1/AJS3-View-installation-folder*\image\extend\user_*any-name* | Folder containing user-created icon image files |

### (5) Setting up JP1/AJS3 Console View

If the JP1/AJS3 Console functionality is used, set up JP1/AJS3 Console View.

### (6) Recovering the icon image files and background image files for JP1/AJS3 Console View

Restore the backed-up icon image files and background image files for JP1/AJS3 Console View to their original locations.

This task is not required only if there are backed-up icon image files or background image files for JP1/AJS3 Console View.

Cautionary note

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

- JP1/AJS3 - View is installed.

- JP1/AJS3 Console View is not running.

## 2.3.6 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 2-20:* 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 commands that collect 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 |
| Setting the linkage functions (only if linkage functions are used) | Y | Y |

Legend:

Y: Required

N/A: Not applicable

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 (in Windows only)

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

#### (b) Recovering the commands that collect troubleshooting data

Recover the backed up commands that collect 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.

## *(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 commands that collect troubleshooting data**

Recover the backed up commands that collect 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.

**Chapter**

# 3. Backing Up and Recovering Databases

This chapter describes how to back up and recover the JP1/AJS3 databases.

## 3.1 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 3-1:* Timing for creating backup files (when the system log not used)
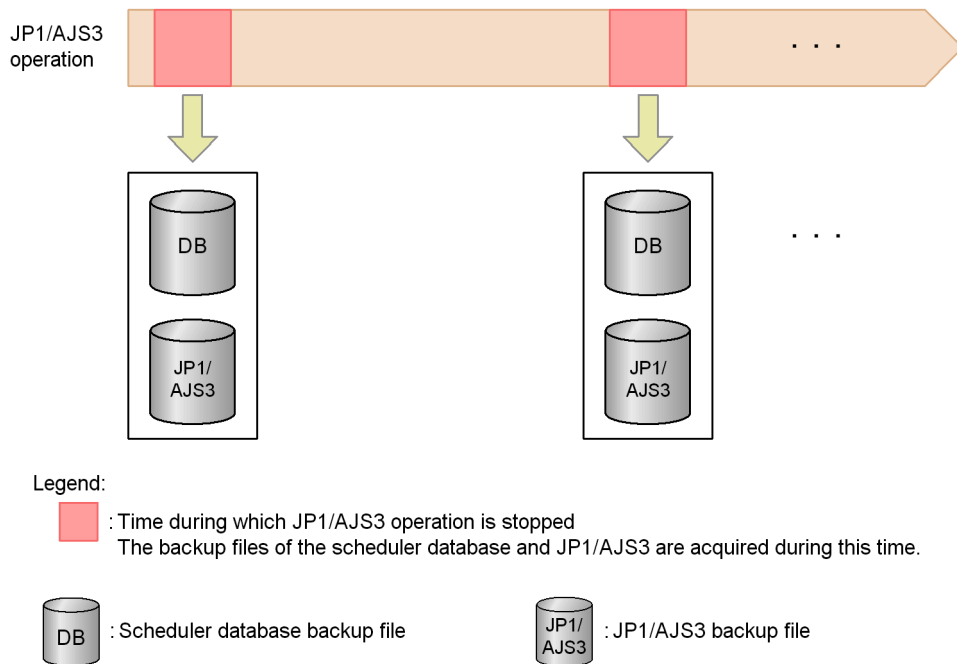


### (2) Managing backup files

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 JP1/AJS3 Database service for which you want to create a backup.

3. Execute the `ajsembdbbackup` command to create a backup file.

   Do not specify the `-s` option in the `ajsembdbbackup` command.

4. Stop the JP1/AJS3 Database service.

5. Start the services you stopped in step 1, and resume normal operation.

For details about the `ajsembdbbackup` command, see *ajsembdbbackup* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

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 `ajsembdbrstr` commands used to restore the database, see *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*. For details about the `ajsembdbbuild`, `ajsembdbsetup`, and `ajsembdbunset` commands, see *2. Commands Used during Setup* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

#### (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.

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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 `ajsembdbrstr` 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 `ajsembdbrstr` command to restore the scheduler database.

    Do not specify the `-ld` and `-l` options in the `ajsembdbrstr` command.

12. Execute the `ajsembdbbackup` command.

    Execute the `ajsembdbbackup` command to create a backup file.

13. Stop the JP1/AJS3 Database service.

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 JP1/AJS3 Database service for which you want to create a backup.

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 `ajsembdbrstr` 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 `ajsembdbrstr` command to restore the scheduler database.

    Do not specify the `-ld` or `-l` option in the `ajsembdbrstr` command.

11. Stop the JP1/AJS3 Database service.

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.

## 3.2 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 3-1:* 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.<br>• The scheduler database can be restored to the state existing at the time the backup file was created.<br>• 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. |

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| Backup method | Advantages | Disadvantages |
|---|---|---|
| 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 scheduler database cannot be restored from the backup files created with this method.<br>• 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 ajsembdbbackup command without the -s option to create a backup file of the scheduler database. When JP1/AJS3 is running, periodically execute the ajsembdbbackup 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 3-2:* Timing for creating backup files (when an unload log used)
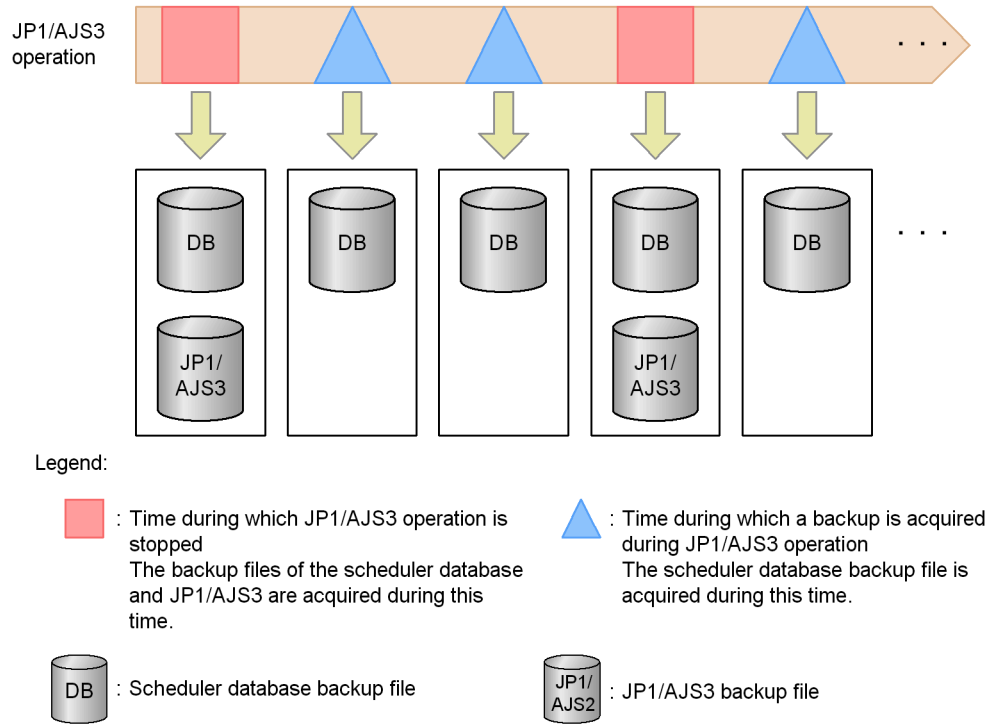


## (3) Managing backup files and unload log files

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.

### ■ 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

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ajsembdbbackup 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 ajsembdbrstr 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.

■ **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 JP1/AJS3 Database service for which you want to create a backup.

3. Execute the ajsembdbbackup command to create a backup file.

   Do not specify the -s option in the ajsembdbbackup command.

4. Stop the JP1/AJS3 Database service.

5. Start the services you stopped in step 1.

For details about the ajsembdbbackup command, see *ajsembdbbackup* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

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 ajsembdbbackup command might result in an error.

### (b) Creating a backup file when the JP1/AJS3 services are running

Execute the ajsembdbbackup command with the -s option specified.

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You can use this backup method while JP1/AJS3 is running. However, because the `ajsembdbbackup` 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 `ajsembdbbackup` command, see *ajsembdbbackup* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

### *(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`, `ajsembdbbackup`, and `ajsembdbrstr` commands used to restore the database, see *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*. For details about the `ajsembdbbuild`, `ajsembdbsetup`, and `ajsembdbunset` commands, see *2. Commands Used during Setup* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

### (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]

   [1]

      To determine the value to be specified in the `-g` option, execute the `ajsembdbstatus` command with the `-l` option specified. In the following example, the `ajsembdbstatus` command is executed when an environment has already been set up with the embedded-database ID `_JF0`.

```
ajsembdbstatus -l -id _JF0

Group   Type Server  Gen No.  Status  Run ID     Block No.           Ex-Status
log1    sys  ajs2          1  os----u 47576555          1      63     -u------
log2    sys  ajs2          2  os----u 47576555         64      64     -u------
log3    sys  ajs2          3  os----u 47576555         65      65     -u------
log4    sys  ajs2          4  oc-d--u 47576555         66      66     -x------
log5    sys  ajs2          0  os----u 00000000          0       0     -u------
log6    sys  ajs2          0  os----u 00000000          0       0     -u------
log7    sys  ajs2          0  os----u 00000000          0       0     -u------
log8    sys  ajs2          0  os----u 00000000          0       0     -u------
log9    sys  ajs2          0  os----u 00000000          0       0     -u------
log10   sys  ajs2          4  oc-d--u 00000000          0       0     -u------
log11   sys  ajs2          0  os----u 00000000          0       0     -u------
log12   sys  ajs2          0  os----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`.

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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 `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.

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 `ajsembdbrstr` 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 `ajsembdbrstr` command to restore the scheduler database.

    To restore the database to the state existing before the error occurred, specify the `-ld` or `-l` option in the `ajsembdbrstr` command. In the `-ld` option, specify the directory containing the unload log files. In the `-l` option, specify the unload log files.

    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. Stop the JP1/AJS3 Database service.

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 JP1/AJS3 Database service for which you want to create a backup.

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 `ajsembdbrstr` 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 `ajsembdbrstr` 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 `ajsembdbrstr` command.

11. 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.

**Chapter**

# 4. 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.

4.1 Overview of backing up and restoring jobnets
4.2 Backing up and restoring jobnets by using the ajsprint and ajsdefine commands
4.3 Backing up and restoring jobnets by using the ajsbackup and ajsrestore commands or JP1/AJS3 - View
4.4 Backing up and recovering the execution registration status of jobnets by using the ajsrgexport and ajsrgimport commands

## 4.1 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 *11. Automatic Distribution Using JP1/Software Distribution* in the *Job Management Partner 1/Automatic Job Management System 3 Linkage Guide*.

We recommend that only a superuser or member of the Administrators group perform backup and restoration.

*Note:*

> 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.

### 4.1.1 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 4-1:* Backup and restore functionality and commands

| Functionality | Command |
|---|---|
| Outputting definitions of units | `ajsprint`[1] |
| Defining units | `ajsdefine`[1] |

| Functionality | | Command |
|---|---|---|
| Backing up units | | ajsbackup[#2] |
| Restoring units | | ajsrestore[#2] |
| Deleting backup box | | ajsbkudel |
| Changing and displaying attributes of the backup box | Owner | chown[#3] |
| | Group | chgrp[#3] |
| | Permission mode | chmod[#3] |
| | Renaming | mv[#3] |
| | 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 *4.3 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.

## 4.1.2 Precautions for backup and restoration

- Be sure to unify the values of the environment variable LANG at the backup source and recovery destination. If the values are not unified, the unit cannot be used even if it is recovered.

- 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 job group and jobnet 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 superuser or member of the Administrators group can restore units that were backed up by a user without deletion authorization.

■ 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 *Job Management Partner 1/ Automatic Job Management System 3 Configuration Guide 1*.

■ 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.

## 4.2 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.

### 4.2.1 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 4-2:* 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[#] |

[#]

If you are not a superuser or a member of the Administrators group, you must have update authorization to restore this item.

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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

### 4.2.2 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 4-3:* 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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

## 4.3 Backing up and restoring jobnets by using the ajsbackup and ajsrestore commands or JP1/AJS3 - View

When you use the `ajsbackup` 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 `ajsbackup` and `ajsrestore` 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.

### 4.3.1 Location for storing information backed up by the ajsbackup command or JP1/AJS3 - View

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

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*Figure  4-1:*  Location for storing backup information
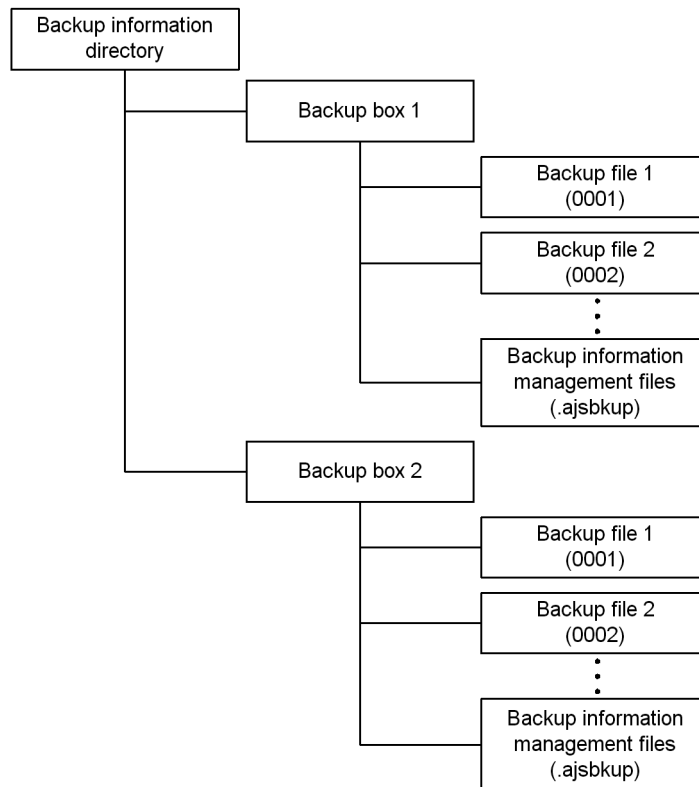


This figure is explained below.

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.

## 4.3.2 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 4-4:* 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[#] |

[#]

If you are not a superuser or a member of the Administrators group, you must have update authorization to restore this item.

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.

2. From the **File** menu, choose **Backup**.

   The Backup dialog box appears, displaying the selected unit in **Unit element**.

3. 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**.

4. 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**.

5. 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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

## 4.3.3 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 4-5:* 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:

1. In the JP1/AJS3 - View window or the Jobnet editor window, select the jobnet or

job group you want to restore.

2. From the **File** menu, choose **Restore**.

   The Restore dialog box appears, displaying the names of the existing backup boxes in **Backup box**.

3. In **Backup box**, select a box name.

   The **Backup file** list displays the backup files stored in the selected backup box.

4. 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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

## 4.3.4 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
```

## 4.3.5  Deleting a backup box or backup files

To delete a backup box or backup files, execute the ajsbkudl 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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

## 4.3.6  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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

## 4.4 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.

### 4.4.1 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 4-2:* Backing up and recovering the execution registration status by using the functions for exporting and importing the registered execution-schedule information for jobnets
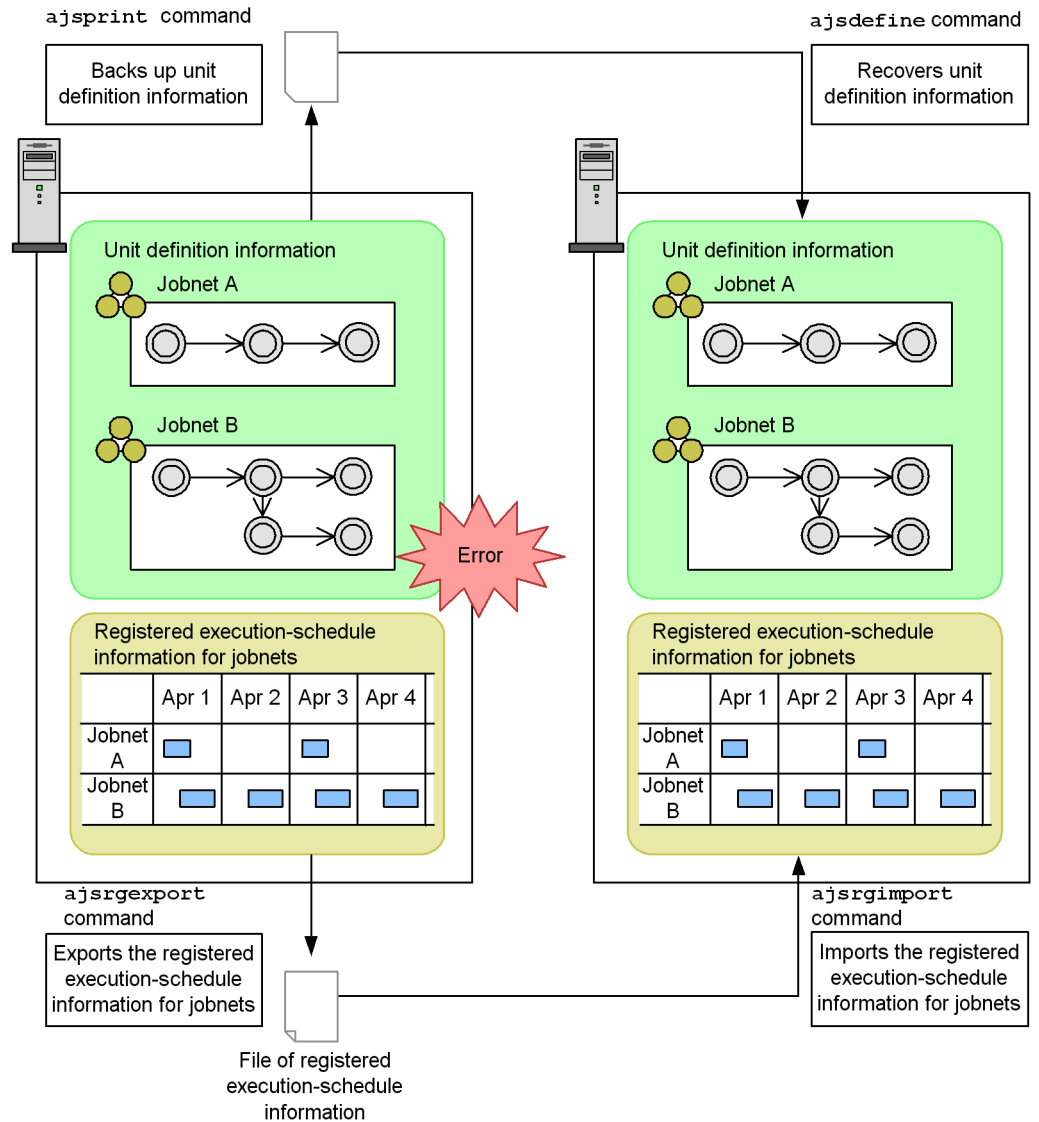


Unlike the `ajsprint` and `ajsdefine` commands used for the backup and recovery of unit definition information, the `ajsrgexport` and `ajsrgimport` commands back up and recover the execution registration status of jobnets by exporting and then importing that information.

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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 (ajsrgexport command)

The `ajsrgexport` 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 `ajsrgexport` command, see *ajsrgexport* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*. For details about the file of registered execution-schedule information for jobnets, see *4.6 File of registered execution-schedule information for jobnets* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

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 *Job Management Partner 1/Automatic Job Management System 3 Overview*.

*Figure 4-3:* Execution schedules to be exported
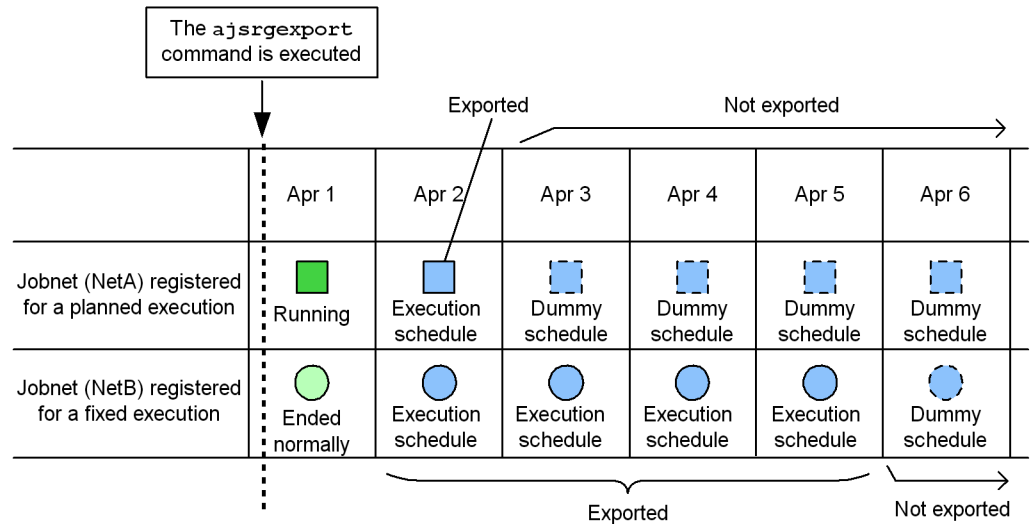


For a jobnet registered for fixed execution, changes in the schedule made by temporarily changing the plan are also exported. Note, however, that these changes cannot be canceled at the importing location. For a jobnet registered for planned execution, changes in the schedule made by temporarily changing the plan are not exported. Therefore, you need to change the schedule again after the import.

### (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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

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 4-4:* Execution schedules to be imported



■ Exported execution registration information for jobnets

|  | Apr 1 | Apr 2 | Apr 3 | Apr 4 | Apr 5 | Apr 6 |
|---|---|---|---|---|---|---|
| Jobnet (NetA) registered for planned execution |  | Execution schedule |  |  |  |  |
| Jobnet (NetB) registered for fixed execution |  | Execution schedule | Execution schedule | Execution schedule | Execution schedule |  |

The schedules are recalculated

■ Schedules after the import

|  | Apr 1 | Apr 2 | Apr 3 | Apr 4 | Apr 5 | Apr 6 |
|---|---|---|---|---|---|---|
| Jobnet (NetA) registered for planned execution |  |  | Execution schedule | Dummy schedule | Dummy schedule | Dummy schedule |
| Jobnet (NetB) registered for fixed execution |  |  | Execution schedule | Execution schedule | Execution schedule | Dummy schedule |

The `ajsrgimport` command is executed

A dummy schedule is created

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.

## 4.4.2 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. |

| Prerequisites | Effects when not met |
|---|---|
| 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. |

■ 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 `ajsqlsetup` 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. |

| Prerequisites | Effects when not met |
|---|---|
| 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[1] | Effects when not met |
|---|---|
| AJSCHARCODE[2] (Character encoding for a scheduler service) | If the character encoding specified in AJSCHARCODE is different at the exporting and importing locations, import cannot be performed because the characters after 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. |

#1

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

#2

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

| Value of AJSCHARCODE | Value of the environment variable LANG when the ajsrgexport command is executed | | |
|---|---|---|---|
| | HP-UX | Solaris | AIX |
| C | C | C | C |

- Environment setting parameters related to the job execution environment

| Definition key | Environment setting parameter | Definition |
|---|---|---|
| [{JP1_DEFAULT\|*logical-host-name*}\JPQNBQMANAGER\Queue] | MaximumQueue[#1] | Maximum number of defined queues |
| [{JP1_DEFAULT\|*logical-host-name*}\JPQNBQMANAGER\Job] | MaximumContentJob[#2] | Maximum number of jobs in the system |
| | AlterContentJob[#2] | Number of warning jobs in the system |
| [{JP1_DEFAULT\|*logical-host-name*}\JPQNBQMANAGER\Agent] | MaximumAgent[#1] | Maximum number of defined agents |
| | LeastRecentlyUsed[#2] | Definition of method used to determine the agent host that distributes jobs |
| [{JP1_DEFAULT\|*logical-host-name*}\JPQNBQMANAGER\Resource] | MaximumResource[#1] | Maximum number of defined execution-locked resources |
| [{JP1_DEFAULT\|*logical-host-name*}\JPQNBQCLIENT\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\|*logical-host-name*}\JPQNBQCLIENT\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 |
| 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 *Running + Abend* 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:<br>When **Synchro** is selected for **Exec. order method**:<br>    The job is executed after the scheduled start time is reached.<br>When **Aynchro** is selected for **Exec. order method**:<br>    The job is executed at the scheduled start time. |

## 4.4.3 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 (`ajsrgexport`) 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  4-5:*  Example of export performed during the creation of generations (for fixed execution registration)

Scheduled generations of jobnets to be exported

| | Apr 1 | Apr 2 | Apr 3 | Apr 4 | Apr 5 | Apr 6 |
|---|---|---|---|---|---|---|
| Jobnet A | ■ | | ▯ | | ▯ | |
| Jobnet B | ■ | ■ | ▯ | ▯ | ▯ | ▯ |

The export command is executed when only the generations up to this point have been created .

Imported registered execution-schedule information for jobnets

| | Apr 1 | Apr 2 | Apr 3 | Apr 4 | Apr 5 | Apr 6 |
|---|---|---|---|---|---|---|
| Jobnet A | ■ | | | | | |
| Jobnet B | ■ | ■ | | | | |

There is no registered execution-schedule information for these jobnets
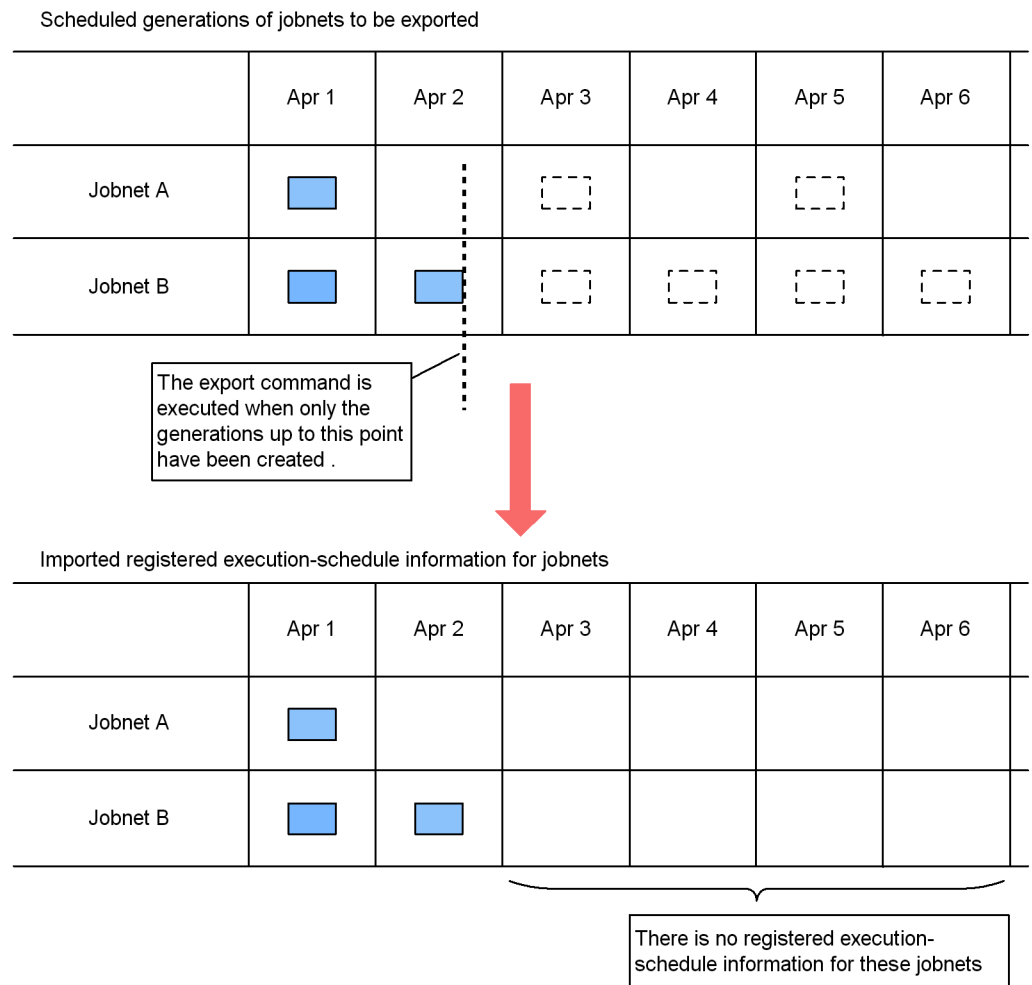
For example, *Figure 4-5* shows that fixed generations are to be created from April 1 to April 6. If the registered execution-schedule information for jobnets is exported when only the generations up to April 2 have been created, only those generations will be output. The generations for April 3 and 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.

## 4.4.4  Procedure for using the ajsrgexport 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 *2.2.2(4) Backing up the unit definition*.

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

    Execute the command in the following format:

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

    For details about the `ajsrgexport` command, see *ajsrgexport* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

    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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

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

Cautionary note

The `ajsrgexport` 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 *Job Management Partner 1/Automatic Job Management System 3 Overview*.

## 4.4.5 Procedure for using the ajsrgimport 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 *2.3.3(8) 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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

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] [-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.

   For details about the `ajsrgimport` command, see *ajsrgimport* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

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 *2. Commands* in the

manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

**Chapter**

# 5. 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.

# 5.1 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  5-1:* 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:<br>• JP1/AJS3 - View window (status monitoring window)<br>• Jobnet Monitor window (definition window format)<br>• Monthly Schedule window (calendar format)<br>• Daily Schedule window (chart format) |
| JP1/AJS3 Console window | You can check the execution results of a specific jobnet in this window. |
| Command | `ajsshow` command<br>  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. |

| Method | Description |
|---|---|
| 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:<br>When a log file is output for each scheduler service:<br>In Windows Server 2008:<br>&bull; `%ALLUSERSPROFILE%\HITACHI\JP1\JP1_DEFAULT\JP1AJS2\log\sch edule\`*scheduler-service-name*`\ajs-log1.log`<br>&bull; `%ALLUSERSPROFILE%\HITACHI\JP1\JP1_DEFAULT\JP1AJS2\log\sch edule\`*scheduler-service-name*`\ajs-log2.log`<br>(The default for `%ALLUSERSPROFILE%` is *system-drive*`\ProgramData`.)<br>In Windows Server 2003:<br>&bull; *JP1/ AJS3-Manager-installation-folder*`\log\schedule\`*scheduler-service-na me*`\ajs-log1.log`<br>&bull; *JP1/ AJS3-Manager-installation-folder*`\log\schedule\`*scheduler-service-na me*`\ajs-log2.log`<br>In UNIX:<br>&bull; `/var/opt/jp1ajs2/log/schedule/`*scheduler-service-name*`/ ajs-log1.log`<br>&bull; `/var/opt/jp1ajs2/log/schedule/`*scheduler-service-name*`/ ajs-log2.log`<br><br>When a log file is output for each host:<br>In Windows Server 2008:<br>&bull; `%ALLUSERSPROFILE%\HITACHI\JP1\JP1_DEFAULT\JP1AJS2\log\ajs -host-log1.log`<br>&bull; `%ALLUSERSPROFILE%\HITACHI\JP1\JP1_DEFAULT\JP1AJS2\log\ajs -host-log2.log`<br>(The default for `%ALLUSERSPROFILE%` is *system-drive*`\ProgramData`.)<br>In Windows Server 2003:<br>&bull; *JP1/AJS3-Manager-installation-folder*`\log\ajs-host-log1.log`<br>&bull; *JP1/AJS3-Manager-installation-folder*`\log\ajs-host-log2.log`<br>In UNIX:<br>&bull; `/var/opt/jp1ajs2/log/ajs-host-log1.log`<br>&bull; `/var/opt/jp1ajs2/log/ajs-host-log2.log` |

| Method | Description |
|---|---|
| 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.<br>The following describes the event IDs, facilities, and message IDs for normal end and abnormal end of a jobnet.<br>Jobnet normal-end event<br>    Event ID: 30261<br>    Facility: LOG_DAEMON<br>    Message ID: KAVS0261-I<br>Jobnet abnormal-end event<br>    Event ID: 30262<br>    Facility: LOG_DAEMON<br>    Message ID: KAVS0262-E |

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

For details about the items displayed in the windows and the operating procedures, see the *Job Management Partner 1/Automatic Job Management System 3 Operator's Guide*.

For details about the ajsshow command options and output examples, see *ajsshow* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

For details about the scheduler log output format, see *C. Log Information* in the manual *Job Management Partner 1/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 *6.1.1 Status levels of jobnets, jobs, and jobnet connectors* in the manual *Job Management Partner 1/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 *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

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  5-1:*  Monitoring in the Jobnet Monitor window



Connection-destination jobnet
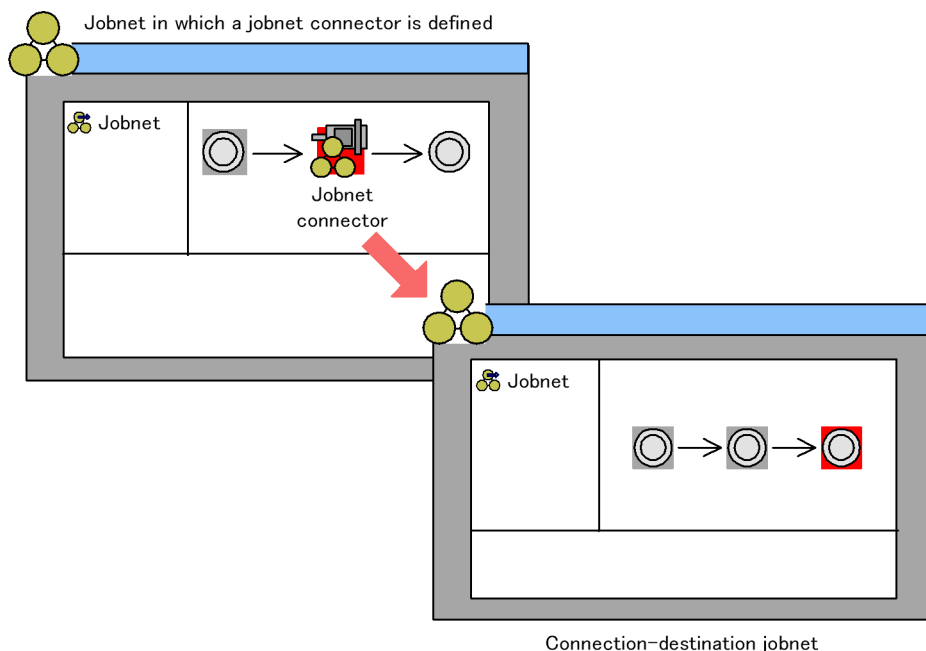
In addition, you can choose **View** and then **Detailed Information** to display the Monitor Details - [*icon-name*] dialog box. If you display this dialog box for a jobnet

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 *15.3.34 Monitor Details - [Jobnet] dialog box* in the *Job Management Partner 1/Automatic Job Management System 3 Operator's Guide*, or *15.12.6 Notes on the Jobnet Monitor window* in the *Job Management Partner 1/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 5-2:* Monitoring in the Daily Schedule and Monthly Schedule windows
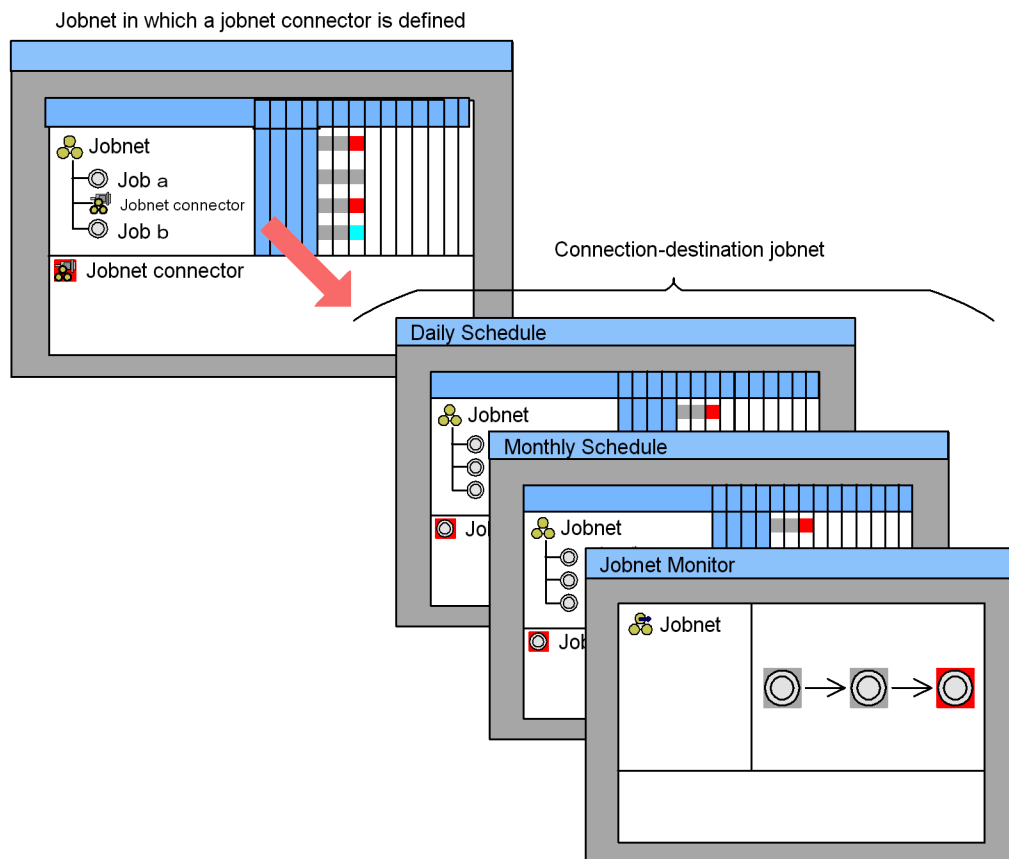


In addition, you can choose **View** and then **Detailed Information** to display the Detailed Schedule dialog box that shows the detailed schedule information. If you display this dialog box for the jobnet connector, you can check the execution ID of the connection-destination jobnet. If you display 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 *Job Management Partner 1/ 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 *15.7.7 Detailed Schedule dialog box* in the *Job Management Partner 1/Automatic Job Management System 3 Operator's Guide*, or *15.12.7 Notes on the Daily/Monthly Schedule window* in the *Job Management Partner 1/ Automatic Job Management System 3 Operator's Guide*.

