

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

3020-3-S05-04(E)

■ Relevant program products

For details about the applicable OS versions, and the service packs and patches required for JPI/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-S05-04(E)) and product changes related to this manual.

Changes	Location
Descriptions have been changed. For details, see Appendix H.	<i>Appendix H</i>

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

Preface

This manual describes how to install and set up JP1/Automatic Job Management System 3 (abbreviated hereafter to *JP1/AJS3*).

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 is organized into the following parts:

PART 1: Windows Host

PART 1 describes installation and setup of JP1/AJS3 on a Windows host.

PART 2: UNIX Host

PART 2 describes installation and setup of JP1/AJS3 on a UNIX host.

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 2* (3020-3-S06(E))
- *Job Management Partner 1/Automatic Job Management System 3 Administration Guide* (3020-3-S07(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

Abbreviation		Full name or meaning
		HP Network Node Manager Software Starter Edition version 7.5 or earlier
JP1/FTP		Job Management Partner 1/File Transmission Server/FTP
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

Abbreviation		Full name or meaning
	Outlook 2007	Microsoft(R) Outlook(R) 2007
	Outlook Express	Microsoft(R) Outlook(R) Express
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)

Abbreviation	Full name or meaning
Solaris	Solaris 9(SPARC)
	Solaris 10(SPARC)
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

Abbreviation	Full name or meaning
NFS	Network File System
NIC	Network Interface Card
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

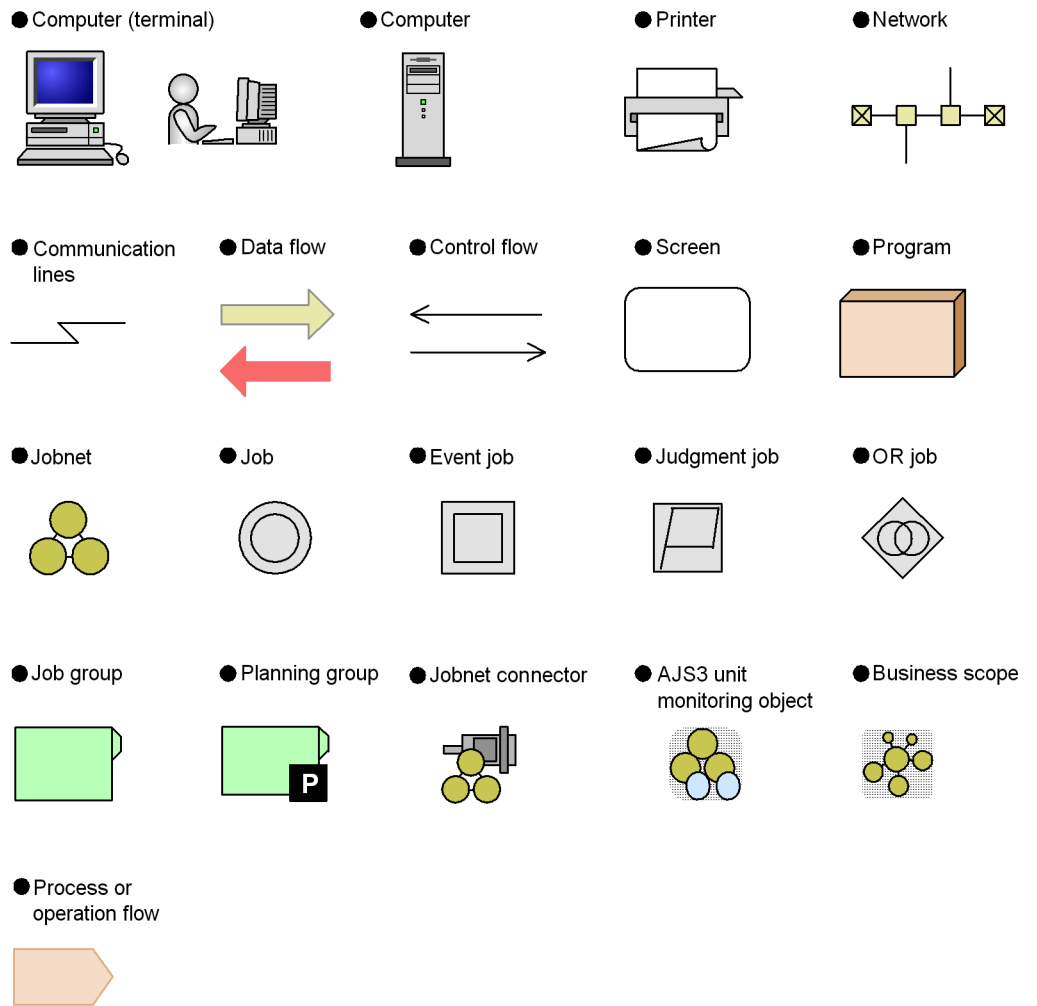
JP1 program reorganization in version 8

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:



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: <ul style="list-style-type: none"> • From the File menu, choose Open. • Click the Cancel button. • In the Enter name entry box, type your name.
<i>Italics</i>	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: <ul style="list-style-type: none"> • Write the command as follows: <i>copy source-file target-file</i> • Do <i>not</i> 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: <ul style="list-style-type: none"> • At the prompt, enter <code>dir</code>. • Use the <code>send</code> command to send mail. • The following message is displayed: <code>The password is incorrect.</code>

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:

```
StoreDatabase [temp|perm] (database-name ...)
```

The following table lists the conventions used in syntax explanations:

Example font or symbol	Convention
<code>StoreDatabase</code>	Code-font characters must be entered exactly as shown.
<i>database-name</i>	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 $\uparrow 34 / 3 \uparrow$ 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 <i>days-to-keep-form</i> ~<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 1,024² bytes.
- 1 GB (gigabyte) is 1,024³ bytes.
- 1 TB (terabyte) is 1,024⁴ 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.

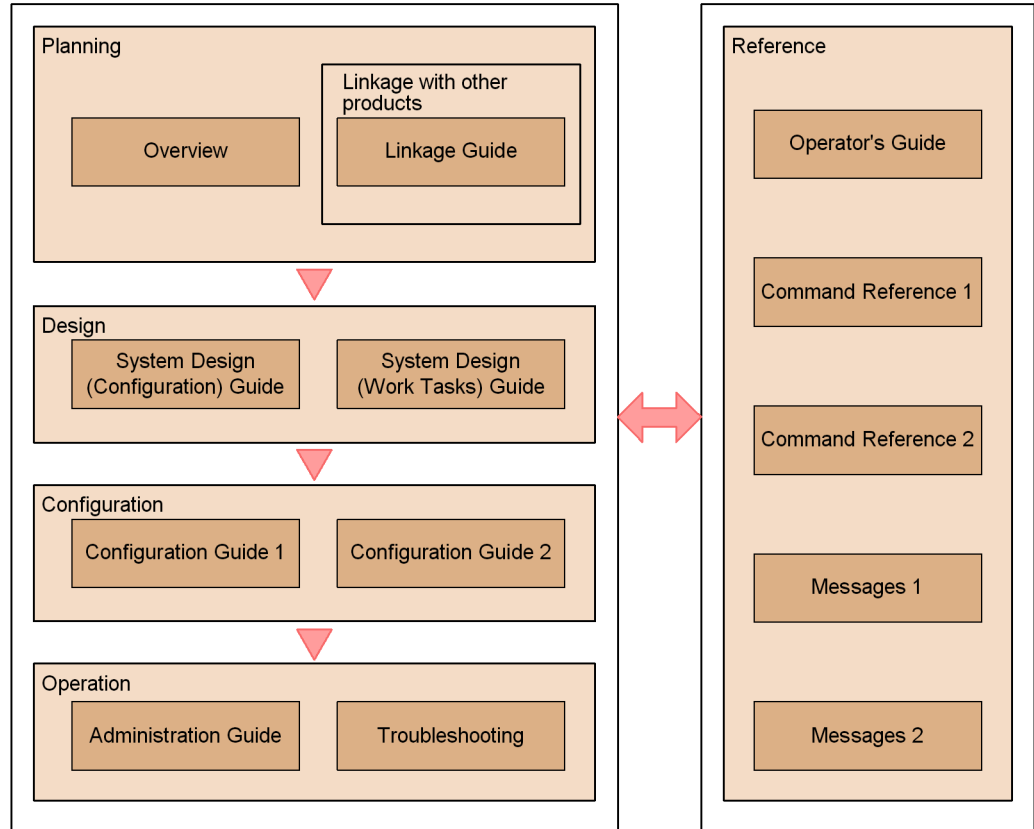
Note that *Job Management Partner 1/Automatic Job Management System 3* is not listed in the table.

No.	Manual	Contents
1	<i>Overview</i> (3020-3-S02(E))	<ul style="list-style-type: none">• JP1/AJS3 features• Description of functions
2	<i>System Design (Configuration) Guide</i> (3020-3-S03(E))	<ul style="list-style-type: none">• Information that must be considered when designing a system• Cautionary notes on designing a system

No.	Manual	Contents
3	<i>System Design (Work Tasks) Guide</i> (3020-3-S04(E))	<ul style="list-style-type: none"> • Information that must be considered when constructing jobs and jobnets • Cautionary notes on designing jobs and jobnets
4	<i>Configuration Guide 1</i> (3020-3-S05(E))	<ul style="list-style-type: none"> • Installation and setup procedures • Environment setup procedure by operation type
5	<i>Configuration Guide 2</i> (3020-3-S06(E))	<ul style="list-style-type: none"> • Description of environment setting parameters
6	<i>Administration Guide</i> (3020-3-S07(E))	<ul style="list-style-type: none"> • Information required to operate a system • Know-how useful for JP1/AJS3 operation
7	<i>Troubleshooting</i> (3020-3-S08(E))	<ul style="list-style-type: none"> • How to troubleshoot errors • Data required when an error occurs
8	<i>Operator's Guide</i> (3020-3-S09(E))	<ul style="list-style-type: none"> • How to operate JP1/AJS3 - View • How to operate JP1/AJS3 Console View • Description of windows and dialog boxes
9	<i>Command Reference 1</i> (3020-3-S10(E))	<ul style="list-style-type: none"> • Command syntax
10	<i>Command Reference 2</i> (3020-3-S11(E))	<ul style="list-style-type: none"> • Syntax of commands used for setup and special operations • Syntax and coding examples of information definition files
11	<i>Linkage Guide</i> (3020-3-S12(E))	<ul style="list-style-type: none"> • Description of functions that can be used when linked with other products and the setup method
12	<i>Messages 1</i> (3020-3-S13(E))	<ul style="list-style-type: none"> • Messages output by JP1/AJS3 (messages beginning with KAVC to KAVT)
13	<i>Messages 2</i> (3020-3-S14(E))	<ul style="list-style-type: none"> • 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



Purpose	Required reading	Read as necessary
To learn about JP1/AJS3's functionalities	<ul style="list-style-type: none"> • <i>Overview</i> (3020-3-S02(E)) 	<ul style="list-style-type: none"> • <i>Linkage Guide</i> (3020-3-S12(E))
To configure a system (including installation and setup) that automatically runs jobs	<ul style="list-style-type: none"> • <i>System Design (Configuration) Guide</i> (3020-3-S03(E)) • <i>Configuration Guide 1</i> (3020-3-S05(E)) 	<ul style="list-style-type: none"> • <i>Configuration Guide 2</i> (3020-3-S06(E)) • <i>Linkage Guide</i> (3020-3-S12(E))
To design work tasks that will be automated (including job definitions and schedule definitions)	<ul style="list-style-type: none"> • <i>System Design (Work Tasks) Guide</i> (3020-3-S04(E)) 	<ul style="list-style-type: none"> • <i>Operator's Guide</i> (3020-3-S09(E))

Purpose	Required reading	Read as necessary
To learn about monitoring and maintaining a running system.	<ul style="list-style-type: none"> • <i>Administration Guide</i> (3020-3-S07(E)) 	<ul style="list-style-type: none"> • <i>Troubleshooting</i> (3020-3-S08(E)) • <i>Messages 1</i> (3020-3-S13(E)) • <i>Messages 2</i> (3020-3-S14(E))
To learn about what action to take for problems that occur during operation.	<ul style="list-style-type: none"> • <i>Troubleshooting</i> (3020-3-S08(E)) 	<ul style="list-style-type: none"> • <i>Messages 1</i> (3020-3-S13(E)) • <i>Messages 2</i> (3020-3-S14(E))
To learn about operating JP1/AJS3	<ul style="list-style-type: none"> • <i>Operator's Guide</i> (3020-3-S09(E)) 	<ul style="list-style-type: none"> • <i>Command Reference 1</i> (3020-3-S10(E)) • <i>Command Reference 2</i> (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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Chapter

1. Types of JP1/AJS3 System Configuration and System Setup Procedures

A JP1/AJS3 system can be set up in various configurations. For example, a small configuration might have only one host that is used to define and execute jobs, whereas a large configuration might have several hosts that execute many jobs. In a JP1/AJS3 system, the functions of other products can also be used by linking JP1/AJS3 to those products. This chapter describes the JP1/AJS3 system configurations you can create, and the necessary setup procedures.

1.1 Overview of setting up JP1/AJS3

1.1 Overview of setting up JP1/AJS3

This section describes the JP1/AJS3 system configurations you can create and the necessary setup procedures.

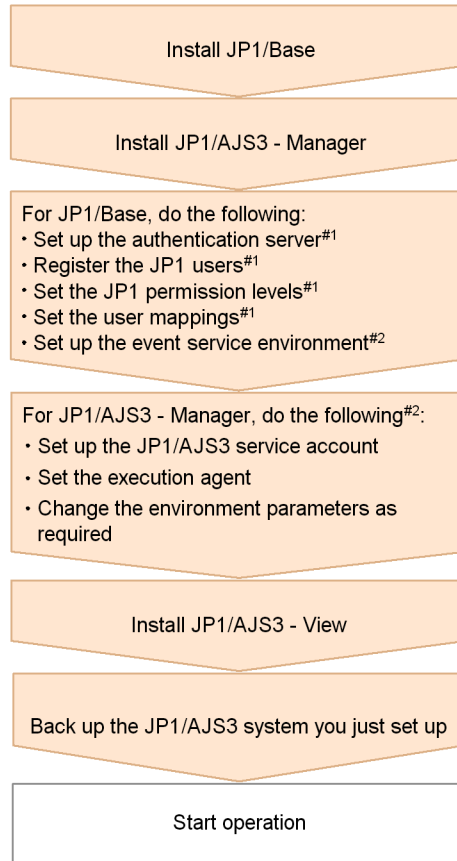
For details about JP1/AJS3 series programs and the prerequisites for setting up a JP1/AJS3 system, see *2.1 Checking the operating environment* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

1.1.1 Procedure for setting up a system with JP1/AJS3 - Manager and JP1/AJS3 - View

Prepare a host machine and install JP1/AJS3 - Manager. If necessary, prepare another host machine and install JP1/AJS3 - View. Multiple JP1/AJS3 - View hosts can connect to the JP1/AJS3 - Manager host.

The following figure shows the procedure for setting up a system with JP1/AJS3 - Manager and JP1/AJS3 - View.

Figure 1-1: Procedure for setting up a system with JP1/AJS3 - Manager and JP1/AJS3 - View



#1: If automatic setup is selected during a new installation of JP1/Base, this setup operation is automatically performed with the defaults. If it is not necessary to change the defaults, you do not need to perform the operation. If automatic setup is not selected during a new installation of JP1/Base or if JP1/Base is remotely installed as a new installation by using JP1/Software Distribution, you need to perform this operation manually.

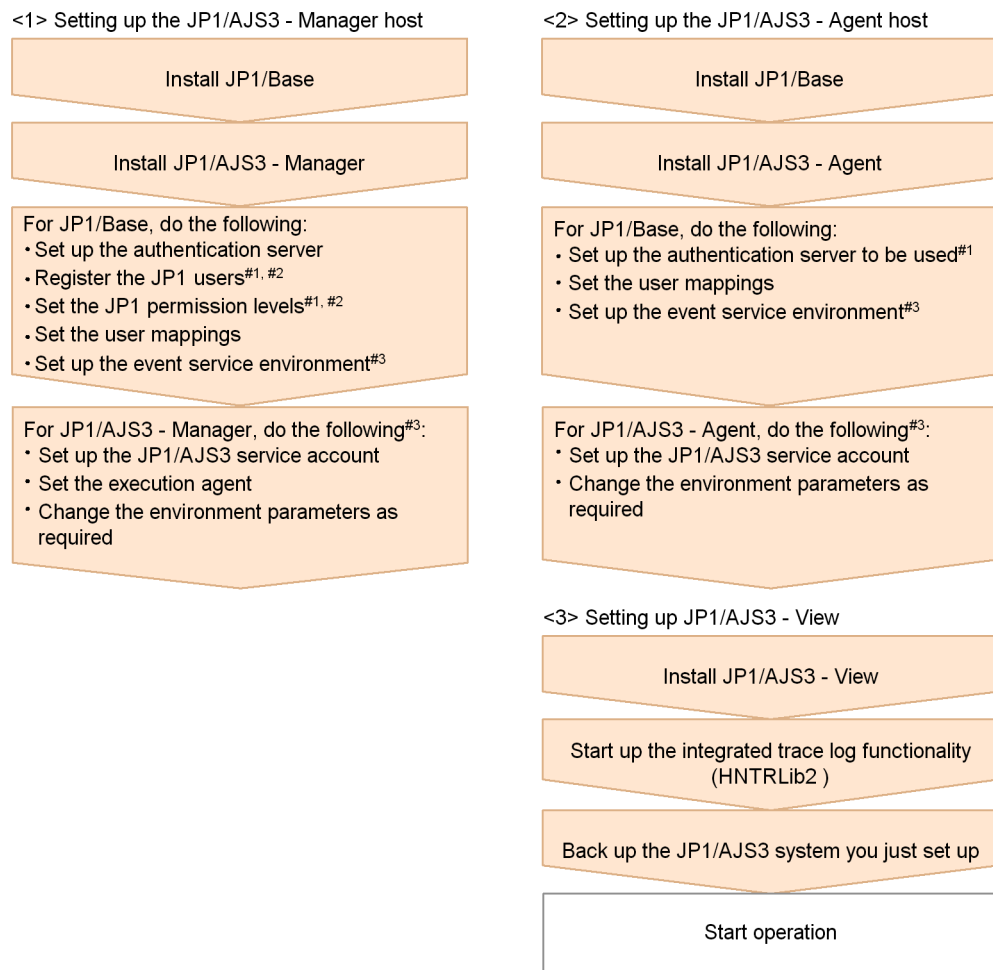
#2: Change settings as needed for your operating requirements.

1.1.2 Procedure for setting up a system in a manager/agent configuration that uses only one JP1/AJS3 - Manager host

Prepare a host for installing JP1/AJS3 - Manager, and hosts for installing JP1/AJS3 - Agent. If necessary, also prepare a host for installing JP1/AJS3 - View.

The following figure shows the procedure for setting up a system in a manager/agent configuration that uses only one JP1/AJS3 - Manager host.

Figure 1-2: Procedure for setting up a system in a manager/agent configuration that uses only one JP1/AJS3 - Manager host



- #1 If automatic setup is selected during a new installation of JP1/Base, this setup operation is automatically performed with the defaults. If it is not necessary to change the defaults, you do not need to perform the operation. If automatic setup is not selected during a new installation of JP1/Base or if JP1/Base is remotely installed as a new installation by using JP1/Software Distribution, you need to perform this operation manually.
- #2 You can omit this operation when you have defined the JP1/Base authentication server on another host.
- #3 Change settings as needed for your operating requirements.

1.1.3 Procedure for setting up a system in a manager/agent configuration that uses several JP1/AJS3 - Manager hosts

Prepare hosts for installing JP1/AJS3 - Manager and for installing JP1/AJS3 - Agent. If necessary, also prepare a host for installing JP1/AJS3 - View.

Although the procedure for setting up a system that uses several JP1/AJS3 - Manager hosts is the same as that for setting up a system that uses only one JP1/AJS3 - Manager host, the procedure in *Figure 1-2* must be performed for each JP1/AJS3 - Manager host.

After live operation starts, define a manager job group or manager jobnet so that multiple managers can be managed centrally.

Chapter

2. Installation

This chapter describes how to install JP1/AJS3.

- 2.1 Required task before installing JP1/AJS3 series programs
- 2.2 Installing JP1/AJS3 series programs

2.1 Required task before installing JP1/AJS3 series programs

This section describes the following task that is required before you can install JP1/AJS3 on a Windows host:

- Installing JP1/Base

Note:

Before you perform a new installation of JP1/AJS3, you must install JP1/Base. Before you perform an upgrade installation of JP1/AJS3, you must upgrade JP1/Base.

2.1.1 Installing JP1/Base

Make sure that JP1/Base has been installed on the hosts on which JP1/AJS3 series programs (JP1/AJS3 - Manager and JP1/AJS3 - Agent) will be installed. JP1/AJS3 - View does not require installation of JP1/Base.

Note that if you select automatic setup when performing a new installation of JP1/Base, the following user information is automatically set. If this information is appropriate, you do not need to set any user information.

- Authentication server: local host
- JP1 user: jpladmin
- JP1 user's password: jpladmin
- OS user mapped to the JP1 user and the OS user password: The OS user and password entered during installation
- Server host name: *

If automatic setup is not selected during a new installation of JP1/Base or if JP1/Base is remotely installed as a new installation by using JP1/Software Distribution, the authentication server and JP1 user settings are not specified automatically. In such cases, these settings must be specified manually after JP1/Base has been installed. If the authentication server for JP1/Base has not been set, startup of the JP1/AJS3 service in JP1/AJS3 - Manager and JP1/AJS3 - Agent fails.

For details about installing and setting up JP1/Base, see the *Job Management Partner I/Base User's Guide*.

2.2 Installing JP1/AJS3 series programs

This section describes how to install JP1/AJS3 series programs (JP1/AJS3 - Manager, JP1/AJS3 - Agent, and JP1/AJS3 - View).

Note that JP1/Base must already be installed before you install JP1/AJS3 - Manager and JP1/AJS3 - Agent. Also make sure that the installed version of JP1/Base is the prerequisite version for JP1/AJS3.

For details about installing JP1/Base, see the *Job Management Partner 1/Base User's Guide*.

2.2.1 Notes on installation

This subsection provides notes on installing JP1/AJS3 series programs.

(1) *Host on which JP1/AJS3 - Manager is installed*

JP1/AJS3 - Agent cannot be installed on a host on which JP1/AJS3 - Manager is installed.

(2) *Notes on upgrade installation*

(a) *About customizable files*

JP1/AJS3 files include files that can be customized by users. Because an upgrade installation does not replace existing customizable files, current user-customized settings are retained.

Note that the folder that contains the customized files also contains model files (files ending with `.model`) from which the customized files were created. These model files are updated in an upgrade installation. After an upgrade installation has been completed, check whether the files in the folders listed below have been customized. For any customized configuration files you find, make the same customization to the copies of the model files you have made. Next, delete all the existing configuration files, and rename the copies of the model files so that they become the new configuration files. If no files have been customized, you need only to delete all the existing configuration files and rename the copies of the model files.

For JP1/AJS3 - Manager:

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

For JP1/AJS3 - Agent:

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

Cautionary notes:

- The model files in the `jp1ajs2` shared folder are not updated.
- The `conf` files in the `jp1ajs2` shared folder are used as configuration files for logical hosts.

If JP1/AJS2 - Manager is upgraded to JP1/AJS3 - Manager, the process management definition files and extended startup process definition files (`jp1ajs_xxxd.conf` and `jp1ajs_xxx_0700.conf` in the folders listed above) are automatically updated for a JP1/AJS3 - Manager process configuration. If linkage with HP NNM or a queueless job execution environment was set up in JP1/AJS2 - Manager, check whether the settings in these files have been inherited after the upgrade installation and setup has been completed. If these settings have not been inherited, re-specify them. If the restart settings were customized (for example, so that abnormally terminated JP1/AJS2 processes are restarted), the restart settings are reset to the defaults. If you want to disable the restart settings or change the maximum number of restart attempts, customize the settings again after the upgrade installation and setup have been completed.

(b) About upgrade installations of JP1/AJS3 - Manager and JP1/AJS3 - Agent

- When JP1/AJS3 - Manager or JP1/AJS3 - Agent is installed, the JP1/AJS2 service and the JP1/AJS2 Monitor service are deleted, and are combined as the JP1/AJS3 service.
- Before you perform an upgrade installation of JP1/AJS3 - Manager or JP1/AJS3 - Agent, make sure that all services and processes of JP1/AJS3 or JP1/AJS2 have stopped. We recommend that you back up necessary definition files before the upgrade installation. For the objects to be backed up, see *5.2.2 Target files and backup timing* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

(c) When JP1/AJS3 - View is being used

Close the JP1/AJS3 - View window before you perform an upgrade installation.

After an upgrade installation, the host might need to be restarted. If the host needs to be restarted, a message asking you to restart the host appears after the upgrade installation. If this message appears, restart the host.

(3) Remote installation (software distribution) using JP1/Software Distribution

JP1/AJS3 supports remote installation by JP1/Software Distribution.

The following types of remote installation are supported:

- New installation
JP1/AJS3 can be installed as a new installation on target hosts.
- Upgrade installation

The version of JP1/AJS3 or JP1/AJS2 installed on target hosts can be updated. Note, however, that setup must be performed on each host if JP1/AJS2 - Manager is upgraded to JP1/AJS3 - Manager.

For details about the actual procedure for remote installation when JP1/Software Distribution is used, see the *Job Management Partner 1/Software Distribution Administrator's Guide Volume 1* (For Windows Systems) or *Job Management Partner 1/Software Distribution Administrator's Guide Volume 2* (For Windows Systems).

For details about how to perform the required setup after JP1/AJS2 - Manager has been upgraded to JP1/AJS3 - Manager, see 8.5 *Setup after upgrading from JP1/AJS2 - Manager to JP1/AJS3 - Manager* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

(4) Upgrade installation from JP1/AJS2 - Manager to JP1/AJS3 - Manager

Because JP1/AJS3 - Manager requires more disk space and memory than JP1/AJS2 - Manager, accurately estimate how much disk space and memory will be required before upgrading JP1/AJS2 - Manager to JP1/AJS3 - Manager. Note that operation of JP1/AJS3 - Manager following an upgrade from JP1/AJS2 - Manager cannot start until setup has been completed after the upgrade installation. Because the time required for the setup to finish depends on the amount of data and other factors, the upgrade installation and setup must be performed according to a suitable plan. For details about the setup procedure required after an upgrade installation from JP1/AJS2 - Manager to JP1/AJS3 - Manager, see 8.5 *Setup after upgrading from JP1/AJS2 - Manager to JP1/AJS3 - Manager* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

2.2.2 Installing a JP1/AJS3 series program

This subsection describes how to install a JP1/AJS3 series program on a Windows host.

(1) New installation

To install a JP1/AJS3 series program as a new installation on a Windows host:

1. Log in as a member of the Administrators group to the host on which you want to install the JP1/AJS3 series program.
2. Close all programs.

If existing JP1 series programs are running, make sure that you stop all of them.

3. Insert the media that contains the JP1/AJS3 series program you want to install. The Hitachi Integrated Installer window opens.
4. Enter the information requested by the Hitachi Integrated Installer.

You will need to enter the following information during installation:

- User information
Enter the user name and other necessary information.
- Installation folder
Specify the folder where the JP1/AJS3 series programs are to be installed.
For JP1/AJS3 - Manager, you must also specify the JP1/AJS3 Console installation folder.
- Program folder (in Windows Server 2003 only)
Specify the program menu name.

Note that when JP1/AJS3 - View is installed, the integrated trace log function (HNTRLib2) is also installed in the *system-drive*\Program Files\Hitachi\HNTRLib2\ folder. However, the Hitachi Network Objectplaza Trace Monitor 2 service does not start automatically if only JP1/AJS3 - View has been installed on a host. If the service does not start automatically, start it by selecting **Hitachi Network Objectplaza Trace Monitor 2** in the list box of the Windows **Services** administrative tool.

If a dialog box displaying An attempt to build a Scheduler service failed. After installation, please re-build the Scheduler service. appears during installation of JP1/AJS3 - Manager, take appropriate action after checking the KAVS2128-E message that has been output to the Windows event log.

5. When installation has finished, restart the host.

Note:

If you are using Windows Firewall, a pop-up message might appear during setup. In this case, you will need to add the affected program to the firewall exclusion list. Refer to the cautionary notes that accompany the `ajsembdbinst1` command and take the appropriate action.

For details about setting up JP1/AJS3 series programs, see 3. *Setup*.

(2) Upgrade installation

To install a JP1/AJS3 series program as an upgrade installation on a Windows host:

1. Log in as a member of the Administrators group to the host on which you want to install a JP1/AJS3 series program.
2. Close all programs.

If existing JP1 series programs are running, make sure that you stop all of them.

If the Windows Event Viewer window is open, close it.

3. Set the JP1/AJS3 series program installation media, and start installation.

If the OS is Windows Server 2003, a confirmation dialog box asking you whether an overwrite installation can be performed appears.

If the OS is not Windows Server 2003, the overwrite or upgrade installation start window appears.

4. Perform installation.

If the OS is Windows Server 2003, respond to the confirmation dialog box to start installation.

If the OS is not Windows Server 2003, perform the necessary installation operations as directed in the installer window.

Note that when JP1/AJS3 - View is installed, the integrated trace log function (HNTRLib2) is also installed in the *system-drive*\Program Files\Hitachi\HNTRLib2\ folder. If you are installing only JP1/AJS3 - View on a host, select and activate the **Hitachi Network Objectplaza Trace Monitor 2** service from the list box of the Windows **Services** administrative tool.

Note that when JP1/AJS3 - View is installed, the integrated trace log function (HNTRLib2) is also installed in the *system-drive*\Program Files\Hitachi\HNTRLib2\ folder. However, the Hitachi Network Objectplaza Trace Monitor 2 service does not start automatically if only JP1/AJS3 - View has been installed on a host. If the service does not start automatically, start it by selecting **Hitachi Network Objectplaza Trace Monitor 2** in the list box of the Windows **Services** administrative tool.

Note:

- If you perform an upgrade installation from JP1/AJS2 - View 06-71 or earlier to JP1/AJS2 - View 07-00 or later, or to JP1/AJS3 - View, HNTRLib2 will be installed but HNTRLib will also remain. If no programs will use HNTRLib, select and deactivate the **Hitachi Network Objectplaza Trace Monitor** service from the list box of the Windows **Services** administrative tool. Alternatively, delete the service by using the **Add/Remove Programs** tool in Windows Control Panel.
 - An upgrade installation updates the following files. If these files have been customized, back them up before performing the installation.
 - Files with the `.model` extension in the *JP1/AJS3-installation-folder\conf* folder
 - Files with the `.bat` extension in the *JP1/AJS3-installation-folder\tool* folder
 - For JP1/AJS3 - Manager, files with the `.model` extension in the *JP1/AJS3-Console-installation-folder\conf*
5. When installation has finished, restart the host.

Note:

- Operation of JP1/AJS3 - Manager following an upgrade from JP1/AJS2 - Manager cannot start until setup has been completed after the upgrade installation. For details about the setup procedure required after an upgrade installation from JP1/AJS2 - Manager to JP1/AJS3 - Manager, see *8.5 Setup after upgrading from JP1/AJS2 - Manager to JP1/AJS3 - Manager* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.
- If JP1/AJS3 - Manager in a standard configuration is installed as an upgrade installation, you might also need to install the embedded database as an upgrade installation. If an upgrade installation of the embedded database is necessary, perform the installation after reading *Installation Procedures and System Generation Precautions* in the *Release Notes*.
- If the embedded database is already in use when you perform an upgrade installation, the file `Pdcltm32.dll` (or `PDCLTM64.dll` in the IPF version) might not be present in the folder *JP1/AJS3-installation-folder\bin*. In this case, create the file by copying and renaming the `Pdcltm32.dll.model` file (or `PDCLTM64.dll.model` in the IPF version).

For details about setting up JP1/AJS3 series programs, see *3. Setup*.

(3) Upgrade installation in a cluster configuration

The following describes the procedure for installing a JP1/AJS3 series program as an upgrade installation on a Windows host in a cluster configuration.

The installation procedure differs according to whether JP1/AJS3 - Manager is updated from JP1/AJS2 - Manager or from JP1/AJS3 - Manager.

In the procedures that follow, the node where the logical host normally operates is called the *primary node*, and the other node is called the *secondary node*.

(a) Upgrade procedure for a program other than JP1/AJS2 - Manager

To perform an upgrade installation from JP1/AJS3 - Manager, JP1/AJS3 - Agent, JP1/AJS3 - View, JP1/AJS2 - Agent, or JP1/AJS2 - View:

1. Make sure that the logical host is not operating on the secondary node.
 Make sure that JP1/AJS3 or JP1/AJS2 of the logical host is not operating on the secondary node.
 No problems are caused if JP1/AJS3 or JP1/AJS2 of the logical host is operating on the primary node.
2. Perform an upgrade installation on the secondary node.

For details about installing a JP1/AJS3 series program as an upgrade installation, see (2) *Upgrade installation*.

3. Make sure that the logical host is not operating on the primary node.

Either fail over the logical host from the primary node to the secondary node or stop the logical host to ensure that JP1/AJS3 or JP1/AJS2 of the logical host is not operating on the primary node.

No problems are caused by failing over the logical host to the secondary node on which an upgrade installation has finished.

4. Perform an upgrade installation on the primary node.

For details about installing a JP1/AJS3 series program as an upgrade installation, see (2) *Upgrade installation*.

Note:

When the logical host has been failed over to the secondary node on which an upgrade installation has finished, do not fail back the logical host to the primary node until the upgrade installation on the primary node has finished.

(b) Upgrade procedure (from JP1/AJS2 - Manager to JP1/AJS3 - Manager in a standard configuration)

Note:

An upgrade installation of JP1/AJS2 - Manager in a cluster configuration requires some setup, such as the migration of data on the shared disk, after completion of the upgrade installation. This setup requires that cluster operation be temporarily stopped. You will not be able to start JP1/AJS3 - Manager operation until this setup is complete. Because the time required for the setup to finish depends on the amount of data and other factors, the upgrade installation and setup must be performed according to a suitable plan.

To perform an upgrade installation from JP1/AJS2 - Manager:

Note: If your system consists of multiple logical hosts, perform steps 6 to 16 and 20 to 23 for each logical host. When using a logical host in a non-cluster environment, perform only the steps that relate to the primary node. You cannot begin using JP1/AJS3 until setup is completed on all physical and logical hosts.

Note: The following procedure assumes that one scheduler service is stored in one embedded database. If multiple scheduler services have been set up, perform steps 8, 11, and 12 for all of the scheduler services. To add an embedded database, perform steps 9, 10, 20, and 21.

1. Terminate JP1 on both the primary and secondary nodes.
Use the cluster software to stop all JP1 programs and services running on the primary and secondary nodes. For details about how to do so, see the manual for your cluster software.
2. Install JP1/Base as an upgrade installation on the primary node.
For details about installing JP1/Base, see the *Job Management Partner 1/Base User's Guide*.
3. Install JP1/AJS3 - Manager as an upgrade installation on the primary node.
On the primary node, upgrade JP1/AJS2 - Manager to JP1/AJS3 - Manager.
For details about an upgrade installation of a JP1/AJS3 series program, see (2) *Upgrade installation*.
4. Start the embedded database or instance of HiRDB you were using before the upgrade on the physical primary node host.
To provide access to the database from before the upgrade, start the embedded database or instance of HiRDB that was used as the database of the scheduler service on the physical host of the primary node.
For details about how to start the embedded database or HiRDB, see the manual for the JP1/AJS2 product or HiRDB you are using.
5. Perform setup on the physical host of the primary node.
On the physical host of the primary node, execute the `jajs_migrate` command.
For example, execute the command as follows:


```
jajs_migrate -convert
```


For details about the `jajs_migrate` command, see *jajs_migrate* in 2. *Commands Used during Setup* in the manual *Job Management Partner 1/ Automatic Job Management System 3 Command Reference 2*.
6. Confirm that the shared disk and logical IP address are available to the primary node.
Make sure that the shared disk is mounted and the logical IP address is valid so that the data on the shared disk can be migrated. If the shared disk is not mounted or the logical IP address is invalid, use the cluster software or volume manager software to mount the shared disk and enable the logical IP address. For details about how to do so, see the manual for your cluster software.
7. Start the embedded database or instance of HiRDB you were using before the upgrade on the logical host of the primary node.

To provide access to the database from before the upgrade, start the embedded database or instance of HiRDB that was used as the database of the scheduler service on the logical host of the primary node.

For details about how to start the embedded database or HiRDB, see the manual for the JP1/AJS2 product or HiRDB you are using.

8. Execute the `ajscnvdbexport` command on the primary node to back up the contents of the database.

For example, execute the command as follows:

```
ajscnvdbexport -mh LHOST -F AJSROOT2 -b D:\workdir
```

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

9. Execute the `ajsembdbinstl` command on the primary node to install the JP1/AJS3 database.

For example, execute the command as follows:

```
ajsembdbinstl -s "C:\Program
Files\HITACHI\JP1AJS2\tools\AJS3DB"
-id _JF1 -mh LHOST
```

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

10. Execute the `ajsembdbbuild` command on the primary node to build the environment for the database.

For example, execute the command as follows:

```
ajsembdbbuild -s -r -d "D:\products\jp1ajs2\embdb\_JF1"
-ld "C:\Program Files\HITACHI\JP1AJS2\embdb\_JF1\dbarea"
-mh LHOST
-eh hostA -p 22221 -i "C:\Program
Files\HITACHI\JP1AJS2\embdb\_JF1"
-id _JF1
```

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

11. Execute the `ajsembdbsetup` command on the primary node to set up the environment for the database.

For example, execute the command as follows:

```
ajsembdbsetup -mh LHOST -F AJSROOT2 -p 22221 -id _JF1 -ru s
-convert
```

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

12. Execute the `ajscnvdbimport` command on the primary node to import the contents of the database.

For example, execute the command as follows:

```
ajscnvdbimport -mh LHOST -F AJSROOT2 -b D:\workdir
```

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

13. Perform setup on the primary node.

Execute the `jajs_migrate` command on the primary node to set up the environment for running JP1/AJS3.

For example, execute the command as follows:

```
jajs_migrate -convert -h LHOST -r -S
```

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

14. Stop the embedded database, which was started automatically during the setup process.

For example, execute the command as follows:

```
ajsembdbstop -id _JF1
```

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

15. Execute the `jbsgetcnf` command on the primary node to back up the common definition information to a file.

Execute the command as follows:

```
jbsgetcnf -h logical-host-name > backup-file-name
```

16. Copy the file you created in step 15 to the secondary node.

17. Install JP1/Base as an upgrade installation on the secondary node.

For details about installing JP1/Base, see the *Job Management Partner 1/Base User's Guide*.

18. Install JP1/AJS3 - Manager as an upgrade installation on the secondary node.

On the secondary node, upgrade JP1/AJS2 - Manager to JP1/AJS3 - Manager.

For details about an upgrade installation of a JP1/AJS3 series program, see (2) *Upgrade installation*.

19. Perform setup on the physical host of the secondary node.

Execute the `jajs_migrate` command on the physical host of the secondary node.

For example, execute the command as follows:

```
jajs_migrate -convert
```

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

20. Execute the `ajsembdbinstl` command on the secondary node to install the JP1/AJS3 database.

For example, execute the command as follows:

```
ajsembdbinstl -s "C:\Program  
Files\HITACHI\JP1AJS2\tools\AJS3DB"  
-id _JF1 -mh LHOST
```

For the `-id` option, specify the same value that you used when installing the database on the primary node.

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

21. Execute the `ajsembdbbuild` command on the secondary node to build the environment for the database.

For example, execute the command as follows:

```
ajsembdbbuild -s -f -d "D:\products\jp1ajs2\embdb\_JF1"
-lid "C:\Program Files\HITACHI\JP1AJS2\embdb\_JF1\dbarea"
-mh LHOST -eh hostA -p 22221
-i "C:\Program Files\HITACHI\JP1AJS2\embdb\_JF1" -id _JF1
```

For the `-id`, `-d`, and `-p` options, specify the same value that you used when building the environment on the primary node.

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

22. Execute the `jbssetcnf` command on the secondary node to apply the common definition information.

Execute the command as follows:

```
jbssetcnf name-of-file-copied-in-step-16
```

23. Perform setup on the secondary node.

Execute the `jajs_migrate` command on the secondary node to set up the environment for running JP1/AJS3.

For example, execute the command as follows:

```
jajs_migrate -convert -h LHOST -f -S
```

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

24. Unregister the embedded database or instance of HiRDB you were using with JP1/AJS2 before the upgrade from the cluster software.

For details about how to do so, see the manual for your cluster software.

25. Start JP1 on the primary node.

Use the cluster software to start the JP1 programs and services on the primary node. This starts JP1/AJS3 operation in a cluster environment.

(c) Upgrade procedure (from JP1/AJS2 - Manager to JP1/AJS3 - Manager in a compatible ISAM configuration)

This subsection describes how to upgrade JP1/AJS2 - Manager to JP1/AJS3 - Manager in a compatible ISAM configuration.

If multiple logical hosts have been set up, perform step 5 in the procedure for all of the logical hosts.

To upgrade JP1/AJS2 - Manager:

1. Terminate JP1 on both the primary and secondary nodes.

Use the cluster software to stop all JP1 programs and services running on the primary and secondary nodes. For details about how to do so, see the documentation for your cluster software.

2. Install JP1/Base as an upgrade installation on the primary node.

For details about installing JP1/Base, see the *Job Management Partner 1/Base User's Guide*.

3. Install JP1/AJS3 - Manager as an upgrade installation on the primary node.

On the primary node, upgrade JP1/AJS2 - Manager to JP1/AJS3 - Manager.

For details about an upgrade installation of a JP1/AJS3 series program, see (2) *Upgrade installation*.

4. Confirm that the shared disk and logical IP address are available to the primary node.

Make sure that the shared disk is available so that the data on the shared disk can be migrated. If the shared disk is not mounted, use the cluster software or volume manager software to mount the shared disk. For details about how to do so, see the documentation for your cluster software.

Also, use the `ping` or `jp1ping` command to confirm that the logical IP address is available. For details about the `jp1ping` command, see the *Job Management Partner 1/Base User's Guide*.

5. On the primary node, execute the `jajs_convert_to_spmd` command to convert the startup process definition file for system management.

For example, execute the command as follows:

```
cd c:\Program Files\HITACHI\JP1AJS2\tools
jajs_convert_to_spmd -h LHOST -c ISAM
```

Because the `jajs_convert_to_spmd` command is a migration tool, it is located in the `JP1/AJS3-Manager-installation-folder\tools` folder.

6. Install JP1/Base as an upgrade installation on the secondary node.
For details about installing JP1/Base, see the *Job Management Partner 1/Base User's Guide*.
7. Install JP1/AJS3 - Manager as an upgrade installation on the secondary node.
On the secondary node, upgrade JP1/AJS2 - Manager to JP1/AJS3 - Manager.
For details about an upgrade installation of a JP1/AJS3 series program, see (2) *Upgrade installation*.
8. Start JP1 on the primary node.
Use the cluster software to start the JP1 programs and services on the primary node. This starts JP1/AJS3 operation in a cluster environment.

Chapter

3. Setup

This chapter describes how to set up each JP1/AJS3 series program and the system and user environments.

- 3.1 Required setup for JP1/AJS3 - Manager
- 3.2 Required setup for JP1/AJS3 - Agent
- 3.3 Required setup for JP1/AJS3 - View
- 3.4 Required setup for JP1/AJS3 Console
- 3.5 Setting up the system and user environments

3.1 Required setup for JP1/AJS3 - Manager

Before JP1/AJS3 - Manager can be used, both JP1/Base and JP1/AJS3 - Manager must be set up.

You must complete setting up JP1/Base before you attempt to set up JP1/AJS3 - Manager.

3.1.1 Setting up JP1/Base

This subsection describes how to set up JP1/Base.

The subsection contains an overview of setup and brief setup procedures. For details about the setup procedures, items to be set, and commands, see the *Job Management Partner 1/Base User's Guide*.

The following is an overview of JP1/Base setup:

1. Set user information.

JP1/Base user management is used to specify user authentication and mapping settings.

The user authentication settings specify JP1/AJS3 users and the permissions required to use JP1/AJS3.

The user mapping settings are required to execute jobs and to log in from JP1/AJS3 - View. JP1 users are mapped to OS users who have been registered on hosts.

For details about how to specify these settings, see (1) *Setting user information*.

2. Specify the event service environment settings.

The event service environment settings are required to send and receive JP1 events.

In the JP1/Base event service environment settings, specify `keep-alive` as the communication type for the `server` parameter in the API settings file. If `close` is specified, the following problems might occur:

- The JP1 event issued by JP1/AJS3 at startup cannot be issued.
- The KAVT1040-E message is output to the integrated trace log, and the JP1 event reception monitoring job, log file monitoring job, and Windows event log monitoring job cannot detect events.
- The JP1 event sending job terminates abnormally (*Ended abnormally* status).

For details about how to specify settings and about the API settings file, see the

Job Management Partner 1/Base User's Guide.

The following describes the JP1/Base setup procedure and definitions.

(1) Setting user information

The general procedure for setting user information is as follows:

1. Specify the authentication server to be used.
2. Register JP1 users.
3. Set the JP1 permission level.
4. Perform user mapping. (This step is also required when a user logs in from JP1/AJS3 - View.)

Note that if the authentication server has been set on another host, steps 2 and 3 are not necessary. However, the operations in these steps must have been performed for the authentication server on the other host.

In the Windows version of JP1/Base, user information can be set by using either the GUI or commands. This manual describes only the method using the GUI. For the method using commands, see the *Job Management Partner 1/Base User's Guide*.

The following describes the steps required to set user information.

(a) Specify the authentication server to be used

To specify the authentication server to be used:

1. From the Windows **Start** menu, choose **Programs, JP1_Base**, and then **Environment Settings**.

The JP1/Base Environment Settings dialog box appears.

2. Click the **Authentication Server** tab.
3. In the **Order of authentication server** area, click the **Add** button.

The Authentication Server dialog box appears.

4. Enter the name of the host that you want to use as the authentication server, and then click the **OK** button.

Specify which host you want to use as the authentication server. You can use either the local or a remote host as the authentication server.

If you want to set a secondary authentication server, specify two authentication servers. If you do not want to set a secondary authentication server, specify only one authentication server.

The authentication server or authentication servers that you specify are displayed in the **Authentication server** of the JP1/Base Environment Settings dialog box. If two authentication servers are displayed, the upper one is the primary

authentication server and the lower one is the secondary authentication server. Authentication server specification is complete.

Note:

If you specify the local host as an authentication server (primary or secondary authentication server) in the **Order of authentication server** area, you must make sure that the JP1/Base service is not running.

(b) Register JP1 users

To register JP1 users:

1. In the JP1/Base Environment Settings dialog box, click the **Authentication Server** tab.
2. In the **JP1 user** area, click the **Add** button.
The JP1 User dialog box appears.
3. Enter the JP1 user name and password for logging in to JP1/AJS3 - Manager, and then click the **OK** button.

The registered user name is displayed in the **JP1 user** of the JP1/Base Environment Settings dialog box.

To register more JP1 users, repeat steps 2 and 3.

JP1 user registration is complete.

If you have specified a remote host as an authentication server, register JP1 users on the authentication server.

(c) Set the JP1 permission level

For each JP1 user you register, set a permission level, which determines what processing the JP1 user can define or execute in JP1/AJS3. When you set a permission level for a JP1 user, you must define both a JP1 resource group and a JP1 permission level for the JP1 user.

To set a JP1 permission level:

1. In the JP1/Base Environment Settings dialog box, click the **Authentication Server** tab.
2. In the **JP1 user**, select the name of the JP1 user for whom you want to set a permission level.
3. In the **Authority level for JP1 resource group** area, click the **Add** button.
The JP1 Resource Group Details dialog box appears.
4. In **JP1 resource group**, enter a JP1 resource group name.

Resource group names are arbitrary names that are used to manage units as a group.

Specify the name of an existing resource group that already has JP1 users or the name of a new resource group. Note that resource group names can contain only alphanumeric characters.

5. In **Permissions not granted**, select the name of the JP1 permission level that you want to set for the JP1 user, and then click the **Add** button.

The selected JP1 permission level name is displayed in the **Permissions granted**.

If you want to set more than one JP1 permission level, repeat this step.

To delete a JP1 permission level name from the **Permissions granted**, select the names and then click the **Delete** button.

For details about the JP1 permission levels required in JP1/AJS3, see *(2) JP1 permission levels required for JP1/AJS3*.

6. Click the **OK** button.

The JP1 resource group name and JP1 permission level names that you have set are displayed in the **Authority level for JP1 resource group** of the JP1/Base Environment Settings dialog box.

To set JP1 permission levels for other JP1 users, repeat steps 2 through 5.

Specification of the JP1 permission level settings is complete.

If you have specified another host as an authentication server, specify JP1 permission level settings on that server.

(d) Map the JP1 users

Map the registered JP1 users to OS users.

To map a JP1 user:

1. In the JP1/Base Environment Settings dialog box, click the **User Mapping** tab.
2. In **Password management**, click the **Set** button.

The Password Manager dialog box appears.

3. Click the **New User** button.

The New User dialog box appears.

4. Specify the OS user name and password as OS user information, and then click the **OK** button.

The OS user information is set, and the Password Manager dialog box appears again. In the dialog box, you can register, change, and delete OS user and password information.

3. Setup

An OS user is defined in *domain-name\user-name* or *user-name* format. In JP1/AJS3, an OS user name with a domain name is distinguished from an OS user name without a domain name. Select the appropriate format as explained below:

- For a domain user, use the *domain-name\user-name* format.
- For a user on the domain controller, use the *domain-name\user-name* format.
- For a local user (a user whose domain name and computer name are the same), use the *user-name* format (do not add a computer name).

5. Click the **Exit** button.

The Password Manager dialog box closes, and the JP1/Base Environment Settings dialog box appears again with the **User Mapping** page displayed.

6. In the **JP1 user** area, click the **Add** button.

The JP1 User dialog box appears.

7. Enter a JP1 user name, the host permitted to request job execution, and the host to which JP1/AJS3 - View logs in. Then click the **OK** button.

The OS User Mapping Details dialog box appears.

If a specific host is set for **Server host**, job execution requests from the other hosts will not be accepted. If an asterisk (*) is set for **Server host**, job execution requests from all hosts will be accepted. To accept a login request from JP1/AJS3 - View, set the local host name or an asterisk (*) for **Server host**.

8. For the displayed JP1 user, select one or more OS users to which you want to map the JP1 user.

The **OS users not mapped** displays the OS users set in the Password Manager dialog box. In this field, select the OS users to which you want to map the JP1 user, and then click the **Add** button. The selected OS users move to the **OS users to be mapped**.

Note that a JP1 user can be mapped to several OS users.

9. After making sure that all the OS users to which you want to map the JP1 user are selected, click the **OK** button.

The JP1 user name and the mapped OS user names are displayed in the **List of OS users to be mapped** of the JP1/Base Environment Settings dialog box.

User mapping is complete.

Note:

Each OS user to which a JP1 user is mapped must have a permission sufficient for logging on locally to the host on which jobs will be executed.

You can set these permissions by using the Windows **Local Security Policy** administrative tool.

Make sure that the OS users to which a JP1 user is mapped are able to log on normally to the OS.

(2) JP1 permission levels required for JP1/AJS3

JP1/AJS3 provides three types of JP1 permission levels:

- Those related to defining and executing jobnets
- Those related to manipulating agent management information
- Those related to executing and manipulating jobs

The following describes the JP1 permission levels for each type.

(a) JP1 permission levels related to defining and executing jobnets

The following five JP1 permission levels are related to defining and executing jobnets:

- JP1_AJS_Admin
Grants administrator authority to the holder, and permits the holder to perform operations related to the owner and resource group of a unit, and to define, execute, and edit a jobnet.
- JP1_AJS_Manager
Permits the holder to define, execute, and edit a jobnet.
- JP1_AJS_Editor
Permits the holder to define and edit a jobnet.
- JP1_AJS_Operator
Permits the holder to execute and view a jobnet.
- JP1_AJS_Guest
Permits the holder to view a jobnet.

The following table provides information about the operations that are permitted by the above JP1 permission levels.

3. Setup

Table 3-1: Operations permitted by the JP1 permission levels related to defining and executing jobnets

Operation	JP1_AJS_Admin	JP1_AJS_Manager	JP1_AJS_Editor	JP1_AJS_Operator	JP1_AJS_Guest
Changing the owner, JP1 resource group name, or job execution user type (<i>Executed by</i>) of a unit owned by another user	Y#1	--	--	--	--
Defining a unit	Y	Y	Y	--	--
Changing the definition of the units of a jobnet	Y	Y#2	Y#2	--	--
Changing the definition of a jobnet	Y	Y	Y	--	--
Copying, moving, or renaming a unit	Y	Y	Y	--	--
Deleting a unit	Y	Y	Y	--	--
Outputting the name of a unit to the standard output file	Y	Y	Y	Y	Y
Outputting the definition of a unit to the standard output file	Y	Y	Y	Y	Y
Backing up a unit	Y	Y	Y	Y	Y
Restoring a unit	Y	Y	Y	--	--
Defining calendar information for a job group	Y	Y	Y	--	--
Defining a jobnet execution schedule for a specific period	Y	Y	--	Y	--
Registering a defined jobnet for execution	Y	Y	--	Y	--
Unregistering execution of a jobnet	Y	Y	--	Y	--
Outputting information such as the execution log, current status, and next execution schedule of a jobnet or job to the standard output file	Y	Y	Y	Y	Y
Temporary changing the schedule of a jobnet	Y	Y	--	Y	--

Operation	JP1_AJS_Admin	JP1_AJS_Manager	JP1_AJS_Editor	JP1_AJS_Operator	JP1_AJS_Guest
Temporary changing the status of a job	Y	Y	--	Y	--
Changing the status of a job	Y	Y	--	Y	--
Interrupting execution of a jobnet	Y	Y	--	Y	--
Re-executing a jobnet	Y	Y	--	Y	--
Forcibly terminating a job or jobnet	Y	Y	--	Y	--
Exporting a unit	Y	Y	Y	Y	Y
Importing a unit	Y	Y	Y	--	--
Exporting the registered execution-schedule information for root jobnets	Y	Y	Y	Y	Y
Importing the registered execution-schedule information for root jobnets	Y	Y	--	Y	--
Registering release of a jobnet	Y	Y	Y ^{#3}	Y ^{#3}	--
Canceling the release of a jobnet	Y	Y	Y ^{#3}	Y ^{#3}	--
Viewing jobnet release information	Y	Y	Y	Y	Y

Legend:

Y: This operation can be performed at this permission level.

--: This operation cannot be performed at this permission level.

Note 1:

Users who belong to the Administrators group of the OS can perform all operations, regardless of the granted JP1 permission level.

If no JP1 resource group is set for a unit, all users can perform all operations for that unit, regardless of the granted JP1 permission level.

Note 2:

For the manager job group and manager jobnet, the access permission definition of the JP1/AJS3 - Manager to be accessed applies.

#1

The owner of a unit can perform these operations for the unit even when JP1_AJS_Admin permission has not been granted. For details, see 8.2.1 *Unit owner permission* in the manual *Job Management Partner 1/Automatic Job Management System 3 Overview*.

#2

When the execution user type of a unit is *User who owns*, operations that change the unit can be performed only by the owner of the unit and by JP1 users who have JP1_AJS_Admin permission. This prevents general users without JP1_AJS_Admin permission from executing jobs.

When the execution user type of a unit is *User who registered*, operations that change the unit can be performed by any user who has a JP1 permission level sufficient for performing those operations.

#3

Both JP1_AJS_Editor and JP1_AJS_Operator permissions must be granted. The reason is that operations for changing definitions and registering execution are required to register or cancel the release of a jobnet.

(b) JP1 permission levels related to manipulating agent management information

The following three JP1 permission levels are related to manipulating agent management information:

- JP1_JPQ_Admin

Grants administrator authority to the holder, and permits the holder to add, change, or delete an execution agent or execution agent group.

- JP1_JPQ_Operator

Permits the holder to change the job transfer restriction status for an execution agent or execution agent group.

- JP1_JPQ_User

Permits the holder to view the status and definition of an execution agent or execution agent group.

When you set JP1 permission levels related to manipulating agent management information, make sure that you set them for the resource group named JP1_Queue. Note that JP1_Queue is case sensitive.

The following table provides information about the operations permitted by the above JP1 permission levels.

Table 3-2: Operations permitted by the JP1 permission levels related to manipulating agent management information

Operation	JP1_JPQ_A dmin	JP1_JPQ_ Operator	JP1_JPQ_ User
Adding an execution agent	Y	--	--
Adding an execution agent group	Y	--	--
Deleting an execution agent	Y	--	--
Deleting an execution agent group	Y	--	--
Changing the target host defined on an execution agent	Y	--	--
Changing the maximum number of concurrently executable jobs on an execution agent	Y	--	--
Changing the description of an execution agent	Y	--	--
Changing the description of an execution agent group	Y	--	--
Adding an execution agent to an execution agent group	Y	--	--
Changing the priority of execution agents in an execution agent group	Y	--	--
Removing an execution agent from an execution agent group	Y	--	--
Changing the job transfer restriction status for an execution agent	Y	Y	--
Changing the job transfer restriction status for an execution agent group	Y	Y	--
Displaying the status of an execution agent [#]	Y	Y	Y
Displaying the status of an execution agent group [#]	Y	Y	Y
Displaying the status of all execution agents and execution agent groups [#]	Y	Y	Y
Displaying the names of all execution agents and execution agent groups [#]	Y	Y	Y
Outputting the definition of an execution agent [#]	Y	Y	Y
Outputting the definition of an execution agent group [#]	Y	Y	Y
Outputting the definitions of all execution agents and execution agent groups [#]	Y	Y	Y

Legend:

Y: This operation can be performed at this permission level.

--: This operation cannot be performed at this permission level.

#

Users who belong to the Administrators group of the OS can perform all operations, regardless of the granted JP1 permission level.

Note:

For the manipulation of agent management information, the access permission definition of the authentication server used by the Manager that executes the command applies.

(c) JP1 permission levels related to executing and manipulating jobs

The following three JP1 permission levels are related to executing and manipulating jobs:

- JP1_JPQ_Admin

Grants administrator authority to the holder, and permits the holder to set up the execution environment, to manipulate queues and job execution agents, and to manipulate jobs queued by other users.

- JP1_JPQ_Operator

Permits the holder to manipulate queues and to manipulate jobs queued by other users.

- JP1_JPQ_User

Permits the holder to register submit jobs and manipulate jobs queued by the holder.

When you set JP1 permission levels related to executing and manipulating jobs, make sure that you set the JP1 permission levels for the resource group named JP1_Queue. Note that JP1_Queue is case sensitive.

The following table provides information about the operations permitted by the above JP1 permission levels.

Table 3-3: Operations permitted by the JP1 permission levels related to executing and manipulating jobs

Operation	JP1_JPQ_A dmin	JP1_JPQ_ Operator	JP1_JPQ_ User
Canceling or forcibly terminating job execution	Y	Y	U
Holding job execution or canceling a hold placed on job execution	Y	Y	U
Moving a job	Y	Y	U
Outputting job information	Y	Y	U
Outputting information about jobs that have ended	Y	Y	U
Deleting information about jobs that have ended from the database	Y	Y	--
Registering a submit job [#]	Y	Y	Y
Opening a queue [#]	Y	Y	--
Closing a queue [#]	Y	Y	--
Adding a queue [#]	Y	--	--
Deleting a queue [#]	Y	--	--
Outputting queue information [#]	Y	Y	Y
Changing the queue definition [#]	Y	--	--
Connecting a queue to an agent [#]	Y	--	--
Disconnecting a queue from an agent [#]	Y	--	--
Changing the maximum number of concurrently executable jobs [#]	Y	--	--
Adding an agent [#]	Y	--	--
Deleting an agent [#]	Y	--	--
Outputting agent host information [#]	Y	--	--
Adding an execution-locked resource [#]	Y	--	--
Deleting an execution-locked resource [#]	Y	--	--

Operation	JP1_JPQ_A dmin	JP1_JPQ_ Operator	JP1_JPQ_ User
Outputting information about execution-locked resources [#]	Y	Y	Y

Legend:

Y: This operation can be performed at this permission level.

U: This operation cannot be performed by a user at this permission level when the job was executed by another user.

--: This operation cannot be performed at this permission level.

#

This operation can be performed only in a configuration in which submit jobs can be used.

Note:

For the execution and manipulation of a job, the access permission definition of the authentication server used by the Manager that accepts the processing request applies.

When a job execution control command is used to execute or manipulate a job, make sure that a JP1 user whose name is the same as the OS user who executes the command is registered. In addition, for that JP1 user, set a JP1 permission level sufficient for executing or manipulating the job.

If the `jpqjobsub` command is executed, the JP1 user executing the job (the user with the same name as the OS user who executes the command) must be mapped on the job execution host to an OS user on that host.

If `-eu` is specified in the executed `jpqjobsub` command, the JP1 user that has the same name as the OS user who executes the command must be mapped on the job execution host to the OS user specified in `-eu`.

3.1.2 Setting up JP1/AJS3 - Manager

This subsection describes how to set up JP1/AJS3 - Manager. Before you set up JP1/AJS3 - Manager, make sure that you have logged on as a member of the Administrators group.

Also make sure that JP1/Base has already been set up before you attempt to set up JP1/AJS3 - Manager.

Note that this subsection describes the basic setup of JP1/AJS3. If you need to change the settings to match specific operating requirements, see the appropriate section listed

in the following table.

Topic	Reference
Procedure for setting the execution agent	4.1
Procedure for setting environment setting parameters	4.2
Settings for controlling the scheduler	6.1
Settings for controlling job execution	6.2
Settings for controlling events and actions	6.3
Settings for controlling queueless job execution	6.4
Settings for the definition pre-check function	6.5
Other settings	6.6
Settings for logging	7
Setting up a cluster system	8

(1) Setup procedure

To set up JP1/AJS3 - Manager:

1. If necessary, change the account settings for the JP1/AJS3 service.
Skip this step if it is not necessary to change the account settings for the JP1/AJS3 service. For details about the operation required to change the account settings, see *4.2.3(1) Changing the account for services provided by JP1/AJS3 in the Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.
 2. If necessary, change the environment setting parameters.
Skip this step if you accept the environment setting parameter values proposed by JP1/AJS3. To change environment setting parameter values, use the `jajs_config` command, or the `jbssetcnf` command provided by JP1/Base.
For details about how to set the environment setting parameters, see *4.2 Environment setting parameter settings*.
 3. If necessary, set up the system and user environments.
For details about setting up the system and user environments, see *3.5 Setting up the system and user environments*.
- JP1/AJS3 - Manager setup is complete.

3.2 Required setup for JP1/AJS3 - Agent

Before JP1/AJS3 - Agent can be used, both JP1/Base and JP1/AJS3 - Agent must be set up.

You must finish setting up JP1/Base before you attempt to set up JP1/AJS3 - Agent.

3.2.1 Setting up JP1/Base

This subsection describes how to set up JP1/Base.

The subsection contains an overview of setup and brief setup procedures. For details about the setup procedures, items to be set, and commands, see the *Job Management Partner 1/Base User's Guide*.

The following is an overview of JP1/Base setup:

1. Set user information.

JP1/Base user management is used to specify user mapping settings.

The user mapping settings are required when another host sends a job execution request to the local host. JP1 users are mapped to OS users who have been registered on hosts.

For details about how to specify these settings, see *(1) Setting user information*.

2. Specify the event service environment settings.

The event service environment settings are required to send and receive JP1 events.

In the JP1/Base event service environment settings, specify `keep-alive` as the communication type for the `server` parameter in the API settings file. If `close` is specified, the following problems might occur:

- The JP1 event issued by JP1/AJS3 at startup cannot be issued.
- The KAVT1040-E message is output to the integrated trace log, and the JP1 event reception monitoring job, log file monitoring job, and Windows event log monitoring job cannot detect events.
- The JP1 event sending job terminates abnormally (*Ended abnormally* status).

For details about how to specify settings and about the API settings file, see the *Job Management Partner 1/Base User's Guide*.

The following describes the JP1/Base setup procedure and definitions.

(1) Setting user information

In the Windows version of JP1/Base, user information can be set by using either the GUI or commands. This manual describes only the method using the GUI. For the method using commands, see the *Job Management Partner 1/Base User's Guide*.

Note that JP1/AJS3 - Agent and JP1/AJS2 - Agent 07-00-/C and later versions no longer access the authentication server when they start.

In JP1/AJS3 - Agent and JP1/AJS2 - Agent 07-00-/C and later versions, you do not need to specify the authentication server.

The following describes the steps required to set user information.

(a) Map the JP1 users

Map the JP1 users registered on the authentication server to OS users.

To map a JP1 user:

1. In the JP1/Base Environment Settings dialog box, click the **User Mapping** tab.
2. In **Password management**, click the **Set** button.

The Password Manager dialog box appears.

3. Click the **New User** button.

The New User dialog box appears.

4. Specify the OS user name and password as OS user information, and then click the **OK** button.

The OS user information is set, and the Password Manager dialog box appears again. In the dialog box, you can register, change, and delete OS user and password information.

An OS user is defined in *domain-name\user-name* or *user-name* format. In JP1/AJS3, an OS user name with a domain name is distinguished from an OS user name without a domain name. Select the appropriate format as explained below:

- For a domain user, use the *domain-name\user-name* format.
- For a user on the domain controller, use the *domain-name\user-name* format.
- For a local user (a user whose domain name and computer name are the same), use the *user-name* format (do not add a computer name).

5. Click the **Exit** button.

The Password Manager dialog box closes, and the JP1/Base Environment Settings dialog box appears again with the **User Mapping** page displayed.

6. In the **JP1 user** area, click the **Add** button.

3. Setup

The JP1 User dialog box appears.

7. Enter a JP1 user name and the name of the host requesting the job, and then click the **OK** button.

The OS User Mapping Details dialog box appears.

If an asterisk (*) is set for **Server host**, job execution requests from all hosts will be accepted.

8. For the displayed JP1 user, select one or more OS users to which you want to map the JP1 user.

The **OS users not mapped** displays the OS users set in the Password Manager dialog box. In this field, select the OS users to which you want to map the JP1 user, and then click the **Add** button. The selected OS users move to the **OS users to be mapped**.

Note that a JP1 user can be mapped to several OS users.

9. After making sure that all the OS users to which you want to map the JP1 user are selected, click the **OK** button.

The JP1 user name and the mapped OS user names are displayed in the **List of OS users to be mapped** of the JP1/Base Environment Settings dialog box.

User mapping is complete.

Note:

Each OS user to which a JP1 user is mapped must have a permission sufficient for logging on locally to the host on which jobs will be executed.

You can set these permissions by using the Windows **Local Security Policy** administrative tool.

Make sure that the OS users to which a JP1 user is mapped are able to log on normally to the OS.

3.2.2 Setting up JP1/AJS3 - Agent

This subsection describes how to set up JP1/AJS3 - Agent. Before you set up JP1/AJS3 - Agent, make sure that you have logged on as a member of the Administrators group.

After you have set up JP1/Base, make sure that JP1/AJS3 - Manager to which you want to connect JP1/AJS3 - Agent is operating normally before attempting to set up JP1/AJS3 - Agent.

Note that this subsection describes the basic setup of JP1/AJS3. If you need to change the settings to match specific operating requirements, see the appropriate section listed in the following table.

Topic	Reference
Procedure for setting environment setting parameters	4.2
Settings for defining the work path to be used during job execution as a variable	6.2.1
Settings for executing a job with a long file name	6.2.15
Settings for executing jobs that require a user profile	6.2.16
Changing the settings related to the size of the log for event jobs to match operational requirements	6.3.1
Setting the status passing option for the file monitoring job	6.3.3
Settings for executing a job that requires a user profile in a queueless job environment	6.4.2
Settings for the JP1/AJS3 definition pre-check function	6.5.1
Settings for logging	7
Setting up for a cluster system	8

(1) Setup procedure

To set up JP1/AJS3 - Agent:

1. If necessary, change the account settings for the JP1/AJS3 service.

Skip this step if it is not necessary to change the account settings for the JP1/AJS3 service. For details about the operation required to change the account settings, see 4.2.3(1) *Changing the account for services provided by JP1/AJS3* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

2. If necessary, change the environment setting parameters.

Skip this step if you accept the environment setting parameter values proposed by JP1/AJS3. To change environment setting parameter values, use the `jajs_config` command, or the `jbssetcnf` command provided by JP1/Base.

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 on the `jbssetcnf` command, see the *Job Management Partner 1/Base User's Guide*.

3. If necessary, set up the system and user environments.

For details about setting up the system and user environments, see 3.5 *Setting up the system and user environments*.

JP1/AJS3 - Agent setup is complete.

3.3 Required setup for JP1/AJS3 - View

JP1/AJS3 - View can be used immediately after installation without performing any special setup procedures or changing any default values.

Before you start using JP1/AJS3 - View, start the integrated trace log function (HNTRLib2) by selecting **Hitachi Network Objectplaza Trace Monitor 2** in the Windows **Services** administrative tool, so that execution and error log data can be collected.

You need to manually start the integrated trace log function only when JP1/AJS3 - View is installed on a separate host from other JP1/AJS3 products, such as JP1/AJS3 - Manager and JP1/AJS3 - Agent. You do not need to start the function manually when JP1/AJS3 - Manager or JP1/AJS3 - Agent is also installed on the host.

For details about how to change the JP1/AJS3 - View environment settings, see 5. *JP1/AJS3 - View Environment Settings*.

3.4 Required setup for JP1/AJS3 Console

Before JP1/AJS3 Console can be used, JP1/AJS3 Console Manager, JP1/AJS3 Console Agent, and JP1/AJS3 Console View must be set up.

3.4.1 Setting up JP1/AJS3 Console Manager

Before JP1/AJS3 Console Manager can be used, JP1/AJS3 Console Manager must be set up on the host on which JP1/AJS3 - Manager has been installed.

You set up JP1/AJS3 Console Manager by executing `ajscmsetup.exe`, which is in the `JP1/AJS3-Console-installation-folder\bin\` folder. Executing this command creates the JP1/AJS3 Console Manager service. For details about the `ajscmsetup` command, see *ajscmsetup (Windows only)* in *3. Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

Supplementary note:

For details about how to start and terminate the JP1/AJS3 Console Manager service, see *7.1 Starting or stopping JP1/AJS3 services* in the *Job Management Partner 1/Automatic Job Management System 3 Administration Guide*.

There is only one instance of the JP1/AJS3 Console Manager service on the machine for accepting connections to physical hosts and all logical hosts.

For details about changing the configuration definition of JP1/AJS3 Console Manager, see *2.8 Setting up the JP1/AJS3 Console environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

3.4.2 Setting up JP1/AJS3 Console Agent

Before JP1/AJS3 Console Agent can be used, JP1/AJS3 Console Agent must be set up on the host on which JP1/AJS3 - Manager has been installed.

You set up JP1/AJS3 Console Agent by executing `ajscasetup.exe`, which is in the `JP1/AJS3-installation-folder\bin\` folder. Executing this command creates the JP1/AJS3 Console Agent service. For details about the `ajscasetup` command, see *ajscasetup (Windows only)* in *3. Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

Supplementary note:

For details about how to start and terminate the JP1/AJS3 Console Agent service, see *7.1 Starting or stopping JP1/AJS3 services* in the *Job Management Partner 1/Automatic Job Management System 3 Administration Guide*.

There is only one instance of the JP1/AJS3 Console Agent service on the machine for accepting connections to physical hosts and all logical hosts.

For details about changing the configuration definition of JP1/AJS3 Console Agent, see *2.8 Setting up the JP1/AJS3 Console environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

3.4.3 Setting up JP1/AJS3 Console View

Before JP1/AJS3 Console View can be used, JP1/AJS3 Console View must be set up on the host on which JP1/AJS3 - View has been installed. If you attempt to start JP1/AJS3 Console View before JP1/AJS3 Console View is set up, an error occurs.

You set up JP1/AJS3 Console View by executing `ajscvsetup.exe`, which is in the *JP1/AJS3-View-installation-folder\bin* folder. For details about the `ajscvsetup` command, see *ajscvsetup* in *3. Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

When setup has been completed, **Application monitoring** is added to the **JP1_Automatic Job Management System 3 - View** program folder in the Windows **Start** menu as a menu item for starting JP1/AJS3 Console View.

Supplementary note:

If JP1/AJS3 Console View is set up after JP1/IM - View has been installed, **Application monitoring** is added to **Job system operation** under **Integrated management** in the tree area of the Tool Launcher window of JP1/IM - View. If you install JP1/IM - View after JP1/AJS3 Console View has been set up, re-execute the setup command after JP1/IM - View has been installed.

3.5 Setting up the system and user environments

This section describes how to set up the system and user environments.