## 5.2 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 5-2:* 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:<br>• JP1/AJS3 - View window (Summary Monitor window)<br>• Jobnet Monitor window (definition window format)<br>• Monthly Schedule window (calendar format)<br>• Daily Schedule window (chart format)<br>The following are the default colors used to indicate delays. Check for items displayed in any of the following colors.<br>Start delay: Pink<br>Start delay + Running: Dark pink<br>End delay: Orange<br>End delay (Running): Dark orange |
| JP1/AJS3 Console window | The JP1/AJS3 Console window lets you check the execution results of a specific jobnet. |
| Command | `ajsshow` command<br>    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. |

| Method | Description |
|---|---|
| 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:<br>When a log file is output for each scheduler service:<br>In Windows Server 2008:<br>• `%ALLUSERSPROFILE%\HITACHI\JP1\JP1_DEFAULT\JP1AJS2\log\schedule\`*scheduler-service-name*`\ajs-log1.log`<br>• `%ALLUSERSPROFILE%\HITACHI\JP1\JP1_DEFAULT\JP1AJS2\log\schedule\`*scheduler-service-name*`\ajs-log2.log`<br>(The default for `%ALLUSERSPROFILE%` is *system-drive*`\ProgramData`.)<br>In Windows Server 2003:<br>• *JP1/ AJS3-Manager-installation-folder*`\log\schedule\`*scheduler-service-name*`\ajs-log1.log`<br>• *JP1/ AJS3-Manager-installation-folder*`\log\schedule\`*scheduler-service-name*`\ajs-log2.log`<br>In UNIX:<br>• `/var/opt/jp1ajs2/log/schedule/`*scheduler-service-name*`/ajs-log1.log`<br>• `/var/opt/jp1ajs2/log/schedule/`*scheduler-service-name*`/ajs-log2.log`<br><br>When a log file is output for each host:<br>In Windows Server 2008:<br>• `%ALLUSERSPROFILE%\HITACHI\JP1\JP1_DEFAULT\JP1AJS2\log\ajs-host-log1.log`<br>• `%ALLUSERSPROFILE%\HITACHI\JP1\JP1_DEFAULT\JP1AJS2\log\ajs-host-log2.log`<br>(The default for `%ALLUSERSPROFILE%` is *system-drive*`\ProgramData`.)<br>In Windows Server 2003:<br>• *JP1/AJS3-Manager-installation-folder*`\log\ajs-host-log1.log`<br>• *JP1/AJS3-Manager-installation-folder*`\log\ajs-host-log2.log`<br>In UNIX:<br>• `/var/opt/jp1ajs2/log/ajs-host-log1.log`<br>• `/var/opt/jp1ajs2/log/ajs-host-log2.log` |

| Method | Description |
|---|---|
| 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.<br>The following describes the event IDs, facilities, and message IDs for a delayed start and a delayed end.<br>Delayed-start event<br>    Event ID: 30275<br>    Facility: `LOG_DAEMON`<br>    Message ID: KAVS0275-I<br>Delayed-end event<br>    Event ID: 30276<br>    Facility: `LOG_DAEMON`<br>    Message ID: KAVS0276-I<br>    Event ID: 30248<br>    Facility: `LOG_DAEMON`<br>    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.<br>The following describes the event IDs for a start-delay JP1 event and an end-delay JP1 event.<br>Delayed-start event<br>    JP1 event ID: 00004122<br>Delayed-end event<br>    JP1 event ID: 00004123 and 00004127 |

For details about the items displayed in the windows and the operating procedures, see the *Job Management Partner 1/Automatic Job Management System 3 Operator's Guide*.

For details about the ajsshow command options and output examples, see *ajsshow* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

For details about the scheduler log output format, see *C. Log Information* in the manual *Job Management Partner 1/Automatic Job Management System 3 Troubleshooting*.

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

**Chapter**

# 6. Monitoring Capacities

This chapter describes how to monitor capacities in JP1/AJS3.

Monitoring capacities during operation consists of the following tasks:

- 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.

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

# 6.1 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 6-1:* Log files and manual references for estimating file sizes

| Log file type | To estimate file size, see: |
|---|---|
| Log file for the scheduler service[#] | *3.4.1 Estimating the size of scheduler log files* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide* |
| Trace log file | *3.4.2 Estimating the size of the trace log file* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide* |
| Log output for event jobs (when event jobs are used) | *3.4.3 Estimating the size of the log information output by event jobs* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide* |
| Trace log file for JP1/AJS3 Console | *3.4.4 Estimating the size of trace log files for JP1/AJS3 Console* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide* |
| Log file for the execution environment for QUEUE jobs and submitted jobs | *7.1.4 Estimating the size of the logs output by the execution environment for QUEUE jobs and submit jobs* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide* |

| Log file type | To estimate file size, see: |
|---|---|
| Log file for queueless jobs | • *7.2.1(1) Estimating the size of the queueless log file* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*<br>• *7.2.1(2) Estimating the size of the queueless trace log file* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*<br>• *7.2.1(3) Estimating the size of the internal execution logs for queueless jobs* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide* |

#

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

## 6.2 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 `ajsembdbreclaim` command to reclaim space during operation.

Generally, database reorganization is seldom required if you periodically use the `ajsembdbreclaim` command for maintenance. 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 *10.2.2 Reorganizing a database*.

### (1) *How to check the database usage*

You can use output messages to check database usage.

#### (a) **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.

#### (b) **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.

### (2) *How to check the unused area of the ISAM files used in the execution environment for QUEUE jobs and submitted 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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

**(a) 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 submitted 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 syslog (Windows event log). 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 submitted 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.

**(b) When the database needs to be reorganized**

For the frequency of reorganization in the execution environment for QUEUE jobs and submitted jobs, also use the number of days that job information is saved. For details about the setting for this number, see *2.3 Setting up the job execution environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

For details about the JP1 event output by the `jpqdbcond` command, see *A. JP1 Events Issued by JP1/AJS3*.

For details about how to reorganize the database, see *10.3 Reorganizing a database when QUEUE jobs and submit jobs are used*.

**(c) 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.

**Chapter**

# 7. Starting and Stopping JP1/AJS3 Services

This chapter describes how to start and stop JP1/AJS3 services.

7.1 Starting or stopping JP1/AJS3 services
7.2 Changing the behavior at JP1/AJS3 startup or termination
7.3 Changing the behavior of JP1/AJS3 if a JP1/AJS3 process terminates abnormally
7.4 Resubmitting jobs when a JP1/AJS3 service is restarted

# 7.1 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.

## 7.1.1 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 Console Manager service[#2]
   - JP1/AJS3 Console Agent service[#3]
   - JP1/AJS3 Check Manager service[#4]
   - JP1/AJS3 Check Agent service[#5]
   - JP1/AJS3 Queueless Agent service[#6]
   - JP1/AJS3 Queueless File Transfer service[#6]

   #1

   Displayed only when mail system linkage has been set up.

   #2

   Displayed only when JP1/AJS3 Console Manager has been set up.

   #3

   Displayed only when JP1/AJS3 Console Agent has been set up.

   #4

Displayed only when JP1/AJS3 Check Manager has been set up.

#5

Displayed only when JP1/AJS3 Check Agent has been set up.

#6

Displayed only when the queueless job execution environment 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 note

You do not need to perform any operations for the JP1/AJS3 Database service or the JP1/AJS3 Database ClusterService service during operation because these services are controlled by JP1/AJS3.

*(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

To start the above services:

1. Copy the `/etc/opt/jp1ajs2/jajs_start` script to any file.

   Execute the following command to copy the script without changing the file permissions:
   `cp -p /etc/opt/jp1ajs2/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 *14.7.1 Setting automatic startup and termination of the JP1/AJS3 service* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1*.

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.

For details about the `ajsqlstart`, `ajsqlftpstart`, and `ajschkstart` commands, see *3. Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2* or *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

Supplementary notes

- You can start the JP1/AJS3 Console services by using the following commands:

  - JP1/AJS3 Console Manager service

    ```
    /etc/opt/jp1ajs2cm/ajscminetd_startstop start
    ```

  - JP1/AJS3 Console Agent service

    ```
    /etc/opt/jp1ajs2/ajscainetd_startstop start
    ```

- 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/jp1ajs2/bin`

  - Started by the `jajs_spmd` command:

  The directory in which the command was executed

## 7.1.2 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 Console Manager service[#2]
- JP1/AJS3 Console Agent service[#3]
- JP1/AJS3 Check Manager service[#4]
- JP1/AJS3 Check Agent service[#5]
- JP1/AJS3 Queueless Agent service[#6]
- JP1/AJS3 Queueless File Transfer service[#6]

#1

Displayed only when mail system linkage has been set up.

#2

Displayed only when JP1/AJS3 Console Manager has been set up.

#3

Displayed only when JP1/AJS3 Console Agent has been set up.

#4

Displayed only when JP1/AJS3 Check Manager has been set up.

#5

Displayed only when JP1/AJS3 Check Agent has been set up.

#6

Displayed only when the queueless job execution environment 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 note

- 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 or the JP1/AJS3 Database ClusterService service during operation because these services are controlled by JP1/AJS3.

### (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

To stop the above services:

1. Copy the `/etc/opt/jp1ajs2/jajs_stop` script to any file.

   Execute the following command to copy the script without changing the file permissions:
   `cp -p /etc/opt/jp1ajs2/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 *14.7.1 Setting automatic startup and termination of the JP1/AJS3 service* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1*.

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.

For details about the `ajsqlstop`, `ajsqlftpstop`, and `ajschkstop` commands, see *3. Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2* or *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

Supplementary note

You can stop the JP1/AJS3 Console services by using the following commands:

JP1/AJS3 Console Manager service

```
/etc/opt/jp1ajs2cm/ajscminetd_startstop stop
```

JP1/AJS3 Console Agent service

```
/etc/opt/jp1ajs2/ajscainetd_startstop stop
```

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## 7.2 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_spmd_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.

### 7.2.1 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 *2.2 Setting up the scheduler service environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

#### *(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 7-1:* Options that can be specified in Startup Parameter

| Operand | Start mode |
|---------|------------|
| -cold   | The service is cold-started. |
| -warm   | The service is warm-started. |
| -hot    | The service is hot-started. |

4. Click the **Start** button.

Note that if you have executed the `net start` *service-name* command, you cannot

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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  7-2:*  Options that can be specified in the jajs_spmd command

| Operand | Operation |
|---------|-----------|
| `-cold` | The service is cold-started. |
| `-warm` | The service is warm-started. |
| `-hot` | The service is hot-started. |

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 7-3:* 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] |
| | 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 |
| | Now monitoring | None | Now monitoring |
| | End status | None | No change |

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| Unit | Status before JP1/AJS3 stops | Condition | Status after JP1/AJS3 starts |
|---|---|---|---|
| Remote jobnet | Wait for prev. to end | None | Wait for prev. to end[#1] |
| | 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 (root job) | None | Ended abnormally |
| | Now running (nested job) | None | Ended abnormally |
| | End status | None | No change |
| Job (standard job, action job, custom job) | Wait for prev. to end | None | Wait for prev. to end[#1] |
| | Being held | None | Being held[#1] |
| | Waiting to execute | • The job is being queued (when the JP1/AJS3 database uses the standard configuration). | Wait for prev. to end[#6] |
| | | • The job is being queued (when the JP1/AJS3 database uses the compatible ISAM configuration). | 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[#7] |

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| Unit | Status before JP1/AJS3 stops | Condition | Status after JP1/AJS3 starts |
|---|---|---|---|
| | | • The job status can no longer be managed because the JP1/AJS3 service did not stop correctly due to a server failure.<br>• An attempt to acquire the job status fails.<br>- When the JP1/AJS3 service is restarted, the job status cannot be acquired due to insufficient memory or a communication error.<br>- 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 (when the JP1/AJS3 database uses the standard configuration). | Wait for prev. to end[6] |
| | | • The job is being queued (when the JP1/AJS3 database uses the compatible ISAM configuration). | 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[7] |

| Unit | Status before JP1/AJS3 stops | Condition | Status after JP1/AJS3 starts |
|---|---|---|---|
| | | • The job status can no longer be managed because the JP1/AJS3 service did not stop correctly due to a server failure.<br>• An attempt to acquire the job status fails.<br>- When the JP1/AJS3 service is restarted, the job status cannot be acquired due to insufficient memory or a communication error.<br>- The job information has already been deleted because the number of days for saving job information expired.[#8] | 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[#7] |
| | | • The job status can no longer be managed because the JP1/AJS3 service did not stop correctly due to a server failure.<br>• An attempt to acquire the job status fails.<br>- When the JP1/AJS3 service is restarted, the job status cannot be acquired due to insufficient memory or a communication error.<br>- 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 | None | Wait for prev. to end[#1] |

| Unit | | Status before JP1/AJS3 stops | Condition | Status after JP1/AJS3 starts |
|---|---|---|---|---|
| | | 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[#7, #9] |
| | | | • When the JP1/AJS3 service is restarted, the job status cannot be acquired due to insufficient memory or a communication error.<br>• Queueless job functionality is disabled when the JP1/AJS3 service restarts. | Unknown end status |
| | | Now running | • The queueless job is running. | Now running |
| | | | • The queueless job ends. | End status[#7, #9] |
| | | | • When the JP1/AJS3 service is restarted, the job status cannot be acquired due to insufficient memory or a communication error.<br>• Queueless job functionality has been uninstalled when the JP1/AJS3 service is started. | Unknown end status |
| | | End status | None | No change |
| Event job | In a jobnet | Wait for prev. to end | None | Wait for prev. to end[#1] |
| | | Being held | None | Being held[#1] |

| Unit | | Status before JP1/AJS3 stops | Condition | Status after JP1/AJS3 starts |
|---|---|---|---|---|
| | | Now queuing, Now running | • The target host is a remote host.<br>• 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[#10] |
| | | End status | None | No change |
| | In start conditions | Wait for prev. to end | None | Wait for prev. to end |
| | | Now queuing, Now running | • The event job is running. | Now running |
| | | | • The event job ends. | End status[#7] |
| | | End status | None | No change |
| Jobnet connector | | Wait for prev. to end | None | Wait for prev. to end[#1] |
| | | Now running | • The connection-destination jobnet ends normally. | Ended normally |
| | | | • The connection-destination jobnet ends with warning. | Ended with warning |
| | | | • The connection-destination jobnet is running. | Now running |
| | | | • The status of the connection-destination jobnet is Running + Warning. | Running + Warning |
| | | | • The connection-destination jobnet contains a unit that has ended abnormally. | Running + Abend |
| | | Running + Warning | • The connection-destination jobnet ends with warning. | Ended with warning |
| | | | • The status of the connection-destination jobnet is Running + Warning. | Running + Warning |

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| Unit | Status before JP1/AJS3 stops | Condition | Status after JP1/AJS3 starts |
|---|---|---|---|
| | | • The connection-destination jobnet contains a unit that has ended abnormally. | Running + Abend |
| | Running + Abend | None | Running + Abend |
| | 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*.

#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

When the JP1/AJS3 database uses the standard configuration, jobs to be submitted that have been queued by job execution control 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 *7.4 Resubmitting jobs when a JP1/AJS3 service is restarted*.

#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 when the JP1/AJS3 database uses the compatible ISAM configuration and 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 *2.3 Setting up the job execution environment* in the *Job Management Partner 1/ Automatic Job Management System 3 Configuration Guide 2*.

#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 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*.

■ **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 7-4:* 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 *Wait for start time* or *Being held* status. | No change |
| | | • The root jobnet is in *Now running* status.[#1] | Not executed + Ended |
| | 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] |
| | Now monitoring | None | Now monitoring |
| | End status | None | No change |
| Remote jobnet | Wait for prev. to end | • The root jobnet is in *Wait for start time* or *Being held* status. | No change |
| | | • The root jobnet is in *Now running* status.[#1] | Not executed + Ended |
| | 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 |

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| Unit | Status before JP1/AJS3 stops | Condition | Status after JP1/AJS3 starts |
|---|---|---|---|
| | Now running (root job) | None | Interrupted |
| | Now running (nested job) | None | Interrupted |
| | End status | None | No change |
| Job (standard job, action job, custom job) | Wait for prev. to end | • The root jobnet is in *Wait for start time* or *Being held* status. | No change |
| | | • The root jobnet is in *Now running* status.[#1] | Not executed + Ended |
| | Being held | None | Not executed + Ended |
| | Waiting to execute | • The job is being queued | Not executed + Ended |
| | | • The job ends. | End status[#6] |
| | | • The JP1/AJS3 service stops before the job enters the queuing status.<br>• The job is running.<br>• An attempt to acquire the job status fails.<br>- When the JP1/AJS3 service is restarted, the job status cannot be acquired due to insufficient memory or a communication error.<br>- The job information has already been deleted because the number of days for saving job information expired.[#7] | Unknown end status |
| | Now queuing | • The job is being queued. | Not executed + Ended |
| | | • The job ends. | End status[#6] |

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| Unit | Status before JP1/AJS3 stops | Condition | Status after JP1/AJS3 starts |
|---|---|---|---|
| | | • The job is running.<br>• The job information has already been deleted because the number of days for saving job information expired.[7] | Unknown end status |
| | Now running | • The job is running.<br>• The job information has already been deleted because the number of days for saving job information expired.[7] | Unknown end status |
| | | • The job ends. | End status[6] |
| | End status | None | No change |
| Queueless job | Wait for prev. to end | • The root jobnet is in *Wait for start time* or *Being held* status. | No change |
| | | • The root jobnet is in *Now running* status.[1] | Not executed + Ended |
| | Being held | None | Not executed + Ended |
| | Waiting to execute | • The queueless job ends. | End status[6, #8] |
| | | • 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 |
| | Now running | • The queueless job ends. | End status[6, #8] |

| Unit | | Status before JP1/AJS3 stops | Condition | Status after JP1/AJS3 starts |
|---|---|---|---|---|
| | | | • The queueless job is running.<br>• When the JP1/AJS3 service is restarted, the job status cannot be acquired due to insufficient memory or a communication error.<br>• Queueless job functionality is disabled when the JP1/AJS3 service restarts. | Unknown end status |
| | | End status | None | No change |
| Event job | In a jobnet | Wait for prev. to end | • The root jobnet is in *Wait for start time* or *Being held* status. | No change |
| | | | • The root jobnet is in *Now running* status.[#1] | Not executed + Ended |
| | | 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 *Wait for start time* or *Being held* status. | No change |
| | | | • The root jobnet is in *Now running* status.[#1] | Not executed + Ended |
| | | Now queuing, Now running | • The event job is running. | Now running |
| | | | • The event job ends. | End status[#6] |
| | | End status | None | No change |
| Jobnet connector. | | Wait for prev. to end | • The root jobnet is in *Wait for start time* or *Being held* status. | No change |
| | | | • The root jobnet is in *Now running* status.[#1] | Not executed + Ended |

| Unit | Status before JP1/AJS3 stops | Condition | Status after JP1/AJS3 starts |
|---|---|---|---|
| | 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

If you specify `plan` in the `OVERSCHEDULE` environment setting parameter for the scheduler service, the status of jobnets scheduled to be executed on that day changes to *Skipped so not exe.* If you specify `skip` or select **Execute from next time** for **Planned time passed when daemon starts** in the Register for Execution dialog box when registering jobnets for execution, the status of jobnets scheduled to be executed before the scheduler service started changes to *Skipped so not exe.*

The jobnet status also becomes *Skipped so not exe.* if the scheduler service was started after the timeout period for the jobnet expired.

#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* 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

Jobs and jobnets can have the following end statuses:

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- *Ended normally*

- *Ended with warning*

- *Ended abnormally*

- *Killed*

- *Failed to start*

#7

This condition might occur when the JP1/AJS3 database uses the compatible ISAM configuration and 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 restated. 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 *2.3 Setting up the job execution environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

#8

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*.

■ **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 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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

(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 7-5:* JP1/AJS3 start modes and the statuses of jobs on the agent host

| Start mode | PC job, Unix job, and QUEUE job | Event job | 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 *Ended abnormally*. However, if you use the -rs option in the jpqjobsub command to specify the job recovery status, the specified job status is set. | The job is killed (the status of the job on the manager host changes to *Ended abnormally*). However, if either of the following conditions exists, the status appropriate for the condition is set: <br> • If the option to continue execution of active event jobs is enabled: The status shown in *Table 7-7* is set. For details about this option, see *9.2.1 Continuing the execution of event jobs if the JP1/AJS3 service stops*. <br> • 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 *Now monitoring*, 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 *Now monitoring*). |

## (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 7-6* describes the statuses of jobs on the manager host when a stopped agent host is restarted. *Table 7-7* describes the statuses of jobs on the manager host when an agent host that stopped due to a system failure is restarted.

*Table 7-6:* 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 | 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, 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 *Job Management Partner 1/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 7-7:* 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[#2] |
| | Other status | No change |
| Queueless job | Wait for prev. to end | Not executed + Ended[#3] |
| | Being held | Being held[#3] |

| Unit type | | Status before the agent host stops | Status after the agent host stops |
|---|---|---|---|
| | | Waiting to execute | Unknown end status[#3] |
| | | Now running | Unknown end status[#3] |
| | | Other status | No change |
| 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, action job, or custom job.

#2

For details about operation when a job is killed, see *4.5.10 Killing a job or jobnet* in the manual *Job Management Partner 1/Automatic Job Management System 3 Overview*.

#3

It may take some time before the status is changed after the agent host has started.

## 7.2.2 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.

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*Table 7-8:* Options that can be specified in the jajs_spmd_stop command

| Operand | Operation |
|---------|-----------|
| -job | The system waits until the currently running job stops, and then terminates JP1/AJS3 - Manager. |
| -kill | The system kills JP1/AJS3 - Manager. |

## 7.3 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 *7.3.1 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 *Job Management Partner 1/Automatic Job Management System 3 Troubleshooting*.

Because processes of the agent service function (job execution and event jobs) do not stop when a process of the scheduler service management function stops, the execution of jobs and events 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 of the processes in the JP1/AJS3 service has stopped, the JP1/AJS3 service stops completely.

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.

## 7.3.1 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 *11.1 Overview of cluster systems*. Note that if you specify the `-HA` option on a logical host, the restart settings are disabled.

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 7-16 to 7-21.

To change the settings, edit the extended startup process definition file, and then restart JP1/Base and JP1/AJS3. In Windows Server 2003, you will need to change the Dr. Watson settings, as described in *(1) Changing the Dr. Watson settings (Windows Server 2003 only)*.

The extended startup process definition file is in the following location.

In Windows:

> *JP1/AJS3-installation-folder*\conf

In UNIX:

> /etc/opt/jp1ajs2/conf

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 set automatic restart for any other processes.

In Windows:

*Table 7-9:* Processes applicable to the restart setting (JP1/AJS3 - Manager in a standard configuration)

| No. | Child process name or detailed process name | Extended startup process definition file | Process that can be restarted |
|---|---|---|---|
| 1 | jajs_dbmd.exe | jp1ajs_service_0700.conf | jajs_dbmd.exe |
| 2 | jajs_hstd.exe | jp1ajs_service_0700.conf | jajs_hstd.exe and detailed process[#] |
| 3 | ajshlogd.exe | jp1ajs_hstd_0700.conf | ajshlogd.exe |

| No. | Child process name or detailed process name | Extended startup process definition file | Process that can be restarted |
|---|---|---|---|
| 4 | ajsinetd.exe | `jp1ajs_hstd_0700.conf` | ajsinetd.exe |
| 5 | ajsnetwd.exe | `jp1ajs_hstd_0700.conf` | ajsnetwd.exe |
| 6 | ajsagtmd.exe | `jp1ajs_hstd_0700.conf` | ajsagtmd.exe |
| 7 | ajsovstatd.exe | `jp1ajs_hstd_0700.conf` | ajsovstatd.exe |
| 8 | ajsgwmasterd.exe | `jp1ajs_hstd_0700.conf` | ajsgwmasterd.exe |
| 9 | ajsqlcltd.exe | `jp1ajs_hstd_0700.conf` | ajsqlcltd.exe |
| 10 | jpqman.exe | `jp1ajs_hstd_0700.conf` | jpqman.exe |
| 11 | jpomanager.exe | `jp1ajs_hstd_0700.conf` | jpomanager.exe |
| 12 | jajs_schd.exe | `jp1ajs_service_0700.conf` | jajs_schd.exe and detailed process[#] |
| 13 | ajslogd.exe | `jp1ajs_schd_0700.conf` | ajslogd.exe |
| 14 | jpqman.exe | `jp1ajs_schd_0700.conf` | jpqman.exe |
| 15 | jpomanager.exe | `jp1ajs_schd_0700.conf` | jpomanager.exe |
| 16 | ajsmasterd.exe | `jp1ajs_schd_0700.conf` | ajsmasterd.exe |
| 17 | jajs_agtd.exe | `jp1ajs_service_0700.conf` | jajs_agtd.exe and detailed process[#] |
| 18 | jpqmon.exe | `jp1ajs_agtd_0700.conf` | jpqmon.exe |
| 19 | jpoagent.exe | `jp1ajs_agtd_0700.conf` | jpoagent.exe |

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For details about JP1/AJS3 detailed processes, see *B. List of Processes* in the manual *Job Management Partner 1/Automatic Job Management System 3 Troubleshooting*.

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*Table 7-10:* Processes applicable to the restart setting (JP1/AJS3 - Manager in a compatible ISAM configuration)

| No. | Child process name or detailed process name | Extended startup process definition file | Process that can be restarted |
|---|---|---|---|
| 1 | jajs_hstd.exe | `jp1ajs_service_0700.conf` | jajs_hstd.exe and detailed process[#] |
| 2 | ajshlogd.exe | `jp1ajs_hstd_0700.conf` | ajshlogd.exe |
| 3 | ajsinetd.exe | `jp1ajs_hstd_0700.conf` | ajsinetd.exe |
| 4 | ajsnetwd.exe | `jp1ajs_hstd_0700.conf` | ajsnetwd.exe |
| 5 | ajsovstatd.exe | `jp1ajs_hstd_0700.conf` | ajsovstatd.exe |
| 6 | ajsgwmasterd.exe | `jp1ajs_hstd_0700.conf` | ajsgwmasterd.exe |
| 7 | ajsqlcltd.exe | `jp1ajs_hstd_0700.conf` | ajsqlcltd.exe |
| 8 | jpqman.exe | `jp1ajs_hstd_0700.conf` | jpqman.exe |
| 9 | jpomanager.exe | `jp1ajs_hstd_0700.conf` | jpomanager.exe |
| 10 | ajsmasterd.exe | `jp1ajs_hstd_0700.conf` | ajsmasterd.exe |
| 11 | jajs_agtd.exe | `jp1ajs_service_0700.conf` | jajs_agtd.exe and detailed process[#] |
| 12 | jpqmon.exe | `jp1ajs_agtd_0700.conf` | jpqmon.exe |
| 13 | jpoagent.exe | `jp1ajs_agtd_0700.conf` | jpoagent.exe |

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For details about JP1/AJS3 detailed processes, see *B. List of Processes* in the manual *Job Management Partner 1/Automatic Job Management System 3 Troubleshooting*.

*Table 7-11:* 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 | jpqmon.exe | `jp1ajs_service_0700.conf` | jpqmon.exe |
| 2 | jpoagent.exe | `jp1ajs_service_0700.conf` | jpoagent.exe |

In UNIX:

*Table 7-12:* Processes applicable to the restart setting (JP1/AJS3 - Manager in a standard configuration)

| No. | Child process name or detailed process name | Extended startup process definition file | Process that can be restarted |
|---|---|---|---|
| 1 | jajs_dbmd | `jp1ajs_service_0700.conf` | jajs_dbmd |
| 2 | jajs_hstd | `jp1ajs_service_0700.conf` | jajs_hstd and detailed process[#] |
| 3 | ajshlogd | `jp1ajs_hstd_0700.conf` | ajshlogd |
| 4 | ajsinetd | `jp1ajs_hstd_0700.conf` | ajsinetd |
| 5 | ajsnetwd | `jp1ajs_hstd_0700.conf` | ajsnetwd |
| 6 | ajsagtmd | `jp1ajs_hstd_0700.conf` | ajsagtmd |
| 7 | ajsovstatd | `jp1ajs_hstd_0700.conf` | ajsovstatd |
| 8 | ajsgwmasterd | `jp1ajs_hstd_0700.conf` | ajsgwmasterd |
| 9 | jpqman | `jp1ajs_hstd_0700.conf` | jpqman |
| 10 | jpomanager | `jp1ajs_hstd_0700.conf` | jpomanager |
| 11 | jajs_schd | `jp1ajs_service_0700.conf` | jajs_schdhstd and detailed process[#] |
| 12 | ajslogd | `jp1ajs_schd_0700.conf` | ajslogd |
| 13 | jpqman | `jp1ajs_schd_0700.conf` | jpqman |
| 14 | jpomanager | `jp1ajs_schd_0700.conf` | jpomanager |
| 15 | ajsmasterd | `jp1ajs_schd_0700.conf` | ajsmasterd |
| 16 | jajs_agtd | `jp1ajs_service_0700.conf` | jajs_agtdhstd and detailed process[#] |
| 17 | jpqmon | `jp1ajs_agtd_0700.conf` | jpqmon |
| 18 | jpoagent | `jp1ajs_agtd_0700.conf` | jpoagent |

\#

For details about JP1/AJS3 detailed processes, see *B. List of Processes* in the manual *Job Management Partner 1/Automatic Job Management System 3 Troubleshooting*.

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*Table 7-13:* Processes applicable to the restart setting (JP1/AJS3 - Manager in a compatible ISAM configuration)

| No. | Child process name or detailed process name | Extended startup process definition file | Process that can be restarted |
|---|---|---|---|
| 1 | jajs_hstd | `jp1ajs_service_0700.conf` | jajs_hstd and detailed process[#] |
| 2 | ajshlogd | `jp1ajs_hstd_0700.conf` | ajshlogd |
| 3 | ajsinetd | `jp1ajs_hstd_0700.conf` | ajsinetd |
| 4 | ajsnetwd | `jp1ajs_hstd_0700.conf` | ajsnetwd |
| 5 | ajsovstatd | `jp1ajs_hstd_0700.conf` | ajsovstatd |
| 6 | ajsgwmasterd | `jp1ajs_hstd_0700.conf` | ajsgwmasterd |
| 7 | jpqman | `jp1ajs_hstd_0700.conf` | jpqman |
| 8 | jpomanager | `jp1ajs_hstd_0700.conf` | jpomanager |
| 9 | ajsmasterd | `jp1ajs_hstd_0700.conf` | ajsmasterd |
| 10 | jajs_agtd | `jp1ajs_service_0700.conf` | jajs_agtd and detailed process[#] |
| 11 | jpqmon | `jp1ajs_agtd_0700.conf` | jpqmon |
| 12 | jpoagent | `jp1ajs_agtd_0700.conf` | jpoagent |

#

For details about JP1/AJS3 detailed processes, see *B. List of Processes* in the manual *Job Management Partner 1/Automatic Job Management System 3 Troubleshooting*.

*Table 7-14:* 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 | `jp1ajs_service_0700.conf` | jpqmon |
| 2 | jpoagent | `jp1ajs_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 7-15:* Values that can be specified for the variable fields

| Field name | Description |
|---|---|
| *whether-to-restart* | 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. |
| *restart-count* | 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 *whether-to-restart* field, the *restart-count* field is disabled regardless of whether a value is specified. |
| *retry-interval* | 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 *whether-to-restart* field, the *retry-interval* field is disabled regardless of whether a value is specified. |
| *retry-count-reset-time* | 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.<br>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 *whether-to-restart* field, the *retry-count-reset-time* 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, any jobnets and jobs that were running before the restart are interrupted. The status of the jobnets and jobs after `ajsmasterd` 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 *7.2.1(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.

The following tables describe the default values of the restart settings.

In Windows:

*Table 7-16:* Default values of the restart settings (JP1/AJS3 - Manager in a standard configuration)

| No. | Child process name or detailed process name | whether-to-restart | restart-count | retry-interval | retry-count-reset-time |
|---|---|---|---|---|---|
| 1 | jajs_dbmd.exe | No | 3 | 3 | 21600 |
| 2 | jajs_hstd.exe | Yes | 3 | 20 | 21600 |

| No. | Child process name or detailed process name | whether-to-restart | restart-count | retry-interval | retry-count-reset-time |
|---|---|---|---|---|---|
| 3 | ajshlogd.exe | Yes | 3 | 3 | 21600 |
| 4 | ajsinetd.exe | Yes | 3 | 3 | 21600 |
| 5 | ajsnetwd.exe | Yes | 3 | 3 | 21600 |
| 6 | ajsagtmd.exe | Yes | 3 | 3 | 21600 |
| 7 | ajsovstatd.exe | Yes | 3 | 3 | 21600 |
| 8 | ajsgwmasterd.exe | Yes | 3 | 3 | 21600 |
| 9 | ajsqlcltd.exe | Yes | 3 | 3 | 21600 |
| 10 | jpqman.exe | Yes | 3 | 3 | 21600 |
| 11 | jpomanager.exe | Yes | 3 | 3 | 21600 |
| 12 | jajs_schd.exe | Yes | 3 | 10 | 21600 |
| 13 | ajslogd.exe | No | 0 | 0 | 21600 |
| 14 | jpqman.exe | No | 0 | 0 | 21600 |
| 15 | jpomanager.exe | No | 0 | 0 | 21600 |
| 16 | ajsmasterd.exe | No | 0 | 0 | 21600 |
| 17 | jajs_agtd.exe | Yes | 3 | 3 | 21600 |
| 18 | jpqmon.exe | Yes | 3 | 3 | 21600 |
| 19 | jpoagent.exe | Yes | 3 | 3 | 21600 |

*Table 7-17:* Default values of the restart settings (JP1/AJS3 - Manager in a compatible ISAM configuration)

| No. | Child process name or detailed process name | whether-to-restart | restart-count | retry-interval | retry-count-reset-time |
|---|---|---|---|---|---|
| 1 | jajs_hstd.exe | Yes | 3 | 20 | 21600 |
| 2 | ajshlogd.exe | Yes | 3 | 3 | 21600 |
| 3 | ajsinetd.exe | Yes | 3 | 3 | 21600 |

| N o. | Child process name or detailed process name | whether-to-restart | restart-count | retry-interval | retry-count-reset-time |
|------|---------------------------------------------|--------------------|---------------|----------------|------------------------|
| 4 | ajsnetwd.exe | Yes | 3 | 3 | 21600 |
| 5 | ajsovstatd.exe | Yes | 3 | 3 | 21600 |
| 6 | ajsgwmasterd.exe | Yes | 3 | 3 | 21600 |
| 7 | ajsqlcltd.exe | Yes | 3 | 3 | 21600 |
| 8 | jpqman.exe | Yes | 3 | 3 | 21600 |
| 9 | jpomanager.exe | Yes | 3 | 3 | 21600 |
| 10 | ajsmasterd.exe | No | 3 | 3 | 21600 |
| 11 | jajs_agtd.exe | Yes | 3 | 3 | 21600 |
| 12 | jpqmon.exe | Yes | 3 | 3 | 21600 |
| 13 | jpoagent.exe | Yes | 3 | 3 | 21600 |

*Table 7-18:* 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.exe | Yes | 3 | 3 | 21600 |
| 2 | jpoagent.exe | Yes | 3 | 3 | 21600 |

In UNIX:

*Table 7-19:* Default values of the restart settings (JP1/AJS3 - Manager in a standard configuration)

| No. | Child process name or detailed process name | whether-to-restart | restart-count | retry-interval | retry-count-reset-time |
|---|---|---|---|---|---|
| 1 | jajs_hstd | Yes | 3 | 20 | 21600 |
| 2 | ajshlogd | Yes | 3 | 3 | 21600 |
| 3 | ajsinetd | Yes | 3 | 3 | 21600 |
| 4 | ajsnetwd | Yes | 3 | 3 | 21600 |
| 5 | ajsagtmd | Yes | 3 | 3 | 21600 |
| 6 | ajsovstatd | Yes | 3 | 3 | 21600 |
| 7 | ajsgwmasterd | Yes | 3 | 3 | 21600 |
| 8 | jpqman | Yes | 3 | 3 | 21600 |
| 9 | jpomanager | Yes | 3 | 3 | 21600 |
| 10 | jajs_schd | Yes | 3 | 10 | 21600 |
| 11 | ajslogd | No | 0 | 0 | 21600 |
| 12 | jpqman | No | 0 | 0 | 21600 |
| 13 | jpomanager | No | 0 | 0 | 21600 |
| 14 | ajsmasterd | No | 0 | 0 | 21600 |
| 15 | jajs_agtd | Yes | 3 | 3 | 21600 |
| 16 | jpqmon | Yes | 3 | 3 | 21600 |
| 17 | jpoagent | Yes | 3 | 3 | 21600 |

*Table 7-20:* Default values of the restart settings (JP1/AJS3 - Manager in a compatible ISAM configuration)

| No. | Child process name or detailed process name | whether-to-restart | restart-count | retry-interval | retry-count-reset-time |
|-----|-----|-----|-----|-----|-----|
| 1 | jajs_hstd | Yes | 3 | 20 | 21600 |
| 2 | ajshlogd | Yes | 3 | 3 | 21600 |
| 3 | ajsinetd | Yes | 3 | 3 | 21600 |
| 4 | ajsnetwd | Yes | 3 | 3 | 21600 |
| 5 | ajsovstatd | Yes | 3 | 3 | 21600 |
| 6 | ajsgwmasterd | Yes | 3 | 3 | 21600 |
| 7 | jpqman | Yes | 3 | 3 | 21600 |
| 8 | jpomanager | Yes | 3 | 3 | 21600 |
| 9 | ajsmasterd | No | 3 | 3 | 21600 |
| 10 | jajs_agtd | Yes | 3 | 3 | 21600 |
| 11 | jpqmon | Yes | 3 | 3 | 21600 |
| 12 | jpoagent | Yes | 3 | 3 | 21600 |

*Table 7-21:* 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:

- The jajs_dbmd.exe and jajs_dbmd processes manage the starting and stopping of the embedded database. Because the embedded database has its own restart functionality, it is not necessary to restart these processes in JP1/AJS3.

- 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.

- The ajsmasterd.exe and ajsmasterd processes in a compatible ISAM configuration do not need to be restarted in JP1/AJS3 because the ajsmasterd process has its own restart functionality.

### (1) Changing the Dr. Watson settings (Windows Server 2003 only)

In Windows, when a process is automatically restarted, an application error occurs in Dr. Watson and a message box appears. If this message box appears, restart is not enabled. To successfully perform automatic restart, you must suppress the error notification by the message box.

Note that when error notification by the message box is suppressed, the message box will not appear even if an error occurs in other applications.

To change the settings of Dr. Watson:

1. From the Windows **Start** menu, choose **Run**.

2. In the text box, type drwtsn32, and click the **OK** button.

   The Dr. Watson dialog box opens.

3. Clear the **Visual Notification** check box.

4. Click the **OK** button.

### (2) 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)

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*restart-count-reset-time*：3,600 (seconds)

*Figure 7-1:* Example of settings in the extended startup process definition file

In Windows:

```
jajs_dbmd|jajs_dbmd.exe||0|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||0|3|3|21600|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 7-2:* 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.

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## 7.3.2 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 `jp1ajs_param.conf` file. By default, JP1 events are not issued.

To enable issuance of JP1 events:

1. Edit the `jp1ajs_param.conf` file.

   The location of the `jp1ajs_param.conf` file is as follows:

   - Windows: *JP1/AJS3-installation-folder*`\conf\jp1ajs_param.conf`
   - UNIX: `/etc/opt/jp1ajs2/conf/jp1ajs_param.conf`

   For details about how to define the `jp1ajs_param.conf` file, see *7.3.3 Format of the jp1ajs_param.conf file*.

   If you do not have the `jp1ajs_param.conf` file, copy `jp1ajs_param.conf.model` from the above directory.

2. Execute the `jbssetcnf` command.

   `jbssetcnf jp1ajs_param.conf`

   For details about the `jbssetcnf` command, see the description of this command in the *Job Management Partner 1/Base User's Guide*.

3. Restart JP1/AJS3.

   The settings in the `jp1ajs_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 *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*. For details about the environment setting parameters that define whether to issue a JP1 event, see *2.1 Setting up the system management environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

### 7.3.3 Format of the jp1ajs_param.conf file

This subsection describes the format of the `jp1ajs_param.conf` file.

In the `jp1ajs_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 `jp1ajs_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`.

## 7.4 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. When the JP1/AJS3 service is restarted in hot-start mode, jobs that were queued at the moment the service stopped are canceled and returned to *Wait for prev. to end* status. The jobs are then automatically submitted again to ensure continued 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 status. 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 7-3:* How a job is resubmitted when the JP1/AJS3 service is restarted (hot start)
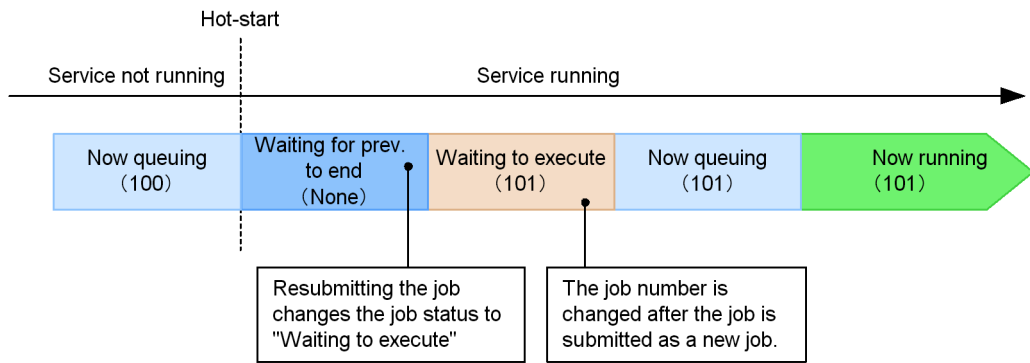


When the service is restarted in warm-start mode, the job status changes to *Not executed + Ended*. When the service is restarted in cold-start mode, the job status changes to *Not registered*.

# 8. 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.

## 8.1 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 *Job Management Partner 1/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.

## 8.2 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.

### 8.2.1 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\AJSROOT1]
  "SUPPRESS"="exec"
  ```

  For details about environment setting parameters, see *2.2 Setting up the scheduler service environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

- `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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

## 8.2.2 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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

## 8.3 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 *Job Management Partner 1/Automatic Job Management System 3 Overview*.

### 8.3.1 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 pre-check of the release-source root jobnet definition.

   Use the `ajschkdef` command to check the definition of the release-source root jobnet. For details about the `ajschkdef` command, see *ajschkdef* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

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 *8.3.2 Registering a jobnet-definition release*.

### 8.3.2 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 *Job Management Partner 1/Automatic Job Management System 3 Operator's Guide*. For

details about how to use the `ajsrelease` command, see *ajsrelease* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

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 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.

- 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. Note, however, that the information specified during registration for

execution, such as macro variables and JP1 user, is passed.

- Even if you register, for release, a jobnet definition that (in the schedule definition) will have no next scheduled generation created, no scheduled generation will be created from that definition. Therefore, use JP1/AJS3 - View or the `ajsshow` command to make sure that a scheduled generation has been created correctly from the jobnet definition that was released. If a scheduled generation has not been created, cancel the jobnet-definition release, review the release-source jobnet definition, and then re-reregister the jobnet-definition release.

- 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.

## 8.3.3 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 8-1:* 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 *Delete wait* status, see *8.3.7 Canceling a release*. |

| Release status | Description |
|---|---|
| Release entry wait | A temporary status that lasts after release entry until *Release wait* 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 *8.3.7 Canceling a release*. |

The following figure shows the *Release wait*, *Being applied*, and *Applied* status transitions.

*Figure 8-1:* Release status transitions



   #
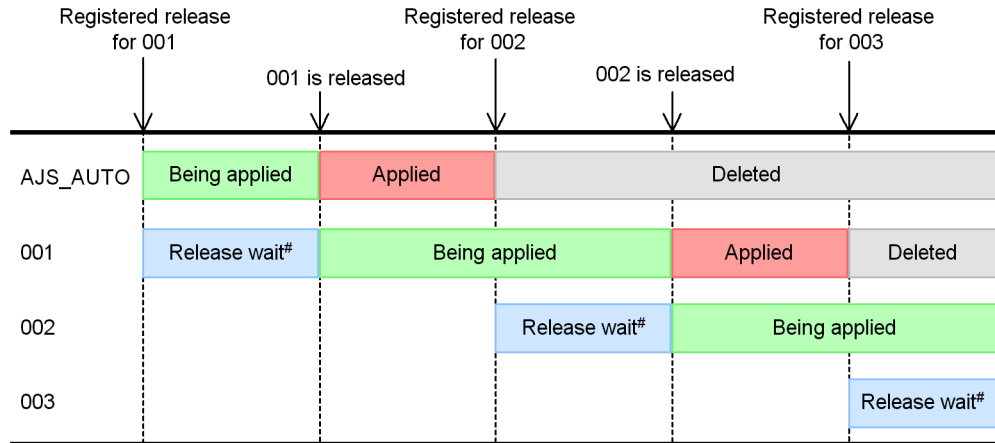
     This status is temporarily *Release entry wait* before it becomes *Release wait*.
     If release fails, the status of the jobnet will remain *Release entry wait*.

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.

## 8.3.4 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 8-2:* 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
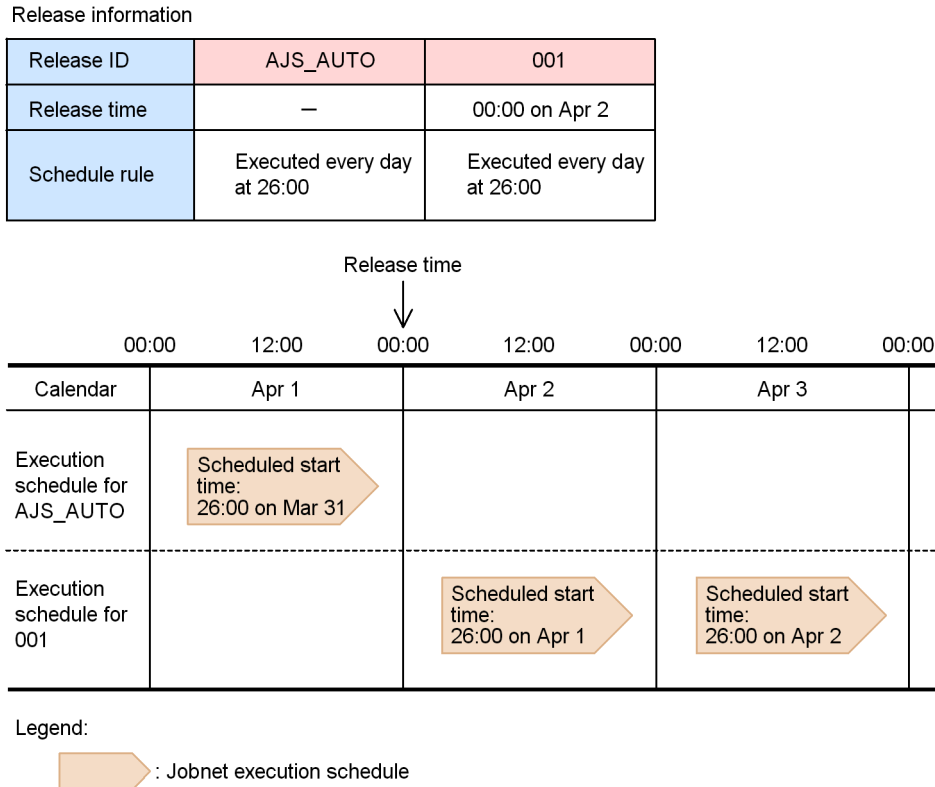
This example assumes that the jobnet is executed every day at 26:00 (48-hour schedule).

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 8-3:* 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
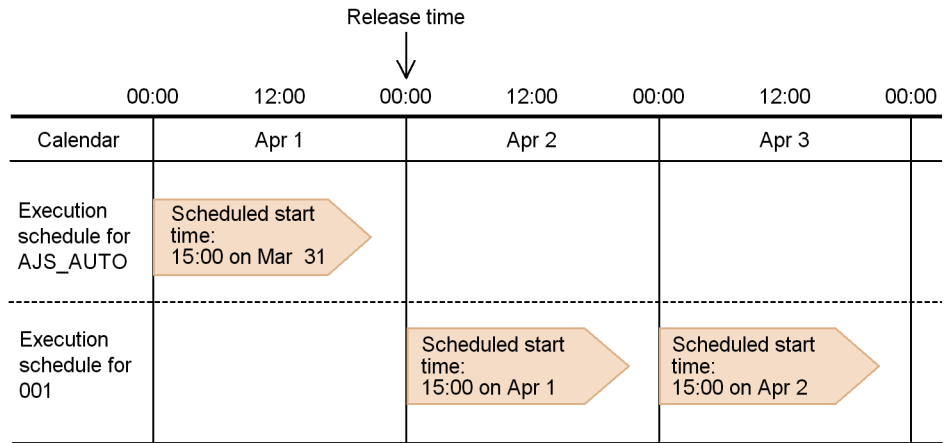


Legend:

 : 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.

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### *(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 8-4:* 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 |
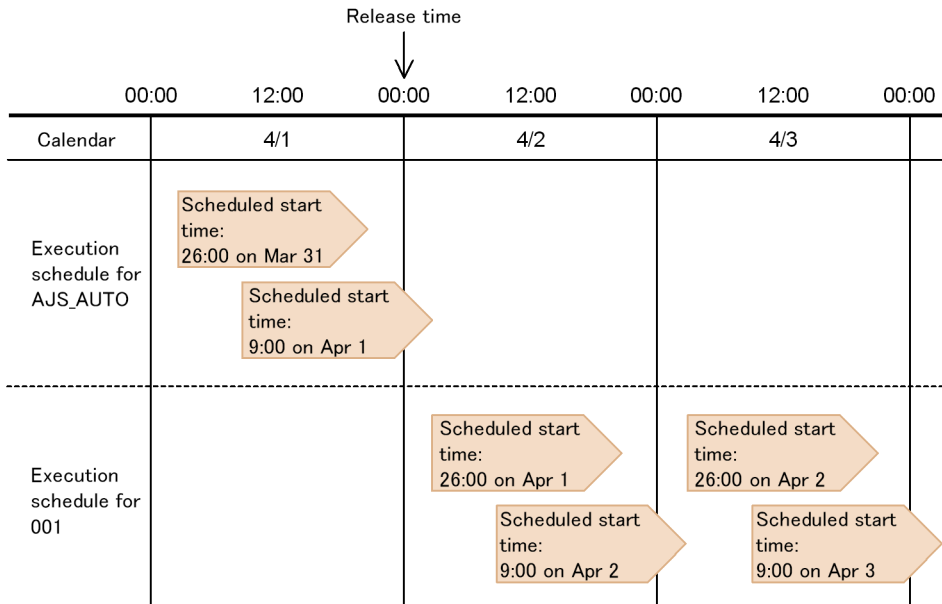
Release time

| | 00:00 | 12:00 | 00:00 | 12:00 | 00:00 | 12:00 | 00:00 |
|---|---|---|---|---|---|---|---|
| Calendar | | 4/1 | | 4/2 | | 4/3 | |

Execution schedule for AJS_AUTO
- Scheduled start time: 26:00 on Mar 31
- Scheduled start time: 9:00 on Apr 1

Execution schedule for 001
- Scheduled start time: 26:00 on Apr 1
- Scheduled start time: 9:00 on Apr 2
- Scheduled start time: 26:00 on Apr 2
- Scheduled start time: 9:00 on Apr 3

Legend:

: Jobnet execution schedule

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.
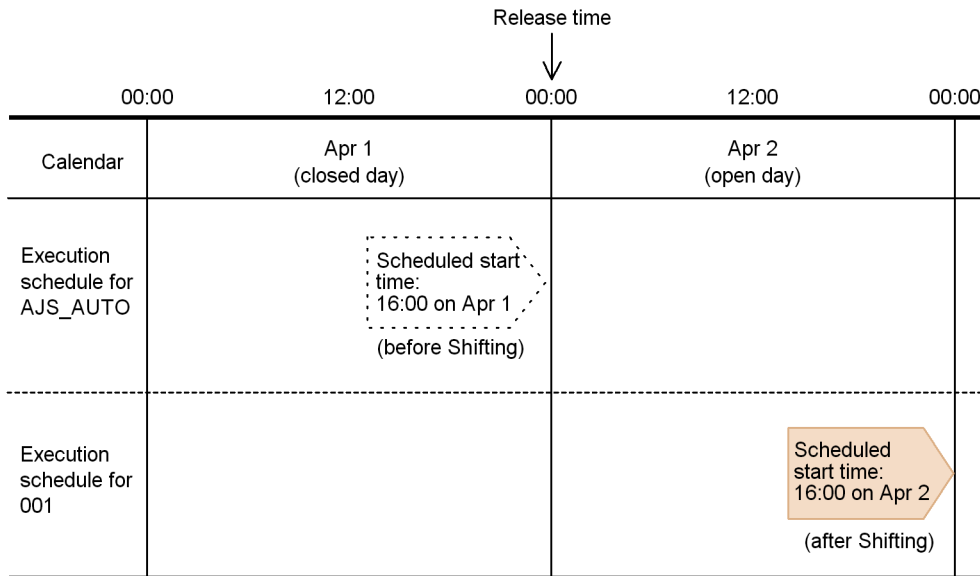
*Figure 8-5:* Example of release when "Execute on next open day" is set

Release information

| Release ID | AJS_AUTO | 001 |
|---|---|---|
| Release time | — | 00:00 on Apr 2 |
| Schedule rule | - Executed at the relative time of 16:00<br><br>- Substitute schedule of closed day job:<br>Execute on next open day<br>Max. shiftable days: 2 days | - Executed at the relative time of 16:00<br><br>- Substitute schedule of closed day job:<br>Execute on next open day<br>Max. shiftable days: 2 days |

Release time

| | 00:00 | 12:00 | 00:00 | 12:00 | 00:00 |
|---|---|---|---|---|---|
| Calendar | | Apr 1<br>(closed day) | | Apr 2<br>(open day) | |
| Execution schedule for AJS_AUTO | | Scheduled start time:<br>16:00 on Apr 1<br><br>(before Shifting) | | | |
| Execution schedule for 001 | | | | Scheduled start time:<br>16:00 on Apr 2<br><br>(after Shifting) | |

Legend:

⌐ ⌐ : Jobnet execution schedule before the shift

: Jobnet execution schedule

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 8-6:* Example of release when "Execute on previous open day" is set



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.

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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.
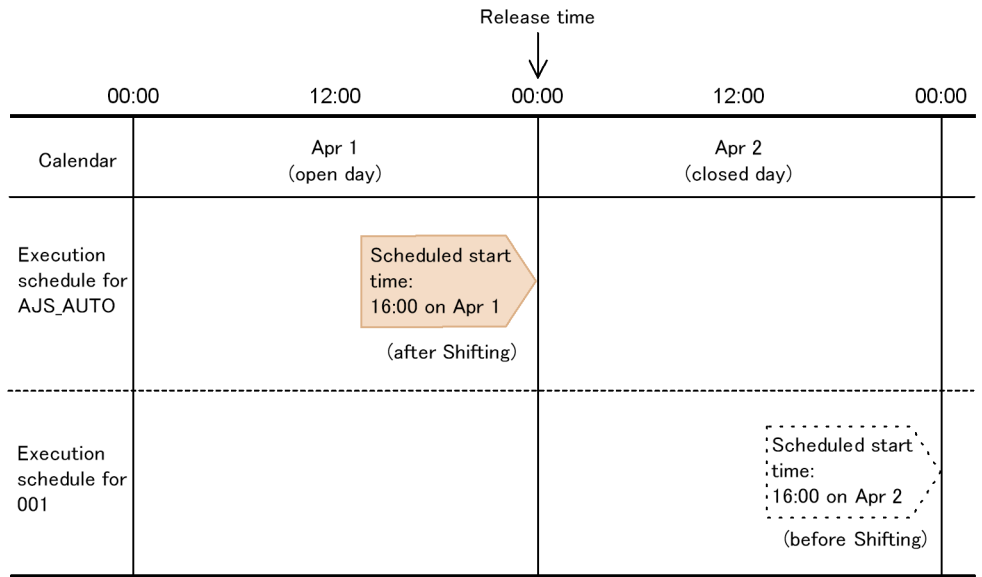
### (5) Release timing when a start condition is set

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 8-7:* Example of release when a start condition is set
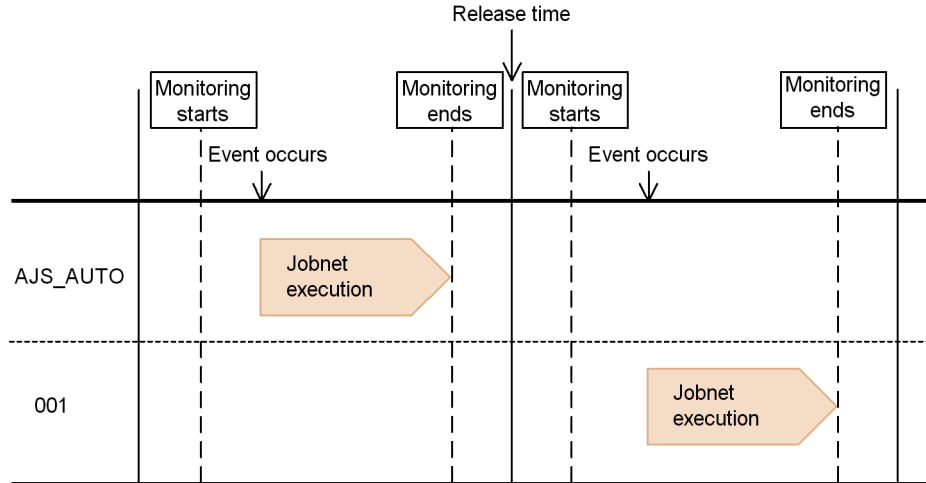


In this example, the release time falls between two monitoring periods. In this case, the jobnet definition is switched at the release time.

However, if monitoring is still in progress at the release time as shown in the following figure, the jobnet definition is not switched.

*Figure 8-8:* Example of release when start condition monitoring has not stopped at the release time
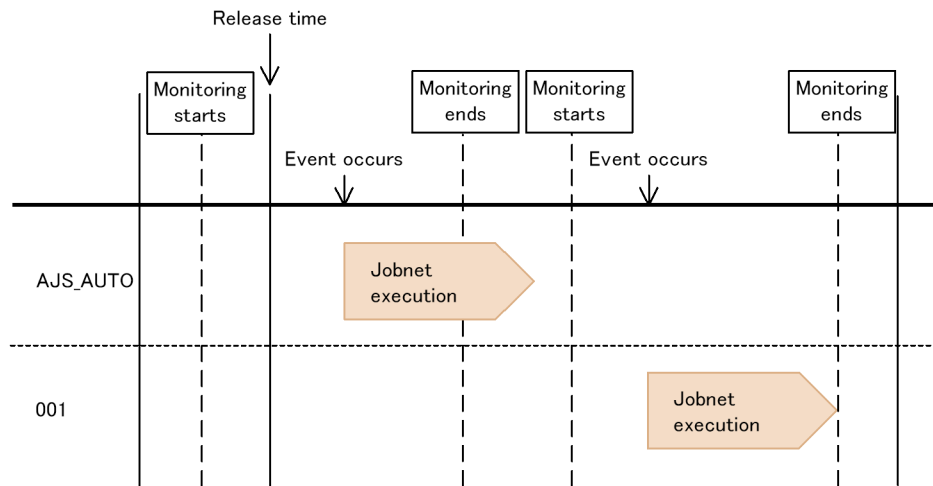


As shown above, if monitoring has not stopped when the release time arrives, the release-target jobnet is executed with the definition that has the release ID AJS_AUTO. The definition that has the release ID 001 will be executed after the next monitoring period starts. Therefore, if you want to use the 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 8-9:* 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 |

Release time

| | 00:00 | 12:00 | 00:00 | 12:00 | 00:00 | 12:00 | 00:00 |
|---|---|---|---|---|---|---|---|
| Calendar | | Apr 1 | | Apr 2 | | Apr 3 | |
| Execution schedule for AJS_AUTO | Scheduled start time: 00:00 on Apr 1 | | | | | | |
| Execution schedule for 001 | | | | Scheduled start time: 15:00 on Apr 2 | | Scheduled start time: 15:00 on Apr 3 | |
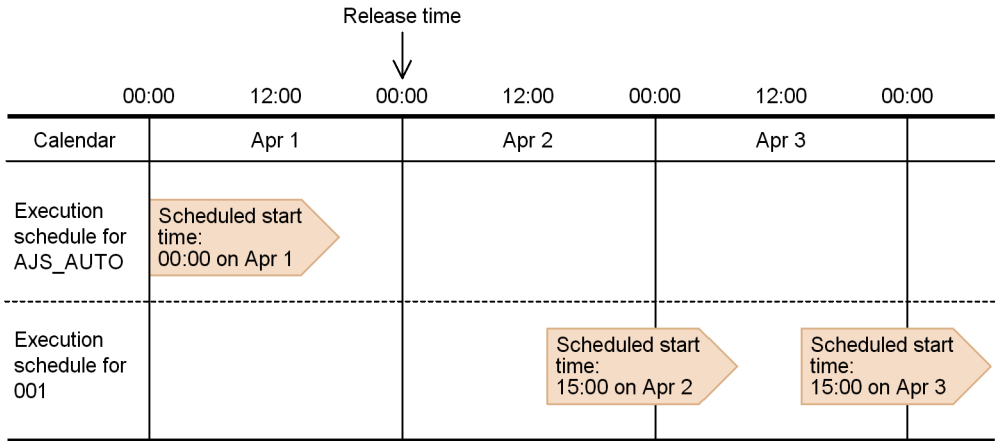
Legend:

: 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 8-10:* Example of release when the time zone settings at jobnet-definition release registration and the release-target jobnet are different



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

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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 8-11:* 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 |
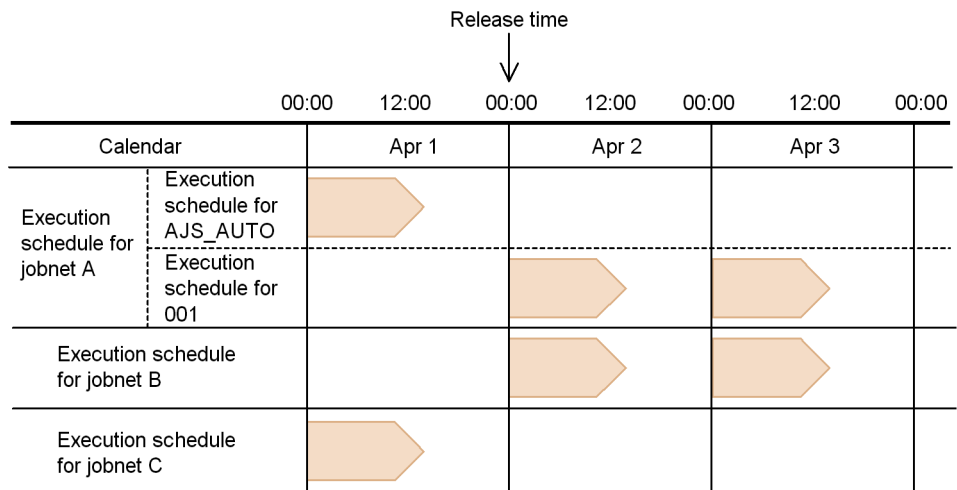


Legend:

 : 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.

## 8.3.5 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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

## 8.3.6 Checking execution schedules after registering a release
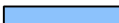
After registering a jobnet-definition release, you can use the JP1/AJS3 - View Daily Schedule window and Monthly Schedule window to check the execution schedules. The following describes how the execution schedules are displayed when release entry is performed with release ID `001` and a release time of 00:00 on April 2 specified.

### ■ Display in the Daily Schedule window

The following figure shows the execution schedules displayed in the Daily Schedule window.

*Figure 8-12:* 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.

■ **Display in the Monthly Schedule window**

The following figure shows the execution schedules displayed in the Monthly Schedule window.

*Figure 8-13:* 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.

## 8.3.7 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 *Job Management Partner 1/Automatic Job Management System 3 Operator's Guide*. For details about how to use the `ajsrelease` command to cancel a release, see *ajsrelease* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

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.

## 8.3.8 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 8-14:* Basic operation cycle for using the jobnet release function
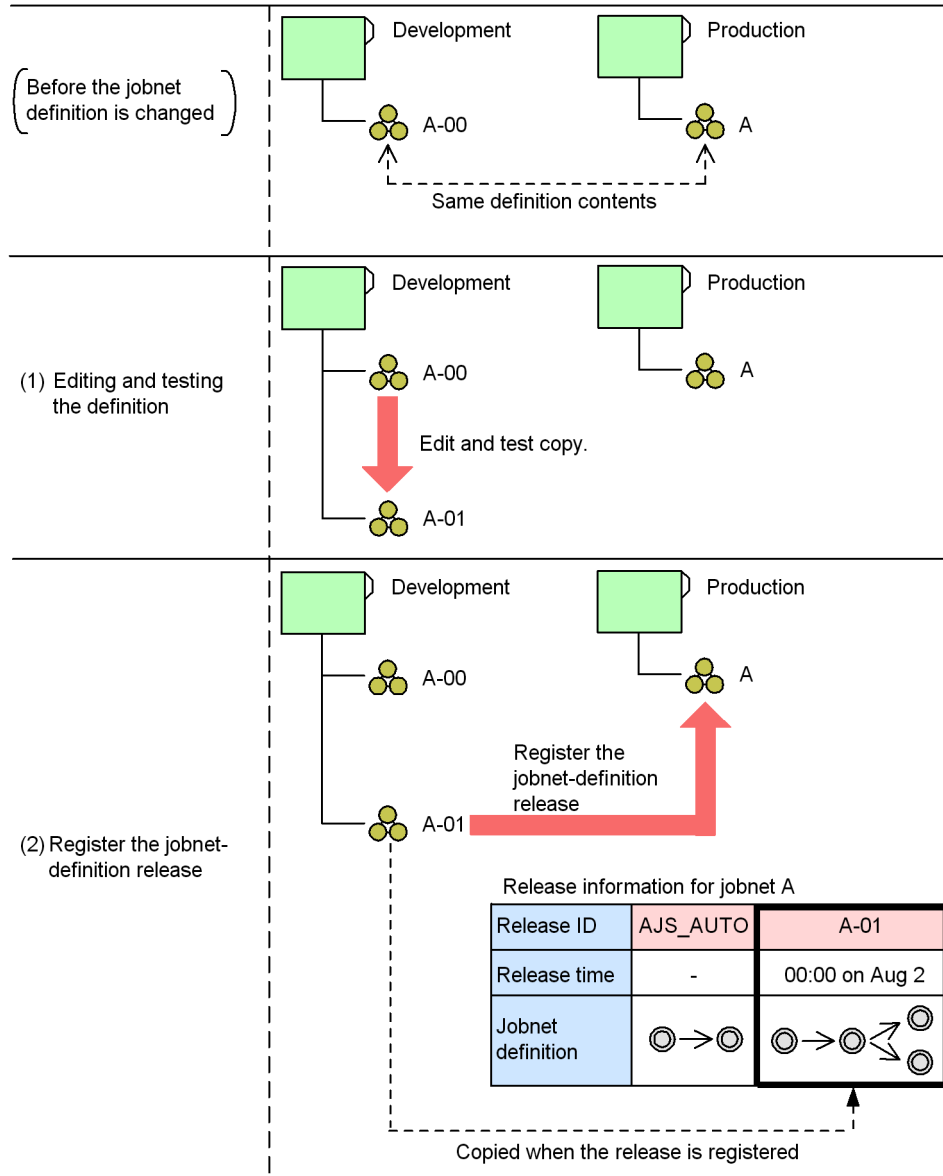


In this example, jobnet A-00, which is used for development, has the same definition contents as the jobnet A in the production environment. When the jobnet release function is used to switch the jobnet A definition, a copy of jobnet A-00 is edited and tested as jobnet A-01 ((1) in the figure). Next, 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 8-15:* Operation for redoing registration of a jobnet-definition release
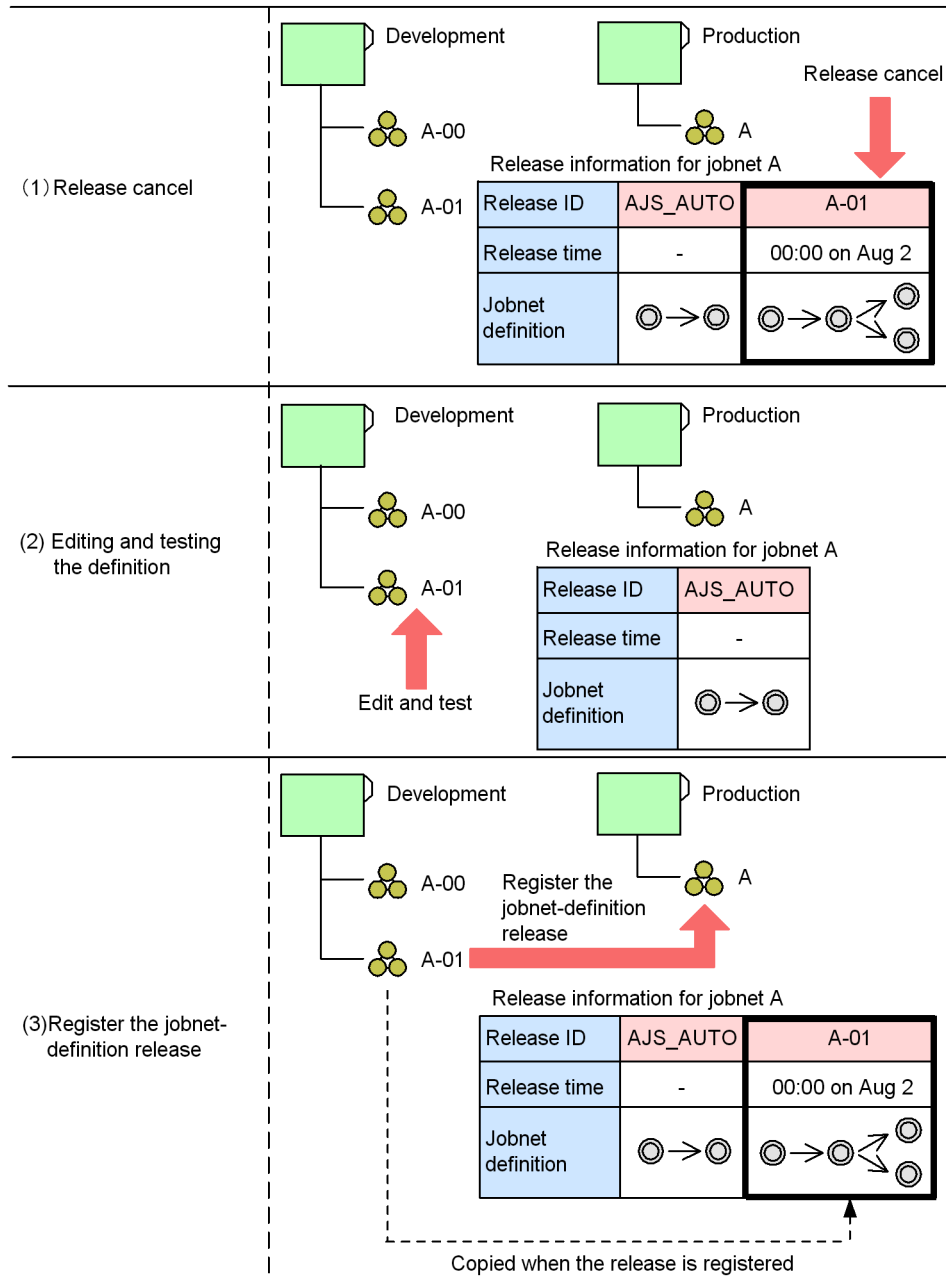


In this example, because editing of the jobnet definition is required after the

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.