3.5.1 Extending trace log files

This subsection describes how to extend the following trace log files in Windows:

- JP1/AJS3 trace log file
- Queueless trace log file
- Internal log file for execution of queueless jobs
- JP1/AJS3 Console trace log file

(1) Extending the JP1/AJS3 trace log file

The initial settings for the JP1/AJS3 trace log file are as follows:

- File name

In Windows Server 2008:

```
%ALLUSERSPROFILE%\HITACHI\JP1\JP1_DEFAULT\JP1AJS2\log\tracelog (The default %ALLUSERSPROFILE% value is system-drive\ProgramData.)
```

In Windows Server 2003:

```
JP1/AJS3-installation-folder\log\tracelog
```

- Size

20 MB (20,480 KB), which is the size of a file in which trace log data about the execution of approximately 2,000 jobs can be saved

Because an adequate trace log file size differs considerably depending on the jobnet structure, number of connected JP1/AJS3 - View instances, and operations performed, the trace log file must be extended whenever necessary after an appropriate trace log file size has been estimated.

For details about how to estimate an appropriate trace log file size, see *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*.

If the trace log file size must be extended, use the `ajstrsetsz` command to resize the file. For details about the `ajstrsetsz` command, see `ajstrsetsz` in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

(2) Extending the queueless trace log file

The initial settings for the queueless trace log file are as follows:

- File name

In Windows Server 2008:

```
%ALLUSERSPROFILE%\HITACHI\JP1\JP1_DEFAULT\JP1AJS2\log\tracelog.q1 (The default %ALLUSERSPROFILE% value is system-drive\ProgramData.)
```

In Windows Server 2003:

```
JP1/AJS3-installation-folder\log\tracelog.q1
```

- Size

15 MB (15,360 KB), which is the size of a file in which trace log data about the execution of approximately 10,000 jobs can be saved

Because an adequate queueless trace log file size differs considerably depending on such factors as whether the job transfers file and error results are output, the trace log file will need to be extended whenever necessary after an adequate file size has been estimated.

For details about how to estimate an appropriate trace log file size, see 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*.

If the queueless trace log file must be extended, use the `ajsqltrsetsz` command to resize the file. For details about the `ajsqltrsetsz` command, see *ajsqltrsetsz* in 3. *Commands Used for Special Operation* in the manual *Job Management Partner 1/ Automatic Job Management System 3 Command Reference 2*.

(3) Extending the internal log file for execution of queueless jobs

The initial settings for the internal log file for execution of queueless jobs are as follows:

- File name

In Windows Server 2008:

```
%ALLUSERSPROFILE%\HITACHI\JP1\JP1_DEFAULT\JP1AJS2\log\ajsqlexeclog#1
```

```
%ALLUSERSPROFILE%\HITACHI\JP1\JP1_DEFAULT\JP1AJS2\log\ajsqlexeclog_ftp#2
```

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

In Windows Server 2003:

JP1/AJS3-installation-folder\log\ajsql EXEClog#1

JP1/AJS3-installation-folder\log\ajsql EXEClog_ftp#2

#1:

In a cluster configuration, the file name is as follows:

JP1/AJS3-installation-folder\log\ajsql EXEClog- [*logical-host-name*]

If the full path name is 256 or more bytes, the maximum length of *logical-host-name* is 30 bytes.

#2:

This file is created for JP1/AJS3 - Manager only.

- Size

The size of the ajsql EXEClog file

24 MB (24,576 KB), which is the size of a file in which the internal execution log data output by the queueless agent service when about 40,000 queueless jobs are executed can be saved

The size of the ajsql EXEClog_ftp file

10 MB (10,240 KB), which is the size of a file in which the internal execution log data output by the queueless file transfer service when about 20,000 queueless jobs that perform a file transfer are executed can be saved

An adequate size for the internal log file for execution of queueless jobs differs considerably depending on the number of executed queueless jobs, whether the queueless job performs a file transfer, and other factors. Therefore, the trace log file must be extended whenever necessary after an adequate file size has been estimated.

For details about how to estimate an appropriate size for the internal log file for execution of queueless jobs, see 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*.

If the size of the internal execution logs for queueless jobs must be extended, use the ajsql EXECSETSZ command to resize the file. For details about the ajsql EXECSETSZ command, see *ajsql EXECSETSZ* in 3. *Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

(4) Extending the JP1/AJS3 Console trace log file

Extension of the JP1/AJS3 Console trace log file must be set separately for JP1/AJS3 Console Manager and JP1/AJS3 Console Agent. The initial settings for the JP1/AJS3 Console trace log file are as follows:

- File name

In Windows Server 2008:

For JP1/AJS3 Console Manager:

```
%ALLUSERSPROFILE%\HITACHI\JP1\JP1_DEFAULT\JP1AJS2CM\log\tracelog.cm
```

For JP1/AJS3 Console Agent:

```
%ALLUSERSPROFILE%\HITACHI\JP1\JP1_DEFAULT\JP1AJS2\log\tracelog.ca
```

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

In Windows Server 2003:

For JP1/AJS3 Console Manager:

```
JP1/AJS3-Console-installation-folder\log\tracelog.cm
```

For JP1/AJS3 Console Agent:

```
JP1/AJS3-Manager-installation-folder\log\tracelog.ca
```

- Size

For JP1/AJS3 Console Manager: 3,072 KB

For JP1/AJS3 Console Agent: 3,072 KB

Because an adequate trace log file size differs considerably depending on the status of monitoring during operation and other factors, the trace log file must be extended whenever necessary after an adequate file size has been estimated.

For details about how to estimate an appropriate trace log file size, see *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*.

If the trace log file must be extended, use the `ajscmtrsetsz` or `ajscatrsetsz` command to resize the file. For details about these commands, see the appropriate manual below.

For JP1/AJS3 Console Manager:

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

For JP1/AJS3 Console Agent:

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

3.5.2 Specifying communication environment settings

When a JP1/AJS3 system is created with an environment that uses the DNS or a firewall, environment settings for resolving host names and IP addresses or firewall communication settings must also be specified.

Specify the necessary communication environment settings as described in the following locations:

- *2.3.6(3) Notes on operation in a DNS environment in the Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*
- *2.3.4 Example of configurations that include a firewall, and their communications settings in the Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*

Chapter

4. Environment Settings

This chapter describes the JP1/AJS3 environment settings.

- 4.1 Execution agent settings
- 4.2 Environment setting parameter settings

4.1 Execution agent settings

You can use the `ajsagtadd`, `ajsagtdelete`, and `ajsagtalt` commands to add, delete, or change an execution agent or execution agent group during JP1/AJS3 operation.

When queue and submit jobs are being used, you can use the `jpqagtadd`, `jpqqeadd`, and other commands to add, delete, or change an agent or queue for queue and submit jobs. For details, see 7.1.2(1)(b) *Changing the execution environment for QUEUE jobs and submit jobs dynamically* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

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

(1) Procedure for specifying execution agent settings

To use the `ajsagtadd` command to add an execution agent and execution agent group:

1. Add an execution agent, and set the maximum number of concurrently executable jobs.

Use the `ajsagtadd` command to add an execution agent.

Before executing the `ajsagtadd` command, make sure that the IP address can be resolved from the host name of the execution agent you want to add.

```
ajsagtadd -a exec-agent-name [-s target-host-name] [-c
time-time=maximum-number-of-concurrently-executable-jobs, ...]
```

Example:

```
ajsagtadd -a AP1 -s Host1 -c 01:00-05:00=1
```

If the `-c` option is omitted, the maximum number of concurrently executable jobs is set to 5 regardless of the time (that is, `-c 00:00-00:00=5` is assumed). If the `-c` option is specified, the maximum number of concurrently executable jobs for the time periods that are not specified in the option is set to 0. For example, if `-c 01:00-02:00=10` is specified, the maximum number of concurrently executable jobs for each time period is as follows:

- 00:00 to 01:00: 0
- 01:00 to 02:00: 10
- 02:00 to 00:00: 0

When the maximum number of concurrently executable jobs is 0, no jobs can be executed. A value of at least 1 must be specified to execute a job. You can also use the `ajsagtalt` command to change the maximum number of concurrently executable jobs. For an example of specifying the maximum number of concurrently executable jobs, see the supplementary note for `ajsagtadd` in 2. *Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

2. Add an execution agent group.

Use the `ajsagtadd` command to add an execution agent group, which is a group of execution agents.

You can add an execution agent group when, for example, you want to connect several execution agents to the execution agent group so that job execution is distributed to those agents. You can also specify a priority for each execution agent so that jobs are delivered to execution agents based on the priorities that have been specified.

```
ajsagtadd -g exec-agent-group-name [-l
exec-agent-name [:priority] , . . .]
```

Example:

```
ajsagtadd -g APG1 -l AP1:16,AP2,AP3:5
```

You can use the `ajsagtalt` command to change the priorities of execution agents in a group.

3. Verify the settings you have specified.

Execute the `ajsagtshow` command to display the settings you specified in steps 1 and 2 so that you can verify that the settings are correct.

```
ajsagtshow {-a exec-agent-name|-g exec-agent-group-name|-l|-n}
```

Example:

```
ajsagtshow -a AP1
```

As shown below, several execution agents and execution agent groups can be added all at one time by using an execution agent definition file.

```
ajsagtadd -f exec-agent-definition-file-name
```

The format used for the execution agent definition file is the same as the format of the CSV file output by the `ajsagtprint` command. For details about the execution agent definition file, see *ajsagtadd* in 2. *Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1* and *ajsagtprint* in 2. *Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

(2) Notes on execution agents

- Names are not case sensitive.
- Names that begin with @SYS cannot be used.
- The following characters cannot be used:
 - Space
 - , (comma)
 - : (colon)
 - Control characters (tab and linefeed characters)

4.2 Environment setting parameter settings

This section describes how to change common definition information that has already been registered.

You can use the following methods to change the common definition information that has already been registered:

- `jajs_config` command

If you use the `jajs_config` command, you can eliminate specification errors because the specified environment setting parameter names and values are checked. 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*.

- `jbssetcnf` command

If you use the `jbssetcnf` command provided by JP1/Base, the new environment setting parameter settings specified in a setting file will replace the corresponding current settings. For details about the `jbssetcnf` command, see the *Job Management Partner 1/Base User's Guide*.

Note that the parameter names and values provided by the `jbssetcnf` command are not checked. If you specify any settings that are incorrect, you might want to restore the previous settings. For details about how to restore the previous settings when incorrect settings have been registered, see *E. Recovery Procedure Used When An Incorrect Environment Settings Parameter Is Set*.

For details about the environment setting parameter settings necessary for registration in the common definition information, see 2. *Environment Setting Parameters* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

The following describes how to use each method.

(1) Using the `jajs_config` command

To use the `jajs_config` command to change the settings in the common definition information:

1. Stop the JP1/AJS3 service.

In Windows Control Panel, open the **Services** administrative tool, and stop the following service:

- JP1/AJS3 service

2. Change the settings in the common definition information.

4. Environment Settings

Use the following command to specify new environment setting parameter settings in the common definition information:

```
jajs_config Δ -k Δ definition-key Δ "parameter-name-1"=value-1 Δ ["parameter-name-2"=value-2] . . .
```

Legend:

Δ : One-byte space

Example:

```
jajs_config -k [JP1_DEFAULT\JP1AJSMANAGER\AJROOT1]
"LOGSIZE"=dword:00002800 "AJSLOG"="all"
```

3. Restart JP1/AJS3.

The changes in the common definition information are applied to JP1/AJS3.

(2) Using the *jbssetcnf* command

To use the *jbssetcnf* command to replace the settings in the common definition information with new settings specified in a configuration file:

1. Stop the JP1/AJS3 service.

In Windows Control Panel, open the **Services** administrative tool, and stop the following service:

- JP1/AJS3 service

2. Create a configuration file that contains the new settings.

Use a text editor such as Notepad to create a setting file that contains the additional or new environment setting parameter settings.

Assign any name to the configuration file.

The following shows an example of specifying settings in the configuration file.

In this example, the environment setting parameter settings shown in the following table will be used.

Definition key	Parameter	Value
[JP1_DEFAULT\JP1AJSMANAGER\AJROOT1]	"LOGSIZE"=	00002800 (hexadecimal)
	"AJSLOG"=	"all"

To specify the above settings, create a configuration file as follows:

```
[JP1_DEFAULT\JP1AJSMANAGER\AJROOT1]
"LOGSIZE"=dword:00002800
"AJSLOG"="all"
```

3. Save the configuration file.
4. Change the common definition information.

Execute the following command, which will change the common definition information based on the specified configuration file:

```
jbssetcnf configuration-file
```

The `jbssetcnf` command is located in the `JP1/Base-installation-folder\bin\` folder.

5. Restart JP1/AJS3.

The changes in the common definition information are applied to JP1/AJS3.

Chapter

5. JP1/AJS3 - View Environment Settings

This chapter describes how to change the JP1/AJS3 - View environment settings.

- 5.1 Procedure for changing the JP1/AJS3 - View environment settings
- 5.2 Procedure for changing the JP1/AJS3 Console View environment settings

5.1 Procedure for changing the JP1/AJS3 - View environment settings

This section describes how to change the JP1/AJS3 - View environment settings.

For the JP1/AJS3 - View environment settings that can be specified, see *11. Customizing Windows and Dialog Boxes Used for JP1/AJS3 - View* in the *Job Management Partner 1/Automatic Job Management System 3 Operator's Guide*. For the items that can be set in the dialog boxes that are displayed, see *15. Windows and Dialog Boxes* in the *Job Management Partner 1/Automatic Job Management System 3 Operator's Guide*.

To change the JP1/AJS3 - View environment settings:

1. From the Windows **Start** menu, choose **Programs, JP1_Automatic Job Management System 3 - View**, and then **Job System Operation**.

The Login screen appears.

2. After entering the JP1 user name and password, and the name of the JP1/AJS3 - Manager host to which you want to connect, click the **OK** button.

The JP1/AJS3 - View window of JP1/AJS3 - View appears.

3. From the **Options** menu, choose **Preferences**.

The Preferences dialog box appears.

4. Specify the necessary information, and click the **OK** button.

You can change the JP1/AJS3 - View environment settings while you are using JP1/AJS3 - View.

For details about when the new settings take effect, see *15.3.36 Preferences dialog box* in the *Job Management Partner 1/Automatic Job Management System 3 Operator's Guide*.

5.2 Procedure for changing the JP1/AJS3 Console View environment settings

This section describes how to change the JP1/AJS3 Console View environment settings.

For the JP1/AJS3 Console View environment settings that can be specified, see *14. Customizing JP1/AJS3 Console Screens* in the *Job Management Partner 1/Automatic Job Management System 3 Operator's Guide*. For the items that can be set in the dialog boxes that are displayed, see *16. JP1/AJS3 Console Screens* in the *Job Management Partner 1/Automatic Job Management System 3 Operator's Guide*.

1. From the Windows **Start** menu, choose **Programs, JP1_Automatic Job Management System 3 - View**, and then **Application monitoring**.

The Login screen appears.

2. After entering the JP1 user name and password, and the name of the JP1/AJS3 Console Manager host to which you want to connect, click the **OK** button.

The Main Scope window of JP1/AJS3 Console View appears.

3. From the **Options** menu, choose **Preferences**.

The Preferences dialog box appears.

4. Specify the necessary information, and click the **OK** button.

You can change the JP1/AJS3 Console View environment settings while you are using JP1/AJS3 Console View.

For details about when the new settings take effect, see *16.3.10 Preferences dialog box* in the *Job Management Partner 1/Automatic Job Management System 3 Operator's Guide*.

Chapter

6. Specifying Settings Based on the Usage of JP1/AJS3

This chapter describes the JP1/AJS3 detailed settings that can be specified to match the requirements for JP1/AJS3 operation.

- 6.1 Settings for controlling the scheduler
- 6.2 Settings for controlling job execution
- 6.3 Changing the settings related to event/action control
- 6.4 Changing the settings related to queueless job execution control
- 6.5 Changing the settings related to the definition pre-check function
- 6.6 Other settings

6.1 Settings for controlling the scheduler

This section describes how to change the settings for controlling the scheduler.

When you set environment setting parameters, use the `jaajs_config` command.

For details about the `jaajs_config` command, see *jaajs_config* in 2. *Commands Used during Setup* in the manual *Job Management Partner I/Automatic Job Management System 3 Command Reference 2*.

6.1.1 Settings for starting multiple scheduler services

Job groups are managed by the scheduler service. If multiple scheduler services are started, the scheduler services can be used to manage the job groups.

To start multiple scheduler services, you must first set information such as the names of the scheduler services to be added.

This subsection describes how to specify the settings for starting multiple scheduler services, and shows how to delete scheduler services that have been added.

For details about how to add scheduler services to a logical host and how to delete scheduler services from a logical host, see 8.2.7 *Setting startup of multiple scheduler services on a logical host*.

(1) Starting multiple scheduler services

To set startup of multiple scheduler services:

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service

Note:

Do not stop the JP1/AJS3 Database services. Make sure that all JP1/AJS3 `Database_JF?` (? : 1 to 9 or A to Z) services are running. If there are JP1/AJS3 `Database_JF?` services that are not running, start them.

Note that you can display all the setup identifiers of the embedded databases for which `Database_JF?` services must be started by using the `ajsembdbidlist` command.

For each setup identifier, execute the `ajsembdbstatus` command with `-s` `ust -id_JFn` (*n*: 1 to 9 or A to Z) specified to confirm that the embedded database is operating (UNIT-STAT is ONLINE). If the database is not operating, use the `ajsembdbstart` command with `-id_JFn` specified to activate it.

2. Use Explorer or another means to create the following folders:

- Database folder
- Folder for temporary files
- Job information folder
- Backup information folder

Make sure that the above folders, other than the backup information folder, are neither folders used by other scheduler services set on the local hosts (the physical host and all logical hosts) nor subfolders of those folders.

3. Execute the `jajs_setup` command to add the scheduler service to be started.

```
jajs_setup -a -F scheduler-service
-p service-for-the-port-reporting-the-job-status
-d database-folder
-t folder-for-temporary-files
-j job-information-folder
-b backup-information-folder
-n scheduler-service-identification-number
```

Example of adding a scheduler service named AJSROOT2:

```
jajs_setup -a -F AJSROOT2
-p jplajs2report2
-d "C:\Program
Files\HITACHI\JP1AJS2\database\schedule\AJSROOT2"
-t "C:\Program Files\HITACHI\JP1AJS2\tmp\schedule2"
-j "C:\Program Files\HITACHI\JP1AJS2\jobinf2"
-b "C:\Program Files\HITACHI\JP1AJS2\backup\schedule2"
-n 2
```

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

4. Open the following file with a text editor such as Notepad:

```
system-folder\system32\drivers\etc\Services
```

5. For the service name of the port that reports the job status specified in step 3, set the port number.

Example of setting 20248 as the port number:

```
jplajs2report2 20248/tcp
```

Note:

Make sure that the port number you specify does not duplicate any existing port number.

6. If you want to use queueless jobs, you must perform the setup required for using queueless jobs.

Execute the following command:

```
ajsqlsetup [-F scheduler-service-name]
```

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

7. Restart the JP1/AJS3 service.

The scheduler service is added and started with the specified settings.

After the JP1/AJS3 service has been restarted, use JP1/AJS3 - View to confirm that the manager job group is displayed with the name of the added scheduler service attached.

Supplementary note on command execution when multiple scheduler services are running:

When multiple scheduler services are running, if you execute a command without specifying a scheduler service name in the `-F` option, the default scheduler service is assumed.

You can omit the `-F` option when the name of a scheduler service name is specified in the `AJSCONF` environment variable.

(2) Deleting a scheduler service that has been added

To delete a scheduler service that has been added:

1. Stop the JP1/AJS3 services.

Stop all JP1/AJS3 services, including the JP1/AJS3 - Manager services, on logical hosts.

Note:

Do not stop JP1/AJS3 Database services. Make sure that all JP1/AJS3 Database_*JF?* (? : 1 to 9 or A to Z) services are running. If there are any JP1/AJS3 Database_*JF?* services that are not running, start them.

Note that you can display all the setup identifiers of the embedded databases for which Database_*JF?* services must be started by using the `ajsembdbidlist` command.

For each setup identifier, execute the `ajsembdbstatus` command with `-s ust -id _JFn` (*n*: 1 to 9 or A to Z) specified to confirm that the embedded database is operating (UNIT-STAT is ONLINE). If the database is not operating, use the `ajsembdbstart` command with `-id _JFn` specified to activate it.

2. Execute the following `jajs_setup` command to delete the scheduler service.

```
jajs_setup -e -F scheduler-service-name
```

Example of deleting the AJSROOT2 scheduler service:

```
jajs_setup -e -F AJSROOT2
```

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

3. Delete the folder that was created when the scheduler service was added.

Delete the following folders that were created when you executed the `jajs_setup` command:

- Database folder specified in the `-d` option
- Folder for temporary files specified in the `-t` option
- Job information folder specified in the `-j` option
- Backup information folder specified in the `-b` option

(3) Uninstalling an unnecessary database environment

To uninstall a database environment that is no longer necessary:

1. Execute the `ajsembdbidlist` command to identify the embedded databases that are not being used by any scheduler services.

Execute the following command:

```
ajsembdbidlist
```

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*.

2. Execute the `ajsembdbuninstl` command to uninstall an embedded database that is not being used by any scheduler services.

Execute the following command:

```
ajsembdbuninstl -id setup-identifier
```

When uninstalling an embedded database environment associated with version 8 or earlier, follow the uninstallation procedure described in the manual for that product version.

When uninstalling such an embedded database environment in UNIX, execute the `ajsembdbunset` command, and then the following command:

```
/opt/HiRDB_J/bin/pdesetup -u embedded-database-practical-directory
```

The embedded databases listed below contain information necessary for the system. Do not specify the setup identifiers of these databases in the `-id` option.

- Embedded database whose setup identifier is `_JF0`
- The embedded database set up first on the host when the setup identifier has been changed to a setup identifier other than `_JF0` by performing any of the following operations: (1) migrating data needed for advanced setup of the embedded database, (2) advanced setup of the embedded database, or (3) performing setup again for the embedded database
- An embedded database set up with the setup identifier specified in the `-I` option of the `jajs_setup_cluster` command in an environment in which logical hosts have been created

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

6.1.2 Changing the level of messages output from scheduler services to the integrated trace log

You can specify the level of messages output from scheduler services to the integrated trace log. The specification procedure is as follows.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied to the configuration definition.

(2) Environment setting parameter

Table 6-1: Environment setting parameter used to change the level of messages output from scheduler services to the integrated trace log

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1AJSMANAGER\ <i>scheduler-service</i>] [#]	"HNTRLOGLEVEL"=	Specifies the level of messages to be output to the integrated trace log.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.2(51) *HNTRLOGLEVEL* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

6.1.3 Changing the method for outputting the schedule rule when outputting nested-jobnet definition parameters

You can specify that a jobnet's schedule rule be enabled so that the jobnet does not depend on the upper-level jobnet's schedule. Alternatively, you can specify that a jobnet's schedule rule be deleted so that the jobnet depends on the upper-level jobnet's

schedule.

This option is effective when `ajsprint`, `ajsbackup`, or `ajsexport` command is executed or a backup operation is performed from JP1/AJS3 - View for a nested jobnet created by copying a root jobnet that has a schedule rule.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied to the configuration definition.

(2) Environment setting parameter

Table 6-2: Environment setting parameter used to change the method for outputting the schedule rule when outputting nested-jobnet definition parameters

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1AJSMANAGER\scheduler-service]#	"AJSPRINTNETSCHPRF"=	Specifies how the schedule rule of a nested jobnet is treated.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.2(74) *AJSPRINTNETSCHPRF* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

6.1.4 Changing the name of a scheduler trace log file

The default trace log file name for the scheduler service is as follows:

In Windows Server 2008:

```
%ALLUSERSPROFILE%\HITACHI\JP1\JP1_DEFAULT\JP1AJS2\log\trace  
log (The default %ALLUSERSPROFILE% value is system-drive\ProgramData.)
```


In Windows Server 2003:

JP1/AJS3-Manager-installation-folder\log\tracelog

You can change the name of a scheduler trace log file by using the following procedure.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied to the configuration definition.

(2) Environment setting parameter

Table 6-3: Environment setting parameter used to change the name of a scheduler trace log file

Definition key	Environment setting parameter	Explanation
[JP1_DEFAULT\JP1AJSMANAGER]	"TRACELOGFILE"=#	Specifies the name of a scheduler trace log file.

#:

The scheduler trace information for the physical host and all logical hosts is recorded in the file specified by this parameter. To ensure that the trace information is recorded, always specify the name of a file on a local disk.

Note that the specified file is created when trace information is output. Do not specify the name of an existing file.

For details about the definition of this environment setting parameter, see 2.2(3) *TRACELOGFILE* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

6.1.5 Enabling the suspension function

When you edit the definition of a subunit of a root jobnet during registration for execution, you need to enable the suspension function so that the root jobnet can be

suspended.

Initially, the suspension function of JP1/AJS3 is disabled. Use the `ajssetup` command to enable it.

To enable the suspension function:

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set up the environment for using the suspension function.

```
ajssetup [-F scheduler-service-name] -m
```

For details about the syntax of the `ajssetup` command and notes on the command, see *ajssetup* in 2. *Commands Used during Setup* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

3. Restart the JP1/AJS3 service.

For details about changing the definition of a subunit of a root jobnet during registration for execution, see 4.5.15 *Changing job and jobnet definitions without unregistering the jobnet* in the manual *Job Management Partner 1/Automatic Job Management System 3 Overview*.

6.1.6 Changing the mode in which unregistration or generation management deletes the generations of a jobnet

The number of generations to be saved for a root jobnet or root remote jobnet can be set to a value from 1 to 99 (the maximum can be increased to 999). However, if an attempt is made to unregister the execution of a jobnet that satisfies either of the following conditions, the unregistration processing takes a long time:

- Jobnet whose number of generations to be saved is 30 or more
- Jobnet for which the number of generations to be saved is 10 or more and a start condition (`LEGACY` is set for the `SAVEGENTYPE` environment setting parameter) is used

If processing to unregister the execution of a jobnet takes a long time, the status of the start-condition monitoring of other jobnets might become *Monitor terminated* or execution of the jobnet might fail.

These problems occur because the unregistration mode set in the scheduler service is *synchronous*. If the unregistration mode is *synchronous*, the time required to cancel registration depends on the number of generations to be deleted. If there are many

generations for which execution needs to be unregistered, a long time is required, with adverse effects on the execution of other jobnets.

To prevent these problems, change the unregistration mode to *asynchronous*. Note that the procedure for changing the unregistration mode to *asynchronous* differs depending on whether the registration information for the jobnet being executed before the mode is changed is necessary.

We recommend that you set the unregistration mode to *asynchronous* after evaluating the time required to unregister execution. Note that the registration information for the jobnet being executed before the mode is changed is deleted.

When JP1/AJS3 is initially installed and set up, the unregistration mode is set to *asynchronous*. However, if JP1/AJS3 is installed as an upgrade installation, the unregistration mode might be set to *synchronous*.

Before you change the unregistration mode of a scheduler service, make sure that the scheduler service is not running.

Use the procedures below to change the unregistration mode of a scheduler service.

(1) Procedure for changing the unregistration mode from synchronous to asynchronous

(a) When the registration information for the jobnet that was being executed is not necessary

To change the unregistration mode from synchronous to asynchronous when the registration information for the jobnet that was being executed is not necessary:

1. Execute the following command to stop the scheduler service:

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

Example:

When the scheduler service is AJSROOT1, execute the command as follows:

```
jajs_spmd_stop -n jajs_schd -F AJSROOT1
```

2. Execute the following command:

```
jajs_config -k
[ {JP1_DEFAULT|logical-host} \JP1AJSMANAGER\scheduler-service ]
"BACKGROUNDLEAVE"="yes"
```

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

Example:

When the scheduler service is AJSROOT1 on the JP1_DEFAULT physical host, execute the command as follows:

```
jajs_config -k [JP1_DEFAULT\JP1AJSMANAGER\AJSROOT1]
"BACKGROUNDLEAVE"="yes"
```

3. Execute the following command to cold-start the scheduler service:

```
jajs_spmc -n jajs_schd -F scheduler-service -cold
```

Example:

When the scheduler service is AJSROOT1, execute the command as follows:

```
jajs_spmc -n jajs_schd -F AJSROOT1 -cold
```

(b) When registration information for the jobnet that was being executed is necessary

To change the unregistration mode from synchronous to asynchronous when the registration information for the jobnet that was being executed is necessary:

1. Execute the following command to stop the scheduler service:

```
jajs_spmc_stop -n jajs_schd -F scheduler-service
```

Example:

When the scheduler service is AJSROOT1, execute the command as follows:

```
jajs_spmc_stop -n jajs_schd -F AJSROOT1
```

2. Execute the following command:

```
jajs_config -k
[ {JP1_DEFAULT|logical-host} \JP1AJSMANAGER\scheduler-service ]
"BACKGROUNDLEAVE"="yes"
```

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

Example:

When the scheduler service is AJSROOT1 on the JP1_DEFAULT physical host,

execute the command as follows:

```
jajs_config -k [JP1_DEFAULT\JP1AJSMANAGER\AJSROOT1]
"BACKGROUNDLEAVE"="yes"
```

3. Convert the information about registration for execution to asynchronous type.

Execute the following command:

```
JP1/AJS3-installation-folder\tools\ajsregcnv -F scheduler-service
```

Example:

When the scheduler service is AJSROOT1, execute the command as follows:

```
JP1/AJS3-installation-folder\tools\ajsregcnv -F AJSROOT1
```

4. Execute the following command to start the scheduler service:

```
jajs_spmd -n jajs_schd -F scheduler-service
```

Example:

When the scheduler service is AJSROOT1, execute the command as follows:

```
jajs_spmd -n jajs_schd -F AJSROOT1
```

(2) Procedure for changing the unregistration mode from asynchronous to synchronous

To change the unregistration mode from asynchronous to synchronous:

1. Execute the following command to stop the scheduler service:

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

Example:

When the scheduler service is AJSROOT1, execute the command as follows:

```
jajs_spmd_stop -n jajs_schd -F AJSROOT1
```

2. Execute the following command:

```
jajs_config -k
[ {JP1_DEFAULT|logical-host} \JP1AJSMANAGER\scheduler-service ]
"BACKGROUNDLEAVE"="no"
```

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

Example:

When the scheduler service is AJSROOT1 on the JP1_DEFAULT physical host, execute the command as follows:

```
jajs_config -k [JP1_DEFAULT\JP1AJSMANAGER\AJSROOT1]
"BACKGROUNDLEAVE"="no"
```

3. Execute the following command to cold-start the scheduler service:

```
jajs_spmd -n jajs_schd -F scheduler-service -cold
```

Example:

When the scheduler service is AJSROOT1, execute the command as follows:

```
jajs_spmd -n jajs_schd -F AJSROOT1 -cold
```

6.2 Settings for controlling job execution

This section describes how to change the settings for controlling job execution.

When you set environment setting parameters, use the `jajs_config` command.

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*.

6.2.1 Defining variables for work paths used during job execution

You can define variables for the work paths of the following items that are displayed in the Define Details dialog box for a PC, UNIX, or a queue job. Because specific values can be set for these variables for each agent host, the same job definition can be used to execute a job on all agent hosts.

Table 6-4: List of job definition items for which variables can be defined

Job definition item	Whether variable can be defined
Command statement (UNIX only)	Y
File name (Windows only)	Y
Script file name (UNIX only) [#]	Y
Parameters	Y
Environment variables	--
Environment file	--
Working path	--
Standard input	Y
Standard output	Y
Standard error output	Y
File to transfer	--
Destination file	--

Legend:

Y: A variable can be defined for this item.

--: A variable cannot be defined for this item.

#:

The variables discussed in this subsection have no effect in a script file.

The following describes how to define variables for the work paths used during job execution.

(1) Definition procedure

To define a variable for a job definition item:

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following services:
 - JP1/AJS3 service
 - JP1/AJS3 Queueless Agent service[#]

#:

This service needs to be stopped only if queueless jobs are used.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart the services that you stopped in step 1.

The new settings are applied.

(2) Environment setting parameter

Table 6-5: Environment setting parameter used to define a variable for a work path

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1NBQAGENT\Variable] [#]	" <i>variable-name</i> "=	Specifies the work path for a variable name.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.3(72) *variable-name* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

(3) Definition example

The following shows an example of specifying the job definition and commands when the `prog1.exe` job program is in `c:\pp1\bin` on the `Agent1` host and in `d:\pp1\bin` on the `Agent2` host.

- Job definition

```
file-name=$pp1_inst$\prog1.exe
```

- Command to be executed on the `Agent1` host

```
jajs_config -k
[ {JP1_DEFAULT|logical-host} \JP1NBQAGENT\Variable]
"pp1_inst"="c:\pp1\bin"
```

The specification of the `{JP1_DEFAULT|logical-host}` part depends on whether the host is a physical host or a logical host. For a physical host, specify `JP1_DEFAULT`. For a logical host, specify the logical host name.

- Command to be executed on the `Agent2` host

```
jajs_config -k
[ {JP1_DEFAULT|logical-host} \JP1NBQAGENT\Variable]
"pp1_inst"="d:\pp1\bin"
```

The specification of the `{JP1_DEFAULT|logical-host}` part depends on whether the host is a physical host or a logical host. For a physical host, specify `JP1_DEFAULT`. For a logical host, specify the logical host name.

With the above definition and commands, `c:\pp1\bin\prog1.exe` is executed on the `Agent1` host and `d:\pp1\bin\prog1.exe` is executed on the `Agent2` host.

(4) Note

Do not use a character string that begins with `JP1`, a character string that begins with `JP1` is used by the system.

6.2.2 Defining search paths for a file to be transferred

When you have defined search paths for a file that is to be transferred, the location of the file can also be resolved from a relative path.

This subsection describes how to define a search path.

(1) Definition procedure

To define a search path:

6. Specifying Settings Based on the Usage of JP1/AJS3

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following services:

- JP1/AJS3 service
- JP1/AJS3 Queueless File Transfer service[#]

#:

This service needs to be stopped only if queueless jobs are used.

2. Execute the following command to set the environment setting parameters described in (2) below:

```
jajs_config -k definition-key "parameter-name-1"=value-1
["parameter-name-2"=value-2]
```

3. Restart the services that you stopped in step 1.

The new settings are applied.

(2) Environment setting parameters

Table 6-6: Environment setting parameters used to define the search path for a file that is to be transferred

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT logical-host} \JP1NBQCLIENT\PathEnv] [#]	"All Users"=	Specifies the search path for the file to be transferred.
	"JP1-user-name"=	Specifies the search path for the file to be transferred.

#:

The specification of the {JP1_DEFAULT | logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see the following:

- 2.3(73) All Users in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.3(74) JP1-user-name in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

(3) Definition example

Conditions:

Name of the JP1 user that will execute the job: `user1`

Search paths for `user1` only: `\home\user1\trans1` and
`\home\user1\trans2`

Search paths common to all JP1 users: `\tmp` and `\usr\tmp`

Name of the file to be transferred: `\home\user1\trans1\TransFile1`

Definition example:

- Definition of the file to be transferred in the job

Name of the file to be transferred: `TransFile1`

- Definition of the search paths on the host sending the submit request

```
jajs_config -k
[ {JP1_DEFAULT|logical-host}\JP1AJSMANAGER\SCHEDULER\schedule
r-service\QUEUE\CLIENT\PathEnv]
"user1"="\home\user1\trans1::\home\user1\trans2"
"All Users"="\tmp::\usr\tmp"
```

The specification of the `{JP1_DEFAULT|logical-host}` part depends on whether the host is a physical host or a logical host. For a physical host, specify `JP1_DEFAULT`. For a logical host, specify the logical host name.

When these settings are specified, on the host that sends a submit request, `\home\user1\trans1\TransFile1` is set as the file to be transferred.

6.2.3 Customizing the execution agent or agent attribute values created by the automatic agent definition function

You can customize the execution agent or agent attribute values created by the automatic agent definition function in advance by using the common definition information.

The applicable objects and job types differ according to the definition key.

Table 6-7: Objects and job types to which customization is applicable

No.	Definition key	Object	Job type
1	[{JP1_DEFAULT <i>logical-host</i> }\JP1AJS2\SCHEDULER\QUEUE\MANAGER\Agent]#	All execution agents	<ul style="list-style-type: none"> • PC job • Unix job • Action job
2	[{JP1_DEFAULT <i>logical-host</i> }\JP1AJSMANAGER\scheduler-service\QUEUE\MANAGER\Agent]#	Execution agent for the scheduler service specified by the definition key	<ul style="list-style-type: none"> • PC job • Unix job • Action job
3	[{JP1_DEFAULT <i>logical-host</i> }\JP1NBQMANAGER\Agent]#	All agents and default queue	<ul style="list-style-type: none"> • Submit job

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

To customize the execution agent or agent attribute values created by the automatic agent definition function can be customized by using the common definition information, execute the `jajs_config` command.

The following describes the customization procedure.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameters described in (2) below:

```
jajs_config -k definition-key "parameter-name-1"=value-1
[ "parameter-name-2"=value-2 ]
[ "parameter-name-3"=value-3 ]
[ "parameter-name-4"=value-4 ]
```

3. Restart JP1/AJS3.
The new settings are applied.

(2) Environment setting parameters*Table 6-8: Environment setting parameters used to customize the attribute values set by the automatic agent definition function*

Definition key	Environment setting parameter	Applicable manager	Explanation
<ul style="list-style-type: none"> • For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \ JP1AJS2 \ SCHEDULER \ QUEUE \ MANAGER \ Agent] # • For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i> } \ JP1AJSMANAGER \ <i>scheduler-service</i> \ QUEUE \ MANAGER \ Agent] # • For submit jobs and a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i> } \ JP1NBQMANAGER \ Agent] # 	"AutoCreateExecJobs " =	C, S	Specifies the maximum number of concurrently executable jobs set by the automatic agent definition function.
	"AutoCreateMaxJobs" =	C	Specifies the maximum number of jobs set by the automatic agent definition function.
	"AutoCreateWarnJobs " =	C	Specifies the number of jobs set by the automatic agent definition function as the threshold value for warning.
	"AutoCreatePriority " =	C	Specifies the agent priority set by the automatic agent definition function

Legend:

C: Job execution control manager for submit jobs and a compatible ISAM configuration

S: Job execution control manager for scheduler services

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see the following:

- 2.3(30) *AutoCreateExecJobs* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.3(31) *AutoCreateMaxJobs* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.3(32) *AutoCreateWarnJobs* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

- 2.3(33) *AutoCreatePriority* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

6.2.4 Checking the messages output at the same time by a job to the standard output and standard error output

The messages displayed in the Execution Result Details dialog box of JP1/AJS3 - View are the messages output by a job to the standard error output. If you also want to check the messages output at the same time by the job to the standard output in this dialog box, the following setting is necessary.

- For PC and Unix jobs

Specify the same file name in both the **Standard output** and **Standard error** text boxes in the Define Details - PC Job dialog box or the Define Details - [UNIX Job] dialog box.

Cautionary notes:

- If you specify the same file name for both the **Standard output** and **Standard error** text boxes, make sure that the same option is also selected for their **Append** check boxes. If you execute a job when check box for one selected and check box for the other cleared, the following message will be output to the integrated trace log and the status of the job will be *Failed to start*.
 - When **Standard** is specified as **Exec. Service** of the job
KAVU0201-E *function-name*: The parameter is specified incorrectly.
 - When **Queueless Agent** is specified as **Exec. Service** of the job (when the job is a queueless job)
KAVS1846-E The job definition (*job-name*) is invalid.
- If you execute a queueless job with the same file name specified for both **Standard output** and **Standard error**, the messages that are output to the standard output and the standard error output are first saved in a temporary file. The specified file is not updated until execution of the job is completed.

6.2.5 Changing the interval and number of resend attempts for job result files

When a job being executed on an agent host has ended, the agent host transfers job result files to the manager host, and if the files are transferred successfully, reports termination to the manager host. However, if the transfer fails, the agent host normally retries the transfer at five-minute intervals until the termination status is reported to the manager host. However, if the files are large, analysis of the files burdens the manager host. Normally, if the manager host does not respond within ten minutes of transferring

the job result files to the agent host, the agent host assumes a timeout error and tries to send the files again. Repeated resend attempts, however, will cause the manager host to repeatedly perform file analysis, a burden that causes CPU usage to soar. At this point, the manager might no longer be able to accept any other requests.

You can reduce the load on the manager host by changing the interval and the number of resend attempts applied when the transfer of job result files fails.

The following describes how to change the interval and number of resend attempts for job result files.

Note that the procedure described below is not necessary if you use the queueless job execution facility, because the facility does not resend job result files.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameters described in (2) below:

```
jajs_config -k definition-key "parameter-name-1"=value-1
["parameter-name-2"=value-2]
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameters

Table 6-9: Environment setting parameters used to change the interval and number of resend attempts for job result files

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> } \JP1NBQAGENT\Network] #	"NotifyJobStateInterval" =	Specifies the interval for attempts to resend job result files.
	"NotifyJobStateCount" =	Specifies the maximum number of resend attempts for job result files.

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see the following:

- 2.3(65) *NotifyJobStateInterval* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.3(66) *NotifyJobStateCount* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

6.2.6 Preventing duplicated reception of job result files

When a standard job or action job being executed on an agent host has ended, the agent host transfers job result files (standard output and standard error output files) to the manager host. Normally, when the agent host has transferred the files, it waits 10 minutes for a response from the manager host. However, if the files are large, file analysis on the manager host takes time, and the wait for a response from the manager host times out. If a timeout occurs, the agent host tries to resend the files until they are transferred successfully. Repeated resend attempts, however, will cause the manager host to repeatedly perform file analysis, a burden that causes CPU usage to soar. At this point, the manager might no longer be able to accept any other requests.

You can use an environment setting parameter to prevent the manager host from receiving job result files resent by agent hosts, thereby reducing the load on the manager. Although the setting for enabling the resending of job result files can also be specified on the agent host side, using that setting is not suitable for a large-scale configuration that includes many agent hosts. This is because the setting must be specified on each agent host. For details about how to specify the setting on the agent host side, see also 6.2.5 *Changing the interval and number of resend attempts for job result files*.

The environment setting parameter described in this subsection allows you to stop all agent hosts from resending job result files by simply changing the definition on the manager host.

The following describes how to prevent the duplicated reception of job result files.

Note that the procedure described below is not necessary if you use the queueless job execution facility, because the facility does not resend job result files.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```


3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter

Table 6-10: Environment setting parameter used to prevent duplicated reception of job result files

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> • For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2\SCHEDULER\QUEUE \MANAGER\Job] # • For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i> } \JP1AJSMANAGER\scheduler-se vice\QUEUE\MANAGER\Job] # • For submit jobs and a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i> } \JP1NBQMANAGER\Job] # 	"ReceiveFileOption"=	Specifies whether to prevent duplicated reception of job result files.

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.3(16) *ReceiveFileOption* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

6.2.7 Placing restrictions on file reception

When a job[#] has been executed in JP1/AJS3, result files (standard output and standard error output files) and transfer files are transferred between the manager and agent hosts, or between the client and manager hosts. If the size of these files exceeds a few megabytes, data analysis and transfer of the files places a burden on the manager host. As a result, CPU and memory usage increases, and other problems that delay job execution and degrade overall system performance can occur.

#:

No files are transferred when the job is a queue job, event job, or queueless job.

The restrictions on file reception described in this subsection allow you to set the

maximum size for these types of files that are transferred after a job is executed. You can set maximums for the total size of result files (standard output and standard error output files) received by the manager host and for the total size of transfer files received by an agent host.

The restrictions on file reception also allow you to specify the status in which the job will be placed and the message that will be output if the size of the received files exceeds the maximum.

The following table describes the type of operation that is performed and how file data is handled when the size of received files exceeds the maximum.

Table 6-11: Type of operation performed and how file data handled if the size of received files exceeds the maximum

File type	Category	Value of the ReceiveFileSizeStatus environment setting parameter			
		0	1	2	3
Result file	Status in which job is placed	Actual termination status of the job	Ended abnormally	Ended with warning [#]	Actual termination status of the job
	Type of message output	Information	Error	Warning	Information
	Handling of file data	All file data is received.	File data exceeding the maximum is discarded.	File data exceeding the maximum is discarded.	File data exceeding the maximum is discarded.
Transfer file	Status in which job is placed	Actual termination status of the job	Failed to start	Failed to start	Actual termination status of the job
	Type of message output	Information	Error	Error	Information
	Handling of file data	All file data is received.	No file data is received.	No file data is received.	No file data is received.

#:

If status of the job is *Ended abnormally* on the agent host, that status is inherited.

(1) Definition procedure

1. Execute the following command to set the environment setting parameters

described in (2) below:

```
jajs_config -k definition-key "parameter-name-1"=value-1
[ "parameter-name-2"=value-2]
```

2. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameters

Table 6-12: Environment setting parameter used to place restrictions on file reception

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT <i>logical-host</i>} \JP1AJS2\SCHEDULER\QUEUE \MANAGER\Job] # For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i>} \JP1AJSMANAGER\scheduler-service\QUEUE\MANAGER\Job] # For submit jobs and a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i>} \JP1NBQMANAGER\Job] # 	"ReceiveFileSizeStatus"=	Specifies the restrictions applied if the size of received files reaches the maximum.
	"LimitReceiveFileSize"=	Specifies the maximum for the size of received files.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see the following:

- 2.3(14) *ReceiveFileSizeStatus* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.3(15) *LimitReceiveFileSize* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

(3) Operation performed if the size of received files exceeds the maximum

The following describes the operation performed if the size of received files exceeds the maximum.

- Result files
 - If the maximum is reached when the value of the `ReceiveFileSizeStatus` environment setting parameter is 1, 2, or 3, no more data is output to the standard output and standard error output files on the manager host. Because the result files are not complete, confirm that the incomplete result files will not cause any problems in cases such as when a succeeding job references these files.
 - For the return code and end status of a job when the size of received result files reaches the maximum, see the following table.

Table 6-13: End status and return code when the size of received result files exceeds the maximum

Actual job status	Category	Value of the <code>ReceiveFileSizeStatus</code> environment setting parameter		
		1	2	0 or 3
Ended normally (Includes cases when <i>Always normal</i> is specified.)	Status	Ended abnormally	Ended with warning	Ended normally
	Return code	Return value of the job#	Return value of the job#	Return value of the job#
Ended with warning	Status	Ended abnormally	Ended with warning	Ended with warning
	Return code	Return value of the job#	Return value of the job#	Return value of the job#
Ended abnormally	Status	Ended abnormally	Ended abnormally	Ended abnormally
	Return code	Return value of the job#	Return value of the job#	Return value of the job#
Killed	Status	Killed	Killed	Killed
	Return code	PC job: -1 Unix job: 255	PC job: -1 Unix job: 255	PC job: -1 Unix job: 255
Failed to start	Status	Failed to start	Failed to start	Failed to start

#:

Return code of the job process executed as a job

- Transfer files
 - If the maximum is reached when the value of the

ReceiveFileSizeStatus environment setting parameter is 1, 2, or 3, none of the transfer files are received, and all the data received as the specified transferred files is discarded.

- For the return code and end status of a job when the size of received transfer files reaches the maximum, see the following table.

Table 6-14: End status and return code when the size of received transfer files exceeds the maximum

Actual job status	Category	Value of the ReceiveFileSizeStatus environment setting parameter		
		1	2	0 or 3
None ^{#1}	Status	Failed to start	Failed to start	Actual job termination status
	Return code	PC job: -1 Unix job: -1	PC job: -1 Unix job: -1	Return value of the job ^{#2}

#1:

Because transfer files are processed before a job is registered, the status of the job is *None*, which is the status of a job before its status becomes *Now queuing*.

#2:

Return code of the job process executed as a job

6.2.8 Changing the interval and number of retry attempts when a TCP/IP connection error occurs

As job execution control, TCP/IP is used to pass information between the processes for registering and delivering jobs, reporting and checking the job status, and checking the agent host status. However, if the host to be connected to is not running or if a network error has occurred, TCP/IP connection fails.

If the other host does not respond to a TCP/IP connection request, job execution control first waits for a maximum of 90 seconds for a response, and then makes two retry attempts at 20-second intervals (under the default settings). If both attempts fail, four or five minutes might pass before the connection finally resulted in an error.

If a communication error occurs during processing that registers or delivers a job, reports or checks the job status, or checks the agent host status, detection of the error might be delayed. This delay might result in a further delay in changing the job status.

If TCP/IP connection errors are frequent, you can set smaller values for the connection timeout value, the number of retry attempts, and the retry interval to speed up the detection of an error.

For details about changing the settings for delivering jobs to agent hosts, checking the job status, and checking the agent host status on the manager side, see *2.6 Setting up the communication control environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

Notes on communication errors caused by insufficient socket ports

When a system has a large number of jobs to execute per unit of time, the number of socket ports used for TCP/IP communication increases. This can result in insufficient socket ports being available. For communication errors that result from insufficient socket ports, the system retries communication at regular intervals. However, failure to resolve the situation by the time communication is retried may cause delays in job execution, or result in the abnormal termination of jobs, scheduler services, and commands.

If you encounter an error related to insufficient socket ports, refer to *3.1.1(5) OS tuning* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide* and adjust the operating system parameters as needed.

The retry behaviour of JP1/AJS3 in the event of a communication error related to insufficient socket ports depends on your operating system.

- In Windows Server 2003

The environment setting parameters (for communication control) listed in *Table 6-16* and *2.6 Setting up the communication control environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2* do not apply in the event of a communication error related to insufficient socket ports. Consequently, you cannot change the retry interval or the number of retry attempts for such an error. The system attempts 48 retries at 20-second intervals (a total of 960 seconds) to check whether socket ports have become available.

- In operating systems other than Windows Server 2003

The environment setting parameters (for communication control) listed in *Table 6-16* and *2.6 Setting up the communication control environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2* apply when a communication error related to insufficient socket ports occurs.

The following table lists the definition keys for which values are to be changed, and their purpose.

Table 6-15: Definition keys for which values are to be changed

Definition key	Purpose
<ul style="list-style-type: none"> For all scheduler services JP1AJS2\SCHEDULER\QUEUE\MANAGER\Network For a specific scheduler service JP1AJSMANAGER\scheduler-service\QUEUE\MANAGER\Network For submit jobs and a compatible ISAM configuration JP1NBQMANAGER\Network 	Reporting the job status
JP1NBQAGENT\Network	Reporting the job status
JP1NBQCLIENT\Network	Registering a job from the scheduler and executing a job from a command
<ul style="list-style-type: none"> For all scheduler services JP1AJS2\SCHEDULER\QUEUE\notify\Network For a specific scheduler service JP1AJSMANAGER\scheduler-service\QUEUE\notify\Network For submit jobs and a compatible ISAM configuration JP1NBQNOTIFY\Network 	Checking the job status on another system (such as JP1/NQSEEXEC or JP1/OJE) and reporting the status

The following describes how to set the connection timeout value, retry interval, and number of retry attempts in job execution control.

Note that the procedure described below is not necessary if the queueless job execution facility is used.

(1) Definition procedure

- In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
- Execute the following command to set the environment setting parameters described in (2) below:

```
jajs_config -k definition-key "parameter-name-1"=value-1
["parameter-name-2"=value-2]
["parameter-name-3"=value-3]
```

You can specify only one definition key. If you want to set environment setting parameters for different definition keys, you must execute the `jajs_config` command for each definition key.

- Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameters

Table 6-16: Environment setting parameters for job execution control

No.	Definition key	Environment setting parameter	Explanation
1	<ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2\SCHEDULER\QUEUE\MANAGER\Network] # 	"ConnectTimeout" =	Defines the timeout value (in milliseconds) for a TCP/IP connection attempted by the job execution control manager.
2	<ul style="list-style-type: none"> For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i> } \JP1AJSMANAGER\scheduler-service\QUEUE\MANAGER\Network] # 	"CommunicateRetryCount" =	Defines the maximum number of retry attempts for a TCP/IP connection attempted by the job execution control manager.
3	<ul style="list-style-type: none"> For submit jobs and a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i> } \JP1NBQMANAGER\Network] # 	"CommunicateRetryInterval" =	Defines the retry interval (in seconds) for a TCP/IP connection attempted by the job execution control manager.
4	[{JP1_DEFAULT <i>logical-host</i> } \JP1NBQAGENT\Network] #	"ConnectTimeout" =	Defines the timeout value (in milliseconds) for a TCP/IP connection attempted by the job execution control agent.
5		"CommunicateRetryCount" =	Defines the maximum number of retry attempts for a TCP/IP connection attempted by the job execution control agent.
6		"CommunicateRetryInterval" =	Defines the retry interval (in seconds) for a TCP/IP connection attempted by the job execution control agent.

No.	Definition key	Environment setting parameter	Explanation
7	[{JP1_DEFAULT <i>logical-host</i> } \ JP1NBQCLIENT\Network] #	"ConnectTimeout" =	Defines the timeout value (in milliseconds) for a TCP/IP connection attempted by job execution commands and the scheduler.
8		"CommunicateRetryCount" =	Defines the maximum number of retry attempts for a TCP/IP connection attempted by job execution commands and the scheduler.
9		"CommunicateRetryInterval" =	Defines the retry interval (in seconds) for a TCP/IP connection attempted by job execution commands and the scheduler.
10	<ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT <i>logical-host</i>} \ JP1AJS2\SCHEDULER\QUEUE\NOTIFY\Network] # For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i>} \ JP1AJSMANAGER\scheduler-service\QUEUE\NOTIFY\Network] # For submit jobs and a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i>} \ JP1NBQNOTIFY\Network] # 	"ConnectTimeout" =	Defines the timeout value (in milliseconds) for a TCP/IP connection attempted by the process that reports the job execution control status.
11		"CommunicateRetryCount" =	Defines the maximum number of retry attempts for a TCP/IP connection attempted by the process that reports the job execution control status.
12		"CommunicateRetryInterval" =	Defines the retry interval (in seconds) for a TCP/IP connection attempted by the process that reports the job execution control status.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see the following:

- 2.3(24) *ConnectTimeout* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.3(25) *CommunicateRetryCount* in the *Job Management Partner 1/Automatic*

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3. *2.3(26) CommunicateRetryInterval in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
4. *2.3(67) ConnectTimeout in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
5. *2.3(68) CommunicateRetryCount in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
6. *2.3(69) CommunicateRetryInterval in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
7. *2.3(75) ConnectTimeout in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
8. *2.3(76) CommunicateRetryCount in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
9. *2.3(77) CommunicateRetryInterval in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
10. *2.3(81) ConnectTimeout in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
11. *2.3(82) CommunicateRetryCount in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
12. *2.3(83) CommunicateRetryInterval in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

6.2.9 Setting the method for determining the agent host to which a job will be delivered

When there are execution agents that have the same priority and agent usage rate, by default, a job (a PC, UNIX, action, or custom job other than a queueless job) is delivered to the agent with the highest agent ID[#].

In this situation, if several jobs requiring little processing time are executed, because the agent usage rate does not increase soon, the difference in the agent usage rate with other execution agents also does not increase soon. As a result, jobs tend to be delivered to execution agents whose agent ID is high, causing a bias in system use.

To counteract this bias and balance the job distribution load, you can use a method that selects the least recently used agent, instead of the method that selects the agent with the highest agent ID.

#:

An agent ID is internally assigned in ascending order to each execution agent in the order the execution agents are registered. A list of execution agents displayed

by the `ajsagtshow` command is sorted in ascending order by agent ID.

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

The following describes how to set the method for determining the agent host to which a job will be delivered.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter

Table 6-17: Environment setting parameter used to set the method for determining the agent host to which a job will be delivered

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> • For all scheduler services [{JP1_DEFAULT <i>logical-host</i>} \JP1AJ S2\SCHEDULER\QUEUE\MANAGER\Agent]# • For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i>} \JP1AJ SMANAGER\<i>scheduler-service</i>\QUEUE\MANAGER\Agent]# 	"LeastRecentlyUsed"=	Defines a method for determining the agent host to which a job will be delivered.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.3(34) *LeastRecentlyUsed* in the *Job Management Partner 1/Automatic Job Management*

*System 3 Configuration Guide 2.***6.2.10 Setting the action to be taken if the value of a macro variable cannot be passed**

If the value of a macro variable cannot be passed to a job in a jobnet being executed, you can take either of two actions for the jobnet. One is to place the jobnet in *Failed to start* status, and the other is to continue execution by using the variable name as a string value.

The following describes how to set the action to be taken if the value of a macro variable cannot be passed when execution of a jobnet is attempted.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter

Table 6-18: Environment setting parameter used to set the action to be taken if the value of a macro variable cannot be passed

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1AJS2COMMON]#	"MACROCHANGEFAIL"=	Defines the action to be taken if the value of a macro variable specified in an event job or specified during registration for execution cannot be passed.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.9(3) *MACROCHANGEFAIL* in the *Job Management Partner 1/Automatic Job*

*Management System 3 Configuration Guide 2.***6.2.11 Setting the handling of a macro variable when the value is a NULL string**

The value of a macro variable can be used as event information received by an event job. For details about macro variables, see *4.1.2 Specifying macro variable values during registration for execution* in the manual *Job Management Partner 1/Automatic Job Management System 3 Overview*. For examples of defining macro variables in event jobs, *2.4.4(6) Passing information received by an event job* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Work Tasks) Guide*.

If the information inherited as a macro variable is a NULL string and only the macro variable is specified without any prefixed or suffixed characters, you can select either of the following methods handling the macro variable:

- The macro variable name itself is used as a string value (default)
- The macro variable name is replaced with a NULL string

These methods for handling a macro variable whose value is a NULL string are described below with the use of examples.

When the macro variable name itself is used as a string value:

- When no characters are prefixed or suffixed to the macro variable:

[?AJS2xxxxxxxxxx?] → [?AJS2xxxxxxxxxx?]

- When characters are prefixed or suffixed to the macro variable:

[aaa?AJS2xxxxxxxxxx?bbb] → [aaabbb]

[ccc?AJS2xxxxxxxxxx?] → [ccc]

[?AJS2xxxxxxxxxx?ddd] → [ddd]

When the macro variable name is replaced with a NULL string:

- When no characters are prefixed or suffixed to the macro variable:

[?AJS2xxxxxxxxxx?] → []

- When characters are prefixed or suffixed to the macro variable:

[aaa?AJS2xxxxxxxxxx?bbb] → [aaabbb]

[ccc?AJS2xxxxxxxxxx?] → [ccc]

[?AJS2xxxxxxxxxx?ddd] → [ddd]

The setting described in this subsection applies to jobs for which **Standard** is specified for **Exec. Service**. If **Queueless Agent** is specified, the macro variable name is always replaced with a NULL string. Note that this setting applies only to the following definition items, for which a macro variable could be used in JP1/AJS2 07-11 and earlier versions:

Unix job:

- Command statement
- Script file name
- Parameter
- Environment variable

PC job:

- Executable file name
- Parameter
- Environment variable

Note that this setting is not necessary when characters are always prefixed or suffixed to macro variables, and when operation expects that macro variable names will be used as string values.

The following describes how to set the handling of a macro variable when the value is a NULL string.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter

Table 6-19: Environment setting parameter used to set the handling of a macro variable when the value is a NULL string

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1NBQCLIENT\Process]#	"MacroOptionReplaceMode"=	Specifies the handling of a macro variable whose value is a NULL string.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.3(79) *MacroOptionReplaceMode* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

6.2.12 Changing the wait time for recovery when an agent has failed

This subsection discusses JP1/AJS3 behavior when an agent host executing a job (a PC or Unix job other than a queueless job, or a queue, action, or custom job running on JP1/AJS3) fails or a communication error occurs. In such situations, JP1/AJS3 does not immediately assume a failure, and retries communication after waiting a specified time for recovery. The purpose of waiting is to prevent operation from stopping due to a temporary, recoverable failure. The default wait time is 10 minutes. However, depending on the operation, you might want to determine the failure location and take corrective action immediately rather than waiting for recovery. You can do this by reducing the wait time for recovery.

The following describes how to change the wait time for recovery when an agent host has failed.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameters described in (2) below:

```
jajs_config -k definition-key "parameter-name-1"=value-1
[ "parameter-name-2"=value-2]
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameters

Table 6-20: Environment setting parameters used to set the amount of time to wait for recovery when an agent has failed

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT logical-host} \JP1AJS2\SCHEDULER\QUEUE\MANAGER\Job] # 	"QueuingJobRecoveryTime" =	Specifies in seconds how long to wait for recovery from an agent failure related to a queued job.
<ul style="list-style-type: none"> For a specific scheduler service [{JP1_DEFAULT logical-host} \JP1AJSMANAGER\scheduler-service\QUEUE\MANAGER\Job] # For submit jobs and a compatible ISAM configuration [{JP1_DEFAULT logical-host} \JP1NBQMANAGER\Job] # 	"ExecutingJobRecoveryTime" =	Specifies in seconds how long to wait for recovery from an agent failure related to a job being executed.

#:

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see the following:

- 2.3(17) *QueuingJobRecoveryTime* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.3(18) *ExecutingJobRecoveryTime* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

6.2.13 Outputting a message that reports that the maximum number of concurrently executable jobs has been reached

If the number of jobs (Unix jobs, PC jobs, action jobs, and custom jobs other than queueless jobs) that are being executed concurrently on an agent host has reached the maximum, the succeeding jobs might remain queued, delaying their execution.

JP1/AJS3 provides a setting that outputs the following message to the integrated trace log when the number of jobs being executed concurrently reaches the maximum. By

enabling the setting, you can confirm that job execution was delayed because the maximum was reached.

```
KAVU4310-I The number of executing jobs reaches the
concurrently-executable-job-limit (maximum-number-of-concurrently-executable-jobs)
at the agent (agent-host-name). (host name: host-name, job number: job-number)
```

If this message is not output even when this setting is enabled and the status of jobs is *Now queuing*, various causes are possible. Accordingly, check the setting of the maximum number of concurrently executable jobs, the job transfer restriction status, and the job execution host status for the execution agent or execution agent group.

1. The maximum number of concurrently executable jobs is 0.

Use the `ajsagtshow` command to check the maximum number of concurrently executable jobs (CON-EXE) on the execution agent.

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

2. The job transfer restriction status of the execution agent group is *Hold* or *Blockade*. Alternatively, the job transfer restriction status of the execution agent is *Ineffective*, *Hold*, or *Blockade*.

Use the `ajsagtshow` command to check the job transfer restriction status of the execution agent group or execution agent.

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

3. The agent host has stopped or failed.

Use the integrated trace log on the agent host to check for stoppage of the JP1/AJS3 service or the occurrence of an error on the agent host. Also check whether the agent host is able to communicate with the manager host.

If queue or submit jobs are used, check the agent, agent group, or job execution host for the following possible causes:

1. The maximum number of concurrently executable jobs is 0.

Use the `jpgagtshow` command to check the maximum number of concurrently executable jobs (CUREXEGHNUM).

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

2. In the settings for queues (including the default queue), the job exit is closed.

Use the `jpqqqshow` command to check the job exit status (`EXITSTATUS`).

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

3. The agent host has stopped or failed.

Use the integrated trace log on the agent host to check for stoppage of the JP1/AJS3 service or the occurrence of an error on the agent host. Also check whether the agent host is able to communicate with the manager host.

4. A necessary resource has been locked by another job.

Use the `jpqresshow` command to check for jobs whose status is `EXECUTING`.

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

For details about the maximum number of concurrently executable jobs when queue or submit jobs are used, see 2.5.4 *Maximum number of concurrently executable jobs* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

The following describes how to set output of a message that reports that the maximum number of concurrently executable jobs has been reached.

(1) **Definition procedure**

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service

Cautionary note:

In a cluster system, check the cluster settings, and also stop the JP1/AJS3 service on each logical host.

2. Execute the following command to set the environment setting parameters described in (2) below:

```
jaajs_config -k definition-key "parameter-name-1"=value-1  
[ "parameter-name-2"=value-2]
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameters

Table 6-21: Environment setting parameters used to set output of the message that reports that the maximum number of concurrently executable jobs has been reached

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT logical-host}\J P1AJS2\SCHEDULER\QUEUE\MAN AGER\Job] # 	"MaximumExecJobLogOptio n" =	Specifies output of the message that reports that the maximum number of concurrently executable jobs has been reached.
<ul style="list-style-type: none"> For a specific scheduler service [{JP1_DEFAULT logical-host}\J P1AJSMANAGER\scheduler-servic e\QUEUE\MANAGER\Job] # For submit jobs and a compatible ISAM configuration [{JP1_DEFAULT logical-host}\J P1NBQMANAGER\Job] # 	"MaximumExecJobLogInter val" =	Specifies the interval for re-output of the message that reports that the maximum number of concurrently executable jobs has been reached.

#:

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see the following:

- 2.3(19) *MaximumExecJobLogOption* in the *Job Management Partner 1/ Automatic Job Management System 3 Configuration Guide 2*
- 2.3(20) *MaximumExecJobLogInterval* in the *Job Management Partner 1/ Automatic Job Management System 3 Configuration Guide 2*

6.2.14 Changing the timeout value for the job execution control manager process

When the job execution control manager process is requested to perform any of the following operations, the timeout period (default: 10 minutes) for communication with the manager process is set by the requester:

- Registration, cancellation, or status checking of a job by the scheduler
- Performing an operation on a job by using a job execution command (jprqxxx)

If communication with the job execution control manager process takes too much time and a timeout occurs, job execution or the command request fails.

The major causes of a communication timeout are as follows:

- The size of the transfer files or result files for the executed job is large.
- Many jobs are listed by the `jpqendjobshow` command, which lists information about terminated jobs.

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

- Many jobs are listed by the `jpqjobshow` command, which lists information about jobs that have not terminated yet.

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

If communication times out while the scheduler is registering or canceling a job or checking the status of a job, the job[#] ends abnormally, and the following message is output to the integrated trace log:

#:

Event jobs and jobs for which **Queueless Agent** is specified for **Exec. Service** are exceptions.

KAVU0220-E *function-name*: There is no response from the manager.

If communication times out during processing of a `jpqxxx` command, the following message is output:

KAVU0953-E No response from the manager.

You might be able to prevent a command request or job execution failure due to a communication timeout by increasing the communication timeout value. If communication times out while the scheduler is registering or canceling a job, or checking the status of a job, increase the timeout value on the manager host. If communication times out while the command that is used to execute a job is being executed, increase the timeout value on the client host where the command is executed.

The following describes how to change the communication timeout value.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter

Table 6-22: Environment setting parameter used to change the timeout value for the job execution control manager process

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1NBQCLI ENT\Network]#	"CommunicateTimeout"=	Specifies the timeout value (in milliseconds) for the job execution control manager process.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.3(78) *CommunicateTimeout* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

(3) Note

Increasing the communication timeout value also increases the time required to detect an error that has occurred in a command or job during communication processing. As a result, succeeding jobs can easily be delayed. Before changing the communication timeout value, carefully consider the best value to be set.

6.2.15 Executing a job by using a long file name

Normally, the executable file name of a job^{#1} is converted to a short file name generated for a file on an NTFS (NT File System) or FAT (File Allocation Table) volume. If you want to execute the executable file of a job by using a long file name without conversion to a short file name, use the procedure described below.

Note that a queueless job is executed by using a long file name^{#2}. No conversion of the executable file name of a queueless job to a short file name takes place.

#1:

Refers to PC jobs and queue jobs executed on JP1/AJS3, and submit jobs

executed by the `jpgjobs` command.

#2:

Depending on the conditions, a queueless job could be executed under a short file name. For details, see (4) *Note*.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter

Table 6-23: Environment setting parameter used to execute a job under a long file name

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT logical-host}\JP1NBQAGENT\Job]#	"IsExecFindExecutable"=	Specifies whether a job is executed under a long file name.

#:

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.3(38) *IsExecFindExecutable* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

(3) How to specify executable file names

- If you specify an executable file name whose extension is .exe, .bat, .cmd, .com, or .pif, use an absolute path name that includes a drive name (A: to Z:).
- If you specify an executable file name that contains space characters, enclose the entire file name (from the drive name to the extension) in double quotation marks

(").

If you specify an executable file name in the `jpgqjobsub` command, make sure that the file name is first enclosed in `\` and then enclosed in double quotation marks (`"`). The following shows an example of executing the `jpgqjobsub` command when the executable file name is `C:\Program Files\test.exe`.