### ■ 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 8-16:* Recommended method for using the jobnet release function
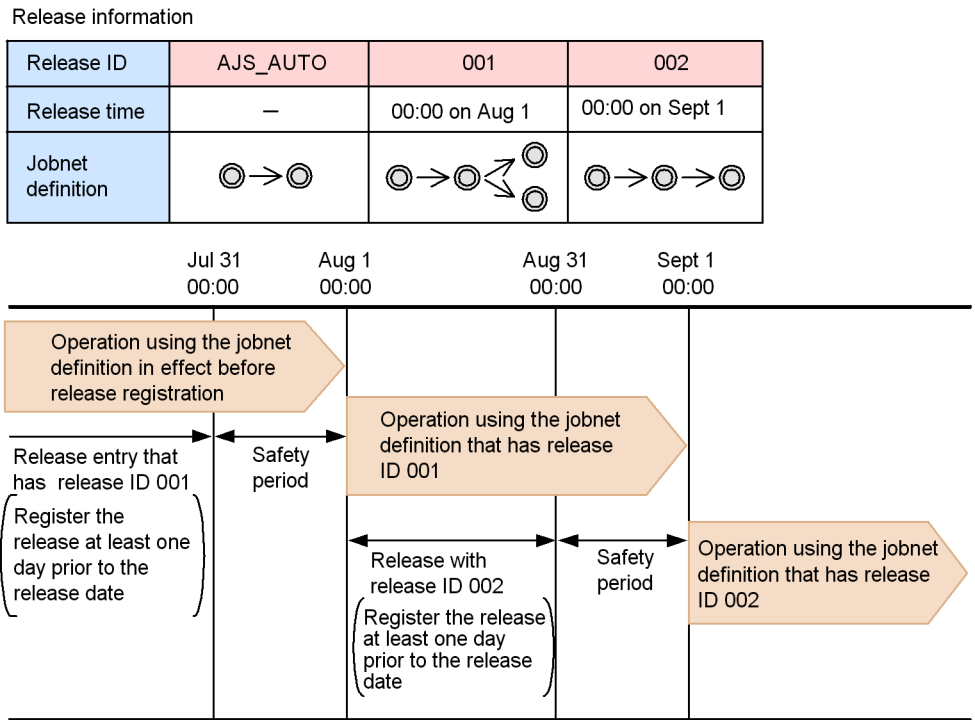
## ■ **Operation when the execution order control for root jobnets is used**

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 8-17:* Example of operation when execution order control for root jobnets is used
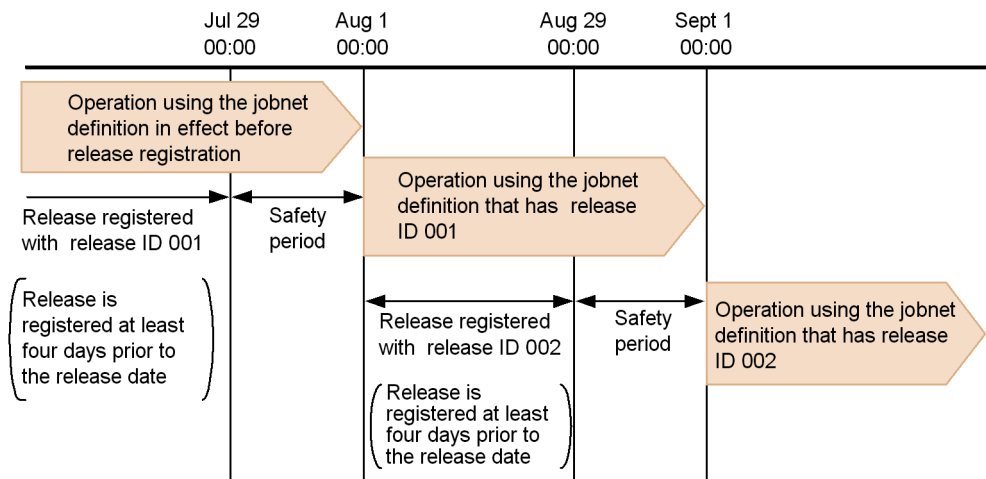
■ **Operation when an execution schedule is changed by temporarily changing the plan**

- **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.

  Therefore, before you register a release, use information such as the scheduler log to check the information about temporary changes to the plan performed for generations after the release time. If necessary, redo temporary changes to the plan for the re-created generations after registering the release.

  #

  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 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.

■ **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  8-18:*  Example of operation when only production devices are used
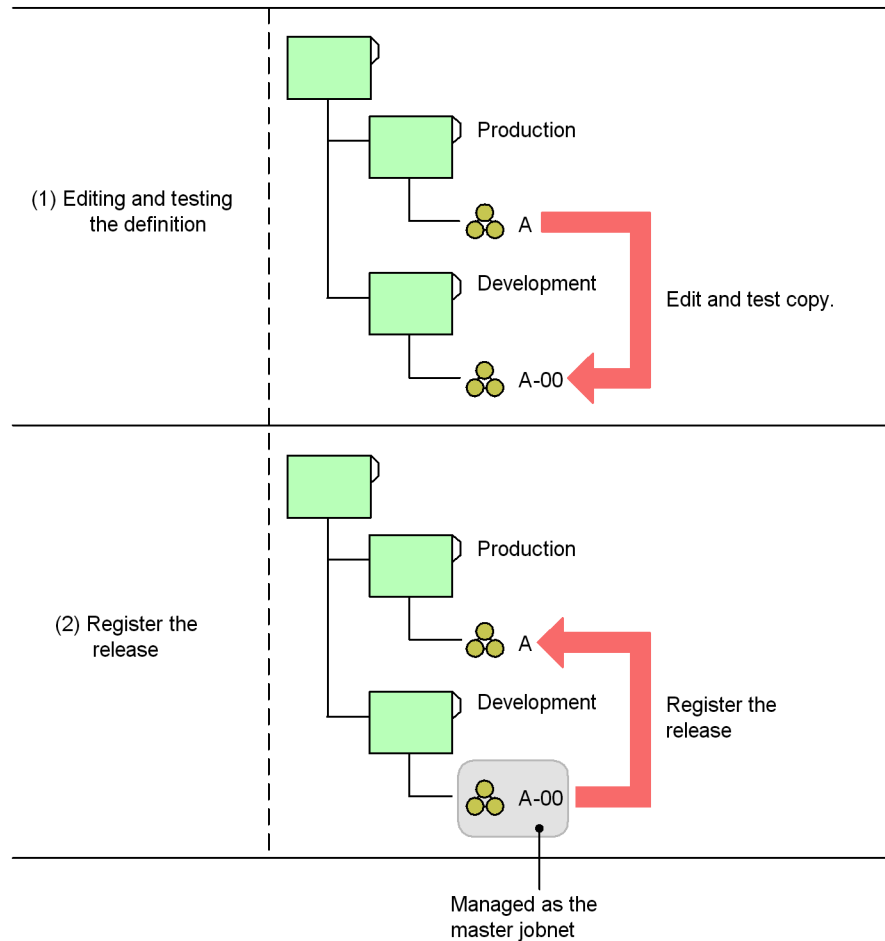


Note that the above operation is also possible if the release-source jobnet and the release-target jobnet belong to the same job group.

■ **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 8-19:* Example of operation when management of a master jobnet is not necessary
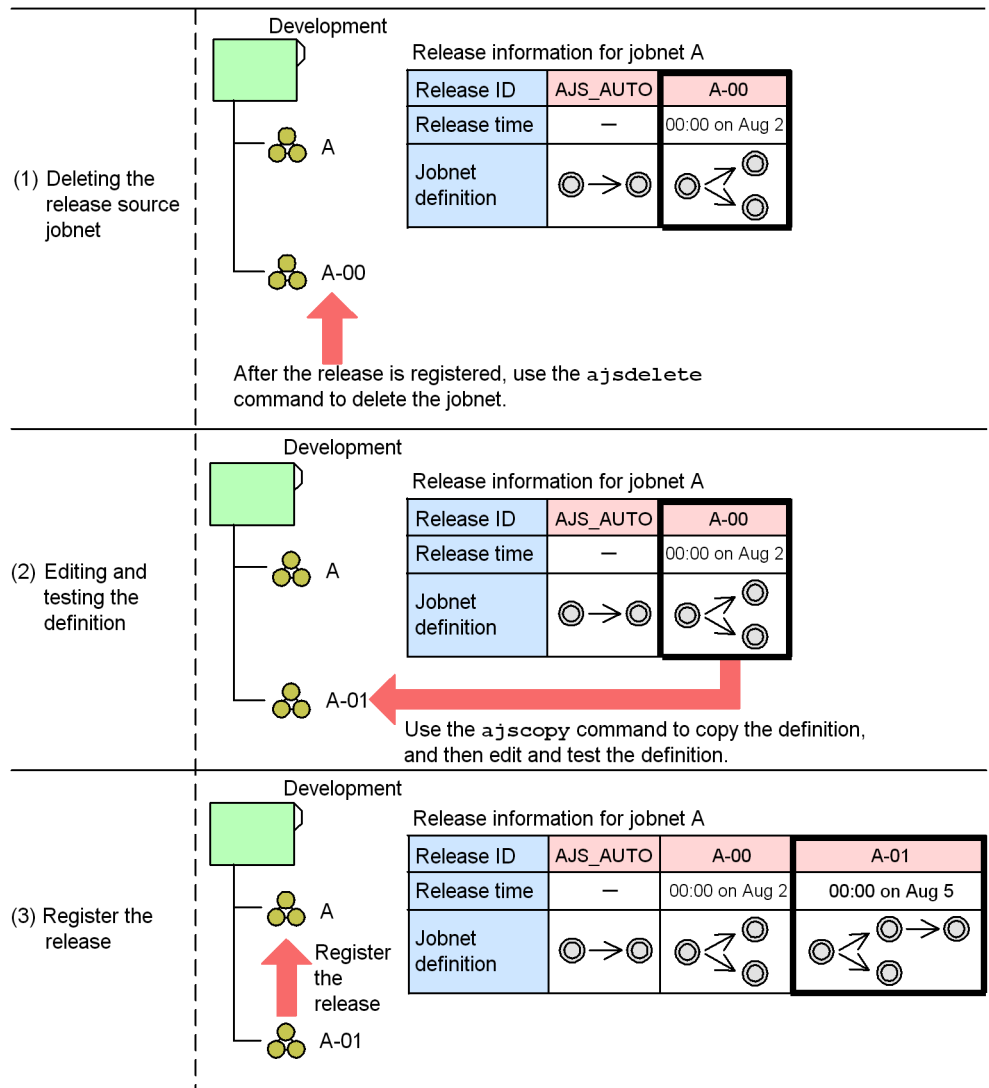


In this example, release-source jobnet `A-01` is deleted after release ID `A-00` is registered for release ((1) in the figure). Next, a jobnet definition is copied from the release information for jobnet `A`, and is edited and tested as jobnet `A-01` ((2) in the figure). Finally, the release is registered.

### *(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 8-20:* 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 |
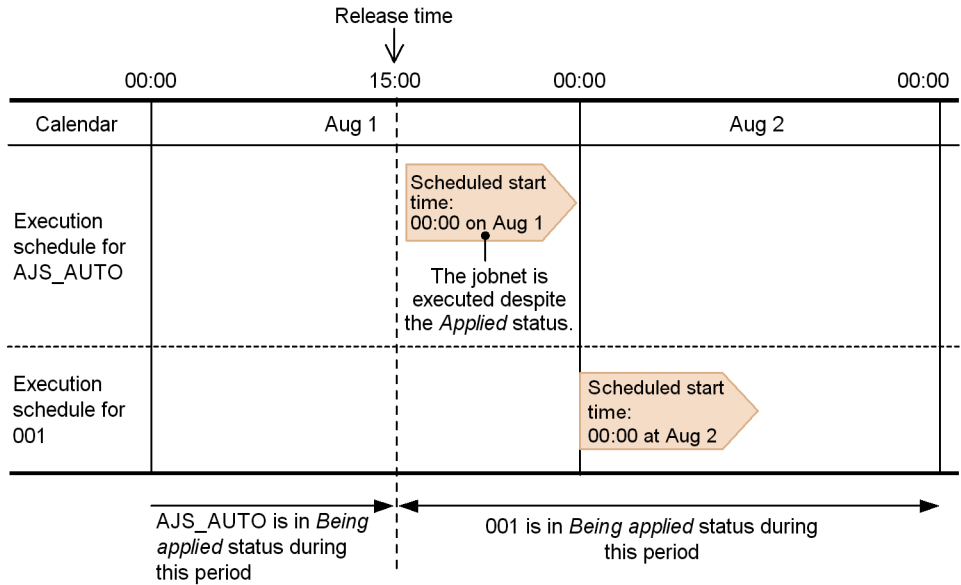


Legend:

 : 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`

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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 8-21:* When the jobnet is registered for execution less than one day after the release time (2)
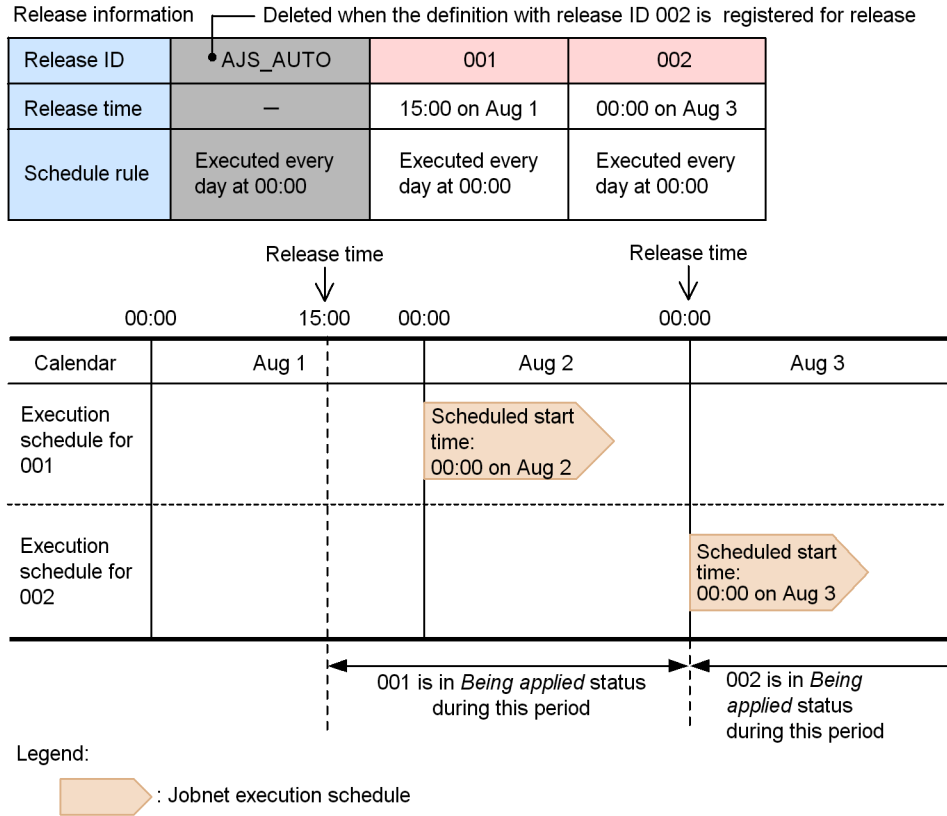
# 8.4 Changing the unit definition information during registration for execution

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 8-2:* 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**<br>**Running + Warning**<br>**Running + Abend** | **Time-wait[#1]**<br>**Wait for start cond.**<br>**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 8-3*.

#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 8-3:* 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 |
|---|---|
| Jobs (standard jobs, event jobs, action jobs, and custom jobs) | • Hold<br>• Owner<br>• Executed by |
| Jobnets | • Execution agent<br>• Concurrent exec. (root jobnet only)<br>• Priority<br>• Schedule option (root jobnet only)<br>• Timeout period (root jobnet only)<br>• Hold |
| Remote jobnets | • Target manager<br>• Concurrent exec. (root remote jobnet only)<br>• Schedule option (root remote jobnet only)<br>• Timeout period (root remote jobnet only)<br>• Hold |

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 *8.4.2 Applying the unit definition information changed during registration for 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  8-4:*  When the latest definition information is reloaded

| Unit type | When the latest definition information is reloaded |
|---|---|
| Jobs (standard jobs, 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.

## 8.4.1 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  8-5:*  Unit definition information for which changes will be applied

| Unit type | Unit definition information for which changes will be applied |
|---|---|
| Jobs (standard jobs, event jobs, action jobs, and custom jobs) | • Hold<br>• Owner<br>• Executed by |
| Jobnets | • Execution agent<br>• Concurrent exec. (root jobnet only)<br>• Priority<br>• Schedule option (root jobnet only)<br>• Timeout period (root jobnet only)<br>• Hold |
| Remote jobnets | • Target manager<br>• Concurrent exec. (root remote jobnet only)<br>• Schedule option (root remote jobnet only)<br>• Hold |

Cautionary note

For *Timeout period*, the latest definition change made during execution registration will not be applied even if the setting that applies unit definition information that has changed during execution registration is specified. To apply all the changes, cancel the registration and then change the definition.

## 8.4.2 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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

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\AJSROOT1]
   "UNITDEFINERELOAD"="yes"
   ```

   If you may change unit definitions during registration for execution, you should select `Yes`.

   For details about the environment setting parameters, see *2.2 Setting up the scheduler service environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

   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_spmd` 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_spmd` command, see *jajs_spmd* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

## 8.5 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.

### 8.5.1 Starting the scheduler service

Use the `jajs_spmd` 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_spmd` command, see *jajs_spmd* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

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.

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## 8.5.2 Stopping the scheduler service

Use the `jajs_spmd_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 restrict how the scheduler service stops, you can use `ajsstop` command options to restrict the execution of jobnets and jobs as follows to ensure 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. 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.

- 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_spmd_stop` command, see *jajs_spmd_stop* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

To use advanced options to stop the scheduler service, use the `ajsstop` command. For details about the `ajsstop` command, see *ajsstop* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

## 8.6 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 is a superuser or a member of the Administrators group can perform this operation.

The following table describes when the local date and time for the scheduler service are applied.

*Table 8-6:* 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, 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 `ajs` is executed | Scheduler service local date and time |
| Time that a command not beginning with `ajs` 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 *3. Commands Used for Special Operation* in the manual *Job Management Partner 1/ Automatic Job Management System 3 Command Reference 2*.

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 *2. Commands* in the manual *Job Management Partner 1/ Automatic Job Management System 3 Command Reference 1* and *jajs_spmd* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

- 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.

## 8.7 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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

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 8-7:* Scheduler log file subject to the -c option according to the combination of the environment setting parameter AJSLOGOUTPUTDEST and -o option

| Specification of AJSLOGOUTPUTDEST | -o option of the ajsalter command | |
|---|---|---|
| | Specified | Not specified |
| schedule (default value) | For the host | For each scheduler service |
| host | 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 considerations about specifying the AJSLOGOUTPUTDEST environment setting parameter, see *4.3.2 Environment settings for scheduler services* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (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/jp1ajs2/log/ajs-host-log1.log

/var/opt/jp1ajs2/log/ajs-host-log2.log

Scheduler service AJSROOT1

- Value of the AJSLOGOUTPUTDEST environment setting parameter: schedule

- Scheduler log files:

/var/opt/jp1ajs2/log/schedule/AJSROOT1/ajs-log1.log

/var/opt/jp1ajs2/log/schedule/AJSROOT1/ajs-log2.log

Scheduler service AJSROOT2

- Value of the AJSLOGOUTPUTDEST environment setting parameter: host

- Scheduler log files

  ```
  /var/opt/jp1ajs2/log/ajs-host-log1.log
  ```

  ```
  /var/opt/jp1ajs2/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/jp1ajs2/log/schedule/AJSROOT1/ajs-log1.log` for the scheduler service is switched to `/var/opt/jp1ajs2/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/jp1ajs2/log/ajs-host-log1.log` for the host is switched to `/var/opt/jp1ajs2/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/jp1ajs2/log/ajs-host-log1.log` for the host is switched to `/var/opt/jp1ajs2/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.

## 8.8  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.

### 8.8.1  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.

To perform these operations, use the following commands. For details about the commands, see *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

- 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

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.

## 8.8.2 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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

- `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.

## 8.9 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.

### 8.9.1 Changing the name of the host that runs JP1/AJS3

This subsection describes how to change the name of the host that runs JP1/AJS3, for both JP1/AJS3 - Manager and JP1/AJS3 - Agent.

#### (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 change only a domain name of the network environment without defining the host name in the FQDN format within JP1/AJS3, operation (for changing the host name) described in this subsection is not required. 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 submitted jobs are used, you need to change the execution agent definition information and the definition information for the execution environment for QUEUE jobs and submitted jobs.

#### (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, stop all programs of JP1/AJS3 of the agent host that executes the event job.

To change the host name of JP1/AJS3 - Manager:

1.  Log off JP1/AJS3 - View.

2. Use the `ajsprint` command to back up the jobnet definition.

   You will use the backup you create here in step 12.

   For details about the backup method, see *2.2.2(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 13. For details about how to create the backup, see *2.2.2(2) Backing up the execution agent information*.

4. Stop the JP1/AJS3 services of the manager host.

5. When QUEUE jobs and submitted jobs are used, use the `jpqexport` command to back up the execution environment definition for QUEUE jobs and submitted jobs.

   The backup created here will be used in step 7. For details about how to create the backup, see *2.2.2(3) Backing up the execution environment definition for QUEUE jobs and submitted 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 *8.2.6 Deleting logical hosts* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1*.

   > 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 *Job Management Partner 1/ Automatic Job Management System 3 Configuration Guide 1*.

   In UNIX:

   > For details about deleting logical host names, see *16.2.6 Deleting logical hosts* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1*.

   > For details about setting up a logical host to run in a cluster system, see *16. Setup for Operation in a Cluster System* in the *Job Management Partner 1/ Automatic Job Management System 3 Configuration Guide 1*.

7. When QUEUE jobs and submitted jobs are used, use the `jpqimport` command to re-create the execution environment for the QUEUE jobs and submitted jobs.

For details about how to re-create the execution environment for the QUEUE jobs and submitted jobs, see *2.3.3(5) Creating an execution environment for QUEUE jobs and submitted 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.

   For details about the procedure for performing setup again, see steps 3 to 7 in *C.2(7) Setting up an embedded database again* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1*.

9. When you use the host whose name is to be changed as the authorization server (a function of JP1/Base) as well, change the user mapping setting.

   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 (jp1BsUmap.conf) to the changed name. Then execute the jbsmkumap command.

   For details on user mapping, see the *Job Management Partner 1/Base User's Guide*.

   If you are using an event job, proceed to step 10. If not, proceed to step 11.

10. If you are using an event job, execute the jpoagoec command on the agent host and manager host (including the local host) that execute the event job, and start the agent host by a cold start.

    Execute the jpoagoec command on all the hosts that receive requests from the manager whose name is to be changed and that execute the event job. The procedure for executing the command is described below. An example procedure for when ManagerHostB is to be changed to ManagerHostC follows:

    To execute the command:

    - Execute the jpoagoec -p command to check the name of the manager host that the event action agent function currently stores.

      Display example:

      ManagerHostA

      ManagerHostB

- Execute the `jpoagoec -d ManagerHostB` command to delete the pre-changed manager host name.

- Execute the `jpoagoec -a ManagerHostC` command to add the changed manager host name.

- Execute the `jpoagoec -p` command to check that a manager host name is added.

  Display example:

  `ManagerHostA`

  `ManagerHostC`

- Start the agent host by 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 *service-name* Properties dialog box, specify `-cold` as the start mode for **Start Parameters**.

  Then click the **Start** button.

  In UNIX:

  Execute the `jajs_spmd -cold` command.

11. Start the manager host by a cold start.

    Perform a cold start of the physical host or logical host whose host name you changed.

12. Use the `ajsdefine` command to recover the jobnet definition you backed up in step 2.

    For details about the recovery method, see *2.3.3(8) Recovering the unit definition*.

13. Use the `ajsagtadd` command to recover the execution agent definition you backed up in step 3.

    For details about the recovery method, see *2.3.3(7) Recovering the execution agent information*.

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 11, the execution

registration of jobnets is all cancelled. Execute and register again the jobnets required for operation.

15. If you are using JP1/AJS3 Console on the manager host, restart the following services:

    • JP1/AJS3 Console Manager service

    • JP1/AJS3 Console Agent service

16. The host is used as the NNM monitoring host when HP NNM is linked.

    To change the host name, you must 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 *A.2(3) Setting up SNMP trap destinations* in the *Job Management Partner 1/Automatic Job Management System 3 Linkage Guide*. 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

To change the host name of JP1/AJS3 - Agent, use the command to be used for execution agent operation. When QUEUE jobs and submitted 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 on the agent host whose name is to be changed.

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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

4. When QUEUE jobs and submitted 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 *3. Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

    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 *3. Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

5. Change the agent host name, and cold-start the JP1/AJS3 services on the agent host.

   Cautionary note

   Confirm that communication is possible between the new agent host and the manager host.

6. Re-register the jobnets and resume operation.

## 8.9.2 Changing the IP address of the host that runs JP1/AJS3

To change the IP address of the host on which JP1/AJS3 is running, note the following points:

- Before changing the IP address, stop the following services, and confirm that they are stopped. Then, change the IP address and restart the service.

  - All JP1/AJS3 services

  - JP1/AJS3 Console Manager service

  - JP1/AJS3 Console Agent service

  - JP1/AJS3 Queueless Agent service

  - JP1/AJS3 Queueless File Transfer service

- To connect from JP1/AJS3 - View to JP1/AJS3 - Manager of the physical host, be sure to connect to the IP address corresponding to the physical host name.

- If you change the IP address of the manager host while a queueless job is running on an agent host, the manager host will be unable to determine the job status when the job terminates. The manager host therefore assumes *Unknown end status*. Before you change the IP address, make sure that no queueless jobs are running. If you have changed the IP address before a queueless job running on an agent host has terminated, use the queueless log files on the agent host to check the termination status of the job.

## 8.9.3 Changing the date and time of the system

This subsection explains the procedure for changing the system's date and time of the system during JP1/AJS3 operation.

Use the procedure described here to set the date and time forward and backward for testing. 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.

After the JP1/AJS3 service starts, if you change the system date and time to a large degree for a test, for example, the change will affect the execution schedules of jobnets. Do not change the system date and time after the JP1/AJS3 service has started. In addition, after JP1/AJS3 operation has started, do not return the system date and time to the original setting. If you want to do this, re-create the database environment. If you set back the time while the JP1/AJS3 service is not running, cold-start the scheduler service, or wait for the time at which you set back the time to arrive before you start the scheduler service.

Cautionary note when JP1/AJS3 Console is used

> When you are using JP1/AJS3 Console, do not change the system date and time to a large degree for testing or for any other purpose. If you want to change the system date and time, JP1/AJS3 Console must not be running on the host for which you want to change the system date and time. Before you change the system date and time, do the following:
>
> 1.  Stop the JP1/AJS3 Console Manager service.
>
> 2.  Stop the JP1/AJS3 Console Agent service.
>
> 3.  Stop JP1/AJS3 Console View.

### (1) Changing the system date and time and performing a check test

> To advance the system's date and time, perform a check test, and return to the current date and time:
>
> 1.  End the JP1/AJS3 services.
>
> 2.  If JP1/AJS3 Console is being used, stop the following services:
>     - JP1/AJS3 Console Manager service
>     - JP1/AJS3 Console Agent service
>
> 3.  Advance the system's date and time.
>
> 4.  Start the JP1/AJS3 services.
>
> 5.  When JP1/AJS3 Console is used, start the following services:
>     - JP1/AJS3 Console Manager service
>     - JP1/AJS3 Console Agent service
>
> 6.  Perform a check test.
>
>     Before you return the date and time of a system to the current date and time, you can repeat steps 1 to 6. However, you should not specify a date and time that

makes the system time later than the current date and time.

7. End the JP1/AJS3 services.

8. When JP1/AJS3 Console is used, stop the following services:

   • JP1/AJS3 Console Manager service

   • JP1/AJS3 Console Agent service

9. Return the date and time of a system to the current date and time.

10. Re-create the database environment.

11. Start the JP1/AJS3 services.

12. When JP1/AJS3 Console is used, start the following services:

   • JP1/AJS3 Console Manager service

   • JP1/AJS3 Console Agent service

## (2) Advancing the time to make the system slower than the actual time

To advance the system time to the current time:

1. End the JP1/AJS3 services.

2. If JP1/AJS3 Console is being used, stop the following services:

   • JP1/AJS3 Console Manager service

   • JP1/AJS3 Console Agent service

3. Advance the system time.

4. Start the JP1/AJS3 services.

5. When JP1/AJS3 Console is used, start the following services:

   • JP1/AJS3 Console Manager service

   • JP1/AJS3 Console Agent service

## (3) Returning to the current time after advancing the system time

To return the system time to the current time:

1. End the JP1/AJS3 services.

2. When JP1/AJS3 Console is used, stop the following services:

   • JP1/AJS3 Console Manager service

   • JP1/AJS3 Console Agent service

3. Return the time of the system.

4. 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 3. After the system time becomes `02:00`, start the JP1/AJS3 services.

5.   When JP1/AJS3 Console is used, start the following services:

   • JP1/AJS3 Console Manager service

   • JP1/AJS3 Console Agent service

## 8.9.4 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 `ajsentry` command

   • Start times of submits jobs registered by the `jpqjobsub` command with the `-st` option specified

   • Start times of processing to delete job information

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 8-22:* Example of switching between standard time and daylight saving time
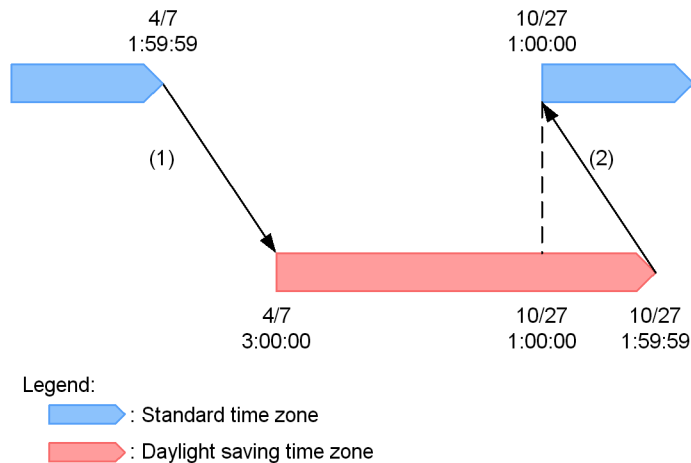


### (1) Switching from standard time to daylight saving time

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

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at which the transition from standard time to daylight saving time takes place. The following explanation is based on the example shown in *Figure 8-22*. 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 8-22). 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 8-8:* 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 8-22*. 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 8-22). 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 8-9:* 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 *Job Management Partner 1/ Automatic Job Management System 3 System Design (Configuration) Guide* and *Cautionary notes* in *4.2.1 Types of JP1/AJS3 services* in the *Job Management Partner 1/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 *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

- When you register a submit job for execution using the `jpqjobsub` 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.

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## 8.10 Modifying the execution environment for QUEUE jobs and submitted jobs

You can set or change the information required for executing QUEUE jobs and submitted 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 submitted jobs if you want to perform the following operation:

- During operation, add or delete an agent host on which QUEUE jobs and submitted 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 submitted jobs are used.

### 8.10.1 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 *3. Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

- 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 *8.9.1(3) Procedure for changing the host name of JP1/AJS3 - Agent*.

## 8.10.2 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 *3. Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

- `jpqagtlink`

  Connects a default queue and queue to an agent host.

- `jpqagtunlink`

  Disconnects a default queue and queue from an agent host.

## 8.10.3 Changing execution-locked resources

During JP1/AJS3 operation, you can change execution-locked resources. Changes in the execution-locked resources are valid only when submitted jobs are used.

To change execution-locked resources, use the following commands. For details about the commands, see *3. Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

- `jpqresadd`

  Adds an execution-locked resource name.

- `jpqresdel`

  Deletes an execution-locked resource name.

- `jpqresshow`

  Lists execution-locked resource names registered on a specified manager host.

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**Chapter**

# 9. Operating Methods

This chapter describes how to operate JP1/AJS3 efficiently and provides know-how for using the system.

## 9.1 Operating methods related to start conditions

This section describes operating methods related to start conditions, and provides know-how for using the system.

### 9.1.1 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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

### *(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.

## 9.1.2 Changing an 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 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 *2. Commands* in the manual Job Management Partner 1/Automatic Job Management System 3 Command Reference 1.

(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 *2. Commands* in the manual Job Management Partner 1/Automatic Job Management System 3 Command Reference 1.

(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**.

## 9.2 Operating methods related to event jobs

This section describes the operating methods related to event jobs, and provides know-how for using the system.

### 9.2.1 Continuing the execution of 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, 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 when the service stops so that the execution of the 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 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 that stopped when the JP1/AJS3 service stopped* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1* (in Windows) or *14.3.6 Resuming event jobs that stopped when the JP1/AJS3 service stopped* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1* (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 9-1:* 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
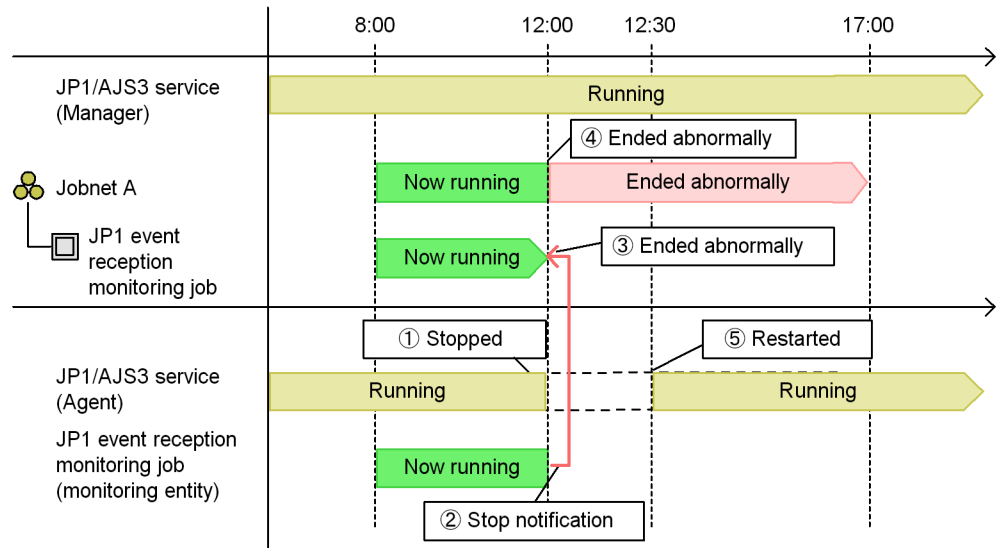


■ Operation when the option to continue execution of active event jobs is used
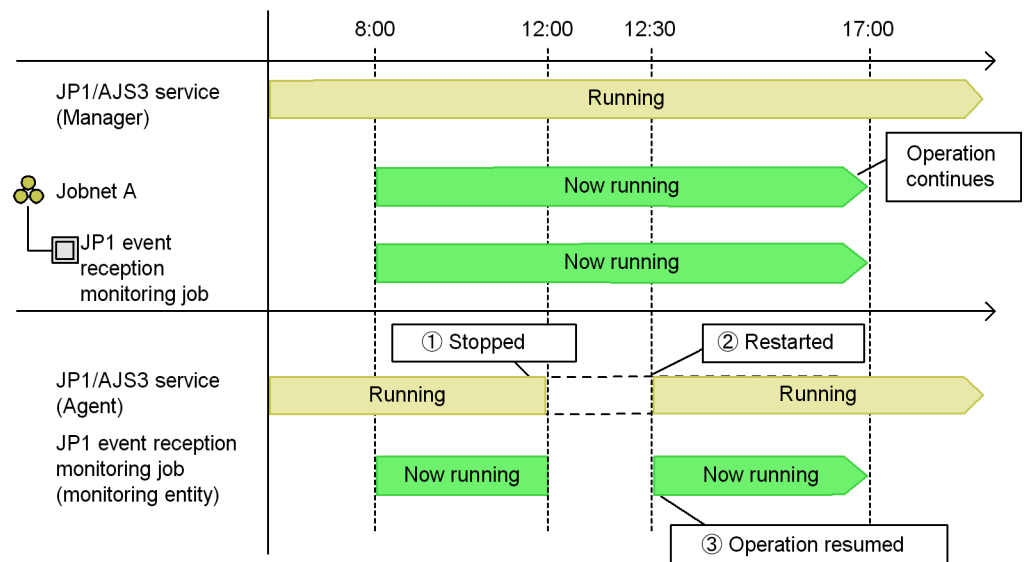


If the JP1/AJS3 service on the agent host stops when the option to continue execution of active event jobs is not enabled, the manager host is notified that the agent has

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stopped. In this case, the status of the 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 does not change. When the service is restarted, the *Now running* status is inherited and the execution of the 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 9-2:* Time period during which events can be detected
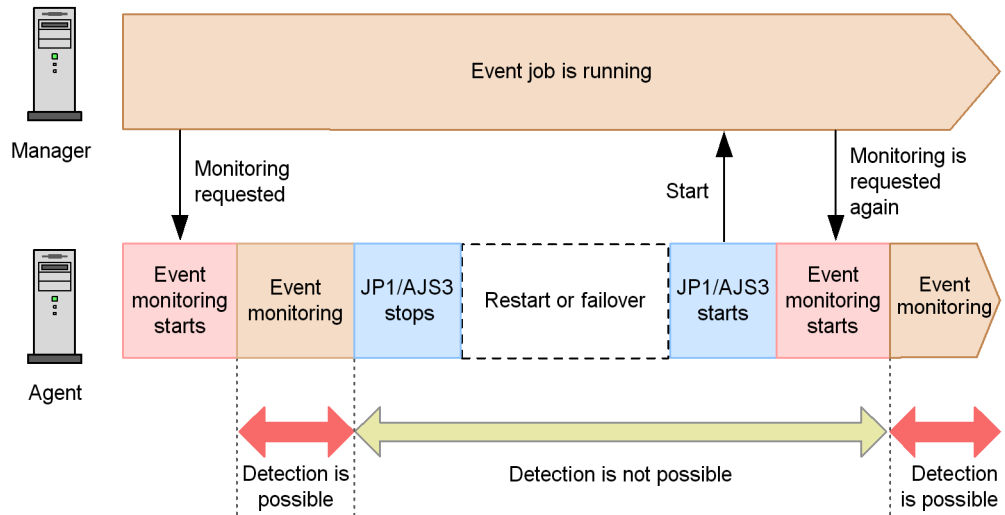


### (2) For a standalone configuration

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 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 *2.2 Setting up the scheduler service environment* in the *Job Management Partner 1/ Automatic Job Management System 3 Configuration Guide 2* or *7.2.1 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 are running, the manager sends an event monitoring request to the agent to automatically continue event monitoring. If many 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 *Job Management Partner 1/Automatic Job Management System 3 System Design (Work Tasks) Guide*.

### (4) Supplementary notes

- For an 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.

**Chapter**

# 10. Database Maintenance

This chapter describes how to maintain the JP1/AJS3 database.

## 10.1 Estimating a maintenance time

When you use a JP1/AJS3 database, you need to either periodically execute the `ajsembdbreclaim` command to make unavailable areas usable again or reorganize the database. Before using the `ajsembdbreclaim` command and estimating when to perform reorganization, you need to 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.

### (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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

### (2) Messages indicating an area shortage

When the storage efficiency of data in the JP1/AJS3 database decreases, the KFPH00211-I or KFPH00212-I message is output to the Windows event log or `syslog` file. If either of these messages is output, use the `ajsembdbstatus` command to analyze the database status, and reorganize the database as required. The following shows an example of messages output.

Example of messages indicating an area shortage

```
KFPH00211-I RDAREA usage xxx%, RDAREA="xxxxx" xxxxx
KFPH00212-I Table should be reorganized, RDAREA="xxxxx",
AUTHID=xxxxx, TABLE=xxxxx
```

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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

## 10.2 Performing maintenance

This section describes how to perform maintenance by executing the ajsembdbreclaim command and how to reorganize a database.

### 10.2.1 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,,jp1admin,;
{
    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,,jp1admin,;
{
    ty=n;
    sd=1,*5;
```

```
            st=1,23:00;
            cy=1,(5,d);
            sh=1,ca;
            unit= ajsembdbreclaim-jobunix;
            {
                ty=j;
                sc="/opt/jp1ajs2/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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

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. For this reason, avoid using the command during peak usage times.

For Windows hosts:

> *JP1/AJS3-Manager-installation-folder*`\tools\ajsembdbreclaim`

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For UNIX hosts:

```
/opt/jp1ajs2/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
```

## 10.2.2 Reorganizing a database

This subsection describes how to reorganize a database.

### (1) Using the ajsembdbrorg command to reorganize the database

Use the `ajsembdbrorg` command to reorganize the database. For details about the `ajsembdbrorg` command, see *ajsembdbrorg* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

To reorganize the database manually:

1. Terminate the JP1/AJS3 scheduler services and agent services.

Use the `jajs_spmd_stop` command to terminate the target JP1/AJS3 scheduler services and agent 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. For details about the `ajsembdbidlist` command, see *ajsembdbidlist* in *2. Commands Used during Setup* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

Command format (terminating the scheduler service):

```
jajs_spmd_stop -n jajs_schd -F scheduler-service-name
```

`-F` *scheduler-service-name*

Specify the service name of the scheduler service to be processed.

Command example: `jajs_spmd_stop -n jajs_schd -F AJSROOT2`

Command format (terminating the agent service):

```
jajs_spmd_stop -n jajs_agtd
```

2.  Stop all connected JP1/AJS3 - View and commands.

    Make sure that no JP1/AJS3 - View and scheduler commands are running. Also disconnect the database from JP1/AJS3 Console View.

3.  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.

    To reclaim empty segments from the scheduler database:

    - On a Windows host:

      *JP1/AJS3-Manager-installation-folder*`\tools\ajsembdbreclaim -m scheduler -F` *service-name*

    - On a UNIX host:

      `/opt/jp1ajs2/tools/ajsembdbreclaim -m scheduler -F` *service-name*

    To reorganize the agent management database:

    - On a Windows host:

      *JP1/AJS3-Manager-installation-folder*`\tools\ajsembdbreclaim -m agent`

    - On a UNIX host:

      `/opt/jp1ajs2/tools/ajsembdbreclaim -m agent`

4.  Use the `ajsembdbrorg` command to reorganize the database.

    For details about the `ajsembdbrorg` command, see *ajsembdbrorg* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

    Command example

    - In Windows:

      `ajsembdbrorg -k unld -F` *service-name* `-d C:\tmp`

      `ajsembdbrorg -k reld -F` *service-name* `-d C:\tmp`

    - In UNIX:

      `ajsembdbrorg -k unld -F` *service-name* `-d /tmp`

      `ajsembdbrorg -k reld -F` *service-name* `-d /tmp`

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For reorganizing the agent management database

- In Windows:

```
ajsembdbrorg -k unld -d C:\tmp -agent
ajsembdbrorg -k reld -d C:\tmp -agent
```

- In UNIX:

```
ajsembdbrorg -k unld -d /tmp -agent
ajsembdbrorg -k reld -d /tmp -agent
```

Note

Make sure that the directory specified in the `-d` option has enough free space for setting up the embedded database.

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.

5. Start the JP1/AJS3 scheduler services.

Use the `jajs_spmd` commands to start the target JP1/AJS3 scheduler services. Also start related services.

Command format: `jajs_spmd -n jajs_schd -F` *scheduler-service-name*

`-F` *scheduler-service-name*

Specify the service name of the scheduler service to be processed.

Command example: `jajs_spmd -n jajs_schd -F AJSROOT2`

### (2) *Using a script to reorganize a 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.

Supplementary note

Because the reorganization procedure performs the same operations as described in (1), we recommend that you always use the procedure 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 10-1:* Environment variable that need to be set

| Environment variable | Description |
| --- | --- |
| PDDIR | Specify the name of the embedded database practical directory. |
| PDCONFPATH | In Windows, specify *embedded-database-practical-directory*\conf. In UNIX, specify *embedded-database-practical-directory*/conf. This is the directory in which definition files for the embedded database are stored. |
| PDUXPLDIR | In Windows only, specify the name of the work directory for the embedded database. |
| PDUSER | Specify the user name and password of the embedded database administrator (the owner of the tables of the scheduler database) in *user-name*/*password* format. Example: PDUSER="root"/"root" |
| JP1_HOSTNAME | Specify the logical host name if you are using the database in a cluster system. |
| PATH | In Windows, specify *embedded-database-practical-directory*\bin. In UNIX, specify *embedded-database-practical-directory*/bin. This is the directory in which commands for the embedded database are stored. |
| SHLIB_PATH[#] | In UNIX only, specify *embedded-database-practical-directory*/lib. |

#

This is LD_LIBRARY_PATH in Solaris, 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 JP1_HOSTNAME=lhost1
x:\> set PATH=%PATH%;%PDDIR%\bin
```

Example of environment variable settings in UNIX (HP-UX):
```
# PDDIR=/opt/jp1ajs2/embdb/_JF0
# PDCONFPATH=$PDDIR/conf
# PDUSER='"root"/"root"'
# SHLIB_PATH=$PDDIR/lib
# PATH=$PATH:$PDDIR/bin

# export PDDIR PDCONFPATH PDUSER SHLIB_PATH PATH
```

2. Terminate the JP1/AJS3 scheduler services.

   Use the `jajs_spmd_stop` commands to stop the target JP1/AJS3 scheduler services. Terminate all scheduler services that use the RD area that will be reorganized.

   Command format: `jajs_spmd_stop -n jajs_schd -F` *scheduler-service-name*

   `-F` *scheduler-service-name*

   > Specify the service name of the scheduler service to be processed.

   Command example: `jajs_spmd_stop -n jajs_schd -F AJSROOT2`

3. Stop the connected JP1/AJS3 - View and all commands.

   Make sure that JP1/AJS3 - View and scheduler commands are not running. Also disconnect the database from JP1/AJS3 Console View.

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.

   On a Windows host:

   > *JP1/AJS3-Manager-installation-folder*`\tools\ajsembdbreclaim -m scheduler -F` *service-name*

   On a UNIX host:

   > `/opt/jp1ajs2/tools/ajsembdbreclaim -m scheduler -F` *service-name*

5. Execute the following script.

   A sample reorganization script is provided. Create a copy in the work directory and use the copy.

   On a Windows host:

   > *JP1/AJS3-installation-folder*`\tools\ajsembdbcond-sample.bat`

   On a UNIX host:

   > `/opt/jp1ajs2/tools/ajsembdbcond-sample`

   For details about the `ajsembdbcond` script, see *(b) Format of the reorganization script* below.

   Script example: `ajsembdbcond`

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(When the script is renamed to `ajsembdbcond`.)

6.  Start the JP1/AJS3 scheduler services.

    Use the `jajs_spmd` command to start the target JP1/AJS3 scheduler services.

    Command format: `jajs_spmd -n jajs_schd -F` *scheduler-service-name*

    `-F` *scheduler-service-name*

    > Specify the service name of the scheduler service to be processed.

    Command example: `jajs_spmd -n jajs_schd -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-conatining-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.

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*Table 10-2:* 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<br>KFPL00732-I | Table creation has not finished. | Re-execute reloading of the table. |
| KFPL00714-I<br>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:

rorg_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

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In UNIX: `pdrorg -k reld -t AJSUNIT /tmp/rorg_ctrl`

See *Table 10-2* and determine the table for which reloading has failed.

## 10.3 Reorganizing a database when QUEUE jobs and submit jobs are used

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 submitted 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 (jpqautocond) 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 submitted 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 submitted jobs requires free space that is about as large as the largest ISAM file that will be reorganized.

- Reorganization using the jpqdbcond command

  Before performing reorganization, back up and save the files. The jpqdbcond 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

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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 *Job Management Partner 1/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 *3. Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

### (2) Reorganization using the jpqautocond script

For the database for the execution environment for QUEUE jobs and submitted 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 submitted jobs. Before using this command, however, you need to back up the database. For details about the command, see *jpqdbcond* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

#### (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 submitted 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 submitted 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 *2.3 Setting up the job execution environment* in the *Job Management Partner 1/ Automatic Job Management System 3 Configuration Guide 2*.

### (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 submitted 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 `jpqdbcond -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 submitted 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 `jpqdbcond` command.

   In Windows:

   > *JP1/AJS3-installation-folder*`\bin\jpqautocond.bat`

   In UNIX:

   > `/opt/jp1ajs2/bin/jpqautocond`

   Cautionary note

   Do not execute the following scripts and command at the same time:

   - `jpqautocond`

   - `jpqdbcond -x -k`

   - `jajs_maintain -m manager`

**Chapter**

# 11. Operation in a Cluster System

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

## 11.1 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 11-1:* Starting multiple JP1/AJS3 services
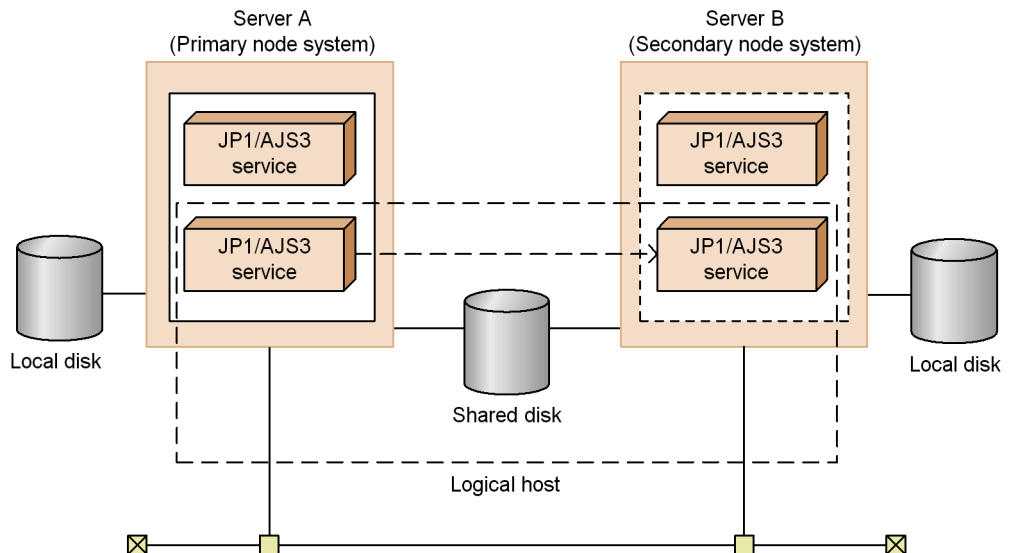


This section describes the prerequisites for cluster systems supported by JP1/AJS3, system configurations, processing procedures for a cluster configuration, and actions to be taken if a failover occurs. For details about the setup for using a cluster system, see *8. Setup for Operation in a Cluster System* in the *Job Management Partner 1/*

*Automatic Job Management System 3 Configuration Guide 1* (on a Windows host) or see *16. Setup for Operation in a Cluster System* in the *Job Management Partner 1/ Automatic Job Management System 3 Configuration Guide 1* (on a UNIX host).

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.

## 11.1.1 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 11-1:* Prerequisites for a physical host environment

| Physical host component | Prerequisites |
|---|---|
| Server main unit | • Two or more servers are used to create a cluster system.<br>• The CPU is capable of handling the expected processing even when multiple logical hosts are concurrently activated.<br>• 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 hostname command) can be used for communication (the cluster software does not disable communication).<br>• 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).<br>• 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.<br>• The patches and service packs prerequisites for JP1/AJS3 and cluster software have already been applied.<br>• 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

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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, action jobs, event jobs, or custom 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 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 *Job Management Partner 1/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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1* or *2. Commands Used during Setup* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

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.

## 11.1.2 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 *11.1.1 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.
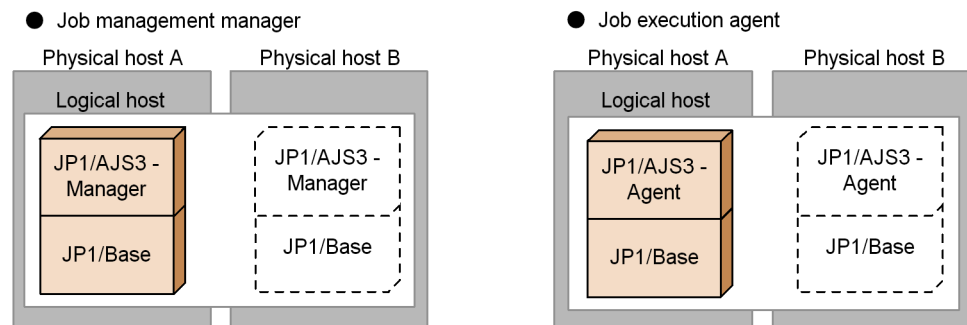


### (b) Active-active configuration

The following figure shows an example of an active-active configuration.

● Job management manager + Job management manager (or job management manager + job execution agent)

Physical host A    Physical host B

Logical host C

JP1/AJS3 - Manager

JP1/Base

JP1/AJS3 - Manager

JP1/Base

Logical host D

JP1/AJS3 - Manager

JP1/Base

JP1/AJS3 - Manager

JP1/Base
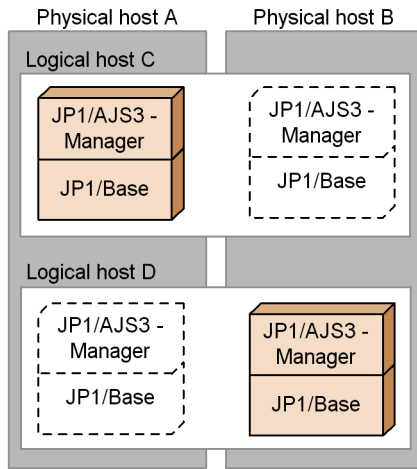
● Job execution agent + Job execution agent

Physical host A    Physical host B

Logical host C

JP1/AJS3 - Agent

JP1/Base

JP1/AJS3 - Agent

JP1/Base

Logical host D

JP1/AJS3 - Agent

JP1/Base

JP1/AJS3 - Agent

JP1/Base
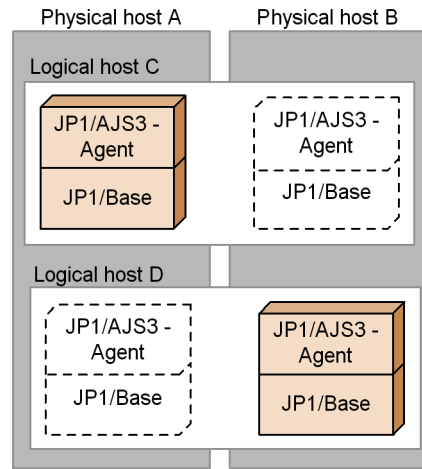
## (c) Three-node configuration

The following figure shows an example of a three-node configuration.

● Job execution agent + Wait + Job execution agent

Physical host A    Physical host B    Physical host C

Logical host D

JP1/AJS3 - Agent

JP1/Base

JP1/AJS3 - Agent

JP1/Base

Logical host E

JP1/AJS3 - Agent

JP1/Base

JP1/AJS3 - Agent

JP1/Base
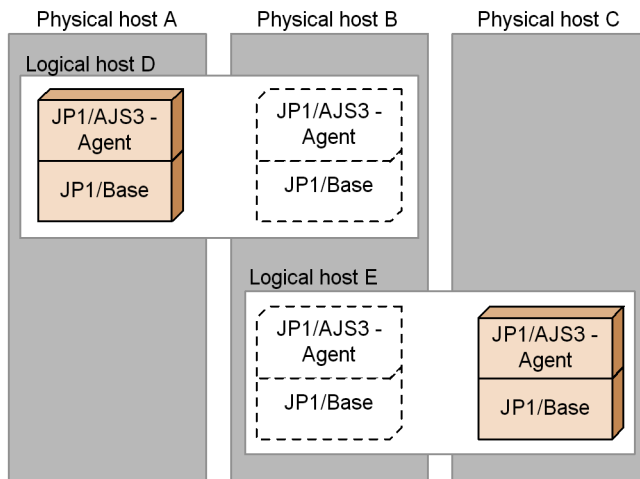
Remarks on JP1/AJS3 operation in a cluster system that uses three or more nodes:

JP1/AJS3 operates in a logical host environment managed by cluster software

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(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.

## 11.1.3 Example of a system configuration when using JP1/AJS3 Console in a cluster system

JP1/AJS3 Console is also available in a cluster system. When JP1/AJS3 Console Manager is used in a cluster configuration, you can continue monitoring work tasks by using failover if an error occurs on the JP1/AJS3 Console Manager host. You can also monitor work tasks that are managed by JP1/AJS3 - Manager on a logical host.

You operate a logical host in a cluster system as if you were operating a single server.

To use JP1/AJS3 Console Manager on a logical host, in the **Host to connect** in the Login screen of JP1/AJS3 Console View, specify the host name or IP address of the logical host. To monitor work tasks managed by JP1/AJS3 - Manager on a logical host, use the Define Details - AJS3 Unit Monitored Object dialog box of JP1/AJS3 Console View. In this dialog box, specify the host name or IP address of the logical host in the **Host name** for **Object to monitor**.

Only one JP1/AJS3 Console Manager service or JP1/AJS3 Console Agent 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. The following figures show the operation of each JP1/AJS3 Console service on a logical host.

*Figure  11-2:*  Operation of JP1/AJS3 Console Manager on a logical host
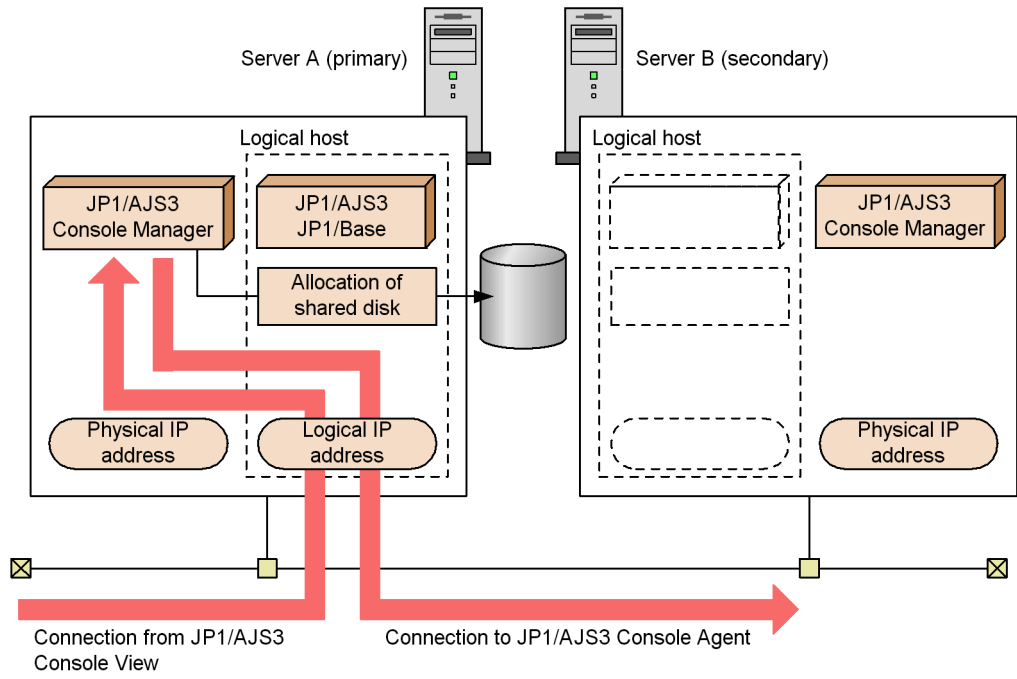
*Figure 11-3:* Operation of JP1/AJS3 Console Agent on a logical host
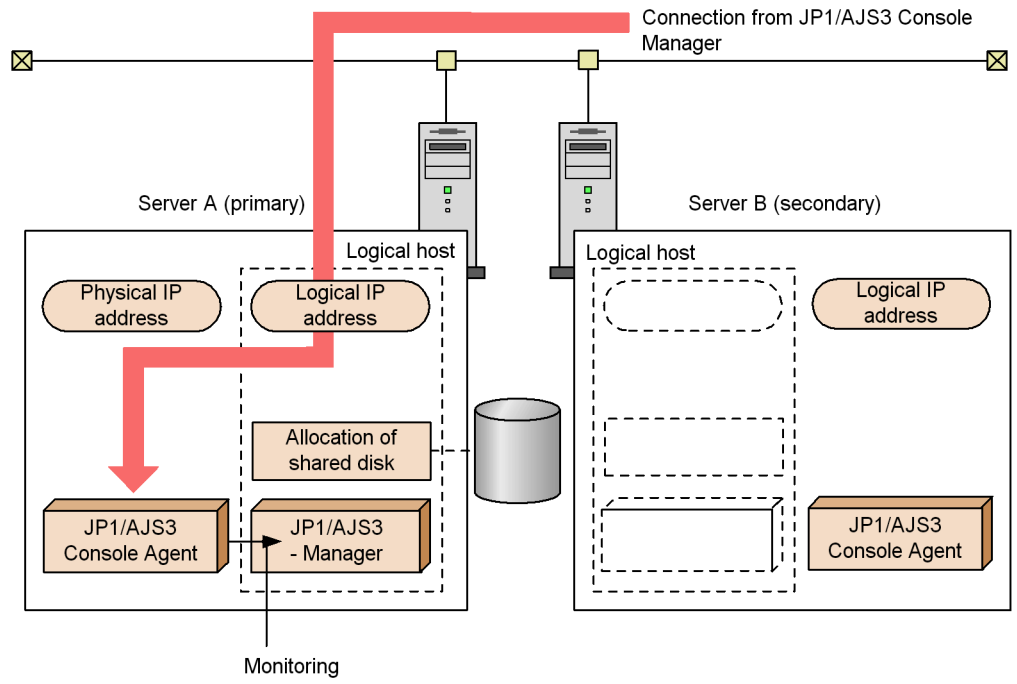
## 11.2  Overview of node switching when an error occurs

If an error occurs in the current host, node switching occurs and the secondary node takes over the processing.

This section describes the flow of processing if an error occurs in JP1/AJS3 - Manager and the flow of processing if an error occurs in JP1/AJS3 - Agent.

### 11.2.1  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 or an event job is defined.

#### *(1)  Flow of processing after node switching*

The following figure shows the processing if node switching occurs in JP1/AJS3 - Manager during operation.

*Figure  11-4:*  Processing if node switching occurs in JP1/AJS3 - Manager
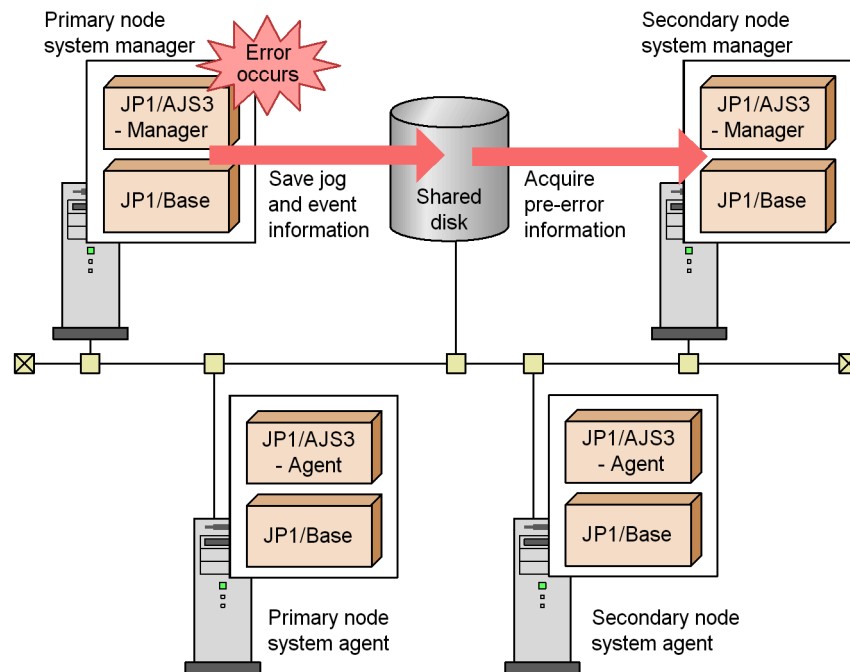


The flow of events in the system processing is as follows:

1.    The system kills the jobnets or jobs that are being executed by JP1/AJS3 -

Manager when the failover occurs. The statuses of the jobnets or jobs being executed by JP1/AJS3 - Agent remain *Now Running*.

This status is managed in the JP1/AJS3 database in a shared disk.

2. The contents of the JP1/AJS3 database are inherited by the secondary node.

3. The JP1/AJS3 - Manager 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/jp1base/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 *2.2 Setting up the scheduler service environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

For details about the setting procedure, see *4.2 Environment setting parameter settings* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1*.

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 with JP1/AJS3 Console:

Since the processes of JP1/AJS3 Console end as shown below at a failover, they may remain for a while. To end a JP1/AJS3 Console process immediately, set the cluster software to restart (stop or start) JP1/AJS3 Console services at a failover.

- For JP1/AJS3 Console Manager

  The ajscmmonsvr process and the ajscmstatd process are executed when JP1/AJS3 Console Manager is accessed from JP1/AJS3 Console View, and they remain for a while at a failover. Since these processes use the shared disk, they are forcibly ended when the cluster software sets the shared disk offline (depending on the specifications of the cluster software). Alternatively, the processes stop automatically when a communication error is detected.

- For JP1/AJS3 Console Agent

  The ajscagtd process is executed when JP1/AJS3 Console Agent is accessed from JP1/AJS3 Console Manager and the process remains for a while at a failover. This process stops automatically when a communication error is detected.

Operating a cluster system while a submitted 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*.

## 11.2.2 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 11-5:* Processing if node switching occurs in JP1/AJS3 - Agent
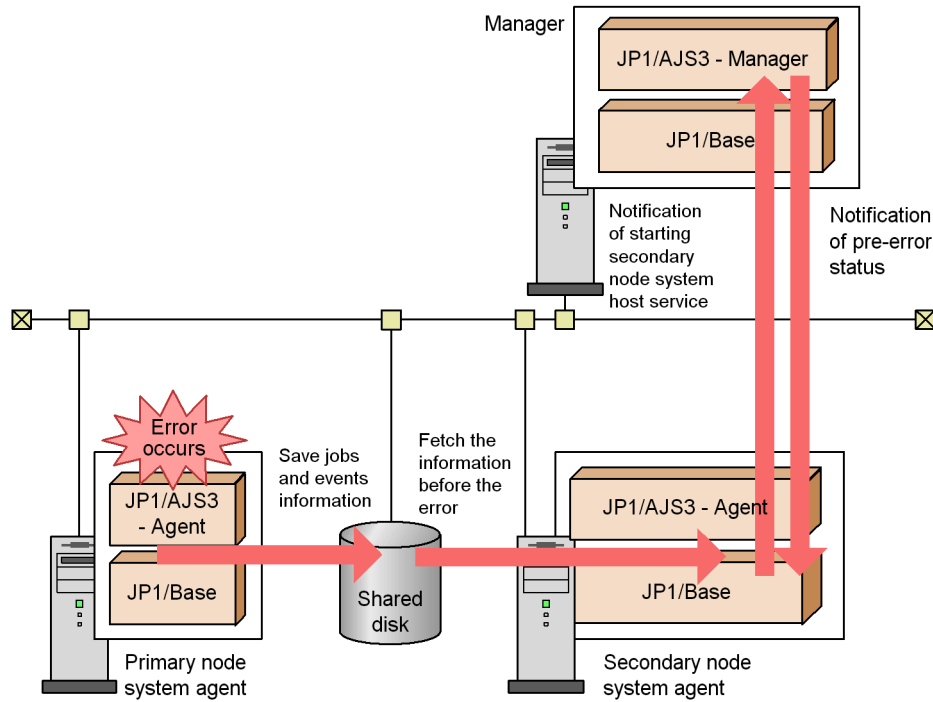


The flow of events in system processing is as follows:

1. *Now Running* remains the status of the jobnet and the job being executed when node switching occurs.

   This status is managed by JP1/AJS3 - Manager.

   Note that only event jobs are able to maintain their status.

2. The JP1/AJS3 - Agent service starts in the secondary node system agent.

3. JP1/AJS3 - Manager is notified that the secondary node system agent is activated.

4. The job status is reported from JP1/AJS3 - Manager to JP1/AJS3 - Agent in the secondary node.

   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 *7.2.1(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.

## 11.3 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 MSCS is used in a Windows environment, set MSCS to monitor the JP1/AJS3 service.

### 11.3.1 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_spmd_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 notes

- You can use the `jajs_spmd` command to start the processes of only the scheduler service. Also, you can use the `jajs_spmd_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.

- If an error occurs in a scheduler service process and the scheduler service stops, the process is automatically restarted. In this case, no process exists after the scheduler service stops until it is restarted. After the scheduler service is restarted, the process ID changes. Therefore, in consideration of the case whereby the automatic restart of the scheduler service allows the operation to continue, we recommend that you do not monitor the processes of the scheduler service.

  If the following behavior is repeated three or more times, the automatic restart of the scheduler service is disabled: After a scheduler service process is started, the scheduler service stops within 6 hours.

- If an error occurs in a scheduler service process and the scheduler service stops, the JP1/AJS3 service continues to wait to accept the `jajs_spmd` command. Therefore, if only the scheduler service has terminated abnormally, the `jajs_spmd_status` command cannot detect an error. Use the `jajs_status` command to check the status of the process.

## 11.3.2 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.

## 11.4  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.

### 11.4.1  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 *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

The following table lists the platforms and products supported by the shell script for forcibly stopping JP1/AJS3.

*Table 11-2:* Platforms and products supported by the shell script for forcibly stopping JP1/AJS3

|  | HP-UX | Solaris | AIX |
|---|---|---|---|
| JP1/AJS3 - Manager | Y | Y | Y |
| JP1/AJS3 - Agent | 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 (`ajs_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:

  - `jp1mqsup`

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MQ monitoring process when JP1/AJS3 is linked with TP1/Message Queue. SUP controlled by TP1.

- jpocwtmqmaii

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 log information to a file on the shared disk. If the shared disk is inaccessible, the command will be unable to output log information, and you will be unable to forcibly stop JP1/AJS3. 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/jp1ajs2/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/jp1ajs2/log"    # Specifies a directory on a physical disk
COMNAME=`basename "$0"`
```

## 11.5 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
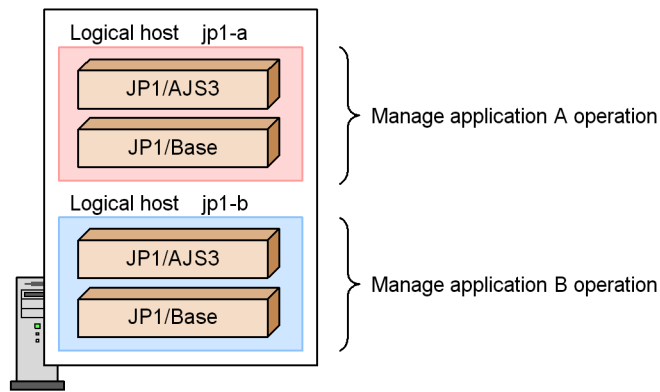


When you run more than one application on a single host, the operation of each application can be managed separately in a dedicated logical host.