```
jpgqjobsub -ah logical-host -sc "\"C:\Program Files\test.exe\""
```

- You cannot specify any arguments after an executable file name.

(4) Note

If a job satisfying both of the following conditions is executed, the executable file name of the job is converted to a short file name even if the `IsExecFindExecutable` environment setting parameter is set to 1. This is also true for queueless jobs.

1. In **File name**, a file name whose extension is `.exe`, `.bat`, `.cmd`, `.com`, or `.pif` is specified as a relative path name.
2. The file path name in condition 1 is specified for **Working path** in the job definition.

If you want the job to be executed under a long file name, perform either of the following operations:

- In **File name**, specify the file name as an absolute path.
- Specify the file path in a system environment variable, and do not specify a file path in **Working path**.

6.2.16 Executing a job that requires a user profile

Normally, the process execution environment in which jobs can be executed requires only system environment settings. However, some jobs require the loading of user profile information from the OS user's logon session for correct execution.

This subsection describes the setting for correctly executing a job that requires user profile information. If this setting is enabled, user profile information is loaded for all PC jobs[#] executed on the specified agent host.

#:

Jobs for which **Queueless Agent** is specified for **Exec. Service** are exceptions.

The following describes how to specify the setting for executing a job that requires a user profile. This setting must be specified on the agent host on which the job will be executed.

For details about how to specify the setting for executing a job requiring a user profile in a queueless job execution environment, see 6.4.2 *Executing a job that requires a user profile in a queueless job execution environment*.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.
The new settings are applied.

Note:

If you want to disable this setting, you must restart the OS after changing the parameter value.

(2) Environment setting parameter

Table 6-24: Environment setting parameter used to enable execution of a job that requires a user profile

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1NBQAGENT\Job]#	"LoadUserProfile"=	Defines whether user profile information is loaded.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.3(39) *LoadUserProfile* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

(3) Note

If a job is executed after this setting is enabled, the job might end abnormally with

either of the following messages output to the integrated trace log. JP1/AJS3 provides a setting that prevents the errors reported by these messages from occurring easily when this setting is enabled. For details about the setting, see *6.2.17 Reusing access tokens for job execution*.

- KAVU3549-E A system call (*function-name*) error occurred in a job execution process. (*reason-code*)
- KAVU3577-W A system call (*function-name*) error occurred in a job execution process. (*reason-code*)

For details about specifying the setting for reusing an access token during job execution, see *5.3.1 User account for job execution* in the manual *Job Management Partner 1/Automatic Job Management System 3 Overview*.

6.2.17 Reusing access tokens for job execution

This subsection describes how to specify the setting for reusing access tokens when a job is executed. This setting must be specified on a job execution host. For details, see *5.3.1 User account for job execution* in the manual *Job Management Partner 1/Automatic Job Management System 3 Overview*.

Note that this setting is not necessary when the queueless job execution facility is used. This is because access tokens are reused when a queueless job is executed by the facility.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:

- JP1/AJS3 service

Cautionary note:

In a cluster system, check the cluster settings, and also stop the JP1/AJS3 service on each logical host.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter

Table 6-25: Environment setting parameter for enabling the reuse of access tokens when a job is executed

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1NEQAGENT\Job]#	"IsAccessTokenCache"=	Specifies whether access tokens are to be reused when a job is executed.

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.3(40) *IsAccessTokenCache* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

(3) Notes

1. If the reuse of access tokens is enabled, access tokens are released as follows:
 - When the password for the OS user who executes the job is changed

When the password for the OS user who executes the job is changed, the user releases the current access token and acquires an access token with new user information.

Cautionary note:

If password information managed by the OS is changed, the password management information for the OS user mapped in JP1/Base must also be changed. If the password management information for the OS user mapped in JP1/Base is not changed, the job is started by reusing the access token that was used before the password was changed. For notes on specifying the JP1/Base user management settings, see the chapter that contains notes on user management in the *Job Management Partner 1/Base User's Guide*.
 - When the JP1/AJS3 service is stopped

When the JP1/AJS3 service is stopped, all users release their own access tokens.
2. If the value of the `IsAccessTokenCache` environment setting parameter is 1, all jobs share one desktop heap secured when the JP1/AJS3 service is started. Therefore, if there are many jobs that run concurrently, the desktop heap might no longer be sufficient.

3. If the value of the `IsAccessTokenCache` environment setting parameter is 2, a desktop heap area is created for each user. For example, if 10 users execute jobs, 10 desktop heap areas are created. Therefore, if there are many users, the many desktop heaps that are created might compromise the availability of the space that can be used as desktop heaps by the OS.
4. If the reuse of access tokens is enabled, jobs started by a user share the same desktop heap that was secured the first time that the user acquired an access token. That is, a new desktop heap is not created each time a job is started. If the JP1/AJS3 service account is changed from the system account to a user account, and jobs are executed by that user, new desktop heaps are not created because an access token is not acquired. For details about changing the JP1/AJS3 service account, see 4.2.3 *Changing the JP1/AJS3 service settings (Windows only)* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

6.2.18 Executing a job whose executable file name has an extension longer than three bytes

Normally, the executable file specified for a job is executed by the application (.exe) associated with the executable file's extension, the maximum length of which is three bytes. Therefore, if the extension is four or more bytes, the executable file for the job[#] might be opened by the wrong application or the job might not be able to start.

To correctly run a job whose executable file has an extension longer than three bytes, specify the appropriate setting by using the procedure described below.

Note that the setting must be specified on the host on which the job is executed.

#:

Refers to PC jobs and queue jobs executed on the Windows version of JP1/AJS3, and submit jobs executed by the `jpqjjobsub` command.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - When **Standard** is specified for **Exec. Service** of the job
JP1/AJS3 service
 - **Queueless Agent** is specified for **Exec. Service** of the job
JP1/AJS3 Queueless Agent service

Cautionary note:

In a cluster system, check the cluster settings, and also stop the JP1/AJS3 service on each logical host.

2. Use the following method to set the environment setting parameters described in (2) below:

- For environment setting parameters in the definition key
[{JP1_DEFAULT | *logical-host-name* } \JP1NBQAGENT \Job] :

Execute the following command:

```
jajs_config -k definition-key "parameter-name"=value
```

- For environment setting parameters in the definition key
[JP1_DEFAULT \JP1QLAGENT] :

In a text editor such as Notepad, create a configuration file that defines the environment setting parameters, and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the jbssetcnf command is *JPI/Base-installation-folder\bin\jbssetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

3. Restart the services that you stopped in step 1.

The new settings are applied.

(2) Environment setting parameters

Table 6-26: Environment setting parameters used to enable execution of an executable file with an extension longer than three bytes

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> } \JP1NBQAGENT \Job] #1	"ENABLE_LONG_EXT"=	This parameter applies when Standard is specified for Exec. Service of the job. The parameter specifies whether the job is to be executed by an associated application whose extension is longer than three bytes.

Definition key	Environment setting parameter	Explanation
[JP1_DEFAULT\JP1QLAGENT] #2	"ENABLE_LONG_EXT" =	This parameter applies when Queueless Agent is specified for Exec. Service of the job. The parameter specifies whether the job is to be executed by an associated application whose extension is longer than three bytes.

#1:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

#2:

This setting applies to both physical and logical hosts.

For details about the definition of this environment setting parameter, see the following:

- 2.3(42) *ENABLE_LONG_EXT* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.7(13) *ENABLE_LONG_EXT* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

(3) Notes

- If this setting is enabled, you cannot specify any arguments following an executable file name in the Define Details dialog box for a job. If you specify arguments, the job might terminate abnormally.
- Before enabling this setting, make sure that the applicable extensions of more than three bytes have been associated with applications.

The following describes how to associate an extension with an application:

In Windows Server 2008:

1. Use the `ftype` command to register the application with which you want to associate an extension.
2. Use the `assoc` command to associate the extension with the application you registered in step 1.
3. Restart the OS.

For details about the `ftype` and `assoc` commands, see Windows Help.

In Windows Server 2003 or earlier:

1. In Windows Control Panel, double-click **Folder Options**. In the displayed dialog box, click the **File Types** tab.
2. After selecting the extension that you want to set, click the **Advanced** button to open the Edit File Type dialog box. Then, in the **Actions** list box, select **Open**, and register the application that you want to associate with the extension.
3. Restart the OS.

6.2.19 Changing the settings for logon retries when a job is executed

In JP1/AJS3, a job[#] might be executed with a user account that is different from the account used to start the JP1/AJS3 service. When a job is executed with a different user account, user information called an *access token* must be acquired. An access token includes the information about the security group to which the user belongs and permission information, and is acquired by using a Win32 API function. In JP1/AJS3, if the function has temporarily failed, logon is not possible, and the status of the job becomes *Failed to start* (Abnormal end). For example, if the domain controller on the authentication server has stopped because of a shutdown or for another reason, the job is unable to start because the domain cannot be authenticated.

Retrying the function at regular intervals prevents temporary errors of this type, and reduces the frequency at which factors causing job abnormal termination occur.

#:

Refers to PC jobs, action jobs, custom jobs, queue jobs executed on the Windows version of JP1/AJS3, and submit jobs executed by the `jpqjobs` command.

The following describes how to specify the setting. Note that the setting must be specified on the host on which the job will be executed.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 serviceIn a cluster system, check the cluster settings, and also stop the JP1/AJS3 service on each logical host.
2. Execute the following command to set the environment setting parameters described in (2) below:

```
jaajs_config -k definition-key "parameter-name"=value
```

Cautionary note:

To set the environment setting parameters of both definition keys, execute the `jaajs_config` command twice.

- Restart the services that you stopped in step 1.

The new settings are applied.

(2) Environment setting parameters

Table 6-27: Environment setting parameters used to retry acquisition of an access token when a job is executed

Definition key	Environment setting parameter	Explanation
[<i>{JP1_DEFAULT logical-host}</i>]\JP1NBQAGENT\Network]#	"LogonUserRetryCount"= =	This parameter applies when Standard is specified for Exec. Service of the job. The parameter specifies the maximum number of times acquisition of an access token is retried.
	"LogonUserRetryInterval"= =	This parameter applies when Queueless Agent is specified for Exec. Service of the job. The parameter specifies the interval at which acquisition of an access token is retried.

#:

The specification of the *{JP1_DEFAULT|logical-host}* part depends on whether the host is a physical host or a logical host. For a physical host, specify `JP1_DEFAULT`. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see the following:

- 2.3(70) *LogonUserRetryCount* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.3(71) *LogonUserRetryInterval* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

(3) Notes

- The logon retry function described above is based on only the number of retry attempts and interval, and is therefore not a complete preventive measure. For

example, the time required to switch the domain controller might be longer than the time calculated by multiplying the number of retries by the retry interval.

- If the password of the OS user who attempts to execute the job is invalid, the account might be locked, depending on the OS security policy settings.

Note that if the account of a user has been locked, the user cannot execute any jobs.

- The logon retries described above are also performed if a logon attempt fails for the reasons listed below. That is, a job might take a long time until it actually ends. Similarly, a job being forced to terminate might take a long time until it actually ends.
 - No domain controller on any authentication server is running when an attempt is made to execute a job.
 - An attempt is made to execute a job by a user whose password is invalid.
 - An attempt is made to execute a job by an unregistered user.
 - An attempt is made to execute a job by a user whose account is locked.
 - An attempt is made to execute a job by a user whose account is no longer valid.

6.2.20 Placing all running jobs in an end status when a communication error occurs

JP1/AJS3 periodically (at five-minute intervals) performs polling to monitor running jobs (PC and Unix jobs that are not queueless jobs, and queue, action, and custom jobs executed on JP1/AJS3).

If a communication error occurs during the monitoring on the agent host on which a job is to be executed, JP1/AJS3 does not immediately declare an abnormal end. Instead, it retries communication for a specified period of time (default: 10 minutes) while waiting for recovery from the system or communication error on the agent host. If the error is a temporary, recoverable error, then operation is not stopped needlessly.

If there has been no recovery on the agent host when the polling period ends, jobs are placed in an end status[#] one by one in order by expiration of a job's wait time for recovery. However, if many jobs are being executed, a long time might be required before all jobs have been placed in an end status. In some cases, therefore, depending on the operation, immediate recovery will have precedence over waiting for recovery in the event of an error. For these cases, you can specify settings so that all jobs being executed on the same agent host are immediately placed in an end status[#] if there has been no error recovery on the agent host when the polling period ends. For the jobs in an execution agent group, these settings are applied to the jobs that are running on the same agent host. Immediately placing jobs in an end status enables recovery action to

be taken sooner.

#:

For a job defined in a jobnet, the job status changes to *Killed*, and -1 is set as the return code. For a submit job executed by the `jpqjobsub` command, the job status changes to the status specified by the `-rs` option (the default is *Hold*).

The following describes how to specify the settings for placing all running jobs in an end status when a communication error occurs.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:

- JP1/AJS3 service

Cautionary note:

In a cluster system, check the cluster settings, and also stop the JP1/AJS3 service on each logical host.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart the service that you stopped in step 1.

The new settings are applied.

(2) Environment setting parameter

Table 6-28: Environment setting parameter used to place all running jobs in an end status when a communication error occurs

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> • For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2 \SCHEDULER \QUEUE \MANAGER \Job] # • For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i> } \JP1AJSMANAGER \<i>scheduler-service</i> \QUEUE \MANAGER \Job] # • For submit jobs and a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i> } \JP1NBQMANAGER \Job] # 	"ExecutingJobChangeStatus"=	Specifies that all running jobs are placed in an end status when a communication error occurs.

6. Specifying Settings Based on the Usage of JP1/AJS3

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.3(23) *ExecutingJobChangeStatus* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

6.3 Changing the settings related to event/action control

This section describes how to change the settings related to event/action control.

When you set environment setting parameters, use the `jajs_config` command or `jbssetcnf` command.

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 on the `jbssetcnf` command, see the *Job Management Partner 1/Base User's Guide*.

6.3.1 Changing the settings related to the size of the log for event jobs to match operational requirements

This subsection describes how to change the settings related to the size of the log for event jobs to match operational requirements. We recommend that you specify the settings so that log data for two or three days is saved. Log data for at least 24 hours must be saved.

For details about estimating the size of log data, see *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*.

The following describes how to change the log settings for event jobs.

(1) Definition procedure

(a) For a standard configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set environment setting parameters:

```
jajs_config -k definition-key "parameter-name-1"=value-1
["parameter-name-2"=value-2]
["parameter-name-3"=value-3] . . .
```

You can specify only one definition key. If you want to set environment setting parameters for different definition keys, you must execute the `jajs_config` command for each definition key.

For the environment setting parameters to be set, see *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.

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. In a text editor such as Notepad, create a configuration file that defines the environment setting parameters.

For the environment setting parameters to be set, see *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.*

3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is *JP1/Base-installation-folder\bin\jbssetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

6.3.2 Setting the event order option

When an event job has start conditions, events that trigger the job might occur in succession but be processed in a different order, depending on the communication conditions. You might want to preserve the actual order of events that satisfied the start conditions if, for example, the event information will be passed to the job. To do this, use the event order option. The following describes how to enable the event order option.

Note that this option must be set on all agent hosts on which event jobs will be executed.

(1) Definition procedure

(a) For a standard configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:

- JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:

- JP1/AJS3 service

2. In a text editor such as Notepad, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is *JP1/Base-installation-folder\bin\jbssetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 6-29: Environment setting parameter used to set the event order option

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1AOMAGENT]#	"EventSequential"=	Specifies whether the event order option is enabled.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.4(20)

EventSequential in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

6.3.3 Setting the status passing option for the file monitoring job

While the file monitoring job is monitoring target files, the monitoring information can be saved continuously so that the monitoring status of the job can be inherited if the JP1/AJS3 service temporarily stops.

Note that the monitoring status can be inherited only if the file monitoring job is operating continuously. Whether the monitoring status can be inherited depends on whether the file monitoring job is operating continuously.

For details about the conditions under which the monitoring status can be inherited, 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*.

The function that inherits the monitoring status of the file monitoring job is disabled by default. Note, however, that the function is enabled when JP1/AJS3 is installed as a new installation and set up. The following describes how to set the status passing option.

(1) Definition procedure

(a) For a standard configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.
The new settings are applied.

(b) For a compatible ISAM configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. In a text editor such as Notepad, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

`jbssetcnf configuration-file-name`

The path of the `jbssetcnf` command is *JP1/Base-installation-folder\bin\jbssetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 6-30: Environment setting parameter used to set the status passing option for the file monitoring job

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT logical-host}\JP1AOMAGENT]#	"FilewatchinfContinue"=	Specifies whether the status passing option for the file monitoring job is enabled.

#:

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.4(17) *FilewatchinfContinue* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

6.3.4 Passing event data containing double quotation marks

Data containing double quotation marks (") can be passed as is to an event job. For details, see 4.3.7(4) *Passing event data containing double quotation marks* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

The option that enables the passing of data containing double quotation marks (") as is to an event job is set by executing the `jajs_config` command.

The following describes how to set the option that enables the passing of data containing double quotation marks (").

(1) Definition procedure

(a) For a standard configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the

following service:

- JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.
The new settings are applied.

(b) For a compatible ISAM configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. In a text editor such as Notepad, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is *JP1/Base-installation-folder\bin\jbssetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.
The contents of the configuration file are applied to the system.

(2) Environment setting parameter*Table 6-31: Environment setting parameter used to enable passing of data containing double quotation marks to an event job*

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2\SCHEDULER\EV\MANAGER] # For a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i> } \JP1AOMMANAGER] # 	"MacVarDQuotation"=	Specifies whether to enable passing of data containing double quotation marks (").

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.4(4) *MacVarDQuotation* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

6.3.5 Using fully qualified domain names (FQDN) when using event jobs during DNS operation

This subsection describes how to specify the settings for using domain names in FQDN format when using event jobs during DNS operation. The procedure for specifying these settings when JP1/AJS3 is installed as a new installation is described below. Note that specification of these settings is required only if event jobs are used. Standard, action, and custom jobs are already supported. For an overview of and the procedure for the specification when JP1/AJS3 is installed as an upgrade from JP1/AJS2 06-71 or earlier, see 8.2 *Setting for executing event jobs in a DNS environment (for upgrading)* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

Note that these settings must be specified on the manager host.

The following describes the procedure for specifying these settings.

(1) Definition procedure**(a) For a standard configuration**

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:

6. Specifying Settings Based on the Usage of JP1/AJS3

- JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.
The new settings are applied.

(b) For a compatible ISAM configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. In a text editor such as Notepad, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is *JP1/Base-installation-folder\bin\jbssetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.
The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 6-32: Environment setting parameter used to enable the use of fully qualified domain names (FQDN) when event jobs are used during DNS operation

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> • For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2\SCHEDULER\EV\MANAGER] # • For a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i> } \JP1AOMMANAGER] # 	"DNSEstablish" =	Specifies whether to enable the use of domain names in FQDN format when event jobs are used during DNS operation.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.4(5) *DNSEstablish* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

6.3.6 Resuming event jobs that stopped when the JP1/AJS3 service stopped

For event jobs, JP1/AJS3 provides an option that enables event jobs that have stopped when the JP1/AJS3 service stopped to resume in the same status from the point at which they stopped.

The following describes how to enable this option. For details about the functionality of this option, see 9.2.1 *Continuing the execution of event jobs if the JP1/AJS3 service stops* in the *Job Management Partner 1/Automatic Job Management System 3 Administration Guide*.

(1) Definition procedure

(a) For a standard configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. In a text editor such as Notepad, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

`jbssetcnf configuration-file-name`

The path of the `jbssetcnf` command is *JP1/Base-installation-folder\bin\jbssetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 6-33: Environment setting parameter used to enable event jobs that have stopped when the JP1/AJS3 service stopped to resume

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> • For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2\SCHEDULER\EV\MANAGER] # • For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i> } \JP1AJSMANAGER\scheduler-service\EV\MANAGER] # • For a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i> } \JP1AOMMANAGER] # 	"EvJobExecContinue"=	Specifies whether to enable the execution of stopped event jobs to resume.

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.4(7) *EvJobExecContinue* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

6.3.7 Retrying startup notification of the event/action control agent

When an event job or a jobnet with start conditions is registered for execution from a manager host, the name of the manager host is set in JP1/AJS3 on the execution host (target host). When JP1/AJS3 starts, it notifies the event/action control manager that it has started. This notification is called the *startup notification of the event/action control agent* (abbreviated here to *startup notification*).

When the manager receives the notification, the manager communicates with the agent to synchronize the execution status of the event job (or jobnet with start conditions) running on the agent between the manager and agent.

If startup notification from the agent to the manager fails, the execution status of the event job (or jobnet with start conditions) might become inconsistent between the manager and agent. If an inconsistency occurs, the jobnet with start conditions might be displayed as a jobnet being monitored (*Now monitoring* status) in JP1/AJS3 - View even if the agent is no longer actually monitoring the jobnet. If a monitored event then occurs, the event will not be detected, preventing the event job from ending on the manager or the jobnet with start conditions from starting.

If the JP1/AJS3 service on the agent host will be restarted under either of the following conditions while an event job or a jobnet with start conditions is running, set an environment parameter as described in (1) below:

- The agent restarts the JP1/AJS3 service on the agent host when the load on the overall system from programs other than JP1/AJS3 is excessive.
- The JP1/AJS3 service on the agent host is restarted when a temporary communication error occurs on the network.

To check the manager host names set, you can use the `jpoagoec` command. If there are unnecessary manager hosts, use the command to delete them, and then set the environment setting parameter. For details about the `jpoagoec` command, see `jpoagoec` in 2. *Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

Cautionary note:

If you set the environment setting parameter and then start the JP1/AJS3 service on the agent when unnecessary manager hosts are set on the agent, startup notification will fail for those hosts, resulting in retries. These unnecessary retries could delay the starting of an event job or a jobnet with start conditions executed from another manager as well as the detection of events.

(1) Definition procedure

(a) For a standard configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.
The new settings are applied.

(b) For a compatible ISAM configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. In a text editor such as Notepad, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is *JP1/Base-installation-folder\bin\jbssetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.
The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 6-34: Environment setting parameter used to enable retrying of startup notification of the event/action control agent after a notification failure

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT logical-host}\JP1AOMAGENT] #	"RetryAgtStartNotification" "="	Specifies whether to enable retrying of startup notification of the event/action control agent after a notification failure.

#:

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.4(21) *RetryAgtStartNotification* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

6.3.8 Setting the agent host name resolution option

Resolution of agent host names might fail on the manager host if, for example, the host

names are not correctly set in the `hosts` file or DNS. If an attempt is made to start or stop the JP1/AJS3 service on the manager host or an agent host when agent host names cannot be resolved, the following problems could occur:

- The status of an event job registered for execution takes a long time to change to *Now running*.
- Detection of an event monitored by an event job or start conditions is delayed.
- The status of an event job or a jobnet with start conditions takes a long time to change when, for example, the job or jobnet is forcibly terminated.
- The JP1/AJS3 service on the manager takes a long time to stop.
- The JP1/AJS3 service on the manager takes a long time to start.

You can prevent these problems from occurring by setting the agent host name resolution option.

Note that you do not need to enable this option in an environment in which all agent host names can be resolved.

The following describes how to enable the option.

(1) **Definition procedure**

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. In a text editor such as Notepad, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is *JPI/Base-installation-folder\bin\jbssetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter*Table 6-35: Environment setting parameter used to enable the agent host name resolution option*

Definition key	Environment setting parameter	Explanation
[JP1_DEFAULT\JP1AOMMANAGER] #	"_AgentStartStopResolveMode" =	Specifies whether to enable the agent host name resolution option.

#:

The specification of this parameter is effective on the physical host and all logical hosts.

For details about the definition of this environment setting parameter, see 2.4(2) *_AgentStartStopResolveMode* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

6.3.9 Applying a timeout for receiving data in inter-process communication by event/action control

If event/action control cannot perform inter-process communication normally due to heavy network load or a line error, the following problems could occur:

- The status of a job does not change when, for example, the job is registered for execution or forcibly terminated.
- A jobnet does not start at the scheduled time.
- An event monitored by an event job or start condition is not detected.
- The scheduler service does not stop when the `jajs_spmc_stop` or `ajsstop` command is executed.
- The JP1/AJS3 service takes a long time to stop.

You can prevent these problems from occurring by enabling the option that applies a timeout for receiving data in inter-process communication by event/action control.

The following describes how to enable this option.

(1) Definition procedure**(a) For a standard configuration**

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter

described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. In a text editor such as Notepad, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is *JP1/Base-installation-folder\bin\jbssetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 6-36: Environment setting parameter used to apply a timeout for receiving data

Definition key	Environment setting parameter	Explanation
[JP1_DEFAULT\JP1AOMAGENT]#	"RecvTimeout"=	Specifies whether to apply the timeout for receiving data in event job socket communication.

#:

The specification of this parameter is effective on the physical host and all logical hosts.

For details about the definition of this environment setting parameter, see 2.4(25) *RecvTimeout* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

6.3.10 Setting the period of time for monitoring event jobs in the blocked status

An event job or a jobnet with start conditions is said to be in *blocked status* when event/action control regards the job or jobnet as running, but the scheduler service regards the job or jobnet as having ended.

The blocked status arises when, for example, temporary files required for processing are lost because disk space is temporarily insufficient or a disk error occurs at the same time that the status of an event job changes.

If event jobs or jobnets with start conditions are in the blocked status, information about the events detected by these jobs or jobnets can accumulate in event/action control, where it consumes system resources such as disk space and memory. The accumulation of information in event/action control can delay the processing of other event jobs or jobnets with start conditions.

To prevent an accumulation of information, JP1/AJS3 checks for event jobs and jobnets with start conditions in the blocked status when the specified period of time since JP1/AJS3 service startup has elapsed. If event jobs and jobnets with start conditions in the blocked status are found, they are forcibly terminated and the accumulated event information is discarded.

You change this period of time in an environment setting parameter.

The following describes how to set the environment setting parameter.

(1) Definition procedure

(a) For a standard configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service

2. In a text editor such as Notepad, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is *JP1/Base-installation-folder\bin\jbssetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 6-37: Environment setting parameter used to set the period of time for monitoring event jobs in the blocked status

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> • For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2\SCHEDULER\EV\MANAGER] # • For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i> } \JP1AJSMANAGER\scheduler-service\EV\MANAGER] # • For a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i> } \JP1AOMMANAGER] # 	"BlockadeTimeoutInterval" =	Specifies the period of time for monitoring event jobs in the blocked status.

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see 2.4(8) *BlockadeTimeoutInterval* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

6.3.11 Setting the binding method applied to the outgoing communication used in the execution of event jobs

By default, the ANY binding method is set as the binding method applied to the communication used in the execution of event jobs to match the JP1/Base communication settings. In a cluster configuration, the IP binding method is automatically set for both physical and logical hosts when the cluster system is set up. The IP binding method is also set for both outgoing communication and incoming communication.

If multi-LAN connection is used, separate binding methods can be set in the JP1/Base communication settings for outgoing communication and incoming communication.

However, you can explicitly ensure that the binding method applied to incoming communication is always applied to the outgoing communication used in the execution of event jobs, regardless of the JP1/Base communication settings, by using the procedure described below.

Note, however, that if you install JP1/AJS3 as a new installation, you must set the binding method in the JP1/Base communication settings without using the procedure described below. If JP1/AJS3 is installed as an upgrade from 06-51 or earlier version of JP1/AJS2 in which the binding method applied to outgoing communication used in the execution of event jobs is already set, that setting is inherited. Note, however, that if JP1/AJS3 is re-installed, the inherited settings are lost. If you still want to use the same settings that were used in JP1/AJS2 06-51 or earlier, you will have to specify the settings manually.

The following describes the procedure for setting the binding method applied to the outgoing communication used in the execution of event jobs. Note that the procedure must be performed on the manager host and all agent hosts on which event jobs will be executed.

(1) Definition procedure

(a) For a standard configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jaajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.
The new settings are applied.

(b) For a compatible ISAM configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. In a text editor such as Notepad, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is *JP1/Base-installation-folder\bin\jbssetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 6-38: Environment setting parameter used to set the binding method for outgoing communication

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> • For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2\SCHEDULER\EV\MANAGER] # • For an event/action control agent [{JP1_DEFAULT <i>logical-host</i> } \JP1AOMAGENT] # • For a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i> } \JP1AOMMANAGER] # 	"ClientBindFlag"=	Specifies the binding method applied to outgoing communication.

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see 2.4(12) *ClientBindFlag* in the *Job Management Partner 1/Automatic Job Management System*

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6.3.12 Settings for ensuring that the sending of unreported information is retried at regular intervals

If inter-process communication between the event/action control manager and the event/action control agent fails for a reason such as a busy network or a defective line, the information that could not be sent is managed as *unreported information*.

The following describes the default values for the send retry interval and the maximum send retry count.

- When connection to the agent host times out

The send retry interval is 300 seconds for the first retry, 600 seconds for the second retry, 900 seconds for the third retry, 1,800 seconds for the fourth retry, and 3,600 seconds for the fifth and subsequent retries. The maximum number of retries is 27 (24 hours).

- In all other cases

The send retry interval is 30 seconds, and the maximum number of send retries is 2,880 (24 hours).

As described above, when a connection to the agent host times out, the sending of unreported information is not retried at regular intervals. However, an option for ensuring that the sending of unreported information is retried at regular intervals (the `NotificationConstantRetry` environment parameter) is provided. If this option is used, send retries apply for any network error. Note, however, that if this option is used and the timeout status of the connection to the agent continues for a long time, send retries could cause many timeouts, resulting in processing delays.

If you want to mitigate processing delays when this option is used, also increase the value of the environment setting parameter for the timeout value to a tolerable level for processing delays.

For details about the environment setting parameter for the timeout value, see *6.3.14 Setting the connection timeout for communication between the event/action control manager and agent*.

In addition to setting the above environment setting parameter, also adjust the other environment setting parameters related to communication for event/action control. For details, see *6.3.15 Environment setting parameters related to communication for event/action control*.

Use the procedure below for ensuring that the sending of unreported information is retried at regular intervals.

(1) Definition procedure**(a) For a standard configuration**

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.
The new settings are applied.

(b) For a compatible ISAM configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. In a text editor such as Notepad, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is *JPI/Base-installation-folder*\bin\jbssetcnf. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.
The contents of the configuration file are applied to the system.

(2) Environment setting parameter*Table 6-39: Environment setting parameter for ensuring that the sending of unreported information is retried at regular intervals*

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT <i>logical-host</i>} \JP1AJS2\SCHEDULER\EV\MANAGER] # For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i>} \JP1AJSMANAGER\<i>scheduler-service</i>\EV\MANAGER] # For a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i>} \JP1AOMMANAGER] # 	"NotificationConstantRetry"=	Option ensuring that the sending of unreported information is retried at regular intervals

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameters, see 2.4(9) *NotificationConstantRetry* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

6.3.13 Changing the send retry interval and the number of retries for sending unreported information

If inter-process communication between the event/action control manager and the event/action control agent fails for a reason such as a busy network or a defective line, the information that could not be sent is managed as *unreported information*.

The following describes the default values for the send retry interval and the maximum number of retries.

For a resend from the manager host to the agent host:

- When connection to the agent host times out

The send retry interval is 300 seconds for the first retry, 600 seconds for the second retry, 900 seconds for the third retry, 1,800 seconds for the fourth retry, and 3,600 seconds for the fifth and subsequent retries. The maximum number of retries is 27 (24 hours).

- In all other cases

The send retry interval is 30 seconds, and the maximum number of send

retries is 2,880 (24 hours).

For the resending of information from the agent host to the manager host (resending information when an event job monitoring condition is satisfied):

- The send retry interval is 10 seconds, and the maximum number of send retries is 8,640 (24 hours).

In cases other than when a connection to the agent host is impossible (that is, a timeout occurs), you can change the send retry interval and the maximum number of send retries for unreported information. Note, however, that changing these settings affects the processing of a resend from the manager host to the agent host as described below.

Before the settings are changed:

Regardless of whether the cause of a network error that occurred is a timeout for connection to the agent host or not, all send retries end in 24 hours.

After the settings are changed:

If a timeout for connection to the agent host occurs 27 times in succession, or if the number of send retries reaches the maximum (default: 2,880), there will be no more retries.

As described above, after settings are changed, the completion of a resend operation could require a long time if a connection to the agent host times out and another network error occurs concurrently. This problem can be prevented by specifying settings that ensure that the sending of unreported information is retried at regular intervals.

For details, see *6.3.12 Settings for ensuring that the sending of unreported information is retried at regular intervals*.

Use the procedure below for changing the settings.

(1) Definition procedure

(a) For a standard configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. In a text editor such as Notepad, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is *JP1/Base-installation-folder\bin\jbssetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 6-40: Environment setting parameters for setting the send retry interval and number of retries for sending unreported information

Definition key	Environment setting parameter	Explanation
Communication from the manager host to the agent host: <ul style="list-style-type: none"> • For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2\SCHEDULER\EV\MANAGER] # • For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i> } \JP1AJSMANAGER\<i>scheduler-service</i>\EV\MANAGER] # • For a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i> } \JP1AOMMANAGER] # 	"NotificationRetryInterval" =	Interval for retrying the sending of unreported information
Communication from the agent host to the manager host: [{JP1_DEFAULT <i>logical-host</i> } \JP1AOMAGENT] #	"NotificationRetryCount" =	Maximum number of retries for sending unreported information

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about defining the environment setting parameters for communication from the manager host to the agent host, see the following:

- *2.4(10) NotificationRetryInterval* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- *2.4(11) NotificationRetryCount* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

For details about defining the environment setting parameters for communication from the agent host to the manager host, see the following:

- *2.4(23) NotificationRetryInterval* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- *2.4(24) NotificationRetryCount* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

6.3.14 Setting the connection timeout for communication between the event/action control manager and agent

When an event job or a jobnet with start conditions is executed, the event/action control manager and the event/action control agent communicate with each other. Because the timeout for connection between the manager and the agent depends on the OS, a wait of 20 to 30 seconds is possible in the following cases:

- The PC at the destination has stopped.
- A non-existent IP address in the network is specified as the destination.
- The manager or agent is not registered in the firewall exceptions list between the manager and agent.

In the above cases, if waits are lengthy and timeouts are frequent, the process might freeze intermittently. As a result, an event job or a jobnet with start conditions executed on another agent the manager can communicate with might be delayed for a long time or detection of an event might take an extremely long time. For such situations, you can adjust the timeout value by using the environment setting parameter described in (2) below.

Use the procedure below for setting the environment setting parameter.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

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```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter

Table 6-41: Environment setting parameter for the connection timeout between the event/action control manager and agent

Definition key	Environment setting parameter	Explanation
Event action control manager <ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT <i>logical-host</i>}\JP1AJS2\HOST\NETWORK\EVMANAGER]# For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i>}\JP1AJSMANAGER\<i>scheduler-service</i>\NETWORK\EVMANAGER]# Event action control agent [{JP1_DEFAULT <i>logical-host</i> }\JP1AOMAGENT]#	"ClientConnectTimeout"=	Connection timeout between the event/action control manager and agent

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about defining the environment setting parameters for the event/action control manager, see the following:

- 2.6(1) *ClientConnectTimeout* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

For details about defining the environment setting parameters for the event/action control agent, see the following:

- 2.4(22) *ClientConnectTimeout* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

6.3.15 Environment setting parameters related to communication for event/action control

When an event job or a jobnet with start conditions is executed, the event/action control manager and the event/action control agent communicate with each other. If a communication error occurs, communication is retried.

A retry interval and a maximum number of retries can be set by using the environment

setting parameters for event/action control. Note that these parameters must be specified in a combination appropriate for the case.

This subsection provides examples of setting environment setting parameters that must be used in appropriate combinations.

For details about a specific environment setting parameter, see the description of that parameter.

(1) Changing the retry interval for retries caused by a connection timeout

When an event job or a jobnet with start conditions is executed and the event/action control manager attempts to connect to the event/action control agent to communicate, if the attempt times out, the manager performs a retry. With the default settings, for each retry, the manager gradually increases the interval, instead of using the regular interval, to gradually reduce the retry frequency. Gradually increasing the interval can reduce the impact on the processing speed of event jobs executed on other agents even when connection timeouts from the event/action control manager to the event/action control agent continue to occur.

For details about this retry process and interval, see *Table 2-3* in *2.2.2(5) Notes on manager/agent system configurations* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

However, if a connection timeout is due to a temporary cause, the retry process described above takes more time, delaying the execution of an event job or jobnet with start conditions on the execution agent. If the gradually increasing retry interval is not convenient, you can also use the regular interval for retries that are caused by connection timeouts for retries that are not caused by connection timeouts.

For details about the interval for retries that are not caused by connection timeouts, see *(2) Changing the retry interval for retries that are not caused by connection timeouts*.

If you want retries to be performed at regular intervals, set the `NotificationConstantRetry` environment setting parameter. Note, however, that if a connection timeout status continues for a long time, retries at regular intervals might make the frequency at which the system waits for a connection greater than that for retries at gradually increasing intervals, thereby delaying other processing. For these cases, in addition to the `NotificationConstantRetry` environment setting parameter, use the `ClientConnectTimeout` environment setting parameter to adjust the connection timeout value for communication related to event jobs and jobnets with start conditions.

Table 6-42: Changing the retry interval for retries caused by a connection timeout

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT <i>logical-host</i>} \JP1AJS2\SCHEMULER\EV\MANAGER]# For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i>} \JP1AJSMANAGER\<i>scheduler-service</i>\EV\MANAGER]# For a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i>} \JP1AOMMANAGER]# 	"NotificationConstantRetry"=	Option ensuring that the sending of unreported information is retried at regular intervals
<ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT <i>logical-host</i>} \JP1AJS2\HOST\NETWORK\EVMANAGER]# For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i>} \JP1AJSMANAGER\<i>scheduler-service</i>\NETWORK\EVMANAGER]# 	"ClientConnectTimeout"=	Connection timeout value

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about defining environment setting parameters, see the following:

- 2.4(9) *NotificationConstantRetry* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.6(1) *ClientConnectTimeout* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

(2) Changing the retry interval for retries that are not caused by connection timeouts

For communication between the event/action control manager and agent during execution of an event job or a jobnet with start conditions, the interval for retries not caused by connection timeouts is set by the `NotificationRetryInterval` environment setting parameter. Similarly, the maximum number of retries not caused by connection timeouts is set by the `NotificationRetryCount` environment setting parameter.

Note that if you change only the retry interval or only the number of retries, the retry

period (the period during which retries can be performed) also changes. If you want to retain the retry period, you need to adjust the values of both environment parameters.

For example, if you change the retry interval to 15 seconds, which is half the default value, the number of retries to preserve the retry period is 5,760, which is twice the default value.

For a network error that is caused by a connection timeout, adjust the settings described in (1) *Changing the retry interval for retries caused by a connection timeout*.

Table 6-43: Environment setting parameters for changing the interval and number of retries that are not caused by connection timeouts for communication

Definition key	Environment setting parameter	Explanation
Communication from the manager host to the agent host: <ul style="list-style-type: none"> For all scheduler services <code>[{JP1_DEFAULT logical-host}\JP1AJS2\SCHEDULER\EV\MANAGER]#</code> For a specific scheduler service <code>[{JP1_DEFAULT logical-host}\JP1AJSMANAGER\scheduler-service\EV\MANAGER]#</code> For a compatible ISAM configuration <code>[{JP1_DEFAULT logical-host}\JP1AOMMANAGER]#</code> 	"NotificationRetryInterval"=	Interval for retrying the sending of unreported information
Communication from the agent host to the manager host: <code>[{JP1_DEFAULT logical-host}\JP1AOMAGENT]#</code>	"NotificationRetryCount"=	Maximum number of retries for sending unreported information

#:

The specification of the `{JP1_DEFAULT|logical-host}` part depends on whether the host is a physical host or a logical host. For a physical host, specify `JP1_DEFAULT`. For a logical host, specify the logical host name.

For details about defining the environment setting parameters for communication from the manager host to the agent host, see the following:

- 2.4(10) *NotificationRetryInterval* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.4(11) *NotificationRetryCount* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

For details about defining the environment setting parameters for communication from the agent host to the manager host, see the following:

- 2.4(23) *NotificationRetryInterval* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.4(24) *NotificationRetryCount* in the *Job Management Partner 1/Automatic Job*

6.3.16 Settings for ensuring that a fixed manager host name is used when event jobs are executed

When an event job is executed, the event/action control manager communicates with the agent on which the job is executed. In the communication, the manager sends its own name to the agent so that the agent can distinguish the manager from other agents. The manager host name is acquired when the JP1/AJS3 service on the manager is started.

Normally, unless the host name is changed intentionally, the acquired host name never changes when the JP1/AJS3 service on the manager is restarted. However, case for alphabetic characters (upper or lower case) used in the acquired host name might change for some reason when the JP1/AJS3 service is restarted. For example, a change in the case might occur if the OS settings related to DNS name resolution are changed.

Because event job execution agents treat manager host names as being case-sensitive, a change in the case, which is equivalent to a change in the manager host name, might cause the following problems:

- If the JP1/AJS3 service on the manager is restarted while a jobnet with start conditions is being executed, a duplication of monitored events might be detected after the restart.
- When the option for continuing execution of active event jobs is enabled, if the JP1/AJS3 service is restarted in hot-start mode on the manager while an event job is being executed, multiple occurrences of the same event are detected.

For details about the option for continuing the execution of active event jobs, see *6.3.6 Resuming event jobs that stopped when the JP1/AJS3 service stopped*.

To avoid these problems, enable the option for using a fixed manager host name (the `FixedHostnameForAgent` environment setting parameter). If this option is enabled, the event/action control manager always sends the host name in all lower case.

Cautionary note:

Be careful when you change the settings of the option for using a fixed manager host name while executing jobnets with start conditions or executing event jobs with the option for continuing the execution of active event jobs enabled. If you make a change, the case of the alphabetic characters of the manager host name might change.

Making such a change might cause inconsistencies in the management status of jobnets with start conditions or event jobs that have already been executed. For example, multiple jobnets might be incorrectly started for one event.

To avoid these types of problems, make sure you use the following procedure when enabling the option for using a fixed manager host name or changing the

option settings:

1. Stop the JP1/AJS service on the agent host on which jobnets with start conditions or event jobs are being executed.
2. On the agent host in step 1, execute the `jpoagoc` command to delete the manager host name for which the option for using a fixed manager host name is to be enabled. For details about the `jpoagoc` command, see *jpoagoc* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.
3. On the manager host, enable the option for using a fixed manager host name. For details about how to enable the option, see (1) below.
4. Cold-start the JP1/AJS service on the agent host in step 2.

The following describes the procedure for enabling the option.

(1) Definition procedure

(a) For a standard configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 service
2. In a text editor such as Notepad, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

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The path of the `jbssetcnf` command is *JP1/Base-installation-folder\bin\jbssetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3 in cold-start mode.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 6-44: Environment parameter for the option for using a fixed manager host name

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> • For all scheduler services [{JP1_DEFAULT logical-host}\JP1AJS2\SCHEMULER\EV\MANAGER] # • For a compatible ISAM configuration [{JP1_DEFAULT logical-host}\JP1AOMMANAGER] # 	"FixedHostnameForAgent" =	Option for using a fixed manager host name

#:

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameters, see 2.4(6) *FixedHostnameForAgent* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

6.4 Changing the settings related to queueless job execution control

This section describes how to change the settings related to queueless job execution control.

When you set environment setting parameters, use the `jbssetcnf` command.

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

6.4.1 Executing jobs with a class specified in a queueless job environment

In a queueless job environment, you can define classes and set for each class the maximum number of concurrently executable jobs and the maximum number of waiting jobs.

If an attempt is made to concurrently execute more jobs in a class than the maximum number of concurrently executable jobs, only as many jobs as the maximum are executed. The rest of the jobs are stacked in memory on the queueless agent. If an attempt is made to execute a job when the number of stacked jobs has reached the maximum number of waiting jobs, the attempt fails, and the status of the job becomes *Failed to start*.

For example, assume that there is a class whose number of concurrently executable jobs is 10 and whose maximum number of waiting jobs is 5, and that 15 jobs are concurrently in the *Now running* status. In this class, if an attempt is made to execute other jobs, the status of the 16th and subsequent jobs becomes *Failed to start*.

In addition to the two types of limitation on a specific class described above, the same two types of limitation are also set for the entire queueless agent. Even if the maximum number of concurrently executable jobs for a class has not been reached, the maximum number of concurrently executable jobs for the queueless agent might have already been reached. In that state, if an attempt is made to execute more jobs in the class, they are stacked in memory on the queueless agent. Similarly, even if the maximum number of waiting jobs for a class has not been reached, the maximum number of waiting jobs for the queueless agent might have already been reached. In that state, if an attempt is made to execute more jobs in the class, the status of the jobs becomes *Failed to start*, although the maximum for the class has not been reached.

When you execute jobs with a class specified, specify the execution host name and class name in **Exec-agent** in the following format, using an exclamation mark (!) as a separator:

```
execution-host-name!class-name
```

Supplementary note:

Because queueless jobs do not use an execution agent, the execution host name and class name are specified in **Exec-agent**.

You can specify only one separator (!) and one class name without specifying the host name on which jobs will be executed. If you do not specify the host name, the local host is assumed.

If you omit both the execution host name and class name for a job, the execution host specified in **Exec-agent** for the jobnet to which the job belongs is assumed.

You cannot specify a class name in **Exec-agent** for a jobnet. If you attempt to execute a jobnet specified in this way, the status of the jobs in the jobnet becomes *Failed to start*.

If you attempt to execute a job with a non-existent class specified, the status of the job becomes *Failed to start*.

The following describes how to set a class.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:

- JP1/AJS3 Queueless Agent service

2. In a text editor such as Notepad, create a configuration file that defines the environment setting parameter described in (2) below.

The configuration file can be given any name.

3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is *JP1/Base-installation-folder\bin\jbssetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart the service that you stopped in step 1.

The new settings are applied.

(2) Environment setting parameters

Table 6-45: Environment setting parameters used to execute jobs with a class specified in a queueless job environment

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> } \ JP1QLAGENT \ AJSQL_CLASS \ <i>class</i>] #	"AJSQL_CJOBMAX" =	Specifies the maximum number of concurrently executable jobs for a class.
	"AJSQL_CJOBWAITMAX" =	Specifies the maximum number of waiting jobs for a class.

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see the following:

- 2.7(25) *AJSQL_CJOBMAX* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.7(26) *AJSQL_CJOBWAITMAX* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

(3) Definition example

- Definition in **Exec-agent** for a job
agent1!class1
- Class definition on the job execution host (agent1)
[JP1_DEFAULT \ JP1QLAGENT \ AJSQL_CLASS \ class1]
"AJSQL_CJOBMAX" = dword: 3
"AJSQL_CJOBWAITMAX" = dword: 1000

In this definition example, the maximum number of concurrently executable jobs in class `class1` on execution host `agent1` is 3. The maximum number of waiting jobs in class `class1` on execution host `agent1` is 4,096.

When three jobs are running concurrently, if an attempt is made to execute additional jobs, a maximum of 4,096 jobs can be stacked in memory on the agent. If 4,096 jobs are stacked and an attempt is made to execute additional jobs, the status of the additional jobs becomes *Failed to start* status.

(4) Notes

- Multi-byte characters cannot be used for a class name.
- The maximum length of the class name that can be specified in **Exec-agent** is 63 bytes. If you specify a class name longer than 63 bytes, the class name is truncated at the 63rd byte.
- If a class is defined without defining an environment setting parameter, the environment setting parameter for the defined class is automatically generated with default values when the `ajsqlsetup` command is executed.

6.4.2 Executing a job that requires a user profile in a queueless job execution environment

Normally, the process execution environment in which jobs can be executed requires only system environment settings. However, some jobs require user profile information that is loaded from the OS user's logon session for correct execution. This subsection describes the setting for correctly executing a job that requires user profile information. If this setting is enabled, user profile information is loaded for all PC jobs executed on the specified agent host. The following describes how to change the settings for executing a job that requires a user profile.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 Queueless Agent service
2. In a text editor such as Notepad, create a configuration file that defines the environment setting parameter described in (2) below.

The configuration file can be given any name.

3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is *JP1/Base-installation-folder\bin\jbssetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart the service that you stopped in step 1.

The new settings are applied.

(2) Environment setting parameter

Table 6-46: Environment setting parameter used to execute a job that requires a user profile in a queueless job execution environment

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1QLAGENT]#	"AJSQL_LOADUSERPROFILE"=	Specifies whether the user profile is to be loaded.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.7(7) *AJSQL_LOADUSERPROFILE* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

6.4.3 Preventing a queueless job from ending abnormally with return value 128

If all of the following conditions are satisfied when a queueless job is executed, the job might end abnormally with return value 128:

1. There is an OS user who is not currently executing any jobs.
2. The OS user in condition 1 executes a job.
3. At the moment the job in condition 2 terminates, the OS user executes another job.

If a job ends abnormally when the above conditions are satisfied, you can prevent the abnormal termination and have the job end normally by setting the *AJSQL_CREATEWINDOWSTATION* environment setting parameter. The following describes how to set this environment setting parameter.

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - JP1/AJS3 Queueless Agent service
2. In a text editor such as Notepad, create a configuration file that defines the environment setting parameter described in (2) below.
The configuration file can be given any name.
3. Save the file and then execute the following command:

`jbssetcnf configuration-file-name`

The path of the `jbssetcnf` command is *JP1/Base-installation-folder\bin\jbssetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart the service that you stopped in step 1.

The new settings are applied.

(2) Environment setting parameter

Table 6-47: Environment setting parameter used to prevent a queueless job from ending abnormally with return value 128

Definition key	Environment setting parameter	Explanation
[JP1_DEFAULT\JP1QLAGENT]	"AJSQL_CREATEWINDOWSTATION" " =	Specifies whether to prevent a job from ending abnormally with return value 128.

For details about the definition of this environment setting parameter, see 2.7(14) *AJSQL_CREATEWINDOWSTATION* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

(3) Notes

- If this setting is enabled, the first time that an OS user executes a job, the queueless agent service secures a desktop heap for job execution for that OS user. The queueless agent service then caches the heap in the user mapping cache. The desktop heap that has been secured is not released when the job ends. If the same user subsequently executes jobs, the applicable desktop heap in the user mapping cache is reused. Accordingly, if many OS users are executing jobs, it might not be possible to secure desktop heaps for all of them. If a user executes a job, but a desktop heap cannot be secured, the following message is output and the status of the job becomes *Failed to start*:

```
KAVS1829-E A system call (CreateDesktop) error occurred in the Queueless Agent service. : xxxxxxxx 8
```

If this message is output, execute the `ajsqlalter` command or restart the queueless agent service to clear the user mapping cache and reduce the number of OS users that are used to execute jobs. For details about the `ajsqlalter` command, see *ajsqlalter* in 3. *Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

If it is not possible to reduce the number of OS users used to execute jobs, reduce

the size of the desktop heaps used by applications. For details about how to change the size of desktop heaps, see the documentation for the OS.

- Enabling this setting will not prevent abnormal end of a job with return value 128 caused by insufficient desktop heap space.

6.5 Changing the settings related to the definition pre-check function

This section describes how to change the settings related to the definition pre-check function.

When you set environment setting parameters, use the `jajs_config` command.

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*.

6.5.1 Setting up the JP1/AJS3 definition pre-check function

As a protection against failures during live operation, JP1/AJS3 can check for problems in the definition of a job before live operation of the job starts. This subsection describes how to set up this function.

(1) Procedure for setting up the function

To set up the JP1/AJS3 definition pre-check function:

1. Execute the following command:

For JP1/AJS3 - Manager:

```
ajschksetup -m -a
```

For JP1/AJS3 - Agent:

```
ajschksetup -a
```

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

2. In Windows Control Panel, open the **Services** administrative tool, and start the following services:
 - JP1/AJS3 Check Manager service
 - JP1/AJS3 Check Agent service

(2) Procedure for changing the function settings

To change the settings of the JP1/AJS3 definition pre-check function:

1. In Windows Control Panel, open the **Services** administrative tool, and stop the

following services:

- JP1/AJS3 Check Manager service
 - JP1/AJS3 Check Agent service
2. Execute the following command to set the environment setting parameters described in (3) below:

```
jajs_config -k definition-key "parameter-name-1"=value-1
["parameter-name-2"=value-2]
["parameter-name-3"=value-3]
["parameter-name-4"=value-4]
["parameter-name-5"=value-5]
```

3. Restart the services that you stopped in step 1.

The new settings are applied.

(3) Environment setting parameters

Table 6-48: Environment setting parameters used to specify the settings of the JP1/AJS3 definition pre-check function

No.	Definition key	Environment setting parameter	Explanation
1	[JP1_DEFAULT\JP1AJS2\CHECK]	"AJSCHK_CHECKFILE"#=	Specifies the name of the file where the definition pre-check results will be stored.
2		"AJSCHK_LOGDIR"=	Specifies the name of the definition check log folder.
3		"AJSCHK_LOGSIZE"=	Specifies the size of the definition check log files.
4		"AJSCHK_TRACELOGFILE"=	Specifies the name of the trace log file for the definition pre-check function.
5		"AJSCHK_CHARCODE"=	Specifies the character encoding used to display job information and the definition pre-check results.

#:

This parameter can be set only in JP1/AJS3 - Manager.

For details about the definition of these environment setting parameters, see the following:

1. 2.5(1) *AJSCHK_CHECKFILE* in the *Job Management Partner 1/Automatic Job*

6. Specifying Settings Based on the Usage of JP1/AJS3

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2. *2.5(2) AJSCHK_LOGDIR in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
3. *2.5(3) AJSCHK_LOGSIZE in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
4. *2.5(4) AJSCHK_TRACELOGFILE in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
5. *2.5(5) AJSCHK_CHARCODE in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

6.6 Other settings

This section describes how to change settings that have not been covered in earlier sections.

When you set environment setting parameters, use the `jajs_config` command.

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*.

6.6.1 Canceling and re-setting service dependencies

If the JP1/Base event server name is not a default name such as an FQDN, an attempt to start a JP1/AJS3 service results in output of a message reporting that the dependent service or group could not be started. If this message appears, the JP1/AJS3 service can no longer be started. In addition, a message explaining that the JP1/AJS3 service depends on the JP1/Base Event service that could not be started due to the indicated error is output to the Windows event log.

To set an event server name in JP1/Base that is not the default name, cancel the JP1/AJS3 service dependencies as described below.

If no dependencies have been set, make sure that the JP1/Base and JP1/Base Event services are running, and then start the JP1/AJS3 service.

For details about how to set an event server name that is not the default value, see the *Job Management Partner 1/Base User's Guide*.

(1) Procedure for canceling dependencies

To cancel dependencies:

1. If the JP1/AJS3 service is running, stop it.
2. Execute the following command to cancel the JP1/AJS3 service dependencies:

```
SpmSetSvcAjs.exe -setdepend no
```

3. Restart the JP1/AJS3 service.

To resume operation that uses the default event server, set the dependencies among the JP1/AJS3, JP1/Base, and JP1/Base Event services again.

(2) Procedure for setting dependencies

To set dependencies:

1. If the JP1/AJS3 service is running, stop it.

6. Specifying Settings Based on the Usage of JP1/AJS3

2. Execute the following command to set the JP1/AJS3 service dependencies:

```
SpmSetSvcAjs.exe -setdepend yes
```

3. Restart the JP1/AJS3 service.

(3) Note

Before you execute `SpmSetSvcAjs.exe` on a computer running Windows Server 2008, make sure that you open the Command Prompt window as an administrator. To do this, on the Windows **Start** menu, right-click **Command Prompt**, and then choose **Run as administrator**.

If the UAC function is disabled, you do not need to open the Command Prompt window as an administrator.

6.6.2 Disabling file system redirection when jobs are executed in a WOW64 environment

The information in this subsection applies when you are using JP1/AJS3 for x86 in the WOW64 environment of Windows Server 2003 x64 Editions, and you want to execute PC jobs, Windows queue jobs, or the `jp1exec` command. To do this, you can temporarily disable file system redirection so that you can start 64-bit applications under `%systemroot%\system32`.

The procedure for disabling redirection is described below. Use this procedure on the host on which the jobs will be executed.

For details, see *9.5.1 Notes when using JP1/AJS3 for x86 in a WOW64 environment in the Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

Cautionary note:

In the 64-bit version of Windows Server 2008, file system redirection is not disabled if this setting is specified.

If you want to use a 64-bit application under `%systemroot%\system32` in the 64-bit version of Windows Server 2008, make sure that you access the executable file in `%systemroot%\sysnative` instead of `%systemroot%\system32`.

Example:

Before the setting is changed: `%systemroot%\system32\executable-file`

After the setting is changed: `%systemroot%\sysnative\executable-file`

(1) Definition procedure

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:

- When **Standard** is specified for **Exec. Service** of the job
JP1/AJS3 service
- When **Queueless Agent** is specified for **Exec. Service** of the job
JP1/AJS3 Queueless Agent service

Note:

In a cluster system, check the cluster settings, and also stop the JP1/AJS3 service on each logical host.

2. Use the following method to set the environment setting parameters described in (2) below:

- For environment setting parameters in the definition key
[{JP1_DEFAULT | *logical-host-name* } \JP1NBQAGENT\Job] :

Execute the following command:

```
jajs_config -k definition-key "parameter-name"=value
```

- For environment setting parameters in the definition key
[JP1_DEFAULT\JP1QLAGENT] :

In a text editor such as Notepad, create a configuration file that defines the environment setting parameters, and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is *JP1/Base-installation-folder*\bin\jbssetcnf. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameters

Table 6-49: Environment setting parameters used to disable file system redirection when jobs are executed in a WOW64 environment

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> } \JP1NBQAGENT \Job] #1	"DISABLE_FS_REDIRECTION" =	This parameter applies when Standard is specified for Exec. Service of the job. The parameter disables file system redirection when jobs are executed in a WOW64 environment.
[JP1_DEFAULT \JP1QLAGENT] #2	"DISABLE_FS_REDIRECTION" =	This parameter applies when Queueless Agent is specified for Exec. Service of the job. The parameter disables file system redirection when jobs are executed in a WOW64 environment.

#1:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

#2:

This setting applies to both physical and logical hosts.

For details about the definition of these environment setting parameters, see the following:

- 2.3(41) *DISABLE_FS_REDIRECTION* in the *Job Management Partner 1/ Automatic Job Management System 3 Configuration Guide 2*
- 2.7(12) *DISABLE_FS_REDIRECTION* in the *Job Management Partner 1/ Automatic Job Management System 3 Configuration Guide 2*

(3) Note

The setting that disables file system redirection when jobs are executed in a WOW64 environment is valid only Windows Server 2003 x64 Editions Service Pack 1 or later.

If you set the *DISABLE_FS_REDIRECTION* option in an operating system other than Windows Server 2003 x64 Editions Service Pack 1 or later, one or the other of the following messages is output to the integrated trace log. In addition, startup of the JP1/AJS2 service and the JP1/AJS2 Queueless Agent service fails. Accordingly, do not set the *DISABLE_FS_REDIRECTION* option in an operating system other than Windows Server 2003 x64 Editions Service Pack 1 or later.

- When **Standard** is specified for **Exec. Service** of the job

```
KAVU3549-E A system call
(GetProcAddress(Wow64DisableWow64FsRedirection)) error
occurred in a job execution. (127)
```

- When **Queueless Agent** is specified for **Exec. Service** of the job

```
KAVS1829-E A system call
(GetProcAddress(Wow64DisableWow64FsRedirection)) error
occurred in the Queueless Agent Service: xxxxxxxx 127.
```

If you specify redirection, one or the other of the following messages is output to the integrated trace log, and the status of the jobs changes to *Failed to start*.

- (a) When **Standard** is specified for **Exec. Service** of the job

```
KAVU3549-E A system call (Wow64DisableWow64FsRedirection)
error occurred in a job execution. (0x00000001)
```

- (b) When **Queueless Agent** is specified for **Exec. Service** of the job

```
KAVS0904-E Unexpected error occurred in JP1/AJS2.: xxxxxxxx 1
```

6.6.3 Changing the JP1/AJS3 database configuration to the standard configuration without ISAM

This subsection describes how to change the JP1/AJS3 database configuration from the *standard configuration* to the *standard configuration without ISAM*. In JP1/AJS3 - Manager installed as a new installation, the database configuration is the standard configuration, not the standard configuration without ISAM.

To change the database configuration to the standard configuration without ISAM, copy the contents of the *JP1/AJS3-Manager-installation-folder\conf\jplajs_hstd.conf.isamless.model* file to the *jplajs_hstd.conf* file to the service configuration file storage directory. Then specify permission settings so that the *jplajs_hstd.conf* file can be loaded by the JP1/AJS3 service account. In a physical host environment, the service configuration file storage directory is *JP1/AJS3-Manager-installation-folder\conf*. In a logical host environment, the service configuration file storage directory is *shared-disk-folder-specified-by-the-jajs_setup_cluster-command\jplajs2\conf*.

Cautionary note:

If you change the database configuration to the standard configuration without ISAM, some functions are no longer available. For details, see *1.4 JP1/AJS3 database configurations* in the manual *Job Management Partner 1/Automatic Job Management System 3 Overview*.

Chapter

7. Collecting Log Data

This chapter describes how to collect log data useful for investigating and analyzing failures that occur in JP1/AJS3.

7.1 Collecting log data

7.1 Collecting log data

This section describes the settings for collecting log information, which can be used to investigate failures.

(1) *Setting up the data collection tool*

The Windows versions of JP1/AJS3 - Manager, JP1/AJS3 - Agent, and JP1/AJS3 - View provide a *data collection tool* that can be used for collecting log data.

After installing JP1/AJS3 - Manager, JP1/AJS3 - Agent, or JP1/AJS3 - View, copy the data collection tool to another folder and use it from that folder.

You can also collect only the log data you need by using Windows Explorer to copy a folder.

Note:

If you use JP1/AJS3 Console, environment setup in JP1/AJS3 Console Agent or JP1/AJS3 Console View is not necessary as long as you have set up the environment for the data collection tool in JP1/AJS3 - Manager and JP1/AJS3 - View.

If you have not set up the environment for a data collection tool, use the following procedure.

To set up the environment needed to use the data collection tool:

1. Use Explorer or another means to copy the data collection tool to any folder. The location of the tool is as follows.
 - (a) For JP1/AJS3 - Manager or JP1/AJS3 - Agent

*JP1/AJS3-Manager-or-JP1/
AJS3-Agent-installation-folder\tools_04.bat*

This data collection tool also allows you to collect log data for JP1/AJS3 - View on the same host.

- (b) For JP1/AJS3 - View

JP1/AJS3-View-installation-folder\tools_04.bat

This data collection tool also allows you to collect log data for JP1/AJS3 - Manager or JP1/AJS3 - Agent on the same host.

2. Edit the copied data collection tool, and then change the file name to any convenient name.

Use a text editor to edit the data collection tool.

The table below lists the initial values specified in the data collection tool. You can change any inappropriate initial values to the appropriate values.

Table 7-1: Initial values specified in the data collection tool

No.	Item	Initial value
1	HNTRLlib installation folder	@set INST_DIR_HNTRLlib=%PROGRAMFILES_DIR%\hitachi\HNTRLlib
2	HNTRLlib2 installation folder	@set INST_DIR_HNTRLlib2=%PROGRAMFILES_DIR%\hitachi\HNTRLlib2
3	JP1/AJS3 database storage folder ^{#1}	@set INST_DIR_DATABASE=%INST_DIR_MANAGER%\hitachi\JP1AJS2\database
4	JP1/AJS3 Console Manager data folder	@set LOG_DIR_AJS2CONSOLE_DATABASE=%INST_DIR_AJS2CONSOLE%\database
5	Folder for storing JP1/AJS3 temporary files	@set LOG_DIR_AJSPDDIR=%INST_DIR_MANAGER%\tmp\schedule
6	JP1/AJS3 job error information folder	@set LOG_DIR_JOBINF=%INST_DIR_MANAGER%\jobinf
7	Log file path for the Dr. Watson Diagnostic Tool ^{#2}	@set LOG_DIR_DRWTSN=%ALLUSERSPROFILE%\Documents\DrWatson
8	Memory dump file path ^{#2}	@set LOG_DIR_USERDUMP=%Systemroot%*.dmp
9	Crash dump file path ^{#2}	@set LOG_DIR_WTSNDUMP=%LOG_DIR_DRWTSN%*.dmp

No.	Item	Initial value
10	Folder used for storing data other than the above	<pre>@rem @set DIR_ADD=</pre> <p>Delete the @rem item, and specify the absolute path to the directory. If you have changed the scheduler log file 1, scheduler log file 2, and scheduler trace log file destinations, you need to use spaces as delimiters as shown in the following example. If the absolute path contains a space character, you must enclose the entire path in double quotation marks (").</p> <p>Example:</p> <pre>@set DIR_ADD=new-scheduler-log-output-folder\JP1A JS2\log "new-scheduler-log-output-folder\sys"</pre>
11	Folder in which data collected by the data collection tool will be saved	<pre>@set DIR_BACKLOG=%TEMP%\jp1ajs2\backlog</pre>

#1:

Data will not be collected if directories in a location not under this directory are set for the scheduler service and the job execution environment database.

Place each database file under the desired directory, and specify the absolute path to that directory.

#2:

This data is not collected in Windows 7, Windows Server 2008 and Windows Vista.

For details about the log file storage folders initially specified in the data collection tool, see *1.2.4 List of log files and directories* in the manual *Job Management Partner 1/Automatic Job Management System 3 Troubleshooting* and the list of files or folders in the appendix of the *Job Management Partner 1/Base User's Guide*.

(2) Notes on the data collection tool

1. The following table summarizes the differences between the data collection tool in JP1/AJS2 07-10 and later versions, and the data collection tool in JP1/AJS2 versions earlier than 07-10.

Table 7-2: Differences in the data collection tool versions

Functionality	Version 07-10 or later	Version earlier than 07-10
Collection of the following types of data: <ul style="list-style-type: none"> • Windows registry information • Windows event log data • Computer configuration information • List of programs for which services have started • File list information for the database folder • JP1/Base file list information • Information required for core analysis 	Data is collected.	Data is not collected.
Specification of the logical host	The logical host name is specified when the data collection tool is executed.	The folder for storing data is set for each logical host in the environment settings of the data collection tool.
Isolation of initial investigation files	Initial investigation files are stored in a special directory.	The files required for initial investigation are output to separate locations.
Collection of log data while the JP1/AJS3 service is running	Collection is possible if the <code>-s</code> option is specified when the data collection tool is executed.	Collection is not possible.

2. If you have customized the data collection tool of a JP1/AJS2 version earlier than 07-10 so that the tool also collects non-standard data items, the customization is lost when the JP1/AJS2 version is upgraded to 07-10 or later.
3. Data collection tools of JP1/AJS3 09-00 or later do not require the following modification:

When you use 64-bit Windows and the JP1/AJS3 data collection tool in the WOW64 (Windows on Windows 64) environment to collect data, you need to modify the data collection tool.

The following describes the procedure for modifying the data collection tool:

1. Copy the data collection tool to any folder.
2. Use a text editor to edit the copied batch file as follows, and then save the file with any file name.

● before a revision

```

@regedit /e "%reg_temp%" %REG_KEYNAME%\JP1BASE\PathName
@regedit /e "%reg_temp%" %REG_KEYNAME%\JP1AJS2\PathName
@regedit /e "%reg_temp%" %REG_KEYNAME%\JP1AJS2
@regedit /e "%reg_temp%" %REG_KEYNAME%\JP1AJS2V\PathName
@regedit /e "%reg_temp%" %REG_KEYNAME%\JP1AJS2V
@regedit /e "%reg_temp%" %REG_KEYNAME%\JP1AJS2C\PathName
@regedit /e "%reg_temp%" %REG_KEYNAME%\JP1AJS2C
@regedit /e "%reg_temp%" %REG_KEYNAME%\JP1AJS2CM\PathName
@regedit /e "%reg_temp%" %REG_KEYNAME%\JP1AJS2\PathName
@regedit /e "%reg_temp%" %REG_KEYNAME%\JP1AJS2WOA\PathName
@regedit /e "%reg_temp%" %REG_KEYNAME%\JP1AJS2WOA
@regedit /e "%reg_temp%" %REG_KEYNAME%\JP1AJS2DA\PathName
@regedit /e "%reg_temp%" %REG_KEYNAME%\JP1AJS2DA
@set REG_NAME=%REG_KEYNAME%\JP1
@set REG_NAME_BASE=%REG_KEYNAME%\JP1BASE
@set REG_NAME_MANAGER=%REG_KEYNAME%\JP1AJS2
@set REG_NAME_VIEW=%REG_KEYNAME%\JP1AJS2V
@set REG_NAME_CLIENT=%REG_KEYNAME%\JP1AJS2C
@set REG_NAME_AJS2CONSOLE=%REG_KEYNAME%\JP1AJS2CM
@set REG_NAME_WOA=%REG_KEYNAME%\JP1AJS2WOA
@set REG_NAME_DA=%REG_KEYNAME%\JP1AJS2DA

```

● After a revision

```

@regedit /e "%reg_temp%" HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1BASE\PathName
@regedit /e "%reg_temp%" HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1AJS2\PathName
@regedit /e "%reg_temp%" HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1AJS2
@regedit /e "%reg_temp%" HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1AJS2V\PathName
@regedit /e "%reg_temp%" HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1AJS2V
@regedit /e "%reg_temp%" HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1AJS2C\PathName
@regedit /e "%reg_temp%" HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1AJS2C
@regedit /e "%reg_temp%" HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1AJS2CM\PathName
@regedit /e "%reg_temp%" HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1AJS2\PathName
@regedit /e "%reg_temp%" HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1AJS2WOA\PathName
@regedit /e "%reg_temp%" HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1AJS2WOA
@regedit /e "%reg_temp%" HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1AJS2DA\PathName
@regedit /e "%reg_temp%" HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1AJS2DA
@set REG_NAME=HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1
@set REG_NAME_BASE=HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1BASE
@set REG_NAME_MANAGER=HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1AJS2
@set REG_NAME_VIEW=HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1AJS2V
@set REG_NAME_CLIENT=HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1AJS2C
@set REG_NAME_AJS2CONSOLE=HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1AJS2CM
@set REG_NAME_WOA=HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1AJS2WOA
@set REG_NAME_DA=HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hitachi\JP1AJS2DA

```

(3) Procedure for setting the outputting of a dump file

When a problem occurs, a memory dump file or a crash dump file might be necessary for troubleshooting. If you want to acquire a memory dump file or a crash dump file when a problem occurs, you must set output of the dump file beforehand.

For details about how to acquire dump files, see *1.4.1 Collecting data for troubleshooting in Windows* in the manual *Job Management Partner 1/Automatic Job Management System 3 Troubleshooting*.

Setting for outputting a memory dump:

1. In Control Panel, double-click **System**.
2. On the **Detailed settings** page, in **Start and Recovery**, click the **Set** button.
3. In **Write Debugging Information**, select **Complete Memory Dump**, and then specify the output destination file in **Dump File**.

Cautionary note:

The size of the memory dump varies according to the amount of memory actually installed. The greater the amount of installed physical memory, the larger the size of the memory dump. Therefore, ensure that there is sufficient free space on the disk to collect a memory dump. For details, see *STOP error* in Windows Help.

Setting for outputting a crash dump (in Windows Server 2003 and Windows XP Professional):

1. From the Windows **Start** menu, choose **Run**.
The Run dialog box appears.
2. In **Name**, enter `drwtsn32`, and then click the **OK** button.
The Dr. Watson Diagnostic Tool dialog box appears.
3. Select the **Create crash dump file** check box, and then specify the output file in **Crash dump**.
4. Click the **OK** button.

Cautionary notes:

- In Windows 7, Windows Server 2008, and Windows Vista, this setting is not required because Dr. Watson log files cannot be acquired. For details about how to collect information equivalent to the information in a crash dump, see *1.4.1(3) Obtain a dump file* in the manual *Job Management Partner 1/Automatic Job Management System 3 Troubleshooting*.
- Because the information output in a crash dump includes not only the JP1 information, but also problem information for other application programs, a large amount of disk space might be required. Therefore, if you set that a crash dump is to be output, ensure that there is sufficient free space on the disk.

Chapter

8. Setup for Operation in a Cluster System

This chapter describes the setup required to use JP1/AJS3 in a cluster system.

Note that previous editions of JP1 manuals referred to a cluster system as a *node switching system*.

- 8.1 Installation and setup required for cluster system operation
- 8.2 Setting up the operating environment for cluster system operation
- 8.3 Notes on cluster operation

8.1 Installation and setup required for cluster system operation

This section describes the installation and setup required to enable cluster system operation.

For an overview of cluster system operation, see *11.1 Overview of cluster systems in the Job Management Partner 1/Automatic Job Management System 3 Administration Guide*.

8.1.1 Installation required for cluster system operation

Install JP1/AJS3 on the local disks of the primary and secondary nodes. The drives must have the same name on both nodes. Similarly, the folders must have the same names on both nodes.

Note:

Do not install JP1/AJS3 on a shared disk.

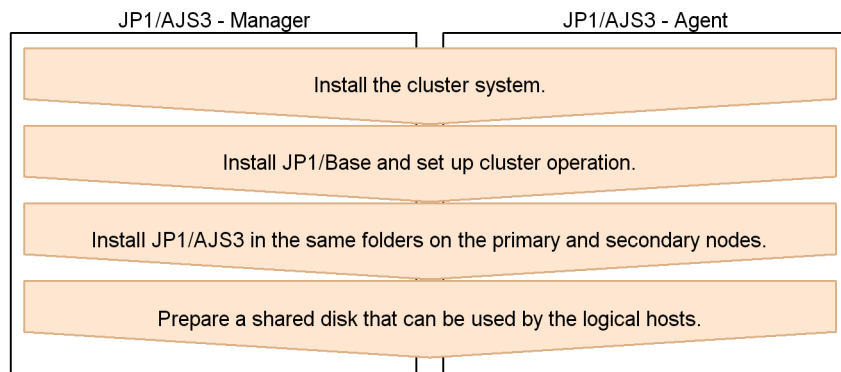
8.1.2 Setup required for cluster system operation

This subsection describes the procedure for setting up a Windows host when you are constructing a system that uses JP1/AJS3 for cluster operation.

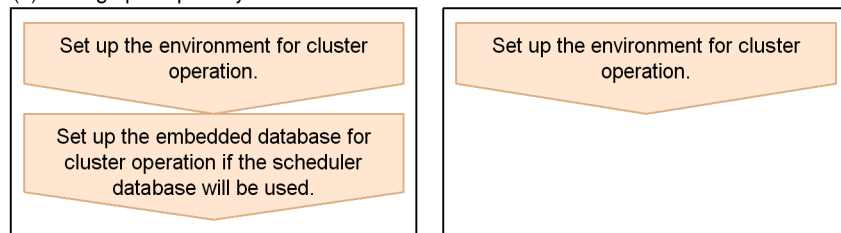
The following figure shows the setup procedure for enabling cluster operation.

Figure 8-1: Setup procedure for enabling cluster operation

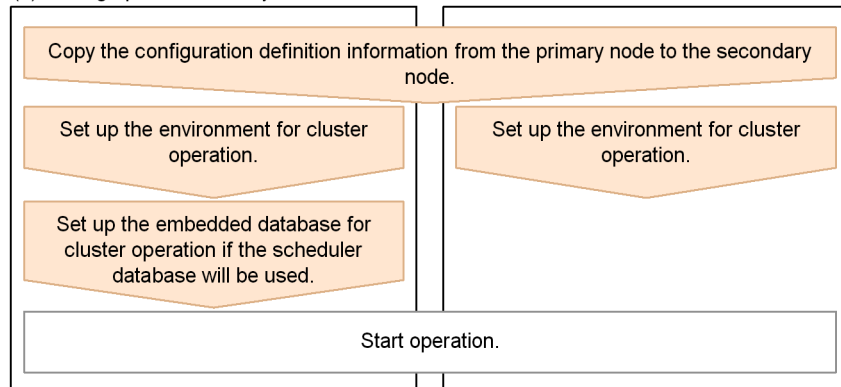
(1) Preparing to set up a cluster system in JP1/AJS3



(2) Setting up the primary node



(3) Setting up the secondary node



Ensure that the locations of JP1 series programs installed on the primary node and the locations of those programs installed on secondary nodes are the same. For details about the setup of the JP1/Base and JP1/AJS3 series programs shown in the figure, see 3. *Setup*. For details about the setup of a cluster system, see the documentation for the cluster system being used.

The following describes the items that must be set to implement cluster operation. For

details about the commands mentioned here, see 2. *Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1* and 2. *Commands Used during Setup* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

Before you set up a cluster system for JP1/AJS3, set up a cluster system for JP1/Base.

In addition, if implementing cluster operation, verify compatibility with the cluster software to be used before starting setup and operation.

8.1.3 Monitoring in cluster system operation

(1) Monitoring JP1/AJS3 operation

If you want to use cluster software to monitor the JP1/AJS3 status during cluster operation, register the names of the JP1/AJS3 services as cluster resources in the cluster software.

(2) When the embedded database is used as the database for the scheduler service

If the embedded database service stops due to an irrecoverable failure occurring in the service, the JP1/AJS3 service can also be stopped so that the occurrence of a failure can be detected. To enable monitoring, set the environment setting parameters as described below.

1. Set the environment setting parameters.

Execute the `jajs_config` command to set the following environment setting parameters in the relevant scheduler service.

Environment setting parameter	Value	Description
RDBCHECKINTERVAL	300	Checks the connection to the embedded database service and automatically stops the scheduler service if disconnection is detected.

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*.

For details about setting the scheduler service environment, see 4.2 *Environment setting parameter settings* and 8.2.3 *Changing the common definition information*.

8.2 Setting up the operating environment for cluster system operation

This section describes how to set up the JP1/AJS3 environment to support cluster operation.

8.2.1 Environment setup items for a cluster system

This subsection describes each of the items related to environment setup. For details about the specific setup procedure, see 8.2.2 *Procedure for setting up the environment for a cluster system*.

(1) Creating shared files on the shared disk

To inherit information when the primary and secondary nodes are switched, create folders and files on the shared disk. The following table lists the types and names of the folders to be created. These folders are automatically created under the folder specified in the `-d` option when the `jajs_setup_cluster` command is executed. Note that the folder names listed in the following table apply when `shared-folder-name\jp1ajs2` is specified in the `-d` option.

Table 8-1: Types and names of folders created on the shared disk (JP1/AJS3 - Manager)

Type of shared folder	Folder name
Environment settings file	<code>shared-folder-name\jp1ajs2\conf</code>
Job execution environment file	<code>shared-folder-name\jp1ajs2\database</code>
Job information file	<code>shared-folder-name\jp1ajs2\jobinf</code>
Log file	<code>shared-folder-name\jp1ajs2\log</code>
System file	<code>shared-folder-name\jp1ajs2\sys</code>
Work file	<code>shared-folder-name\jp1ajs2\tmp</code>
Backup file	<code>shared-folder-name\jp1ajs2\backup</code>
JP1/AJS3 Console Manager data directory	<code>shared-folder-name\jp1ajs2cm\database[#]</code>

[#]:

This folder is not automatically created when the `jajs_setup_cluster` command is executed. Manually create the folder when using JP1/AJS3 Console Manager in a cluster system.

Table 8-2: Types and names of folders created on the shared disk (JP1/AJS3 - Agent)

Type of shared folder	Folder name
Environment settings file	<i>shared-folder-name</i> \jplajs2\conf
Log file	<i>shared-folder-name</i> \jplajs2\log
System file	<i>shared-folder-name</i> \jplajs2\sys
Work file	<i>shared-folder-name</i> \jplajs2\tmp

As the shared folder, specify one of the folders specified during setup of the logical host environment for JP1/Base. Do not assign the same folder to more than one logical host. Create the folders and files to be shared under the folder assigned to each logical host.

Example:

The following example shows the folders created when the shared disk of logical host node0 is e:\shdisk\node0.