Using JP1 programs designed for physical hosts in a cluster configuration where the logical host name must match the physical host name
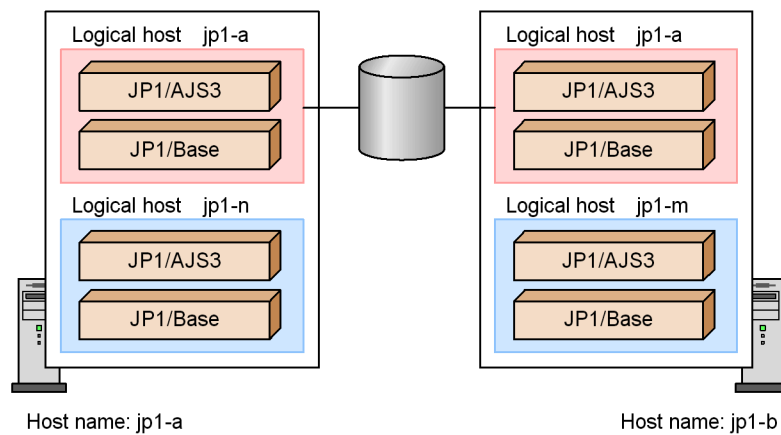


Logical hosts jp1-n and jp1-m host JP1 for the physical hosts

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 *Job Management Partner 1/Base User's Guide*.

## 11.5.1 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 *Job Management Partner 1/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.

## 11.5.2 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 *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1*.

For UNIX

See *16.2 Setting up the operating environment for cluster system operation* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1*.

Cautionary note

Before you attempt to start JP1/AJS3 services in Windows, make sure that JP1/AJS3 Database_JF$n$[#] is not running.

If JP1/AJS3 Database_JF$n$ is running, stop it and then start the JP1/AJS3 services.

#

_JF$n$ refers to the embedded database setup ID used for JP1/AJS3 services on a logical host.

## 11.5.3 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_spmd_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-settings
                :
        if [ -x /etc/opt/jp1ajs2/jajs_start.cluster ]
        then
            /etc/opt/jp1ajs2/jajs_start.cluster logical-host-name
jajs_spmd-command-option
        fi
        ;;

'stop')
        if [ -x /etc/opt/jp1ajs2/jajs_stop.cluster ]
        then
            /etc/opt/jp1ajs2/jajs_stop.cluster logical-host-name
jajs_spmd_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/jp1_service_cluster /sbin/rc2.d/
```

```
SXXX_JP1_SERVICE
```

The higher the value in *XXX*, the later the start script is executed.

Stop script

Execute the following command to set up the link:
```
ln -s /sbin/init.d/jp1_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/jp1_service_cluster
chown root:sys /sbin/init.d/jp1_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/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/jp1ajs2/jajs_start.cluster ]
        then
            /etc/opt/jp1ajs2/jajs_start.cluster logical-host-name
option-of-jajs_spmd command
        fi
```

```
        ;;

'stop')
        if [ -x /etc/opt/jp1ajs2/jajs_stop.cluster ]
        then
            /etc/opt/jp1ajs2/jajs_stop.cluster logical-host-name
option-of-jajs_spmd_stop-command
        fi
                :
        JP1/Base-start-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.

   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 "jp1ajs2:2:wait:/etc/opt/jp1ajs2/
jajs_start.cluster logical-host-name option-of-jajs_spmd-command"
```

- 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/jp1ajs2/jajs_stop.cluster && /etc/opt/
  jp1ajs2/jajs_stop.cluster logical-host-name
  option-of-jajs_spmd_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.

### (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 *Job Management Partner 1/Base User's Guide*.

#### (b) In HP-UX and Solaris environments

The sequence for automatic start and automatic stop is determined by the value of the number part (*XX* in S*XX*) 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 11-3:* 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` |

Check the value of *XX* (number) in S*XX* in the above table and *XX* (number) in S*XX* 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.

For example, if you want to start services on the logical host first, specify a value smaller than 900 (in HP-UX) or 99 (in Solaris) for *XX* in *symbolic-link-name* S*XX* of the automatic start script created for the logical host.

Note that because JP1/AJS3 requires JP1/Base, JP1/Base must be started first.

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## 11.6 Cautionary notes on using a cluster system

The following are cautionary notes on using a cluster system.

### *(1) Cautionary notes applicable to all JP1/AJS3 programs*

- 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, queueless file transfer service, JP1/AJS3 console manager service, or JP1/AJS3 console agent 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 submitted jobs is not supported. Use a RAID disk to ensure reliability of the disk system.

### *(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 *11.1.1(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 *7.3.1 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 *14.7.1(8) Setting automatic startup and termination of the JP1/AJS3 service that do not depend on the JP1_HOSTNAME environment variable* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1*.

- When using the kill command (jajs_killall.cluster command) in UNIX, specify a unique logical host name of 15 bytes. This command checks the first 15 bytes of the logical host name, and kills the corresponding process. The command cannot kill a process for a logical host whose name contains more than 15 bytes.

### (4) Cautionary notes on event start

- If you upgrade a version earlier than 07-10 to 07-10 or later in an environment in which cluster system operation has been set up, the value of the `FileWriteMode` environment setting parameter that defines the file update mode for a logical host is set to `nosync` (asynchronous). To change this setting to `sync`, use the `jajs_config` command to change the value of the `FileWriteMode` environment setting parameter (sets the file writing mode), to `sync`.

- If you set up cluster system operation after an upgrade to 07-10 or later, the value of the `FileWriteMode` environment setting parameter that defines the file update mode for a logical host is set to `sync` (synchronous). To change this setting to `nosync`, after setting up cluster system operation, use the `jajs_config` command to change the value of the `FileWriteMode` environment setting parameter for JP1/AJS3 - Manager or JP1/AJS3 - Agent to `nosync`.

- If you upgrade a version earlier than 07-10-/C to 07-10-/C or later when cluster system operation has been set up, the `EVProcessHA` environment setting parameter for event action control for the logical host is set to `N`.

  If you set up cluster system operation after an upgrade to 07-10-/C, the `EVProcessHA` environment setting parameter for the logical host is set to `Y`. Change the setting as required.

- When the mail system linkage is used, only one instance of JP1/AJS3 on the physical host or logical host can be linked. Even if you use the logical host for linkage, define the environment setting for the linkage function on the physical host. However, if you only use the mail system linkage on the UNIX host to execute the email reception monitoring job, you need to define the `ExecMode` environment setting parameter on the physical host. This parameter is set in the definition file for the event and action execution environment (`EVAction.conf`) to define whether to use the mail system linkage. Set any other environment setting parameters on the logical host.

  For details about environment setting parameters, see *2.3.2 Setting up the environment for an email reception monitoring job* in the *Job Management Partner 1/Automatic Job Management System 3 Linkage Guide*.

  Note that because mail system linkages cannot be started concurrently, you cannot apply these linkages to the secondary node.

### (5) Cautionary notes on the execution environment for QUEUE jobs and submitted 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 `jpqreguser` 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 *jpqreguser* in *2. Commands Used during Setup* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

### (6) Cautionary notes on the queueless job execution environment

For cautionary notes on the queueless job execution environment, see *8.2.5(3) Notes on automatic attachment and detachment of logical hosts performed when queueless jobs are used* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1* (in Windows) or *16.2.5 Setting up the queueless job execution environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 1* (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 *Job Management Partner 1/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.

# 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 | Scheduler service restarted in hot-start mode when a job had been queued by job execution control | 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 |

| Event ID | Event name | Event occurrence | Message ID |
|---|---|---|---|
| 00004122 | Jobnet delayed start event | Jobnet entered *Delayed start* status | KAVS0275-I |
| 00004123 | Jobnet delayed end event | Jobnet entered *Delayed end* 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 execution-request started | KAVS0242-I |
| 00004127 | Job delayed end event | Job entered *Delayed end* status | KAVS0248-I |
| 00004130 | Scheduler service restart event (daemon restart event) | Scheduler service restarted | KAVS0204-E |
| 00004131 | Jobnet shutdown event | Jobnet entered *Shutdown* 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 *Skipped so not exec.* 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 |
| 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] |

| Event ID | Event name | Event occurrence | Message ID |
|---|---|---|---|
| 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] |
| 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] |
| 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 |
| 00004191 | Command or JP1/AJS3 - View operation end event | Command or JP1/AJS3 - View operation ended | KAVS0716-I |

| Event ID | Event name | Event occurrence | Message ID |
|---|---|---|---|
| 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 |
| 000041F0[#2] | Process abnormal end event (compatible event) | Process ended abnormally | KNAD3737-E |
| 000041F1[#2] | Process start timeout event (compatible event) | Start of a process times out | KNAD3613-W |
| 000041F2[#2] | Process restart completion event (compatible event) | Restart of a process completes | KNAD3616-I |
| 000041F3[#2] | Pre-start failure event (compatible event) | Pre-start process fails | KNAD3953-E |
| 000041C0 | JP1/AJS3 start completed event | JP1/AJS3 started | KNAD3604-I |
| 000041C1 | JP1/AJS3 stop event | JP1/AJS3 stopped | KNAD3743-I |
| 000041C2 | Managed process start completed event | Managed process startup completed | KNAD3617-I |
| 000041C3 | Managed process stop event | Managed process stopped | KNAD3746-I |
| 000041C4 | Managed process abnormal end event | Managed process ended abnormally during operation | KNAD3737-E |
| 000041C5 | Managed process start timeout event | Managed process timed out without a start notification | KNAD3613-W |
| 000041C6 | Managed process restart completed event | Restart of a managed process that ended abnormally completed | KNAD3616-I |
| 000041C7 | Pre-start process failure event | Pre-start process failed | KNAD3953-E |

Legend:

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N/A: Not applicable

#1

Output only when a JP1 event is specified for output in the `ajsdbcond` command or `jpqdbcond` command.

#2

Output only when the system settings specify that a JP1 event is to be issued if a process ends abnormally. To enable issuing of JP1 events, see *7.3.2 Issuing a JP1 event when a JP1/AJS3 process starts, stops, or terminates abnormally*.

## 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<br>Scheduler service started.<br>(*scheduler-service-name*) |
| | Detailed information | N/A | `VRID STTM CODIR ERDIR SCDIR SRVID`<br>The meaning of each symbol is as follows:<br>`VRID`: Protocol version ID<br>`STTM`: Start time<br>`CODIR`: Directory for unit definitions<br>`ERDIR`: Directory for job error information<br>`SCDIR`: Directory for schedule and monitoring information<br>`SRVID`: Scheduler service name |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| Exten ded | Com mon infor mati on | Severity | SEVERITY | Information |
| | | User name | USER_NAME | • In Windows: Account for the JP1/AJS3 service (default: SYSTEM)<br>• In UNIX: root<br>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_TYP E | SERVICE |
| | | Root object name | ROOT_OBJECT_NAM E | JP1/AJS2 - Manager Scheduler service |
| | | Object ID | OBJECT_ID | Scheduler service name |
| | | Occurrence | OCCURRENCE | START |
| | | Start time | START_TIME | Start time |
| | Spec ific infor mati on | Platform | PLATFORM | In Windows: NT<br>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.

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*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<br>Scheduler service ended.<br>(*scheduler-service-name*) |
| | | Detailed information | N/A | `VRID EDTM RTN EDTYP SRVID`<br>The meaning of each symbol is as follows:<br>`VRID`: Protocol version ID<br>`EDTM`: End time<br>`RTN`: Return code<br>`EDTYP`: Stop method<br>`SRVID`: Scheduler service name |
| Extended | Common information | Severity | `SEVERITY` | `Information` |
| | | User name | `USER_NAME` | • In Windows: Account for the JP1/AJS3 service (default: `SYSTEM`)<br>• In UNIX: `root`<br>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 |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | Specific information | Platform | PLATFORM | In Windows: NT<br>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<br>Jobnet started. (name: *jobnet-name* : *execution-ID*) |
| | | Detailed information | N/A | VRID STTM PATH NAME RKIND LVL EUSR SCTM EHST SRVID<br>The meaning of each symbol is as follows:<br>VRID: Protocol version ID<br>STTM: Start time<br>PATH: Upper-level unit name<br>NAME: Unit name<br>RKIND: Recovery kind<br>LVL: Level<br>EUSR: Source user name<br>SCTM: Scheduled run-time[#]<br>EHST: Source host name<br>SRVID: Scheduler service name<br>#<br>    Not set for a jobnet connector |
| Extended | Common information | Severity | SEVERITY | Information |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | 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: /*jobnet-or-jobnet-connector-name* |
| | | Root object type | ROOT_OBJECT_TYPE | JOBNET |
| | | Root object name | ROOT_OBJECT_NAME | Scheduler service name: /*root-jobnet-name* |
| | | Object ID | OBJECT_ID | Scheduler service name: /*jobnet-name* |
| | | Occurrence | OCCURRENCE | START |
| | | Start time | START_TIME | Start time |
| | Specific information | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0600 |
| | | Job group name | A0 | Scheduler service name: /*job-group-name* |
| | | 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 |
| | | Recovery kind | B0 | n: Normal<br>r: Recovery |
| | | Jobnet levels | B1 | Number of levels (where the root jobnet is level 0) |

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| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Source host | B3 | When JP1/AJS3 - View is used to register execution:<br>Name of the JP1/AJS3 - Manager host to be connected<br>When the `ajsentry` command is used to register execution:<br>Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>Name of the host on which the remote jobnet is defined |
| | | Scheduled run time | B5 | Scheduled run 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

### (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<br>Jobnet ended normally. (name: *jobnet-name* : *execution-ID*) |

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| Attribute type | Type | Attribute name | Contents |
|---|---|---|---|
| | Detailed information | N/A | `VRID STTM PATH NAME RKIND LVL EUSR EHST SRVID`<br>The meaning of each symbol is as follows:<br>`VRID`: Protocol version ID<br>`STTM`: Start time<br>`PATH`: Upper-level unit name<br>`NAME`: Unit name<br>`RKIND`: Recovery kind<br>`LVL`: Level<br>`EUSR`: Source user name<br>`EHST`: Source host name<br>`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: / *jobnet-or-jobnet-connector-name* |
| | | Root object type | `ROOT_OBJECT_TYP E` | `JOBNET` |
| | | Root object name | `ROOT_OBJECT_NAM E` | Scheduler service name: /*root-jobnet-name* |
| | | Object ID | `OBJECT_ID` | Scheduler service name: / *jobnet-or-jobnet-connector-name* |
| | | Occurrence | `OCCURRENCE` | `END` |
| | | Start time | `START_TIME` | Start time |
| | | End time | `END_TIME` | End time |
| | Specific information | Platform | `PLATFORM` | In Windows: `NT`<br>In UNIX: `UNIX` |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Version of AJS action | ACTION_VERSION | 0600 |
| | | Job group name | A0 | Scheduler service name: /job-group-name |
| | | 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 |
| | | Recovery kind | B0 | n: Normal<br>r: Recovery |
| | | Jobnet levels | B1 | Number of levels (where the root jobnet is level 0) |
| | | Source host | B3 | When JP1/AJS3 - View is used to register execution:<br>    Name of the JP1/AJS3 - Manager host to be connected<br>When the ajsentry command is used to register execution:<br>    Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>    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

## (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 |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Message | N/A | KAVS0262-E<br>Jobnet ended abnormally. (name: *jobnet-name* : *execution-ID*) |
| | | Detailed information | N/A | `VRID STTM PATH NAME RKIND LVL EUSR EDTM`<br>`EHST SRVID`<br>The meaning of each symbol is as follows:<br>`VRID`: Protocol version ID<br>`STTM`: Start time<br>`PATH`: Upper-level unit name<br>`NAME`: Unit name<br>`RKIND`: Recovery kind<br>`LVL`: Level<br>`EUSR`: Source user name<br>`EDTM`: End time<br>`EHST`: Source host name<br>`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: /<br>*jobnet-or-jobnet-connector-name* |
| | | Root object type | `ROOT_OBJECT_TYP E` | `JOBNET` |
| | | Root object name | `ROOT_OBJECT_NAM E` | Scheduler service name: /*root-jobnet-name* |
| | | Object ID | `OBJECT_ID` | Scheduler service name: /<br>*jobnet-or-jobnet-connector-name* |
| | | Occurrence | `OCCURRENCE` | `END` |
| | | Start time | `START_TIME` | Start time |
| | | End time | `END_TIME` | End time |

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| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | Specific information | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0600 |
| | | Job group name | A0 | Scheduler service name: /job-group-name |
| | | 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 |
| | | Recovery kind | B0 | n: Normal<br>r: Recovery |
| | | Jobnet levels | B1 | Number of levels (where the root jobnet is level 0) |
| | | Source host | B3 | When JP1/AJS3 - View is used to register execution:<br>    Name of the JP1/AJS3 - Manager host to be connected<br>When the ajsentry command is used to register execution:<br>    Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>    Name of the host on which the remote jobnet is defined |
| | | Status | B4 | a: Ended abnormally<br>q: Invalid exe. seq.<br>i: Interrupted<br>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

## (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<br>Job started. (name: *job-name* : *execution-ID*, host *host-name*, JOBID, *job-number*) |
| | | Detailed information | N/A | `VRID STTM PATH NAME RKIND DUSR EUSR EGRP EHST JTYP JHST SRVID`<br>The meaning of each symbol is as follows:<br>`VRID`: Protocol version ID<br>`STTM`: Start time<br>`PATH`: Upper-level unit name<br>`NAME`: Unit name<br>`RKIND`: Recovery kind<br>`DUSR`: Run-time user name<br>`EUSR`: Source user name<br>`EGRP`: Job group name<br>`EHST`: Source host name<br>`JTYP`: Job execution status<br>`JHST`: Job run-time host<br>`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* : /*jobnet-name*/*job-name* |
| | | Root object type | `ROOT_OBJECT_TYPE` | `JOBNET` |
| | | Root object name | `ROOT_OBJECT_NAME` | Scheduler service name: /*root-jobnet-name* |
| | | Object ID | `OBJECT_ID` | Scheduler service name: /*jobnet-name*/*job-name* |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Occurrence | OCCURRENCE | START |
| | | Start time | START_TIME | Start time |
| | Specific information | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0600 |
| | | Job group name | A0 | Scheduler service name: /*job-group-name* |
| | | 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 |
| | | Recovery kind | B0 | n: Normal<br>r: Recovery |
| | | Jobnet levels | B1 | Number of levels (where the root jobnet is level 0) |
| | | Jobnet user | B2 | User who registered the jobnet |
| | | Source host | B3 | When JP1/AJS3 - View is used to register execution:<br>    Name of the JP1/AJS3 - Manager host to be connected<br>When the ajsentry command is used to register execution:<br>    Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>    Name of the host on which the remote jobnet is defined |
| | | Target host | C0 | Name of the host on which the job was executed |
| | | Job execution group name | C1 | Always blank |
| | | Job execution status | C6 | Always r |

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| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Unit ID | H2 | Unit ID (decimal number) |
| | | Unit type | H3 | Unit type (string specified as a parameter in the unit definition file) |
| | | Queuing type | H4 | Displays whether the queuing attribute exists:<br>q: Exists.<br>n: Does not exist. |

Legend:

N/A: Not applicable

## (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<br>Job ended normally. (name: *job-name*, : *execution-ID*, host : *host-name*, code : *code*, JOBID : *job-number*) |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | 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`<br>The meaning of each symbol is as follows:<br>`VRID`: Protocol version ID<br>`STTM`: Start time<br>`PATH`: Upper-level unit name<br>`NAME`: Unit name<br>`RKIND`: Recovery kind<br>`DUSR`: Run-time user name<br>`EUSR`: Source user name<br>`EGRP`: Job group name<br>`EDTM`: End time<br>`RTN`: Return code<br>`UCPUT`: User CPU time<br>`SCPUT`: System CPU time<br>`EHST`: Source host name<br>`JTYP`: Job execution status<br>`JHST`: Job run-time host<br>`RQID`: Request ID<br>`ASTTM`: Agent start time<br>`AEDTM`: Agent end time<br>`AUCPU`: Agent user CPU time<br>`ASCPU`: Agent system CPU time<br>`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*:/*jobnet-name*/*job-name* |
| | | Root object type | `ROOT_OBJECT_TYPE` | `JOBNET` |
| | | Root object name | `ROOT_OBJECT_NAME` | Scheduler service name: /*root-jobnet-name* |
| | | Object ID | `OBJECT_ID` | Scheduler service name: /*jobnet-name*/*job-name* |

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| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | 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<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0600 |
| | | Job group name | A0 | Scheduler service name: /job-group-name |
| | | 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 |
| | | Recovery kind | B0 | n: Normal<br>r: Recovery |
| | | Jobnet levels | B1 | Number of levels (where the root jobnet is level 0) |
| | | Jobnet user | B2 | User who registered the jobnet |
| | | Source host | B3 | When JP1/AJS3 - View is used to register execution:<br>    Name of the JP1/AJS3 - Manager host to be connected<br>When the ajsentry command is used to register execution:<br>    Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>    Name of the host on which the remote jobnet is defined |
| | | Target host | C0 | Name of the host on which the job was executed |
| | | Job execution group name | C1 | Always blank |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Request ID | C2 | Job number |
| | | Queue name | C3 | Queue name (for a queuing job) or agent name (for a Unix job or PC job) |
| | | User CPU time | C4 | Always 0 (zero) |
| | | System CPU time | C5 | Always 0 (zero) |
| | | Job execution status | C6 | Always r |
| | | Target host start time | E0[#1, #2] | Start time at the target host |
| | | Target host end time | E1[#2] | End time at the target host |
| | | Target host user CPU time | E2 | Always 0 (zero) |
| | | Target host system CPU time | 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 type | H4 | Displays whether the queuing attribute exists: q: Exists. n: Does not exist. |

Legend:

N/A: Not applicable

#1

No value is set if the job failed to start and execution was not started on the target host.

#2

No value is set for a judgment job and OR job.

### (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<br>Job ended abnormally. (name: *job-name*, : *execution-ID*, status : *status*, code : *code*, JOBID : *job-number*) |
| | | 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`<br>The meaning of each symbol is as follows:<br>`VRID`: Protocol version ID<br>`STTM`: Start time<br>`PATH`: Upper-level unit name<br>`NAME`: Unit name<br>`RKIND`: Recovery kind<br>`DUSR`: Run-time user name<br>`EUSR`: Source user name<br>`EGRP`: Job group name<br>`EDTM`: End time<br>`RTN`: Return code<br>`UCPUT`: User CPU time<br>`SCPUT`: System CPU time<br>`EDST`: Termination status<br>`EHST`: Source host name<br>`JTYP`: Job execution status<br>`JHST`: Job run-time host<br>`RQID`: Request ID<br>`ASTTM`: Agent start time<br>`AEDTM`: Agent end time<br>`AUCPU`: Agent user CPU time<br>`ASCPU`: Agent system CPU time<br>`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` |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Object name | `OBJECT_NAME` | *scheduler-service-name* : / *jobnet-name* / *job-name* |
| | | Root object type | `ROOT_OBJECT_TYPE` | `JOBNET` |
| | | Root object name | `ROOT_OBJECT_NAME` | Scheduler service name: / *root-jobnet-name* |
| | | Object ID | `OBJECT_ID` | Scheduler service name: / *jobnet-name* / *job-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`<br>In UNIX: `UNIX` |
| | | Version of AJS action | `ACTION_VERSION` | `0600` |
| | | Job group name | `A0` | Scheduler service name: / *job-group-name* |
| | | 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 |
| | | Recovery kind | `B0` | `n`: Normal<br>`r`: Recovery |
| | | Jobnet levels | `B1` | Number of levels (where the root jobnet is level 0) |
| | | Jobnet user | `B2` | User who registered the jobnet |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Source host | B3 | When JP1/AJS3 - View is used to register execution:<br>    Name of the JP1/AJS3 - Manager host to be connected<br>When the `ajsentry` command is used to register execution:<br>    Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>    Name of the host on which the remote jobnet is defined |
| | | Status | B4 | `a`: Ended abnormally<br>`f`: Failed to start<br>`c`: Killed<br>`?`: Unknown end status |
| | | Target host | C0 | Name of the host on which the job was executed |
| | | Job 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 or PC job) |
| | | User CPU time | C4 | Always `0` (zero) |
| | | System CPU time | C5 | Always `0` (zero) |
| | | Job execution status | C6 | Always `r` |
| | | Target host start time | E0[#1, #2] | Start time at the target host |
| | | Target host end time | E1[#2] | End time at the target host |
| | | Target host user CPU time | E2 | Always `0` (zero) |
| | | Target host system CPU time | E3 | Always `0` (zero) |
| | | Unit ID | H2 | Unit ID (decimal number) |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Unit type | H3 | Unit type (string specified as a parameter in the unit definition file) |
| | | Queuing type | H4 | Displays whether the queuing attribute exists:<br>q: Exists.<br>n: Does not exist. |

Legend:

N/A: Not applicable

#1

No value is set if the job failed to start and execution was not started on the target host.

#2

No value is set for a judgment job and OR job.

### (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<br>Jobnet ended with warning. (name: *jobnet-name*: *execution-ID*) |
| | Detailed information | N/A | VRID STTM PATH NAME RKIND LVL EUSR EDTM EHST SRVID<br>The meaning of each symbol is as follows:<br>VRID: Protocol version ID<br>STTM: Start time<br>PATH: Upper-level unit name<br>NAME: Unit name<br>RKIND: Recovery kind<br>LVL: Level<br>EDTM: End time<br>EHST: Source host name<br>SRVID: Scheduler service name |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| Exten ded | Com mon infor mati on | 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: /*jobnet-or-jobnet-connector-name* |
| | | Root object type | ROOT_OBJECT_TYP E | JOBNET |
| | | Root object name | ROOT_OBJECT_NAM E | Scheduler service name: /*root-jobnet-name* |
| | | Object ID | OBJECT_ID | Scheduler service name: /*jobnet-or-jobnet-connector-name* |
| | | Occurrence | OCCURRENCE | END |
| | | Start time | START_TIME | Start time |
| | | End time | END_TIME | End time |
| | Spec ific infor mati on | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0600 |
| | | Job group name | A0 | Scheduler service name: /*job-group-name* |
| | | 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 |
| | | Recovery kind | B0 | n: Normal<br>r: Recovery |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Jobnet levels | `B1` | Number of levels (where the root jobnet is level 0) |
| | | Source host | `B3` | When JP1/AJS3 - View is used to register execution:<br>    Name of the JP1/AJS3 - Manager host to be connected<br>When the `ajsentry` command is used to register execution:<br>    Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>    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

## (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<br>Job ended with warning. (name: *job-name*: *execution-ID*, code: *code*, host: *host-name*) |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | 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`<br>The meaning of each symbol is as follows:<br>VRID: Protocol version ID<br>STTM: Start time<br>PATH: Upper-level unit name<br>NAME: Unit name<br>RKIND: Recovery kind<br>DUSR: Run-time user name<br>EUSR: Source user name<br>EGRP: Job group name<br>EDTM: End time<br>RTN: Return code<br>UCPUT: User CPU time<br>SCPUT: System CPU time<br>EHST: Source host name<br>JTYP: Job execution status<br>JHST: Job run-time host<br>RQID: Request ID<br>ASTTM: Agent start time<br>AEDTM: Agent end time<br>AUCPU: Agent user CPU time<br>ASCPU: Agent system CPU time<br>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: */jobnet-name*/*job-name* |
| | | Root object type | ROOT_OBJECT_TYPE | `JOBNET` |
| | | Root object name | ROOT_OBJECT_NAME | Scheduler service name: */root-jobnet-name* |
| | | Object ID | OBJECT_ID | Scheduler service name: */jobnet-name*/*job-name* |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | 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`<br>In UNIX: `UNIX` |
| | | Version of AJS action | `ACTION_VERSION` | `0600` |
| | | Job group name | `A0` | Scheduler service name: /*job-group-name* |
| | | 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 |
| | | Recovery kind | `B0` | `n`: Normal<br>`r`: Recovery |
| | | Jobnet levels | `B1` | Number of levels (where the root jobnet is level 0) |
| | | Jobnet user | `B2` | User who registered the jobnet |
| | | Source host | `B3` | When JP1/AJS3 - View is used to register execution:<br>Name of the JP1/AJS3 - Manager host to be connected<br>When the `ajsentry` command is used to register execution:<br>　Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>　Name of the host on which the remote jobnet is defined |
| | | Target host | `C0` | Name of the host on which the job was executed |
| | | Job execution group name | `C1` | Always blank |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Request ID | C2 | Job number |
| | | Queue name | C3 | Queue name (for a queuing job) or agent name (for a Unix job or PC job) |
| | | User CPU time | C4 | Always 0 (zero) |
| | | System CPU time | C5 | Always 0 (zero) |
| | | Job execution status | C6 | Always r |
| | | Target host start time | E0[1], [2] | Start time at the target host |
| | | Target host end time | E1[2] | End time at the target host |
| | | Target host user CPU time | E2 | Always 0 (zero) |
| | | Target host system CPU time | 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 type | H4 | Displays whether the queuing attribute exists:<br>q: Exists.<br>n: Does not exist. |

Legend:

N/A: Not applicable

#1

No value is set if the job failed to start and execution was not started on the target host.

#2

No value is set for a judgment job and OR job.

### (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: *job-name*: *execution-ID*, JOBID: *job-number*) |
| | | 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:/*jobnet-name*/*job-name* |
| | | Root object type | ROOT_OBJECT_TYPE | `JOBNET` |
| | | Root object name | ROOT_OBJECT_NAME | Scheduler service name: /*root-jobnet-name* |
| | | Object ID | OBJECT_ID | Scheduler service name: /*jobnet-name*/*job-name* |
| | | Occurrence | OCCURRENCE | `END` |
| | Specific information | Platform | PLATFORM | In Windows: `NT`<br>In UNIX: `UNIX` |
| | | Version of AJS action | ACTION_VERSION | `0900` |
| | | Job group name | A0 | Scheduler service name: /*job-group-name* |
| | | Root jobnet name | A1 | Root jobnet name |
| | | Nested jobnet or job name | A2 | Job name |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Execution ID | A3 | Execution ID |
| | | Recovery kind | B0 | n: Normal<br>r: Recovery |
| | | Jobnet levels | B1 | Number of levels (where the root jobnet is level 0) |
| | | Jobnet user | B2 | User who registered the jobnet |
| | | Source host | B3 | When JP1/AJS3 - View is used to register execution:<br>    Name of the JP1/AJS3 - Manager host to be connected<br>When the ajsentry command is used to register execution:<br>    Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>    Name of the host on which the remote jobnet is defined |
| | | Target host | C0 | Always blank |
| | | Job execution group name | C1 | Always blank |
| | | Request ID | C2 | Job number |
| | | Queue name | C3 | Agent name |
| | | User CPU time | C4 | Always 0 (zero) |
| | | System CPU time | C5 | Always 0 (zero) |
| | | Job execution status | C6 | Always r |
| | | Target host start time | E0 | Always blank |
| | | Target host end time | E1 | Always blank |
| | | Target host user CPU time | E2 | Always 0 (zero) |
| | | Target host system CPU time | E3 | Always 0 (zero) |

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| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Unit ID | H2 | Unit ID (decimal number) |
| | | Unit type | H3 | Unit type (string specified as a parameter in the unit definition file) |
| | | Queuing type | H4 | Displays whether the queuing attribute exists:<br>q: Exists.<br>n: Does not exist |

Legend:

N/A: Not applicable

### (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<br>Log daemon ended abnormally. (code: *code*) |
| | | 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)<br>• In UNIX: root<br>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 |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Root object name | ROOT_OBJECT_NAME | JP1/AJS2 - Manager Scheduler service |
| | | Object ID | OBJECT_ID | Scheduler service name |
| | | Occurrence | OCCURRENCE | END |
| | Specific information | Platform | PLATFORM | In Windows: NT<br>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<br>Log file (*old-scheduler-log-file-name*) has been changed to *new-scheduler-log-file-name*. |
| | | 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)<br>• In UNIX: root<br>If the JP1_USERNAME environment variable is set, its value is used. |

| Attribute type | Type | Attribute name | Contents |
|---|---|---|---|
| | 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_TYP E` | `SERVICE` |
| | Root object name | `ROOT_OBJECT_NAM E` | `JP1/AJS2 - Manager Scheduler service` |
| | Object ID | `OBJECT_ID` | Scheduler service name |
| | Occurrence | `OCCURRENCE` | `EXCEPTION` |
| Specific information | Platform | `PLATFORM` | In Windows: `NT`<br>In UNIX: `UNIX` |
| | Version of AJS action | `ACTION_VERSION` | `0600` |
| | Old file | `D0` | Name of the old scheduler log file |
| | New file | `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<br>Jobnet cannot be executed while being held.<br>(name: *jobnet-name*: *execution-ID*) |

| Attribute type | Type | Attribute name | Contents |
|---|---|---|---|
| | | Detailed information | N/A | `VRID STTM PATH NAME RKIND LVL EUSR EHST SRVID`<br>The meaning of each symbol is as follows:<br>`VRID`: Protocol version ID<br>`STTM`: Start time<br>`PATH`: Upper-level unit name<br>`NAME`: Unit name<br>`RKIND`: Recovery kind<br>`LVL`: Level<br>`EUSR`: Source user name<br>`EHST`: Source host name<br>`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: /*jobnet-name* |
| | | Root object type | `ROOT_OBJECT_TYPE` | `JOBNET` |
| | | Root object name | `ROOT_OBJECT_NAME` | Scheduler service name: /*root-jobnet-name* |
| | | Object ID | `OBJECT_ID` | Scheduler service name: /*jobnet-name* |
| | | Occurrence | `OCCURRENCE` | `PAUSE` |
| | Specific information | Platform | `PLATFORM` | In Windows: `NT`<br>In UNIX: `UNIX` |
| | | Version of AJS action | `ACTION_VERSION` | `0600` |
| | | Job group name | `A0` | Scheduler service name: /*job-group-name* |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | 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 |
| | | Recovery kind | B0 | n: Normal<br>r: Recovery |
| | | Jobnet levels | B1 | Number of levels (where the root jobnet is level 0) |
| | | Source host | B3 | When JP1/AJS3 - View is used to register execution:<br>    Name of the JP1/AJS3 - Manager host to be connected<br>When the ajsentry command is used to register execution:<br>    Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>    Name of the host on which the remote jobnet is defined |
| | | Scheduled run time | B5 | Scheduled run 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

### (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 |

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| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Message | N/A | KAVS0271-I<br>Job cannot be executed while being held. (name: *job-name*: *execution-ID*) |
| | | Detailed information | N/A | `VRID STTM PATH NAME RKIND DUSR EUSR EGRP JHST SRVID`<br>The meaning of each symbol is as follows:<br>`VRID`: Protocol version ID<br>`STTM`: Start time<br>`PATH`: Upper-level unit name<br>`NAME`: Unit name<br>`RKIND`: Recovery kind<br>`DUSR`: Run-time user name<br>`EUSR`: Source user name<br>`EGRP`: Job group name<br>`JHST`: Job run-time host<br>`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: */jobnet-name/job-name* |
| | | Root object type | `ROOT_OBJECT_TYPE` | `JOBNET` |
| | | Root object name | `ROOT_OBJECT_NAME` | Scheduler service name: */root-jobnet-name* |
| | | Object ID | `OBJECT_ID` | Scheduler service name: */jobnet-name/job-name* |
| | | Occurrence | `OCCURRENCE` | `PAUSE` |
| | Specific information | Platform | `PLATFORM` | In Windows: `NT`<br>In UNIX: `UNIX` |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Version of AJS action | ACTION_VERSION | 0600 |
| | | Job group name | A0 | Scheduler service name: /job-group-name |
| | | 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 |
| | | Recovery kind | B0 | n: Normal<br>r: Recovery |
| | | Jobnet levels | B1 | Number of levels (where the root jobnet is level 0) |
| | | Jobnet user | B2 | User who registered the jobnet |
| | | Source host | B3 | When JP1/AJS3 - View is used to register execution:<br>　Name of the JP1/AJS3 - Manager host to be connected<br>When the ajsentry command is used to register execution:<br>　Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>　Name of the host on which the remote jobnet is defined |
| | | Job 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 type | H4 | Displays whether the queuing attribute exists:<br>q: Exists.<br>n: Does not exist. |

Legend:

N/A: Not applicable

### (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<br>Start of a jobnet delayed. (name: *jobnet-name*: *execution-ID*) |
| | | Detailed information | N/A | VRID STTM STRTM JNST PATH NAME RKIND LVL EUSR EHST SRVID<br>The meaning of each symbol is as follows:<br>VRID: Protocol version ID<br>STTM: Start time<br>STRTM: Start delayed<br>JNST: Jobnet status<br>PATH: Upper-level unit name<br>NAME: Unit name<br>RKIND: Recovery kind<br>LVL: Level<br>EUSR: Source user name<br>EHST: Source host name<br>SRVID: Scheduler service name |
| Exten ded | Com mon infor mati on | 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: /*jobnet-name* |
| | | Root object type | ROOT_OBJECT_TYP E | JOBNET |
| | | Root object name | ROOT_OBJECT_NAM E | Scheduler service name: /*root-jobnet-name* |
| | | Object ID | OBJECT_ID | Scheduler service name: /*jobnet-name* |
| | | Occurrence | OCCURRENCE | LATESTART |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | Specific information | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0600 |
| | | Job group name | A0 | Scheduler service name: /job-group-name |
| | | 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 |
| | | Recovery kind | B0 | n: Normal<br>r: Recovery |
| | | Jobnet levels | B1 | Number of levels (where the root jobnet is level 0) |
| | | Source host | B3 | When JP1/AJS3 - View is used to register execution:<br>    Name of the JP1/AJS3 - Manager host to be connected<br>When the ajsentry command is used to register execution:<br>    Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>    Name of the host on which the remote jobnet is defined |
| | | Status | B4 | term-wait: Waiting for prev. to end<br>time-wait: Waiting for start time<br>holding: Being held<br>shutdown: Shutdown |
| | | Scheduled run time | B5 | Scheduled run time |
| | | Start delay 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

## (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<br>End of a jobnet delayed. (name: *jobnet-name*: *execution-ID*) |
| | | Detailed information | N/A | `VRID STTMR STTM SEDTM JNST PATH NAME RKIND LVL EUSR EHST SRVID`<br>The meaning of each symbol is as follows:<br>`VRID`: Protocol version ID<br>`STTMR`: Scheduled start time<br>`STTM`: Actual start time<br>`SEDTM`: Termination delay<br>`JNST`: Jobnet status<br>`PATH`: Upper-level unit name<br>`NAME`: Unit name<br>`RKIND`: Recovery kind<br>`LVL`: Level<br>`EUSR`: Source user name<br>`EHST`: Source host name<br>`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: /*jobnet-name* |
| | | Root object type | `ROOT_OBJECT_TYPE` | `JOBNET` |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Root object name | `ROOT_OBJECT_NAM E` | Scheduler service name: /*root-jobnet-name* |
| | | Object ID | `OBJECT_ID` | Scheduler service name: /*jobnet-name* |
| | | Occurrence | `OCCURRENCE` | `LATEEND` |
| | | Start time | `START_TIME` | Start time |
| | Specific information | Platform | `PLATFORM` | In Windows: `NT`<br>In UNIX: `UNIX` |
| | | Version of AJS action | `ACTION_VERSION` | `0600` |
| | | Job group name | `A0` | Scheduler service name: /*job-group-name* |
| | | 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 |
| | | Recovery kind | `B0` | `n`: Normal<br>`r`: Recovery |
| | | Jobnet levels | `B1` | Number of levels (where the root jobnet is level 0) |
| | | Source host | `B3` | When JP1/AJS3 - View is used to register execution:<br>    Name of the JP1/AJS3 - Manager host to be connected<br>When the `ajsentry` command is used to register execution:<br>    Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>    Name of the host on which the remote jobnet is defined |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Status | B4 | term-wait: Waiting for prev. to end<br>time-wait: Waiting for start time<br>holding: Being held<br>running: Now running<br>AB-cont: Running + Abend<br>WA-cont: Running + Warning<br>shutdown: Shutdown |
| | | Scheduled run time | B5 | Scheduled run time |
| | | End delay 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

## (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<br>Start time for next execution schedule has been reached. (name: *jobnet-name*: *execution-ID*) |
| | | 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 |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Object type | OBJECT_TYPE | JOBNET |
| | | Object name | OBJECT_NAME | Scheduler service name: /*jobnet-name* |
| | | Root object type | ROOT_OBJECT_TYPE | JOBNET |
| | | Root object name | ROOT_OBJECT_NAME | Scheduler service name: /*root-jobnet-name* |
| | | Object ID | OBJECT_ID | Scheduler service name: /*jobnet-name* |
| | | Occurrence | OCCURRENCE | EXCEPTION |
| | Specific information | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0600 |
| | | Job group name | A0 | Scheduler service name: /*job-group-name* |
| | | 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 |
| | | Source host | B3 | When JP1/AJS3 - View is used to register execution:<br>    Name of the JP1/AJS3 - Manager host to be connected<br>When the ajsentry command is used to register execution:<br>    Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>    Name of the host on which the remote jobnet is defined |
| | | Scheduled run time | B5 | Scheduled run time |
| | | Unit ID | H2 | Unit ID (decimal number) |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Unit type | H3 | Unit type (string specified as a parameter in the unit definition file) |

Legend:

N/A: Not applicable

### (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<br>Job submit started. (name: *job-name*: *execution-ID*) |
| | | Detailed information | N/A | VRID STTM PATH NAME RKIND DUSR EUSR EGRP EHST JTYP JHST SRVID<br>The meaning of each symbol is as follows:<br>VRID: Protocol version ID<br>STTM: Start time<br>PATH: Upper-level unit name<br>NAME: Unit name<br>RKIND: Recovery kind<br>DUSR: Run-time user name<br>EUSR: Source user name<br>EGRP: Job group name<br>EHST: Source host name<br>JTYP: Job execution status<br>JHST: Job run-time host<br>SRVID: Scheduler service name |
| 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 |
| | | Object type | OBJECT_TYPE | JOB |

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| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Object name | `OBJECT_NAME` | Scheduler service name: /*jobnet-name*/*job-name* |
| | | Root object type | `ROOT_OBJECT_TYP E` | `JOBNET` |
| | | Root object name | `ROOT_OBJECT_NAM E` | Scheduler service name: /*root-jobnet-name* |
| | | Object ID | `OBJECT_ID` | Scheduler service name: /*jobnet-name*/*job-name* |
| | | Occurrence | `OCCURRENCE` | `START` |
| | | Start time | `START_TIME` | Start time |
| | Specific information | Platform | `PLATFORM` | In Windows: `NT`<br>In UNIX: `UNIX` |
| | | Version of AJS action | `ACTION_VERSION` | `0600` |
| | | Job group name | `A0` | Scheduler service name: /*job-group-name* |
| | | 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 |
| | | Recovery kind | `B0` | `n`: Normal<br>`r`: Recovery |
| | | Jobnet levels | `B1` | Number of levels (where the root jobnet is level 0) |
| | | Jobnet user | `B2` | User who registered the jobnet |

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| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Source host | B3 | When JP1/AJS3 - View is used to register execution:<br>    Name of the JP1/AJS3 - Manager host to be connected<br>When the ajsentry command is used to register execution:<br>    Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>    Name of the host on which the remote jobnet is defined |
| | | Target host | C0 | Name of the host on which the job was executed (only if executed on a local or remote host) |
| | | Job 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 type | H4 | Displays whether the queuing attribute exists:<br>q: Exists.<br>n: Does not exist. |

Legend:

N/A: Not applicable

## (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 |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Message | N/A | KAVS0242-I The execution request of the event job started. (name: *job-name*: *execution-ID*) |
| | | Detailed information | N/A | N/A |
| Exten ded | Com mon infor mati on | Severity | SEVERITY | Information |
| | | User name | USER_NAME | Name of the user who issued the execution request (JP1 user name) |
| | | Product name | PRODUCT_NAME | /HITACHI/JP1/AJS2 |
| | | Object type | OBJECT_TYPE | JOB |
| | | Object name | OBJECT_NAME | Scheduler service name: */jobnet-name/job-name* |
| | | Root object type | ROOT_OBJECT_TYPE | JOBNET |
| | | Root object name | ROOT_OBJECT_NAME | Scheduler service name: */root-jobnet-name* |
| | | Object ID | OBJECT_ID | Scheduler service name: */jobnet-name/job-name* |
| | | Occurrence | OCCURRENCE | START |
| | | Start time | START_TIME | Start time |
| | Spec ific infor mati on | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0800 |
| | | Job group name | A0 | Scheduler service name: */job-group-name* |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | 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 |
| | | Recovery kind | `B0` | `n`: Normal<br>`r`: Recovery |
| | | Jobnet levels | `B1` | Number of levels (where the root jobnet is level 0) |
| | | Jobnet user | `B2` | User who registered the jobnet |
| | | Source host | `B3` | When JP1/AJS3 - View is used to register execution:<br>    Name of the JP1/AJS3 - Manager host to be connected<br>When the `ajsentry` command is used to register execution:<br>    Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>    Name of the host on which the remote jobnet is defined |
| | | Target host | `C0` | Name of the host on which the job was executed (only if executed on a local or remote host) |
| | | Job 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 type | `H4` | Displays whether the queuing attribute exists:<br>`q`: Exists.<br>`n`: Does not exist. |

Legend:

N/A: Not applicable

### (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: *job-name*: *execution-ID*) |
| | | Detailed information | N/A | `VRID STTM SEDTM JST PATH NAME RKIND LVL EUSR EHST SRVID`<br>The meaning of each symbol is as follows<br>`VRID`: Protocol version ID<br>`STTM`: Actual start time<br>`SEDTM`: Termination delay<br>`JST`: Job status<br>`PATH`: Upper-level unit name<br>`NAME`: Unit name<br>`RKIND`: Recovery kind<br>`LVL`: Level<br>`EUSR`: Source user name<br>`EHST`: Source host name<br>`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: /*jobnet-name* |
| | | Root object type | `ROOT_OBJECT_TYPE` | `JOBNET` |
| | | Root object name | `ROOT_OBJECT_NAME` | Scheduler service name: /*root-jobnet-name* |
| | | Object ID | `OBJECT_ID` | Scheduler service name: /*jobnet-name*/*job-name* |
| | | Occurrence | `OCCURRENCE` | `LATEEND` |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Start time | START_TIME | Start time |
| | Specific information | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0850 |
| | | Job group name | A0 | Scheduler service name: */job-group-name* |
| | | 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 |
| | | Recovery kind | B0 | n: Normal<br>r: Recovery |
| | | Jobnet levels | B1 | Number of levels (where the root jobnet is level 0) |
| | | Source host | B3 | When JP1/AJS3 - View is used to register execution:<br>    Name of the JP1/AJS3 - Manager host to be connected<br>When the ajsentry command is used to register execution:<br>    Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>    Name of the host on which the remote jobnet is defined |
| | | Status | B4 | running: Now running |
| | | End delay time | B7 | Time when the termination delay was detected |
| | | Target host | C0 | Name of the host on which the job was 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

### (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<br>Scheduler service (*scheduler-service-name*) ended (name: *process-name*, code: *return-code*), but Scheduler service restart. |
| | | Detailed information | N/A | N/A |
| Exten ded | Com mon infor mati on | Severity | SEVERITY | Error |
| | | User name | USER_NAME | • In Windows: Account for the JP1/AJS3 service (default: SYSTEM)<br>• In UNIX: root<br>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_TYP E | SERVICE |
| | | Root object name | ROOT_OBJECT_NAM E | 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 |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | Spec ific infor mati on | Platform | PLATFORM | In Windows: NT<br>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<br>Jobnet (*jobnet-name*: *execution-ID*) cannot be executed - error (*maintenance-information*) occurred.<br>KAVS0273-E<br>Jobnet (*jobnet-name*: *execution-ID*) cannot be scheduled - error (*maintenance-information*) occurred. |
| | | Detailed information | N/A | N/A |
| Exten ded | Com mon infor mati on | 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 |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Object name | OBJECT_NAME | Scheduler service name: /*jobnet-name* |
| | | Root object type | ROOT_OBJECT_TYPE | JOBNET |
| | | Root object name | ROOT_OBJECT_NAME | Scheduler service name: /*root-jobnet-name* |
| | | Object ID | OBJECT_ID | Scheduler service name: /*jobnet-name* |
| | | Occurrence | OCCURRENCE | EXCEPTION |
| | Specific information | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0600 |
| | | Job group name | A0 | Scheduler service name: /*job-group-name* |
| | | Root jobnet name | A1 | Root jobnet name |
| | | Source host | B3 | When JP1/AJS3 - View is used to register execution:<br>    Name of the JP1/AJS3 - Manager host to be connected<br>When the ajsentry command is used to register execution:<br>    Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>    Name of the host on which the remote jobnet is defined |
| | | Shutdown time | B8 | Shutdown time |
| | | Maintenance information | B9 | Maintenance information |

Legend:

　　N/A: Not applicable

## (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<br>Monitoring of a jobnet's start conditions started. (name: *jobnet-name*: *execution-ID*) |
| | | Detailed information | N/A | `VRID STTM PATH NAME RKIND LVL EUSR SCTM EHST SRVID`<br>The meaning of each symbol is as follows:<br>`VRID`: Protocol version ID<br>`STTM`: Start time<br>`PATH`: Upper-level unit name<br>`NAME`: Unit name<br>`RKIND`: Recovery kind<br>`LVL`: Level<br>`EUSR`: Source user name<br>`SCTM`: Scheduled run-time<br>`EHST`: Source host name<br>`SRVID`: Scheduler service name |
| Exten ded | Com mon infor mati on | 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: */jobnet-name* |
| | | Root object type | `ROOT_OBJECT_TYP E` | `JOBNET` |
| | | Root object name | `ROOT_OBJECT_NAM E` | Scheduler service name: */root-jobnet-name* |
| | | Object ID | `OBJECT_ID` | Scheduler service name: */jobnet-name* |
| | | Occurrence | `OCCURRENCE` | `START` |
| | | Start time | `START_TIME` | Start time |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | Specific information | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0671 |
| | | Job group name | A0 | Scheduler service name: /job-group-name |
| | | 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 |
| | | Recovery kind | B0 | n: Normal<br>r: Recovery |
| | | Jobnet levels | B1 | Number of levels (where the root jobnet is level 0) |
| | | Source host | B3 | When JP1/AJS3 - View is used to register execution:<br>    Name of the JP1/AJS3 - Manager host to be connected<br>When the ajsentry command is used to register execution:<br>    Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>    Name of the host on which the remote jobnet is defined |
| | | Scheduled run time | B5 | Scheduled run time |

Legend:

N/A: Not applicable

### (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<br>Monitoring of a jobnet's start conditions ended.<br>(name: *jobnet-name*: *execution-ID*, status: *status*) |
| | | Detailed information | N/A | `VRID STTM PATH NAME RKIND LVL EUSR EDTM`<br>`EHST SRVID`<br>The meaning of each symbol is as follows:<br>`VRID`: Protocol version ID<br>`STTM`: Start time<br>`PATH`: Upper-level unit name<br>`NAME`: Unit name<br>`RKIND`: Recovery kind<br>`LVL`: Level<br>`EUSR`: Source user name<br>`EDTM`: End time<br>`EHST`: Source host name<br>`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: */jobnet-name* |
| | | Root object type | `ROOT_OBJECT_TYP E` | `JOBNET` |
| | | Root object name | `ROOT_OBJECT_NAM E` | Scheduler service name: */root-jobnet-name* |
| | | Object ID | `OBJECT_ID` | Scheduler service name: */jobnet-name* |
| | | Occurrence | `OCCURRENCE` | `END` |
| | | Start time | `START_TIME` | Start time |
| | | End time | `END_TIME` | End time |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | Specific information | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0671 |
| | | Job group name | A0 | Scheduler service name: /job-group-name |
| | | 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 |
| | | Recovery kind | B0 | n: Normal<br>r: Recovery |
| | | Jobnet levels | B1 | Number of levels (where the root jobnet is level 0) |
| | | Source host | B3 | When JP1/AJS3 - View is used to register execution:<br>　Name of the JP1/AJS3 - Manager host to be connected<br>When the ajsentry command is used to register execution:<br>　Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>　Name of the host on which the remote jobnet is defined |
| | | Status | B4 | u: Unmonitored + Ended<br>c: Monitor terminated<br>i: Interrupted monitoring<br>n: Monitor-end normal |

Legend:

　　N/A: Not applicable

## (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<br>Jobnet ended with execution-deferred status.<br>(name: *jobnet-name*: *execution-ID*) |
| | | Detailed information | N/A | `VRID STTM PATH NAME RKIND LVL EUSR EDTM EHST SRVID`<br>The meaning of each symbol is as follows:<br>`VRID`: Protocol version ID<br>`STTM`: Start time<br>`PATH`: Upper-level unit name<br>`NAME`: Unit name<br>`RKIND`: Recovery kind<br>`LVL`: Level<br>`EUSR`: Source user name<br>`EDTM`: End time<br>`EHST`: Source host name<br>`SRVID`: Scheduler service name |
| Exten ded | Com mon infor mati on | 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: */jobnet-name* |
| | | Root object type | `ROOT_OBJECT_TYP E` | `JOBNET` |
| | | Root object name | `ROOT_OBJECT_NAM E` | Scheduler service name: */root-jobnet-name* |
| | | Object ID | `OBJECT_ID` | Scheduler service name: */jobnet-name* |
| | | Occurrence | `OCCURRENCE` | `END` |
| | | Start time | `START_TIME` | Start time |
| | | End time | `END_TIME` | End time |

| Attribute type | Type | Attribute name | Contents |
|---|---|---|---|
| Spec ific infor mati on | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | Version of AJS action | ACTION_VERSION | 0671 |
| | Job group name | A0 | Scheduler service name: /*job-group-name* |
| | 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 |
| | Recovery kind | B0 | n: Normal<br>r: Recovery |
| | Jobnet levels | B1 | Number of levels (where the root jobnet is level 0) |
| | Source host | B3 | When JP1/AJS3 - View is used to register execution:<br>    Name of the JP1/AJS3 - Manager host to be connected<br>When the ajsentry command is used to register execution:<br>    Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>    Name of the host on which the remote jobnet is defined |

Legend:

N/A: Not applicable

### *(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 |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Message | N/A | KAVS0243-E Cannot terminate the jobnet(*jobnet-connector-name*: *execution-ID*) - jobnet for the connection destination is not registered. |
| Exten ded | Com mon infor mati on | 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: /*jobnet-connector-name* |
| | | Root object type | ROOT_OBJECT_TYP E | JOBNET |
| | | Root object name | ROOT_OBJECT_NAM E | Scheduler service name: /*root-jobnet-name* |
| | | Object ID | OBJECT_ID | Scheduler service name: /*jobnet-connector-name* |
| | | Occurrence | OCCURRENCE | EXCEPTION |
| | | Start time | START_TIME | Start time |
| | Spec ific infor mati on | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0810 |
| | | Job group name | A0 | Scheduler service name: /*job-group-name* |
| | | Root jobnet name | A1 | Root jobnet name |
| | | Nested jobnet or job name | A2 | Jobnet connector name |
| | | Execution ID | A3 | Execution ID |
| | | Jobnet levels | B1 | Number of levels (where the root jobnet is level 0) |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Source host | B3 | Source host name |
| | | Unit ID | H2 | Unit ID (decimal number) |
| | | Unit type | H3 | nc |

Legend:

N/A: Not applicable

### (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(*job-name*: *execution-ID*) - 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: /*jobnet-name* |
| | | Root object type | ROOT_OBJECT_TYPE | JOBNET |
| | | Root object name | ROOT_OBJECT_NAME | Scheduler service name: /*root-jobnet-name* |
| | | Object ID | OBJECT_ID | Scheduler service name: /*jobnet-name* |
| | | Occurrence | OCCURRENCE | EXCEPTION |

| Attribute type | Type | Attribute name | Contents |
|---|---|---|---|
| Specific information | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | Version of AJS action | ACTION_VERSION | 0810 |
| | Job group name | A0 | Scheduler service name: /job-group-name |
| | Root jobnet name | A1 | Root jobnet name |
| | Execution ID | A3 | Execution ID |
| | Source host | B3 | Source host name |
| | Scheduled run time | B5 | Scheduled run time |
| | Unit ID | H2 | Unit ID (decimal number) |
| | Unit type | H3 | n |

Legend:

N/A: Not applicable

## (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:*jobnet-name*: *execution-ID*) will wait for the termination of its monitoring status generation(*execution-ID-of-monitored-generation*). |
| | Detailed information | N/A | N/A |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| Exten ded | Com mon infor mati on | 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: /*jobnet-name* |
| | | Root object type | ROOT_OBJECT_TYP E | JOBNET |
| | | Root object name | ROOT_OBJECT_NAM E | Scheduler service name: /*root-jobnet-name* |
| | | Object ID | OBJECT_ID | Scheduler service name: /*jobnet-name* |
| | | Occurrence | OCCURRENCE | EXCEPTION |
| | Spec ific infor mati on | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0900 |
| | | Job group name | A0 | Scheduler service name: /*job-group-name* |
| | | 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 | A5 | Execution ID of the generation being monitored |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Source host | B3 | When JP1/AJS3 - View is used to register execution:<br>    Name of the JP1/AJS3 - Manager host to be connected<br>When the `ajsentry` command is used to register execution:<br>    Name of the host on which the command is executed<br>When a remote jobnet is executed on this host:<br>    Name of the host on which the remote jobnet is defined |
| | | Scheduled run time | B5 | Scheduled run 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

## (30) Attributes of the start event for scheduler database reorganization

The attributes of the start event for scheduler database reorganization are as follows.

*Table A-31:* 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<br>Database condensing of the scheduler service (*service-name*) started. *start-time*. |
| | | Detailed information | N/A | `VRID STTM CODIR SRVID`<br>The meaning of each symbol is as follows:<br>`VRID`: Protocol version ID<br>`STTM`: Start time<br>`CODIR`: Directory for unit definitions<br>`SRVID`: Scheduler service name |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| Exten ded | Com mon infor mati on | 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_TYP E | SERVICE |
| | | Root object name | ROOT_OBJECT_NAM E | SERVICE |
| | | Object ID | OBJECT_ID | JP1/AJS2 - Manager ISAM Condense |
| | | Occurrence | OCCURRENCE | START |
| | | Start time | START_TIME | Start time |
| | Spec ific infor mati on | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0671 |

Legend:

N/A: Not applicable

### (31) Attributes of the normal end event for scheduler database reorganization

The attributes of the normal end event for scheduler database reorganization are as follows.

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*Table A-32:* 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<br>Database condensing of the scheduler service (*service-name*) ended normally. *start-time - end-time* (*required-time*) |
| | | Detailed information | N/A | `VRID STTM EDTM CODIR SRVID RTN`<br>The meaning of each symbol is as follows:<br>`VRID`: Protocol version ID<br>`STTM`: Start time<br>`EDTM`: End time<br>`CODIR`: Directory for unit definitions<br>`SRVID`: Scheduler service name<br>`RTN`: Return code |
| Exten ded | Com mon infor mati on | 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_TYP E` | `SERVICE` |
| | | Root object name | `ROOT_OBJECT_NAM E` | `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 |
|---|---|---|---|---|
| | Specific information | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0671 |
| | | Required time | F0 | Required time (seconds) |

Legend:

N/A: Not applicable

## *(32) 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-33:* 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<br>Database condensing of the scheduler service (*service-name*) ended abnormally. *start-time - end-time* (*required-time*) |
| | | Detailed information | N/A | VRID EDTM CODIR SRVID RTN<br>The meaning of each symbol is as follows:<br>VRID: Protocol version ID<br>EDTM: End time<br>CODIR: Directory for unit definitions<br>SRVID: Scheduler service name<br>RTN: Return code |
| Extended | Common information | Severity | SEVERITY | Error |
| | | User name | USER_NAME | root |

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| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | 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<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0671 |

Legend:

    N/A: Not applicable

## (33) 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-34:* 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<br>The ISAM unused area size on scheduler service (*service-name*) is *size* MB. |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Detailed information | N/A | `VRID STTM CODIR SRVID`<br>The meaning of each symbol is as follows:<br>`VRID`: Protocol version ID<br>`STTM`: Start time<br>`CODIR`: Directory for unit definitions<br>`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 information | Platform | `PLATFORM` | In Windows: `NT`<br>In UNIX: `UNIX` |
| | | Version of AJS action | `ACTION_VERSION` | `0671` |
| | | Unused area size | `F1` | Unused area size (MB) |

Legend:

N/A: Not applicable