```
e:\shdisk\node0\jplajs2\conf
e:\shdisk\node0\jplajs2\database
e:\shdisk\node0\jplajs2\jobinf
e:\shdisk\node0\jplajs2\log
e:\shdisk\node0\jplajs2\sys
e:\shdisk\node0\jplajs2\tmp
e:\shdisk\node0\jplajs2\backup
e:\shdisk\node0\jplajs2cm\database
```

(2) Setting the communication method

Select the method to be used to bind an IP address to the TCP/IP socket that will be used for communication. To start multiple scheduler services in the cluster system, use the method that binds all hosts, including the physical hosts, to one IP address. For the operation described in *8.2.2 Procedure for setting up the environment for a cluster system*, the method used to bind to an IP address can be set automatically.

Set the port number when you are using the multi-startup setting of the scheduler service to add a port number for the service name of the job-status notification port.

(3) Setting common definition information

JP1/AJS3, JP1/Base, and JP1/IM have information specific to each logical host on the local disks of both physical hosts. Because the information is used as common definition information, it must be identical on both physical hosts.

The common definition information includes the environment settings file and job execution environment file.

(4) Registering services

Use the following names to register services corresponding to the logical hosts:

Display name: JP1/AJS3_ *logical-host-name*

Service name: JP1_AJS2_ *logical-host-name*

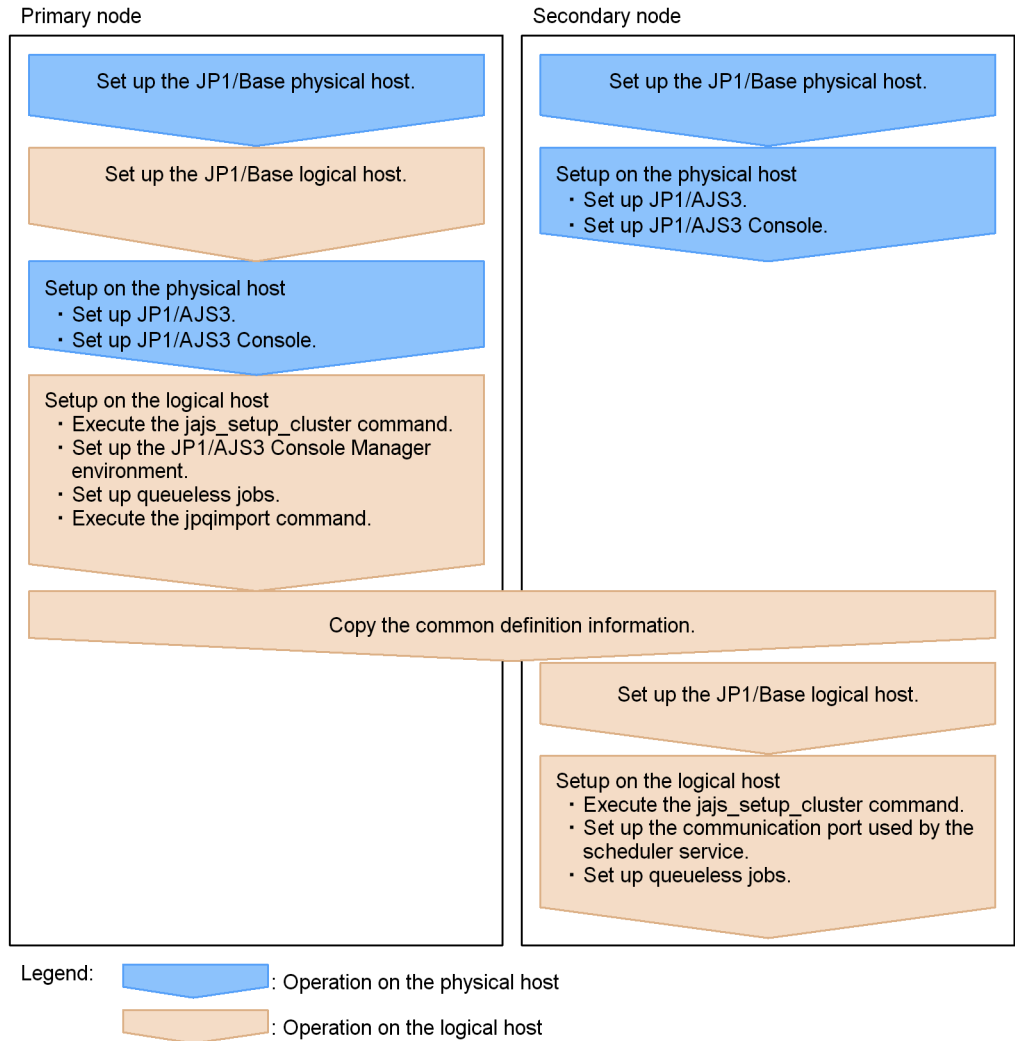
8.2.2 Procedure for setting up the environment for a cluster system

Use commands to define the items described in *8.2.1 Environment setup items for a cluster system*. Do this on both the primary and secondary nodes.

This subsection describes the tasks related to the environment setting commands that must be performed on both the primary and secondary nodes. Stop all the JP1 services and then set up the environment in JP1/AJS3 - Manager or JP1/AJS3 - Agent.

The following figure provides an overview of setting up the environment.

Figure 8-2: Overview of setting up the environment



(1) Tasks required on the primary node (JP1/AJS3 - Manager)

To set up a cluster system environment for JP1/AJS3 - Manager on the primary node:

1. Perform the JP1/Base tasks required on the primary node.

For details about the JP1/Base tasks, see the *Job Management Partner 1/Base User's Guide*.

If you activate both the physical and logical hosts concurrently, make sure that the IP address of the physical host is set as the `jp1hosts` information on both hosts.

Note that you might also need to set the `jp1hosts` information in other cases, depending on the network configuration or the operating environment. Specify the necessary settings by referring to the notes on cluster system operation and the procedure for setting the `jp1hosts` information in the *Job Management Partner 1/Base User's Guide*.

2. To use JP1/AJS3 Console, set up the physical host.

To use JP1/AJS3 Console Manager and JP1/AJS3 Console Agent, execute the following commands:

```
JP1/AJS3-Console-installation-folder\bin\ajscmsetup.exe
```

```
JP1/AJS3-installation-folder\bin\ajscasetup.exe
```

You do not have to execute the above commands if the physical host has been set up. However, make sure that the start method for the JP1/AJS3 Console service is set to **Automatic**.

3. Execute the `jajs_setup_cluster` command to set up the logical host, and create the shared files and folder on the shared disk.

Make sure that the JP1/AJS3 service is not running on any logical and physical hosts, and then execute the `jajs_setup_cluster` command.

The following shows the format of the `jajs_setup_cluster` command you execute:

```
jajs_setup_cluster
[-h logical-host-name]
-F scheduler-service-name
-d shared-folder-name
[-n scheduler-service-ID]
[-m {cold|warm|hot}]
{-P port-number-for-the-embedded-database
-I embedded-database-setup-ID |
-S
}
```

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

- For the `-h` option, specify the logical host name set in JP1/Base.
- The `-F` option is required.

- The `-d` option must be specified during setup of the primary node environment. For this option, specify a folder on the shared disk in which the shared folder and files will be created. As the shared folder, *specified-folder-name\jp1ajs2* is created, and the definition files on the local disk (files in *JPI/AJS3-installation-folder\conf*) are copied to the folder that is created. Before you execute the command, make sure that the shared disk is mounted. If the `-d` option is omitted, the secondary node environment is set up.
- If the `-n` option is omitted, the smallest available ID is assumed.
- For the `-m` option, specify the scheduler service start mode. The specification of this option takes effect only during setup of the primary node environment. If this option is omitted, the value for the scheduler service specified in the `DEFAULTSERVICENAME` environment setting parameter is inherited.
- Specify the `-P` and `-I` options only if you set up the embedded database when you set up the logical host.

For the `-P` option, specify the port number for the embedded database used by the logical host.

For the `-I` option, specify the setup ID of the embedded database used by the logical host.

When the `-P` and `-I` options have been specified, the embedded database is set up with the following settings:

- Database model: `-s` (small-scale model)

- System logging: Not performed

- System file duplication: Not performed

- Unload log file: Not used

- Data area directory:

shared-folder\jp1ajs2\embdb\value-specified-for-the-I-option\dbarea

- Work area directory: *JPI/*

AJS3-installation-folder\embdb\value-specified-for-the-I-option\dbarea

- Embedded database practical directory: *JPI/*

AJS3-installation-folder\embdb\value-specified-for-the-I-option

For the other items, the default values are set.

- Specify the `-s` option only if advanced setup is to be performed for the embedded database.

If the `-s` option is specified, setup of the embedded database is skipped

during setup of the logical host. Accordingly, the embedded database must be set up separately.

4. Perform advanced setup for the embedded database.

If you specified the `-s` option in step 3, perform advanced setup for the embedded database.

For details about advanced setup for the embedded database, see *D. Advanced Setup for the Embedded Database (in a Cluster Configuration)*.

5. Specify the JP1/AJS3 Console Manager environment settings.

If JP1/AJS3 Console Manager is being used, the JP1/AJS3 Console Manager environment must be set up for a cluster system.

Note that you do not need to set up the JP1/AJS3 Console Agent environment for a cluster system because setup is performed during setup of the JP1/AJS3 Manager environment for cluster operation.

Execute the following command to set the `DATADIRECTORY` environment setting parameter to the path to the data directory on the logical host:

```
jajs_config -k [logical-host-name\JP1AJS2CONSOLEMANAGER]
"DATADIRECTORY"="path-to-the-data-directory-on-the-logical-host"
```

For example, if the logical host name is `node0` and the logical host shared folder is `e:\shdisk\node0`, the command you execute is as follows:

```
jajs_config -k [node0\JP1AJS2CONSOLEMANAGER]
"DATADIRECTORY"="e:\shdisk\node0\jplajs2cm\database"
```

6. To use queueless jobs, perform the necessary setup, as described below.

Execute the following command:

```
ajsqlsetup -h logical-host-name -F scheduler-service-name
```

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

Cautionary note:

Executing the `ajsqlsetup` command causes the files needed for queueless job execution to be created on the shared disk. Because the files are then checked, make sure that the shared disk is mounted before you attempt to execute this command.

7. Execute the following command to create the environment for executing jobs:

```
jqimport -dt isam -ci  
execution-environment-configuration-definition-file-for-queue-and-submit-jobs  
[-mh logical-host-name]
```

8. Make sure that the service settings on the logical host are specified correctly.
For example, make sure that the option appropriate for system operation is set for the `STARTMODE` environment setting parameter.

9. Stop all embedded database services.

If JP1/AJS3 Database `_JFn`[#] services have been added, check whether the added JP1/AJS3 Database `_JFn` services have stopped. If these services are running, stop them.

#:

`_JFn` is the embedded database setup identifier used by JP1/AJS3 services on a logical host.

This completes the tasks required on the primary node.

Cautionary notes:

- Setup must be performed on each logical host.
- When the logical host for the primary node is set up by using the `jajs_setup_cluster` command, the environment of the scheduler service specified in the `DEFAULTSERVICENAME` environment setting parameter is copied to create the logical host environment.
- If the setting for starting multiple scheduler services is required on a logical host, see 8.2.7(1) *Starting multiple scheduler services on a logical host*.
- When the logical host for the primary node is set up by using the `jajs_setup_cluster` command, the following files are copied from the physical host to the logical host:

- `jp1ajs_spm.d.conf`
- `jp1ajs_dbm.d.conf`
- `jp1ajs_hst.d.conf`
- `jp1ajs_sch.d.conf`
- `jp1ajs_agt.d.conf`

As a result, the settings on the physical host are inherited and processes that are not necessary for the logical host might be started. If the above files on the physical host have been customized, customize them again on the logical host so that only necessary processes are started.

(2) Tasks required on the secondary node (JP1/AJS3 - Manager)

To set up a cluster system environment for JP1/AJS3 - Manager on the secondary node:

1. To use JP1/AJS3 Console, set up the physical host.

To use JP1/AJS3 Console Manager and JP1/AJS3 Console Agent, execute the following commands:

```
JP1/AJS3-Console-installation-folder\bin\ajscmsetup.exe
JP1/AJS3-installation-folder\bin\ajscasetup.exe
```

You do not have to execute the above commands if the physical host has been set up. However, make sure that the start method for the JP1/AJS3 Console service is set to **Automatic**.

2. After completing the JP1/Base, JP1/AJS3, and JP1/IM tasks on the primary node, save the common definition information to the primary node and then set up the common definition information on the secondary node.

After completing these tasks on the primary node, execute the `jbsgetcnf` command on the primary node to save the common definition information. Copy the backup file to the secondary node, specify the backup file as an argument of the `jbssetcnf` command, and then execute the command. The commands to be executed are as follows:

On the primary node:

```
jbsgetcnf -h logical-host-name > backup-file-name
```

On the secondary node:

```
jbssetcnf backup-file-name
```

3. Perform the JP1/Base tasks required on the secondary node.

For details about the JP1/Base tasks, see the *Job Management Partner 1/Base User's Guide*.

If you want to activate both the physical and logical hosts, make sure that the IP address of the physical host is set as the `jp1hosts` information on the physical host.

4. Execute the `jajs_setup_cluster` command to set up the logical host.

The following shows the format of the `jajs_setup_cluster` command you

execute:

```
jajs_setup_cluster  
[-h logical-host-name]  
-F scheduler-service-name  
[-S]
```

- For the -h option, specify the logical host name set in JP1/Base.
- For the -F option, always specify the scheduler service name that was specified on the primary node.
- Specify the -S option only if advanced setup is performed for the embedded database.

If the -S option is specified, setup of the embedded database is skipped during setup of the logical host. Accordingly, the embedded database must be set up separately.

5. Perform advanced setup for the embedded database.

If you specified the -S option in step 4, perform advanced setup for the embedded database.

For details about advanced setup for the embedded database, see *D. Advanced Setup for the Embedded Database (in a Cluster Configuration)*.

6. To use queueless jobs, perform the necessary setup, as described below.

Execute the following command:

```
ajsqlsetup -h logical-host-name -F scheduler-service-name -nc
```

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

7. To add the port number for the service name of the job status reporting port when you set startup of multiple scheduler services, set the port number in the `services` file.

8. Stop all embedded database services.

If JP1/AJS3 Database `_JFn#` services have been added, check whether the added JP1/AJS3 Database `_JFn` services have stopped. If these services are running, stop them.

#:

`_JFn` is the embedded database setup identifier used by JP1/AJS3 services on a logical host.

This completes the tasks required on the secondary node.

Cautionary notes:

- Setup must be performed on each logical host.
- If the setting for starting multiple scheduler services is required on a logical host, see 8.2.7(1) *Starting multiple scheduler services on a logical host*.

(3) Tasks required on the primary node (JP1/AJS3 - Agent)

To set up a cluster system environment for JP1/AJS3 - Agent on the primary node:

1. Perform the JP1/Base tasks required on the primary node.

For details about the JP1/Base tasks, see the *Job Management Partner 1/Base User's Guide*.

If you activate both the physical and logical hosts concurrently, make sure that the IP address of the physical host is set as the `jp1hosts` information on both hosts. Note that you might also need to set the `jp1hosts` information in other cases, depending on the network configuration or the operating environment. Specify the necessary settings by referring to the notes on cluster system operation and the procedure for setting the `jp1hosts` information in the *Job Management Partner 1/Base User's Guide*.

2. Execute the `jajs_setup_cluster` command to set up the logical host, and create the shared files and folder on the shared disk.

The following shows the format of the `jajs_setup_cluster` command you execute:

```
jajs_setup_cluster -h logical-host-name [-d shared-folder-name]
```

- For the `-h` option, specify the logical host name set in JP1/Base.
 - The `-d` option must be specified during setup of the primary node environment. For this option, specify a folder on the shared disk in which the shared folder and files will be created. As the shared folder, `specified-folder-name\jp1ajs2\` is created, and the definition files on the local disk (files in `JP1/AJS3-installation-folder\conf\`) are copied to the folder that is created. Before you execute the command, make sure that the shared disk is mounted. If the `-d` option is omitted, the secondary node environment is set up.
3. To use queueless jobs, perform the necessary setup, as described below.

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Execute the following command:

```
ajsqlsetup -h logical-host-name
```

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

Cautionary note:

Executing the `ajsqlsetup` command causes the files needed for queueless job execution to be created on the shared disk. Because the files are then checked, make sure that the shared disk is mounted before you attempt to execute this command.

This completes the tasks required on the primary node.

Cautionary note:

Setup must be performed on each logical host.

(4) Tasks required on the secondary node (JP1/AJS3 - Agent)

To set up a cluster system environment for JP1/AJS3 - Agent on the secondary node:

1. After completing the JP1/Base, JP1/AJS3, and JP1/IM tasks on the primary node, save the common definition information to the primary node and then set up the common definition information on the secondary node.

After completing these tasks on the primary node, execute the `jbsgetcnf` command on the primary node to save the common definition information. Copy the backup file to the secondary node, specify the backup file as an argument of the `jbssetcnf` command, and then execute the command. The commands to be executed are as follows:

On the primary node:

```
jbsgetcnf -h logical-host-name > backup-file-name
```

On the secondary node:

```
jbssetcnf backup-file-name
```

2. Perform the JP1/Base tasks required on the secondary node.

For details about the JP1/Base tasks, see the *Job Management Partner 1/Base User's Guide*.

If you want to activate both the physical and logical hosts, make sure that the IP address of the physical host is set as the `jp1hosts` information on the physical host.

3. Execute the `jajs_setup_cluster` command to set up the logical host.

The following shows the format of the `jajs_setup_cluster` command you execute:

```
jajs_setup_cluster -h logical-host-name
```

For the `-h` option, specify the logical host name set in JP1/Base.

4. To use queueless jobs, perform the necessary setup, as described below.

Execute the following command:

```
ajsqlsetup -h logical-host-name
```

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

This completes the tasks required on the secondary node.

Cautionary note:

Setup must be performed on each logical host.

8.2.3 Changing the common definition information

Cluster operation requires that the common definition information for JP1/Base, JP1/AJS3, and JP1/IM be the same on each physical host. After setting up JP1/Base, JP1/AJS3, and JP1/IM on the primary node physical host, and then changing the common definition information[#], execute the following command to ensure that the information matches on both physical hosts.

Note that this operation affects all JP1/Base, JP1/AJS3, and JP1/IM products.

On the primary node:

```
jbsgetcnf -h logical-host-name > backup-file-name
```

On the secondary node:

```
jbssetcnf backup-file-name
```

#:

While JP1/AJS3 is being used, the common definition information for JP1/Base, JP1/AJS3, and JP1/IM is updated at the following times:

- When the common definition information is changed by using the JP1/Base `jbssetcnf` command. (This command adds the information in the environment settings files to the registry.)
- When the JP1/AJS3 settings are changed by using either of the following JP1/AJS3 commands:
 - `jpqregguestuser`
 - `jpqreguser`
- When JP1/AJS3 is set up by using any of the following JP1/AJS3 commands:
 - `jajs_setup`
 - `jajs_config`
 - `jajs_setup_cluster`
 - `ajsembdbsetup`
 - `ajscasetup`
 - `ajscmsetup`
- When settings in the Manager Environment Settings dialog box or in the Agent Environment Settings dialog box of JP1/AJS2 are changed
- When linkage with JP1/AJS3 is set by using the JP1/Power Monitor `jaomajs2confset` command. (This command sets up the environment for controlling the host power in collaboration with JP1/AJS3.)

8.2.4 Registering the JP1/AJS3 service in the cluster software

Register the JP1/AJS3 service in the cluster software to enable failover to be performed. For details about how to register the service, see the documentation for the cluster software.

Note the following when registering the service:

- Set the cluster software so that the secondary node can inherit the IP address and shared disk together with the service from the primary node. In addition, set the cluster software so that the application program is also inherited.
- Set the cluster software so that JP1/AJS3 starts after the secondary node has

inherited the IP address and shared disk, and JP1/Base has started on the secondary node.

- The service name you register in the cluster software is `JP1_AJS3_logical-host-name`, which is registered in the environment settings.
- If you use JP1/AJS3 Console, you do not need to register the JP1/AJS3 Console service in the cluster software.
- If you use queueless jobs, see *8.2.5 Setting up the queueless job execution environment*.
- After setup required for cluster system operation has been completed, before you start the first JP1/AJS3 service, check whether JP1/AJS3 Database `_JFn#` services have stopped. If JP1/AJS3 Database `_JFn` services are running, stop them, and then start the first JP1/AJS3 service. You do not need to stop JP1/AJS3 Database `_JFn` services again after cluster system operation has started.
- You do not need to register JP1/AJS3 Database `_JFn#` and JP1/AJS3 Database ClusterService `_JFn#` services in your cluster software.

#:

`_JFn` is the embedded database setup identifier used by JP1/AJS3 services on a logical host.

8.2.5 Setting up the queueless job execution environment

When queueless jobs are used and the nodes are switched, the logical hosts that are currently attached to the currently active node must be detached, and then re-attached to the node that will become active.

To ensure that the detachment and re-attachment of the logical hosts is performed automatically when the nodes are switched, use the applicable procedure described below.

(1) Procedure used when JP1/AJS3 - Manager or JP1/AJS3 - Agent is installed and set up as a new installation

If you install and set up JP1/AJS3 - Manager or JP1/AJS3 - Agent as a new installation, perform the following procedure on both the primary and secondary nodes.

To ensure that logical hosts are automatically detached and re-attached:

1. Install JP1/AJS3 - Manager or JP1/AJS3 - Agent as a new installation.
For details about the installation procedure, see *2.2.2 Installing a JP1/AJS3 series program*.
2. Set up the physical host.
For details about the setup procedure, see *3. Setup*.

3. Set up the logical hosts.

For details about the setup procedure, see 8.2.2 *Procedure for setting up the environment for a cluster system*.

4. Edit the `jp1ajs_hstd.conf` file.

Edit the `jp1ajs_hstd.conf` file that was set up in step 3.

- If you have installed JP1/AJS3 - Manager, and either monitoring of the scheduler status is enabled, or the execution order of root jobnets among different scheduler services is controlled by using jobnet connectors

After creating a backup of the `jp1ajs_hstd.conf` file, edit the original file as follows:

```
qlcltd|ajsqlcltd.exe|||1800|
hlogd|ajshlogd.exe|||1800|
internet|ajsinetd.exe|||1800|
network|ajsnetwd.exe|||1800|
agentm|ajsagtmd.exe|||1800|
submitqueue|jppqman.exe|||1800|
hostevam|jppomanager.exe|||1800|
gatewayd|ajsgwmasterd.exe|||1800|
```

- If you have installed JP1/AJS3 - Manager, and either monitoring of the scheduler status is disabled, or the execution order of root jobnets among different scheduler services is not controlled by using jobnet connectors

After creating a backup of the `jp1ajs_hstd.conf` file, change the name of the `jp1ajs_hstd_ql.conf.model` file to `jp1ajs_hstd.conf`.

- If you have installed JP1/AJS3 - Agent

After creating a backup of the `jp1ajs_spmd.conf` file, change the name of the `jp1ajs_spmd_ql.conf.model` file to `jp1ajs_spmd.conf`. You do not need to edit the `jp1ajs_hstd.conf` file.

The `jp1ajs_hstd.conf` and `jp1ajs_hstd_ql.conf.model` files are located in the *shared-folder-name*\jp1ajs2\conf folder.

5. Start the queueless agent service and the queueless file transfer service.

Start the queueless agent service. If you have installed JP1/AJS3 - Manager, also start the queueless file transfer service.

(2) Procedure used when JP1/AJS3 - Manager or JP1/AJS3 - Agent is installed and set up as an upgrade installation

If you install and set up JP1/AJS3 - Manager or JP1/AJS3 - Agent as an upgrade

installation of version 7 of JP1/AJS2 - Manager or JP1/AJS2 - Agent, perform the following procedure on both the primary and secondary nodes.

To ensure that the logical hosts are automatically detached and re-attached:

1. Install JP1/AJS3 - Manager or JP1/AJS3 - Agent as an upgrade installation.

For details about the installation procedure, see 2.2.2 *Installing a JP1/AJS3 series program*.

If JP1/AJS3 - Manager or JP1/AJS3 - Agent has already been installed as an upgrade installation, skip this step.

2. Set up the queueless job execution environment on the physical host.

If the queueless job execution environment has not been set up on the physical host, use the `ajsqlsetup` command to set it up. For details about the `ajsqlsetup` command, see *ajsqlsetup* in 3. *Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

3. Set up the logical hosts.

If you have not set up the logical hosts yet, set them up.

For details about the setup procedure, see 8.2.2 *Procedure for setting up the environment for a cluster system*.

If the queueless job execution environment has not been set up when you are ready to set up the logical hosts, use the `ajsqlsetup` command to set up the queueless job execution environment. For details about the `ajsqlsetup` command, see *ajsqlsetup* in 3. *Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

4. Edit the `jplajs_hstd.conf` file.

Edit the `jplajs_hstd.conf` file of the logical hosts for which you want to enable automatic attachment and detachment.

- If you have installed JP1/AJS3 - Manager as an upgrade installation, and either monitoring of the scheduler status is enabled, or the execution order of root jobnets among different scheduler services is controlled by using jobnet connectors

After creating a backup of the `jplajs_hstd.conf` file, edit the original file as follows:

```
qlcltd|ajsqlcltd.exe|||1800|
hlogd|ajshlogd.exe|||1800|
internet|ajsinetd.exe|||1800|
network|ajsnetwd.exe|||1800|
```

8. Setup for Operation in a Cluster System

```
agentm|ajsagtmpd.exe|||1800|
submitqueue|jpmqman.exe|||1800|
hostevam|jpmomanager.exe|||1800|
gatewayd|ajsgwmasterd.exe|||1800|
```

- If you have installed JP1/AJS3 - Manager as an upgrade installation, and either monitoring of the scheduler status is disabled, or the execution order of root jobnets among different scheduler services is not controlled by using jobnet connectors

After creating a backup of the `jp1ajs_hstd.conf` file, change the name of the `jp1ajs_hstd_q1.conf.model` file to `jp1ajs_hstd.conf`.

- If you have installed JP1/AJS3 - Agent as an upgrade installation

After creating a backup of the `jp1ajs_spmd.conf` file, change the name of the `jp1ajs_spmd_q1.conf.model` file to `jp1ajs_spmd.conf`. You do not need to edit the `jp1ajs_hstd.conf` file.

The `jp1ajs_hstd.conf` and `jp1ajs_hstd_q1.conf.model` files are located in the *shared-folder-name*\jp1ajs2\conf folder.

5. Start the queueless agent service and the queueless file transfer service.

Start the queueless agent service. If you have installed JP1/AJS3 - Manager, also start the queueless file transfer service.

After the above settings have been specified, the queueless cluster process is started when the JP1/AJS3 service is started on the logical hosts. The queueless cluster process automatically attaches the logical hosts. When the JP1/AJS3 service stops on the logical hosts, the queueless cluster process also stops and the queueless cluster process automatically detaches the logical hosts.

(3) Notes on automatic attachment and detachment of logical hosts performed when queueless jobs are used

- This function must be set on each logical host. A queueless cluster process is generated for each logical host.
You do not need to set this function on logical hosts that do not use queueless jobs.
- You can also set this function on the logical hosts that are not in a cluster system.
- If you do not use this function during cluster system operation, manually execute the `ajsqlattach` command and the `ajsqldetach` command when nodes are switched to attach and detach logical hosts.
- Before you use this function, you must start the queueless agent service on both the primary and secondary nodes. You do not need to start and stop the queueless agent service when nodes are switched.

- This function cannot be used on physical hosts.
- By default, the queueless cluster process does not terminate abnormally even if automatic attachment fails and the startup processing of the JP1/AJS3 service on logical hosts continues. If you want to terminate the queueless cluster process abnormally to cancel the startup processing of the JP1/AJS3 service, set `error` for the `AJSQL_CLUSTERREQ` environment setting parameter. For details about `AJSQL_CLUSTERREQ`, see 2.7 *Setting up the queueless job execution environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.
- If automatic detachment fails, the queueless cluster process terminates abnormally. The processing to stop the JP1/AJS3 service on logical hosts also terminates abnormally.
- If this function is used, the status of the queueless cluster process is also output in the execution result of the `jajs_spm�_status` command. If this function is not used, the execution result of the `jajs_spm�_status` command does not include this status.

Output example when the function is not used:

```
c:\>jajs_spm�_status -h LHOST1
KNAD3690-I Processing to report the status of JP1/AJS3
has started.
Running processes are as follows:
Process name      Scheduler service name  Process ID
   jajs_dbmd                301
   ajsembdb                -
   ...
   jpomanager                AJSROOT1                557
   ajsmasterd                AJSROOT1                565
KNAD3691-I All the processes have started.
```

Output example when the function is used:

```
c:\>jajs_spm�_status -h LHOST1
KNAD3690-I Processing to report the status of JP1/AJS3
has started.
Process name      Scheduler service name  Process ID
   jajs_dbmd                301
   ajsembdb                -
   ...
   qlcltd                    320
   ...
   jpomanager                AJSROOT1                557
   ajsmasterd                AJSROOT1                565
KNAD3691-I All the processes have started.
```

(4) Other notes

- This note applies when a logical host is attached with the `AJSQL_ATTACH` environment setting parameter set to `yes`. If the nodes are switched in this state, cluster software or another means must be used to stop the queueless agent service on the active node and to start the queueless agent service on the standby node.

In this case, the status of the queueless jobs running on the physical host or on other logical hosts attached to the queueless agent service on the active node might become *Failed to start*, *Ended abnormally*, or *Unknown end status*. If queueless jobs must be executed on multiple hosts, use this function without enabling `AJSQL_ATTACH`.

For details about the `AJSQL_ATTACH` environment setting parameter, see 2.7 *Setting up the queueless job execution environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

- Do not allow operation with only logical hosts when physical hosts have been detached from the queueless agent service.

If you do so, an error message output when startup of a queueless job fails and information output to the standard error output during job execution might not be reported to the manager host.

8.2.6 Deleting logical hosts

In Windows, if you want to delete a logical host, you must do so on both the primary and secondary nodes. The following describes how to delete a logical host.

(1) JP1/AJS3 - Manager

To delete the JP1/AJS3 - Manager logical host:

1. Stop the JP1/AJS3 service.

Stop all JP1/AJS3 services, including JP1/AJS3 - Manager on the physical host.

2. Uninstall the database environment set up on the logical host.

Execute the `ajsembdbuninstl` command to uninstall the database environment set up on the logical host. If you delete the logical host without also uninstalling the database environment, you will be no longer able to uninstall the database environment. For details about the `ajsembdbuninstl` command, see *ajsembdbuninstl* in 2. *Commands Used during Setup* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

The command is executed in the following format:

```
ajsembdbuninstl -mh logical-host-name
```

- Execute the JP1/Base `jp1bshasetup.exe` command.

The Settings for Base Cluster System dialog box appears.

- Click the **Delete Logical Host** button.

- Select the names of the logical hosts you want to delete.

The logical host information and services for JP1/Base, JP1/AJS3, and JP1/IM are deleted. However, the shared files and shared folders are not deleted from the shared disk, and must be deleted manually.

If you want to delete only the common definition information for JP1/AJS3 on logical hosts without deleting JP1/Base, execute the following commands to delete the information:

```

jbsunsetcnf -i -h logical-host-name -c JP1AJS2
jbsunsetcnf -i -h logical-host-name -c JP1NBQAGENT
jbsunsetcnf -i -h logical-host-name -c JP1NBQMANAGER
jbsunsetcnf -i -h logical-host-name -c JP1NBQCLIENT
jbsunsetcnf -i -h logical-host-name -c JP1NBQNOTIFY
jbsunsetcnf -i -h logical-host-name -c JP1AOMMANAGER
jbsunsetcnf -i -h logical-host-name -c JP1AOMAGENT
jbsunsetcnf -i -h logical-host-name -c JP1AJSMANAGER
jbsunsetcnf -i -h logical-host-name -c JP1AJS2COMMON
jbsunsetcnf -i -h logical-host-name -c JP1QLAGENT
jbsunsetcnf -i -h logical-host-name -c JP1AJS2CONSOLEMANAGER

```

If no information has been set when you execute the above commands, the following message might appear. If the message appears, ignore it.

```

KAVA0405-I The specified string-specified-in-the-c-option does not exist
[logical-host-name]. Processing Stops.

```

- Delete the shared files and directories on the shared disk.

When you execute the `jbsunsetcnf` command, the logical host information for JP1/Base, JP1/IM, and JP1/AJS3 is deleted. However, the shared files and shared folders on the shared disk are not deleted, and must be deleted manually.

- Change the common definition information on the JP1/AJS3 physical host so that cluster operation is not set.

If you have deleted all logical hosts, change the common definition information on the JP1/AJS3 physical host so that cluster operation is not set.

To do this, execute the following command to set the environment setting parameters described in (3) below.

```
jajs_config -k definition-key "parameter-name"=value
```

Cautionary note:

The `jajs_config` command must be executed for each definition key.

8. Delete the `JP1_HOSTNAME` environment variable.

(2) JP1/AJS3 - Agent

To delete the JP1/AJS3 - Agent logical host:

1. Stop the JP1/AJS3 service.
Stop all JP1/AJS3 services, including JP1/AJS3 - Agent on the physical host.
2. Execute the JP1/Base `jp1bshasetup.exe` command.
The Settings for Base Cluster System dialog box appears.
3. Click the **Delete Logical Host** button.
4. Select the names of the logical hosts you want to delete.

The logical host information and services for JP1/Base, JP1/AJS3, and JP1/IM are deleted. However, the shared files and shared folders are not deleted from the shared disk, and must be deleted manually.

If you want to delete only the common definition information for JP1/AJS3 on logical hosts without deleting JP1/Base, execute the following commands to delete the information:

```
jbsunsetcnf -i -h logical-host-name -c JP1AJS2  
jbsunsetcnf -i -h logical-host-name -c JP1NBQAGENT  
jbsunsetcnf -i -h logical-host-name -c JP1NBQMANAGER  
jbsunsetcnf -i -h logical-host-name -c JP1NBQCLIENT  
jbsunsetcnf -i -h logical-host-name -c JP1NBQNOTIFY  
jbsunsetcnf -i -h logical-host-name -c JP1AOMAGENT  
jbsunsetcnf -i -h logical-host-name -c JP1AJS2COMMON  
jbsunsetcnf -i -h logical-host-name -c JP1QLAGENT
```

If no information has been set when you execute the above commands, the following message might appear. If the message appears, ignore it.

```
KAVA0405-I The specified string-specified-in-the-c-option does not exist  
[logical-host-name]. Processing Stops.
```

5. Delete the shared files and directories on the shared disk.

When you execute the `jbsunsetcnf` command, the logical host information for JP1/Base, JP1/IM, and JP1/AJS3 is deleted. However, the shared files and shared folders on the shared disk are not deleted, and must be deleted manually.

6. Change the common definition information on the JP1/AJS3 physical host so that cluster operation is not set.

If you have deleted all logical hosts, change the common definition information on the JP1/AJS3 physical host so that cluster operation is not set.

To do this, execute the following command to set the environment setting parameters described in (3) below.

```
jajs_config -k definition-key "parameter-name"=value
```

Cautionary note:

The `jajs_config` command must be executed for each definition key.

7. Delete the `JP1_HOSTNAME` environment variable.

(3) Environment setting parameters

Table 8-3: Environment setting parameters to set when deleting JP1/AJS3 - Manager and JP1/AJS3 - Agent logical hosts

Definition key	Environment setting parameter	Value
[JP1_DEFAULT\JP1NBQAGENT\Process]	"Isha"=	dword:00000000
[JP1_DEFAULT\JP1NBQCLIENT\Process]	"Isha"=	dword:00000000
[JP1_DEFAULT\JP1NBQMANAGER\Process]	"Isha"=	dword:00000000
[JP1_DEFAULT\JP1NBQNOTIFY\Process]	"Isha"=	dword:00000000

For details about these environment parameters, see *2.3 Setting up the job execution environment* in the *Job Management Partner 1/Automated Job Management System 3 Configuration Guide 2*.

8.2.7 Setting startup of multiple scheduler services on a logical host

To set the startup of multiple scheduler services, first set information such as the names of the scheduler services to be added and then create databases for those scheduler services.

The following describes the procedure for setting the startup of multiple scheduler services on a logical host and the procedure for deleting scheduler services that have been added.

(1) Starting multiple scheduler services on a logical host

The following describes the procedure for enabling startup of multiple scheduler services on a logical host.

(a) Tasks required on the primary node

To specify the necessary settings on the primary node:

1. In Windows Control Panel, open the **Services** administrative tool, and stop the following service:
 - The JP1/AJS3 service on the logical host to which you want to add a scheduler service

Note:

Do not stop the JP1/AJS3 Database services. Make sure that all JP1/AJS3 Database_*JF?* (? : 1 to 9 or A to Z) services are running. If there are JP1/AJS3 Database_*JF?* services that are not running, start them.

Note that you can display all the setup identifiers of the embedded databases for which Database_*JF?* services must be started by using the `ajsembdbidlist` command.

For each setup identifier, execute the `ajsembdbstatus` command with `-s ust -id _JFn` (*n*: 1 to 9 or A to Z) specified to confirm that the embedded database is operating (UNIT-STAT is ONLINE). If the database is not operating, use the `ajsembdbstart` command with `-id _JFn` specified to activate it.

2. Use Explorer or another means to create the following folders on the shared disk:
 - Database folder
 - Folder for temporary files
 - Job information folder
 - Backup information folder

Make sure that the above folders, other than the backup information folder, are neither folders used by other scheduler services set on the local hosts (the physical host and all logical hosts) nor subfolders of those folders.

3. Execute the `jajs_setup` command to add the scheduler service that is to be started.

```
jajs_setup -a -h logical-host
-F scheduler-service
-p service-for-the-port-reporting-the-job-status
-d database-folder
```

```
-t folder-for-temporary-files
-j job-information-folder
-b backup-information-folder
-n scheduler-service-ID-number
-D logical-host-shared-folder
-I setup-identifier
-P embedded-database-port-number
```

Example of adding a scheduler service named AJSROOT3 to the logical host LHOST whose shared folder is x:\products:

```
jajs_setup -a -h LHOST
-F AJSROOT3
-p jplajs2report3
-d "x:\products\jplajs2\database\schedule\AJSROOT3"
-t "x:\products\jplajs2\temp\schedule3"
-j "x:\products\jplajs2\jobinf\schedule3"
-b "x:\products\jplajs2\backup\schedule3"
-n 3
-D "x:\products"
-I _JF2
-P 22225
```

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

4. Open the following file with a text editor such as Notepad:

```
system-folder\system32\drivers\etc\Services
```

5. For the service name of the port that reports the job status specified in step 3, set the port number.

Example of setting 20248 as the port number:

```
jplajs2report3 20248/tcp
```

Cautionary note:

Make sure that the port number you specify does not duplicate any existing port number.

6. If you want to use queueless jobs, you must perform the setup required for using queueless jobs.

Execute the following command:

```
ajsqlsetup -F scheduler-service -h logical-host
```

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

7. Restart the JP1/AJS3 service on the logical host to which you have added the scheduler service.

The scheduler service is added and started with the specified settings. After the JP1/AJS3 service has been restarted, use JP1/AJS3 - View to confirm that the root job group is displayed with the name of the added scheduler service attached.

(b) Tasks required on the secondary node

To specify the necessary settings on the secondary node:

1. Set up the embedded database on the secondary node.

Note: This step is required only if the setup identifier specified during setup on the primary node is an identifier that is not output by the `ajsembdbidlist` command.

Execute the following commands:

```
ajsembdbinstl
-s directory-containing-the-embedded-database-installation-media
-id setup-identifier
-mh logical-host-name

ajsembdbbuild
-d logical-host-shared-directory\JP1AJS2\emddb\setup-identifier
-s
-f
-mh logical-host
-eh physical-host-of-the-primary-node
-ld work-area-directory
-p embedded-database-port-number
-i embedded-database-installation-directory
-id setup-identifier
-ext_db
-ext_log
```

For *setup-identifier*, *logical-host-shared-directory*, and *embedded-database-port-number*, specify the values that are specified on the primary node.

For details about the commands executed in this step, see *2. Commands Used*

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

Example of the commands to be executed when you set up an embedded database on logical host LHOST whose logical host shared directory is x:\products, setup identifier is _JF3, and embedded database port number is 22222:

```
ajsembdbinstl
-s "c:\Program Files\HITACHI\jplajs2\tools\AJS3DB"
-id _JF3
-mh LHOST

ajsembdbbuild
-d "x:products\jplajs2\embdb\_JF3"
-s
-f
-mh LHOST
-eh HOST1
-ld "c:\Program Files\HITACHI\jplajs2\embdb\_JF3\dbarea"
-p 22222
-i "c:\Program Files\HITACHI\jplajs2\_JF3"
-id _JF3
-ext_db
-ext_log
```

2. Set the common definition information of the primary node on the secondary node.

When you have completed the tasks for the primary node, execute the `jbsgetcnf` command on the primary node to save the common definition information. Copy the saved file to the secondary node, specify the name of the saved file as an argument, and execute the `jbssetcnf` command.

Execute the commands as follows:

On the primary node:

```
jbsgetcnf -h logical-host > backup-file
```

On the secondary node:

```
jbssetcnf backup-file
```

3. Open the following file with a text editor such as Notepad:

```
system-folder\system32\drivers\etc\Services
```

4. On the secondary host, set the port number that you set in step 5 in (a) above.

Example of setting 20248 as the port number:

```
jplajs2report3 20248/tcp
```

Cautionary note:

Set the same port number as that used on the primary node.

Supplementary note on commands executed to enable startup of multiple scheduler services:

If multiple scheduler services are running and you execute the command without specifying the `-F scheduler-service` option, the system assumes the command is being executed for the default scheduler service.

You can omit the `-F` option if you specify a scheduler service name in the `AJSCONF` environment variable.

(2) Deleting an added scheduler service

When you delete a scheduler service that has been added, you must delete it from both the primary node and the secondary node.

To delete an added scheduler service:

1. Stop the JP1/AJS3 services.

Stop all the JP1/AJS3 services on the physical and logical hosts.

Note:

Do not stop the JP1/AJS3 Database services. Make sure that all JP1/AJS3 Database_`JF?` (`?`: 1 to 9 or A to Z) services are running. If there are JP1/AJS3 Database_`JF?` services that are not running, start them.

Note that you can display all the setup identifiers of the embedded databases for which Database_`JF?` services must be started by using the `ajsembdbidlist` command.

For each setup identifier, execute the `ajsembdbstatus` command with `-s ust -id _JFn` (`n`: 1 to 9 or A to Z) specified to confirm that the embedded database is operating (UNIT-STAT is ONLINE). If the database is not operating, use the `ajsembdbstart` command with `-id _JFn` specified to activate it.

2. Execute the `jajs_setup` command to delete the scheduler service.

```
jajs_setup -e -F scheduler-service
```

Example of the command executed when the scheduler service to be deleted is

```
AJSROOT3:
```

```
jajs_setup -e -F AJSROOT3
```

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

On the secondary node, use the `jbsunsetcnf` command instead of the `jajs_setup` command.

```
jbsunsetcnf -i -h logical-host-name -c JP1AJSMANAGER -n
scheduler-service-name
```

Example of the command for deleting the scheduler service AJSROOT3:

```
jbsunsetcnf -i -h LHOST -c JP1AJSMANAGER -n AJSROOT3
```

3. Delete the folders that you created when you added the scheduler service.

Delete the following folders that were created when you executed the `jajs_setup` command:

- Database folder specified in the `-d` option
- Folder for temporary files specified in the `-t` option
- Job information folder specified in the `-j` option
- Backup information folder specified in the `-b` option

Note:

Do not delete the logical host shared folder specified in the `-D` option.

4. Start the JP1/AJS3 services.

Restart the JP1/AJS3 services that you stopped in step 1, and confirm that the scheduler service has been deleted.

(3) Uninstalling a database environment that is no longer necessary

For details about how to uninstall a database environment that is no longer necessary, see 6.1.1(3) *Uninstalling an unnecessary database environment*.

8.3 Notes on cluster operation

For notes that apply during cluster operation, see *11.6 Cautionary notes on using a cluster system* in the *Job Management Partner 1/Automatic Job Management System 3 Administration Guide*.

Chapter

9. Uninstallation

This chapter describes how to uninstall JP1/Base and JP1/AJS3.

- 9.1 Uninstalling JP1/Base
- 9.2 Uninstalling JP1/AJS3 series programs

9.1 Uninstalling JP1/Base

To uninstall JP1/Base, use the automatic uninstallation function. This function also uninstalls the integrated trace log function (HNTRLib2). However, if JP1/AJS3 - View or another product is using the function, the function is uninstalled when the product is uninstalled.

For details about JP1/Base uninstallation, see the *Job Management Partner 1/Base User's Guide*.

Note:

Before you uninstall JP1/Base, make sure that JP1/AJS3 has been uninstalled. If you uninstall JP1/Base before you uninstall JP1/AJS3, you might no longer be able to uninstall JP1/AJS3.

If you uninstall and then re-install JP1/Base, you must also uninstall and then re-install JP1/AJS3. The common definition information used by JP1/AJS3 is deleted when JP1/Base is uninstalled. Therefore, if JP1/Base is uninstalled, JP1/AJS3 will no longer be able to operate.

9.2 Uninstalling JP1/AJS3 series programs

This section describes how to uninstall JP1/AJS3.

Note:

- Because uninstalling JP1/AJS3 also causes the JP1/AJS3 programs to be deleted, the user environment (such as the database and environment settings files) is also deleted. Therefore, if you uninstall and then reinstall JP1/AJS3, you must specify all the settings again.
- If you perform uninstallation while the **Services** administrative tool in Control Panel is open, the startup type for the services provided by JP1/AJS3 might change to *Disabled*, preventing the services from being uninstalled. Before you perform uninstallation, make sure that the **Services** administrative tool in Control Panel is closed. If uninstallation of services has failed because the **Services** administrative tool was not closed, restart the system. When the system is restarted, these services are uninstalled. Note that if you perform re-installation while the startup type of the services provided by JP1/AJS3 is *Disabled*, these services will not be installed.
- Before you start uninstallation, make sure that the Event Viewer administrative tool in the Control Panel is closed. If this tool is open, uninstallation might fail.
- If you uninstall JP1/Base before uninstalling JP1/AJS3, you will no longer be able to uninstall JP1/AJS3. Always make sure that JP1/Base is installed before you uninstall JP1/AJS3.
- In a cluster system, use JP1/Base to delete logical hosts before you uninstall JP1/AJS3. For details about deleting logical hosts, see 8.2.6 *Deleting logical hosts*.

To uninstall JP1/AJS3 series programs from a Windows host:

1. Log in as a member of the Administrators group to the host from which you want to uninstall the JP1/AJS3 series programs.
2. Terminate all programs.
If existing JP1 series programs are running, always stop them.
3. In Windows Control Panel, double-click **Add/Remove Programs**.
A dialog box for selecting the programs to be uninstalled appears.

9. Uninstallation

4. Select the JP1/AJS3 series programs you want to uninstall, and then click the **Remove** button.

A dialog box asking you to confirm that you want to delete the program appears.

5. Click the **OK** button.

The selected programs are uninstalled.

If a dialog box displaying the message `An attempt to delete the JP1/AJS3 database failed. Try uninstalling again.` appears while JP1/AJS3 - Manager is being uninstalled, take action based on the KAVS2128-E message output to the Windows event log.

6. Delete any user files created by JP1/AJS3 and the JP1/AJS3 installation folder as required.

Chapter

10. Types of JP1/AJS3 System Configuration and System Setup Procedures

A JP1/AJS3 system can be set up in various configurations. For example, a small configuration might have only one host that is used to define and execute jobs, whereas a large configuration might have several hosts that execute many jobs. In a JP1/AJS3 system, the functions of other products can also be used by linking JP1/AJS3 to those products. This chapter describes the JP1/AJS3 system configurations you can create, and the necessary setup procedures.

10.1 Overview of setting up JP1/AJS3

10.1 Overview of setting up JP1/AJS3

This section describes the JP1/AJS3 system configurations you can create and the necessary setup procedures.

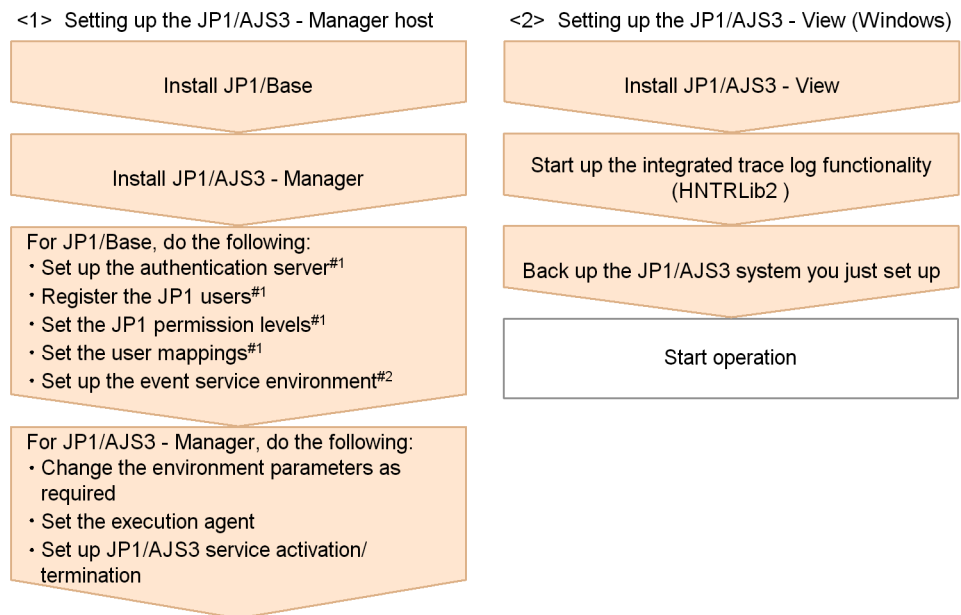
For details about JP1/AJS3 series programs and the prerequisites for setting up a JP1/AJS3 system, see *2.1 Checking the operating environment* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

10.1.1 Procedure for setting up a system with JP1/AJS3 - Manager and JP1/AJS3 - View

Prepare a host machine and install JP1/AJS3 - Manager. If necessary, prepare another host (Windows) machine and install JP1/AJS3 - View. Multiple JP1/AJS3 - View hosts (Windows) can connect to the JP1/AJS3 - Manager host.

The following figure shows the procedure for setting up a system with JP1/AJS3 - Manager and JP1/AJS3 - View.

Figure 10-1: Procedure for setting up a system with JP1/AJS3 - Manager and JP1/AJS3 - View



#1 If automatic setup is selected during a new installation of JP1/Base, this setup operation is automatically performed with the defaults. If it is not necessary to change the defaults, you do not need to perform the operation. If automatic setup is not selected during a new installation of JP1/Base or if JP1/Base is remotely installed as a new installation by using JP1/Software Distribution, you need to perform this operation manually.

#2 Change settings as needed for your operating requirements.

10.1.2 Procedure for setting up a system in a manager/agent configuration that uses only one JP1/AJS3 - Manager host

Prepare a host for installing JP1/AJS3 - Manager, and hosts for installing JP1/AJS3 - Agent. If necessary, also prepare a host (Windows) for installing JP1/AJS3 - View.

The following figure shows the procedure for setting up a system in a manager/agent configuration that uses only one JP1/AJS3 - Manager host.

Figure 10-2: Procedure for setting up a system in a manager/agent configuration that uses only one JP1/AJS3 - Manager host



- #1 If automatic setup is selected during a new installation of JP1/Base, this setup operation is automatically performed with the defaults. If it is not necessary to change the defaults, you do not need to perform the operation. If automatic setup is not selected during a new installation of JP1/Base or if JP1/Base is remotely installed as a new installation by using JP1/Software Distribution, you need to perform this operation manually.
- #2 You can omit this operation when you have defined the JP1/Base authentication server on another host.
- #3 Change settings as needed for your operating requirements.

10.1.3 Procedure for setting up a system in a manager/agent configuration that uses several JP1/AJS3 - Manager hosts

Prepare hosts for installing JP1/AJS3 - Manager and for installing JP1/AJS3 - Agent.

If necessary, also prepare a host (Windows) for installing JP1/AJS3 - View.

Although the procedure for setting up a system that uses several JP1/AJS3 - Manager hosts is the same as that for setting up a system that uses only one JP1/AJS3 - Manager host, the procedure in *Figure 10-2* must be performed for each JP1/AJS3 - Manager host.

After live operation starts, define a manager job group or manager jobnet so that multiple managers can be managed centrally.

Chapter

11. Installation

This chapter describes how to install JP1/AJS3.

- 11.1 Required task before installing JP1/AJS3 series programs
- 11.2 Installing JP1/AJS3 series programs

11.1 Required task before installing JP1/AJS3 series programs

This section describes the following task that is required before you can install JP1/AJS3 on a UNIX host:

- Installing JP1/Base

Note:

Before you perform a new installation of JP1/AJS3, you must install JP1/Base. Before you perform an upgrade installation of JP1/AJS3, you must upgrade JP1/Base.

11.1.1 Installing JP1/Base

Make sure that JP1/Base has been installed on the hosts on which JP1/AJS3 - Manager and JP1/AJS3 - Agent will be installed.

Note that if you select automatic setup when performing a new installation of JP1/Base, the following user information is automatically set. If this information is appropriate, you do not need to set any user information.

- Authentication server: local host
- JP1 user: `jp1admin`
- JP1 user's password: `jp1admin`
- OS user mapped to the JP1 user: `root`
- Server host name: *

If automatic setup is not selected during a new installation of JP1/Base or if JP1/Base is remotely installed as a new installation by using JP1/Software Distribution, the authentication server and JP1 user settings are not specified automatically. In such cases, these settings must be specified manually after JP1/Base has been installed. If the authentication server for JP1/Base has not been set, startup of the JP1/AJS3 service in JP1/AJS3 - Manager and JP1/AJS3 - Agent fails.

For details about installing and setting up JP1/Base, see the *Job Management Partner I/Base User's Guide*.

11.2 Installing JP1/AJS3 series programs

This section describes how to install JP1/AJS3 series programs (JP1/AJS3 - Manager and JP1/AJS3 - Agent) for each OS of the target host.

Note that JP1/Base must already be installed before you install JP1/AJS3 - Manager and JP1/AJS3 - Agent. Also make sure that the installed version of JP1/Base is the prerequisite version for JP1/AJS3.

For details about installing JP1/Base, see the *Job Management Partner 1/Base User's Guide*.

11.2.1 Notes on installation

This subsection provides notes on the host on which JP1/AJS3 - Manager will be installed, and notes on upgrade installation of JP1/AJS3 - Manager. This subsection also describes remote installation (software distribution) using JP1/Software Distribution.

(1) Host on which JP1/AJS3 - Manager is installed

JP1/AJS3 - Agent cannot be installed on a host on which JP1/AJS3 - Manager is installed.

(2) Notes on upgrade installation

(a) About customizable files

JP1/AJS3 files include files that can be customized by users. Because an upgrade installation does not replace existing customizable files, current user-customized settings are retained.

Note that the directory that contains the customized files also contains model files (files ending with `.model`) from which the customized files were created. These model files are updated in an upgrade installation. After an upgrade installation has been completed, check whether the files in the folders listed below have been customized. For any customized configuration files you find, make the same customization to the copies of the model files you have made. Next, delete all the existing configuration files, and rename the copies of the model files so that they become the new configuration files. If no files have been customized, you need only to delete all the existing configuration files and rename the copies of the model files.

For JP1/AJS3 - Manager:

- `/etc/opt/jp1ajs2`
- `/etc/opt/jp1ajs2/conf`
- `/etc/opt/jp1ajs2cm`

- `/etc/opt/jp1ajs2cm/conf`

For JP1/AJS3 - Agent:

- `/etc/opt/jp1ajs2`
- `/etc/opt/jp1ajs2/conf`

Cautionary notes:

- The model files in the `jp1ajs2` shared directory are not updated.
- The `conf` files in the `jp1ajs2` shared directory are used as configuration files for logical hosts.

If JP1/AJS2 - Manager is upgraded to JP1/AJS3 - Manager, the process management definition files and extended startup process definition files (`jp1ajs_xxx.d.conf` and `jp1ajs_xxx_0700.conf` in the folders listed above) are automatically updated for a JP1/AJS3 - Manager process configuration. If linkage with HP NNM or a queueless job execution environment was set up in JP1/AJS2 - Manager, check whether the settings in these files have been inherited after the upgrade installation and setup has been completed. If these settings have not been inherited, re-specify them. If the restart settings were customized (for example, so that abnormally terminated JP1/AJS2 processes are restarted), the restart settings are reset to the defaults. If you want to disable the restart settings or change the maximum number of restart attempts, customize the settings again after the upgrade installation and setup have been completed.

(b) About upgrade installations of JP1/AJS3 - Manager and JP1/AJS3 - Agent

- Before you perform an upgrade installation of JP1/AJS3 - Manager or JP1/AJS3 - Agent, make sure that all services and processes of JP1/AJS3 or JP1/AJS2 have stopped. We recommend that you back up necessary definition files before the upgrade installation.
- Upgrade installation of JP1/AJS3 - Manager or JP1/AJS3 - Agent fails in the following cases:
 - A process of JP1/AJS3 - Manager or JP1/AJS3 - Agent that has already been installed is running.
 - JP1/Base has not been installed or the version of the installed JP1/Base is not appropriate.
 - A product with which JP1/AJS3 - Manager or JP1/AJS3 - Agent is not compatible has been installed.

(c) Upgrade installation in a cluster configuration

The following describes the procedure for installing a JP1/AJS3 series program as an upgrade installation on a UNIX host in a cluster configuration.

The installation procedure differs according to whether JP1/AJS3 - Manager is updated from JP1/AJS2 - Manager or from JP1/AJS3 - Manager.

In the procedures that follow, the node where the logical host normally operates is called the *primary node*, and the other node is called the *secondary node*.

■ Upgrade procedure for a program other than JP1/AJS2 - Manager

To perform an upgrade installation from JP1/AJS3 - Manager, JP1/AJS3 - Agent, JP1/AJS3 - View, JP1/AJS2 - Agent, or JP1/AJS2 - View:

1. Make sure that the logical host is not operating on the secondary node.

Make sure that JP1/AJS3 or JP1/AJS2 of the logical host is not operating on the secondary node.

No problems are caused if JP1/AJS3 or JP1/AJS2 of the logical host is operating on the primary node.

2. Perform an upgrade installation on the secondary node.

3. Make sure that the logical host is not operating on the primary node.

Either fail over the logical host from the primary node to the secondary node or stop the logical host to ensure that JP1/AJS3 or JP1/AJS2 of the logical host is not operating on the primary node.

No problems are caused by failing over the logical host to the secondary node on which an upgrade installation has finished.

4. Perform an upgrade installation on the primary node.

Note:

When the logical host has been failed over to the secondary node on which an upgrade installation has finished, do not fail back the logical host to the primary node until the upgrade installation on the primary node has finished.

■ Upgrade procedure (from JP1/AJS2 - Manager to JP1/AJS3 - Manager in a standard configuration)

Note:

An upgrade installation of JP1/AJS2 - Manager in a cluster configuration requires some setup, such as the migration of data on the shared disk, after completion of the upgrade installation. This setup requires that cluster operation be temporarily stopped. You will not be able to start JP1/AJS3 - Manager operation until this setup is complete. Because the time required for the setup to finish depends on the amount of data and other factors, the upgrade installation and setup must be performed according to a suitable plan.

To perform an upgrade installation from JP1/AJS2 - Manager:

Note: If your system consists of multiple logical hosts, perform steps 6 to 16 and 20 to 23 for each logical host. When using a logical host in a non-cluster environment, perform only the steps that relate to the primary node. You cannot begin using JP1/AJS3 until setup is completed on all physical and logical hosts.

Note: The following procedure assumes that one scheduler service is stored in one embedded database. If multiple scheduler services have been set up, perform steps 8, 11, and 12 for all of the scheduler services. To add an embedded database, perform steps 9, 10, 20, and 21.

1. Terminate JP1 on both the primary and secondary nodes.
Use the cluster software to stop all JP1 programs and services running on the primary and secondary nodes. For details about how to do so, see the manual for your cluster software.
2. Install JP1/Base as an upgrade installation on the primary node.
For details about installing JP1/Base, see the *Job Management Partner 1/Base User's Guide*.
3. Install JP1/AJS3 - Manager as an upgrade installation on the primary node.
On the primary node, upgrade JP1/AJS2 - Manager to JP1/AJS3 - Manager.
4. Start the embedded database or instance of HiRDB you were using before the upgrade on the physical primary node host.
To provide access to the database from before the upgrade, start the embedded database or instance of HiRDB that was used as the database of the scheduler service on the physical host of the primary node.
For details about how to start the embedded database or HiRDB, see the manual for the JP1/AJS2 product or HiRDB you are using.
5. Perform setup on the physical host of the primary node.

On the physical host of the primary node, execute the `jajs_migrate` command.

For example, execute the command as follows:

```
jajs_migrate -convert
```

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

6. Confirm that the shared disk and logical IP address are available to the primary node.

Make sure that the shared disk is mounted and the logical IP address is valid so that the data on the shared disk can be migrated. If the shared disk is not mounted or the logical IP address is invalid, use the cluster software or volume manager software to mount the shared disk and enable the logical IP address. For details about how to do so, see the manual for your cluster software.

7. Start the embedded database or instance of HiRDB you were using before the upgrade on the logical host of the primary node.

To provide access to the database from before the upgrade, start the embedded database or instance of HiRDB that was used as the database of the scheduler service on the logical host of the primary node.

For details about how to start the embedded database or HiRDB, see the manual for the JP1/AJS2 product or HiRDB you are using.

8. Execute the `ajscnvdbexport` command on the primary node to back up the contents of the database.

For example, execute the command as follows:

```
ajscnvdbexport -mh LHOST -F AJSROOT2 -b /tmp/work
```

If you were using the embedded database as the scheduler database before the upgrade, set the following environment variables before you execute the command. If you fail to do so, the message KAVS0990-E is output and the command ends abnormally.

- In HP-UX

```
SHLIB_PATH=installation-directory-of-embedded-database-before-migration/client/lib
```

- In Solaris

```
LD_LIBRARY_PATH=installation-directory-of-embedded-database-before-
```

migration/client/lib

- In AIX

```
LIBPATH=installation-directory-of-embedded-database-before-migration/
client/lib
```

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

9. Execute the `ajsembdbinstl` command on the primary node to install the JP1/AJS3 database.

For example, execute the command as follows:

```
ajsembdbinstl -s /opt/jp1ajs2/tools/AJS3DB -id _JF1 -mh
LHOST
```

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

10. Execute the `ajsembdbbuild` command on the primary node to build the environment for the database.

For example, execute the command as follows:

```
ajsembdbbuild -s -r -d /shdsk/node0/jp1ajs2/embdb/_JF1
-ld /var/opt/jp1ajs2/embdb/_JF1/dbarea -mh LHOST -eh hostA
-p 22221 -i /opt/jp1ajs2/embdb/_JF1 -id _JF1
```

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

11. Execute the `ajsembdbsetup` command on the primary node to set up the environment for the database.

For example, execute the command as follows:

```
ajsembdbsetup -mh LHOST -F AJSROOT2 -p 22221 -id _JF1 -ru s
-convert
```

For details about the `ajsembdbsetup` command, see *ajsembdbsetup* in 2. *Commands Used during Setup* in the manual *Job Management Partner 1/*

Automatic Job Management System 3 Command Reference 2.

12. Execute the `ajscnvdbimport` command on the primary node to import the contents of the database.

For example, execute the command as follows:

```
ajscnvdbimport -mh LHOST -F AJSROOT2 -b /tmp/work
```

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

13. Perform setup on the primary node.

Execute the `jajs_migrate` command on the primary node to set up the environment for running JP1/AJS3.

For example, execute the command as follows:

```
jajs_migrate -convert -h LHOST -r -S
```

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

14. Stop the embedded database, which was started automatically during the setup process.

For example, execute the command as follows:

```
ajsembdbstop -id _JF1
```

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

15. Execute the `jbsgetcnf` command on the primary node to back up the common definition information to a file.

Execute the command as follows:

```
jbsgetcnf -h logical-host-name > backup-file-name
```

16. Copy the file you created in step 15 to the secondary node.
17. Install JP1/Base as an upgrade installation on the secondary node.

For details about installing JP1/Base, see the *Job Management Partner 1/Base User's Guide*.

18. Install JP1/AJS3 - Manager as an upgrade installation on the secondary node.
On the secondary node, upgrade JP1/AJS2 - Manager to JP1/AJS3 - Manager.
19. Perform setup on the physical host of the secondary node.

Execute the `jajs_migrate` command on the physical host of the secondary node.

For example, execute the command as follows:

```
jajs_migrate -convert
```

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

20. Execute the `ajsembdbinstl` command on the secondary node to install the JP1/AJS3 database.

For example, execute the command as follows:

```
ajsembdbinstl -s /opt/jp1ajs2/tools/AJS3DB -id _JF1 -mh  
LHOST
```

For the `-id` option, specify the same value that you used when installing the database on the primary node.

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

21. Execute the `ajsembdbbuild` command on the secondary node to build the environment for the database.

For example, execute the command as follows:

```
ajsembdbbuild -s -f -d /shdsk/node0/jp1ajs2/embdb/_JF1  
-ld /var/opt/jp1ajs2/embdb/_JF1/dbarea -mh LHOST -eh hostA  
-p 22221 -i /opt/jp1ajs2/embdb/_JF1 -id _JF1
```

For the `-id`, `-d`, and `-p` options, specify the same value that you used when building the environment on the primary node.

For details about the `ajsembdbbuild` command, see *ajsembdbbuild* in 2.

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

22. Execute the `jbssetcnf` command on the secondary node to apply the common definition information.

Execute the command as follows:

```
jbssetcnf name-of-file-copied-in-step-16
```

23. Perform setup on the secondary node.

Execute the `jajs_migrate` command on the secondary node to set up the environment for running JP1/AJS3.

For example, execute the command as follows:

```
jajs_migrate -convert -h LHOST -f -s
```

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

24. Unregister the embedded database or instance of HiRDB you were using with JP1/AJS2 before the upgrade from the cluster software.

For details about how to do so, see the documentation for your cluster software.

25. Start JP1 on the primary node.

Use the cluster software to start the JP1 programs and services on the primary node. This starts JP1/AJS3 operation in a cluster environment.

■ Upgrade procedure (from JP1/AJS2 - Manager to JP1/AJS3 - Manager in a compatible ISAM configuration)

This subsection describes how to upgrade JP1/AJS2 - Manager to JP1/AJS3 - Manager in a compatible ISAM configuration.

If multiple logical hosts have been set up, perform step 5 in the procedure for all of the logical hosts.

To upgrade JP1/AJS2 - Manager:

1. Terminate JP1 on both the primary and secondary nodes.

Use the cluster software to stop all JP1 programs and services running on the primary and secondary nodes. For details about how to do so, see the documentation for your cluster software.

2. Install JP1/Base as an upgrade installation on the primary node.

For details about installing JP1/Base, see the *Job Management Partner 1/Base User's Guide*.

3. Install JP1/AJS3 - Manager as an upgrade installation on the primary node.

On the primary node, upgrade JP1/AJS2 - Manager to JP1/AJS3 - Manager.

For details about an upgrade installation of a JP1/AJS3 series program, see (b) *About upgrade installations of JP1/AJS3 - Manager and JP1/AJS3 - Agent*.

4. Confirm that the shared disk and logical IP address are available to the primary node.

Make sure that the shared disk is available so that the data on the shared disk can be migrated. If the shared disk is not mounted, use the cluster software or volume manager software to mount the shared disk. For details about how to do so, see the documentation for your cluster software.

Also, use the `ping` or `jp1ping` command to confirm that the logical IP address is available. For details about the `jp1ping` command, see the *Job Management Partner 1/Base User's Guide*.

5. On the primary node, execute the `jajs_convert_to_spmd` command to convert the startup process definition file for system management.

For example, execute the command as follows:

```
/opt/jplajs2/tools/jajs_convert_to_spmd -h LHOST -c ISAM
```

6. Install JP1/Base as an upgrade installation on the secondary node.

For details about installing JP1/Base, see the *Job Management Partner 1/Base User's Guide*.

7. Install JP1/AJS3 - Manager as an upgrade installation on the secondary node.

On the secondary node, upgrade JP1/AJS2 - Manager to JP1/AJS3 - Manager.

For details about an upgrade installation of a JP1/AJS3 series program, see (b) *About upgrade installations of JP1/AJS3 - Manager and JP1/AJS3 - Agent*.

8. Start JP1 on the primary node.

Use the cluster software to start the JP1 programs and services on the primary node. This starts JP1/AJS3 operation in a cluster environment.

(d) About the shared memory used by job execution control (for upgrade installation from 06-71-G1 or an earlier version)

The job execution control agent process uses shared memory to send or receive information. Normally, this information is deleted when the JP1/AJS3 service stops. However, if the agent process terminates abnormally or the service is forcibly stopped

by using the `jajs_killall.cluster` command, the information might remain. If the abnormal termination or the forced stop, followed by a restart, is repeated, the number of shared memory segments increases, possibly affecting the system.

You can prevent the number of shared memory segments from increasing by using the `jpgshmake` command. If you perform an upgrade installation from JP1/AJS2 06-71-G1 or earlier, execute the command once after you set up the system. You do not need to execute the command if you install JP1/AJS3 or JP1/AJS2 version 06-71-H or later as a new installation. For details about the `jpgshmake` command, see *jpgshmake (UNIX only)* in 2. *Commands Used during Setup* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

(3) Remote installation (software distribution) using JP1/Software Distribution

JP1/AJS3 supports remote installation by JP1/Software Distribution.

The following types of remote installation are supported:

- New installation

JP1/AJS3 can be installed as a new installation on target hosts.

- Upgrade installation

The version of JP1/AJS3 or JP1/AJS2 installed on target hosts can be updated. Note, however, that setup must be performed on each host if JP1/AJS2 - Manager is upgraded to JP1/AJS3 - Manager.

For details about the actual procedure for remote installation when JP1/Software Distribution is used, see the *Job Management Partner 1/Software Distribution Client Description and User's Guide (For UNIX Systems)*.

For details about how to perform the required setup after JP1/AJS2 - Manager has been upgraded to JP1/AJS3 - Manager, see 8.5 *Setup after upgrading from JP1/AJS2 - Manager to JP1/AJS3 - Manager* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

(4) Upgrade installation from JP1/AJS2 - Manager to JP1/AJS3 - Manager

Because JP1/AJS3 - Manager requires more disk space and memory than JP1/AJS2 - Manager, accurately estimate how much disk space and memory will be required before upgrading JP1/AJS2 - Manager to JP1/AJS3 - Manager. Note that operation of JP1/AJS3 - Manager following an upgrade from JP1/AJS2 - Manager cannot start until setup has been completed after the upgrade installation. Because the time required for the setup to finish depends on the amount of data and other factors, the upgrade installation and setup must be performed according to a suitable plan. For details about the setup procedure required after an upgrade installation from JP1/AJS2 - Manager to JP1/AJS3 - Manager, see 8.5 *Setup after upgrading from JP1/AJS2 - Manager to JP1/AJS3 - Manager* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

11.2.2 Installation in HP-UX

This subsection describes the installation procedure in HP-UX.

Note that the names of files and directories on the CD-ROM might be different from the names used in this subsection, depending on the hardware environment. Use the actual file and directory names displayed by the `ls` command.

To install a JP1/AJS3 series program in HP-UX:

1. Log in as a superuser to the host on which you want to install the JP1/AJS3 series program. Alternatively, use the `su` command to become superuser.
2. Close all programs.
If existing JP1 series programs are running, make sure that you stop all of them.
3. Insert the media containing the JP1/AJS3 series program you want to install.
4. Execute the following command to mount the CD-ROM drive:

```
/usr/sbin/mount -F cdfs -r device-special-file /cdrom
```

In the above command, `/cdrom` is the mount point directory of the device special file for the CD-ROM drive. If there is no mount point directory, create one.

Note that the device special file name and mount point directory name might differ, depending on the user environment.

5. Execute the following command to start Hitachi Program Product Installer:

```
/cdrom/HPUX#1/SETUP /cdrom#2
```

Hitachi Program Product Installer starts, and the initial screen appears.

#1:

For HP-UX (IPF), this folder name is `IPFHPUX`.

#2:

This example assumes that the mount point directory is `/cdrom`.

6. On the initial screen, enter `I`.
A list of programs that can be installed is displayed.
7. Select the JP1/AJS3 series program you want to install, and then enter `I`.
The selected program is installed.
You can select a program by moving the cursor to the program, and then pressing

the space bar.

8. When installation of the program has been completed, enter `Q`.

The Hitachi Program Product Installer initial screen is displayed again.

After JP1/AJS3 - Manager has been installed, check syslog for the KAVS2128-E message. If this message has been output, setup of the scheduler service has failed, in which case take action based on the KAVS2128-E message.

When the JP1/AJS3 series program has been installed, user information (the authentication server and JP1 user) and database settings have been specified. In this state, you can execute a job simply by starting the JP1/AJS3 service. Note, however, that the job will be executed with all of the default settings. For changing these settings, see *12. Setup*.

11.2.3 Installation in Solaris

This subsection describes the installation procedure in Solaris.

Note that the names of files and directories on the CD-ROM might be different from the names used in this subsection, depending on the hardware environment. Use the actual file and directory names displayed by the `ls` command.

To install a JP1/AJS3 series program in Solaris:

1. Log in as superuser to the host on which you want to install the JP1/AJS3 series program. Alternatively, use the `su` command to become superuser.
2. Close all programs.

If existing JP1 series programs are running, make sure that you stop all of them.

3. Insert the media containing the JP1/AJS3 series program you want to install.
4. Execute the following command to start Hitachi Program Product Installer.

```
/cdrom/cdrom/solaris/setup /cdrom/cdrom#
```

Hitachi Program Product Installer starts, and the initial screen appears.

#:

This example assumes that the mount point directory is `/cdrom/cdrom`.

5. On the initial screen, enter `I`.
A list of programs that can be installed is displayed.
6. Select the JP1/AJS3 series program you want to install, and then enter `I`.
The selected program is installed.

You can select a program by moving the cursor to the program, and then pressing the space bar.

7. When installation of the program has been completed, enter `Q`.

The Hitachi Program Product Installer initial screen is displayed again.

After JP1/AJS3 - Manager has been installed, check syslog for the KAVS2128-E message. If this message has been output, setup of the scheduler service has failed, in which case take action based on the KAVS2128-E message.

When the JP1/AJS3 series program has been installed, user information (the authentication server and JP1 user) and database settings have been specified. In this state, you can execute a job simply by starting the JP1/AJS3 service. Note, however, that the job will be executed with all of the default settings. For changing these settings, see *12. Setup*.

11.2.4 Installation in AIX

This subsection describes the installation procedure in AIX.

Note that the names of files and directories on the CD-ROM might be different from the names used in this subsection, depending on the hardware environment. Use the actual file and directory names displayed by the `ls` command.

To install a JP1/AJS3 series program in AIX:

1. Log in as superuser to the host on which you want to install the JP1/AJS3 series program. Alternatively, use the `su` command to become superuser.
2. Close all programs.
If existing JP1 series programs are running, make sure that you stop all of them.
3. Insert the media containing the JP1/AJS3 series program you want to install.
4. Execute the following command to mount the CD-ROM drive:

```
/usr/sbin/mount -r -v cdrfs device-special-file /cdrom
```

In the above command, `/cdrom` is the mount point directory of the device special file for the CD-ROM drive. If there is no mount point directory, create one.

Note that the device special file name and mount point directory name might differ, depending on the user environment.

5. Execute the following command to start Hitachi Program Product Installer:

```
/cdrom/AIX/SETUP /cdrom#
```

Hitachi Program Product Installer starts, and the initial screen appears.

#:

This example assumes that the mount point directory is `/cdrom`.

6. On the initial screen, enter `I`.

A list of programs that can be installed is displayed.

7. Select the JP1/AJS3 series program you want to install, and then enter `I`.

The selected program is installed.

You can select a program by moving the cursor to the program, and then pressing the space bar.

8. When installation of the program has been completed, enter `Q`.

The Hitachi Program Product Installer initial screen is displayed again.

After JP1/AJS3 - Manager has been installed, check syslog for the KAVS2128-E message. If this message has been output, setup of the scheduler service has failed, in which case take action based on the KAVS2128-E message.

When the JP1/AJS3 series program has been installed, user information (the authentication server and JP1 user) and database settings have been specified. In this state, you can execute a job simply by starting the JP1/AJS3 service. Note, however, that the job will be executed with all of the default settings. For information about changing these settings, see *12. Setup*.

Chapter

12. Setup

This chapter describes how to set up each JP1/AJS3 series program and the system and user environments.

- 12.1 Required setup for JP1/AJS3 - Manager
- 12.2 Required setup for JP1/AJS3 - Agent
- 12.3 Required setup for JP1/AJS3 Console
- 12.4 Setting up the system and user environments

12.1 Required setup for JP1/AJS3 - Manager

Before JP1/AJS3 - Manager can be used, both JP1/Base and JP1/AJS3 - Manager must be set up.

You must complete setting up JP1/Base before you attempt to set up JP1/AJS3 - Manager.

12.1.1 Setting up JP1/Base

This subsection describes how to set up JP1/Base.

The subsection contains an overview of setup and brief setup procedures. For details about the setup procedures, items to be set, and commands, see the *Job Management Partner 1/Base User's Guide*.

The following is an overview of JP1/Base setup:

1. Set user information.

JP1/Base user management is used to specify user authentication and mapping settings.

The user authentication settings specify JP1/AJS3 users and the permissions required to use JP1/AJS3.

The user mapping settings are required to execute jobs and to log in from JP1/AJS3 - View. JP1 users are mapped to OS users who have been registered on hosts.

For details about how to specify these settings, see (1) *Setting user information*.

2. Specify the event service environment settings.

The event service environment settings are required to send and receive JP1 events.

In the JP1/Base event service environment settings, specify `keep-alive` as the communication type for the `server` parameter in the API settings file. If `close` is specified, the following problems might occur:

- The JP1 event issued by JP1/AJS3 at startup cannot be issued.
- The KAVT1040-E message is output to the integrated trace log, and the JP1 event reception monitoring job, log file monitoring job, and Windows event log monitoring job cannot detect events.
- The JP1 event sending job terminates abnormally (*Ended abnormally* status).

For details about how to specify settings and about the API settings file, see the

Job Management Partner 1/Base User's Guide.

The following describes the JP1/Base setup procedure and definitions.

(1) Setting user information

The general procedure for setting user information is as follows:

1. Specify the authentication server to be used.
2. Register JP1 users.
3. Set the JP1 permission level.
4. Perform user mapping. (This step is also required when a user logs in from JP1/AJS3 - View.)

Note that if the authentication server has been set on another host, steps 2 and 3 are not necessary. However, the operations in these steps must have been performed for the authentication server on the other host.

In the UNIX version of JP1/Base, user information is set by using commands.

The following describes the steps required to set user information.

(a) Specify the authentication server to be used

Execute the following command:

```
jbssetusrsv primary-authentication-server [secondary-authentication-server]
```

The host specified for *primary-authentication-server* is used as the default authentication server, while the host specified for *secondary-authentication-server* is used as the backup authentication server.

You do not always need to specify a secondary authentication server. If you omit the specification, only the host specified for *primary-authentication-server* operates as the authentication server in the user authentication block.

Note:

The authentication server names you specify in the command must be set in the `hosts` file or on the DNS server before JP1/Base starts. You can execute the `jbssetusrsv` command to specify authentication server names before or after the names are set in the `hosts` file or on the DNS server. However, JP1/Base must be able to resolve the server names into IP addresses when it starts. If you execute the `jbssetusrsv` command to specify the local host as an authentication server (primary or secondary authentication server), you must also execute the following commands:

```
cd /etc/opt/jplbase/conf
cp -p jplbs_spm�.conf.session.model jplbs_spm�.conf
```

The local host is not started as an authentication server (primary or secondary authentication server) until these commands have been executed.

(b) Register JP1 users

Execute the following command:

```
jbsadduser JP1-user-name
```

You need to execute the command for each JP1 user to be registered.

(c) Set the JP1 permission level

For each JP1 user you register, set a permission level, which determines what processing the JP1 user can define or execute in JP1/AJS3. When you set a permission level for a JP1 user, you must define both a JP1 resource group and a JP1 permission level for the JP1 user.

To set a JP1 permission level:

1. Open the following file with a text editor:

```
/etc/opt/jplbase/conf/user_acl/JP1_UserLevel
```

This file initially contains the following definition entry:

```
jpladmin:*=JP1_AJS_Admin,JP1_Console_Admin,JP1_JPQ_Admin
```

2. Modify the definition entry (the format is *JP1-user-name:JP1-resource-group-name=JP1-permission-level-name*).

If you want to specify two or more JP1 permission level names, use a comma (,) to separate the JP1 permission level names. If you want to define permission

levels for two or more resource groups, use a colon (:) to separate the resource group names. If you want to insert a comment in the file, start the line with a semicolon (;). A line beginning with a semicolon (;) is treated as a comment line.

Note that `JP1_Queue` is a case-sensitive name.

For details about the JP1 permission levels required for JP1/AJS3, see (2) *JP1 permission levels required for JP1/AJS3*.

The following shows an example of the definition in the file.

<Permission levels to be set>

Set the following permission levels.

- JP1 user "jp1user1" is granted permission to execute and reference jobnets (JP1_AJS_Operator) in resource group "UNIT1", as well as manipulate the queues and jobs of other users (JP1_JPQ_Operator).
 - JP1 user "jp1user2" is granted permission to reference jobnets (JP1_AJS_Guest) in resource group "UNIT1".
JP1 user "jp1user2" cannot manipulate queues and agents, or register submitted jobs.
 - JP1 user "jp1user3" is granted permission to execute and reference jobnets (JP1_AJS_Operator) in resource group "UNIT1", register submitted jobs, and manipulate local jobs (JP1_JPQ_User).
- Leave the default permission levels set for "jp1admin" as is.

<File contents>

```
jp1admin:*=JP1_AJS_Admin,JP1_Console_Admin,JP1_JPQ_Admin
jp1user1:UNIT1=JP1_AJS_Operator:JP1_Queue=JP1_JPQ_Operator
jp1user2:UNIT1=JP1_AJS_Guest
jp1user3:UNIT1=JP1_AJS_Operator:JP1_Queue=JP1_JPQ_User
```

3. Set JP1 permission levels for all JP1 users, and then close the file.
4. Restart JP1/Base, or execute the `jbs_spmc_reload` command.

The new definition in the file takes effect.

(d) Map the JP1 users

Map the registered JP1 users to OS users. This user mapping is required for JP1 users to execute jobs or log in from JP1/AJS3 - View.

To map a JP1 user:

1. Use a text editor to create or open a user mapping definition file.

Although you can use a file with any name, we recommend that you use a file named `/etc/opt/jp1base/conf/user_acl/jp1BsUmap.conf`.

2. Specify the user mapping entries (the format is *JP1-user-name: host-name: OS-user-name*).

The following shows an example of the definition in the file.

<User mapping to be set>

Set the following information.

- JP1 user "jp1user1" uses JP1/AJS3 - View to define a job and uses JP1/AJS3 - Manager and JP1/AJS3 - Agent on a remote host to execute the job.
JP1/AJS3 - Manager is on the host named "host01". JP1 user "jp1user1" logs in to host "host01" using the OS user name "administrator", which is registered on "host01".
JP1/AJS3 - Agent is on the host named "host02". JP1 user "jp1user1" executes jobs from JP1/AJS3 - Manager on host "host01" using OS user name "administrator", which is registered on "host02".

<Contents set with host01>

```
jp1user1:host01:administrator
```

<Contents set with host02>

```
jp1user1:host01:administrator
```

- JP1 user "jp1user2" uses JP1/AJS3 - Manager to define a job and uses JP1/AJS3 - Agent on a remote host to execute the job.
JP1/AJS3 - Manager is on a host named "host01". JP1 user "jp1user2" logs on to host "host01" using the OS user name "jp1user2", which is registered on "host01".
JP1/AJS3 - Agent is on a host named "host02". JP1 user "jp1user2" executes jobs from JP1/AJS3 - Manager of host "host01" using the OS user name "jp1user2", which is registered on "host02".

<Contents set with host01>

```
jp1user2:host01:jp1user2
```

<Contents set with host02>

```
jp1user2:host01:jp1user2
```

- JP1 user "jp1user3" uses JP1/AJS2 - Client Toolkit to register a submitted job in JP1/AJS3 - Manager and uses JP1/AJS3 - Agent to execute the job.
JP1/AJS3 - Agent is on a host named "host02". JP1/AJS3 - Manager is on a host named "host01".
JP1 user "jp1user3" executes the job using the OS user name "administrator" without specifying the host on which JP1/AJS3 - Manager is located.

<Contents set with host02>

```
jp1user3*:administrator
```

3. When you have completed the definition, close the file, and then execute the following command:

```
jbsmkumap [-f user-mapping-definition-file]
```

The definition in the file takes effect.

If the user mapping definition file is `/etc/opt/jp1base/conf/user_acl/jp1BsUmap.conf`, you do not need to specify the `-f` option.

Supplementary note:

The following table describes the items that can be specified in the user mapping definition file.

Table 12-1: Items that can be specified in the user mapping definition file (JP1/AJS3 - Manager)

Permitted operation	JP1 user	Host	OS user
Executing a job from JP1/AJS3 - View	User who logs in to JP1/AJS3 - Manager	JP1/AJS3 - Manager host to which JP1/AJS3 - View connects	User registered in the OS of the host on which the job will be executed
Executing a job on a host other than the JP1/AJS3 - Manager host	User who logs in to the OS of the JP1/AJS3 - Manager host	JP1/AJS3 - Manager host	User registered in the OS of the host on which the submit job will be executed
Registering a submit job from JP1/AJS2 - Client Toolkit	User who logs in to the OS of the JP1/AJS3 - Manager host to which the job is to be submitted	JP1/AJS3 - Manager host	User registered in the OS of the host on which the submit job will be executed

Cautionary note:

Make sure that the user ID and group ID have been set correctly for any OS user to whom you map a JP1 user.

For a JP1 user to log in from JP1/AJS3 - View, the home directory must be set correctly for the OS user to whom the JP1 user is mapped.

The OS users to which you map JP1 users must be able to log in to the OS normally.

If the OS user to whom you map a JP1 user satisfies either of the following conditions, the job might fail to start:

- The home directory specified in `/etc/passwd` does not exist.
- The login shell specified in `/etc/passwd` does not exist.

(2) JP1 permission levels required for JP1/AJS3

JP1/AJS3 provides three types of JP1 permission levels:

- Those related to defining and executing jobnets
- Those related to manipulating agent management information
- Those related to executing and manipulating jobs

The following describes the JP1 permission levels for each type.

(a) JP1 permission levels related to defining and executing jobnets

The following five JP1 permission levels are related to defining and executing jobnets:

- JP1_AJS_Admin

Grants administrator authority to the holder, and permits the holder to perform operations related to the owner and resource group of a unit, and to define, execute, and edit a jobnet.

- JP1_AJS_Manager
Permits the holder to define, execute, and edit a jobnet.
- JP1_AJS_Editor
Permits the holder to define and edit a jobnet.
- JP1_AJS_Operator
Permits the holder to execute and view a jobnet.
- JP1_AJS_Guest
Permits the holder to view a jobnet.

The following table provides information about the operations that are permitted by the above JP1 permission levels.

Table 12-2: Operations permitted by the JP1 permission levels related to defining and executing jobnets

Operation	JP1_AJS_Admin	JP1_AJS_Manager	JP1_AJS_Editor	JP1_AJS_Operator	JP1_AJS_Guest
Changing the owner, JP1 resource group name, or job execution user type (<i>Executed by</i>) of a unit owned by another user	Y#1	--	--	--	--
Defining a unit	Y	Y#2	Y#2	--	--
Changing the definition of the units of a jobnet	Y	Y#3	Y#3	--	--
Changing the definition of a jobnet	Y	Y	Y	--	--
Copying, moving, or renaming a unit	Y	Y#2	Y#2	--	--
Deleting a unit	Y	Y	Y	--	--
Outputting the name of a unit to the standard output file	Y	Y	Y	Y	Y
Outputting the definition of a unit to the standard output file	Y	Y	Y	Y	Y
Backing up a unit	Y	Y	Y	Y	Y

Operation	JP1_AJS_Admin	JP1_AJS_Manager	JP1_AJS_Editor	JP1_AJS_Operator	JP1_AJS_Guest
Restoring a unit	Y	Y ^{#2}	Y ^{#2}	--	--
Defining calendar information for a job group	Y	Y	Y	--	--
Defining a jobnet execution schedule for a specific period	Y	Y	--	Y	--
Registering a defined jobnet for execution	Y	Y	--	Y	--
Unregistering execution of a jobnet	Y	Y	--	Y	--
Outputting information such as the execution log, current status, and next execution schedule of a jobnet or job to the standard output file	Y	Y	Y	Y	Y
Temporary changing the schedule of a jobnet	Y	Y	--	Y	--
Temporary changing the status of a job	Y	Y	--	Y	--
Changing the status of a job	Y	Y	--	Y	--
Interrupting execution of a jobnet	Y	Y	--	Y	--
Re-executing a jobnet	Y	Y	--	Y	--
Forcibly terminating a job or jobnet	Y	Y	--	Y	--
Exporting a unit	Y	Y	Y	Y	Y
Importing a unit	Y	Y	Y	--	--
Exporting the registered execution-schedule information for root jobnets	Y	Y	Y	Y	Y
Importing the registered execution-schedule information for root jobnets	Y	Y	--	Y	--
Registering release of a jobnet	Y	Y	Y ^{#4}	Y ^{#4}	--
Canceling the release of a jobnet	Y	Y	Y ^{#4}	Y ^{#4}	--

Operation	JP1_AJS_Admin	JP1_AJS_Manager	JP1_AJS_Editor	JP1_AJS_Operator	JP1_AJS_Guest
Viewing jobnet release information	Y	Y	Y	Y	Y

Legend:

Y: This operation can be performed at this permission level.

--: This operation cannot be performed at this permission level.

Note:

OS superusers can perform all operations, regardless of the granted JP1 permission level.

If no JP1 resource group is set for a unit, all users can perform all operations for that unit, regardless of the granted JP1 permission level.

#1

The owner of a unit can perform these operations for the unit even when JP1_AJS_Admin permission has not been granted. For details, see *8.2.1 Unit owner permission* in the manual *Job Management Partner 1/Automatic Job Management System 3 Overview*.

#2

For the manager job group and manager jobnet, the access permission definition of the JP1/AJS3 - Manager to be accessed applies.

#3

When the execution user type of a unit is *User who owns*, operations that change the unit can be performed only by the owner of the unit and by JP1 users who have JP1_AJS_Admin permission. This prevents general users without JP1_AJS_Admin permission from executing jobs.

When the execution user type of a unit is *User who registered*, operations that change the unit can be performed by any user who has a JP1 permission level sufficient for performing those operations.

#4

Both JP1_AJS_Editor and JP1_AJS_Operator permissions must be granted. The reason is that operations for changing definitions and registering execution are required to register or cancel the release of a jobnet.

(b) JP1 permission levels related to manipulating agent management information

The following three JP1 permission levels are related to manipulating agent management information:

- **JP1_JPQ_Admin**
Grants administrator authority to the holder, and permits the holder to add, change, or delete an execution agent or execution agent group.
- **JP1_JPQ_Operator**
Permits the holder to change the job transfer restriction status for an execution agent or execution agent group.
- **JP1_JPQ_User**
Permits the holder to view the status and definition of an execution agent or execution agent group.

When you set JP1 permission levels related to manipulating agent management information, make sure that you set them for the resource group named `JP1_Queue`. Note that `JP1_Queue` is case sensitive.

The following table provides information about the operations permitted by the above JP1 permission levels.

Table 12-3: Operations permitted by the JP1 permission levels related to manipulating agent management information

Operation	JP1_JPQ_Admin	JP1_JPQ_Operator	JP1_JPQ_User
Adding an execution agent	Y	--	--
Adding an execution agent group	Y	--	--
Deleting an execution agent	Y	--	--
Deleting an execution agent group	Y	--	--
Changing the target host defined on an execution agent	Y	--	--
Changing the maximum number of concurrently executable jobs on an execution agent	Y	--	--
Changing the description of an execution agent	Y	--	--
Changing the description of an execution agent group	Y	--	--
Adding an execution agent to an execution agent group	Y	--	--

Operation	JP1_JPQ_A dmin	JP1_JPQ_ Operator	JP1_JPQ_ User
Changing the priority of execution agents in an execution agent group	Y	--	--
Removing an execution agent from an execution agent group	Y	--	--
Changing the job transfer restriction status for an execution agent	Y	Y	--
Changing the job transfer restriction status for an execution agent group	Y	Y	--
Displaying the status of an execution agent [#]	Y	Y	Y
Displaying the status of an execution agent group [#]	Y	Y	Y
Displaying the status of all execution agents and execution agent groups [#]	Y	Y	Y
Displaying the names of all execution agents and execution agent groups [#]	Y	Y	Y
Outputting the definition of an execution agent [#]	Y	Y	Y
Outputting the definition of an execution agent group [#]	Y	Y	Y
Outputting the definitions of all execution agents and execution agent groups [#]	Y	Y	Y

Legend:

Y: This operation can be performed at this permission level.

--: This operation cannot be performed at this permission level.

#

OS superusers can perform all operations, regardless of the granted JP1 permission level.

Note:

For the manipulation of agent management information, the access permission definition of the authentication server used by the Manager that executes the command applies.

(c) JP1 permission levels related to executing and manipulating jobs

The following three JP1 permission levels are related to executing and manipulating jobs:

- **JP1_JPQ_Admin**
Grants administrator authority to the holder, and permits the holder to set up the execution environment, to manipulate queues and job execution agents, and to manipulate jobs queued by other users.
- **JP1_JPQ_Operator**
Permits the holder to manipulate queues and to manipulate jobs queued by other users.
- **JP1_JPQ_User**
Permits the holder to register submit jobs and manipulate jobs queued by the holder.

When you set JP1 permission levels related to executing and manipulating jobs, make sure that you set the JP1 permission levels for the resource group named JP1_Queue. Note that JP1_Queue is case sensitive.

The following table provides information about the operations permitted by the above JP1 permission levels.

Table 12-4: Operations permitted by the JP1 permission levels related to executing and manipulating jobs

Operation	JP1_JPQ_Admin	JP1_JPQ_Operator	JP1_JPQ_User
Canceling or forcibly terminating job execution	Y	Y	U
Holding job execution or canceling a hold placed on job execution	Y	Y	U
Moving a job	Y	Y	U
Outputting job information	Y	Y	U
Outputting information about jobs that have ended	Y	Y	U
Deleting information about jobs that have ended from the database	Y	Y	--
Registering a submit job [#]	Y	Y	Y
Opening a queue [#]	Y	Y	--
Closing a queue [#]	Y	Y	--

Operation	JP1_JPQ_A dmin	JP1_JPQ_ Operator	JP1_JPQ_ User
Adding a queue [#]	Y	--	--
Deleting a queue [#]	Y	--	--
Outputting queue information [#]	Y	Y	Y
Changing the queue definition [#]	Y	--	--
Connecting a queue to an agent [#]	Y	--	--
Disconnecting a queue from an agent [#]	Y	--	--
Changing the maximum number of concurrently executable jobs [#]	Y	--	--
Adding an agent [#]	Y	--	--
Deleting an agent [#]	Y	--	--
Outputting agent host information [#]	Y	--	--
Adding an execution-locked resource [#]	Y	--	--
Deleting an execution-locked resource [#]	Y	--	--
Outputting information about execution-locked resources [#]	Y	Y	Y

Legend:

Y: This operation can be performed at this permission level.

U: This operation cannot be performed by a user at this permission level when the job was executed by another user.

--: This operation cannot be performed at this permission level.

#

This operation can be performed only in a configuration in which submit jobs can be used.

Note:

For the execution and manipulation of a job, the access permission definition of the authentication server used by the Manager that accepts the processing request applies.

When a job execution control command is used to execute or manipulate a job, make sure that a JP1 user whose name is the same as the OS user who executes the command is registered.

In addition, for that JP1 user, set a JP1 permission level sufficient for executing or manipulating the job.

For example, to execute a command after logging in as OS user `root`, set the following entry in the definition file:

```
root:JP1_Queue=JP1_JPQ_Admin
```

Although `JP1_JPQ_Admin` is specified as the JP1 permission level in the above example, specify the JP1 permission level required to execute the command.

If the `jpqjobsub` command is executed, the JP1 user executing the job (the user with the same name as the OS user who executes the command) must be mapped on the job execution host to an OS user on that host.

If `-eu` is specified in the executed `jpqjobsub` command, the JP1 user that has the same name as the OS user who executes the command must be mapped on the job execution host to the OS user specified in `-eu`.

12.1.2 Setting up JP1/AJS3 - Manager

This subsection describes how to set up JP1/AJS3 - Manager. Before you set up JP1/AJS3 - Manager, make sure that you have logged in as superuser.

After you have set up JP1/Base, set up JP1/AJS3 - Manager. Make sure that the `umask` for the user who starts JP1/AJS3 permits viewing and updating by any user who executes JP1/AJS3 commands.

Note that this subsection describes the basic setup of JP1/AJS3. If you need to change the settings to match specific operating requirements, see the appropriate section listed in the following table.

Topic	Reference
Procedure for setting the execution agent	13.1
Procedure for setting environment setting parameters	13.2

Topic	Reference
Settings for controlling the scheduler	14.1
Settings for controlling job execution	14.2
Settings for controlling events and actions	14.3
Settings for controlling queueless job execution	14.4
Settings for the definition pre-check function	14.5
Settings common to all control processes	14.6
Other settings	14.7
Settings for logging	15
Setting up a cluster system	16

(1) Setup procedure

To set up JP1/AJS3 - Manager:

1. If necessary, change the environment setting parameters.

Skip this step if you accept the environment setting parameter values proposed by JP1/AJS3. To change environment setting parameter values, use the `jajs_config` command, or the `jbssetcnf` command provided by JP1/Base.

For details about how to set the environment setting parameters, see *13.2 Environment setting parameter settings*.

2. Set up the system and user environments.

For details about setting up the system and user environments, see *12.4 Setting up the system and user environments*.

3. If necessary, set automatic startup and termination of the JP1/AJS3 service.

For details about setting automatic startup and termination of the JP1/AJS3 service, see *14.7.1 Setting automatic startup and termination of the JP1/AJS3 service*.

JP1/AJS3 - Manager setup is complete.

12.2 Required setup for JP1/AJS3 - Agent

Before JP1/AJS3 - Agent can be used, both JP1/Base and JP1/AJS3 - Agent must be set up.

You must finish setting up JP1/Base before you attempt to set up JP1/AJS3 - Agent.

12.2.1 Setting up JP1/Base

This subsection describes how to set up JP1/Base.

The subsection contains an overview of setup and brief setup procedures. For details about the setup procedures, items to be set, and commands, see the *Job Management Partner 1/Base User's Guide*.

The following is an overview of JP1/Base setup:

1. Set user information.

JP1/Base user management is used to specify user mapping settings.

The user mapping settings are required when another host sends a job execution request to the local host. JP1 users are mapped to OS users who have been registered on hosts.

For details about how to specify these settings, see (1) *Setting user information*.

2. Specify the event service environment settings.

The event service environment settings are required to send and receive JP1 events.

In the JP1/Base event service environment settings, specify `keep-alive` as the communication type for the `server` parameter in the API settings file. If `close` is specified, the following problems might occur:

- The JP1 event issued by JP1/AJS3 at startup cannot be issued.
- The KAVT1040-E message is output to the integrated trace log, and the JP1 event reception monitoring job, log file monitoring job, and Windows event log monitoring job cannot detect events.
- The JP1 event sending job terminates abnormally (*Ended abnormally* status).

For details about how to specify settings and about the API settings file, see the *Job Management Partner 1/Base User's Guide*.

The following describes the JP1/Base setup procedure and definitions.

(1) Setting user information

In the UNIX version of JP1/Base, user information can be set by using commands.

The following describes the steps required to set user information.

Note that JP1/AJS3 - Agent and JP1/AJS2 - Agent 07-00-/C and later versions no longer access the authentication server when they start.

In JP1/AJS3 - Agent and JP1/AJS2 - Agent 07-00-/C and later versions, you do not need to specify the authentication server.

(a) Map the JP1 users

Map the JP1 users registered on the authentication server to OS users.

To map a JP1 user:

1. Use a text editor to create a new file.

This file will be used as the user mapping definition file.

2. Specify user mapping entries, each in *JP1-user-name: host-name: OS-user-name* format.

The following shows an example of the definition in the file.

<User mapping to be set>

Set the following information.

- As an OS user called "administrator", execute the jobs requested by "jp1user1" on "host01".
- As an OS user called "administrator", execute the jobs requested by JP1/AJS3 - Manager host "jp1user2".

<File contents>

```
jp1user1:host01:administrator
jp1user2*:administrator
```

3. When you have completed the definition, close the file, and then execute the following command:

```
jbsmkumap -f user-mapping-definition-file
```

The definition in the file takes effect.

Supplementary note:

The following table describes the items that can be specified in the user mapping definition file.

Table 12-5: Items that can be specified in the user mapping definition file (JP1/AJS3 - Agent)

Permitted operation	JP1 user	Host	OS user
Executing a job on a host other than the JP1/AJS3 - Manager host	User who logs in to the OS of the JP1/AJS3 - Manager host	JP1/AJS3 - Manager host	User registered in the OS of the host on which the job will be executed

Cautionary note:

Make sure that the user ID and group ID have been set correctly for any OS user to whom you map a JP1 user.

For a JP1 user to be able to log in from JP1/AJS3 - View, the home directory must be set correctly for the OS user to whom the JP1 user is mapped.

The OS users to which you map JP1 users must be able to log in to the OS normally.

If the OS user to whom you map a JP1 user satisfies either of the following conditions, the job might fail to start:

- The home directory specified in `/etc/passwd` does not exist.
- The login shell specified in `/etc/passwd` does not exist.

12.2.2 Setting up JP1/AJS3 - Agent

This subsection describes how to set up JP1/AJS3 - Agent. Before you set up JP1/AJS3 - Agent, make sure that you have superuser permissions.

After you have set up JP1/Base, make sure that JP1/AJS3 - Manager to which you want to connect JP1/AJS3 - Agent is operating normally before attempting to set up JP1/AJS3 - Agent.

Make sure that the umask for the user who starts JP1/AJS3 permits viewing and updating by any user who executes JP1/AJS3 commands.

Note that this subsection describes the basic setup of JP1/AJS3. If you need to change the settings to match specific operating requirements, see the appropriate section listed in the following table.

Topic	Reference
Procedure for setting environment setting parameters	13.2
Settings for defining the work path to be used during job execution as a variable	14.2.1
Changing the timeout value for pipe communication of the agent	14.2.15

Topic	Reference
Setting the timeout value for receiving notification from the job process that execution is ready	14.2.16
Changing the settings related to the size of the log for event jobs to match operational requirements	14.3.1
Setting the status passing option for the file monitoring job	14.3.3
Settings for monitoring a large file (file whose size is 2 GB or larger)	14.3.12
Settings for automatic startup and termination of the JP1/AJS3 service	14.7.1
Settings for the JP1/AJS3 definition pre-check function	14.5.1
Settings for logging	15
Setting up for a cluster system	16

(1) Setup procedure

To set up JP1/AJS3 - Agent:

1. If necessary, change the environment setting parameters.

Skip this step if you accept the environment setting parameter values proposed by JP1/AJS3. To change environment setting parameter values, use the `jaajs_config` command, or the `jbssetcnf` command provided by JP1/Base.

For details about the `jaajs_config` command, see *jaajs_config* in *2. Commands Used during Setup* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*. For details on the `jbssetcnf` command, see the *Job Management Partner 1/Base User's Guide*.

2. Set up the system and user environments.

For details about setting up the system and user environments, see *12.4 Setting up the system and user environments*.

3. If necessary, set the method for automatic startup and termination of the JP1/AJS3 service.

For details about setting the method for automatic startup and termination of the JP1/AJS3 service, see *14.7.1 Setting automatic startup and termination of the JP1/AJS3 service*.

JP1/AJS3 - Agent setup is complete.

12.3 Required setup for JP1/AJS3 Console

Before JP1/AJS3 Console can be used, JP1/AJS3 Console Manager and JP1/AJS3 Console Agent must be set up.

12.3.1 Setting up JP1/AJS3 Console Manager

Before JP1/AJS3 Console Manager can be used, JP1/AJS3 Console Manager must be set up on the host on which JP1/AJS3 - Manager has been installed.

To set up JP1/AJS3 Console Manager:

1. Execute the `jp1ajs2cmsetup` command.
2. If necessary, set the method for automatic startup and termination of the JP1/AJS3 Console Manager service.

For details about setting the method for automatic startup and termination of the JP1/AJS3 Console Manager service, see *14.7.1(4) Setting automatic startup and termination of the JP1/AJS3 Console services*.

12.3.2 Setting up JP1/AJS3 Console Agent

Before JP1/AJS3 Console Agent can be used, JP1/AJS3 Console Agent must be set up on the host on which JP1/AJS3 - Manager has been installed.

To set up JP1/AJS3 Console Agent:

1. Execute the `jp1ajs2casetup` command.
2. If necessary, set the method for automatic startup and termination of the JP1/AJS3 Console Agent service.

For details about setting the method for automatic startup and termination of the JP1/AJS3 Console Agent service, see *14.7.1(4) Setting automatic startup and termination of the JP1/AJS3 Console services*.

12.4 Setting up the system and user environments

This section describes how to set up the system and user environments.

12.4.1 Changing the login scripts

In JP1/AJS3, before a Unix job is executed, login scripts are executed based on the shell as follows:

- `sh`

```
/etc/profile  
$HOME/.profile
```

- `csh`

```
/etc/csh.login  
$HOME/.cshrc  
$HOME/.login
```

Therefore, if the login scripts contain the `echo`, `cat`, or another command that sends information to the standard output file, text other than the job execution result is output to the standard output file. In addition, if the `stty`, `tty`, `tset`, or `script` command, which requires an interactive environment, is executed in a login script, the job might terminate abnormally. In cases such as this, change the login script so that these commands are not executed.

For other login scripts loaded into the shell, verify their operation in the relevant OS.

For example, if you are using `sh`, you must add the shaded parts shown in the following figure to the login scripts for `sh`.

```
if [ ${JP1JobID:-""} = "" ]; then  
:  
cat /etc/copyright  
:  
fi
```

If you are using `csh`, similarly, add the shaded parts shown in the following figure to the login scripts for `csh`.

```

if ( $?JP1JobID == 0 ) then
:
cat /etc/copyright
:
endif

```

Supplementary note:

In AIX, the information in `/etc/environment` cannot be inherited. Change the applicable login scripts as shown in the following example:

```

if [ ${JP1JobID:-""} != "" ]; then
. /etc/environment
fi

```

After `/etc/environment` is loaded, execute the `export` command for the environment variables to be set.

Note:

The above setting is valid only for `sh(.profile)`, and is not valid for `csh` and other shells. Also note that specifying the above setting might change the order in which settings are specified in a login script because `/etc/environment` is loaded in the login script. Carefully check the position at which `/etc/environment` is to be added, and verify that environment variables set by `/etc/environment` are also set in the login script.

We recommend that you edit the login script so that `/etc/environment` is loaded at the beginning of the script.

12.4.2 Tuning kernel parameters

If you use JP1/AJS3 in a UNIX environment, tune the kernel parameters that affect the allocation of resources necessary for JP1/AJS3 processing. The kernel parameters that need to be tuned depend on the OS. For details, see the Release Notes.

Kernel parameters are the settings used for maximum tuning of the resources used by the UNIX system. For example, the following types of tuning can be performed:

- File system tuning: The maximum number of files that can be opened and the maximum number of files that can be locked
- Shared memory tuning: The maximum shared memory size and the maximum number of shared memory segments
- Semaphore tuning: The maximum number of semaphores and the maximum

number of undo operations that can be performed

For details about the kernel parameters, see the OS documentation or UNIX references.

12.4.3 Extending trace log files

This subsection describes how to extend the following trace log files in UNIX:

- JP1/AJS3 trace log file
- Queueless trace log file
- Internal log file for execution of queueless jobs
- JP1/AJS3 Console trace log file

(1) Extending the JP1/AJS3 trace log file

The initial settings for the JP1/AJS3 trace log file are as follows:

- File name

`/var/opt/jp1ajs2/log/tracelog`

- Size

20 MB (20,480 KB), which is the size of a file in which trace log data about the execution of approximately 2,000 jobs can be saved

An adequate trace log file size differs considerably depending on the jobnet configuration, the number of connected JP1/AJS3 - View instances, and operation types. Therefore, the trace log file will need to be extended whenever necessary after an appropriate file size has been determined.

For details about how to estimate an appropriate trace log file size, see *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*.

If the trace log file size must be extended, use the `ajstrsetsz` command to resize the file. For details about the `ajstrsetsz` command, see *ajstrsetsz* in *2. Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

(2) Extending the queueless trace log file

The initial settings for the queueless trace log file are as follows:

- File name

`/var/opt/jp1ajs2/log/tracelog ql`

- Size

15 MB (15,360 KB), which is the size of a file in which trace log data about the

execution of approximately 10,000 jobs can be saved

Because an adequate queueless trace log file size differs considerably depending on such factors as whether the job transfers file and error results are output, the trace log file will need to be extended whenever necessary after an adequate file size has been estimated.

For details about how to estimate an appropriate trace log file size, see 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*.

If the queueless trace log file must be extended, use the `ajsqltrsetsz` command to resize the file. For details about the `ajsqltrsetsz` command, see `ajsqltrsetsz` in 3. *Commands Used for Special Operation* in the manual *Job Management Partner 1/ Automatic Job Management System 3 Command Reference 2*.

(3) Extending the internal log file for execution of queueless jobs

The initial settings for the internal log file for execution of queueless jobs are as follows:

- File name

```
/var/opt/jp1ajs2/log/ajsqlxeclog#1
```

```
/var/opt/jp1ajs2/log/ajsqlxeclog_ftp#2
```

#1:

In a cluster configuration, the file name is as follows:

```
/var/opt/jp1ajs2/log/ajsqlxeclog- [logical-host-name]
```

If the full path name is 256 or more bytes, the maximum length of *logical-host-name* is 30 bytes.

#2:

This file is created for JP1/AJS3 - Manager only.

- Size

The size of the `ajsqlxeclog` file

24 MB (24,576 KB), which is the size of a file in which the internal execution log data output by the queueless agent service when about 40,000 queueless jobs are executed can be saved

The size of the `ajsqlxeclog_ftp` file

10 MB (10,240 KB), which is the size of a file in which the internal execution log data output by the queueless file transfer service when about 20,000 queueless jobs that perform a file transfer are executed can be saved

An adequate size for the internal log file for execution of queueless jobs differs considerably depending on the number of executed queueless jobs, whether the queueless job performs a file transfer, and other factors. Therefore, the trace log file must be extended whenever necessary after an adequate file size has been estimated.

For details about how to estimate an appropriate size for the internal log file for execution of queueless jobs, see 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*.

If the size of the internal execution logs for queueless jobs must be extended, use the `ajsqlxecsetsz` command to resize the file. For details about the `ajsqlxecsetsz` command, see `ajsqlxecsetsz` in 3. *Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

(4) Extending the JP1/AJS3 Console trace log file

Extension of the JP1/AJS3 Console trace log file must be set separately for JP1/AJS3 Console Manager and JP1/AJS3 Console Agent. The initial settings for the JP1/AJS3 Console trace log file are as follows:

- File name
 - For JP1/AJS3 Console Manager: `/var/opt/jp1ajs2cm/log/tracelog.cm`
 - For JP1/AJS3 Console Agent: `/var/opt/jp1ajs2/log/tracelog.ca`
- Size
 - For JP1/AJS3 Console Manager: 3,072 KB
 - For JP1/AJS3 Console Agent: 3,072 KB

Because an adequate trace log file size differs considerably depending on the status of monitoring during operation and other factors, the trace log file must be extended whenever necessary after an adequate file size has been estimated.

For details about how to estimate an appropriate trace log file size, see 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*.

If the trace log file must be extended, use the `ajscmtrsetsz` or `ajscatrsetsz` command to resize the file. For details about these commands, see the appropriate manual below.

For JP1/AJS3 Console Manager:

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

For JP1/AJS3 Console Agent:

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

12.4.4 Specifying communication environment settings

When a JP1/AJS3 system is created with an environment that uses the DNS or a firewall, environment settings for resolving host names and IP addresses or firewall communication settings must also be specified.

Specify the necessary communication environment settings as described in the following locations:

- *2.3.6(3) Notes on operation in a DNS environment* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*
- *2.3.4 Example of configurations that include a firewall, and their communications settings* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*

Chapter

13. Environment Settings

This chapter describes the JP1/AJS3 environment settings.

13.1 Execution agent settings

13.2 Environment setting parameter settings

13.1 Execution agent settings

You can use the `ajsagtadd`, `ajsagtdelete`, and `ajsagtalt` commands to add, delete, or change an execution agent or execution agent group during JP1/AJS3 operation.

When queue and submit jobs are being used, you can use the `jpqagtadd`, `jpqqueueadd`, and other commands to add, delete, or change an agent or queue for queue and submit jobs. For details, see 7.1.2(1)(b) *Changing the execution environment for QUEUE jobs and submit jobs dynamically* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

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

(1) Procedure for specifying execution agent settings

To use the `ajsagtadd` command to add an execution agent and execution agent group:

1. Add an execution agent, and set the maximum number of concurrently executable jobs.

Use the `ajsagtadd` command to add an execution agent.

Before executing the `ajsagtadd` command, make sure that the IP address can be resolved from the host name of the execution agent you want to add.

```
ajsagtadd -a exec-agent-name [-s target-host-name] [-c
time-time=maximum-number-of-concurrently-executable-jobs, ...]
```

Example:

```
ajsagtadd -a AP1 -s Host1 -c 01:00-05:00=1
```

If the `-c` option is omitted, the maximum number of concurrently executable jobs is set to 5 regardless of the time (that is, `-c 00:00-00:00=5` is assumed). If the `-c` option is specified, the maximum number of concurrently executable jobs for the time periods that are not specified in the option is set to 0. For example, if `-c 01:00-02:00=10` is specified, the maximum number of concurrently executable jobs for each time period is as follows:

- 00:00 to 01:00: 0
- 01:00 to 02:00: 10
- 02:00 to 00:00: 0

When the maximum number of concurrently executable jobs is 0, no jobs can be executed. A value of at least 1 must be specified to execute a job. You can also use the `ajsagtalt` command to change the maximum number of concurrently executable jobs. For an example of specifying the maximum number of concurrently executable jobs, see the supplementary note for `ajsagtadd` in 2. *Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

2. Add an execution agent group.

Use the `ajsagtadd` command to add an execution agent group, which is a group of execution agents.

You can add an execution agent group when, for example, you want to connect several execution agents to the execution agent group so that job execution is distributed to those agents. You can also specify a priority for each execution agent so that jobs are delivered to execution agents based on the priorities that have been specified.

```
ajsagtadd -g exec-agent-group-name [-l
exec-agent-name [:priority] , . . .]
```

Example:

```
ajsagtadd -g APG1 -l AP1:16,AP2,AP3:5
```

You can use the `ajsagtalt` command to change the priorities of execution agents in a group.

3. Verify the settings you have specified.

Execute the `ajsagtshow` command to display the settings you specified in steps 1 and 2 so that you can verify that the settings are correct.

```
ajsagtshow {-a exec-agent-name|-g exec-agent-group-name|-l|-n}
```

Example:

```
ajsagtshow -a AP1
```

As shown below, several execution agents and execution agent groups can be added all at one time by using an execution agent definition file.

```
ajsagtadd -f exec-agent-definition-file-name
```

The format used for the execution agent definition file is the same as the format of the CSV file output by the `ajsagtprint` command. For details about the execution agent definition file, see *ajsagtadd* in 2. *Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1* and *ajsagtprint* in 2. *Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

(2) Notes on execution agents

- Names are not case sensitive.
- Names that begin with @SYS cannot be used.
- The following characters cannot be used:
 - Space
 - , (comma)
 - : (colon)
 - Control characters (tab and linefeed characters)

13.2 Environment setting parameter settings

This section describes how to change common definition information that has already been registered.

You can use the following methods to change the common definition information that has already been registered:

- `jajs_config` command

If you use the `jajs_config` command, you can eliminate specification errors because the specified environment setting parameter names and values are checked. 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*.

- `jbssetcnf` command

If you use the `jbssetcnf` command provided by JP1/Base, the new environment setting parameter settings specified in a configuration file will replace the corresponding current settings. For details about the `jbssetcnf` command, see the *Job Management Partner 1/Base User's Guide*.

Note that the parameter names and values provided by the `jbssetcnf` command are not checked. If you specify any settings that are incorrect, you might want to restore the previous settings. For details about how to restore the previous settings when incorrect settings have been registered, see *E. Recovery Procedure Used When An Incorrect Environment Settings Parameter Is Set*.

For details about the environment setting parameter settings necessary for registration in the common definition information, see 2. *Environment Setting Parameters* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

The following describes how to use each method.

(1) Using the `jajs_config` command

To use the `jajs_config` command to change the settings in the common definition information:

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Change the settings in the common definition information.

Use the following command to specify new environment setting parameter settings in the common definition information:

```
jajs_config  $\Delta$  -k  $\Delta$  definition-key  $\Delta$  "parameter-name-1"=value-1  $\Delta$  ["parameter-name-2"=value-2] ...
```

Legend:

Δ : One-byte space

Example:

```
jajs_config -k [JP1_DEFAULT\JP1AJSMANAGER\AJSROOT1]
"LOGSIZE"=dword:00002800 "AJSLOG"="all"
```

3. Restart JP1/AJS3.

The changes in the common definition information are applied to JP1/AJS3.

(2) Using the *jbssetcnf* command

To use the *jbssetcnf* command to replace the settings in the common definition information with new settings specified in a configuration file:

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Create a configuration file that contains the new settings.

Use a text editor such as vi to create a configuration file that contains the additional or new environment setting parameter settings.

Assign any name to the configuration file.

The following shows an example of specifying settings in the configuration file.

In this example, the environment setting parameter settings shown in the following table will be used.

Definition key	Parameter	Value
[JP1_DEFAULT\JP1AJSMANAGER\AJSSROOT1]	"LOGSIZE"=	00002800 (hexadecimal)
	"AJSLOG"=	"all"

To specify the above settings, create a configuration file as follows:

```
[JP1_DEFAULT\JP1AJSMANAGER\AJSSROOT1]
"LOGSIZE"=dword:00002800
"AJSLOG"="all"
```

3. Save the configuration file.
4. Change the common definition information.

Execute the following command, which will change the common definition information based on the specified configuration file:

```
jbssetcnf configuration-file
```

The `jbssetcnf` command is located in the `/opt/jp1base/bin/jbssetcnf` directory.

5. Restart JP1/AJS3.

The changes in the common definition information are applied to JP1/AJS3.

Chapter

14. Specifying Settings Based on the Usage of JP1/AJS3

This chapter describes the JP1/AJS3 detailed settings that can be specified to match the requirements for JP1/AJS3 operation.

- 14.1 Settings for controlling the scheduler
- 14.2 Settings for controlling job execution
- 14.3 Changing the settings related to event/action control
- 14.4 Changing the settings related to queueless job execution control
- 14.5 Changing the settings related to the definition pre-check function
- 14.6 Settings common to all control processes
- 14.7 Other settings

14.1 Settings for controlling the scheduler

This section describes how to change the settings for controlling the scheduler.

When you set environment setting parameters, use the `jajs_config` command.

For details about the `jajs_config` command, see *jajs_config* in 2. *Commands Used during Setup* in the manual *Job Management Partner I/Automatic Job Management System 3 Command Reference 2*.

14.1.1 Settings for starting multiple scheduler services

Job groups are managed by the scheduler service. If multiple scheduler services are started, the scheduler services can be used to manage the job groups.

To start multiple scheduler services, you must first set information such as the names of the scheduler services to be added.

This subsection describes how to specify the settings for starting multiple scheduler services, and shows how to delete scheduler services that have been added.

For details about how to add scheduler services to a logical host and how to delete scheduler services from a logical host, see 16.2.7 *Setting startup of multiple scheduler services on a logical host*.

(1) Starting multiple scheduler services

To set startup of multiple scheduler services:

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop
# /opt/jp1ajs2/bin/jajs_spmd_status
```

Note:

For each setup identifier, execute the `ajsembdbstatus` command with `-sust -id_JFn` (*n*: 1 to 9 or A to Z) specified to confirm that the embedded database is operating (UNIT-STAT is ONLINE). If the database is not operating, use the `ajsembdbstart` command with `-id_JFn` specified to activate it.

2. Use the `mkdir` command or another means to create the following directories:
 - Database directory
 - Directory for temporary files

- Job information directory
- Backup information directory

Make sure that the above directories, other than the backup information directory, are neither directories used by other scheduler services set on the local hosts (the physical host and all logical hosts) nor subdirectories of those directories.

3. Execute the `jajs_setup` command to add the scheduler service to be started.

```
jajs_setup -a -F scheduler-service
-p service-for-the-port-reporting-the-job-status
-d database-directory
-t directory-for-temporary-files
-j job-information-directory
-b backup-information-directory
-n scheduler-service-identification-number
```

Example of adding a scheduler service named AJSROOT2:

```
jajs_setup -a -F AJSROOT2
-p jp1ajs2report2
-d "/var/opt/jp1ajs2/database/schedule/AJSROOT2"
-t "/var/opt/jp1ajs2/tmp/schedule2"
-j "/var/opt/jp1ajs2/jobinf2"
-b "/var/opt/jp1ajs2/backup/schedule2"
-n 2
```

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

4. For the service name of the port that reports the job status specified in step 3, set the port number.

Open the `/etc/services` file with a text editor, and add the port number. Make sure that you do not specify an existing port number.

Example of setting 20248 as the port number:

```
jp1ajs2report2 20248/tcp
```

5. If you want to use queueless jobs, you must perform the setup required for using queueless jobs.

Execute the following command:

```
ajsqlsetup [-F scheduler-service-name]
```

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

6. Restart the JP1/AJS3 service.

The scheduler service is added and started with the specified settings.

After the JP1/AJS3 service has been restarted, use JP1/AJS3 - View to confirm that the manager job group is displayed with the name of the added scheduler service attached.

Supplementary note on command execution when multiple scheduler services are running:

When multiple scheduler services are running, if you execute a command without specifying a service name in the `-F` option, the default scheduler service is assumed.

You can omit the `-F` option when the name of a scheduler service name is specified in the `AJSCONF` environment variable.

(2) Deleting a scheduler service that has been added

To delete a scheduler service that has been added:

1. Execute the `jajs_spmd_stop` command to stop the JP1/AJS3 services.
Stop all JP1/AJS3 services, including the JP1/AJS3 - Manager services, on logical hosts.

Note:

For each setup identifier, execute the `ajsembdbstatus` command with `-sust -id_JFn` (n : 1 to 9 or A to Z) specified to confirm that the embedded database is operating (UNIT-STAT is ONLINE). If the database is not operating, use the `ajsembdbstart` command with `-id_JFn` specified to activate it.

2. Execute the `ajsshmdel` command to delete scheduler service information.

The `ajsshmdel` command is located in `/opt/jp1ajs2/bin/ajsshmdel`.

If the shell is `sh`, the command line is as follows:

```
/opt/jp1ajs2/bin/ajsshmdel >/dev/null 2>&1
```

If the shell is `csh`, the command line is as follows:


```
/opt/jp1ajs2/bin/ajsshmdel >&/dev/null
```

3. Execute the following `jajs_setup` command to delete the scheduler service.

```
jajs_setup -e -F scheduler-service-name
```

Example of deleting the AJSROOT2 scheduler service:

```
jajs_setup -e -F AJSROOT2
```

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

4. Delete the directory that was created when the scheduler service was added.

Delete the following directories that were created when you executed the `jajs_setup` command:

- Database directory specified in the `-d` option
- Directory for temporary files specified in the `-t` option
- Job information directory specified in the `-j` option
- Backup information directory specified in the `-b` option

5. Start the JP1/AJS3 services.

The scheduler service you added is deleted.

(3) Uninstalling an unnecessary database environment

For details about how to uninstall a database environment that is no longer necessary, see *6.1.1(3) Uninstalling an unnecessary database environment*.

14.1.2 Changing the level of messages output from scheduler services to the integrated trace log

You can specify the level of messages output from scheduler services to the integrated trace log. The specification procedure is as follows.

(1) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop
# /opt/jp1ajs2/bin/jajs_spmd_status
```

- Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

- Restart JP1/AJS3.

The new settings are applied to the configuration definition.

(2) Environment setting parameter

Table 14-1: Environment setting parameter used to change the level of messages output from scheduler services to the integrated trace log

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1AJSMANAGER\scheduler-service]#	"HNTRLOGLEVEL" =	Specifies the level of messages to be output to the integrated trace log.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.2(51) *HNTRLOGLEVEL* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.1.3 Changing the method for outputting the schedule rule when outputting nested-jobnet definition parameters

You can specify that a jobnet's schedule rule is enabled so that the jobnet does not depend on the upper-level jobnet's schedule. Alternatively, you can specify that a jobnet's schedule rule is deleted so that the jobnet depends on the upper-level jobnet's schedule.

This option is effective when *ajsprint*, *ajsbackup*, or *ajsexport* command is executed or a backup operation is performed from JP1/AJS3 - View for a nested jobnet created by copying a root jobnet that has a schedule rule.

(1) Definition procedure

- Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jplajs2/jajs_stop
# /opt/jplajs2/bin/jajs_spmd_status
```

- Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

- Restart JP1/AJS3.

The new settings are applied to the configuration definition.

(2) Environment setting parameter

Table 14-2: Environment setting parameter used to change the method for outputting the schedule rule when outputting nested-jobnet definition parameters

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1AJSMANAGER\ <i>scheduler-service</i>]#	"AJSPRINTNETSCHPRF"=	Specifies how the schedule rule of a nested jobnet is treated.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.2(74) *AJSPRINTNETSCHPRF* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.1.4 Changing the name of a scheduler trace log file

If only one scheduler service is used, the default trace log file name is /var/opt/jplajs2/log/tracelog. You can change the name of a scheduler trace log file by using the following procedure.

(1) Definition procedure

- Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jplajs2/jajs_stop
# /opt/jplajs2/bin/jajs_spmd_status
```

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied to the configuration definition.

(2) Environment setting parameter

Table 14-3: Environment setting parameter used to change the name of a scheduler trace log file

Definition key	Environment setting parameter	Explanation
[JP1_DEFAULT\JP1AJSMANAGER]	"TRACELOGFILE"=#	Specifies the name of a scheduler trace log file.

#:

The scheduler trace information for the physical host and all logical hosts is recorded in the file specified by this parameter. To ensure that the trace information is recorded, always specify the name of a file on a local disk.

Note that the specified file is created when trace information is output. Do not specify the name of an existing file.

For details about the definition of this environment setting parameter, see 2.2(3) *TRACELOGFILE* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.1.5 Enabling the suspension function

When you edit the definition of a subunit of a root jobnet during registration for execution, you need to enable the suspension function so that the root jobnet can be suspended.

Initially, the suspension function of JP1/AJS3 is disabled. Use the *ajssetup* command to enable it.

To enable the suspension function:

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop
# /opt/jp1ajs2/bin/jajs_spmd_status
```

2. Execute the following command to set up the environment for using the suspension function.

```
ajssetup -F scheduler-service-name -m
```

For details about the syntax of the `ajssetup` command and notes on the command, see *ajssetup* in *2. Commands Used during Setup* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

3. Restart the JP1/AJS3 service.

For details about changing the definition of a subunit of a root jobnet during registration for execution, see *4.5.15 Changing job and jobnet definitions without unregistering the jobnet* in the manual *Job Management Partner 1/Automatic Job Management System 3 Overview*.

14.1.6 Changing the mode in which unregistration or generation management deletes the generations of a jobnet

The number of logs to keep for a root jobnet or root remote jobnet can be set to a value from 1 to 99 (the maximum can be increased to 999). However, if an attempt is made to unregister the execution of a jobnet that satisfies either of the following conditions, the unregistration processing takes a long time:

- Jobnet whose number of logs to keep is 30 or more
- Jobnet for which the number of logs to keep is 10 or more and a start condition (LEGACY is set for the SAVEGENTYPE environment setting parameter) is used

If processing to unregister the execution of a jobnet takes a long time, the status of the start-condition monitoring of other jobnets might become *Monitor terminated* or execution of the jobnet might fail.

These problems occur because the unregistration mode set in the scheduler service is *synchronous*. If the unregistration mode is *synchronous*, the time required to cancel registration depends on the number of generations to be deleted. If there are many generations for which execution needs to be unregistered, a long time is required, with adverse effects on the execution of other jobnets.

To prevent these problems, change the unregistration mode to *asynchronous*. Note that the procedure for changing the unregistration mode to *asynchronous* differs depending on whether the registration information for the jobnet being executed before the mode is changed is necessary.

We recommend that you set the unregistration mode to *asynchronous* after evaluating the time required to unregister execution. Note that the registration information for the jobnet being executed before the mode is changed is deleted.

When JP1/AJS3 is initially installed and set up, the unregistration mode is set to *asynchronous*. However, if JP1/AJS3 is installed as an upgrade installation, the unregistration mode might be set to *synchronous*.

Before you change the unregistration mode of a scheduler service, make sure that the scheduler service is not running.

Use following procedures to change the unregistration mode of a scheduler service.

(1) Procedure for changing the unregistration mode from synchronous to asynchronous

(a) When the registration information for the jobnet that was being executed is not necessary

To change the unregistration mode from synchronous to asynchronous when the registration information for the jobnet that was being executed is not necessary:

1. Stop the scheduler service.

After logging in as a user with superuser permissions, execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jplajs2/jajs_spmd_stop -n jajs_schd -F
scheduler-service-name
# /opt/jplajs2/bin/jajs_spmd_status
```

Example:

When the scheduler service is AJSROOT1, execute the command as follows:

```
# /etc/opt/jplajs2/jajs_spmd_stop -n jajs_schd -F AJSROOT1
# /opt/jplajs2/bin/jajs_spmd_status
```

2. Execute the following command:

```
jajs_config -k
[{{JP1_DEFAULT|logical-host}}\JP1AJSMANAGER\scheduler-service]
"BACKGROUNDLEAVE"="yes"
```

The specification of the `{{JP1_DEFAULT|logical-host}}` part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

Example:

When the scheduler service is AJSROOT1 on the JP1_DEFAULT physical host, execute the command as follows:

```
jaajs_config -k [JP1_DEFAULT\JP1AJSMANAGER\AJSROOT1]
"BACKGROUNDLEAVE"="yes"
```

3. Cold-start the scheduler service.

After logging in as a user with superuser permissions, execute the following command:

```
# /opt/jp1ajs2/bin/jaajs_spmd -n jaajs_schd -F
scheduler-service-name -cold
```

Example:

When the scheduler service is AJSROOT1, execute the command as follows:

```
# /opt/jp1ajs2/bin/jaajs_spmd -n jaajs_schd -F AJSROOT1 -cold
```

(b) When registration information for the jobnet that was being executed is necessary

To change the unregistration mode from synchronous to asynchronous when the registration information for the jobnet that was being executed is necessary:

1. Stop the scheduler service:

After logging in as a user with superuser permissions, execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jaajs_spmd_stop -n jaajs_schd -F
scheduler-service-name
# /opt/jp1ajs2/bin/jaajs_spmd_status
```

Example:

When the scheduler service is AJSROOT1, execute the commands as follows:

```
# /etc/opt/jp1ajs2/jaajs_spmd_stop -n jaajs_schd -F AJSROOT1
# /opt/jp1ajs2/bin/jaajs_spmd_status
```

2. Execute the following command:

```
jaajs_config -k
[ {JP1_DEFAULT|logical-host} \JP1AJSMANAGER\scheduler-service ]
"BACKGROUNDLEAVE"="yes"
```

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

Example:

When the scheduler service is AJSROOT1 on the JP1_DEFAULT physical host, execute the command as follows:

```
jajs_config -k [JP1_DEFAULT\JP1AJSMANAGER\AJSROOT1]
"BACKGROUNDLEAVE"="yes"
```

3. Convert the information about registration for execution to asynchronous type.

Execute the following command:

```
/opt/jp1ajs2/tools/ajsregcnv -F scheduler-service
```

Example:

When the scheduler service is AJSROOT1, execute the command as follows:

```
/opt/jp1ajs2/tools/ajsregcnv -F AJSROOT1
```

4. Start the scheduler service:

After logging in as a user with superuser permissions, execute the following command:

```
# /opt/jp1ajs2/bin/jajs_spmd -n jajs_schd -F
scheduler-service-name
```

Example:

When the scheduler service is AJSROOT1, execute the command as follows:

```
# /opt/jp1ajs2/bin/jajs_spmd -n jajs_schd -F AJSROOT1
```

(2) Procedure for changing the unregistration mode from asynchronous to synchronous

To change the unregistration mode from asynchronous to synchronous:

1. Stop the scheduler service:

After logging in as a user with superuser permissions, execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_spmd_stop -n jajs_schd -F
scheduler-service-name
# /opt/jp1ajs2/bin/jajs_spmd_status
```

Example:

When the scheduler service is AJSROOT1, execute the command as follows:

```
# /etc/opt/jp1ajs2/jajs_spmd_stop -n jajs_schd -F AJSROOT1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

2. Execute the following command:

```
jajs_config -k
[ {JP1_DEFAULT|logical-host} \JP1AJSMANAGER\scheduler-service ]
"BACKGROUNDLEAVE"="no"
```

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

Example:

When the scheduler service is AJSROOT1 on the JP1_DEFAULT physical host, execute the command as follows:

```
jajs_config -k [JP1_DEFAULT\JP1AJSMANAGER\AJSROOT1]
"BACKGROUNDLEAVE"="no"
```

3. Cold-start the scheduler service.

After logging in as a user with superuser permissions, execute the following command:

```
# /opt/jp1ajs2/bin/jajs_spmd -n jajs_schd -F
scheduler-service-name -cold
```

Example:

When the scheduler service is AJSROOT1, execute the command as follows:

```
# /opt/jp1ajs2/bin/jajs_spmd -n jajs_schd -F AJSROOT1 -cold
```

14.2 Settings for controlling job execution

This section describes how to change the settings for controlling job execution.

When you set environment setting parameters, use the `jajs_config` command.

For details about the `jajs_config` command, see *jajs_config* in 2. *Commands Used during Setup* in the manual *Job Management Partner I/Automatic Job Management System 3 Command Reference 2*.

14.2.1 Defining variables for work paths used during job execution

You can define variables for the work paths of the following items that are displayed in the Define Details dialog box for a PC, UNIX, or a queue job. Because specific values can be set for these variables for each agent host, the same job definition can be used to execute a job on all agent hosts.

Table 14-4: List of job definition items for which variables can be defined

Job definition item	Whether variable can be defined
Command statement (UNIX only)	Y
File name (Windows only)	Y
Script file name (UNIX only) [#]	Y
Parameters	Y
Environment variables	--
Environment file	--
Working path	--
Standard input	Y
Standard output	Y
Standard error output	Y
File to transfer	--
Destination file	--

Legend:

Y: A variable can be defined for this item.

--: A variable cannot be defined for this item.

#:

The variables discussed in this subsection have no effect in a script file.

The following describes how to define variables for the work paths used during job execution.

(1) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
# /opt/jp1ajs2/bin/ajsqlstop#2
# /opt/jp1ajs2/bin/ajsqlstatus#2
```

#1:

Confirm that automatic termination has been set.

#2:

This command needs to be executed only if queueless jobs are used.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart the services that you stopped in step 1.

The new settings are applied.

(2) Environment setting parameter

Table 14-5: Environment setting parameter used to define a variable for a work path

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1NBQAGENT\Variable]#	" <i>variable-name</i> "=	Specifies the work path for a variable name.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify

JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.3(72) *variable-name* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

(3) Definition example

The following shows an example of specifying the job definition and commands when the prog1 job program is in /usr/i1/pp1/bin on the Agent1 host and in /usr/i2/pp1/bin on the Agent2 host.

- Job definition

```
file-name=$pp1_inst$/prog1
```

- Command to be executed on the Agent1 host

```
jajs_config -k
[ {JP1_DEFAULT|logical-host}\JP1NBQAGENT\Variable]
"pp1_inst"="/usr/i1/pp1/bin"
```

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

- Command to be executed on the Agent2 host

```
jajs_config -k
[ {JP1_DEFAULT|logical-host}\JP1NBQAGENT\Variable]
"pp1_inst"="/usr/i2/pp1/bin"
```

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

With the above definition and commands, /usr/i1/pp1/bin/prog1 is executed on the Agent1 host and /usr/i2/pp1/bin/prog1 is executed on the Agent2 host.

(4) Note

Do not use a character string that begins with JP1, a character string that begins with JP1 is used by the system.

14.2.2 Defining search paths for a file to be transferred

When you have defined search paths for a file that is to be transferred, the location of

the file can also be resolved from a relative path.

This subsection describes how to define a search path.

(1) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
# /opt/jp1ajs2/bin/ajsq1stop#2
# /opt/jp1ajs2/bin/ajsq1status#2
```

#1:

Confirm that automatic termination has been set.

#2:

This command needs to be executed only if queueless jobs are used.

2. Execute the following command to set the environment setting parameters described in (2) below:

```
jajs_config -k definition-key "parameter-name-1"=value-1
[ "parameter-name-2"=value-2 ]
```

3. Restart the services that you stopped in step 1.

The new settings are applied.

Note:

Make sure that you perform the above procedure on the host on which a job operation has been requested. For example, if you use the `jpqjobsub` command to submit a job, perform the procedure on the host on which you execute the command.

Note that this function is not valid for result files.

(2) Environment setting parameters

Table 14-6: Environment setting parameters used to define the search path for a file that is to be transferred

Definition key	Environment setting parameter	Explanation
[<code>{JP1_DEFAULT logical-host}\JP1NBQCLIENT\PathEnv</code>]#	"All Users"=	Specifies the search path for the file to be transferred.
	"JP1-user-name"=	Specifies the search path for the file to be transferred.

#:

The specification of the `{JP1_DEFAULT|logical-host}` part depends on whether the host is a physical host or a logical host. For a physical host, specify `JP1_DEFAULT`. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see the following:

- 2.3(73) *All Users* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.3(74) *JP1-user-name* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

(3) Definition example

Conditions:

Search paths common to all JP1 users: `/home/user1/trans1` and `/home/user1/trans2`

Name of the file to be transferred: `/home/user1/trans1/TransFile1`

Definition example:

- Definition of the file to be transferred in the job

Name of the file to be transferred: `TransFile1`

- Definition of the search paths on the host sending the submit request

```
jajs_config -k
[{JP1_DEFAULT|logical-host}\JP1AJSMANAGER\SCHEDULER\schedule
```

```
r-service\QUEUE\CLIENT\PathEnv]
"All Users"="/home/user1/trans1::/home/user1/trans2"
```

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

When these settings are specified, on the host that sends a submit request, /home/user1/trans1/TransFile1 is set as the file to be transferred.

14.2.3 Customizing the execution agent or agent attribute values created by the automatic agent definition function

You can customize the execution agent or agent attribute values created by the automatic agent definition function in advance by using the common definition information.

The applicable objects and job types differ according to the definition key.

Table 14-7: Objects and job types to which customization is applicable

No.	Definition key	Object	Job type
1	[{JP1_DEFAULT logical-host}\JP1AJS2\SCHEDULER\QUEUE\MANAGER\Agent]#	All execution agents	<ul style="list-style-type: none"> • PC job • Unix job • Action job
2	[{JP1_DEFAULT logical-host}\JP1AJSMANAGER\scheduler-service\QUEUE\MANAGER\Agent]#	Execution agent for the scheduler service specified by the definition key	<ul style="list-style-type: none"> • PC job • Unix job • Action job
3	[{JP1_DEFAULT logical-host}\JP1NBQMANAGER\Agent]#	All agents and default queue	<ul style="list-style-type: none"> • Submit job

#:

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

To customize the execution agent or agent attribute values created by the automatic agent definition function can be customized by using the common definition information, execute the `jajs_config` command.

The following describes the customization procedure.

(1) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1  
# /opt/jp1ajs2/bin/jajs_spmc_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameters described in (2) below:

```
jajs_config -k definition-key "parameter-name-1"=value-1  
[ "parameter-name-2"=value-2]  
[ "parameter-name-3"=value-3]  
[ "parameter-name-4"=value-4]
```

3. Restart the JP1/AJS3 service.
The new settings are applied.

(2) Environment setting parameters

Table 14-8: Environment setting parameters used to customize the attribute values set by the automatic agent definition function

Definition key	Environment setting parameter	Applicable manager	Explanation
<ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \ JP1AJS2 \ SCHEDULER \ QUEUE \ MANAGER \ Agent] # For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i> } \ JP1AJS2 \ SCHEDULER \ <i>scheduler-service</i> \ QUEUE \ MANAGER \ Agent] # For submit jobs and a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i> } \ JP1NBQMANAGER \ Agent] # 	"AutoCreateExecJobs" " =	C, S	Specifies the maximum number of concurrently executable jobs set by the automatic agent definition function.
	"AutoCreateMaxJobs" " =	C	Specifies the maximum number of jobs set by the automatic agent definition function.
	"AutoCreateWarnJobs" " =	C	Specifies the number of jobs set by the automatic agent definition function as the threshold value for warning.
	"AutoCreatePriority" " =	C	Specifies the agent priority set by the automatic agent definition function

Legend:

C: Job execution control manager for submit jobs and a compatible ISAM configuration

S: Job execution control manager for scheduler services

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see the following:

- 2.3(30) *AutoCreateExecJobs* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.3(31) *AutoCreateMaxJobs* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.3(32) *AutoCreateWarnJobs* in the *Job Management Partner 1/Automatic Job*

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- 2.3(33) *AutoCreatePriority* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

14.2.4 Checking the messages output at the same time by a job to the standard output and standard error output

The messages displayed in the Execution Result Details dialog box of JP1/AJS3 - View are the messages output by a job to the standard error output. If you also want to check the messages output at the same time by the job to the standard output in this dialog box, the following setting is necessary.

- For PC and Unix jobs

Specify the same file name in both the **Standard output** and **Standard error** text boxes in the Define Details - PC Job dialog box or the Define Details - [UNIX Job] dialog box.

Cautionary notes:

- If you specify the same file name for both the **Standard output** and **Standard error** text boxes, make sure that the same option is also selected for their **Append** check boxes. If you execute a job when check box for one selected and check box for the other cleared, the following message will be output to the integrated trace log and the status of the job will be *Failed to start*.

- When **Standard** is specified as **Exec. Service** of the job

`KAVU0201-E function-name: The parameter is specified incorrectly.`

- When **Queueless Agent** is specified as **Exec. Service** of the job (when the job is a queueless job)

`KAVS1846-E The job definition (job-name) is invalid.`

- If you execute a queueless job with the same file name specified for both **Standard output** and **Standard error**, the messages that are output to the standard output and the standard error output are first saved in a temporary file. The specified file is not updated until execution of the job is completed.

14.2.5 Changing the interval and number of resend attempts for job result files

When a job being executed on an agent host has ended, the agent host transfers job result files to the manager host, and if the files are transferred successfully, reports termination to the manager host. However, if the transfer fails, the agent host normally retries the transfer at five-minute intervals until the termination status is reported to the

manager host. However, if the files are large, analysis of the files burdens the manager host. Normally, if the manager host does not respond within ten minutes of transferring the job result files to the agent host, the agent host assumes a timeout error and tries to send the files again. Repeated resend attempts, however, will cause the manager host to repeatedly perform file analysis, a burden that causes CPU usage to soar. At this point, the manager might no longer be able to accept any other requests.

You can reduce the load on the manager host by changing the interval and the number of resend attempts applied when the transfer of job result files fails.

The following describes how to change the interval and number of resend attempts for job result files.

Note that the procedure described below is not necessary if you use the queueless job execution facility, because the facility does not resend job result files.