### (34) 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-35:* 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 | KAVU1504-W<br>The ISAM unused area size of the scheduler service (*service-name*) is *size* MB, which exceeds the *size* MB threshold value. |
| | | Detailed information | N/A | VRID STTM CODIR SRVID<br>The meaning of each symbol is as follows:<br>VRID: Protocol version ID<br>STTM: Start time<br>CODIR: Directory for unit definitions<br>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 |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | Specific information | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0671 |
| | | Unused area size | F1 | Unused area size (MB) |
| | | Unused area size threshold | F2 | Unused area size threshold (MB) |

Legend:

N/A: Not applicable

## (35) 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-36:* 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<br>Database condensing of the job execution environment started. *start-time* |
| | | Detailed information | N/A | N/A |
| Extended | Common information | Severity | SEVERITY | Information |
| | | User name | USER_NAME | root |
| | | Product name | PRODUCT_NAME | /HITACHI/JP1/AJS2 |

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| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | 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<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0671 |

Legend:

N/A: Not applicable

## (36) 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-37:* 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 |
| | Message | N/A | KAVU5981-I<br>Database condensing of the job execution environment ended normally. *start-time - end-time* (*required-time*) |
| | Detailed information | N/A | N/A |

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| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| Exten ded | Com mon infor mati on | 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_TYP E | SERVICE |
| | | Root object name | ROOT_OBJECT_NAM E | 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 |
| | Spec ific infor mati on | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0671 |
| | | Required time | F0 | Required time (seconds) |

Legend:

N/A: Not applicable

### (37)  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-38:* 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<br>Database condensing of the job execution environment ended abnormally. *start-time - end-time* (*required-time*) |
| | | 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 |
| | | 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<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0671 |

Legend:

N/A: Not applicable

### (38) 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-39:* 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<br>The ISAM unused area size on job execution environment is *size* 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 |
|---|---|---|---|---|
| | Specific information | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0671 |
| | | Unused area size | F1 | Unused area size (MB) |

Legend:

N/A: Not applicable

## (39)  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-40:*  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<br>The ISAM unused area size of the job execution environment is *size* MB, which exceeds the *size* 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 |

| Attribute type | Type | Attribute name | Contents |
|---|---|---|---|
| | 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<br>In UNIX: UNIX |
| | Version of AJS action | ACTION_VERSION | 0671 |
| | Unused area size | F1 | Unused area size (MB) |
| | Unused area size threshold | F2 | Unused area size threshold (MB) |

Legend:

N/A: Not applicable

### (40)  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-41:*  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 |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Message | N/A | KAVS0998-E<br>The system will wait because the database could not be connected. (Scheduler service: *scheduler-service-name*, Waittime: *maximum-wait-time*, Host: *host-name*) |
| | | Detailed information | N/A | VRID or RTN<br>The meaning of each symbol is as follows:<br>VRID: Version ID<br>RTN: Return value |
| Exten ded | Com mon infor mati on | Severity | SEVERITY | Error |
| | | User name | USER_NAME | • In Windows: Account for the JP1/AJS3 service (default: SYSTEM)<br>• In UNIX: root<br>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_TYP E | SERVICE |
| | | Root object name | ROOT_OBJECT_NAM E | JP1/AJS2 - Manager Schedule service |
| | | Object ID | OBJECT_ID | AJS service name |
| | | Occurrence | OCCURRENCE | END |
| | Spec ific infor mati on | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0711 |
| | | Database type | G0 | EmbedDB |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Maximum wait time | G1 | RDBCONNECTWAITTIME value |
| | | Return code from the RDB | G2 | Return code from the RDB |

Legend:

N/A: Not applicable

### (41)  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-42:*  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: *scheduler-service-name*, Waittime: *maximum-wait-time*, Host: *host-name*) |
| | | Detailed information | N/A | VRID<br>The meaning of each symbol is as follows:<br>VRID: Version ID |
| Exten ded | Com mon infor mati on | Severity | SEVERITY | Warning |
| | | User name | USER_NAME | • In Windows: Account for the JP1/AJS3 service (default: SYSTEM)<br>• In UNIX: root<br>If the JP1_USERNAME environment variable is set, its value is used. |
| | | Product name | PRODUCT_NAME | /HITACHI/JP1/AJS2 |
| | | Object type | OBJECT_TYPE | SERVICE |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | 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<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0711 |
| | | Database type | G0 | EmbedDB |
| | | Maximum wait time | G1 | RDBCONNECTWAITTIME value |
| | | Return code from the RDB | G2 | Return code from the RDB |

Legend:

N/A: Not applicable

## (42) *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-43:* Attributes of the command or JP1/AJS3 - View operation start event

| Attribute type | Type | Attribute name | Contents |
|---|---|---|---|
| Basic | Event ID | N/A | 00004190 |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Message | N/A | KAVS0715-I The command or JP1/AJS2 - View operation started. (Operation name: *command-name*)<br>*command-name*: Upper-case command name from which the prefix `ajs` is removed<br>For example, if the command name is `ajsentry`, `ENTRY` is set. |
| | | Detailed information | N/A | N/A |
| Exten ded | Com mon infor mati on | Severity | `SEVERITY` | `Information` |
| | | User name | `USER_NAME` | Name of the user who executed the command.<br>When the operation is performed from JP1/AJS3 - View, the JP1 user name is set.<br>When the operation is performed by executing a command, the value of the `JP1_USERNAME` environment variable is set.<br>If the environment variable has not been set, the name of the OS user who executed the command is set.<br>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_TYP E` | `COMMAND` |
| | | Root object name | `ROOT_OBJECT_NAM E` | Command name |
| | | Object ID | `OBJECT_ID` | `COMMAND` |
| | | Occurrence | `OCCURRENCE` | `START` |
| | | Start time | `START_TIME` | Start time |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | Specific information | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0800 |
| | | Scheduler service name | H1 | Scheduler service name |
| | | Host name of requestor | 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

## (43)  *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-44:* 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: *command-name*)<br>*command-name*: Upper-case command name formed after the prefix ajs is removed<br>For example, if the command name is ajsentry, ENTRY is set. |
| | | Detailed information | N/A | N/A |
| Extended | Common information | Severity | SEVERITY | Information |

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| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | User name | USER_NAME | Name of the user who executed the command. When the operation is performed from JP1/AJS3 - View, the JP1 user name is set. When the operation is performed by executing a command, the value of the JP1_USERNAME 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 | End time |
| | Specific information | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0800 |
| | | Scheduler service name | H1 | Scheduler service name |
| | | Host name of requestor | H5 | Name of the host that requested the operation |
| | | Message ID | H6 | Always - (hyphen) |
| | | Option | H7 | Option specified when the command was executed |

Legend:

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N/A: Not applicable

## (44) Attributes of the log file trap event

The attributes of the log file trap event are as follows.

*Table A-45:* 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<br>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<br>In UNIX: UNIX |
| | | Product name | PPNAME | In Windows: /HITACHI/JP1/NT_LOGTRAP<br>In UNIX: /HITACHI/JP1/UX_LOGTRAP |
| | | Execution ID | T1 | Number identifying the execution of the Log file trap job |

Legend:

N/A: Not applicable

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### (45) Attributes of the event action control - manager start event

The attributes of the event action control - manager start event are as follows.

*Table A-46:* 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<br>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)<br>• In UNIX: root<br>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 | START |
| | | Start time | START_TIME | Start time of the event action control - manager |
| | Specific information | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0600 |

Legend:

N/A: Not applicable

## *(46) Attributes of the event action control - manager end event*

The attributes of the event action control - manager end event are as follows.

*Table A-47:* 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<br>JP1/AJS2 event action manager will now end. |
| | | Detailed information | N/A | N/A |
| Exten ded | Com mon infor mati on | Severity | SEVERITY | Information |
| | | User name | USER_NAME | • In Windows: Account for the JP1/AJS3 service (default: SYSTEM)<br>• In UNIX: root<br>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_TYP E | SERVICE |
| | | Root object name | ROOT_OBJECT_NAM E | 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 |
|---|---|---|---|---|
| Spec ific infor mati on | | Platform | PLATFORM | In Windows: NT<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0600 |

Legend:

N/A: Not applicable

## (47) Attributes of the event action control - agent start event

The attributes of the event action control - agent start event are as follows.

*Table A-48:* 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<br>JP1/AJS2 event action agent will now start. |
| | | Detailed information | N/A | N/A |
| Exten ded | Com mon infor mati on | Severity | SEVERITY | Information |
| | | User name | USER_NAME | • In Windows: Account for the JP1/AJS3 service (default: SYSTEM)<br>• In UNIX: root<br>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 |

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| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | 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`<br>In UNIX: `UNIX` |
| | | Version of AJS action | `ACTION_VERSION` | `0600` |

Legend:

N/A: Not applicable

## (48) Attributes of the event action control - agent end event

The attributes of the event action control - agent end event are as follows.

*Table A-49:* 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<br>JP1/AJS2 event action agent will now end. |
| | | Detailed information | N/A | N/A |
| Extended | Common information | Severity | `SEVERITY` | `Information` |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | User name | USER_NAME | • In Windows: Account for the JP1/AJS3 service (default: SYSTEM)<br>• In UNIX: root<br>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<br>In UNIX: UNIX |
| | | Version of AJS action | ACTION_VERSION | 0600 |

Legend:

N/A: Not applicable

## (49) Attributes of the process abnormal end event (compatible event)

The attributes of the process abnormal end event are as follows.

*Table A-50:* 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 : *product-name* : *process-name* terminated abnormally. |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| Exten ded | Com mon infor mati on | Severity | SEVERITY | Error |
| | | Product name | PRODUCT_NAME | /HITACHI/JP1/AJS2/SPMD |
| | | Object type | OBJECT_TYPE | SPMD |
| | | Object name | OBJECT_NAME | Name of the process that ended abnormally |
| | | Occurrence | OCCURRENCE | NOTICE |

Legend:

N/A: Not applicable

## (50)  Attributes of the process start timeout event (compatible event)

The attributes of the process start timeout event are as follows.

*Table  A-51:*  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 *process-name*. continue |
| Exten ded | Com mon infor mati on | Severity | SEVERITY | Warning |
| | | Product name | PRODUCT_NAME | /HITACHI/JP1/AJS2/SPMD |
| | | 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

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**(51) Attributes of the process restart completion event (compatible event)**

The attributes of the process restart completion event are as follows.

*Table A-52:* 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 *process-name* has completed. |
| Exten ded | Com mon infor mati on | Severity | SEVERITY | Information |
| | | Product name | PRODUCT_NAME | /HITACHI/JP1/AJS2/SPMD |
| | | Object type | OBJECT_TYPE | SPMD |
| | | Object name | OBJECT_NAME | Name of the process that restarted |
| | | Occurrence | OCCURRENCE | NOTICE |

Legend:

N/A: Not applicable

**(52) Attributes of the pre-start failure event (compatible event)**

The attributes of the pre-start failure event are as follows.

*Table A-53:* 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: *pre-startup-process-name* Fail |
| Exten ded | Com mon infor mati on | Severity | SEVERITY | Error |
| | | Product name | PRODUCT_NAME | /HITACHI/JP1/AJS2/SPMD |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Object type | OBJECT_TYPE | SPMD |
| | | Object name | OBJECT_NAME | Failed command name |
| | | Occurrence | OCCURRENCE | NOTICE |

Legend:

N/A: Not applicable

### (53)  Attributes of the JP1/AJS3 start completed event

The attributes of the JP1/AJS3 start completed event is as follows.

*Table  A-54:*  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

### (54)  Attributes of the JP1/AJS3 stop event

The Attributes of the JP1/AJS3 stop event are as follows.

*Table  A-55:*  Attributes of the JP1/AJS3 stop event

| Attribute type | Type | Attribute name | Contents |
|---|---|---|---|
| Basic | Event ID | N/A | 000041C1 |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Message | N/A | KNAD3743-I JP1/AJS3 has terminated |
| Exten ded | Com mon infor mati on | 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

### (55) Attributes of the managed process start completed event

The attributes of the managed process start completed event are as follows.

*Table A-56:* Attributes of the managed process start completed event

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| Basic | | Basic | Basic | Basic |
| | | Message | N/A | KNAD3617-I The JP1/AJS3 *managed-process-name* startup has finished |
| Exten ded | Com mon infor mati on | 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:

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N/A: Not applicable

## (56)  Attributes of the managed process stop event

The attributes of the managed process stop event are as follows.

*Table A-57:*  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 *managed-process-name* terminated |
| Exten ded | Com mon infor mati on | 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

## (57)  Attributes of the managed process abnormal end event

The attributes of the managed process abnormal end event are as follows.

*Table A-58:*  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 *managed-process-name* terminated abnormally. |
| Exten ded | Com mon infor mati on | Severity | SEVERITY | Error |
| | | Product name | PRODUCT_NAME | /HITACHI/JP1/AJS2 |

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| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Object type | OBJECT_TYPE | SPMD |
| | | Object name | OBJECT_NAME | Name of the process that ended abnormally |
| | | Occurrence | OCCURRENCE | NOTICE |

Legend:

N/A: Not applicable

### (58) Attributes of the managed process start timeout event

The attributes of the managed process start timeout event are as follows.

*Table A-59:* 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 *managed-process-name* 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

### (59) Attributes of the managed process restart completed event

Attributes of the managed process restart completed event are as follows.

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*Table  A-60:*  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 *managed-process-name* 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

## (60)  *Attributes of the pre-start process failure event*

The attributes of the pre-start process failure event are as follows.

*Table  A-61:*  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 : *pre-startup-process-name* 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 |

| Attribute type | | Type | Attribute name | Contents |
|---|---|---|---|---|
| | | Occurrence | OCCURRENCE | NOTICE |

Legend:

N/A: Not applicable

# B. Version Revisions

This appendix lists the changes in each version of the JP1/AJS series programs.

## B.1 Revisions in 09-00

The following lists the revisions in 09-00 for each program.

### *(1) JP1/AJS3 - Manager*

- The standard database of JP1/AJS3 is now an embedded database.

- Functions related to an embedded database have been changed as follows:

  - The sizes of the large-scale, medium-scale, and small-scale database models have been changed.

  - The database area auto-increment function and the system log auto-increment function have been added.

  - The system log is no longer used.

  - The functions of the commands used to control an embedded database have been enhanced.

- The ISAM database is now used only for QUEUE jobs and submit jobs.

- An agent management function has been added for specifying a logical execution agent name as the destination host for a job or jobnet. Previously, users could only specify execution hosts by their real names.

- Jobs that are in the *Now queuing* status when the service is stopped are now returned to the *Wait for prev. to end* status when the service restarts (in hot-start mode), before being resubmitted.

- A jobnet release function has been added for replacing the definition of a jobnet that is registered for execution with another definition.

- The job execution control manager process (jpqman) and event/action control manager process (jpomanager) can now be started on a scheduler service basis.

- A scheduler log file can now be output for an individual scheduler service or host.

- The following functions have been enhanced:

  - The method by which the number of logs to keep is managed

  - The process by which monitored generations of jobnets with start conditions are established

  - The process by which execution generations when a start condition is established are held

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- A format specification has been added to the `ajsshow` command for outputting the standard output file name.

- The Manager Environment Settings dialog box is no longer provided. Instead, you can use the `jajs_config` command to set up the manager environment.

- A function has been added to support end delay monitoring based on how long a job takes to execute.

- The jobnet connector functionality has been enhanced to enable control of the execution order of root jobnets managed by different scheduler services.

- The definition pre-check has been enhanced so that if an invalid execution order is found in the units of the jobnet being checked, the names of the units are output to the check results file.

- The file permission check performed at execution of a Unix job has been enhanced to include checks of the access control list and secondary group settings as well as file permissions.

- A function has been added that enables event jobs to continue executing even if the JP1/AJS3 service stops on the execution host.

- A function has been added for exporting and importing the registration statuses of jobnets as registered execution-schedule information.

- Linkage with message queues on UNIX hosts (TP1/LiNK, TP1/Message Queue, MQSeries) is no longer supported.

- Windows Server 2008 has been added as platforms supported by JP1/AJS3 - Manager.

- A unit called a jobnet connector which controls the execution order of root jobnets has been added.

- An option has been added to output a detailed history of user operations, such as changes to jobnet definitions, to the scheduler log.

- The `ajslogprint` command for extracting log entries from the scheduler log has been added.

### *(2) JP1/AJS3 - Agent*

- The Agent Environment Settings dialog box is no longer provided. Instead, you can use the `jajs_config` command to set up the agent environment.

- Linkage with a message queue system is no longer supported.

- The file permission check performed at execution of a Unix job has been enhanced to include checks of the access control list and secondary group settings as well as file permissions.

- Linkage with message queues on UNIX hosts (TP1/LiNK, TP1/Message Queue,

MQSeries) is no longer supported.

- Windows Server has been added as platforms supported by JP1/AJS3 - Agent.

### (3) JP1/AJS3 - View

- An agent management function has been added for specifying a logical execution agent name as the destination host for a job or jobnet. Previously, users could only specify execution hosts by their real names.

- A jobnet release function has been added for replacing the definition of a jobnet that is registered for execution with another definition.

- Function menus have been added to the JP1/AJS3 - View window to facilitate task-oriented operation.

- The JP1/AJS3 - View window (Summary Monitor window) has been added. In this window, you can view the progress of jobnets and other information.

- JP1/AJS3 - View can now be started in the following modes:

  - Normal mode

    In this mode, the JP1/AJS3 - View window is equipped with function menus.

  - Monitoring mode

    A mode dedicated to monitoring jobs and jobnets. Only the JP1/AJS3 - View window (Summary Monitor window) is displayed.

  - Compatible mode

    JP1/AJS3 - View operates in the same way as JP1/AJS2 - View version 8 or earlier.

- A Detailed Information area has been added to the JP1/AJS3 - View window (Main window), which displays detailed information about a unit.

- The concurrent execution setting of monitored generations and the holding behavior of execution generations (produced when a start condition is satisfied) can now be selected in the detailed definition of a start condition.

- A list filter function has been added for filtering the information in a list.

- A function has been added for saving list information in CSV format.

- You can now click a button in the Daily Schedule window and Monthly Schedule window to move between days and months.

- A list area has been added to the Jobnet Editor window and Jobnet Monitor window. This area displays the jobs defined in the jobnet.

- A Search window has been added, in which you can set detailed search conditions and perform operations on units listed in the search results.

- You can now use a mouse wheel to scroll inside JP1/AJS3 - View.

- A function has been added that allows you to select whether **Type** in list areas are grouped by type or displayed in detailed format.

- A function has been added for prohibiting changes to specific definition items in the Define Details dialog box.

- A function has been added for removing icons you no longer use from the icon list area in the Jobnet Editor window.

- Windows 7 has been added as a supported OS (JP1/AJS3 - View 09-00-05 or later).

- A function has been added to support end delay monitoring based on how long a job takes to execute.

- The jobnet connector functionality has been enhanced to enable control of the execution order of root jobnets managed by different scheduler services.

- An option has been added to the Filter Settings dialog box so that jobnets with hold plans can be treated as jobnets in *Being held* status for filtering purposes in the Daily Schedule window and Monthly Schedule window.

- The ability to define, operate, and monitor jobnet connectors which control the execution order of root jobnets has been added.

- A function that displays the preceding and succeeding jobs of a given job or jobnet in bold has been added.

- Support for Windows Vista has been added.

## B.2 Revisions in 08-00

The following lists the revisions in 08-00 for each program.

### (1) JP1/AJS2 - Manager

- The recommended values for the environment settings are now set during installation and setup.

- A Monitoring Files job can now monitor files larger than 2 gigabytes (large files).

- The `ajsstatus` command can now output the connection status of JP1/AJS2 - View.

- The following commands used to control an embedded database have been added:

  - `ajsembdbaddarea` command (expands a database area in an embedded database)

  - `ajsembdbaddlog` command (expands a log area in an embedded database)

  - `ajsembdbcancel` command (cancels execution of a command

manipulating an embedded database)

- `ajsembdboplog` command (manipulates embedded database logs)

- `ajsembdbreclaim` command (maintains an embedded database)

- `ajsembdbrorg` command (unloads and reloads an embedded database )

- `ajsembdbrstr` command (backs up and restores an embedded database)

- `ajsembdbstart` command (starts an embedded database)

- `ajsembdbstatus` command (monitors an embedded database )

- `ajsembdbstop` command (stops an embedded database)

- `ajsembdbunset` command (removes the setup of an embedded database)

With support of the `ajsembdbreclaim` command, the time required to reclaim free pages has been reduced.

- JP1/Performance Management - Agent Option for JP1/AJS2 can now be linked with JP1/AJS2 to analyze the operating status.

- The `jajs_start` command and the `jajs_start.cluster` command can now check whether a process has already been started when JP1/AJS2 is started. (UNIX only)

### *(2) JP1/AJS2 - Agent*

- The recommended values for the environment settings are now set during installation and setup.

- A Monitoring Files job can now monitor files larger than 2 gigabytes (large files).

### *(3) JP1/AJS2 - View*

- Icons have been changed.

## B.3 Revisions in 07-50

### *(1) JP1/AJS2 - Manager*

- Macro variables can now be used during registration for execution to specify information to be passed.

- Judgment jobs can now perform variable judgment.

- A function has been added that suppresses jobnet executions that follow an abnormally terminated jobnet and that will be started when their start conditions are satisfied.

- A definition pre-check function has been added for conducting a final check before starting production in the production environment after the unit definitions are migrated from the development environment.

- The `jpomanevreset` command has been added for deleting data accumulated in the event action manager if a large amount of unprocessed data accumulated in the event action manager has caused delay. To identify the start conditions and agents that have caused this problem, the `jpomanevshow` command has also been added for displaying information about agents that frequently send data to the manager and the start conditions.

- A function that alleviates consumption of the Desktop heap has been added. (Windows only)

- A function has been added for specifying the maximum wait time for the scheduler service to connect to a database.

- Messages that were output to only the integrated trace log can now be output to syslog also. (UNIX only)

- The following functions have been added to the data collection tool:

  - Specifying a logical host name

  - Filtering the data to be collected

  - Adding types of data that can be collected

- Descriptions of messages have been improved.

- An urgent command has been added that can be executed if an error occurs.

- A function has been added that places limits on, for example, the size of files that can be received, to prevent a part of job processing from affecting the entire system operation.

- A function has been added that performs a synchronized write when updating event job information or the wait information file.

- The monitoring interval for linkage with MQ Series can now be specified in seconds.

- If a TCP/IP connection error occurs, the retry interval and count can now be changed.

- The policy to determine the agent hosts to which a job will be dispatched can now be specified.

- All the detailed processes of the event action function can now be stopped to terminate the agent process for the event action function if any of the detailed processes have terminated upon receiving a signal.

- Microsoft(R) Visual C++ .NET Version 2003 is now supported as a compiler for the provided code functions.

- The `ajsshow` command can now display the hold attribute of a jobnet or job even when the jobnet or job has already terminated.

### (2) JP1/AJS2 - Agent

- A definition pre-check function has been added for conducting a final check before starting production in the production environment after the unit definitions are migrated from the development environment.

- The following functions have been added to the data collection tool:

  - Specifying a logical host name

  - Filtering the data to be collected

  - Adding types of data that can be collected

- Descriptions of messages have been improved.

- The monitoring interval for linkage with MQ Series can now be specified in seconds.

- All the detailed processes of the event action function can now be stopped to terminate the agent process for the event action function if any of the detailed processes have terminated upon receiving a signal.

- A function has been added that performs a synchronized write when updating event job information or the wait information file.

### (3) JP1/AJS2 - View

- Macro variables can now be used during registration for execution to specify information to be passed.

- Judgment jobs can now perform variable judgment.

- A function has been added that suppresses the jobnet executions that follow an abnormally terminated jobnet and that will be started when their start conditions are satisfied.

- The **Add**, **Change Time**, **Execute Immediately**, and **Release Change** options have been added to the JP1/AJS2 - View window.

- The **Paste (Extension)** menu command has been added for copying units and relationship lines at the same time.

- Relationship lines can now be drawn from multiple units to a single job network element.

- When opening the Jobnet Monitor window of JP1/AJS2 - View from JP1/AJS2 Console View, if there is already an activated JP1/AJS2 - View, the window can now be opened in JP1/AJS2 - View.

- The following functions have been added to the data collection tool:

  - Specifying a logical host name

- Filtering the data to be collected

- Adding types of data that can be collected

- Descriptions of messages have been improved.

- The maximum log file size for JP1/AJS2 - View has been increased.

- The maximum log file size for JP1/AJS2 Console View has been increased.

- In JP1/AJS2 - View, log information that previously was output many times in small units can now be output at one time.

- In JP1/AJS2 Console View, log information that previously was output many times in small units can now be output at one time.

- In the Windows version of JP1/AJS2 - View, **Help** has been added to the **Start** menu.

## B.4 Revisions in 07-00

Version 07-00 features the addition of a new program, JP1/AJS2 - Advanced Manager, to enable the use of an embedded database (HiRDB) in a JP1/AJS2 scheduler database.

This section explains the changes in each version from 06-71 to 07-00, on a program-by-program basis.

### (1) About JP1/AJS2 - Manager

- A function was provided to temporarily compress JP1/AJS2 and reconfigure the ISAM database (scheduler database and job execution environment database) without stopping active applications.

- ISAM databases can now be reconfigured in parallel.

- The number of scheduler services that can be added has been changed from 9 to 20.

- An option was added for outputting the execution timings of reference commands, such as `ajsshow` and the history of service processing requests from operation commands, as the operation log to the scheduler log.

- The number of logs to keep for a jobnet has been changed from 99 to 999.

- For a cold start of JP1/AJS2, the job execution environment database is deleted so that the startup time of JP1/AJS2 becomes shorter.

- A function is now supported for validating the user profile information in the environment setup for job execution control.

- By setting the number of days that job information is held to 0 days, jobs that terminate abnormally can now be handled by changing the save time.

- The JP1/AJS2 job information deletion can now be suppressed.

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- Any event job can now be used in a DNS environment (host name in the FQDN format).

- Event job reception information can now be inherited as macro variables as the parameters of standard jobs and action jobs without having to pay attention to double quotation marks in the inherited information.

- The extended regular expression supported by JP1/Base can now be used in Receive event job monitoring jobs, Monitoring log files jobs, and Monitoring event log jobs according to the JP1/Base settings.

- A function to execute queueless jobs is now supported.

## (2)  About JP1/AJS2 - Agent

- Event job reception information can now be inherited as macro variables of the parameters of standard jobs and action jobs without being aware of double quotation marks in the inherited information.

- A function for executing queueless jobs was supported.

- When JP1/AJS2 - Agent starts, it no longer accesses the authentication server (07-00-/C or later).

## (3)  About JP1/AJS2 - View

- A user profile can now be used to set the JP1/AJS2 - View environment.

- A line feed character can now be inserted at any point in a unit name displayed in the map area of the Jobnet Editor and Jobnet Monitor windows.

- The default values in the dialog box can now be changed.

- Display items (columns) in the following locations can now be selected.

  - List area in the JP1/AJS2 - View window

  - Execution result list in the Daily Schedule window

  - Execution result list in the Monthly Schedule window

# C. Changes in 3020-3-S07-04(E)

The following table list the changes in this manual (3020-3-S07-04(E)).

*Table C-1:* Changes in 3020-3-S07-04(E)

| No. | Location | Changes |
|-----|----------|---------|
| 1 | All | Windows 7 has been added as an OS supported by JP1/AJS3 - View. |
| 2 | *7.3.1* | Tables describing the default values of the restart settings for JP1/AJS3 processes have been added. |
| 3 | *7.3.2* | The description of the settings for issuing a JP1 event when a JP1/AJS3 process starts, stops, or terminates abnormally has been changed. |
| 4 | *7.3.3* | The description of the format of the `jp1ajs_param.conf` file has been changed. |
| 5 | *9.1.2* | The description of how to change an event job definition in the start conditions of a jobnet registered for execution has been moved from the manual *Job Management Partner 1/Automatic Job Management System 3 Overview* to this manual. |
| 6 | *11.6* | Cautionary notes on using a cluster system have been added. |

# D. Glossary

**abnormal end**

> A jobnet ends abnormally if one of the processes defined in the jobnet fails to execute properly. The jobnet is interrupted at that point and subsequent processes are not executed.
>
> A job ends abnormally if it fails to execute properly. The process is interrupted at that point.
>
> The embedded database system ends abnormally when an error causes its status to change from active to stopped or paused, without any intervention by the user. For details, see *D. How the Embedded Database Operates* in the manual *Job Management Partner 1/Automatic Job Management System 3 Troubleshooting*.

**abnormal threshold**

> A value that is compared with a job's return code to evaluate whether the job ended normally or abnormally.

**action job**

> A job that sends email, or sends events reporting the system status to JP1/ IM or the HP NNM.

**agent host**

> A host that executes jobs on request from a manager host. JP1/AJS3 - Agent must be installed on the agent host, or since JP1/AJS3 - Manager also provides JP1/AJS3 - Agent functionality, JP1/AJS3 - Manager might be installed on the agent host.
>
> The agent host executes the job on receipt of a job request from the manager host. At completion of the job, the agent host receives the execution result (return value) of the executable file and forwards it to the manager host.

**AJS3 unit monitored object**

> An object for monitoring the status of root jobnets in JP1/AJS3. By defining the monitoring conditions in this object, you can then switch to monitoring mode and monitor the root jobnets.

**AJSPATH**

> An environment variable for defining the paths used by JP1/AJS3. When this environment variable is defined, you do not need to specify the full path when specifying a jobnet name in a command.

**backup box**

> A directory or a folder for storing backup files.

**backup file**

A file containing the units defined in JP1/AJS3.

**base day**

A date specified as the starting day of the month in the calendar information.

**base time**

The time that marks when a day ends and the next day begins in a JP1/AJS3 system. For example, if 8:00 a.m. is set as the base time, the previous day is regarded as lasting until 7:59 a.m.

**calendar information**

Information about open days and closed days for jobnet execution. You can define calendar information separately for each job group. The calendar information specifies the days on which jobnets in the job group can and cannot be executed. (When the processing cycle falls on a closed day, the jobnet can be executed on another day if a substitute schedule is defined.) For open days, you can specify the base day, base month, and base time.

**closed day**

A day on which jobnets are not executed. However, if **Execute without shift** is specified, the jobnet will be executed on that closed day.

**cluster system**

A system configured as multiple linked server systems, designed to continue operation even if one system fails. If a failure occurs in the server currently executing applications (primary node), the other standby server (secondary node) takes over and continues processing the applications. Therefore, a cluster system is also referred to as a *node switching system*.

The term *cluster system* can also mean load balancing based on parallel processing. In this manual, however, *cluster system* refers only to node-switching functionality for preventing interruption of application processing.

**common user profile**

A file containing the environment settings for JP1/AJS3 - View, accessible to all JP1 users. The system administrator saves the common user profile in JP1/AJS3 - Manager. JP1 users can download this file, enabling the same JP1/AJS3 - View environment to be set for all JP1 users.

A common user profile is useful when a large number of JP1 users will be using JP1/AJS3 - View in the same environment.

**compatible ISAM configuration**

A system configuration in which JP1/AJS3 information is managed exclusively by the

ISAM database.

This configuration is offered to help users migrate from JP1/AJS2 version 8 or earlier. It can restrict to the same degree as in previous versions, the use of resources such as hard disk and memory. However, from version 9 only a subset of the new features offered is provided.

**correlation ID**

Information for identifying sent and received messages. The correlation ID is received in the character code set specified by the sender.

**custom job**

A predefined job for executing a task with a specific purpose. JP1/AJS3 provides standard custom jobs such as file transfer and job requests to a mainframe. In addition, you can register your own frequently used jobs as custom jobs. When registering a custom job, you can represent it by creating an icon with a special shape and design, and you can create a dialog box for entering job information.

To use a custom job, the requisite program for the job must be installed.

**Daily Schedule window**

A window that displays each day's execution schedules, execution status, and execution results.

**default queue**

A queue created in an agent host for executing jobs. You must always create a default queue.

When you submit a job for execution, if you specify an agent host name as the destination, the job will be submitted to the default queue of the specified agent host.

**dependent job**

A job executed when the judgment result of a judgment job is true.

**dependent jobnet**

A jobnet executed when the judgment result of a judgment job is true.

**embedded database**

The standard database of JP1/AJS3. An embedded database offers high reliability, and is well suited to large-scale systems that handle large quantities of information.

**embedded database administrator (database administrator)**

A user authorized to assign and cancel various permissions for an embedded database (a user with DBA permissions).

Database administrators are managed within an embedded database.

**embedded database operation commands**

> A generic term for commands whose name begins with `ajsembdb`.

**embedded database service**

> A service that provides the environment for using the embedded database in Windows. This service must be started before you can use the embedded database. The name of the embedded database service is `JP1/AJS3 Database` *setup-identifier*.

**embedded database system administrator**

> The owner of an embedded database practical directory and embedded database file system areas (data area and system area). The embedded database system administrator can execute commands for an embedded database.

> The OS manages embedded database system administrators.

**end with warning**

> A status indicating that a jobnet finished, but some of the processes defined in the jobnet were executed incorrectly. The jobnet continues to the end without interruption.

> This ending method is used when an error is not so serious as to terminate the jobnet.

**environment setting parameter**

> A parameter for defining the information required to operate JP1/AJS3, written in an environment settings file. With these parameters, you can specify the directory in which information about JP1/AJS3 units is stored, whether to output syslog messages, and other such preferences.

**environment settings file**

> A file containing the settings required to operate JP1/AJS3, such as the scheduler service environment and job execution environment.

**event**

> A specific event, such as email reception or file update, that occurred in the system. Events can be used to start a job or jobnet, and can be monitored using an event job.

**event job**

> A job that monitors specific events occurring in the system. When an event job is initiated, it starts monitoring for file updates, incoming messages, or other specified events.

**execution agent**

> The logical name of an agent host that executes jobs or jobnets. Based on the agent information defined in the manager host, the manager maps the execution agent specified in the job or jobnet to the physical host name of the agent host, and distributes the job or jobnet accordingly.

**execution agent group**

A group of execution agents configured to realize load distribution. The manager distributes jobs among the execution agents according to their assigned priorities.

**execution ID**

A number assigned to an execution schedule of the uppermost jobnet.

**execution-locked resource**

A means of preventing multiple jobs from executing at the same time, by specifying the same resource name (execution-locked resource name) for each job.

**fixed execution registration**

A method of registering a jobnet so that it starts and runs at a predetermined date and time calculated by the system from schedule definitions.

**fixed schedule**

A schedule set by absolute times when a jobnet is registered for fixed execution.

**HP NNM**

A suite of integrated network management tools from Hewlett-Packard Co. for managing network configuration, performance, and failures.

**immediate execution registration**

A method for starting and processing a jobnet immediately after registering it for execution.

**ISAM database**

The database that manages the execution environment for QUEUE jobs and submit jobs. Data is indexed using the Indexed Sequential Access Method (ISAM) and is managed in the database. The ISAM database is provided as standard with JP1/Base.

**job**

A group of commands, shell scripts, or Windows executable files.

**job execution environment**

A job execution environment consists of a JP1/AJS3 manager and agents.

The job execution environment for the manager is used to manage the definition information for execution agents (such as the maximum number of concurrently executable jobs and job transfer restriction status), job distribution method, and job execution results.

The job execution environment for the agent is used mainly to manage how a job is executed.

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These job execution environments are managed by using a database and environment setting parameters.

When QUEUE jobs and submitted jobs are used, the ISAM database and environment setting parameters are used as the job execution environment for the QUEUE jobs and submitted jobs.

Note that queueless jobs are managed in the queueless job execution environment.

**job group**

A folder for classifying and managing jobnets.

**job network element**

The generic term for these elements is *unit*.

**jobnet**

A set of jobs associated in execution order. When a jobnet is executed, the jobs in the jobnet are automatically executed in their predetermined order.

**jobnet connector**

A unit for controlling the execution order of root jobnets. A jobnet connector establishes connections between root jobnets and controls their execution order by having connected generations wait for their counterparts to start or finish.

**Jobnet Editor window**

A window in which you can create new jobnets or edit existing jobnets.

**Jobnet Monitor window**

A window that displays the execution status or detailed execution results of jobnets or jobs. You can manipulate jobnets or jobs in this window.

**JP1 event**

Event information that is reported to JP1/Base when an event occurs in the system. JP1 events are reported to other systems via JP1/Base.

**JP1 permission level**

A name that indicates the operations that a JP1 user is allowed to perform on management targets (resources) defined in JP1/AJS3, including applications and events. Use JP1/Base to define JP1 permission levels.

**JP1 resource group**

A name given to a specific JP1/AJS3 unit for controlling access by JP1 users to that unit.

## JP1 user

A user designation for using JP1/AJS3 or JP1/IM - Manager. Each JP1 user is registered in the authentication server, which controls the user's access to management targets (resources).

## JP1/AJS3 - Definition Assistant

This program allows you to register a large amount of JP1/AJS3 definition information edited using an Excel template into a manager host, or to retrieve JP1/AJS3 definition information from a manager host to an Excel template. The Excel templates provided by JP1/AJS3 - Definition Assistant are called *definition management templates*. With a definition management template in the spreadsheet format, you can enter or edit definition information efficiently by using automatic filling, automatic filtering, and other Excel functionalities.

## JP1/AJS3 Console Agent

A JP1/AJS3 component that regularly monitors the status of objects (root jobnets) on the local host, specified in JP1/AJS3 Console Manager. Any change in status is notified to JP1/AJS3 Console Manager.

## JP1/AJS3 Console Manager

A JP1/AJS3 component that stores definitions about monitored objects defined in JP1/AJS3 Console View, and gets status information about monitored objects by issuing requests to JP1/AJS3 Console Agent.

## JP1/AJS3 Console View

A JP1/AJS3 component that allows you to define objects to be monitored, using a graphical user interface. The definitions are stored in JP1/AJS3 Console Manager. Using JP1/AJS3 Console View, you can view and monitor the status of target objects notified by JP1/AJS3 Console Agent to JP1/AJS3 Console Manager. You need to log in to JP1/AJS3 Console Manager before using JP1/AJS3 Console View.

## JP1/AJS3 for Enterprise Applications

A program that allows you to control jobs in an R/3 system from another system. You can submit, delete, and monitor R/3 jobs.

R/3 jobs can be executed automatically from JP1/AJS3 if you register them as custom jobs for JP1/AJS3 for Enterprise Applications when you define a JP1/AJS3 jobnet.

JP1/AJS3 for Enterprise Applications is the successor to JP1/Application Manager for R/3.

## JP1/AJS2 for Oracle E-Business Suite

A program that allows you to access Oracle E-Business Suite from another system and to request concurrent execution of applications.

Requests for concurrent execution can be issued from JP1/AJS3 if you register the requests as custom jobs for JP1/AJS2 for Oracle E-Business Suite when you define a JP1/AJS3 jobnet.

Using JP1/AJS3's schedule definition facility, you can specify the processing cycles and the execution dates of concurrent requests.

JP1/AJS2 for Oracle E-Business Suite is the successor to JP1/Application Manager for Oracle E-Business Suite.

### JP1/Base

A program that provides the event service function. JP1/Base allows you to control the order in which services start, and it lets you send and receive JP1 events. JP1/Base is a prerequisite program for JP1/IM and JP1/AJS3. When JP1/IM is deployed in a system with JP1/AJS3, JP1/Base provides functionality for restricting operations by JP1 users.

### JP1/FTP

A program for performing file transfer tasks efficiently, including file transfer/reception linked to application execution, scheduled file transfer, and automated program execution following file reception. JP1/FTP supports monitoring of transfer status, enhancing file transfer reliability.

### JP1/IM

A program for centrally monitoring a distributed system. Using the windows in JP1/IM - View, the system administrator can monitor JP1 events, which provide information about job execution status or problems in the distributed system.

### JP1/NQSEXEC

A program for executing routine batch processing on a distributed system and for running batch jobs efficiently.

### JP1/OJE for Midrange Computer

A program for submitting batch jobs to AS/400 from a Windows or UNIX host, or for submitting batch jobs from AS/400 to a Windows or UNIX host.

### JP1/OJE for VOS3

A program that links with JP1/AJS3 for executing and monitoring batch jobs between a Windows or UNIX system and a mainframe (VOS3).

### JP1/Script

A program for creating and executing scripts (batch files) that control jobs on Windows. Job operation can be automated by linking JP1/Script with JP1/AJS3.

**JP1/Software Distribution**

A general term for a system that distributes software and manages clients using batch operations over a network.

By linking with JP1/AJS3 using the JP1/Software Distribution command interface, the user can automate software distribution and other tasks.

**judgment job**

A job that executes a dependent job or jobnet if the judgment result of a specified condition is true.

**judgment value**

A value for evaluating whether a job ended normally or abnormally.

**kill**

To forcibly terminate a unit being executed.

When the root jobnet is killed, all the jobs being executed are killed and the jobnets are terminated.

**list file**

A file containing a list of extracts from sent and received mail.

**logical host**

A logical server that provides the JP1 execution environment for running a cluster system. If a failure occurs on the primary node, the logical host is switched to the secondary node.

Each logical host has a unique IP address. At failover, the secondary node inherits the IP address. Thus, if the physical server fails, clients can access the secondary node using the same IP address. To the clients, it appears that one server is operating continuously.

**macro variable**

A variable defined for a succeeding job for referencing information received in an event. By defining a macro variable name in an event job, you can pass the event information to a succeeding job or jobnet.

Specify macro variables in the form `?AJS2`*xxxxxxxxx*`?`:*name-of-information-to-pass*.

**mail filtering application**

A program or a shell script that converts email formats.

A mail filtering application is required to convert the character set when exchanging email in formats other than RFC822.

**mail receipt parameter file**

> A file containing the mail receipt monitoring parameters defined by the user. The file extension is `.prm`. This file is created automatically when the user defines a Receive Email Event job.

**mail send parameter file**

> A file containing the mail send parameters defined by the user. The file extension is `.prm`. This file is created automatically when the user defines a Send Email Action job.

**manager host**

> A host that manages jobnet definitions and schedule information in a database, and requests agent hosts to execute jobs. You must install JP1/AJS3 - Manager on the manager host.
>
> The manager host creates jobnet execution schedules from the defined schedule information. At jobnet run time, the manager host starts the executable files defined as jobs, forwards the job definitions to an agent host, and requests the agent host to execute the jobs. When execution completes, the execution result is received by the agent host and the database is updated. Based on the updated information, the manager host executes a succeeding job or schedules the next execution of the jobnet.

**manager job group**

> A job group for monitoring JP1/AJS3 - Manager applications from another JP1/AJS3 - Manager.

**manager jobnet**

> A jobnet for monitoring JP1/AJS3 - Manager applications from another JP1/AJS3 - Manager.

**MAPI (Messaging Application Programming Interface)**

> The standard messaging API for Windows.

**max. shiftable days**

> A set number of days within which to shift the next scheduled execution date when the recalculated date falls on a closed day.

**maximum number of concurrently executable jobs**

> The maximum number of jobs that can be executed concurrently.

**message ID**

> One item in an MQSeries message descriptor. Message IDs are stored in the character set specified by the sender. They can be used as storage locations to help identify messages.

**MIME (Multipurpose Internet Mail Extensions)**

An extended SMTP function used for sending and receiving non-ASCII data.

MIME specifies various procedures, such as how data is to be transmitted between email systems, and the format of control messages for email transfer.

**Monthly Schedule window**

A window that displays each month's execution schedules and execution results.

**nested jobnet**

A jobnet defined within another jobnet.

**node switching system**

See *cluster system*.

**normal end**

A normal end of a jobnet occurs when all the processes defined in the jobnet have executed correctly and the jobnet has completed.

A normal end of a job occurs when the job has executed correctly.

**open day**

A day when jobnets run.

**physical host**

An environment unique to each of the servers (nodes) in a cluster system. When a secondary node takes over from the primary node, the environment of the physical host remains unchanged and is not inherited by the other server.

**planned execution registration**

A method of registering a jobnet so that it starts and executes according to schedule definitions.

**planning group**

A unit for switching execution among multiple root jobnets in a planned manner. Directly under a planning group, you can create a number of root jobnets, each defined differently and with differing execution schedules. This enables the root jobnets to be executed automatically in turn, according to the set schedules.

**preceding job**

A job executed immediately before another job or jobnet.

**preceding jobnet**

A jobnet executed immediately before another job or jobnet.

**processing cycle**

The interval between one execution start date and the next execution start date of a jobnet. By defining a processing cycle, you can execute a jobnet at regular intervals.

**queue**

An area for temporarily keeping jobs registered for execution. Jobs are submitted to the queue in order of registration, and are sequentially transferred for execution to the agent connected to that queue.

The queue controls the number of jobs that the agent executes concurrently, thereby preventing any degradation in performance caused by a large number of jobs being executed at the same time.

**queueless job**

A job transferred directly from the manager to an agent host for execution, without using a queue. Queueless jobs simplify processing because they are not managed in a queue by the job execution control. As a result, they offer better performance than ordinary queued jobs, allowing more jobs to be executed within a given period of time. However, job execution control functions such as execution agent names and execution agent groups are not available with queueless jobs.

You can define PC jobs and Unix jobs in a jobnet as queueless jobs by specifying **Queueless Agent** as the execution service.

Unless otherwise indicated, the descriptions in this manual apply to jobs for which **Standard** is specified as the execution service.

**queueless job execution environment**

A queueless job execution environment consists of execution environments for the JP1/AJS3 manager (scheduler service and queueless file transfer service) and queueless agents (queueless agent services). The execution of queueless jobs is managed by using the environment setting parameters for the job execution environment.

Note that the job execution environment must be set up by using the `ajsqlsetup` command before environment setting parameters are set.

**queuing job**

A job submitted directly to a queue and waiting to be executed.

**recovery job**

A job to be executed when a job or jobnet ends abnormally.

**recovery jobnet**

A jobnet to be executed when a job or jobnet ends abnormally.

**schedule by days from start**

> A schedule defined for recalculating the next scheduled execution date, using as the base day the next scheduled execution date determined from the execution start time, processing cycle, and substitute schedule for closed days.

**schedule information file**

> A text file containing schedule information parameters, entered by command when setting fixed execution registration for a jobnet.

**schedule rule**

> Jobnet information such as execution start time and processing cycle. Up to 144 schedule rules can be defined for a single jobnet.

**scheduler service**

> A service that manages the schedules for jobnet execution, and executes processes according to those schedules. Each scheduler service manages all the units in the root job group whose name matches the scheduler service name.

> Multiple scheduler services can be activated in a single manager. This allows root job groups to be managed individually. For example, if you start a separate scheduler service for each application, each scheduler service can run its specific application (jobnet and jobs) in parallel, independently of the other scheduler services.

**shift days**

> A set number of days within which to determine a substitute date when the next execution date falls on a closed day.

**shutdown status**

> A situation in which a jobnet fails to start or end due to an error, and the execution status or the next scheduled execution cannot be verified. If this happens, you must cancel and then re-register the jobnet for execution.

**SMTP (Simple Mail Transfer Protocol)**

> A protocol, generally used in UNIX networks, for transferring ASCII data by TCP/IP between heterogeneous systems.

**standard configuration**

> A system configuration in which JP1/AJS3 information is managed by the embedded database.

> Unless otherwise indicated, the descriptions in this manual relate to a system in a standard configuration.

> Note that the ISAM database is still used to store some information related to QUEUE jobs and submit jobs.

**start condition**

A definition of the conditions under which a jobnet starts when the jobnet is driven by a specific event.

**subject**

A character string written in the subject line of an email message. Non-ASCII characters are supported in JP1/AJS3, but might not be supported in connected email systems.

**submit**

To request the system to execute a job.

**submitted job**

A standard job registered using the `jpqjobsub` command.

**substitute schedule**

A means of executing a jobnet on a different day when the next execution date, determined from the jobnet schedule, falls on a closed day.

**succeeding job**

A job executed immediately after another job or jobnet.

**succeeding jobnet**

A jobnet executed immediately after another job or jobnet.

**suspend**

To suppress the execution of the root jobnet and lower units.

When you change a definition under a root jobnet that has been registered for execution, you should suspend the root jobnet to prevent erroneous operation such as the execution control processing running with the old definition. By suspending the root jobnet, the redefinition processing can be synchronized with the execution control processing.

**threshold**

A value for evaluating the termination status of a job. You can define an abnormal threshold and a warning threshold for each job.

**timeout period**

A time interval after which an executed job is forcibly terminated if there was no response from the job or if it failed to complete during the specified period.

**TP1/Server Base**

Software for distributing transaction processing and server processing in an open

system. JP1/AJS2 uses TP1/Server Base transaction processing.

**unit**

A generic term for any job network element.

**unit definition parameter file**

A text file containing unit definition parameters, entered by command when defining the units.

**unit ID**

A unique number allocated to a unit.

**warning threshold**

A value for evaluating whether a job ended with a warning.

**Windows Messaging**

A facility that provides an interface for sending and receiving email. Using Windows Messaging, you can manage, access, and share a variety of information such as data received from an online service.

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