(1) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spm_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameters described in (2) below:

```
jajs_config -k definition-key "parameter-name-1"=value-1
["parameter-name-2"=value-2]
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameters

Table 14-9: Environment setting parameters used to change the interval and number of resend attempts for job result files

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT logical-host}\JP1NBQAGENT\Network]#	"NotifyJobStateInterval"=	Specifies the interval for attempts to resend job result files.

Definition key	Environment setting parameter	Explanation
	"NotifyJobStateCount" =	Specifies the maximum number of resend attempts for job result files.

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see the following:

- 2.3(65) *NotifyJobStateInterval* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.3(66) *NotifyJobStateCount* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

14.2.6 Preventing duplicated reception of job result files

When a standard job or action job being executed on an agent host has ended, the agent host transfers job result files (standard output and standard error output files) to the manager host. Normally, when the agent host has transferred the files, it waits 10 minutes for a response from the manager host. However, if the files are large, file analysis on the manager host takes time, and the wait for a response from the manager host times out. If a timeout occurs, the agent host tries to resend the files until they are transferred successfully. Repeated resend attempts, however, will cause the manager host to repeatedly perform file analysis, a burden that causes CPU usage to soar. At this point, the manager might no longer be able to accept any other requests.

You can use an environment setting parameter to prevent the manager host from receiving job result files resent by agent hosts, thereby reducing the load on the manager. Although the setting for enabling the resending of job result files can also be specified on the agent host side, using that setting is not suitable for a large-scale configuration that includes many agent hosts. This is because the setting must be specified on each agent host. For details about how to specify the setting on the agent host side, see also *14.2.5 Changing the interval and number of resend attempts for job result files*.

The environment setting parameter described in this subsection allows you to stop all agent hosts from resending job result files by simply changing the definition on the manager host.

The following describes how to prevent the duplicated reception of job result files.

Note that the procedure described below is not necessary if you use the queueless job

execution facility, because the facility does not resend job result files.

(1) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter

Table 14-10: Environment setting parameter used to prevent duplicated reception of job result files

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> • For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2\SCHEDULER\QUEUE \MANAGER\Job] # • For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i> } \JP1AJSMANAGER\scheduler-service\QUEUE\MANAGER\Job] # • For submit jobs and a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i> } \JP1NBQMANAGER\Job] # 	"ReceiveFileOption"=	Specifies whether to prevent duplicated reception of job result files.

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify

JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.3(16) *ReceiveFileOption* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.2.7 Placing restrictions on file reception

When a job[#] has been executed in JP1/AJS3, result files (standard output and standard error output files) and transfer files are transferred between the manager and agent hosts, or between the client and manager hosts. If the size of these files is very large, data analysis of the files places a burden on the manager host. As a result, CPU and memory usage increases, and other problems that delay job execution and degrade overall system performance can occur.

#:

No files are transferred when the job is a queue job, event job, or queueless job.

The restrictions on file reception described in this subsection allow you to set the maximum size for these types of files that are transferred after a job is executed. You can set maximums for the total size of result files (standard output and standard error output files) received by the manager host and for the total size of transfer files received by an agent host.

The restrictions on file reception also allow you to specify the status in which the job will be placed and the message that will be output if the size of the received files exceeds the maximum.

The following table describes the type of operation that is performed and how file data is handled when the size of received files exceeds the maximum.

Table 14-11: Type of operation performed and how file data handled if the size of received files exceeds the maximum

File type	Category	Value of the ReceiveFileSizeStatus environment setting parameter			
		0	1	2	3
Result file	Status in which job is placed	Actual termination status of the job	Ended abnormally	Ended with warning [#]	Actual termination status of the job
	Type of message output	Information	Error	Warning	Information

File type	Category	Value of the ReceiveFileSizeStatus environment setting parameter			
		0	1	2	3
	Handling of file data	All file data is received.	File data exceeding the maximum is discarded.	File data exceeding the maximum is discarded.	File data exceeding the maximum is discarded.
Transfer file	Status in which job is placed	Actual termination status of the job	Failed to start	Failed to start	Actual termination status of the job
	Type of message output	Information	Error	Error	Information
	Handling of file data	All file data is received.	No file data is received.	No file data is received.	No file data is received.

#:

If status of the job is *Ended abnormally* on the agent host, that status is inherited.

(1) Definition procedure

1. Execute the following command to set the environment setting parameters described in (2) below:

```
jajs_config -k definition-key "parameter-name-1"=value-1
[ "parameter-name-2"=value-2 ]
```

2. Restart JP1/AJS3.
The new settings are applied.

(2) Environment setting parameters

Table 14-12: Environment setting parameter used to place restrictions on file reception

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2\SCHEDULER\QUEUE \MANAGER\Job] # 	"ReceiveFileSizeStatus"=	Specifies the restrictions applied if the size of received files reaches the maximum.
<ul style="list-style-type: none"> For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i> } \JP1AJSMANAGER\scheduler-service\QUEUE\MANAGER\Job] # For submit jobs and a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i> } \JP1NBQMANAGER\Job] # 	"LimitReceiveFileSize"=	Specifies the maximum for the size of received files.

#:

The specification of the {JP1_DEFAULT | *logical-host* } part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see the following:

- 2.3(14) *ReceiveFileSizeStatus* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.3(15) *LimitReceiveFileSize* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

(3) Operation performed if the size of received files exceeds the maximum

The following describes the operation performed if the size of received files exceeds the maximum.

- Result files
 - If the maximum is reached when the value of the *ReceiveFileSizeStatus* environment setting parameter is 1, 2, or 3, no more data is output to the standard output and standard error output files on the manager host. Because the result files are not complete, confirm that the incomplete result files will not cause any problems in cases such as when a succeeding job references these files.
 - For the return code and end status of a job when the size of received result

files reaches the maximum, see the following table.

Table 14-13: End status and return code when the size of received result files exceeds the maximum

Actual job status	Category	Value of the ReceiveFileSizeStatus environment setting parameter		
		1	2	0 or 3
Ended normally (Includes cases when <i>Always normal</i> is specified.)	Status	Ended abnormally	Ended with warning	Ended normally
	Return code	Return value of the job#	Return value of the job#	Return value of the job#
Ended with warning	Status	Ended abnormally	Ended with warning	Ended with warning
	Return code	Return value of the job#	Return value of the job#	Return value of the job#
Ended abnormally	Status	Ended abnormally	Ended abnormally	Ended abnormally
	Return code	Return value of the job#	Return value of the job#	Return value of the job#
Killed	Status	Killed	Killed	Killed
	Return code	PC job: -1 Unix job: 255	PC job: -1 Unix job: 255	PC job: -1 Unix job: 255
Failed to start	Status	Failed to start	Failed to start	Failed to start

#:

Return code of the job process executed as a job

- Transfer files
 - If the maximum is reached when the value of the `ReceiveFileSizeStatus` environment setting parameter is 1, 2, or 3, none of the transfer files are received, and all the data received as the specified transferred files is discarded.
 - For the return code and end status of a job when the size of received transfer files reaches the maximum, see the following table.

Table 14-14: End status and return code when the size of received transfer files exceeds the maximum

Actual job status	Category	Value of the ReceiveFileSizeStatus environment setting parameter		
		1	2	0 or 3
None ^{#1}	Status	Failed to start	Failed to start	Actual job termination status
	Return code	PC job: -1 Unix job: -1	PC job: -1 Unix job: -1	Return value of the job ^{#2}

#1:

Because transfer files are processed before a job is registered, the status of the job is *None*, which is the status of a job before its status becomes *Now queuing*.

#2:

Return code of the job process executed as a job

14.2.8 Changing the interval and number of retry attempts when a TCP/IP connection error occurs

As job execution control, TCP/IP is used to pass information between the processes for registering and delivering jobs, reporting and checking the job status, and checking the agent host status. However, if the host to be connected to is not running or if a network error has occurred, TCP/IP connection fails.

If the other host does not respond to a TCP/IP connection request, job execution control first waits for a maximum of 90 seconds for a response, and then makes two retry attempts at 20-second intervals (under the default settings). If both attempts fail, four or five minutes might pass before the connection finally resulted in an error.

If a communication error occurs during processing that registers or delivers a job, reports or checks the job status, or checks the agent host status, detection of the error might be delayed. This delay might result in a further delay in changing the job status.

If TCP/IP connection errors are frequent, you can set smaller values for the connection timeout value, the number of retry attempts, and the retry interval to speed up the detection of an error.

For details about changing the settings for delivering jobs to agent hosts, checking the job status, and checking the agent host status on the manager side, see 2.6 *Setting up the communication control environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

The following table lists the definition keys for which values are to be changed, and their purpose.

Table 14-15: Definition keys for which values are to be changed

Definition key	Purpose
<ul style="list-style-type: none"> For all scheduler services JP1AJS2\SCHEDULER\QUEUE\MANAGER\Network For a specific scheduler service JP1AJSMANAGER\scheduler-service\QUEUE\MANAGER\Network For submit jobs and a compatible ISAM configuration JP1NBQMANAGER\Network 	Reporting the job status
JP1NBQAGENT\Network	Reporting the job status
JP1NBQCLIENT\Network	Registering a job from the scheduler and executing a job from a command
<ul style="list-style-type: none"> For all scheduler services JP1AJS2\SCHEDULER\QUEUE\notify\Network For a specific scheduler service JP1AJSMANAGER\scheduler-service\QUEUE\notify\Network For submit jobs and a compatible ISAM configuration JP1NBQNOTIFY\Network 	Checking the job status on another system (such as JP1/NQSEEXEC or JP1/OJE) and reporting the status

The following describes how to set the connection timeout value, retry interval, and number of retry attempts in job execution control.

Note that the procedure described below is not necessary if the queueless job execution facility is used.

(1) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spm_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameters described in (2) below:

```
jajs_config -k definition-key "parameter-name-1"=value-1
["parameter-name-2"=value-2]
["parameter-name-3"=value-3]
```

You can specify only one definition key. If you want to set environment setting parameters for different definition keys, you must execute the `jajs_config` command for each definition key.

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameters

Table 14-16: Environment setting parameters for job execution control

No.	Definition key	Environment setting parameter	Explanation
1	<ul style="list-style-type: none"> For all scheduler services <code>[{JP1_DEFAULT logical-host}\JP1AJS2\SCHEDULER\QUEUE\MANAGER\Network]#</code> 	"ConnectTimeout"=	Defines the timeout value (in milliseconds) for a TCP/IP connection attempted by the job execution control manager.
2	<ul style="list-style-type: none"> For a specific scheduler service <code>[{JP1_DEFAULT logical-host}\JP1AJSMANAGER\scheduler-service\QUEUE\MANAGER\Network]#</code> 	"CommunicateRetryCount"=	Defines the maximum number of retry attempts for a TCP/IP connection attempted by the job execution control manager.
3	<ul style="list-style-type: none"> For submit jobs and a compatible ISAM configuration <code>[{JP1_DEFAULT logical-host}\JP1NBQMANAGER\Network]#</code> 	"CommunicateRetryInterval"=	Defines the retry interval (in seconds) for a TCP/IP connection attempted by the job execution control manager.
4	<code>[{JP1_DEFAULT logical-host}\JP1NBQAGENT\Network]#</code>	"ConnectTimeout"=	Defines the timeout value (in milliseconds) for a TCP/IP connection attempted by the job execution control agent.
5		"CommunicateRetryCount"=	Defines the maximum number of retry attempts for a TCP/IP connection attempted by the job execution control agent.
6		"CommunicateRetryInterval"=	Defines the retry interval (in seconds) for a TCP/IP connection attempted by the job execution control agent.

No.	Definition key	Environment setting parameter	Explanation
7	[{JP1_DEFAULT logical-host}\JP1NBQCLIENT\Network]#	"ConnectTimeout"=	Defines the timeout value (in milliseconds) for a TCP/IP connection attempted by job execution commands and the scheduler.
8		"CommunicateRetryCount"=	Defines the maximum number of retry attempts for a TCP/IP connection attempted by job execution commands and the scheduler.
9		"CommunicateRetryInterval"=	Defines the retry interval (in seconds) for a TCP/IP connection attempted by job execution commands and the scheduler.
10	<ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT logical-host}\JP1AJS2\SCHEDULER\QUEUE\NOTIFY\Network]# For a specific scheduler service [{JP1_DEFAULT logical-host}\JP1AJSMANAGER\scheduler-service\QUEUE\NOTIFY\Network]# For submit jobs and a compatible ISAM configuration [{JP1_DEFAULT logical-host}\JP1NBQNOTIFY\Network]# 	"ConnectTimeout"=	Defines the timeout value (in milliseconds) for a TCP/IP connection attempted by the process that reports the job execution control status.
11		"CommunicateRetryCount"=	Defines the maximum number of retry attempts for a TCP/IP connection attempted by the process that reports the job execution control status.
12		"CommunicateRetryInterval"=	Defines the retry interval (in seconds) for a TCP/IP connection attempted by the process that reports the job execution control status.

#:

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see the following:

- 2.3(24) ConnectTimeout in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2
- 2.3(25) CommunicateRetryCount in the Job Management Partner 1/Automatic

Job Management System 3 Configuration Guide 2

3. *2.3(26) CommunicateRetryInterval in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
4. *2.3(67) ConnectTimeout in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
5. *2.3(68) CommunicateRetryCount in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
6. *2.3(69) CommunicateRetryInterval in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
7. *2.3(75) ConnectTimeout in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
8. *2.3(76) CommunicateRetryCount in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
9. *2.3(77) CommunicateRetryInterval in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
10. *2.3(81) ConnectTimeout in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
11. *2.3(82) CommunicateRetryCount in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
12. *2.3(83) CommunicateRetryInterval in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

14.2.9 Setting the method for determining the agent host to which a job will be delivered

When there are execution agents that have the same priority and agent usage rate, by default, a job (a PC, UNIX, action, or custom job other than a queueless job) is delivered to the agent with the highest agent ID[#].

In this situation, if several jobs requiring little processing time are executed, because the agent usage rate does not increase soon, the difference in the agent usage rate with other execution agents also does not increase soon. As a result, jobs tend to be delivered to execution agents whose agent ID is high, causing a bias in system use.

To counteract this bias and balance the job distribution load, you can use a method that selects the least recently used agent, instead of the method that selects the agent with the highest agent ID.

#:

An agent ID is internally assigned in ascending order to each execution agent in the order the execution agents are registered. A list of execution agents displayed

by the `ajsagtshow` command is sorted in ascending order by agent ID.

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

The following describes how to set the method for determining the agent host to which a job will be delivered.

(1) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter

Table 14-17: Environment setting parameter used to set the method for determining the agent host to which a job will be delivered

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> • For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2\SCHEDULER\QUEUE\MANAGER\Agent]# • For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2\MANAGER\<i>scheduler-service</i>\QUEUE\MANAGER\Agent]# 	"LeastRecentlyUsed"=	Defines a method for determining the agent host to which a job will be delivered.

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.3(34) *LeastRecentlyUsed* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.2.10 Setting the action to be taken if the value of a macro variable cannot be passed

If the value of a macro variable cannot be passed to a job in a jobnet being executed, you can take either of two actions for the jobnet. One is to place the jobnet in *Failed to start* status, and the other is to continue execution by using the variable name as a string value.

The following describes how to set the action to be taken if the value of a macro variable cannot be passed when execution of a jobnet is attempted.

(1) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jplajs2/jajs_stop#1
# /opt/jplajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter*Table 14-18: Environment setting parameter used to set the action to be taken if the value of a macro variable cannot be passed*

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1AJS2COMMON]#	"MACROCHANGEFAIL" =	Defines the action to be taken if the value of a macro variable specified in an event job or specified during registration for execution cannot be passed.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.9(3) *MACROCHANGEFAIL* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.2.11 Setting the handling of a macro variable when the value is a NULL string

The value of a macro variable can be used as event information received by an event job. For details about macro variables, see 4.1.2 *Specifying macro variable values during registration for execution* in the manual *Job Management Partner 1/Automatic Job Management System 3 Overview*. For examples of defining macro variables in event jobs, 2.4.4(6) *Passing information received by an event job* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Work Tasks) Guide*.

You can define the event information received by an event job as a macro variable that can be used to pass the event information to a succeeding job or jobnet. The information passed to a succeeding job or jobnet is called *passing information*. For an example of defining macro variables, see 2.4.4(6) *Passing information received by an event job* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Work Tasks) Guide*.

If the information inherited as a macro variable is a NULL string and only the macro variable is specified without any prefixed or suffixed characters, you can select either of the following methods handling the macro variable:

- The macro variable name itself is used as a string value (default)
- The macro variable name is replaced with a NULL string

These methods for handling a macro variable whose value is a NULL string are described below with the use of examples.

When the macro variable name itself is used as a string value:

- When no characters are prefixed or suffixed to the macro variable:

[?AJS2xxxxxxxxxx?] → [?AJS2xxxxxxxxxx?]

- When characters are prefixed or suffixed to the macro variable:

[aaa?AJS2xxxxxxxxxx?bbb] → [aaabbb]

[ccc?AJS2xxxxxxxxxx?] → [ccc]

[?AJS2xxxxxxxxxx?ddd] → [ddd]

When the macro variable name is replaced with a NULL string:

- When no characters are prefixed or suffixed to the macro variable:

[?AJS2xxxxxxxxxx?] → []

- When characters are prefixed or suffixed to the macro variable:

[aaa?AJS2xxxxxxxxxx?bbb] → [aaabbb]

[ccc?AJS2xxxxxxxxxx?] → [ccc]

[?AJS2xxxxxxxxxx?ddd] → [ddd]

The setting described in this subsection applies to jobs for which **Standard** is specified for **Exec. Service**. If **Queueless Agent** is specified, the macro variable name is always replaced with a NULL string. Note that this setting applies only to the following definition items, for which a macro variable could be used in JP1/AJS2 07-11 and earlier versions:

Unix job:

- Command statement
- Script file name
- Parameter
- Environment variable

PC job:

- Executable file name
- Parameter
- Environment variable

Note that this setting is not necessary when characters are always prefixed or suffixed to macro variables, and when operation expects that macro variable names will be used as string values.

The following describes how to set the handling of a macro variable when the value is a NULL string.

(1) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter

Table 14-19: Environment setting parameter used to set the handling of a macro variable when the value is a NULL string

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1NBQCLIENT\Process]#	"MacroOptionReplaceMode"=	Specifies the handling of a macro variable whose value is a NULL string.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.3(79) *MacroOptionReplaceMode* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.2.12 Changing the wait time for recovery when an agent has failed

This subsection discusses JP1/AJS3 behavior when an agent host executing a job (a PC or Unix job other than a queueless job, or a queue, action, or custom job running on JP1/AJS3) fails or a communication error occurs. In such situations, JP1/AJS3 does not immediately assume a failure, and retries communication after waiting a specified time for recovery. The purpose of waiting is to prevent operation from stopping due to a temporary, recoverable failure. The default wait time is 10 minutes. However, depending on the operation, you might want to determine the failure location and take corrective action immediately rather than waiting for recovery. You can do this by reducing the wait time for recovery.

The following describes how to change the wait time for recovery when an agent host has failed.

(1) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jplajs2/jajs_stop#1
# /opt/jplajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

In a cluster system, also stop the JP1/AJS3 service on each logical host.

2. Execute the following command to set the environment setting parameters described in (2) below:

```
jajs_config -k definition-key "parameter-name-1"=value-1
[ "parameter-name-2"=value-2 ]
```

Cautionary note:

In a cluster system, perform this step on both the primary and secondary

nodes.

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameters

Table 14-20: Environment setting parameters used to set the amount of time to wait for recovery when an agent has failed

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2\SCHEDULER\QUEUE\MANAGER\Job] # 	"QueuingJobRecoveryTime" =	Specifies in seconds how long to wait for recovery from an agent failure related to a queued job.
<ul style="list-style-type: none"> For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i> } \JP1AJSMANAGER\scheduler-service\QUEUE\MANAGER\Job] # For submit jobs and a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i> } \JP1NBQMANAGER\Job] # 	"ExecutingJobRecoveryTime" =	Specifies in seconds how long to wait for recovery from an agent failure related to a job being executed.

#:

The specification of the {JP1_DEFAULT | *logical-host* } part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see the following:

- 2.3(17) *QueuingJobRecoveryTime* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.3(18) *ExecutingJobRecoveryTime* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

14.2.13 Outputting a message that reports that the maximum number of concurrently executable jobs has been reached

If the number of jobs (Unix jobs, PC jobs, action jobs, and custom jobs other than queueless jobs) that are being executed concurrently on an agent host has reached the maximum, the succeeding jobs might remain queued, delaying their execution.

JP1/AJS3 provides a setting that outputs the following message to the integrated trace log when the number of jobs being executed concurrently reaches the maximum. By

enabling the setting, you can confirm that job execution was delayed because the maximum was reached.

```
KAVU4310-I The number of executing jobs reaches the
concurrently-executable-job-limit (maximum-number-of-concurrently-executable-jobs)
at the agent (agent-host-name). (host name: host-name, job number: job-number)
```

If this message is not output, despite enabling of this setting and a job status of *Now queuing*, check the agent, agent group, or job execution host for the following possible causes:

If this message is not output even when this setting is enabled and the status of jobs is *Now queuing*, various causes are possible. Accordingly, check the setting of the maximum number of concurrently executable jobs, the job transfer restriction status, and the job execution host status for the execution agent or execution agent group.

1. The maximum number of concurrently executable jobs is 0.

Use the `ajsagtshow` command to check the maximum number of concurrently executable jobs (CON-EXE) on the execution agent.

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

2. The job transfer restriction status of the execution agent group is *Hold* or *Blockade*. Alternatively, the job transfer restriction status of the execution agent is *Ineffective*, *Hold*, or *Blockade*.

Use the `ajsagtshow` command to check the job transfer restriction status of the execution agent group or execution agent.

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

3. The agent host has stopped or failed.

Use the integrated trace log on the agent host to check for stoppage of the JP1/AJS3 service or the occurrence of an error on the agent host. Also check whether the agent host is able to communicate with the manager host.

If queue or submit jobs are used, check the agent, agent group, or job execution host for the following possible causes:

1. The maximum number of concurrently executable jobs is 0.

Use the `jpgagtshow` command to check the maximum number of concurrently executable jobs (CUREXECHGNUM).

For details about the `jpgagtshow` command, see *jpgagtshow* in 3. *Commands*

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

2. In the settings for queues (including the default queue), the job exit is closed.
Use the `jpqqqeshow` command to check the job exit status (`EXITSTATUS`).
For details about the `jpqqqeshow` command, see *jpqqqeshow* in *3. Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.
3. The agent host has stopped or failed.
Use the integrated trace log on the agent host to check for stoppage of the JP1/AJS3 service or the occurrence of an error on the agent host. Also check whether the agent host is able to communicate with the manager host.
4. A necessary resource has been locked by another job.
Use the `jpqresshow` command to check for jobs whose status is `EXECUTING`.
For details about the `jpqresshow` command, see *jpqresshow* in *3. Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

For details about the maximum number of concurrently executable jobs when queue or submit jobs are used, see *2.5.4 Maximum number of concurrently executable jobs* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

The following describes how to set output of a message that reports that the maximum number of concurrently executable jobs has been reached.

(1) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameters described in (2) below:

```
jajs_config -k definition-key "parameter-name-1"=value-1
["parameter-name-2"=value-2]
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameters

Table 14-21: Environment setting parameters used to set output of the message that reports that the maximum number of concurrently executable jobs has been reached

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT logical-host} \JP1AJS2\SCHEDULER\QUEUE\MANAGER\Job] # For a specific scheduler service [{JP1_DEFAULT logical-host} \JP1AJSMANAGER\scheduler-service\QUEUE\MANAGER\Job] # For submit jobs and a compatible ISAM configuration [{JP1_DEFAULT logical-host} \JP1NBQMANAGER\Job] # 	"MaximumExecJobLogOption"=	Specifies output of the message that reports that the maximum number of concurrently executable jobs has been reached.
	"MaximumExecJobLogInterval"=	Specifies the interval for re-output of the message that reports that the maximum number of concurrently executable jobs has been reached.

#:

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see the following:

- 2.3(19) *MaximumExecJobLogOption* in the *Job Management Partner 1/ Automatic Job Management System 3 Configuration Guide 2*
- 2.3(20) *MaximumExecJobLogInterval* in the *Job Management Partner 1/ Automatic Job Management System 3 Configuration Guide 2*

14.2.14 Changing the timeout value for the job execution control manager process

When the job execution control manager process is requested to perform any of the following operations, the timeout period (default: 10 minutes) for communication with the manager process is set by the requester:

- Registration, cancellation, or status checking of a job by the scheduler

- Performing an operation on a job by using a job execution command (jprqxxx)

If communication with the job execution control manager process takes too much time and a timeout occurs, job execution or the command request fails.

The major causes of a communication timeout are as follows:

- The size of the transfer files or result files for the executed job is large.
- Many jobs are listed by the jpqendjobshow command, which lists information about terminated jobs.

For details about the jpqendjobshow command, see *jqendjobshow* in 3. *Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

- Many jobs are listed by the jpqjobshow command, which lists information about jobs that have not terminated yet.

For details about the jpqjobshow command, see *jqjobshow* in 3. *Commands Used for Special Operation* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

If communication times out while the scheduler is registering or canceling a job or checking the status of a job, the job# ends abnormally, and the following message is output to the integrated trace log:

#:

Event jobs and jobs for which **Queueless Agent** is specified for **Exec. Service** are exceptions.

KAVU0220-E *function-name*: There is no response from the manager.

If communication times out during processing of a jprqxxx command, the following message is output:

KAVU0953-E No response from the manager.

You might be able to prevent a command request or job execution failure due to a communication timeout by increasing the communication timeout value. If communication times out while the scheduler is registering or canceling a job, or checking the status of a job, increase the timeout value on the manager host. If communication times out while the command that is used to execute a job is being executed, increase the timeout value on the client host where the command is executed.

The following describes how to change the communication timeout value.

(1) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following command to confirm that all processes have stopped:

```
# /opt/jp1ajs2/bin/jajs_spmc_status
```

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter

Table 14-22: Environment setting parameter used to change the timeout value for the job execution control manager process

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1NBQCLIENT\Network]#	"CommunicateTimeout"=	Specifies the timeout value (in milliseconds) for the job execution control manager process.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.3(78) *CommunicateTimeout* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

(3) Note

Increasing the communication timeout value also increases the time required to detect an error that has occurred in a command or job during communication processing. As a result, succeeding jobs can easily be delayed. Before changing the communication timeout value, carefully consider the best value to be set.

14.2.15 Changing the timeout value for pipe communication of the agent

Pipe communication between job execution control agent processes sometimes times out. For example, any of the following conditions could cause a timeout:

- Many jobs are being executed in a very short period.

- The CPU is not available for 300 or more seconds because it is busy.
- The job execution control agent process is swapped out and is not executed for at least 300 seconds because of a shortage of real memory.

If any of these conditions persists and pipe communication times out frequently, we recommend that you increase the timeout value for pipe communication on the host on which the agent process runs. The default timeout value is 300 seconds.

The following describes how to change the timeout value for pipe communication of the agent.

(1) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter

Table 14-23: Environment setting parameter used to change the timeout value for pipe communication of the agent

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1NBQAGENT\Job]#	"PipeComTimeout"=	Specifies the timeout value for pipe communication of the agent.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify

JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.3(59) *PipeComTimeout* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.2.16 Setting the timeout value for receiving notification from the job process that execution is ready

A job that uses a queue (PC job that is not a queueless job, Unix job, queue job executed on JP1/AJS3, action job, or custom job) is started as a job process from the job execution control agent process. When the job is started, the agent process uses pipe communication to wait for a notification from the job process that execution is ready. During the wait, if, for example, the CPU is busy or the job priority is low, the job process might not be able to send the notification to the agent process for a long time. Because the agent process changes the status of a job to *Now running* when it receives the notification from the job process, the job status might remain *Now queuing* if no notification is received. If you set a timeout for receiving the notification, you can detect this problem early from the following message output to the integrated log:

```
KAVU3589-E A pipe timeout error occurred in a job execution
process (timeout value(second): seconds)
```

The following describes how to set the timeout value for receiving notification from the job process that execution is ready.

Note that if you use the queueless job execution functionality, the procedure described below is not needed because the functionality does not use pipe communication.

(1) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jplajs2/jajs_stop#1
# /opt/jplajs2/bin/jajs_spmd_status
```

```
#1:
```

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter

Table 14-24: Environment setting parameter used to set the timeout value for receiving notification from the job process that execution is ready

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1NBQAGENT\Job]#	"AfterForkPipeTimeout"=	Specifies the timeout value for receiving notification from the job process that execution is ready.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.3(60) *AfterForkPipeTimeout* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.2.17 Applying SIG_DFL (setting for receiving the SIGCHLD signal) to a child process started from JP1/AJS3

The explanation in this subsection applies to a UNIX environment in which a UNIX or action job that is not a JP1/AJS3 queueless job is executed. In this state, depending on the login shell used by the job execution OS user, the status of the job might change to *Failed to start* or *Ended abnormally*. Alternatively, the job might end with an unexpected result. This occurs because child processes started from JP1/AJS3 are based on SIG_IGN, which is the setting that ignores the SIGCHLD signal. For details about child-process signals set by JP1/AJS3, see (3) *Child-process signals set by JP1/AJS3*.

Cautionary notes:

1. If JP1/AJS2 08-00 or a later version or JP1/AJS3 is installed as a new installation, SIG_DFL, which is the setting for receiving the SIGCHLD signal, is applied. In this case, the settings described in this subsection need not be specified.
2. If JP1/AJS2 08-00 or a later version or JP1/AJS3 is installed as an upgrade from JP1/AJS2 07-50 or an earlier version, the previous settings are inherited. In this case, the settings described in this subsection must be specified.

The following describes how to apply `SIG_DFL`, which is the setting for receiving the `SIGCHLD` signal, to the type of job described above.

Note that if you use the queueless job execution functionality, you do not need to specify the settings described in this subsection. For any child process started from the queueless agent service when a queueless job is executed, `SIG_DFL`, which is the setting for receiving the `SIGCHLD` signal, is applied.

(1) Setting method 1

If an application that might cause the problem described above is started from JP1/AJS3, use `sh`, `csh`, or `ksh` as the login shell for the job execution OS user. Alternatively, start the application via the shell.

(2) Setting method 2

(a) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

Cautionary note:

If you apply `SIG_DFL`, which is the setting for receiving the `SIGCHLD` signal, you must use the above procedure on the job execution host.

(b) Environment setting parameter*Table 14-25: Environment setting parameter used to apply SIG_DFL to child processes started from JP1/AJS3*

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1NBQAGENT\Job]#	"IsSigchldDefault"=	Specifies whether to apply SIG_DFL, which is the setting for receiving the SIGCHLD signal, to child processes started from JP1/AJS3.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.3(63) *IsSigchldDefault* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

(3) Child-process signals set by JP1/AJS3*Table 14-26: Child-process signals set by JP1/AJS3*

Signal name	Initial setting	Behavior
SIGHUP	SIG_DFL (default)	A
SIGINT	SIG_DFL (default)	A
SIGQUIT	SIG_DFL (default)	A
SIGILL	SIG_DFL (default)	A
SIGTRAP	SIG_DFL (default)	C, G
SIGIOT	SIG_DFL (default)	C, G
SIGEMT	SIG_DFL (default)	G
SIGFPE	SIG_DFL (default)	C
SIGBUS	SIG_DFL (default)	A, G
SIGSEGV	SIG_DFL (default)	C
SIGSYS	SIG_DFL (default)	G
SIGPIPE	SIG_DFL (default)	A

Signal name	Initial setting	Behavior
SIGALRM	SIG_DFL (default)	A
SIGTERM	SIG_DFL (default)	A
SIGUSR1	SIG_DFL (default)	A
SIGUSR2	SIG_DFL (default)	A
SIGCHLD	SIG_DFL (default) ^{#1}	B
	SIG_IGN (ignore) ^{#2}	H
SIGPWR	SIG_DFL (default)	A, G
SIGVTALRM	SIG_DFL (default)	A, G
SIGPROF	SIG_DFL (default)	A, G
SIGIO	SIG_DFL (default)	A, G
SIGWINCH	SIG_DFL (default)	B, G
SIGTSTP	SIG_DFL (default)	D
SIGCONT	SIG_DFL (default)	I
SIGTTIN	SIG_DFL (default)	D
SIGTTOU	SIG_DFL (default)	D
SIGURG	SIG_DFL (default)	B, G
SIGLOST	SIG_DFL (default)	A, G

Legend:

- A: The default behavior is to terminate the process.
- B: The default behavior is to ignore the signal.
- C: The default behavior is to dump core.
- D: The default behavior is to stop the process.
- E: Signal that cannot be caught
- F: Signal that cannot be ignored
- G: Signal that does not conform to POSIX.1
- H: The signal is ignored.
- I: The default behavior is to restart the process.

#1:

If JP1/AJS2 08-00 or a later version or JP1/AJS3 is installed as a new installation, `SIG_DFL`, which is the setting for receiving the `SIGCHLD` signal, is applied.

#2:

If JP1/AJS2 08-00 or a later version or JP1/AJS3 is installed as an upgrade from JP1/AJS2 07-50 or an earlier version, `SIG_IGN`, which is the setting for ignoring the `SIGCHLD` signal, is applied.

14.2.18 Enabling the file access permission check for the ACL and secondary group settings during job execution

This subsection describes how to enable the file access permission check not only for file permissions during job execution, but also for the ACL and secondary group settings.

The procedure in this subsection must be performed for each agent host. Note that this function is valid only for Unix jobs.

Note that the procedure in this subsection is not necessary when you use the queueless job execution functionality. During the execution of queueless jobs, both file permissions and the ACL and secondary group settings are subject to the file access permission check conducted.

Cautionary note:

You cannot enable this function if the JP1/AJS2 - Agent (or JP1/AJS2 - Manager) 08-10 or an earlier version is installed on the agent host.

(1) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jplajs2/jajs2_stop#1
# /opt/jplajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter

Table 14-27: Environment setting parameter used to change the settings for checking file access permissions during job execution

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1NEQAGENT\Job]#	"FileAccessPermissionMode" =	Specifies the method for checking file access permissions during the execution of Unix jobs.

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.3(64) *FileAccessPermissionMode* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.2.19 Placing all running jobs in an end status when a communication error occurs

JP1/AJS3 periodically (at five-minute intervals) performs polling to monitor running jobs (PC and Unix jobs that are not queueless jobs, and queue, action, and custom jobs executed on JP1/AJS3).

If a communication error occurs during the monitoring on the agent host on which a job is to be executed, JP1/AJS3 does not immediately declare an abnormal end. Instead, it retries communication for a specified period of time (default: 10 minutes) while waiting for recovery from the system or communication error on the agent host. If the error is a temporary, recoverable error, then operation is not stopped needlessly.

If there has been no recovery on the agent host when the polling period ends, jobs are placed in an end status# one by one in order by expiration of a job's wait time for recovery. However, if many jobs are being executed, a long time might be required before all jobs have been placed in an end status. In some cases, therefore, depending on the operation, immediate recovery will have precedence over waiting for recovery in the event of an error. For these cases, you can specify settings so that all jobs being executed on the same agent host are immediately placed in an end status# if there has been no error recovery on the agent host when the polling period ends. For the jobs in an execution agent group, these settings are applied to the jobs that are running on the same agent host. Immediately placing jobs in an end status enables recovery action to

be taken sooner.

#:

For a job defined in a jobnet, the job status changes to *Killed*, and -1 is set as the return code. For a submit job executed by the `jpqjobsub` command, the job status changes to the status specified by the `-rs` option (the default is *Hold*).

The following describes how to specify the settings for placing all running jobs in an end status when a communication error occurs.

(1) Definition procedure

1. Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs2_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter

Table 14-28: Environment setting parameter used to place all running jobs in an end status when a communication error occurs

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> • For all scheduler services [{JP1_DEFAULT logical-host} \JP1AJS2\SCHEDULER\QUEUE \MANAGER\Job] # • For a specific scheduler service [{JP1_DEFAULT logical-host} \JP1AJSMANAGER\scheduler-se rvice\QUEUE\MANAGER\Job] # • For submit jobs and a compatible ISAM configuration [{JP1_DEFAULT logical-host} \JP1NBQMANAGER\Job] # 	"ExecutingJobChangeStatus" =	Specifies that all running jobs are placed in an end status when a communication error occurs.

#:

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.3(23) *ExecutingJobChangeStatus* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.3 Changing the settings related to event/action control

This section describes how to change the settings related to event/action control.

When you set environment setting parameters, use the `jaajs_config` command or `jbssetcnf` command.

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

For details on the `jbssetcnf` command, see the *Job Management Partner 1/Base User's Guide*.

14.3.1 Changing the settings related to the size of the log for event jobs to match operational requirements

This subsection describes how to change the settings related to the size of the log for event jobs to match operational requirements. We recommend that you specify the settings so that log data for two or three days is saved. Log data for at least 24 hours must be saved.

For details about estimating the size of log data, see *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*.

The following describes how to change the log settings for event jobs.

(1) Definition procedure

(a) For a standard configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jaajs_stop#1
# /opt/jp1ajs2/bin/jaajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set environment setting parameters:

```
jaajs_config -k definition-key "parameter-name-1"=value-1
["parameter-name-2"=value-2]
["parameter-name-3"=value-3] ...
```

You can specify only one definition key. If you want to set environment setting parameters for different definition keys, you must execute the `jajs_config` command for each definition key.

For the environment setting parameters to be set, see 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*.

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. In an editor such as `vi`, create a configuration file that defines the environment setting parameters.

For the environment setting parameters to be set, see 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*.

3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is `/opt/jp1base/bin/jbssetcnf`. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

14.3.2 Setting the event order option

When an event job has start conditions, events that trigger the job might occur in succession but be processed in a different order, depending on the communication conditions. You might want to preserve the actual order of events that satisfied the start

conditions if, for example, the event information will be passed to the job. To do this, use the event order option. The following describes how to enable the event order option.

Note that this option must be set on all agent hosts on which event jobs will be executed.

(1) **Definition procedure**

(a) **For a standard configuration**

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(b) **For a compatible ISAM configuration**

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. In an editor such as vi, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

`jbssetcnf configuration-file-name`

The path of the `jbssetcnf` command is `/opt/jp1base/bin/jbssetcnf`. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 14-29: Environment setting parameter used to set the event order option

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> }\JP1AOMAGENT]#	"EventSequential"=	Specifies whether the event order option is enabled.

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.4(20) *EventSequential* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.3.3 Setting the status passing option for the file monitoring job

While the file monitoring job is monitoring target files, the monitoring information can be saved continuously so that the monitoring status of the job can be inherited if the JP1/AJS3 service temporarily stops.

Note that the monitoring status can be inherited only if the file monitoring job is operating continuously. Whether the monitoring status can be inherited depends on whether the file monitoring job is operating continuously.

For details about the conditions under which the monitoring status can be inherited, 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*.

The function that inherits the monitoring status of the file monitoring job is disabled by default. Note, however, that the function is enabled when JP1/AJS3 is installed as a new installation and set up. The following describes how to set the status passing option.

(1) Definition procedure**(a) For a standard configuration**

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. In an editor such as vi, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is `/opt/jp1base/bin/jbssetcnf`. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 14-30: Environment setting parameter used to set the status passing option for the file monitoring job

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT logical-host}\JP1AOMAGENT] #	"FilewatchinfContinue"=	Specifies whether the status passing option for the file monitoring job is enabled.

#:

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.4(17) *FilewatchinfContinue* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.3.4 Passing event data containing double quotation marks

Data containing double quotation marks (") can be passed as is to an event job. For details, see 4.3.7(4) *Passing event data containing double quotation marks* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

The option that enables the passing of data containing double quotation marks (") as is to an event job is set by executing the `jajs_config` command.

The following describes how to set the option that enables the passing of data containing double quotation marks (").

(1) Definition procedure

(a) For a standard configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. In an editor such as vi, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is `/opt/jp1base/bin/jbssetcnf`. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 14-31: Environment setting parameter used to enable passing of data containing double quotation marks to an event job

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> • For all scheduler services [{JP1_DEFAULT logical-host} \JP1AJS2\SCHEDULER\EV\MA NAGER]# • For a compatible ISAM configuration [{JP1_DEFAULT logical-host} \JP1AOMMANAGER]# 	<p>"MacVarDQuotation"=</p>	<p>Specifies whether to enable passing of data containing double quotation marks (").</p>

#:

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.4(4) *MacVarDQuotation* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.3.5 Using fully qualified domain names (FQDN) when using event jobs during DNS operation

This subsection describes how to specify the settings for using domain names in FQDN format when using event jobs during DNS operation. The procedure for specifying these settings when JP1/AJS3 is installed as a new installation is described below. Note that specification of these settings is required only if event jobs are used. Standard, action, and custom jobs are already supported. For an overview of and the procedure for the specification when JP1/AJS3 is installed as an upgrade from JP1/AJS2 06-71 or earlier, see 8.2 *Setting for executing event jobs in a DNS environment (for upgrading)* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

Note that these settings must be specified on the manager host.

The procedure for specifying these settings is as follows.

(1) Definition procedure

(a) For a standard configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_spmd_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. In an editor such as vi, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is `/opt/jp1base/bin/jbssetcnf`. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 14-32: Environment setting parameter used to enable the use of fully qualified domain names (FQDN) when event jobs are used during DNS operation

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT logical-host} \JP1AJS2\SCHEDULER\EV\MA NAGER]# For a compatible ISAM configuration [{JP1_DEFAULT logical-host} \JP1AOMMANAGER]# 	"DNSEstablish"=	Specifies whether to enable the use of domain names in FQDN format when event jobs are used during DNS operation.

#:

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.4(5) *DNSEstablish* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.3.6 Resuming event jobs that stopped when the JP1/AJS3 service stopped

For event jobs, JP1/AJS3 provides an option that enables event jobs that have stopped when the JP1/AJS3 service stopped to resume in the same status from the point at which they stopped.

The following describes how to enable this option. For details about the functionality of this option, see 9.2.1 *Continuing the execution of event jobs if the JP1/AJS3 service stops* in the *Job Management Partner 1/Automatic Job Management System 3 Administration Guide*.

(1) Definition procedure

(a) For a standard configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jplajs2/jajs_stop#1
# /opt/jplajs2/bin/jajs_spm_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. In an editor such as vi, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is `/opt/jp1base/bin/jbssetcnf`. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 14-33: Environment setting parameter used to enable event jobs that have stopped when the JP1/AJS3 service stopped to resume

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2\SCHEDULER\EV\MANAGER]# For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i> } \JP1AJSMANAGER\scheduler-service\EV\MANAGER]# For a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i> } \JP1AOMMANAGER]# 	"EvJobExecContinue"=	Specifies whether to enable the execution of stopped event jobs to resume.

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.4(7) *EvJobExecContinue* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.3.7 Retrying startup notification of the event/action control agent

When an event job or a jobnet with start conditions is registered for execution from a manager host, the name of the manager host is set in JP1/AJS3 on the execution host (target host). When JP1/AJS3 starts, it notifies the event/action control manager that it has started. This notification is called the *startup notification of the event/action control agent* (abbreviated here to *startup notification*).

When the manager receives the notification, the manager communicates with the agent to synchronize the execution status of the event job (or jobnet with start conditions) running on the agent between the manager and agent.

If startup notification from the agent to the manager fails, the execution status of the event job (or jobnet with start conditions) might become inconsistent between the manager and agent. If an inconsistency occurs, the jobnet with start conditions might be displayed as a jobnet being monitored (*Now monitoring* status) in JP1/AJS3 - View even if the agent is no longer actually monitoring the jobnet. If a monitored event then occurs, the event will not be detected, preventing the event job from ending on the

manager or the jobnet with start conditions from starting.

If the JP1/AJS3 service on the agent host will be restarted under either of the following conditions while an event job or a jobnet with start conditions is running, set an environment parameter as described in (1) below:

- The agent restarts the JP1/AJS3 service on the agent host when the load on the overall system from programs other than JP1/AJS3 is excessive.
- The JP1/AJS3 service on the agent host is restarted when a temporary communication error occurs on the network.

To check the manager host names set, you can use the `jpoagoec` command. If there are unnecessary manager hosts, use the command to delete them, and then set the environment setting parameter. For details about the `jpoagoec` command, see `jpoagoec` in 2. *Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.

Cautionary note:

If you set the environment setting parameter and then start the JP1/AJS3 service on the agent when unnecessary manager hosts are set on the agent, startup notification will fail for those hosts, resulting in retries. These unnecessary retries could delay the starting of an event job or a jobnet with start conditions executed from another manager as well as the detection of events.

(1) Definition procedure

(a) For a standard configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. In an editor such as vi, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the jbssetcnf command is /opt/jp1base/bin/jbssetcnf. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 14-34: Environment setting parameter used to enable retrying of startup notification of the event/action control agent after a notification failure

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT logical-host}\JP1AOMAGENT]#	"RetryAgtStartNotification" "="	Specifies whether to enable retrying of startup notification of the event/action control agent after a notification failure.

#:

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.4(21) *RetryAgtStartNotification* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.3.8 Setting the agent host name resolution option

Resolution of agent host names might fail on the manager host if, for example, the host names are not correctly set in the `hosts` file or DNS. If an attempt is made to start or stop the JP1/AJS3 service on the manager host or an agent host when agent host names cannot be resolved, the following problems could occur:

- The status of an event job registered for execution takes a long time to change to *Now running*.
- Detection of an event monitored by an event job or start conditions is delayed.
- The status of an event job or a jobnet with start conditions takes a long time to change when, for example, the job or jobnet is forcibly terminated.
- The JP1/AJS3 service on the manager takes a long time to stop.
- The JP1/AJS3 service on the manager takes a long time to start.

You can prevent these problems from occurring by setting the agent host name resolution option.

Note that you do not need to enable this option in an environment in which all agent host names can be resolved.

The following describes how to enable the option.

(1) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. In an editor such as `vi`, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is `/opt/jp1base/bin/jbssetcnf`. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter

Table 14-35: Environment setting parameter used to enable the agent host name resolution option

Definition key	Environment setting parameter	Explanation
[JP1_DEFAULT\JP1AOMMANAGER] #	"_AgentStartStopResolveMode" ="	Specifies whether to enable the agent host name resolution option.

#:

The specification of this parameter is effective on the physical host and all logical hosts.

For details about the definition of this environment setting parameter, see 2.4(2) *_AgentStartStopResolveMode* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.3.9 Applying a timeout for receiving data in inter-process communication by event/action control

If event/action control cannot perform inter-process communication normally due to heavy network load or a line error, the following problems could occur:

- The status of a job does not change when, for example, the job is registered for execution or forcibly terminated.
- A jobnet does not start at the scheduled time.
- An event monitored by an event job or start condition is not detected.
- The scheduler service does not stop when the `jajs_spmd_stop` or `ajsstop` command is executed.
- The JP1/AJS3 service takes a long time to stop.

You can prevent these problems from occurring by enabling the option that applies a timeout for receiving data in inter-process communication by event/action control.

The following describes how to enable this option.

(1) Definition procedure

(a) For a standard configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spm_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spm_status
```

#1:

Confirm that automatic termination has been set.

2. In an editor such as vi, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is `/opt/jp1base/bin/jbssetcnf`. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 14-36: Environment setting parameter used to apply a timeout for receiving data

Definition key	Environment setting parameter	Explanation
[JP1_DEFAULT\JP1AOMAGENT] #	"RecvTimeout"=	Specifies whether to apply the timeout for receiving data in event job socket communication.

#:

The specification of this parameter is effective on the physical host and all logical hosts.

For details about the definition of this environment setting parameter, see 2.4(25) *RecvTimeout* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.3.10 Setting the period of time for monitoring event jobs in the blocked status

An event job or a jobnet with start conditions is said to be in *blocked status* when event/action control regards the job or jobnet as running, but the scheduler service regards the job or jobnet as having ended.

The blocked status arises when, for example, temporary files required for processing are lost because disk space is temporarily insufficient or a disk error occurs at the same time that the status of an event job changes.

If event jobs or jobnets with start conditions are in the blocked status, information about the events detected by these jobs or jobnets can accumulate in event/action control, where it consumes system resources such as disk space and memory. The accumulation of information in event/action control can delay the processing of other event jobs or jobnets with start conditions.

To prevent an accumulation of information, JP1/AJS3 checks for event jobs and jobnets with start conditions in the blocked status when the specified period of time since JP1/AJS3 service startup has elapsed. If event jobs and jobnets with start conditions in the blocked status are found, they are forcibly terminated and the accumulated event information is discarded.

You change this period of time in an environment setting parameter.

The following describes how to set the environment setting parameter.

(1) Definition procedure**(a) For a standard configuration**

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. In an editor such as vi, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is `/opt/jp1base/bin/jbssetcnf`. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 14-37: Environment setting parameter used to set the period of time for monitoring event jobs in the blocked status

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> • For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2\SCHEDULER\EV\MANAGER]# • For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i> } \JP1AJSMANAGER\scheduler-service\EV\MANAGER]# • For a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i> } \JP1AOMMANAGER]# 	<p>"BlockadeTimeoutInterval"=</p>	<p>Specifies the period of time for monitoring event jobs in the blocked status.</p>

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see 2.4(8) *BlockadeTimeoutInterval* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.3.11 Setting the binding method applied to the outgoing communication used in the execution of event jobs

By default, the ANY binding method is set as the binding method applied to the communication used in the execution of event jobs to match the JP1/Base communication settings. In a cluster configuration, the IP binding method is automatically set for both physical and logical hosts when the cluster system is set up. The IP binding method is also set for both outgoing communication and incoming communication.

If multi-LAN connection is used, separate binding methods can be set in the JP1/Base communication settings for outgoing communication and incoming communication.

However, you can explicitly ensure that the binding method applied to incoming communication is always applied to the outgoing communication used in the execution of event jobs, regardless of the JP1/Base communication settings, by using the

procedure described below.

Note, however, that if you install JP1/AJS3 as a new installation, you must set the binding method in the JP1/Base communication settings without using the procedure described below. If JP1/AJS3 is installed as an upgrade from 06-51 or earlier version of JP1/AJS2 in which the binding method applied to outgoing communication used in the execution of event jobs is already set, that setting is inherited. Note, however, that if JP1/AJS3 is re-installed, the inherited settings are lost. If you still want to use the same settings that were used in JP1/AJS2 06-51 or earlier, you will have to specify the settings manually.

The following describes the procedure for setting the binding method applied to the outgoing communication used in the execution of event jobs. Note that the procedure must be performed on the manager host and all agent hosts on which event jobs will be executed.

(1) Definition procedure

(a) For a standard configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spm_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spm_status
```

#1:

Confirm that automatic termination has been set.

2. In an editor such as vi, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the jbssetcnf command is /opt/jp1base/bin/jbssetcnf. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 14-38: Environment setting parameter used to set the binding method for outgoing communication

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> • For all scheduler services [{JP1_DEFAULT logical-host} \JP1AJS2\SCHEDULER\EV\MANAGER] # • For an event/action control agent [{JP1_DEFAULT logical-host} \JP1AOMAGENT] # • For a compatible ISAM configuration [{JP1_DEFAULT logical-host} \JP1AOMMANAGER] # 	"ClientBindFlag"=	Specifies the binding method applied to outgoing communication.

#:

The specification of the {JP1_DEFAULT | logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see 2.4(12) *ClientBindFlag* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.3.12 Enabling monitoring of a large file

This subsection describes how to enable large file (2 GB or larger) monitoring that uses a file monitoring job, and large-file evaluation that uses a judgment job.

(1) Definition procedure

(a) For a standard configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmc_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmc_status
```

#1:

Confirm that automatic termination has been set.

2. In an editor such as vi, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is `/opt/jp1base/bin/jbssetcnf`. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 14-39: Environment setting parameter used for large-file monitoring and evaluation

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT logical-host}\JP1AJS2COMMON] #	"LARGEFILEUSE" =	Specifies whether to support large files.

#:

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.9(1) *LARGEFILEUSE* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.3.13 Settings for ensuring that the sending of unreported information is retried at regular intervals

If inter-process communication between the event/action control manager and the event/action control agent fails for a reason such as a busy network or a defective line, the information that could not be sent is managed as *unreported information*.

The following describes the default values for the send retry interval and the maximum send retry count.

- When connection to the agent host times out

The send retry interval is 300 seconds for the first retry, 600 seconds for the second retry, 900 seconds for the third retry, 1,800 seconds for the fourth retry, and 3,600 seconds for the fifth and subsequent retries. The maximum number of retries is 27 (24 hours).
- In all other cases

The send retry interval is 30 seconds, and the maximum number of send retries is 2,880 (24 hours).

As described above, when a connection to the agent host times out, the sending of unreported information is not retried at regular intervals. However, an option for

ensuring that the sending of unreported information is retried at regular intervals (the `NotificationConstantRetry` environment parameter) is provided. If this option is used, a send retry interval of 30 seconds and a maximum of 2,880 send retries apply for any network error. Note, however, there is a risk if you enable the option for ensuring that the sending of unreported information is retried at regular intervals, and the `timeout-value` environment setting parameter is set to a value larger than the default value. For example, in situations in which a connection attempt to the agent times out and continues in that status for a long time, send retries performed at regular intervals could result in many timeouts, delaying the processing.

If you want to mitigate processing delays when this option is used, also increase the value of the environment setting parameter for the timeout value to a tolerable level for processing delays.

For details about the environment setting parameter for the timeout value, see *14.3.15 Setting the connection timeout for communication between the event/action control manager and agent*.

In addition to setting the above environment setting parameter, also adjust the other environment setting parameters related to communication for event/action control. For details, see *14.3.16 Environment setting parameters related to communication for event/action control*.

Use the procedure below for ensuring that the sending of unreported information is retried at regular intervals.

(1) Definition procedure

(a) For a standard configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. In an editor such as vi, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the jbssetcnf command is /opt/jp1base/bin/jbssetcnf. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 14-40: Environment setting parameter for ensuring that the sending of unreported information is retried at regular intervals

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> • For all scheduler services [{JP1_DEFAULT logical-host} \JP1AJS2 \SCHEDULER \EV \MANAGER] # • For a specific scheduler service [{JP1_DEFAULT logical-host} \JP1AJSMANAGER \scheduler-service \EV \MANAGER] # • For a compatible ISAM configuration [{JP1_DEFAULT logical-host} \JP1AOMMANAGER] # 	"NotificationConstantRetry" =	Option ensuring that the sending of unreported information is retried at regular intervals

#:

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameters, see 2.4(9) *NotificationConstantRetry* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.3.14 Changing the send retry interval and the number of retries for sending unreported information

If inter-process communication between the event/action control manager and the event/action control agent fails for a reason such as a busy network or a defective line, the information that could not be sent is managed as *unreported information*.

The following describes the default values for the send retry interval and the maximum number of retries.

For a resend from the manager host to the agent host:

- When connection to the agent host times out

The send retry interval is 300 seconds for the first retry, 600 seconds for the second retry, 900 seconds for the third retry, 1,800 seconds for the fourth retry, and 3,600 seconds for the fifth and subsequent retries. The maximum number of retries is 27 (24 hours).

- In all other cases

The send retry interval is 30 seconds, and the maximum number of send retries is 2,880 (24 hours).

For the resending of information from the agent host to the manager host (resending information when an event job monitoring condition is satisfied):

- The send retry interval is 10 seconds, and the maximum number of send retries is 8,640 (24 hours).

In cases other than when a connection to the agent host is impossible (that is, a timeout occurs), you can change the send retry interval and the maximum number of send retries for unreported information. Note, however, that changing these settings affects the processing of a resend from the manager host to the agent host as described below.

Before the settings are changed:

Regardless of whether the cause of a network error that occurred is a timeout for connection to the agent host or not, all send retries end in 24 hours.

After the settings are changed:

If a timeout for connection to the agent host occurs 27 times in succession, or if the number of send retries reaches the maximum (default: 2,880), there will be no

more retries.

As described above, after settings are changed, the completion of a resend operation could require a long time if a connection to the agent host times out and another network error occurs concurrently. This problem can be prevented by specifying settings that ensure that the sending of unreported information is retried at regular intervals.

For details, see *14.3.13 Settings for ensuring that the sending of unreported information is retried at regular intervals*.

Use the procedure below for changing the settings.

(1) Definition procedure

(a) For a standard configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. In an editor such as vi, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the jbssetcnf command is /opt/jp1base/bin/jbssetcnf. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 14-41: Environment setting parameters for setting the send retry interval and number of retries for sending unreported information

Definition key	Environment setting parameter	Explanation
Communication from the manager host to the agent host: <ul style="list-style-type: none"> • For all scheduler services [{JP1_DEFAULT logical-host}\JP1AJS2\SCHEDULER\EV\MANAGER] # • For a specific scheduler service [{JP1_DEFAULT logical-host}\JP1AJSMANAGER\scheduler-service\EV\MANAGER] # • For a compatible ISAM configuration [{JP1_DEFAULT logical-host}\JP1AOMMANAGER] # Communication from the agent host to the manager host: [{JP1_DEFAULT logical-host}\JP1AOMAGENT] #	"NotificationRetryInterval" =	Interval for retrying the sending of unreported information
	"NotificationRetryCount" =	Maximum number of retries for sending unreported information

#:

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about defining the environment setting parameters for communication from the manager host to the agent host, see the following:

- 2.4(10) NotificationRetryInterval in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.4(11) NotificationRetryCount in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

For details about defining the environment setting parameters for communication from the agent host to the manager host, see the following:

- 2.4(23) *NotificationRetryInterval* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.4(24) *NotificationRetryCount* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

14.3.15 Setting the connection timeout for communication between the event/action control manager and agent

When an event job or a jobnet with start conditions is executed, the event/action control manager and the event/action control agent communicate with each other. At this time, waiting for a connection by the manager or the agent might result in a timeout depending on the state of the communication environment, such as a busy network. If such timeouts are frequent, repeated retries might delay the execution of event jobs or jobnets with start conditions or delay the detection of monitored events. For such situations, you can adjust the timeout value by using the environment setting parameter described in (2) below.

Use the procedure below for setting the environment setting parameter.

(1) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jplajs2/jajs_stop#1
# /opt/jplajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter

Table 14-42: Environment setting parameter for the connection timeout between the event/action control manager and agent

Definition key	Environment setting parameter	Explanation
Event action control manager <ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT logical-host}\JP1AJS2\HOST\NETWORK\EVMANAGER]# For a specific scheduler service [{JP1_DEFAULT logical-host}\JP1AJSMANAGER\scheduler-service\NETWORK\EVMANAGER]# Event action control agent [{JP1_DEFAULT logical-host}\JP1AOMAGENT]#	"ClientConnectTimeout"=	Connection timeout between the event/action control manager and agent

#:

The specification of the {JP1_DEFAULT|logical-host} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about defining the environment setting parameters for the event/action control manager, see the following:

- 2.6(1) ClientConnectTimeout in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2

For details about defining the environment setting parameters for the event/action control agent, see the following:

- 2.4(22) ClientConnectTimeout in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2

14.3.16 Environment setting parameters related to communication for event/action control

When an event job or a jobnet with start conditions is executed, the event/action control manager and the event/action control agent communicate with each other. If a communication error occurs, communication is retried.

A retry interval and a maximum number of retries can be set by using the environment setting parameters for event/action control. Note that these parameters must be specified in a combination appropriate for the case.

This subsection provides examples of setting environment setting parameters that must be used in appropriate combinations.

For details about a specific environment setting parameter, see the description of that parameter.

(1) Changing the retry interval for retries caused by a connection timeout

If a connection from the manager to the agent times out when an event job or a jobnet with start conditions is executed, you can use the `ClientConnectTimeout` environment setting parameter to change the timeout value. Note, however, that increasing the timeout value might delay the start of other processing. In such cases, using a gradually increasing retry interval, instead of a regular retry interval, which might reduce the delay frequency.

For details about this retry process and interval, see *Table 2-3 in 2.2.2(5) Notes on manager/agent system configurations* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

However, if a connection timeout is due to a temporary cause, the retry process described above takes more time, delaying the execution of an event job or jobnet with start conditions on the execution agent. If the gradually increasing retry interval is not convenient, you can also use the regular interval for retries that are caused by connection timeouts for retries that are not caused by connection timeouts.

For details about the interval for retries that are not caused by connection timeouts, see *(2) Changing the retry interval for retries that are not caused by connection timeouts*.

If you want retries to occur at regular, shorter intervals, set the `NotificationConstantRetry` environment setting parameter. If you do so, however, and the connection timeout value is large and the connection timeout status continues for a long time, the system might wait on connections more frequently, increasing the number of processing delays. For these cases, in addition to the `NotificationConstantRetry` environment setting parameter, use the `ClientConnectTimeout` environment setting parameter to adjust the connection timeout value for communication related to event jobs and jobnets with start conditions.

Table 14-43: Changing the retry interval for retries caused by a connection timeout

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2 \SCHE DULER \EV \MANAGER] # For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i> } \JP1AJSMANAGE R \scheduler-service \EV \MANAGER] # For a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i> } \JP1AOMMANAGE R] # 	"NotificationConstantRe try"=	Option ensuring that the sending of unreported information is retried at regular intervals
<ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2 \HOST \NETWORK \EVMANAGER] # For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i> } \JP1AJSMANAGE R \scheduler-service \NETWORK \EVMANAGER] # 	"ClientConnectTimeout"=	Connection timeout value

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about defining environment setting parameters, see the following:

- 2.4(9) *NotificationConstantRetry* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.6(1) *ClientConnectTimeout* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

(2) Changing the retry interval for retries that are not caused by connection timeouts

For communication between the event/action control manager and agent during execution of an event job or a jobnet with start conditions, the interval for retries not caused by connection timeouts is set by the `NotificationRetryInterval` environment setting parameter. Similarly, the maximum number of retries not caused by connection timeouts is set by the `NotificationRetryCount` environment setting parameter.

Note that if you change only the retry interval or only the number of retries, the retry period (the period during which retries can be performed) also changes. If you want to

retain the retry period, you need to adjust the values of both environment parameters. For example, if you change the retry interval to 15 seconds, which is half the default value, the number of retries to preserve the retry period is 5,760, which is twice the default value.

For a network error that is caused by a connection timeout, adjust the settings described in (1) *Changing the retry interval for retries caused by a connection timeout*.

Table 14-44: Environment setting parameters for changing the interval and number of retries that are not caused by connection timeouts for communication

Definition key	Environment setting parameter	Explanation
Communication from the manager host to the agent host: <ul style="list-style-type: none"> For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2\SCHEULER\EV\MANAGER] # For a specific scheduler service [{JP1_DEFAULT <i>logical-host</i> } \JP1AJSMANAGER\ <i>scheduler-service</i> \EV\MANAGER] # For a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i> } \JP1AOMMANAGER] # 	"NotificationRetryInterval" "="	Interval for retrying the sending of unreported information
Communication from the agent host to the manager host: [{JP1_DEFAULT <i>logical-host</i> } \JP1AOMAGENT] #	"NotificationRetryCount"=	Maximum number of retries for sending unreported information

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about defining the environment setting parameters for communication from the manager host to the agent host, see the following:

- 2.4(10) *NotificationRetryInterval* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.4(11) *NotificationRetryCount* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

For details about defining the environment setting parameters for communication from the agent host to the manager host, see the following:

- 2.4(23) *NotificationRetryInterval* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

- *2.4(24) NotificationRetryCount in the Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

14.3.17 Settings for ensuring that a fixed manager host name is used when event jobs are executed

When an event job is executed, the event/action control manager communicates with the agent on which the job is executed. In the communication, the manager sends its own name to the agent so that the agent can distinguish the manager from other agents. The manager host name is acquired when the JP1/AJS3 service on the manager is started.

Normally, unless the host name is changed intentionally, the acquired host name never changes when the JP1/AJS3 service on the manager is restarted. However, case for alphabetic characters (upper or lower case) used in the acquired host name might change for some reason when the JP1/AJS3 service is restarted. For example, a change in the case might occur if the OS settings related to DNS name resolution are changed.

Because event job execution agents treat manager host names as being case-sensitive, a change in the case, which is equivalent to a change in the manager host name, might cause the following problems:

- If the JP1/AJS3 service on the manager is restarted while a jobnet with start conditions is being executed, a duplication of monitored events might be detected after the restart.
- When the option for continuing execution of active event jobs is enabled, if the JP1/AJS3 service is restarted in hot-start mode on the manager while an event job is being executed, multiple occurrences of the same event are detected.

For details about the option for continuing the execution of active event jobs, see *14.3.6 Resuming event jobs that stopped when the JP1/AJS3 service stopped*.

To avoid these problems, enable the option for using a fixed manager host name (the `FixedHostnameForAgent` environment setting parameter). If this option is enabled, the event/action control manager always sends the host name in all lower case.

Cautionary note:

Be careful when you change the settings of the option for using a fixed manager host name while executing jobnets with start conditions or executing event jobs with the option for continuing the execution of active event jobs enabled. If you make a change, the case of the alphabetic characters of the manager host name might change.

Making such a change might cause inconsistencies in the management status of jobnets with start conditions or event jobs that have already been executed. For example, multiple jobnets might be incorrectly started for one event.

To avoid these types of problems, make sure you use the following procedure

when enabling the option for using a fixed manager host name or changing the option settings:

1. Stop the JP1/AJS service on the agent host on which jobnets with start conditions or event jobs are being executed.
2. On the agent host in step 1, execute the `jpoagoec` command to delete the manager host name for which the option for using a fixed manager host name is to be enabled. For details about the `jpoagoec` command, see *jpoagoec* in 2. *Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1*.
3. On the manager host, enable the option for using a fixed manager host name. For details about how to enable the option, see (1) below.
4. Cold-start the JP1/AJS service on the agent host in step 2.

The following describes the procedure for enabling the option.

(1) Definition procedure

(a) For a standard configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmd_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(b) For a compatible ISAM configuration

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
```


/opt/jp1ajs2/bin/jajs_spm�_status

#1:

Confirm that automatic termination has been set.

2. In an editor such as vi, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

jbssetcnf *configuration-file-name*

The path of the jbssetcnf command is /opt/jp1base/bin/jbssetcnf. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

(2) Environment setting parameter

Table 14-45: Environment parameter for the option for using a fixed manager host name

Definition key	Environment setting parameter	Explanation
<ul style="list-style-type: none"> • For all scheduler services [{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2 \SCHEDULER \EV \MANAGER] # • For a compatible ISAM configuration [{JP1_DEFAULT <i>logical-host</i> } \JP1AOMMANAGER] # 	"FixedHostnameForAgent " =	Option for using a fixed manager host name

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameters, see 2.4(6) *FixedHostnameForAgent* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.4 Changing the settings related to queueless job execution control

This section describes how to change the settings related to queueless job execution control.

When you set environment setting parameters, use the `jbssetcnf` command.

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

14.4.1 Executing jobs with a class specified in a queueless job environment

In a queueless job environment, you can define classes and set for each class the maximum number of concurrently executable jobs and the maximum number of waiting jobs.

If an attempt is made to concurrently execute more jobs in a class than the maximum number of concurrently executable jobs, only as many jobs as the maximum are executed. The rest of the jobs are stacked in memory on the queueless agent. If an attempt is made to execute a job when the number of stacked jobs has reached the maximum number of waiting jobs, the attempt fails, and the status of the job becomes *Failed to start*.

For example, assume that there is a class whose number of concurrently executable jobs is 10 and whose maximum number of waiting jobs is 5, and that 15 jobs are concurrently in the *Now running* status. In this class, if an attempt is made to execute other jobs, the status of the 16th and subsequent jobs becomes *Failed to start*.

In addition to the two types of limitation on a specific class described above, the same two types of limitation are also set for the entire queueless agent. Even if the maximum number of concurrently executable jobs for a class has not been reached, the maximum number of concurrently executable jobs for the queueless agent might have already been reached. In that state, if an attempt is made to execute more jobs in the class, they are stacked in memory on the queueless agent. Similarly, even if the maximum number of waiting jobs for a class has not been reached, the maximum number of waiting jobs for the queueless agent might have already been reached. In that state, if an attempt is made to execute more jobs in the class, the status of the jobs becomes *Failed to start*, although the maximum for the class has not been reached.

When you execute jobs with a class specified, specify the execution host name and class name in **Exec-agent** in the following format, using an exclamation mark (!) as a separator:

execution-host-name ! class-name

Supplementary note:

Because queueless jobs do not use an execution agent, the execution host name and class name are specified in **Exec-agent**.

You can specify only one separator (!) and one class name without specifying the host name on which jobs will be executed. If you do not specify the host name, the local host is assumed.

If you omit both the execution host name and class name for a job, the execution host specified in **Exec-agent** for the jobnet to which the job belongs is assumed.

You cannot specify a class name in **Exec-agent** for a jobnet. If you attempt to execute a jobnet specified in this way, the status of the jobs in the jobnet becomes *Failed to start*.

If you attempt to execute a job with a non-existent class specified, the status of the job becomes *Failed to start*.

The following describes how to set a class.

(1) Definition procedure

Perform the following procedure on the queueless agent host on which you want to execute queueless jobs with a class specified.

1. Stop the queueless agent service.

Execute the following commands to confirm that all processes have stopped:

```
# /opt/jp1ajs2/bin/ajsqlstop
# /opt/jp1ajs2/bin/ajsqlstatus
```

2. In an editor such as vi, create a configuration file that defines the environment setting parameter described in (2) below.
3. Save the file and then execute the following command:

```
jbssetcnf configuration-file-name
```

The path of the `jbssetcnf` command is `/opt/jp1base/bin/jbssetcnf`. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

4. Execute the following command to restart the service that you stopped in step 1:

```
# /opt/jp1ajs2/bin/ajsqlstart
```

The new settings are applied.

(2) Environment setting parameters

Table 14-46: Environment setting parameters used to execute jobs with a class specified in a queueless job environment

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> } \JP1QLAGENT \AJSQL_CLASS \class] #	"AJSQL_CJOBMAX" =	Specifies the maximum number of concurrently executable jobs for a class.
	"AJSQL_CJOBWAITMAX" =	Specifies the maximum number of waiting jobs for a class.

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of these environment setting parameters, see the following:

- 2.7(25) *AJSQL_CJOBMAX* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
- 2.7(26) *AJSQL_CJOBWAITMAX* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

(3) Definition example

- Definition in **Exec-agent** for a job
agent1!class1
- Class definition on the job execution host (agent1)
[JP1_DEFAULT \JP1QLAGENT \AJSQL_CLASS \class1]
"AJSQL_CJOBMAX"=dword:200
"AJSQL_CJOBWAITMAX"=dword:100

In this definition example, the maximum number of concurrently executable jobs in class class1 on execution host agent1 is 512. The maximum number of waiting jobs in class class1 on execution host agent1 is 256.

When 512 jobs are running concurrently, if an attempt is made to execute additional jobs, a maximum of 256 jobs can be stacked in memory on the agent. If 256 jobs are stacked and an attempt is made to execute additional jobs, the status of the additional jobs becomes *Failed to start* status.

(4) Notes

- Multi-byte characters cannot be used for a class name.
- The maximum length of the class name that can be specified in **Exec-agent** is 63 bytes. If you specify a class name longer than 63 bytes, the class name is truncated at the 63rd byte.

14.5 Changing the settings related to the definition pre-check function

This section describes how to change the settings related to the definition pre-check function.

When you set environment setting parameters, use the `jajs_config` command.

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*.

14.5.1 Setting up the JP1/AJS3 definition pre-check function

As a protection against failures during live operation, JP1/AJS3 can check for problems in the definition of a job before live operation of the job starts. This subsection describes how to set up this function.

(1) Procedure for setting up the function

To set up the JP1/AJS3 definition pre-check function:

1. Execute the following command:

For JP1/AJS3 - Manager:

```
#!/opt/jplajs2/bin/ajschksetup -m -a
```

For JP1/AJS3 - Agent:

```
#!/opt/jplajs2/bin/ajschksetup -a
```

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

2. Start the JP1/AJS3 Check Manager service and the JP1/AJS3 Check Agent service.

The following shows the commands to be executed.

For JP1/AJS3 - Manager:

```
#!/opt/jplajs2/bin/ajschkstart -m -a
```

For JP1/AJS3 - Agent:

```
#/opt/jp1ajs2/bin/ajschkstart -a
```

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

(2) Procedure for changing the function settings

To change the settings of the JP1/AJS3 definition pre-check function:

1. Stop the JP1/AJS3 Check Manager service and the JP1/AJS3 Check Agent service.

The following shows the commands to be executed.

For JP1/AJS3 - Manager:

```
#/opt/jp1ajs2/bin/ajschkstop -m -a
```

For JP1/AJS3 - Agent:

```
#/opt/jp1ajs2/bin/ajschkstop -a
```

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

2. Execute the following command to set the environment setting parameters described in (3) below:

```
jajs_config -k definition-key "parameter-name-1"=value-1  
["parameter-name-2"=value-2]  
["parameter-name-3"=value-3]  
["parameter-name-4"=value-4]  
["parameter-name-5"=value-5]
```

3. Start the services that you stopped in step 1.

The following shows the commands to be executed.

For JP1/AJS3 - Manager:

```
#/opt/jp1ajs2/bin/ajschkstart -m -a
```

For JP1/AJS3 - Agent:

```
#/opt/jplajs2/bin/ajschkstart -a
```

The new settings are applied.

(3) Environment setting parameters

Table 14-47: Environment setting parameters used to specify the settings of the JP1/AJS3 definition pre-check function

No.	Definition key	Environment setting parameter	Explanation
1	[JP1_DEFAULT\JP1AJS2\CHECK]	"AJSCHK_CHECKFILE"#=	Specifies the name of the file where the definition pre-check results will be stored.
2		"AJSCHK_LOGDIR"=	Specifies the name of the definition check log directory.
3		"AJSCHK_LOGSIZE"=	Specifies the size of the definition check log files.
4		"AJSCHK_TRACELOGFILE"=	Specifies the name of the trace log file for the definition pre-check function.
5		"AJSCHK_CHARCODE"=	Specifies the character encoding used to display job information and the definition pre-check results.

#:

This parameter can be set only in JP1/AJS3 - Manager.

For details about the definition of these environment setting parameters, see the following:

1. 2.5(1) *AJSCHK_CHECKFILE* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
2. 2.5(2) *AJSCHK_LOGDIR* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
3. 2.5(3) *AJSCHK_LOGSIZE* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
4. 2.5(4) *AJSCHK_TRACELOGFILE* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*
5. 2.5(5) *AJSCHK_CHARCODE* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*

14.6 Settings common to all control processes

This section describes how to change settings that are common to all control processes.

When you set environment setting parameters, use the `jajs_config` command.

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*.

14.6.1 Settings for outputting error messages for jobs to syslog

You can output error messages for jobs (KAVS, KAVT, and KAVU messages) to syslog so that you are able to use only syslog to monitor errors occurring during job execution in JP1/AJS3.

The following describes the procedure for specifying the settings for outputting error messages for jobs to syslog.

(1) Definition procedure

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes have stopped:

```
# /etc/opt/jp1ajs2/jajs_stop#1
# /opt/jp1ajs2/bin/jajs_spmc_status
```

#1:

Confirm that automatic termination has been set.

2. Execute the following command to set the environment setting parameter described in (2) below:

```
jajs_config -k definition-key "parameter-name"=value
```

3. Restart JP1/AJS3.

The new settings are applied.

(2) Environment setting parameter*Table 14-48:* Environment setting parameter used to output error messages for jobs to syslog

Definition key	Environment setting parameter	Explanation
[{JP1_DEFAULT <i>logical-host</i> } \JP1AJS2COMMON] #	"SYSLOGJOBMSG" =	Specifies whether to output error messages for jobs to syslog.

#:

The specification of the {JP1_DEFAULT | *logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For details about the definition of this environment setting parameter, see 2.9(2) *SYSLOGJOBMSG* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

14.7 Other settings

This section describes how to change settings that have not been covered in earlier sections.

When you set environment setting parameters, use the `jajs_config` command.

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*.

14.7.1 Setting automatic startup and termination of the JP1/AJS3 service

The JP1/AJS3 service can be started automatically when the system starts, and can be terminated automatically when the system terminates.

(1) Setting automatic startup and termination of the JP1/AJS3 service (JP1/AJS3 - Manager)

The following describes how to set automatic startup and termination of the JP1/AJS3 service (JP1/AJS3 - Manager).

(a) Setting automatic startup of the JP1/AJS3 service (JP1/AJS3 - Manager)

To ensure that the JP1/AJS3 service is started automatically when the system starts:

1. Open the following file with a text editor such as vi:

```
/etc/opt/jp1ajs2/jajs_start
```

2. In the file (automatic start shell script), delete the shaded part shown below.

```
:# /opt/jp1ajs2/bin/jajs_spmd >/dev/null 2>/dev/null
:
```

If you choose to delete the comment symbol, review beforehand operation of the script after the deletion.

Note that in a standard configuration, if you delete the comment symbol from the `: # WAIT_READY=YES` line, startup of JP1/AJS3 - Manager fails. If JP1/AJS3 - Manager has been installed as a new installation, do not delete the comment symbol from this line. If the comment has been deleted from this line in an environment in which JP1/AJS3 - Manager has been upgraded from JP1/AJS2 - Manager, add the comment symbol (`: #`) to the line after migration to comment that line out.

This completes the setting for automatic startup of the JP1/AJS3 service.

(b) Setting automatic startup of the JP1/AJS3 service (JP1/AJS3 - Manager) to change the settings for the function that waits for connection to the RDB

The following describes how to change the maximum wait time for connection to the RDB and how to change the setting for the function that waits for connection to the RDB.

Note that both the embedded database and the function are enabled by default if JP1/AJS3 is installed as an upgrade from JP1/AJS2 07-10 or an earlier version.

To change the maximum wait time for connection to the RDB:

1. Execute the following command:

```
jajs_config -k
[ {JP1_DEFAULT|logical-host}\JP1AJSMANAGER\scheduler-service]
"RDBCONNECTWAITTIME"=maximum-wait-time-for-connection-to-the-RDB
```

The specification of the {JP1_DEFAULT|*logical-host*} part depends on whether the host is a physical host or a logical host. For a physical host, specify JP1_DEFAULT. For a logical host, specify the logical host name.

For example, if you change the maximum wait time for the AJSROOT1 scheduler service on the physical host, you might be able to execute the following command:

```
jajs_config -k [JP1_DEFAULT\JP1AJSMANAGER\AJSROOT1]
"RDBCONNECTWAITTIME"=dword:00000001
```

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

Note:

To use the function that waits for connection to the RDB in a cluster environment, perform the above task on both the primary and secondary nodes. Make sure that you specify the same value on both nodes.

Before the function that waits for connection to the RDB can be used, automatic startup of JP1/AJS3 at system startup must be enabled. To enable automatic startup, in the `/etc/opt/jp1ajs2/jajs_start` file, delete the shaded part shown below:

```

: # /opt/jp1ajs2/bin/jajs_spmd >/dev/null 2>/dev/null
:

```

The following notes also apply:

- On a physical host

When the system is restarted, if the function that waits for connection to the RDB is used and `WAIT_READY=YES` (the system waits for `jajs_spmd` startup) is specified, the scheduler service fails to start. If you want to use the function, add the comment symbol to disable the specification as follows: `: #`
`WAIT_READY=YES`

- On a logical host

No problem is caused if the `WAIT_READY=YES` specification is enabled.

This completes changing of the settings. The new settings are applied the next time that JP1/AJS3 starts.

Cautionary notes:

If the scheduler service fails to start at system startup, and the KAVS0999-W (a wait started) and KAVS0998-E (a wait failed) messages have been output, check the following points:

- Whether the embedded database has been set up

If the embedded database specified in the scheduler service is not running, regardless of how long JP1/AJS3 waits, connection to the database will not succeed.

Confirm that the scheduler service is up and running without problem during setup.

- Whether the embedded database definition has been changed

If the startup method is changed after the embedded database has been set up, the embedded database might be unable to start when the system starts. If this problem occurs, restore the initial values that were set during setup.

- Whether the embedded database terminated abnormally when it terminated previously

If the embedded database terminates abnormally during the execution of a job, it might take time for the embedded database to start the next time. If startup of the embedded database takes time, the embedded database might not start within the default maximum wait time. Accordingly, make sure that you do not force the embedded database to terminate.

- Whether the comment symbol (`: #`) on the `WAIT_READY=YES` line in the

`jajs_start` file has been deleted

If the comment symbol (`:` `#`) has been deleted, add it to disable the `WAIT_READY=YES` specification.

If you know how long startup of the embedded database is delayed, you can also increase the maximum wait time for connection to the database.

(c) Setting automatic termination of the JP1/AJS3 service (JP1/AJS3 - Manager)

To ensure that the JP1/AJS3 service is terminated automatically when the system terminates:

1. Open the following file with a text editor such as `vi`:

`/etc/opt/jp1ajs2/jajs_stop`

2. In the file (automatic termination shell script), delete the shaded part shown below.

```
: # /opt/jp1ajs2/bin/jajs_spmc_stop  
: # RC=$?  
:
```

If you choose to delete the comment symbols, review beforehand operation of the script after the deletion.

Note that if you delete the comment symbols from the `:` `# WAIT_READY=YES` specification, the system will wait until the JP1/AJS3 service starts. That is, system startup will require a longer time. If system startup has precedence, do not delete the comment symbol.

This completes the setting for automatic termination of the JP1/AJS3 service.

(2) Setting automatic startup and termination of the JP1/AJS3 service (JP1/AJS3 - Agent)

The following describes how to set automatic startup and termination of the JP1/AJS3 service (JP1/AJS3 - Agent).

(a) Setting automatic startup of the JP1/AJS3 service (JP1/AJS3 - Agent)

To ensure that the JP1/AJS3 service is started automatically when the system starts:

1. Open the following file with a text editor such as `vi`:

`/etc/opt/jp1ajs2/jajs_start`

- In the file (automatic start shell script), delete the shaded part shown below.

```
#!/opt/jp1ajs2/bin/jajs_spmc >/dev/null 2>/dev/null
```

If you choose to delete the comment symbol, review beforehand operation of the script after the deletion.

Note that if you delete the comment symbol from the : # WAIT_READY=YES specification, the system will wait until the JP1/AJS3 service starts. That is, system startup will require a longer time. If system startup has precedence, do not delete the comment symbol.

This completes the setting for automatic startup of the JP1/AJS3 service.

(b) Setting automatic termination of the JP1/AJS3 service (JP1/AJS3 - Agent)

To ensure that the JP1/AJS3 service is terminated automatically when the system terminates:

- Open the following file with a text editor such as vi:

```
/etc/opt/jp1ajs2/jajs_stop
```

- In the file, delete the shaded parts shown below.

```
#!/opt/jp1ajs2/bin/jajs_spmc_stop
#!/RC=$?
```

If you choose to delete the comment symbols, review beforehand operation of the script after the deletion.

Note that if you delete the comment symbols from the : # WAIT_READY=YES specification, the system will wait until the JP1/AJS3 service starts. That is, system startup will require a longer time. If system startup has precedence, do not delete the comment symbol.

This completes the setting for automatic termination of the JP1/AJS3 service.

(3) Setting automatic startup and termination of the queueless agent service and queueless file transfer service

The queueless agent service or queueless file transfer service can be started when the system starts or can be terminated when the system terminates if the automatic start or termination script is set to perform this.

Note that the queueless file transfer service is available in JP1/AJS3 - Manager but is not available in JP1/AJS3 - Agent. The setting for the service is required in JP1/AJS3 - Manager only.

(a) Setting automatic startup and termination of the queueless agent service

The following describes how to set automatic startup and termination of the queueless agent service.

- Setting automatic startup of the queueless agent service

To ensure that the queueless agent service is started automatically when the system starts, you must set the automatic start script.

To set automatic startup of the queueless agent service in the automatic start script:

1. Open the following file with a text editor such as vi:
`/etc/opt/jp1ajs2/jajs_start`
2. In the file, delete the shaded part shown below.

```
#!/opt/jp1ajs2/bin/ajsqlstart >/dev/null 2>/dev/null
```

If you choose to delete the comment symbol, review beforehand operation of the script after the deletion.

3. Close the file.

- Setting automatic termination of the queueless agent service

To set automatic termination of the queueless agent service in the automatic termination script:

1. Open the following file with a text editor such as vi:
`/etc/opt/jp1ajs2/jajs_stop`
2. In the file, delete the shaded part shown below.

```
#!/opt/jp1ajs2/bin/ajsqlstop
```

If you choose to delete the comment symbol, review beforehand operation of the script after the deletion.

3. Close the file.

(b) Setting automatic startup and termination of the queueless file transfer service

The following describes how to set automatic startup and termination of the queueless file transfer service.

- Setting automatic startup of the queueless file transfer service

To ensure that the queueless file transfer service is started automatically when the

system starts, you must set the automatic start script so that this is done.

To set automatic startup of the queueless file transfer service in the automatic start script:

1. Open the following file with a text editor such as vi:

```
/etc/opt/jp1ajs2/jajs_start
```

2. In the file, delete the shaded part shown below.

```
#!/opt/jp1ajs2/bin/ajsqftpstart >/dev/null 2>/dev/null
```

If you choose to delete the comment symbol, review beforehand operation of the script after the deletion.

3. Close the file.

- **Setting automatic termination of the queueless file transfer service**

To set automatic termination of the queueless file transfer service in the automatic termination script:

1. Open the following file with a text editor such as vi:

```
/etc/opt/jp1ajs2/jajs_stop
```

2. In the file, delete the shaded part shown below.

```
#!/opt/jp1ajs2/bin/ajsqftpstop
```

If you choose to delete the comment symbol, review beforehand operation of the script after the deletion.

3. Close the file.

(4) Setting automatic startup and termination of the JP1/AJS3 Console services

The JP1/AJS3 Console services can be started when the system starts or can be terminated when the system terminates if the automatic start or termination script is set to do this.

The JP1/AJS3 Console services include the JP1/AJS3 Console Manager service and the JP1/AJS3 Console Agent service. The script must be set for each of these services.

(a) Setting automatic startup and termination of the JP1/AJS3 Console Manager service

The following describes how to set automatic startup and termination of the JP1/AJS3 Console Manager service.

- **Setting automatic startup of the JP1/AJS3 Console Manager service**

To ensure that the JP1/AJS3 Console Manager service is started automatically when the system starts, you must set the automatic start script.

To set automatic start of the JP1/AJS3 Console Manager service in the automatic start script:

1. Open the following file with a text editor such as vi:
`/etc/opt/jp1ajs2cm/jajscm_start`
2. In the file, delete the shaded part shown below.

```
:#/etc/opt/jp1ajs2cm/ajscminetd_startstop start >/dev/null 2>/dev/null
```

If you choose to delete the comment symbol, review beforehand operation of the script after the deletion.

3. Close the file.

■ Setting automatic termination of the JP1/AJS3 Console Manager service

To set automatic termination of the JP1/AJS3 Console Manager service in the automatic start script:

1. Open the following file with a text editor such as vi:
`/etc/opt/jp1ajs2cm/jajscm_stop`
2. In the file, delete the shaded part shown below.

```
:#/etc/opt/jp1ajs2cm/ajscminetd_startstop stop
```

If you choose to delete the comment symbol, review beforehand operation of the script after the deletion.

3. Close the file.

(b) Setting automatic startup and termination of the JP1/AJS3 Console Agent service

The following describes how to set automatic startup and termination of the JP1/AJS3 Console Agent service.

■ Setting automatic startup of the JP1/AJS3 Console Agent service

To ensure that the JP1/AJS3 Console Agent service is started automatically when the system starts, you must set the automatic start script.

To set automatic startup of the JP1/AJS3 Console Agent service in the automatic start script:

1. Open the following file with a text editor such as vi:

```
/etc/opt/jp1ajs2/jajscsca_start
```

2. In the file, delete the shaded part shown below.

```
:#/etc/opt/jp1ajs2/ajscainetd_startstop start >/dev/null 2>/dev/null
```

If you choose to delete the comment symbol, review beforehand operation of the script after the deletion.

3. Close the file.

- **Setting automatic termination of the JP1/AJS3 Console Agent service**

To set automatic termination of the JP1/AJS3 Console Agent service in the automatic start script:

1. Open the following file with a text editor such as vi:

```
/etc/opt/jp1ajs2/jajscsca_stop
```

2. In the file, delete the shaded part shown below.

```
:#/etc/opt/jp1ajs2/ajscainetd_startstop stop
```

If you choose to delete the comment symbol, review beforehand operation of the script after the deletion.

3. Close the file.

(5) Setting automatic startup and termination of the JP1/AJS3 Check Manager service or the JP1/AJS3 Check Agent service

The following describes how to set automatic startup and termination of the JP1/AJS3 Check Manager service or the JP1/AJS3 Check Agent service.

(a) Setting automatic startup of the JP1/AJS3 Check Manager service or the JP1/AJS3 Check Agent service

To ensure that the JP1/AJS3 Check Manager service or the JP1/AJS3 Check Agent service is started automatically when the system starts, you must set the automatic start script.

To set automatic startup of the JP1/AJS3 Check Manager service or the JP1/AJS3 Check Agent service in the automatic start script:

1. Open the following file with a text editor such as vi:

```
/etc/opt/jp1ajs2/jajscsca_start
```

2. In the file, delete the shaded part shown below.

```

if [ -x /opt/jp1ajs2/bin/ajschkmand ] ; then
pids=`ps -ef|awk '/\opt\jp1ajs2\bin\ajschkmand / {print $2}`
if [ "$pids" = "" ] ; then
trap "" 1 2 3
: #/opt/jp1ajs2/bin/ajschkstart -m >/dev/null 2>/dev/null &
fi
fi
if [ -x /opt/jp1ajs2/bin/ajschkagtd ] ; then
pids=`ps -ef|awk '/\opt\jp1ajs2\bin\ajschkagtd / {print $2}`
if [ "$pids" = "" ] ; then
trap "" 1 2 3
: #/opt/jp1ajs2/bin/ajschkstart -a >/dev/null 2>/dev/null &
fi
fi

```

If you choose to delete the comment symbols, review beforehand operation of the script after the deletion.

3. Close the file.

(b) Setting automatic termination of the JP1/AJS3 Check Manager service or the JP1/AJS3 Check Agent service

To set automatic termination of the JP1/AJS3 Check Manager service or the JP1/AJS3 Check Agent service in the automatic termination script:

1. Open the following file with a text editor such as vi:
`/etc/opt/jp1ajs2/jajs_stop`
2. In the file, delete the shaded part shown below.

```

if [ -x /opt/jp1ajs2/bin/ajschkstop ] ; then
: #/opt/jp1ajs2/bin/ajschkstop
fi

```

If you choose to delete the comment symbol, review beforehand operation of the script after the deletion.

3. Close the file.

(6) Outputting the JP1/AJS3 process status when JP1/AJS3 is started automatically

For JP1/AJS3 - Agent, the JP1/AJS3 service status can be output when JP1/AJS3 services are started automatically. Output of the JP1/AJS3 service status cannot be set for JP1/AJS3 - Manager.

To enable output of the JP1/AJS3 process status, you must set the automatic start script.

To set the automatic start script to output the JP1/AJS3 process status when JP1/AJS3 is started automatically:

1. Open the following file with a text editor such as vi:

```
/etc/opt/jp1ajs2/jajs_start
```

2. In the file, delete the shaded part shown below.

```
:#/opt/jp1ajs2/bin/jajs_spmc_status # Display the running processes
```

If you choose to delete the comment symbol, review beforehand operation of the script after the deletion.

Cautionary note:

To enable output of the process status when JP1/AJS3 is started, you must delete the comment symbol (:#) from the :# WAIT_READY=YES specification.

3. Close the file.

(7) Setting the process behavior when memory becomes insufficient (AIX only)

In AIX, if memory becomes insufficient, the system might issue SIGKILL, causing the JP1/AJS3 process to terminate. To prevent termination, set `early` for the `PSALLOC` environment variable, and start JP1/AJS3.

Note that the `NODISCLAIM` environment variable must be set to `true` if the `PSALLOC` environment variable is set to `early`.

The following shows an example of setting the process behavior in the automatic script.

To set the process behavior in the automatic start script:

1. In the automatic start script, find the following line:

```
export PATH SHLIB_PATH LD_LIBRARY_PATH LIBPATH HCCLIBCNF
```

2. Insert the following entries after the line:

```
----- Start of entries to be inserted
PSALLOC=early
NODISCLAIM=true
export PSALLOC NODISCLAIM
----- End of entries to be inserted
unset LC_MESSAGES
cd /opt/jp1ajs2/bin
/opt/jp1ajs2/bin/jajs_spmc >/dev/null 2>/dev/null
```

(8) Setting automatic startup and termination of the JP1/AJS3 service that do not depend on the JP1_HOSTNAME environment variable

The JP1/AJS3 service can be automatically started or terminated without being depending on the JP1_HOSTNAME environment variable set in the environment.

To ensure that the JP1/AJS3 service is automatically started or terminated without being dependent on the JP1_HOSTNAME environment variable:

1. Open the following file with a text editor such as vi:
 - (a) For automatic startup of the JP1/AJS3 service


```
/etc/opt/jp1ajs2/jajs_start
```
 - (b) For automatic termination of the JP1/AJS3 service


```
/etc/opt/jp1ajs2/jajs_stop
```
2. In the file, delete the shaded part shown below.

```
: #unset JP1_HOSTNAME
```

If you choose to delete the comment symbol, review beforehand operation of the script after the deletion.

3. Close the file.

14.7.2 Changing the JP1/AJS3 database configuration to the standard configuration without ISAM

This subsection describes how to change the JP1/AJS3 database configuration from the *standard configuration* to the *standard configuration without ISAM*. In JP1/AJS3 - Manager installed as a new installation, the database configuration is the standard configuration, not the standard configuration without ISAM.

To change the database configuration to the standard configuration without ISAM, copy the contents of the `/etc/opt/jp1ajs2/conf/jp1ajs_hstd.conf.isamless.model` file to the `jp1ajs_hstd.conf` file to the service configuration file storage directory. In a physical host environment, the service configuration file storage directory is `/etc/opt/jp1ajs2/conf`. In a logical host environment, the service configuration file storage directory is `shared-disk-directory-specified-by-the-jajs_setup_cluster-command/jp1ajs2/conf`.

Cautionary note:

If you change the database configuration to the standard configuration without ISAM, some functions are no longer available. For details, see *1.4 JP1/AJS3 database configurations* in the manual *Job Management Partner 1/Automatic Job Management System 3 Overview*.

Chapter

15. Collecting Log Data

This chapter describes how to collect log data useful for investigating and analyzing failures that occur in JP1/AJS3.

15.1 Collecting log data

15.1 Collecting log data

This section describes the settings for collecting log information, which can be used to investigate failures.

(1) *Setting up the data collection tool*

The UNIX versions of JP1/AJS3 - Manager and JP1/AJS3 - Agent provide a *data collection tool* that can be used for collecting log data.

After installing JP1/AJS3 - Manager or JP1/AJS3 - Agent, copy the data collection tool to another folder and use it from that folder.

Note:

If you use JP1/AJS3 Console, environment setup in JP1/AJS3 Console Agent is not necessary as long as you have set up the environment for the data collection tool in JP1/AJS3 - Manager.

If you have not set up the environment for a data collection tool, use the following procedure.

To set up the environment needed to use the data collection tool:

1. Copy the data collection tool to any folder.

The following shows an example of the command you execute.

```
cp /opt/jp1ajs2/lib/sample_script/_04 /home/jp1ajs2/  
trouble.sh
```

2. Specify the permission settings required to edit the copied data collection tool.

The following shows an example of the command you execute.

```
chmod +rw /home/jp1ajs2/trouble.sh
```

3. Edit the copied data collection tool, and then change the file name to any convenient name.

Use an editor to edit the data collection tool.

The following table lists the initial values specified in the data collection tool. You can change any inappropriate initial values to the appropriate values.

Table 15-1: Initial values specified in the data collection tool

No.	Item	Initial value
1	Directory for storing integrated trace log files	HNTRLOG="/opt/hitachi/HNTRLlib/spool" HNTR2LOG="/var/opt/hitachi/HNTRLlib2/spool"
2	Directory for storing user mapping and authentication settings files	AUTHSV="/etc/opt/jp1base/conf/user_acl"
3	syslog and syslog storage directory ^{#1}	In HP-UX: SYSLOGFILE="/var/adm/syslog/syslog.log" In Solaris: SYSLOGFILE="/var/adm/messages" In AIX: SYSLOGFILE="/var/adm/syslog"
4	OS system file ^{#2, #3}	SYSTEMFILES="./etc/hosts ./etc/services ./etc/passwd"
5	Embedded database work directory (PDDIR) ^{#4}	#PDDIR="/opt/HiRDB_J"
6	Database storage directory ^{#3, #5}	DATABASE="./var/opt/jp1ajs2/database[sql]*"
7	Job error information directory ^{#3, #6}	JOBINF="./var/opt/jp1ajs2/jobinf"
8	JP1/AJS3 Console Manager data directory ^{#3, #7}	JP1AJS2CMBD="/var/opt/jp1ajs2cm/database"

#1:

Depending on the system environment, the syslog and the syslog storage directory settings might have been changed. Make sure that you set an appropriate syslog or a directory in which only syslog is stored, according to the system environment.

#2:

If OS system files will not be collected, delete the names of the files that are not to be collected.

#3:

If you want to change a file name, specify a period (.) followed by a relative path from the root directory.

#4:

To collect embedded-database trace information, delete the comment symbol, and specify the database work directory (PDDIR). The default is /opt/HiRDB_J. If the directory has been changed, specify the directory that

is actually used as the database work directory.

#5:

Do not delete the directory name that is set by default. If a database directory that does not exist under this directory has been specified because a scheduler service has been added on the physical host, specify the directory name prefixed with a period (.).

Example:

```
DATABASE="./var/opt/jp1ajs2/database ./addir/
database2"
```

If only logical hosts are used for operation and the default directory has been changed, specify the name of the directory that contains the database directory on the shared disk for `ADDFILE` in step 4. Do not change the `DATABASE` specification.

#6:

In the scheduler service settings on the physical host, if the job error information directory has been changed or a job error information directory has been added, modify the value to reflect the change. If the default directory has been changed in an environment in which only logical hosts are used for operation, specify the name of the directory that contains the job error information directory for `ADDFILE` in step 4.

#7:

If the data directory of JP1/AJS3 Console Manager on the physical host has been changed, modify the directory specification to reflect the change. For the data directory on a logical host, specify the directory for `ADDFILE` in step 4.

For details about the default storage directories for the log files specified in the data collection tool, see *1.2.4 List of log files and directories* in the manual *Job Management Partner 1/Automatic Job Management System 3 Troubleshooting* and the list of files and directory in the appendix of the *Job Management Partner 1/Base User's Guide*.

4. In a cluster configuration, if the default output directory settings on a logical host have been changed or if you want to collect information that is not collected by default, customize the data collection tool.

Open the data collection tool with an editor, and edit the tool so that the information about the new shared directory can be collected.

```

...
...
ADDFILE="/new-shared-directory/jplajs2"
ADDFILE="$ADDFILE /new-shared-directory/jplbase/log /
new-shared-directory/jplbase/conf"
...
...

```

(2) Notes on the data collection tool

1. The following table summarizes the differences between the data collection tool in JP1/AJS2 07-10 and later versions, and the data collection tool in JP1/AJS2 versions earlier than 07-10.

Table 15-2: Differences in the data collection tool versions

Functionality	Version 07-10 or later	Version earlier than 07-10
Collection of the following types of data: <ul style="list-style-type: none"> • Error log information[#] • Information about the <code>/etc/</code> environment file[#] • File list information for the database directory • Information required for core analysis 	Data is collected.	Data is not collected.
Specification of the logical host	The logical host name is specified when the data collection tool is executed.	The directory for storing data is set for each logical host in the environment settings of the data collection tool.
Isolation of initial investigation files	Initial investigation files are stored in a special directory.	The files required for initial investigation are output to separate locations.

[#]:

This type of information is collected in AIX only.

2. If you have customized the data collection tool of a JP1/AJS2 version earlier than 07-10 so that the tool also collects non-standard data items, the customization is lost when the JP1/AJS2 version is upgraded to 07-10 or later.

Chapter

16. Setup for Operation in a Cluster System

This chapter describes the setup required to use JP1/AJS3 in a cluster system.

Note that previous editions of JP1 manuals referred to a cluster system as a *node switching system*.

- 16.1 Installation and setup required for cluster system operation
- 16.2 Setting up the operating environment for cluster system operation
- 16.3 Notes on cluster operation

16.1 Installation and setup required for cluster system operation

This section describes the installation and setup required to enable cluster system operation.

For an overview of cluster system operation, see *11.1 Overview of cluster systems* in the *Job Management Partner 1/Automatic Job Management System 3 Administration Guide*.

16.1.1 Installation required for cluster system operation

Install JP1/AJS3 on the local disks of the primary and secondary nodes.

Note:

Do not install JP1/AJS3 on a shared disk.

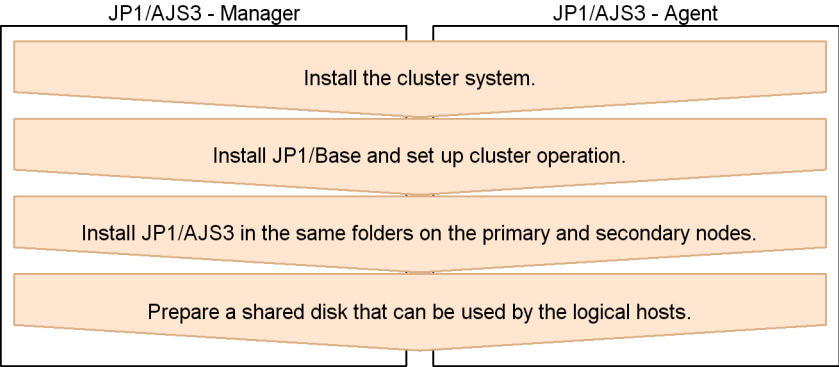
16.1.2 Setup required for cluster system operation

This subsection describes the procedure for setting up a UNIX host when you are constructing a system that uses JP1/AJS3 for cluster operation.

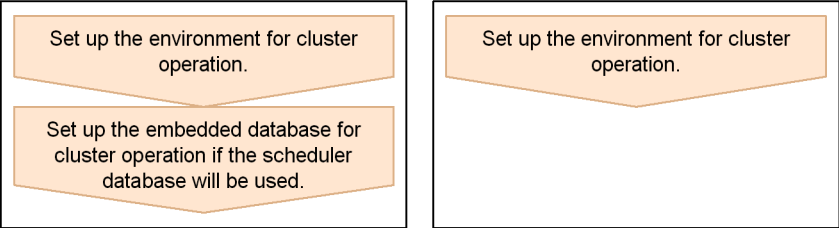
The following figure shows the setup procedure for enabling cluster operation.

Figure 16-1: Setup procedure for enabling cluster operation

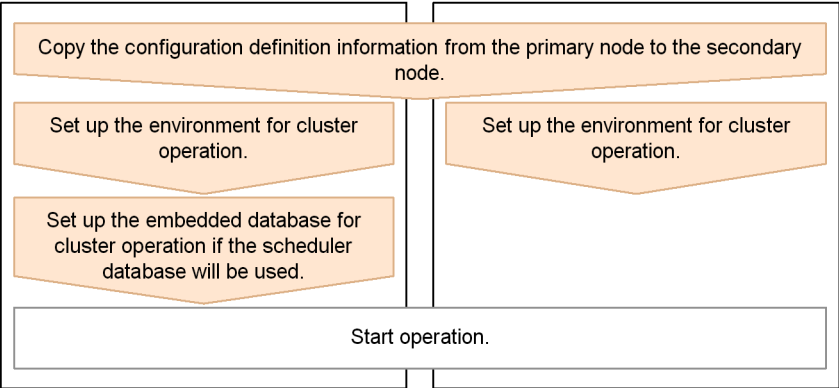
(1) Preparing to set up a cluster system in JP1/AJS3



(2) Setting up the primary node



(3) Setting up the secondary node



Ensure that the locations of JP1 series programs installed on the primary node and the locations of those programs installed on secondary nodes are the same. For details about the setup of the JP1/Base and JP1/AJS3 series programs shown in the figure, see 12. Setup. For details about the setup of a cluster system, see the documentation for the cluster system being used.

The following describes the items that must be set to implement cluster operation. For

details about the commands mentioned here, see 2. *Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1* and 2. *Commands Used during Setup* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

Before you set up a cluster system for JP1/AJS3, set up a cluster system for JP1/Base.

In addition, if implementing cluster operation, verify compatibility with the cluster software to be used before starting setup and operation.

16.1.3 Monitoring in cluster system operation

(1) Monitoring JP1/AJS3 operation

To monitor the activation status of JP1/AJS3 in a cluster system, execute the `jajs_spmd_status` command.

(2) When the embedded database is used as the database for the scheduler service

If the embedded database service stops due to an irrecoverable failure occurring in the service, the JP1/AJS3 service can also be stopped so that the occurrence of a failure can be detected. To enable monitoring, set the environment setting parameters as described below.

1. Set the environment setting parameters.

Execute the `jajs_config` command to set the following environment setting parameters in the relevant scheduler service.

Environment setting parameter	Value	Description
RDBCHECKINTERVAL	300	Checks the connection to the embedded database service and automatically stops the scheduler service if disconnection is detected.

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*.

For details about setting the scheduler service environment, see 13.2 *Environment setting parameter settings* and 16.2.3 *Changing the common definition information*.

16.2 Setting up the operating environment for cluster system operation

This section describes how to set up the JP1/AJS3 environment to support cluster operation.

16.2.1 Environment setup items for a cluster system

This subsection describes each of the items related to environment setup. For details about the specific setup procedure, see *16.2.2 Procedure for setting up the environment for a cluster system*.

(1) Creating shared files on the shared disk

To inherit information when the primary and secondary nodes are switched, create directories and files on the shared disk. The following table lists the types and names of the directories to be created. These directories are automatically created under the *shared-directory-name*/*jp1ajs2* directory specified in the *-d* option when the *jajs_setup_cluster* command is executed.

Table 16-1: Types and names of directories created on the shared disk (JP1/AJS3 - Manager)

Type of shared directory	Directory name
Environment settings file	<i>shared-directory-name</i> / <i>jp1ajs2</i> / <i>conf</i>
Job execution environment file	<i>shared-directory-name</i> / <i>jp1ajs2</i> / <i>database</i>
Job information file	<i>shared-directory-name</i> / <i>jp1ajs2</i> / <i>jobinf</i>
Log file	<i>shared-directory-name</i> / <i>jp1ajs2</i> / <i>log</i>
System file	<i>shared-directory-name</i> / <i>jp1ajs2</i> / <i>sys</i>
Work file	<i>shared-directory-name</i> / <i>jp1ajs2</i> / <i>tmp</i>
Backup file	<i>shared-directory-name</i> / <i>jp1ajs2</i> / <i>backup</i>
JP1/AJS3 Console Manager data directory	<i>shared-directory-name</i> / <i>jp1ajs2cm</i> / <i>database</i> [#]

#:

This directory is not automatically created when the *jajs_setup_cluster* command is executed. Manually create the folder when using JP1/AJS3 Console Manager in a cluster system.

Table 16-2: Types and names of directories created on the shared disk (JP1/AJS3 - Agent)

Type of shared directory	Directory name
Environment settings file	<i>shared-directory-name</i> /jplajs2/conf
Log file	<i>shared-directory-name</i> /jplajs2/log
System file	<i>shared-directory-name</i> /jplajs2/sys
Work file	<i>shared-directory-name</i> /jplajs2/tmp

As the shared directory, specify one of the folders specified during setup of the logical host environment for JP1/Base. Do not assign the same directory to more than one logical host. Create the directories and files to be shared under the directory assigned to each logical host.

Example:

The following example shows the directories created when the shared disk of logical host node0 is /shdsk/node0.

```
/shdsk/node0/jplajs2/jplajs2/conf
/shdsk/node0/jplajs2/jplajs2/database
/shdsk/node0/jplajs2/jplajs2/jobinf
/shdsk/node0/jplajs2/jplajs2/log
/shdsk/node0/jplajs2/jplajs2/sys
/shdsk/node0/jplajs2/jplajs2/tmp
/shdsk/node0/jplajs2/jplajs2/backup
/shdsk/node0/jplajs2/jplajs2cm/database
```

(2) Setting the communication method

Select the method to be used to bind an IP address to the TCP/IP socket that will be used for communication. To start multiple scheduler services in the cluster system, use the method that binds all hosts, including the physical hosts, to one IP address. For the operation described in *16.2.2 Procedure for setting up the environment for a cluster system*, the method used to bind to an IP address can be set automatically.

Set the port number when you are using the multi-startup setting of the scheduler service to add a port number for the service name of the job-status notification port.

(3) Setting common definition information

JP1/AJS3, JP1/Base, and JP1/IM have information specific to each logical host on the local disks of both physical hosts. Because the information is used as common definition information, it must be identical on both physical hosts.

The common definition information includes the environment settings file and job execution environment file.

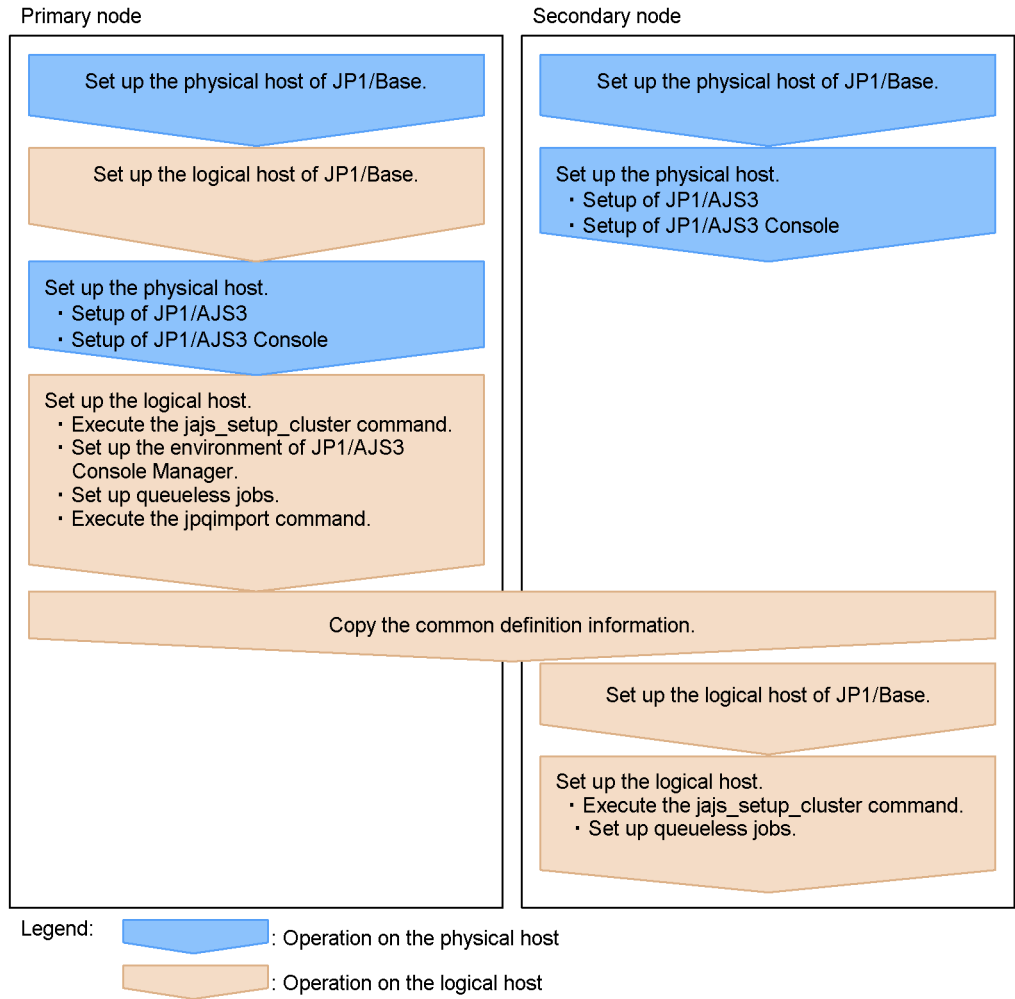
16.2.2 Procedure for setting up the environment for a cluster system

Use commands to define the items described in *16.2.1 Environment setup items for a cluster system*. Do this on both the primary and secondary nodes.

This subsection describes the tasks related to the environment setting commands that must be performed on both the primary and secondary nodes. Stop all the JP1 services and then set up the environment in JP1/AJS3 - Manager or JP1/AJS3 - Agent.

The following figure provides an overview of setting up the environment.

Figure 16-2: Overview of setting up the environment



(1) Tasks required on the primary node (JP1/AJS3 - Manager)

To set up a cluster system environment for JP1/AJS3 - Manager on the primary node:

1. Perform the JP1/Base tasks required on the primary node.

For details about the JP1/Base tasks, see the *Job Management Partner 1/Base User's Guide*.

Note that, depending on the network configuration or operating environment, you might need to set the `jplhosts` information. Specify the necessary settings by referring to the notes on cluster system operation and the procedure for setting the

`jp1hosts` information in the *Job Management Partner 1/Base User's Guide*.

2. Set up the physical host.

For details about how to set up the physical host, see *12.1.2 Setting up JP1/AJS3 - Manager*.

To use JP1/AJS3 Console Manager and JP1/AJS3 Console Agent, execute the following commands:

```
/opt/jp1ajs2cm/bin/jp1ajs2cmsetup
/opt/jp1ajs2/bin/jp1ajs2casetup
```

You do not have to execute the above commands if the physical host has been set up. For the JP1/AJS3 Console service, automatic startup and termination must be set. For details about how to set automatic startup and termination, see *14.7.1(4) Setting automatic startup and termination of the JP1/AJS3 Console services*.

3. Execute the `jajs_setup_cluster` command to set up the logical host, and create the shared files and directory on the shared disk.

Make sure that the JP1/AJS3 service is not running on any logical and physical hosts, and then execute the `jajs_setup_cluster` command.

The following shows the format of the `jajs_setup_cluster` command you execute:

```
jajs_setup_cluster
[-h logical-host-name]
-F scheduler-service-name
-d shared-directory-name
[-n scheduler-service-ID]
[-m {cold|warm|hot}]
{-P port-number-for-the-embedded-database
-I embedded-database-setup-ID |
-S
}
```

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

- For the `-h` option, specify the logical host name set in JP1/Base.
- The `-F` option is required.
- The `-d` option must be specified during setup of the primary node environment. For this option, specify a directory on the shared disk in which

the shared directory and files will be created. As the shared directory, *specified-directory-name/jp1ajs2/* is created, and the definition files on the local disk (files in */etc/opt/jp1ajs2/conf/*) are copied to the directory that is created. Before you execute the command, make sure that the shared disk is mounted. If the *-d* option is omitted, the secondary node environment is set up.

- If the *-n* option is omitted, the smallest available ID is assumed.
- For the *-m* option, specify the scheduler service start mode. The specification of this option takes effect only during setup of the primary node environment. If this option is omitted, the value for the scheduler service specified in the *DEFAULTSERVICENAME* environment setting parameter is inherited.
- Specify the *-P* and *-I* options only if you set up the embedded database when you set up the logical host.

For the *-P* option, specify the port number for the embedded database used by the logical host.

For the *-I* option, specify the setup ID of the embedded database used by the logical host.

When the *-P* and *-I* options have been specified, the embedded database is set up with the following settings:

- Database model: *-s* (small-scale model)

- System logging: Not performed

- System file duplication: Not performed

- Unload log file: Not used

- Data area directory: *shared-directory/jp1ajs2/embdb\value-specified-for-the-I-option*

- Work area directory: */opt/jp1ajs2/embdb/value-specified-for-the-I-option/dbarea*

- Embedded database practical directory: */opt/jp1ajs2/embdb/value-specified-for-the-I-option*

For the other items, the default values are set.

- Specify the *-s* option only if advanced setup is to be performed for the embedded database.

If the *-s* option is specified, setup of the embedded database is skipped during setup of the logical host. Accordingly, the embedded database must be set up separately.

4. Perform advanced setup for the embedded database.

If you specified the `-s` option in step 3, perform advanced setup for the embedded database.

For details about advanced setup for the embedded database, see *D. Advanced Setup for the Embedded Database (in a Cluster Configuration)*.

5. Specify the JP1/AJS3 Console Manager environment settings.

If JP1/AJS3 Console Manager is being used, the JP1/AJS3 Console Manager environment must be set up for a cluster system.

Note that you do not need to set up the JP1/AJS3 Console Agent environment for a cluster system because setup is performed during setup of the JP1/AJS3 Manager environment for cluster operation.

Execute the following command to set the `DATADIRECTORY` environment setting parameter to the path to the data directory on the logical host:

```
jajs_config -k [logical-host-name\JP1AJS2CONSOLEMANAGER]
"DATADIRECTORY"="path-to-the-data-directory-on-the-logical-host"
```

For example, if the logical host name is `node0` and the logical host shared directory is `/shdisk/node0`, the command you execute is as follows:

```
jajs_config -k [node0\JP1AJS2CONSOLEMANAGER]
"DATADIRECTORY"="/shdisk/node0/jp1ajs2cm/database"
```

6. Execute the following command to create the environment for executing jobs:

```
jpqimport -dt isam -ci
execution-environment-configuration-definition-file-for-queue-and-submit-jobs
[-mh logical-host-name]
```

7. To use queueless jobs, perform the necessary setup, as described below.

Execute the following command:

```
ajsqlsetup -h logical-host-name -F scheduler-service-name
```

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

Cautionary note:

Executing the `ajsqlsetup` command causes the files needed for queueless job execution to be created on the shared disk. Because the files are then

checked, make sure that the shared disk is mounted before you attempt to execute this command.

This completes the tasks required on the primary node.

Cautionary notes:

- Setup must be performed on each logical host.
- When the logical host for the primary node is set up by using the `jaajs_setup_cluster` command, the environment of the scheduler service specified in the `DEFAULTSERVICENAME` environment setting parameter is copied to create the logical host environment.
- If the setting for starting multiple scheduler services is required on a logical host, see *16.2.7(1) Starting multiple scheduler services on a logical host*.
- When the logical host for the primary node is set up by using the `jaajs_setup_cluster` command, the following files are copied from the physical host to the logical host:

```
- jplajs_spmd.conf
- jplajs_dbmd.conf
- jplajs_hstd.conf
- jplajs_schd.conf
- jplajs_agtd.conf
```

As a result, the settings on the physical host are inherited and processes that are not necessary for the logical host might be started. If the above files on the physical host have been customized, customize them again on the logical host so that only necessary processes are started.

(2) Tasks required on the secondary node (JP1/AJS3 - Manager)

To set up a cluster system environment for JP1/AJS3 - Manager on the secondary node:

1. Set up the physical host.

To do this, execute the following command:

```
/opt/jplajs2/bin/jaajs_setup
```

If the physical host has already been set up, stop all JP1/AJS3 services, and then clear the scheduler service information from the shared memory of the system in the same way as on the primary node.

If you use JP1/AJS3 Console Manager and JP1/AJS3 Console Agent, execute the

following commands, respectively:

```
/opt/jplajs2cm/bin/jplajs2cmsetup
/opt/jplajs2/bin/jplajs2casetup
```

You do not have to execute the above commands if the physical host has been set up. For the JP1/AJS3 Console service, automatic startup and termination must be set. For details about how to set automatic startup and termination, see *14.7.1(4) Setting automatic startup and termination of the JP1/AJS3 Console services*.

2. After completing the JP1/Base, JP1/AJS3, and JP1/IM tasks on the primary node, save the common definition information to the primary node and then set up the common definition information on the secondary node.

After completing these tasks on the primary node, execute the `jbsgetcnf` command on the primary node to save the common definition information. Copy the backup file to the secondary node, specify the backup file as an argument of the `jbssetcnf` command, and then execute the command. The commands to be executed are as follows:

On the primary node:

```
jbsgetcnf -h logical-host-name > backup-file-name
```

On the secondary node:

```
jbssetcnf backup-file-name
```

3. Perform the JP1/Base tasks required on the secondary node.

For details about the JP1/Base tasks, see the *Job Management Partner 1/Base User's Guide*.

4. Execute the `jajs_setup_cluster` command to set up the logical host.

The following shows the format of the `jajs_setup_cluster` command you execute:

```
jajs_setup_cluster
[-h logical-host-name]
-F scheduler-service-name
[-S]
```

- For the `-h` option, specify the logical host name set in JP1/Base.
- For the `-F` option, always specify the scheduler service name that was specified on the primary node.
- Specify the `-s` option only if advanced setup is performed for the embedded database.

If the `-s` option is specified, setup of the embedded database is skipped during setup of the logical host. Accordingly, the embedded database must be set up separately.

5. Perform advanced setup for the embedded database.

If you specified the `-s` option in step 4, perform advanced setup for the embedded database.

For details about advanced setup for the embedded database, see *D. Advanced Setup for the Embedded Database (in a Cluster Configuration)*.

6. To use queueless jobs, perform the necessary setup, as described below.

Execute the following command:

```
ajsqlsetup -h logical-host-name -F scheduler-service-name -nc
```

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

This completes the tasks required on the secondary node.

Cautionary notes:

- Setup must be performed on each logical host.
- If the setting for starting multiple scheduler services is required on a logical host, see *16.2.7(1) Starting multiple scheduler services on a logical host*.

(3) Tasks required on the primary node (JP1/AJS3 - Agent)

To set up a cluster system environment for JP1/AJS3 - Agent on the primary node:

1. Perform the JP1/Base tasks required on the primary node.

For details about the JP1/Base tasks, see the *Job Management Partner 1/Base User's Guide*.

Note that, depending on the network configuration or operating environment, you might need to set the `jp1hosts` information. Specify the necessary settings by referring to the notes on cluster system operation and the procedure for setting the `jp1hosts` information in the *Job Management Partner 1/Base User's Guide*.

2. Set up the physical host.

For details about how to set up the physical host, see *12.2.2 Setting up JP1/AJS3 - Agent*.

3. Execute the `jajs_setup_cluster` command to set up the logical host, and create the shared files and directory on the shared disk.

The following shows the format of the `jajs_setup_cluster` command you execute:

```
jajs_setup_cluster -h logical-host-name [-d shared-directory-name]
```

- For the `-h` option, specify the logical host name set in JP1/Base.
- The `-d` option must be specified during setup of the primary node environment. For this option, specify a directory on the shared disk in which the shared directory and files will be created. As the shared directory, *specified-directory-name/jp1ajs2/* is created, and the definition files on the local disk (files in `/etc/opt/jp1ajs2/conf/`) are copied to the directory that is created. Before you execute the command, make sure that the shared disk is mounted. If the `-d` option is omitted, the secondary node environment is set up.

4. To use queueless jobs, perform the necessary setup, as described below.

Execute the following command:

```
ajsqlsetup -h logical-host-name
```

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

This completes the tasks required on the primary node.

Cautionary note:

Setup must be performed on each logical host.

(4) Tasks required on the secondary node (JP1/AJS3 - Agent)

To set up a cluster system environment for JP1/AJS3 - Agent on the secondary node:

1. Set up the physical host.

To do this, execute the following command:

```
/opt/jp1ajs2/bin/jajs_setup
```

2. After completing the JP1/Base, JP1/AJS3, and JP1/IM tasks on the primary node, save the common definition information to the primary node and then set up the common definition information on the secondary node.

After completing these tasks on the primary node, execute the `jbsgetcnf` command on the primary node to save the common definition information. Copy the backup file to the secondary node, specify the backup file as an argument of the `jbssetcnf` command, and then execute the command. The commands to be executed are as follows:

On the primary node:

```
jbsgetcnf -h logical-host-name > backup-file-name
```

On the secondary node:

```
jbssetcnf backup-file-name
```

3. Perform the JP1/Base tasks required on the secondary node.

For details about the JP1/Base tasks, see the *Job Management Partner 1/Base User's Guide*.

4. Execute the `jajs_setup_cluster` command to set up the logical host.

The following shows the format of the `jajs_setup_cluster` command you execute:

```
jajs_setup_cluster -h logical-host-name
```

For the `-h` option, specify the logical host name set in JP1/Base.

5. To use queueless jobs, perform the necessary setup, as described below.

Execute the following command:

```
ajsqlsetup -h logical-host-name
```

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

This completes the tasks required on the secondary node.

Cautionary note:

Setup must be performed on each logical host.

16.2.3 Changing the common definition information

In a cluster system, JP1/Base, JP1/AJS3, and JP1/IM have specific information for each logical host on the physical hosts of both nodes. Because the information is used as common definition information, it must be identical on both physical hosts. After setting up JP1/Base, JP1/AJS3, and JP1/IM on the primary node physical host, and then changing the common definition information[#], perform an operation such as the following to ensure that the information on both physical hosts matches.

Note that this operation affects all JP1/Base, JP1/AJS3, and JP1/IM products.

On the primary node:

```
jbsgetcnf -h logical-host-name > backup-file-name
```

On the secondary node:

```
jbssetcnf backup-file-name
```

#:

While JP1/AJS3 is being used, the common definition information for JP1/Base, JP1/AJS3, and JP1/IM is updated at the following times:

- When the common definition information is changed by using the JP1/Base `jbssetcnf` command. (This command adds the information in the environment settings files to the registry.)
- When the JP1/AJS3 settings are changed by using either of the following JP1/AJS3 commands:
 - `jpqregguestuser`
 - `jpqreguser`
- When JP1/AJS3 is set up by using any of the following JP1/AJS3 commands:
 - `jajs_setup`
 - `jajs_config`
 - `jajs_setup_cluster`
 - `jp1ajs2_setup_cluster`

- ajsembdbsetup
- jp1ajs2casetup
- jp1ajs2cmsetup
- When linkage with JP1/AJS3 is set by using the JP1/Power Monitor `jaomaajs2confset` command. (This command sets up the environment for controlling the host power in collaboration with JP1/AJS3.)

16.2.4 Registering the JP1/AJS3 service in the cluster software

Register the JP1/AJS3 service in the cluster software to enable failover to be performed. For details about how to register the service, see the documentation for the cluster software.

Note the following when registering the service:

- Set the cluster software so that the secondary node can inherit the IP address and shared disk together with the service from the primary node. In addition, set the cluster software so that the application program is also inherited.
- Set the cluster software so that JP1/AJS3 starts after the secondary node has inherited the IP address and shared disk, and JP1/Base has started on the secondary node.
- Register the following commands in the cluster software:
 - `jajs_start.cluster logical-host-name` (command that starts JP1/AJS3)
The command is located in the `/etc/opt/jp1ajs2/` directory.
The `jajs_start.cluster` command executes the following command:

```
jajs_spmd -h logical-host-name
```

- `jajs_stop.cluster logical-host-name` (command that stops JP1/AJS3)
The command is located in the `/etc/opt/jp1ajs2/` directory.
The `jajs_stop.cluster` command executes the following command:

```
jajs_spmd_stop -h logical-host-name
```

- `jajs_killall.cluster logical-host-name` (command that forcibly stops JP1/AJS3)

This command forcibly stops JP1/AJS3 and releases the resource being used by JP1/AJS3. Executing this command forcibly stops all processes without performing the normal JP1/AJS3 termination processing.

Use this command only in cases such as the following: processing does not terminate even when the `jajs_stop.cluster` command, which stops JP1/AJS3, is executed.

Note that in the output results of the `ps` command, a logical host name is added after each process name so that you can identify the logical host to which the process belongs.

- If you want to monitor the status of JP1/AJS3 processes so that retries start or stop JP1/AJS3 will be successful, always set the maximum number of retries. If you do not set the maximum number, the number of retries could be unlimited. When you set the maximum number of retries, take into account the time required for normal start or stop processing.
- If you use JP1/AJS3 Console, you do not need to register the JP1/AJS3 Console service in the cluster software.

16.2.5 Setting up the queueless job execution environment

With the default settings, all processing for queueless jobs is disabled. Edit the `jajs_start.cluster` and `jajs_stop.cluster` commands to match operating requirements.

(1) To ensure that the queueless agent service does not stop when the nodes are switched

The following describes how to switch the nodes by detaching and re-attaching logical hosts.

If you use both physical and logical hosts at the same time or if you use multiple logical hosts at the same time, use the procedures described below.

(a) Edit `jajs_start.cluster`

1. Open the following file with a text editor such as `vi`:

```
/etc/opt/jp1ajs2/jajs_start.cluster
```

2. In the file, delete the shaded parts shown below.

```

:
### Logical host attach to Queueless Agent service ###
: # /opt/jp1ajs2/bin/ajsqattach -h $JP1_HOSTNAME
if
:
:
if [ $RC -ne 0 ]; then
: # exit ... (1)
fi
:
:
/opt/jp1ajs2/bin/jajs_spmc_status -h $JP1_HOSTNAME
: # /opt/jp1ajs2/bin/ajsqdetach -h $JP1_HOSTNAME -k

exit 8
:

```

3. Close the file.

Supplementary note:

After deletion of the comment symbol (: #) indicated by (1) in step 2, the start processing of the JP1/AJS3 service stops if the attachment of a logical host fails. If you want the start processing to continue, do not delete the comment symbol (: #).

(b) Edit jajs_stop.cluster

1. Open the following file with a text editor such as vi:

```
/etc/opt/jp1ajs2/jajs_stop.cluster
```

2. In the file, delete the shaded parts shown below.

```

:
if [ "$QLDTCCHK" = "can" ] || [ "$QLDTCCHK" = "detach" ]; then
: # /opt/jp1ajs2/bin/ajsqdetach -h $JP1_HOSTNAME -k
RC=$?
if [ $RC -ne 0 ]; then
: # ExitCord=1 ... (2)
: # exit $ExitCord ... (3)
fi
:

```

3. Close the file.

Supplementary notes:

- After deletion of the comment symbol (: #) indicated by (2) in step 2, error code 1 is returned if the detachment of a logical host fails.
- After deletion of the comment symbol (: #) indicated by (3) in step 2, the

start processing of the JP1/AJS3 service stops if the detachment of a logical host fails. If you want the start processing to continue, do not delete the comment symbol (: #).

- After deleting the comment symbol (: #) indicated by (3) in step 2, you must also delete the comment symbol (: #) indicated by (2).

(2) To ensure that the queueless agent service stops when the nodes are switched

The following describes how to switch the nodes by stopping the queueless agent service.

If you use only logical hosts, use the procedures described below.

(a) Edit jajs_start.cluster

1. Open the following file with a text editor such as vi:

```
/etc/opt/jp1ajs2/jajs_start.cluster
```

2. In the file, delete the shaded parts shown below.

```
### JP1/AJS2 - Queueless Agent service started ###
: # /opt/jp1ajs2/bin/ajsqstart >/dev/null 2>/dev/null
fi
:
### Logical host attach to Queueless Agent service ###
: # /opt/jp1ajs2/bin/ajsqattach -h $JP1_HOSTNAME
fi
:
if [ $RC -ne 0 ]; then
: # exit 1 ... (1)
fi
:
/opt/jp1ajs2/bin/jajs_spmc_status -h $JP1_HOSTNAME
: # /opt/jp1ajs2/bin/ajsqdetach -h $JP1_HOSTNAME -k
exit 8
```

3. Close the file.

Supplementary note:

After deletion of the comment symbol (: #) indicated by (1) in step 2, the start processing of the JP1/AJS3 service stops if the attachment of a logical host fails. If you want the start processing to continue, do not delete the comment symbol (: #).

(b) Edit jajs_stop.cluster

1. Open the following file with a text editor such as vi:

```
/etc/opt/jp1ajs2/jajs_stop.cluster
```

2. In the file, delete the shaded parts shown below.

```

:
:
if [ "$QLDTCCHK" = "can" ] || [ "$QLDTCCHK" = "detach" ]; then
: # /opt/jp1ajs2/bin/ajsqldetach -h $JP1_HOSTNAME -k
RC=$?
if [ $RC -ne 0 ]; then
: # ExitCord=1 ... (2)
: # exit $ExitCord ... (3)
fi
:
if [ -x /opt/jp1ajs2/bin/ajsqstop ]; then
: # /opt/jp1ajs2/bin/ajsqstop -c
fi
:

```

3. Close the file.

Supplementary notes:

- After deletion of the comment symbol (: #) indicated by (2) in step 2, error code 1 is returned if the detachment of a logical host fails.
- After deletion of the comment symbol (: #) indicated by (3) in step 2, the start processing of the JP1/AJS3 service stops if the detachment of a logical host fails. If you want the start processing to continue, do not delete the comment symbol (: #).
- After deleting the comment symbol (: #) indicated by (3) in step 2, you must also delete the comment symbol (: #) indicated by (2).

(3) Notes

- Before deleting a comment symbol (: #), review operation of the script without the comment symbol.
- If you are performing an upgrade installation, copy the `jajs_start.cluster.model` and `jajs_stop.cluster.model` files, and then edit these files according to operating requirements. After editing the files, rename them to `jajs_start.cluster` and `jajs_stop.cluster`.
- Attaching a logical host by setting the `AJSQL_ATTACH` environment parameter to `yes` requires that, for example, cluster software be used to stop the queueless agent service on the switch-from node, and to start the service on the switch-to

node.

As a result of this operation, however, the status of a queueless job being executed on another logical host attached to the queueless agent service on the physical host or switch-from node might become *Failed to start*, *Ended abnormally*, or *Unknown end status*.

If you use queueless jobs on multiple hosts, use the procedures described here instead of using `AJSQL_ATTACH`.

For details about the `AJSQL_ATTACH` environment setting parameter, see 2.7 *Setting up the queueless job execution environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

- Do not operate the system in a state with only logical hosts created by detaching the physical host from the queueless agent service.

If you do so, error messages normally output if startup of a queueless job fails and the information output to the standard error output during job execution might not be reported to the manager host.

16.2.6 Deleting logical hosts

If you want to delete a logical host, you must do so on both the primary and secondary nodes. The following describes how to delete a logical host.

(1) JP1/AJS3 - Manager

To delete the JP1/AJS3 - Manager logical host:

1. Execute the `jajs_spm�_stop` command to stop the JP1/AJS3 service.
Stop all JP1/AJS3 services, including JP1/AJS3 - Manager on the physical host.
2. Execute the `ajsshmdel` command to delete the information about the shared memory.

The `ajsshmdel` command is located in `/opt/jp1ajs2/bin/ajsshmdel`.

If the shell is `sh`, the command line is as follows:

```
ajsshmdel >/dev/null 2>&1
```

If the shell is `csh`, the command line is as follows:

```
ajsshmdel >&/dev/null
```

3. Uninstall the database environment set up on the logical host.

Execute the `ajsembdbuninst1` command to uninstall the database environment set up on the logical host. If you delete the logical host without also uninstalling the database environment, you will be no longer able to uninstall the database environment. For details about the `ajsembdbuninst1` command, see

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

The command is executed in the following format:

```
ajsembdbuninstl -mh logical-host-name
```

4. Delete the logical host information from the common definition information.

To do this, execute the `jbsunsetcnf -i -h logical-host-name` command of JP1/Base. For details about the `jbsunsetcnf` command, see the *Job Management Partner 1/Base User's Guide*.

If you want to delete only the common definition information for JP1/AJS3 on logical hosts without deleting JP1/Base, execute the following commands to delete the information:

```
jbsunsetcnf -i -h logical-host-name -c JP1AJS2
jbsunsetcnf -i -h logical-host-name -c JP1NBQAGENT
jbsunsetcnf -i -h logical-host-name -c JP1NBQMANAGER
jbsunsetcnf -i -h logical-host-name -c JP1NBQCLIENT
jbsunsetcnf -i -h logical-host-name -c JP1NBQNOTIFY
jbsunsetcnf -i -h logical-host-name -c JP1AOMMANAGER
jbsunsetcnf -i -h logical-host-name -c JP1AOMAGENT
jbsunsetcnf -i -h logical-host-name -c JP1AJSMANAGER
jbsunsetcnf -i -h logical-host-name -c JP1AJS2COMMON
jbsunsetcnf -i -h logical-host-name -c JP1QLAGENT
jbsunsetcnf -i -h logical-host-name -c JP1AJS2CONSOLEMANAGER
```

If no information has been set when you execute the above commands, the following message might appear. If the message appears, ignore it.

```
KAVA0405-I The specified string-specified-in-the-c-option does not exist
[logical-host-name]. Processing Stops.
```

5. Delete the shared files and directories on the shared disk.

When you execute the `jbsunsetcnf` command, the logical host information for JP1/Base, JP1/IM, and JP1/AJS3 is deleted. However, the shared files and shared directories on the shared disk are not deleted, and must be deleted manually.

6. Change the common definition information on the JP1/AJS3 physical host so that cluster operation is not set.

If you have deleted all logical hosts, change the common definition information

on the JP1/AJS3 physical host so that cluster operation is not set.

To do this, execute the following command to set the environment setting parameters described in (3) below.

```
jaajs_config -k definition-key "parameter-name"=value
```

Cautionary note:

The `jaajs_config` command must be executed for each definition key.

7. If the `JP1_HOSTNAME` environment variable has been set, delete it.

(2) JP1/AJS3 - Agent

To delete the JP1/AJS3 - Agent logical host:

1. Execute the `jaajs_spmc_stop` command to stop the JP1/AJS3 service.
Stop all JP1/AJS3 services, including JP1/AJS3 - Agent on the physical host.
2. Delete the logical host information from the common definition information.

To do this, execute the `jbsunsetcnf -i -h logical-host-name` command of JP1/Base. For details about the `jbsunsetcnf` command, see the *Job Management Partner 1/Base User's Guide*.

If you want to delete only the common definition information for JP1/AJS3 on logical hosts without deleting JP1/Base, execute the following commands to delete the information:

```
jbsunsetcnf -i -h logical-host-name -c JP1AJS2
jbsunsetcnf -i -h logical-host-name -c JP1NBQAGENT
jbsunsetcnf -i -h logical-host-name -c JP1NBQMANAGER
jbsunsetcnf -i -h logical-host-name -c JP1NBQCLIENT
jbsunsetcnf -i -h logical-host-name -c JP1NBQNOTIFY
jbsunsetcnf -i -h logical-host-name -c JP1AOMAGENT
jbsunsetcnf -i -h logical-host-name -c JP1AJS2COMMON
jbsunsetcnf -i -h logical-host-name -c JP1QLAGENT
```

If no information has been set when you execute the above commands, the following message might appear. If the message appears, ignore it.

```
KAVA0405-I The specified string-specified-in-the-c-option does not exist
[logical-host-name]. Processing Stops.
```

3. Delete the shared files and directories on the shared disk.

When you execute the `jbsunsetcnf` command, the logical host information for

JP1/Base, JP1/IM, and JP1/AJS3 is deleted. However, the shared files and shared directories on the shared disk are not deleted, and must be deleted manually.

4. Change the common definition information on the JP1/AJS3 physical host so that cluster operation is not set.

To do this, execute the following command to set the environment setting parameters described in (3) below.

```
jajs_config -k definition-key "parameter-name"=value
```

Cautionary note:

The `jajs_config` command must be executed for each definition key.

5. If the `JP1_HOSTNAME` environment variable has been set, delete it.

(3) Environment setting parameters

Table 16-3: Environment setting parameters to set when deleting JP1/AJS3 - Manager and JP1/AJS3 - Agent logical hosts

Definition key	Environment setting parameter	Value
[JP1_DEFAULT\JP1NBQAGENT\Process]	"IsHA"=	dword:00000000
[JP1_DEFAULT\JP1NBQCLIENT\Process]	"IsHA"=	dword:00000000
[JP1_DEFAULT\JP1NBQMANAGER\Process]	"IsHA"=	dword:00000000
[JP1_DEFAULT\JP1NBQNOTIFY\Process]	"IsHA"=	dword:00000000

For details about these environment parameters, see *2.3 Setting up the job execution environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

16.2.7 Setting startup of multiple scheduler services on a logical host

To set the startup of multiple scheduler services, first set information such as the names of the scheduler services to be added and then create databases for those scheduler services.

The following describes the procedure for setting the startup of multiple scheduler services and the procedure for deleting scheduler services that have been added.

(1) Starting multiple scheduler services on a logical host

The following describes the procedure for enabling startup of multiple scheduler services.

(a) Tasks required on the primary node

To specify the necessary settings on the primary node:

1. Stop the JP1/AJS3 service.

Execute the following commands to confirm that all processes on the logical host have stopped:

```
jajs_spmd_stop -h logical-host-name
jajs_spmd_status -h logical-host-name
```

Note:

For each setup identifier, execute the `ajsembdbstatus` command with `-s ust -id _JFn` (n : 1 to 9 or A to Z) specified to confirm that the embedded database is operating (UNIT-STAT is ONLINE). If the database is not operating, use the `ajsembdbstart` command with `-id _JFn` specified to activate it.

2. Use the `mkdir` command or another means to create the following directories on the shared disk:
 - Database directory
 - Directory for temporary files
 - Job information directory
 - Backup information directory

Make sure that the above directories, other than the backup information directory, are neither directories used by other scheduler services set on the local hosts (the physical host and all logical hosts) nor subdirectories of those directories.

3. Execute the `jajs_setup` command to add the scheduler service that is to be started.

```
jajs_setup -a -h logical-host
-F scheduler-service
-p service-for-the-port-reporting-the-job-status
-d database-directory
-t directory-for-temporary-files
-j job-information-directory
-b backup-information-directory
-n scheduler-service-ID-number
-D logical-host-shared-directory
-I setup-identifier
-P embedded-database-port-number
```

Example of adding a scheduler service named AJSROOT3 to the logical host node0 whose shared directory is /shdsk/node0:

```
jajs_setup -a -h node0
-F AJSROOT3
-p jplajs2report3
-d "/shdsk/node0/jplajs2/database/schedule/AJSROOT3"
-t "/shdsk/node0/jplajs2/tmp/schedule3"
-j "/shdsk/node0/jplajs2/jobinf3"
-b "/shdsk/node0/jplajs2/backup/schedule3"
-n 3
-D "/shdsk/node0"
-I _JF2
-P 22225
```

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

4. For the service name of the port that reports the job status specified in step 3, set the port number.

Open the `/etc/services` file with a text editor, and add the port number. Make sure that you do not specify an existing port number.

Example of setting 20248 as the port number:

```
jplajs2report3 20248/tcp
```

5. If you want to use queueless jobs, you must perform the setup required for using queueless jobs.

Execute the following command:

```
ajsqlsetup -F scheduler-service -h logical-host
```

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

6. Restart the JP1/AJS3 service to which you have added the scheduler service.
The scheduler service is added and started with the specified settings.

(b) Tasks required on the secondary node

To specify the necessary settings on the secondary node:

1. Set up the embedded database on the secondary node.

Note: This step is required only if the setup identifier specified during setup on the primary node is an identifier that is not output by the `ajsembdbidlist` command.

Execute the following commands:

```
ajsembdbinstl
-s directory-containing-the-embedded-database-installation-media
-id setup-identifier
-mh logical-host-name

ajsembdbbuild
-d logical-host-shared-directory/JP1AJS2/embdb/setup-identifier
-s
-f
-mh logical-host
-eh physical-host-of-the-primary-node
-ld work-area-directory
-p embedded-database-port-number
-i embedded-database-installation-directory
-id setup-identifier
-ext_db
-ext_log
```

For *setup-identifier*, *logical-host-shared-directory*, and *embedded-database-port-number*, specify the values that are specified on the primary node.

For details about the commands executed in this step, see 2. *Commands Used during Setup* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

Example of the commands to be executed when you set up an embedded database on logical host `node0` whose logical host shared directory is `/shdsk/node0`, setup identifier is `_JF3`, and embedded database port number is 22222:

```
ajsembdbinstl
-s /opt/jp1ajs2/tools/AJS3DB
-id _JF3
-mh node0

ajsembdbbuild
-d /shdsk/node0/jp1ajs2/embdb/_JF3
-s
```

```

-f
-mh node0
-eh HOST1
-ld /opt/jplajs2/embdb/_JF3/dbarea
-p 22222
-i /opt/jplajs2/embdb/_JF3
-id _JF3
-ext_db
-ext_log

```

2. Set the common definition information of the primary node on the secondary node.

When you have completed the tasks for the primary node, execute the `jbsgetcnf` command on the primary node to save the common definition information. Copy the saved file to the secondary node, specify the name of the saved file as an argument, and execute the `jbssetcnf` command.

Execute the commands as follows:

On the primary node:

```
jbsgetcnf -h logical-host > backup-file
```

On the secondary node:

```
jbssetcnf backup-file
```

3. On the secondary host, set the port number that you set in step 4 in (a) above.

Open the `/etc/services` file with a text editor, and add the port number. make sure that you add the same port number that you set on the primary node.

Example of setting 20248 as the port number:

```
jplajs2report3 20248/tcp
```

Supplementary note on commands executed to enable startup of multiple scheduler services:

If multiple scheduler services are running and you execute the command without specifying the `-F scheduler-service` option, the system assumes the command is being executed for the default scheduler service.

You can omit the `-F` option if you specify a scheduler service name in the `AJSCONF` environment variable.

(2) Deleting an added scheduler service

When you delete a scheduler service that has been added, you must delete it from both the primary node and the secondary node.

To delete an added scheduler service:

1. Execute the `jajs_spmd_stop` command to stop JP1/AJS3 services.
Stop all JP1/AJS3 services, including JP1/AJS3 - Manager on the physical host.

Note:

For each setup identifier, execute the `ajsembdbstatus` command with `-s ust -id _JFn` (*n*: 1 to 9 or A to Z) specified to confirm that the embedded database is operating (UNIT-STAT is ONLINE). If the database is not operating, use the `ajsembdbstart` command with `-id _JFn` specified to activate it.

2. Execute the `ajsshmdel` command to delete the information about the shared memory.

The `ajsshmdel` command is located in `/opt/jp1ajs2/bin/ajsshmdel`.

If the shell is `sh`, the command line is as follows:

```
/opt/jp1ajs2/bin/ajsshmdel >/dev/null 2>&1
```

If the shell is `csh`, the command line is as follows:

```
/opt/jp1ajs2/bin/ajsshmdel >&/dev/null
```

3. Execute the `jajs_setup` command to delete the scheduler service.

```
jajs_setup -e -F scheduler-service
```

Example of the command executed when the scheduler service to be deleted is

AJSROOT3:

```
jajs_setup -e -F AJSROOT3
```

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

On the secondary node, use the `jbsunsetcnf` command instead of the `jajs_setup` command.

```
jbsunsetcnf -i -h logical-host-name -c JP1AJSMANAGER -n scheduler-service-name
```

Example of the command for deleting the scheduler service AJSROOT3:

```
jbsunsetcnf -i -h LHOST -c JP1AJSMANAGER -n AJSROOT3
```

4. Delete the directories that you created when you added the scheduler service.

Delete the following directories that were created when you executed the `jajs_setup` command:

- Database directory specified in the `-d` option
- Directory for temporary files specified in the `-t` option
- Job information directory specified in the `-j` option
- Backup information directory specified in the `-b` option

Note:

Do not delete the logical host shared folder specified in the `-D` option.

5. Start the JP1/AJS3 services.

Restart the JP1/AJS3 services that you stopped in step 1, and confirm that the scheduler service has been deleted.

(3) Uninstalling a database environment that is no longer necessary

For details about how to uninstall a database environment that is no longer necessary, see *6.1.1(3) Uninstalling an unnecessary database environment*.

16.2.8 Specifying the settings that control startup and termination of JP1/AJS3 in a logical host environment

This subsection describes how to specify the settings that control JP1/AJS3 when the JP1/AJS3 service in a logical host environment is started or terminated.

(1) Settings for the queueless agent service and the queueless file transfer service

For details about starting and stopping the queueless agent service and queueless file transfer service, see *16.2.5 Setting up the queueless job execution environment*.

(2) Settings for the JP1/AJS3 Check Manager service and the JP1/AJS3 Check Agent service

The following describes how to specify the settings for starting and stopping the JP1/AJS3 Check Manager service and the JP1/AJS3 Check Agent service.

(a) Setting startup of the JP1/AJS3 Check Manager service and the JP1/AJS3 Check Agent service

1. Open the following file with a text editor such as `vi`:

```
/etc/opt/jplajs2/jajs_start.cluster
```

- In the file, delete the shaded parts shown below.

```

if [ -x /opt/jp1ajs2/bin/ajschkmand ]; then
pids=`ps -ef|awk '/VoptVjp1ajs2VbinVajschkmand / {print $2}'`
if [ "$pids" = "" ]; then
trap "" 1 2 3
: # /opt/jp1ajs2/bin/ajschkstart -m >/dev/null 2>/dev/null &
fi
fi
if [ -x /opt/jp1ajs2/bin/ajschkagtd ]; then
pids=`ps -ef|awk '/VoptVjp1ajs2VbinVajschkagtd / {print $2}'`
if [ "$pids" = "" ]; then
trap "" 1 2 3
: # /opt/jp1ajs2/bin/ajschkstart -a >/dev/null 2>/dev/null &
fi
fi

```

- Close the file.

(b) Setting stoppage of the JP1/AJS3 Check Manager service and the JP1/AJS3 Check Agent service

- Open the following file with a text editor such as vi:

```
/etc/opt/jp1ajs2/jajs_stop.cluster
```

- In the file, delete the shaded parts shown below.

```

if [ -x /opt/jp1ajs2/bin/ajschkstop ]; then
: # /opt/jp1ajs2/bin/ajschkstop
fi

```

- Close the file.

(3) Settings for outputting the status of JP1/AJS3 processes when JP1/AJS3 starts

To output the status of JP1/AJS3 processes when JP1/AJS3 starts:

- Open the following file with a text editor such as vi:

```
/etc/opt/jp1ajs2/jajs_start.cluster
```

- In the file, delete the shaded parts shown below.

```
# /opt/jp1ajs2/bin/jajs_spmcmd_status -h $JP1_HOSTNAME #
Display the running processes
```

3. Close the file.

(4) Adjusting the time to wait for JP1/AJS3 to start or to stop

(a) Adjusting the time to wait for JP1/AJS3 to start

The `jajs_start.cluster` command waits a maximum of 60 seconds for startup of JP1/AJS3 to be confirmed. In cases such as when the automatic reorganization feature for ISAM files is used, JP1/AJS3 might not start within 60 seconds. For these cases, you must adjust the wait time.

The following describes how to set the time to wait for startup of JP1/AJS3 to be confirmed. Note that the following procedure assumes that startup of JP1/AJS3 requires 140 seconds.

1. Open the following file with a text editor such as vi:

```
/etc/opt/jp1ajs2/jajs_start.cluster
```

2. In the file, change the shaded parts shown below.

```
Before the change:
MAX_RETRY=6 # 10 x 6 = 60 [seconds]
```

```
After the change:
MAX_RETRY=14 # 10 x 14 = 140 [seconds]
```

3. Close the file.

(b) Adjusting the time to wait for JP1/AJS3 to stop

The `jajs_stop.cluster` command waits a maximum of 60 seconds for stoppage of JP1/AJS3 to be confirmed. If JP1/AJS3 does not stop within 60 seconds, you must adjust the wait time.

The following describes how to set the time to wait for stoppage of JP1/AJS3 to be confirmed. Note that the following procedure assumes that stoppage of JP1/AJS3 requires 140 seconds.

1. Open the following file with a text editor such as vi:

```
/etc/opt/jp1ajs2/jajs_stop.cluster
```

2. In the file, change the shaded parts shown below.

Before the change:

MAX_RETRY=6

10 x 6 = 60 [seconds]

After the change:

MAX_RETRY=14

10 x 14 = 140 [seconds]

3. Close the file.

16.3 Notes on cluster operation

For notes that apply during cluster operation, see *11.6 Cautionary notes on using a cluster system* in the *Job Management Partner 1/Automatic Job Management System 3 Administration Guide*.

Chapter

17. Uninstallation

This chapter describes how to uninstall JP1/Base and JP1/AJS3.

17.1 Uninstalling JP1/Base

17.2 Uninstalling JP1/AJS3 series programs

17.1 Uninstalling JP1/Base

To uninstall JP1/Base, use the automatic uninstallation function. This function also uninstalls the integrated trace log function (HNTRLib2).

For details about JP1/Base uninstallation, see the *Job Management Partner 1/Base User's Guide*.

Before you uninstall JP1/Base, make sure that JP1/AJS3 has been uninstalled. If you uninstall JP1/Base before you uninstall JP1/AJS3, you might no longer be able to uninstall JP1/AJS3.

17.2 Uninstalling JP1/AJS3 series programs

This section describes how to uninstall JP1/AJS3 series programs (JP1/AJS3 - Manager and JP1/AJS3 - Agent) for each OS of the hosts from which JP1/AJS3 series programs are to be uninstalled.

Note:

- Because uninstalling JP1/AJS3 also causes the JP1/AJS3 programs to be deleted, the user environment (such as the database and environment settings files) is also deleted. Therefore, if you uninstall and then reinstall JP1/AJS3, you must specify all the settings again.

If JP1/AJS3 is set up on a logical host, uninstallation does not delete the user environment (such as the database and environment settings files) on the logical host. If the user environment is no longer necessary, you will need to delete it manually. For details about how to delete the user environment on a logical host, see *16.2.6 Deleting logical hosts*.

- If you uninstall JP1/Base before uninstalling JP1/AJS3, you will no longer be able to uninstall JP1/AJS3. Always make sure that JP1/Base is installed before you uninstall JP1/AJS3.
- In a cluster system, use JP1/Base to delete logical hosts before you uninstall JP1/AJS3. For details about deleting logical hosts, see *16.2.6 Deleting logical hosts*.

Uninstalling JP1/AJS3 series programs deletes all the directories listed below them, including all the files in the directories. If these directories contain any files you need, copy the files to another directory before starting uninstallation. If any directories remain after the uninstallation, delete the directories, including all the files in them.

- JP1/AJS3 - Manager

`/etc/opt/jplajs2, /opt/jplajs2, /var/opt/jplajs2, /etc/opt/jplajs2cm, /opt/jplajs2cm, /var/opt/jplajs2cm`

- JP1/AJS3 - Agent

`/etc/opt/jplajs2, /opt/jplajs2, /var/opt/jplajs2`

17.2.1 Uninstallation in HP-UX

To uninstall a JP1/AJS3 series program in HP-UX:

1. Log in as superuser to the host from which you want to uninstall the JP1/AJS3 series program. Alternatively, use the `su` command to become superuser.

2. Terminate all programs.

If existing JP1 series programs are running, always stop them.

3. Execute the following command to start Hitachi Program Product Installer:

```
/etc/hitachi_setup
```

Hitachi Program Product Installer starts, and the initial screen appears.

4. On the initial screen, enter D.

A list of programs that can be uninstalled is displayed.

5. Select the JP1/AJS3 series program you want to uninstall, and then enter D.

The selected program is uninstalled. You can select a program by moving the cursor to the program, and then pressing the space bar.

6. When uninstallation of the program has been completed, enter Q.

The Hitachi Program Product Installer initial screen is displayed again.

If uninstallation of JP1/AJS3 - Manager has failed, check syslog for the KAVS2128-E message. If this message has been output, deletion of JP1/AJS3_Database has failed, in which case take action based on the KAVS2128-E message.

7. If necessary, delete the user files created in JP1/AJS3.

17.2.2 Uninstallation in Solaris

To uninstall a JP1/AJS3 series program in Solaris:

1. Log in as superuser to the host from which you want to uninstall the JP1/AJS3 series program. Alternatively, use the `su` command to become superuser.

2. Terminate all programs.

If existing JP1 series programs are running, always stop them.

3. Execute the following command to start Hitachi Program Product Installer:

```
/etc/hitachi_setup
```

Hitachi Program Product Installer starts, and the initial screen appears.

4. On the initial screen, enter D.

A list of programs that can be uninstalled is displayed.

5. Select the JP1/AJS3 series program you want to uninstall, and then enter D.

The selected program is uninstalled. You can select a program by moving the cursor to the program, and then pressing the space bar.

6. When uninstallation of the program has been completed, enter `Q`.

The Hitachi Program Product Installer initial screen is displayed again.

If uninstallation of JP1/AJS3 - Manager has failed, check syslog for the KAVS2128-E message. If this message has been output, deletion of JP1/AJS3_Database has failed, in which case take action based on the KAVS2128-E message.

7. If necessary, delete the user files created in JP1/AJS3.

17.2.3 Uninstallation in AIX

To uninstall a JP1/AJS3 series program in AIX:

1. Log in as superuser to the host from which you want to uninstall the JP1/AJS3 series program. Alternatively, use the `su` command to become superuser.

2. Terminate all programs.

If existing JP1 series programs are running, always stop them.

3. Execute the following command to start Hitachi Program Product Installer:

```
/etc/hitachi_setup
```

Hitachi Program Product Installer starts, and the initial screen appears.

4. On the initial screen, enter `D`.

A list of programs that can be uninstalled is displayed.

5. Select the JP1/AJS3 series program you want to uninstall, and then enter `D`.

The selected program is uninstalled. You can select a program by moving the cursor to the program, and then pressing the space bar.

6. When uninstallation of the program has been completed, enter `Q`.

The Hitachi Program Product Installer initial screen is displayed again.

If uninstallation of JP1/AJS3 - Manager has failed, check syslog for the KAVS2128-E message. If this message has been output, deletion of JP1/AJS3_Database has failed, in which case take action based on the KAVS2128-E message.

7. If necessary, delete the user files created in JP1/AJS3.

Appendixes

- A. Checking the Installation and Setup
- B. Scheduler Database Estimates
- C. Advanced Setup of an Embedded Database
- D. Advanced Setup for the Embedded Database (in a Cluster Configuration)
- E. Recovery Procedure Used When An Incorrect Environment Settings Parameter Is Set
- F. Values Recommended for the Environment Settings Set in JP1/AJS3
- G. Version Revisions
- H. Changes in 3020-3-S05-04(E)
- I. Glossary

A. Checking the Installation and Setup

A.1 Installation and setup checklists (Windows host)

This section provides checklists used for installing and setting up JP1/AJS3.

(1) Checklist for JP1/AJS3 - Manager

The installation and setup checklist is given below.

Table A-1: Installation and setup checklist (for JP1/AJS3 - Manager)

Classification	Work contents	Base	AJS3	Check
Installation	Installing JP1/Base	R	--	
	Installing JP1/AJS3 - Manager	--	R	
Setting user information	Setting up the authentication servers	O [#]	--	
	Registering JP1 users	O [#]	--	
	Setting JP1 permission levels	O [#]	--	
	Setting user mapping information	O [#]	--	
Setting up the service account	Setting up the JP1/AJS3 service account	--	O [#]	
Setting up the scheduler service environment	Specifying the necessary environment setting parameters	--	O [#]	
Setting up the job execution environment	Specifying the necessary environment setting parameters	--	O [#]	
Setting up the event service environment	Specifying the necessary environment setting parameters	--	O [#]	
Setting up the queueless job execution environment	Specifying the necessary environment setting parameters	--	O [#]	
Setting up the JP1/AJS3 Console environment	Setting up and changing the contents of the JP1/AJS3 Console Manager environment settings file (<code>ajs2cm.conf</code>)	--	O [#]	
Setting up the user environment	Extending the trace log file	--	O	

Classification	Work contents	Base	AJS3	Check
Setting up other environments	Setting concurrent start of the scheduler services	--	O	
	Setting up the automatic reconfiguration function for ISAM files	--	O	
	Changing the output level of the integrated trace log of the scheduler service	--	O	
	Changing the schedule rule output method when the nested jobnet definition parameter is output	--	O	
	Renaming the scheduler trace log file	--	O	
	Limiting the JP1/AJS3 - Manager operation method to the registration and manipulation of submitted jobs	--	O	
	Setting up the suspend function	--	O	

Legend:

Base: Work performed in JP1/Base

AJS3: Work performed in JP1/AJS3

R: Required work

O: Optional work

--: Not applicable

#

This work is not necessary when you want to use all the default values. Perform this work only if you need to change one of the default values.

(2) Checklist for JP1/AJS3 - Agent

The installation and setup checklist is given below.

Table A-2: Installation and setup checklist (for JP1/AJS3 - Agent)

Classification	Work contents	Base	AJS3	Check
Installation	Installing JP1/Base	R	--	
	Installing JP1/AJS3 - Agent	--	R	
Setting user information	Registering JP1 users	O [#]	--	

A. Checking the Installation and Setup

Classification	Work contents	Base	AJS3	Check
	Setting JP1 permission levels	O [#]	--	
	Setting user mapping information	O [#]	--	
Setting up the service account	Setting up the JP1/AJS3 service account	--	O [#]	
Setting up the job execution environment	Specifying the necessary environment setting parameters	--	O [#]	
Setting up the event service environment	Specifying the necessary environment setting parameters	--	O [#]	
Setting up the queueless job execution environment	Specifying the necessary environment setting parameters	--	O [#]	
Setting up the user environment	Extending the trace log file	--	O	

Legend:

Base: Work performed in JP1/Base

AJS3: Work performed in JP1/AJS3

R: Required work

O: Optional work

--: Not applicable

#

This work is not necessary when you intend to use all of the default values as is. Perform this work only if you need to change one of the default values.

(3) Checklist for JP1/AJS3 - View

The installation and setup checklist is given below.

Table A-3: Installation and setup checklist (for JP1/AJS3 - View)

Classification	Work contents	Base	AJS3	Check
Installation	Installing JP1/AJS3 - View	--	R	
Starting the integrated trace log functionality	Starting the integrated trace log functionality (HNTRLib2)	--	O ^{#1}	

Classification	Work contents	Base	AJS3	Check
Setting up the JP1/AJS3 - View environment	Setting up a definition in the Environment Settings dialog box	--	O#2	

Legend:

Base: Work performed in JP1/Base

AJS3: Work performed in JP1/AJS3

R: Required work

O: Optional work

--: Not applicable

#1

This work is required if only JP1/AJS3 - View is installed on one host and you use the host as a JP1/AJS3 - View host.

#2

This work is not necessary when you intend to use all of the default values as is. Perform this work only if you need to change one of the default values.

A.2 Installation and setup checklists (UNIX host)

This section provides the checklists for the installation and setup of JP1/AJS3.

(1) Checklist for JP1/AJS3 - Manager

The installation and setup checklist is given below.

Table A-4: Installation and setup checklist (for JP1/AJS3 - Manager)

Classification	Work contents	Base	AJS3	Check
Installation	Installing JP1/Base	R	--	
	Installing JP1/AJS3 - Manager	--	R	
Setting user information	Setting up authentication servers	O#	--	
	Registering JP1 users	O#	--	
	Setting JP1 permission levels	O#	--	
	Setting user mapping information	O#	--	

A. Checking the Installation and Setup

Classification	Work contents	Base	AJS3	Check
Setting up the scheduler service environment	Specifying the necessary environment setting parameters	--	O [#]	
Setting up the job execution environment	Specifying the necessary environment setting parameters	--	O [#]	
Setting up the event service environment	Specifying the necessary environment setting parameters	--	O [#]	
Setting up the queueless job execution environment	Specifying the necessary environment setting parameters	--	O [#]	
Setting up the JP1/AJS3 Console environment	Setting up and changing the JP1/AJS3 Console Manager environment setup file (<code>ajs2cm.conf</code>)	--	O [#]	
Setting up the user environment	Setting the search paths of commands and libraries	--	O	
	Changing the login scripts	--	O	
	Adjusting the kernel parameters	--	O	
	Extending the trace log file	--	O	
Setting up other environments	Setting up the concurrent start of scheduler services	--	O	
	Setting up automatic start and termination of the JP1/AJS3 service	--	O	
	Setting up the automatic reconfiguration function for ISAM files	--	O	
	Limiting the JP1/AJS3 - Manager operation for registering and manipulating submitted jobs	--	O	
	Setting up the suspend function	--	O	

Legend:

Base: Work performed in JP1/Base

AJS3: Work performed in JP1/AJS3

R: Required work

O: Optional work

--: Not applicable

#

This work is not necessary when you intend to use all of the default values as is. Perform this work only if you need to change one of the default values.

(2) Checklist for JP1/AJS3 - Agent

The installation and setup checklist is given below.

Table A-5: Installation and setup checklist (for JP1/AJS3 - Agent)

Classification	Work contents	Base	AJS3	Check
Installation	Installing JP1/Base	R	--	
	Installing JP1/AJS3 - Agent	--	R	
Setting user information	Registering JP1 users	O [#]	--	
	Setting JP1 permission levels	O [#]	--	
	Setting user mapping information	O [#]	--	
Setting up the job execution environment	Specifying the necessary environment setting parameters	--	O [#]	
Setting up the event service environment	Specifying the necessary environment setting parameters	--	O [#]	
Setting up the queueless job execution environment	Specifying the necessary environment setting parameters	--	O [#]	
Setting up the user environment	Setting the search paths of commands and libraries	--	O	
	Changing the login scripts	--	O	
	Adjusting the kernel parameters	--	O	
	Extending the trace log file	--	O	

Legend:

Base: Work performed in JP1/Base

AJS3: Work performed in JP1/AJS3

R: Required work

O: Optional work

--: Not applicable

A. Checking the Installation and Setup

#

This work is not necessary when you intend to use all of the default values as is. Perform this work only if you need to change one of the default values.

B. Scheduler Database Estimates

B.1 Estimating the amount of required database area

In JP1/AJS3, a database can be created as a large-scale, medium-scale, or small-scale database. When JP1/AJS3 is installed, a small-scale database is created. You can change the scale of a database by performing an advanced setup of the embedded database.

The embedded-database environment must be set up for each physical host and for each logical host. If you use multiple scheduler services on the same physical or logical host, the scheduler services can share one embedded database environment.

The following table describes the database models that can be specified during setup of the embedded-database environment. Make sure that the disk has extra free space, because some file systems require more disk space than described in the table.

Table B-1: Database models that can be specified during setup of the embedded-database environment

Scale	Purpose
Large	Total number of units: About 48,000 to 240,000 Number of jobs and jobnets executed per day: 30,000 to 120,000 Disk space guideline: About 20,700 MB (data area: about 6,700 MB, system area: about 14,000 MB)
Medium	Total number of units: About 5,000 to 48,000 Number of jobs and jobnets executed per day: 5,000 to 30,000 Disk space guideline: About 4,200 MB (data area: about 1,400 MB, system area: about 2,800 MB)
Small	Total number of units: About 5,000 or fewer Number of jobs and jobnets executed per day: 5,000 or fewer Disk space guideline: About 520 MB (data area: about 200 MB, system area: about 320 MB)

If the system area for the embedded database is duplexed during setup of the embedded-database environment, more disk space is required. The following table shows how much additional disk space is required.

Table B-2: Amount of additional disk space required for duplexing the system area for the embedded database

Scale	Amount of additional disk space required
Large	About 14,000 MB

Scale	Amount of additional disk space required
Medium	About 2,800 MB
Small	About 320 MB

You can create the data area and system area for the embedded database in RAW files. For this purpose, the following two or three partitions are required:

- Data area partition (ajssys01)
- System area partition 1 (ajssys11)
- System area partition 2 (ajssys17)[#]

The following table shows the partition sizes required for each scale. The database models in *Table B-1* also apply to this table.

Table B-3: Required partition sizes

Scale	Purpose
Large	ajssys01: About 6,700 MB ajssys11: About 14,000 MB ajssys17: About 14,000 MB [#]
Medium	ajssys01: About 1,400 MB ajssys11: About 2,800 MB ajssys17: About 2,800 MB [#]
Small	ajssys01: About 200 MB ajssys11: About 320 MB ajssys17: About 320 MB [#]

#:

This partition is required only if the system area for the embedded database is duplexed.

About the database auto-increment function:

If you use the database auto-increment function, the amount of allocated data area is automatically increased a little bit each time it becomes insufficient. The function can expand the data area to the maximum extent possible on the disk on which the data area is located. The files that can be expanded by this function are as follows:

- The ajssys041 and ajssys042 files in the data area storage directory
- The files created under the directory specified for the -d option in the

`ajsembdbaddarea` command

Similarly, if you use the system log auto-increment function, the amount of allocated system area is also automatically increased a little bit each time it becomes insufficient. The system area can be expanded to three times the initial size. The files that can be expanded by this function are as follows:

- The `ajssys01101` to `ajssys01112#` files in the data area storage directory
- The files created under the directory specified for the `-d` option in the `ajsembdbaddlog` command, for which `sys` is specified for the `-r` option

`#:`

If system file area creation directories 1 and 2 are specified in the `ajsembdbbuild` command during advanced setup of an embedded database, the following files are expanded:

- The `ajssys01101` to `ajssys01112` files in system file area creation directory 1
- The `ajssys01701` to `ajssys01712` files in system file area creation directory 2

C. Advanced Setup of an Embedded Database

This appendix describes how to perform advanced setup of the embedded database when you use an embedded database as the scheduler database.

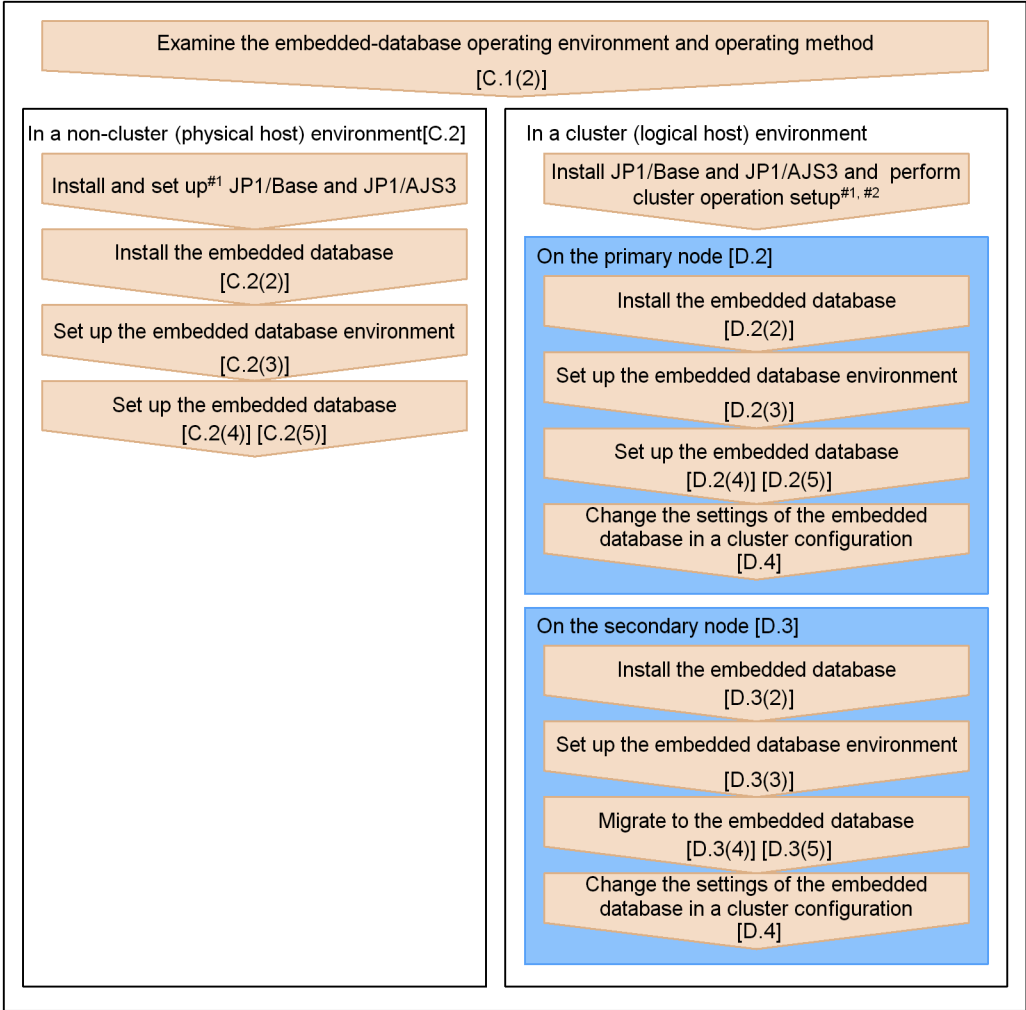
C.1 Preparation for using an embedded database

This appendix describes the preparation for using an embedded database as the JP1/AJS3 - Manager scheduler database.

(1) Procedure for installing and setting up an embedded database

The following figure shows the procedure for installing and setting up an embedded database.

Figure C-1: Procedure for installing and setting up an embedded database



Legend: [] indicates the section providing detailed information.
 #1: For installation details, see 2. *Installation (Windows)* or 11. *Installation (UNIX)*.
 For setup details, see 3. *Setup (Windows)* or 12. *Setup (UNIX)*.
 #2: For setup details for cluster operation, see 8. *Setup for Operation in a Cluster System (Windows)* or 16. *Setup for Operation in a Cluster System (UNIX)*.

(2) Examining the embedded-database operating environment and operating method

(a) Operating environment

Carefully consider the following environment conditions related to operation of the

embedded database:

- System configuration
- Environment scale
- System file area
- Operating environment

■ **System configuration**

Decide whether to configure the embedded database in a non-cluster configuration (physical host) or in a cluster configuration (logical host). The environment conditions consist of both those related to embedded databases and those related to the overall JP1/AJS3 service configuration.

■ **Environment scale**

Based on the scale of JP1/AJS3 operations, select small, medium, or large as the scale of the embedded database environment. The following table provides a guideline for selecting the scale.

Table C-1: Guideline for selecting the scale of the embedded database environment to be set up

Scale	Number of units	Number of jobs and jobnets executed per day	Number of logs to keep
Small	5,000 or less	5,000 or less	5 or fewer
Medium	5,000 to 48,000	5,000 to 30,000	5 to 30
Large	48,000 to 240,000	30,000 to 120,000	30 to 120

If the scale of the operation is larger than the large scale in the table, create the embedded database environment as large scale, and then expand the environment.

For details about how to expand an embedded database environment, see *ajsembdbaddarea* in *2. Commands* in the manual *Job Management Partner 1/ Automatic Job Management System 3 Command Reference 1*.

■ **System file area**

Decide whether it is necessary to duplicate the system files used for the embedded database. If you choose to duplicate the system files, although the required disk space will increase, you will be able to restore the embedded database to the point of a disk failure if one occurs.

The following table shows the required disk space for each type of embedded database operating environment. Select one of the possibilities.

Table C-2: Disk space required for the embedded database operating environment

No.	Operating environment				Required disk space (in megabytes)						
	System configuration	Environment scale	Using RAW files ^{#1}	System files duplicated	System area ^{#2}	Data area	System file area	Work area	Total ^{#3}		
1	Non-cluster	Small	No	No	170 ^{#4}	200	320	--	520		
2				Yes					840		
3			Yes	No					320	40	560
4				Yes					640	880	
5		Medium	No	No		1,400	2,800	--	4,200		
6				Yes					5,600	7,000	
7			Yes	No					2,800	40	4,240
8				Yes					5,600	7,040	
9		Large	No	No		6,700	14,000	--	20,700		
10				Yes					28,000	34,700	
11			Yes	No					14,000	40	20,740
12				Yes					28,000	34,740	
13	Cluster	Small	No	No	170 ^{#4} , #5	200	320	40 x 2 ^{#6}	600		
14				Yes					920		
15			Yes	No					320	600	
16				Yes					640	920	
17		Medium	No	No		1,400	2,800		4,280		
18				Yes					5,600	7,080	

No.	Operating environment				Required disk space (in megabytes)				
	System configuration	Environment scale	Using RAW files ^{#1}	System files duplicated	System area ^{#2}	Data area	System file area	Work area	Total ^{#3}
19			Yes	No			2,800		4,280
20				Yes			5,600		7,080
21		Large	No	No		6,700	14,000		20,780
22	Yes			28,000			34,780		
23	Yes		No	14,000			20,780		
24			Yes	28,000			34,780		

Legend

--: The work area is not necessary

#1

Applicable in UNIX only

#2

The system area is created on the disk on which JP1/AJS3 is installed or in the directory specified in the `-i` option of the `ajsembdbinstl` command. For details about the `ajsembdbinstl` command, see *ajsembdbinstl* in *2. Commands Used during Setup* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

#3

This value does not include the system area amount.

#4

This value varies according to the OS.

OS	Size (MB)
Windows	170
HP-UX (IPF)	400

OS	Size (MB)
Solaris	260
AIX	200

#5

In a cluster system, the embedded database must be installed on both the primary and secondary nodes.

#6

In a cluster configuration, work areas must be created on both local disks, and must not be created on a shared disk. That is, you must create a work area on both the primary node and the secondary node.

■ Operating environment

Take into consideration the following operating environment items related to the embedded database:

- System definitions

The operands in the following system definitions are described below.

- System common definition
- Single server definition

Note that if the embedded database is used in JP1/AJS3, normally you do not need to change the system definition for the embedded database. Therefore, change the system definition settings only if a problem occurs.

• System common definition

The following describes the operands in the system common definition, the values of which can be changed by the embedded database system administrator. The path name of the system common definition file is as shown below. You (the embedded database system administrator) can change the values of operands specified in this file.

- Windows: *embedded-database-practical-directory\conf\pdsys*
- UNIX: *embedded-database-practical-directory/conf/pdsys*

Note:

To ensure correct JP1/AJS3 operation, do not change the values of any operands that are not described here.

No.	Format
1	set pd_max_users = <i>maximum-number-of-concurrently-connectable-users</i>
2	[set pd_service_port = <i>client-connection-port-number</i>]

(1) pd_max_users = *maximum-number-of-concurrently-connectable-users*

~ <unsigned integer> ((1 to 2000))

This operand specifies the maximum number of users who can connect to the embedded database. If you want to change the maximum number of users who can connect to the embedded database, change the value of this operand. If connection to the embedded database is requested when the number of users who have already been connected to the embedded database has reached the maximum, the embedded database does not accept the request (the request results in an error). In JP1/AJS3, the default value of this operand is 128.

Cautionary note:

For embedded-database operation commands, each command is counted as a single connection to an embedded database.

The number of connections to the embedded database is counted as shown in the following table.

JP1/AJS3 behavior	Number of connections
Startup of JP1/AJS3 - Manager	2
Startup of a scheduler service	4
Execution of a command that performs an operation on a job network	1
Connection from JP1/AJS3 - View	The number of viewed scheduler services
Execution of a command that performs an operation on the embedded database	2

(2) pd_service_port = *client-connection-port-number*

~ <unsigned integer> ((5001 to 65535))

If there is a firewall on the embedded database server side, specify the client connection port number. Note that the port number you specify must satisfy the following condition:

- Port number that is unique on the host

Explanation:

- Specify this operand as necessary if you use a product that links to JP1/AJS3. You do not need to specify this operand in JP1/AJS3 - Manager because it is not available in JP1/AJS3 - Manager.
- If you start multiple servers or units on the same computer, specify a separate port number for each embedded database.

Cautionary note:

Make sure that the port number you specify is outside the range of port numbers assigned automatically by the OS. This differs depending on the OS. If another program is already using a port number in the range and you specify that port number, you will not be able to start the embedded database.

- **Single server definition**

The following describes the operands in the single server definition, the values of which can be changed by the embedded database system administrator. The path name of the single server definition file is as shown below. You (the embedded database system administrator) can change the values of operands specified in this file.

- Windows: *embedded-database-practical-directory\conf\ajs2*
- UNIX: *embedded-database-practical-directory/conf/ajs2*

Note:

To ensure correct JP1/AJS3 operation, do not change the values of any operands that are not described here.

No.	Format
1	<i>set pd_lck_pool_size = size-of-pool-used-for-locking</i>

(1) *pd_lck_pool_size = size-of-pool-used-for-locking*

~ <unsigned integer> (unit: KB) ((1 to 2000000))

When performing a unit operation or executing an embedded-database operation command, specify, in kilobytes, the size of the shared memory area in the embedded database.

In JP1/AJS3, the default differs depending on the scale specified by the *ajsembdbbuild* command.

Scale	ajsembdbbuild command option	Lock pool size
Large	-l	60,000
Medium	-m	37,500
Small	-s	15,000

Operation method:

If operations on many units are attempted at one time by using a command or JP1/AJS3 - View, the KAVS0902-E message might be output to the integrated log, syslog, or Windows event log, causing the operations to terminate abnormally.

If this occurs, review the following items, because the memory area used for locks in the embedded database might be insufficient:

1. The total number of the top-level units to be defined by using the `ajsdefine` command, and their subordinate units
2. The number of units (including subordinate units) specified as the copy sources for unit copy operations performed with the `ajscopy` command or JP1/AJS3 - View
3. The number of units (including subordinate units) to be restored by restore operations performed with the `ajsrestore` command or JP1/AJS3 - View
4. The total number of root jobnets (including subordinate units) specified as the release sources for release operations performed with the `ajsrelease` command or JP1/AJS3 - View
5. The number of root jobnets (including subordinate units) specified, or the number of root jobnets (including subordinate units) defined under the job group specified, for execution registration operations performed with the `ajsentry` command or JP1/AJS3 - View
6. The number of jobnets (including subordinate units) specified for re-execution operations performed with the `ajsrerun` command or JP1/AJS3 - View
7. The number of units added to the root jobnet, the suspend status of which was released with the `ajssuspend` command or JP1/AJS3 - View

Compare the value specified for `pd_lck_pool_size` with the value obtained with the applicable expression below. If the value of `pd_lck_pool_size` is smaller, change the value to the obtained value.

If the obtained value is smaller, because the amount of memory required for JP1/AJS3 might be insufficient, you need to re-estimate the amount of required memory. For details about how to estimate the amount of required memory, see 3. *Estimates* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

- In cases 1, 2, 3, or 4 above

$$(a + b + c + d) / 4 \times 1.2$$

a: *(total-number-of-job-groups x 2) + total-number-of-years-in-the-calendar-defined-for-job-groups*

b: *(total-number-of-jobnets x 2) + total-number-of-schedule-rules-defined-for-all-jobnets*

c: *total-number-of-jobs x 2*

d: *total-number-of-relations-defined-for-jobs-and-jobnets*

- In cases 5, 6, or 7

$$e / 4 \times 1.2$$

e: *total-number-of-jobs-and-jobnets x 3*

If the jobnets used in the calculation use the jobnet release function, perform the calculation by using the definition for the jobnets that are currently operating.

Cautionary note:

If you increase the value of this operand, the amount of memory used by the embedded database also increases proportionally. Before you change the value, make sure that there is sufficient memory.

If the value of this operand is too small, an attempt to access JP1/AJS3 might result in an error.

- **Changing the system definition**

To change the system definition:

1. Stop the JP1/AJS3 services.
2. Check the status of the target embedded database.

```
ajsembdbstatus -s ust -id _JF0#
```

3. If the target embedded database is running, stop it normally. If the target embedded database is not running, start it, and then stop it normally.

Example of the command used to start an embedded database:

```
ajsembdbstart -id _JF0#
```

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

```
ajsembdbstop -id _JF0#
```

4. Using a text editor, open the system common definition file or a single server definition file.

Before performing this operation, create a backup of the file in case a problem occurs.

5. Change the value of the operand.
6. Save the change made in step 5, and then close the file.
7. Start the JP1/AJS3 services that you stopped.

The embedded database is also started at this time.

#:

For the `-id` option, specify the setup identifier of the target embedded database.

Note:

If you use a double-byte space or character, or add an unnecessary line-feed or space character in the system common definition or single server definition, startup of the JP1/AJS3 services fails.

(b) Database operations

Consider the following items related to embedded database operations:

- Use of the system log data
- Times at which the embedded database is backed up
- Point up to which the embedded database is restored from the backup
- Method for restoring the embedded database from the backup

■ Use of the system log data

The following describes operation when the system log is used for restoration. You can ignore this item if you do not use the system log for restoration.

Operation that uses unloading

In this method, the data output to a system log file is unloaded (that is, backed up) to another file. The contents of the system log files are unloaded automatically by the embedded database, at which time the system log file becomes available for reuse. However, since disk space is required to store the unloaded log files (called *unload log files*), available disk space must be monitored. In addition, when the system is restored, the unload log files must be specified in the correct order.

■ Times at which the embedded database is backed up

The embedded database can be backed up at either of the following times:

While the JP1/AJS3 service is stopped (while no jobs or jobnets are being executed)

In this case, you must stop JP1/AJS3 when you back up the embedded database. This is the basic backup method. With this method, you can restore the status of the embedded database at the time it was backed up by using the obtained backup data only.

While the JP1/AJS3 service is running (when jobs and jobnets are being executed)

In this case, it is not necessary to stop JP1/AJS3 when you back up the embedded database. However, the unload log file that has been output by the embedded database, together with the data you backed up, is necessary for restoration.

■ Point up to which the embedded database is restored from the backup

The embedded database can be restored from the backup up to the following times:

Time when the embedded database was backed up

In this case, you can restore the embedded database to the state existing at the time the embedded database was backed up. However, any updates made after the backup was acquired will not be restored.

Latest synchronization timepoint following backup of the embedded database

In this case, in addition to restoring the embedded database to the state existing at the time of the backup, you can also restore updates occurring after the backup, thereby restoring the database to the latest state.

■ Methods for restoring the embedded database from a backup

This subsection describes how you can restore the embedded database from backup data.

By using the backup data only

In this case, you use only the backup data to restore the embedded database. The embedded database is restored to the state existing at the time it was backed up.

By using the backup data and the system log data

In this case, you use the backup data and the system log information output after the backup to restore the embedded database. This method also restores any updates made to the database after the backup. Use this method to restore the embedded database if you use backup data obtained while JP1/AJS3 was running.

The following table shows the methods of embedded database operation.

Table C-3: Methods of embedded database operation

No.		Method of operation			
		System log	Time that the embedded database is backed up	Time up to which the embedded database is restored from the backup data	Method for recovering the embedded database from the backup data
A		Not used	While the JP1/AJS3 service is stopped	Up to the time when the embedded database was backed up	Backup data only
B	B-1	Unloading used	When the JP1/AJS3 service is stopped	Up to the time when the embedded database was backed up	Backup data only
	B-2				
	B-3	While the JP1/AJS3 service is running			

The following table shows the advantages and disadvantages of each method of operation. Study this table before you select a method from *Table C-3*.

Table C-4: Advantages and disadvantages of each method of operation

No.#	Advantages and disadvantages	
	Advantages	Disadvantages
A	Monitoring the status of the system log file is not required.	<ul style="list-style-type: none"> The embedded database can be restored only up to the time when it was backed up. The JP1/AJS3 service must be stopped during the backup.

No.#		Advantages and disadvantages	
		Advantages	Disadvantages
B	Common	Monitoring the status of the system log file is not required.	<ul style="list-style-type: none"> The operating status of the automatic log unload functionality must be monitored. An unload log file creation directory must be created.
	B-1	If an error occurs in the system log file, the embedded database can be restored by using the backup data only.	<ul style="list-style-type: none"> The embedded database can be restored only up to the time when the database was backed up. The JP1/AJS3 service must be stopped during the backup.
	B-2	<ul style="list-style-type: none"> If an error occurs in the system log file, the embedded database can be restored by using the backup data only. The embedded database can be restored to the latest state in which updates made after the backup are reflected. 	The JP1/AJS3 service must be stopped during the backup.
	B-3	<ul style="list-style-type: none"> The JP1/AJS3 service need not be stopped during the backup. The embedded database can be restored to the latest state, which includes updates made after the backup. 	If the unload log file is lost, the embedded database cannot be recovered by using the backup data only.

#

The numbers in this table correspond to the numbers in *Table C-3*.

For details about the backup and how to restore the database from the backup data only, see the following:

- *5.4.1(1) Restoring the scheduler database from unload log files in the Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*
- *5.4.1(2) Restoring the scheduler database without using the system log in the Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*

When using a method you have selected in *Table C-3*, you need to use the following commands to set up the environment for the embedded database, back up the embedded database, and restore the embedded database from the backup data only:

- `ajsembdbbuild` command (sets up the embedded database environment)

- `ajsembdbbackup` command (backs up the embedded database)
- `ajsembdbrstr` command (restores the embedded database from the backup data only)

The following table shows the options required when you execute these commands.

Table C-5: Specifiable command options

No.#	Duplicating system files	Options related to the restoration method and use of system log data		
		<code>ajsembdbbuild</code> (-bs, -br, -bl)	<code>ajsembdbbackup</code> (-s)	<code>ajsembdbrstr</code> (-ld, -l)
A	Not available	Not available	Not available	Not available
B		-bs -bl	Not available	Not available
B-1				-ld or -l
B-2			-s	-ld or -l
B-3				
A	Available	--	--	--
B		-br -bl	Not available	Not available
B-1				-ld or -l
B-2			-s	-ld or -l
B-3				

Legend

--: Not applicable.

#:

The numbers in this table correspond to the numbers in *Table C-3*.

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

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

(c) environment setting parameter

The advanced setup of an embedded database requires that you set the environment setting parameters associated with the scheduler service. Consider the environment setting parameters that you need to set.

For details on 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.

The following is an example of defining the environment setting parameters for the scheduler service AJSROOT2:

```
[JP1_DEFAULT\JP1AJSMANAGER\AJSROOT2]
"AUTOSTART"="yes"
"AJSSERVICEID"=dword:00000002
"AJSCHARCODE"="SJIS"
"AJSTMPDIR"="C:\Program Files\HITACHI\JP1AJS2\tmp\schedule2"
"JOBINFDIR"="C:\Program Files\HITACHI\JP1AJS2\jobinf2"
"AJSBKURoot"="C:\Program
Files\HITACHI\JP1AJS2\backup\schedule2"
"HNTRLOGLEVEL"="error"
"AJSSYSLOG"="none"
"NETSYSLOG"="none"
"JOBSYSLOG"="none"
"LOGINFOALL"="yes"
"INFOLOG"="all"
"LOGHEADER"="PID"
"AJSLOG"="all"
"NETLOG"="all"
"JOBLOG"="all"
"OPELOG"="all"
"REFLOG"="all"
"STARTMODE"="warm"
"OVERSCHEDULE"="exec"
"SUPPRESS"="none"
"EXECDEFER"="oneday"
"UNITDEFINERELoad"="yes"
"JOBSTATUSPORT"="jplajs2report2"
"LOGSIZE"=dword:00002800
"AJSLOGFILE1"="C:\Program
Files\HITACHI\JP1AJS2\log\schedule\AJSROOT2\ajs-log1.log"
"AJSLOGFILE2"="C:\Program
Files\HITACHI\JP1AJS2\log\schedule\AJSROOT2\ajs-log2.log"
"AJSLOGOUTPUTEXTEND"="no"
"SESSIONTIMEOUT"=dword:00000078
"SYSLOGCODE"="C"
"NONRELOADHOLDING"="yes"
"AJSPRINTNETSCHPRF"="no"
"BACKGROUNDLEAVE"="yes"
"AJSSYSDIR"="C:\Program
Files\HITACHI\JP1AJS2\sys\schedule\AJSROOT2"
"AJSLOGDIR"="C:\Program
Files\HITACHI\JP1AJS2\log\schedule\AJSROOT2"
"RJCUSE"="yes"
```

```
"SAVEGENTYPE"="TOTAL"  
"AJSDBDIRECTOR"="C:\Program  
Files\HITACHI\JP1AJS2\database\schedule\AJSROOT2"  
"RDBCHECKINTERVAL"=dword:0000012C  
"RDBCONNECTWAITTIME"=dword:00000001
```

C.2 Setting up an embedded database

This appendix describes the procedures for installing an embedded database, setting up the environment for operating the embedded database, and setting up the embedded database.

(1) Tasks required before installing the embedded database

This subsection describes the work that is required before you install the embedded database.

Note on the embedded database:

External client software cannot connect to the embedded database.

(a) For Windows

■ Checking free space on the target disk

Check whether the free space on the target disk is sufficient before you install the embedded database. The embedded database requires about 240 MB of free disk space.

■ Checking the size of virtual memory

For virtual memory, you must set the same value (fixed value) for the initial size and the maximum size so that a continuous area is created on the same drive. If you cannot allocate a continuous area for virtual memory, the embedded database ends abnormally due to insufficient memory.

To check the size of virtual memory:

1. In the Windows **Start** menu, choose **Control Panel**, and then double-click **System**.

The System Properties dialog box appears.

2. Click the **Advanced** tab.
3. Click the **Settings** button of **Performance**.

The Performance Options window appears.

4. Click the **Advanced** tab.
5. Click the **Change** button of **Virtual memory**.

The following shows the required virtual memory size. To determine the size you actually specify, add the size required by Windows and other programs. If you change

the size of the virtual memory, you must restart Windows.

Paging file size = 130 MB

Cautionary note:

The size may increase depending on the number of JP1/AJS3 - Views that are connected or the number of scheduler services that are set.

■ Checking the file system

If you install the embedded database on an NTFS file system, do not compress the files under the embedded database practical directory. If you compress this directory, the embedded database will not operate correctly.

(b) For UNIX

■ Checking and changing kernel parameters

You need to estimate the required size for the message queue and semaphores used by the embedded database, and change the kernel parameters accordingly. For details about estimating operating system parameters, see *3.2.5 Estimating the values for kernel parameters* in the *Job Management Partner 1/Automatic Job Management System 3 System Design (Configuration) Guide*.

(2) Installing an embedded database

If you want to use an embedded database as the JP1/AJS3 - Manager scheduler database, execute the following command:

```
ajsembdbinstl
```

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

Notes on installation:

- Before you execute the `ajsembdbinstl` command, make sure that you are a member of the Administrators group. If a user who is not a member of the Administrators group attempts to execute the command, an error message appears and installation is canceled.
- Do not install an embedded database on a network drive.
- When an embedded database is installed, the `tmp` folder is created immediately under the installation drive. Do not delete this folder. It is used by the embedded database.
- In a Windows environment, the embedded database uses ASCII encoding.

(3) **Setting up the embedded database environment**

To set up an embedded database environment:

1. Stop all the services.

Stop all the services that access the scheduler database. Such services include the JP1/AJS3, and JP1/AJS3 Console Agent services on the physical host and all logical hosts.

2. In UNIX, delete the environment setting information from the shared memory.

Use the `ajsshmdel` command to delete the environment setting information in the shared memory.

```
ajsshmdel >/dev/null 2>&1
```

3. Execute commands to set up the embedded database environment.

Use the `ajsembdbbbuild` command to set up the embedded database environment.

When executed, the `ajsembdbbbuild` command performs the following operations:

- Creates the definition information for the embedded database.
- Creates an area for the embedded database.
- Starts the embedded database system.

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

The following shows examples of specifying the `ajsembdbbbuild` command when a large-scale embedded database environment is set up. The examples also provide the combination of item numbers shown in *Table C-2* and *Table C-3*.

Supplementary note:

If the system files are duplicated and the system log is not used (combination 2-A, 4-A, 6-A, 8-A, 10-A or 12-A in *Table C-2* and *Table C-3*), the environment cannot be set up.

Cautionary notes:

- Register the name of the host on which the embedded database environment is set up in the `hosts` file or DNS.
- If you register the name of the host on which the embedded database

environment is created in the `jp1hosts` definition file, the host name does not take effect as the host name used for the embedded database.

- Do not use aliases for the name of the host on which the embedded database environment is set up.
- The maximum size of the name of the host on which the embedded database can operate is 32 bytes. Therefore, specify the name of the physical host on which the embedded database can be set up in the range from 1 to 32 bytes.

(a) For Windows

The specification examples in this subsection assume that the following values are set. Create the following directories before executing the `ajsembdbbuild` command:

- Data area creation directory: `d:\EmbDB\RDArea`
- System file area creation directory 1: `e:\EmbDB\SYSArea1`
- System file area creation directory 2: `f:\EmbDB\SYSArea2`
- Unload log file creation directory: `g:\EmbDB\Unload_Log`
- Embedded database installation directory: `c:\Program Files\Hitachi\JP1AJS2\embdb_JF3`
- Port number of the embedded database : 22223
- Embedded database setup identifier: `_JF3`

- If the system files are not duplicated and the system log is not used (combination 9-A in *Table C-2* and *Table C-3*):

```
ajsembdbbuild -l
-d "d:\EmbDB\RDArea,e:\EmbDB\SYSArea1"
-i "c:\Program Files\Hitachi\JP1AJS2\embdb\_JF3"
-id _JF3 -p 22223
```

- If the system files are not duplicated and unloading is used (combination 9-B in *Table C-2* and *Table C-3*):

```
ajsembdbbuild -l
-d "d:\EmbDB\RDArea,e:\EmbDB\SYSArea1" -bs
-bl g:\EmbDB\Unload_Log -i "c:\Program
Files\Hitachi\JP1AJS2\embdb\_JF3"
-id _JF3 -p 22223
```

- If the system files are duplicated and unloading is used (combination 10-B in

Table C-2 and Table C-3):

```
ajsembdbbuild -l
-d "d:\EmbDB\RDArea,e:\EmbDB\SYSArea1,f:\EmbDB\SYSArea2"
-br -bl g:\EmbDB\Unload_Log
-i "c:\Program Files\Hitachi\JP1AJS2\embdb\_JF3"
-id _JF3 -p 22223
```

(b) For UNIX

The specification examples in this subsection assume that the following values are set. Create the following directories before executing the `ajsembdbbuild` command:

- Unload log file creation directory: `/Unload_Log_JF3`
- Embedded database work area directory: `/WorkArea_JF3`
- Embedded database practical directory: `/opt/jp1ajs2/embdb/_JF3`
- Port number of the embedded database : 22223
- Embedded database setup identifier: `_JF3`

The following table shows the data area creation directory and system file area creation directory that are used in the specification example.

Type of area	Type of file	
	Normal file	RAW file
Data area creation directory	<code>/RDArea_JF3</code>	<code>/dev/rdb_JF3</code>
System file area creation directory 1	<code>/SYSArea1_JF3</code>	<code>/dev/rsys1_JF3</code>
System file area creation directory 2	<code>/SYSArea2_JF3</code>	<code>/dev/rsys2_JF3</code>

- If the system files are not duplicated and the system log is not used

Creating the data area and system file area in a normal file(combination 9-A in *Table C-2 and Table C-3):*

```
ajsembdbbuild -l -d "/RDArea_JF3,/SYSArea1_JF3"
-i /opt/jp1ajs2/embdb/_JF3 -id _JF3 -p 22223
```

Creating the data area and system file area in a RAW file(combination 11-A in *Table C-2 and Table C-3):*

```
ajsembdbbuild -l
```

```
-a "ajssys01=/dev/rdb_JF3,ajssys11=/dev/rsys1_JF3"
-d /WorkArea_JF3
-i /opt/jp1ajs2/embdb/_JF3 -id _JF3 -p 22223
```

- If the system files are not duplicated and unloading is used

Creating the data area and system file area in a normal file(combination 9-B in *Table C-2* and *Table C-3*):

```
ajsembdbbuild -l
-d "/RDArea_JF3,/SYSArea1_JF3" -bs -bl /Unload_Log_JF3
-i opt/jp1ajs2/embdb/_JF3 -id _JF3 -p 22223
```

Creating the data area and system file area in a RAW file(combination 11-B in *Table C-2* and *Table C-3*):

```
ajsembdbbuild -l
-a "ajssys01=/dev/rdb_JF3,ajssys11=/dev/rsys1_JF3"
-d /WorkArea_JF3
-bs -bl /Unload_Log_JF3 -i /opt/jp1ajs2/embdb/_JF3
-id _JF3 -p 22223
```

- If the system files are duplicated and unloading is used

Creating the data area and system file area in a normal file(combination 10-B in *Table C-2* and *Table C-3*):

```
ajsembdbbuild -l
-d "/RDArea_JF3,/SYSArea1_JF3,/SYSArea2_JF3"
-br -bl /Unload_Log_JF3 -i /opt/jp1ajs2/embdb/_JF3
-id _JF3 -p 22223
```

Creating the data area and system file area in a RAW file(combination 12-B in *Table C-2* and *Table C-3*):

```
ajsembdbbuild -l
-a "ajssys01=/dev/rdb_JF3,ajssys11=/dev/rsys1_JF3,
ajssys17=/dev/rsys2_JF3" -d /WorkArea_JF3
-br -bl /Unload_Log_JF3 -i /opt/jp1ajs2/embdb/_JF3
-id _JF3 -p 22223
```

(4) Environment setting parameter settings

Set the environment setting parameters for the scheduler service, as considered in

C.1(2)(c) environment setting parameter.

Also, create the directories you specified in the environment setting parameters.

For details on setting the environment setting parameters, see *4.2 Environment setting parameter settings* (for Windows) or *13.2 Environment setting parameter settings* (for UNIX).

(5) Setting up the scheduler database in an embedded database environment

The `ajsembddbsetup` command can be used to set up the contents of a scheduler database in an embedded database environment.

When executed, the `ajsembddbsetup` command performs the following operations:

- Sets the database information of the embedded database (schema and table).
- Sets the JP1/AJS3 environment setting parameter.

An example of executing the `ajsembddbsetup` command in a large-scale embedded database environment is shown below. This example assumes that the following values are set:

- Scheduler service name: AJSROOT2
- Port number of the embedded database : 22223
- Embedded database setup identifier: _JF3

```
ajsembddbsetup -F AJSROOT2 -ru -l -id _JF3 -p 22223
```

Supplementary note:

When the `ajsembddbsetup` command is executed, the environment setting parameters listed in the following table are set. Do not change the values of the environment setting parameters listed in the table. For details about the parameters, see *2.2 Setting up the scheduler service environment* in the *Job Management Partner 1/Automatic Job Management System 3 Configuration Guide 2*.

Table C-6: Environment setting parameters specified when the `ajsembddbsetup` command is executed

Environment setting parameter	Definition	Setting specified by the <code>ajsembddbsetup</code> command [#]
AJSDBTYPE	Type of database	EmbedDB

Environment setting parameter	Definition	Setting specified by the ajsembdbsetup command [#]
TABLERNAMEPREFIX	Table name prefix	Either of the following: <ul style="list-style-type: none"> -tp option specification value AJS1
TABLERNAMEPOSTFIX	Table ID	--
RDBAUTHID	RDB permission identifier	root
RDBUSER	RDB access user name	ajs2
RDBPASSWORD	RDB user password	--
RDBHOST	Name of the host at the RDB connection destination	One of the following: <ul style="list-style-type: none"> Physical host name -mh option specification value Setting of the JP1_HOSTNAME environment variable.
RDBPORT	RDB connection port number	Either of the following: <ul style="list-style-type: none"> -p option specification value 22220
RDBIPC	Method for communication with RDB server	MEMORY
RDBSENDMEMSIZE	Send-data memory size for RDB interprocess memory communication	Either of the following: <ul style="list-style-type: none"> -s option specification value 100
RDBRECVMEMSIZE	Receive-data memory size for RDB interprocess memory communication	Either of the following: <ul style="list-style-type: none"> -r option specification value 1600

#:

Settings that are numeric values use decimal numbers.

(6) Setting up multiple scheduler databases in one or more embedded database environments

The following describes how to set up multiple scheduler databases in one or more embedded databases.

(a) Setting up a different embedded database environment for each scheduler service

To set up a different embedded database environment for each scheduler service when multiple scheduler services are defined, separately prepare the areas listed below.

Prepare the system file area, the embedded database work area, and, if necessary, the unload log creation directory:

- Embedded database practical directory
- Data area
- System file area
- Embedded database work area
- Unload log file creation directory

If you set up multiple embedded database environments, specify port numbers and embedded database setup identifiers that are different from those for other embedded databases. That is, when executing the `ajsembdbbuild` or `ajsembdbsetup` command, you must specify a unique port number for each embedded database in the `-p` option. Similarly, when executing the `ajsembdbinstl`, `ajsembdbbuild`, or `ajsembdbsetup` command, you must specify a unique embedded database setup identifier for each embedded database in the `-id` option.

An example for setup is shown below.

This example assumes that the environment described in *C.2(3) Setting up the embedded database environment* and *C.2(4) Environment setting parameter settings* is already set up.

■ For Windows

Environment for the embedded database:

- Data area creation directory: `h:\EmbDB\RDArea`
- System file area creation directory 1: `i:\EmbDB\SYSArea1`
- System file area creation directory 2: `j:\EmbDB\SYSArea2`
- Unload log file creation directory: `k:\EmbDB\Unload_Log`
- Embedded database installation directory: `c:\Program Files\Hitachi\JP1AJS2\embdb_JF5`
- Scheduler service name: `AJSROOT2`
- Port number of the embedded database: `22224`
- Embedded database setup identifier: `_JF5`

Specification of the `ajsembdbinstl` command:

```
ajsembdbinstl -s "c:\Program
Files\Hitachi\JP1AJS2\tools\AJS3DB"
-i "c:\Program Files\Hitachi\JP1AJS2\embdb\_JF5"
-id _JF5
```

Specification of the ajsembdbbuild command:

```
ajsembdbbuild -l
-d "h:\EmbDB\RDArea,i:\EmbDB\SYSArea1,
j:\EmbDB\SYSArea2" -br -bl k:\EmbDB\Unload_Log
-i "c:\Program Files\Hitachi\JP1AJS2\embdb\_JF5"
-p 22224 -id _JF5
```

Specification of the ajsembdbsetup command:

```
ajsembdbsetup -F AJSROOT2 -ru l -id _JF5 -p 22224
```

■ For UNIX

Environment of the embedded database:

- Data area creation directory: /RDArea_JF5
- System file area creation directory 1: /SYSArea1_JF5
- System file area creation directory 2: /SYSArea2_JF5
- Unload log file creation directory: /Unload_Log_JF5
- Embedded database practical directory: /opt/jp1ajs2/embdb/_JF5
- Scheduler service name: AJSROOT2
- Embedded database port number: 22224
- Embedded database setup identifier: _JF5

Specification of the ajsembdbinstl command:

```
ajsembdbinstl -s /opt/jp1ajs2/tools/AJS3DB
-i /opt/jp1ajs2/embdb/_JF5 -id _JF5
```

Specification of the ajsembdbbuild command:

```
ajsembdbbuild -l
-d "/RDArea_JF5,/SYSArea1_JF5,/SYSArea2_JF5"
-br -bl /Unload_Log_JF5 -i :/opt/jp1ajs2/embdb/_JF5
-p 22224 -id _JF5
```

Specification of the ajsembdbsetup command:

```
ajsembdbsetup -F AJSROOT2 -ru l -id _JF5 -p 22224
```

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

(b) Setting up multiple scheduler databases in one embedded database environment

If you want to set up multiple scheduler databases in one embedded database environment, you must create and manage a different table for each scheduler service in the embedded database. To do this, you must change the table name prefix specified when you execute the `ajsembdbsetup` command.

The following shows an example of specifying the `ajsembdbsetup` command when setting up the second scheduler database in an embedded database environment.

- Scheduler service name: `AJSROOT3`
- Table name prefix: `AJS3`
- Embedded database setup identifier: `_JF0`

```
ajsembdbsetup -F AJSROOT3 -tp AJS3 -ru 1 -id _JF0
```

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

Cautionary notes:

- In an embedded database environment in which multiple scheduler databases have been set up, you cannot reorganize just one scheduler database. In this environment, you need to reorganize all the scheduler databases that have been set up. If you want to reorganize only one scheduler database, you must prepare an embedded database environment for each scheduler service. For details, see *(a) Setting up a different embedded database environment for each scheduler service*.
- In an embedded database environment in which multiple scheduler databases have been set up, you cannot use the `ajsembdbbackup` command to back up just one scheduler database. The `ajsembdbbackup` command can only back up all the scheduler databases set up in an embedded database environment. If a backup created by using the `ajsembdbbackup` command is used for restoration, all the scheduler databases are restored. Therefore, when you use the `ajsembdbbackup` and `ajsembdbstr` commands to perform backup and restore operations, you must stop all the scheduler services that access the relevant embedded database beforehand. If you use

the `ajsprint` command to back up only the unit definition, you can create a backup for each scheduler database without stopping scheduler services.

If you want to use the `ajsembdbbackup` command to back up only one scheduler database, you must prepare an embedded database for each scheduler service. For details, see (a) *Setting up a different embedded database environment for each scheduler service*.

(7) Setting up an embedded database again

To set up an embedded database again:

1. Use the `ajsprint` command to back up the jobnet definitions.
For details about how to perform the backup, see 2.2.2 *Backing up the JP1/AJS3 - Manager setup information* in the *Job Management Partner 1/Automatic Job Management System 3 Administration Guide*.
2. Stop all the services that access the scheduler database. Such services include the JP1/AJS3, and JP1/AJS3 Console Agent services on the physical host and all logical hosts.
3. Use the `ajsembdbunset -e` command to delete the embedded database environment.
4. If you need to change the embedded database practical directory, uninstall the embedded database, and then reinstall it.
5. Use the `ajsembdbbuild` command to create an embedded database.
6. Use the `ajsembdbsetup` command to set up the embedded database.
7. Start the JP1/AJS3 service.
8. Restore the jobnet definition that was backed up in step 1.
See 2.3.3 *Recovering the JP1/AJS3 - Manager setup information* in the *Job Management Partner 1/Automatic Job Management System 3 Administration Guide*.
9. Register the required jobnet for execution.

For details about commands used in the above procedure, see 2. *Commands* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 1* and 2. *Commands Used during Setup* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

Supplementary note:

In a single embedded database environment, if you execute the `ajsembdbunset` command when multiple scheduler databases are set up, information about all the

scheduler databases is deleted. If this happens, perform steps 1, 6, 8, and 9 above for all the scheduler databases set up for the embedded database environment.

(8) Uninstalling an embedded database

For details about uninstalling an embedded database, see *6.1.1(3) Uninstalling an unnecessary database environment*.

D. Advanced Setup for the Embedded Database (in a Cluster Configuration)

This appendix describes how to perform advanced setup for an embedded database when the embedded database is used as the scheduler database in a cluster configuration.

D.1 Preparation for using an embedded database

For details about the preparation for using an embedded database, see *C.1 Preparation for using an embedded database*.

D.2 Setting up an embedded database (on the primary node)

This section describes the procedures for installing an embedded database, setting up the environment for operating the embedded database, and setting up the embedded database on the primary node in a cluster configuration.

(1) Tasks required before installing the embedded database

Review the tasks required before installing the embedded database. For details about these tasks, see *C.2(1) Tasks required before installing the embedded database*.

(2) Installing an embedded database

To install an embedded database, you must perform the procedure described in *C.2(2) Installing an embedded database*. If you plan to install the embedded database on the primary node in a cluster configuration, read the following notes before starting the installation.

Cautionary notes:

- When you install the embedded database, install it on the local disk of the primary node. Specify the same drive name and the same folder name for both the primary and secondary nodes.
- If you create a physical host and multiple logical hosts on the same machine and use different embedded databases, specify unique setup identifiers to avoid duplication conflicts.

Also check the detailed information about installation. For details about installation, see *C.2(2) Installing an embedded database*.

(3) Setting up the embedded database environment

To set up the embedded database environment:

1. Stop services.

Stop all services that access the scheduler database. Such services include the JP1/

AJS3, and JP1/AJS3 Console Agent services on the physical host and all logical hosts.

2. In UNIX, delete the environment setting information from the shared memory.
Use the `ajsshmdel` command to delete the environment setting information in the shared memory.

```
ajsshmdel >/dev/null 2>&1
```

3. Execute a command to set up the embedded database environment.
Use the `ajsembddbbuild` command to set up the embedded database environment.
When executed, the `ajsembddbbuild` command performs the following operations:

- Creates the definition information of the embedded database.
- Creates the embedded database work area.
- Starts the embedded database system.

Specify an area on a shared disk for the data area and system file area specified in the `-d` option of the `ajsembddbbuild` command. Specify an area on the local disk for the embedded database work area specified in the `-ld` option.

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

The following shows examples of specifying the `ajsembddbbuild` command when a large-scale embedded database environment is set up. The examples also provide the combination of item numbers shown in *Table C-2* and *Table C-3*.

Supplementary note:

You cannot set up an environment that duplexes the system file, but does not use the system log (the combination of items in *Table C-2* and *Table C-3* is 14-A, 16-A, 18-A, 20-A, 22-A, or 24-A).

Cautionary notes:

- In the `hosts` file or in the DNS, you must register the names of both the primary node physical and logical hosts on which an embedded database environment is set up.
- A host name registered in the `jplhosts` definition file cannot be used as the name of a host on which an embedded database environment will be set up.

- Do not use an alias for the name of a host on which an embedded database environment will be set up.
- The maximum length of the name of a host on which an embedded database can operate is 32 bytes. Therefore, make sure that the name of a primary node physical or logical host on which an embedded database is set up is 1 to 32 bytes.

(a) For Windows

The specification examples in this subsection assume that the following values are set. Create the following directories before executing the `ajsembdbbuild` command:

- Data area creation directory: `l:\EmbDB\RDArea`
- System file area creation directory 1: `m:\EmbDB\SYSArea1`
- System file area creation directory 2: `n:\EmbDB\SYSArea2`
- Unload log file creation directory: `o:\EmbDB\Unload_Log`
- Embedded database work area directory: `p:\EmbDB\WorkArea`
- Embedded database installation directory: `c:\Program Files\Hitachi\JP1AJS2\embdb_JFA`
- Scheduler service name: `AJSROOT4`
- Embedded database port number: `22230`
- Embedded database setup identifier: `_JFA`
- Physical host name of the primary node: `physical_host`
- Logical host name: `logical_host`

- If the system files are not duplicated and the system log is not used (combination 21-A in *Table C-2* and *Table C-3*):

```
ajsembdbbuild -l
-d "l:\EmbDB\RDArea,m:\EmbDB\SYSArea1"
-ld p:\EmbDB\WorkArea
-i "c:\Program Files\Hitachi\JP1AJS2\embdb\_JFA" -p 22230
-id _JFA -r -mh logical_host -eh physical_host
```

- If the system files are not duplicated and unloading is used (combination 21-B in *Table C-2* and *Table C-3*):

```
ajsembdbbuild -l
-d "l:\EmbDB\RDArea,m:\EmbDB\SYSArea1"
```

D. Advanced Setup for the Embedded Database (in a Cluster Configuration)

```
-ld p:\EmbDB\WorkArea -bs -bl o:\EmbDB\Unload_Log
-i "c:\Program Files\Hitachi\JP1AJS2\embdb\_JFA"
-p 22230 -id _JFA
-r -mh logical_host -eh physical_host
```

- If the system files are duplicated and unloading is used (combination 22-B in *Table C-2* and *Table C-3*):

```
ajsembdbbuild -l
-d "l:\EmbDB\RDArea,m:\EmbDB\SYSArea1,n:\EmbDB\SYSArea2"
-ld p:\EmbDB\WorkArea -br -bl o:\EmbDB\Unload_Log
-i "c:\Program Files\Hitachi\JP1AJS2\embdb\_JFA"
-p 22230 -id _JFA
-r -mh logical_host -eh physical_host
```

(b) For UNIX

The specification examples in this subsection assume that the following values are set. Create the following directories before executing the `ajsembdbbuild` command:

- Unload log file creation directory: /Unload_Log_JFA
- Embedded database work area directory: /WorkArea_JFA
- Embedded database practical directory: /opt/jp1ajs2/embdb/_JFA
- Scheduler service name: AJSROOT4
- Embedded database port number: 22230
- Embedded database setup identifier: _JFA
- Physical host name of the primary node: physical_host
- Logical host name: logical_host

The following table shows the data area creation directory and system file area creation directory that are used in the specification example.

Type of area	Type of file	
	Normal file	RAW file
Data area creation directory	/share1/RDArea_JFA	/dev/vgshare1/rdb_JFA
System file area creation directory 1	/share2/SYSArea_JFA	/dev/vgshare2/rsys_JFA
System file area creation directory 2	/share3/SYSArea_JFA	/dev/vgshare3/rsys_JFA

- If the system files are not duplicated and the system log is not used

Creating the data area and system file area in a normal file(combination 21-A in *Table C-2* and *Table C-3*):

```
ajsembdbbuild -l
-d "/share1/RDArea_JFA,/share2/SYSArea_JFA"
-ld /WorkArea_JFA -i /opt/jp1ajs2/embdb/_JFA -p 22230
-id _JFA -r -mh logical_host -eh physical_host
```

Creating the data area and system file area in a RAW file(combination 23-A in *Table C-2* and *Table C-3*):

```
ajsembdbbuild -l
-a "ajsssys01=/dev/vgshare1/rdb_JFA,
ajsssys11=/dev/vgshare2/rsys_JFA"
-ld /WorkArea_JFA -i /opt/jp1ajs2/embdb/_JFA -p 22230
-id _JFA -r -mh logical_host -eh physical_host
```

- If the system files are not duplicated and unloading is used

Creating the data area and system file area in a normal file(combination 21-B in *Table C-2* and *Table C-3*):

```
ajsembdbbuild -l
-d "/share1/RDArea_JFA,/share2/SYSArea_JFA"
-ld /WorkArea_JFA -bs -bl /Unload_Log_JFA
-i /opt/jp1ajs2/embdb/_JFA -p 22230 -id _JFA
-r -mh logical_host -eh physical_host
```

Creating the data area and system file area in a RAW file(combination 23-B in *Table C-2* and *Table C-3*):

```
ajsembdbbuild -l
-a "ajsssys01=/dev/vgshare1/rdb_JFA,
ajsssys11=/dev/vgshare2/rsys_JFA"
-ld /WorkArea_JFA -bs -bl /Unload_Log_JFA
-i /opt/jp1ajs2/embdb/_JFA -p 22230 -id _JFA
-r -mh logical_host -eh physical_host
```

- If the system files are duplicated and unloading is used

Creating the data area and system file area in a normal file(combination 22-B in

Table C-2 and Table C-3):

```
ajsembdbbuild -l  
-d "/share1/RDArea_JFA,/share2/SYSArea_JFA,  
/share3/SYSArea_JFA" -ld /WorkArea_JFA -br  
-bl /Unload_Log_JFA -i /opt/jp1ajs2/embdb/_JFA  
-p 22230 -id _JFA  
-r -mh logical_host -eh physical_host
```

Creating the data area and system file area in a RAW file(combination 24-B in *Table C-2 and Table C-3):*

```
ajsembdbbuild -l  
-a "ajssys01=/dev/vgshare1/rdb_JFA,  
ajssys11=/dev/vgshare2/rsys_JFA,  
ajssys17=/dev/vgshare3/rsys_JFA" -ld /WorkArea_JFA -br  
-bl /Unload_Log_JFA -i /opt/jp1ajs2/embdb/_JFA -p 22230  
-id _JFA -r -mh logical_host -eh physical_host
```

(4) Environment setting parameter settings

Set the environment setting parameters for the scheduler service, as considered in *C.1(2)(c) environment setting parameter*.

Also, create the directories you specified in the environment setting parameters.

If you create an environment by specifying the `-s` option in the `jajs_setup_cluster` command, you do not need to specify the settings in this subsection.

For details on setting the environment setting parameters, see *4.2 Environment setting parameter settings* (for Windows) or *13.2 Environment setting parameter settings* (for UNIX).

(5) Setting up the scheduler database in an embedded database environment

The `ajsembdbsetup` command can be used to set up the contents of a scheduler database in an embedded database environment. Before you start setup by executing the `ajsembdbsetup` command, make sure that the scheduler service is set up in the logical host environment.

When executed, the `ajsembdbsetup` command performs the following operations:

- Sets the database information of the embedded database (schema and table).
- Sets the JP1/AJS3 environment setting parameter.

An example of executing the `ajsembdbsetup` command in a large-scale embedded database environment is shown below. This example assumes that the following

values are set:

- Scheduler service name: AJSROOT4
- Port number of the embedded database : 22230
- Embedded database setup identifier: _JFA
- Logical host name: logical_host

```
ajsembdbsetup -F AJSROOT4 -ru -l -id _JFA
-mh logical_host -p 22230
```

Supplementary note:

When the `ajsembdbsetup` command is executed, the environment setting parameters listed in the following table are set. Do not change the values set for these environment setting parameters. For details about the parameters, see 2.2 *Setting up the scheduler service environment* in the *Job Management Partner 1/ Automatic Job Management System 3 Configuration Guide 2*.

Table D-1: Environment setting parameters specified when the `ajsembdbsetup` command is executed

Environment setting parameter	Definition	Setting specified by the <code>ajsembdbsetup</code> command [#]
AJSDBTYPE	Type of database	EmbedDB
TABLENAMEPREFIX	Table name prefix	Either of the following: <ul style="list-style-type: none"> • <code>-tp</code> option specification value • AJS1
TABLENAMEPOSTFIX	Table ID	--
RDBAUTHID	RDB permission identifier	root
RDBUSER	RDB access user name	ajs2
RDBPASSWORD	RDB user password	--
RDBHOST	Name of the host at the RDB connection destination	Either of the following: <ul style="list-style-type: none"> • <code>-mh</code> option specification value • Setting of the <code>JP1_HOSTNAME</code> environment variable.
RDBPORT	RDB connection port number	Either of the following: <ul style="list-style-type: none"> • <code>-p</code> option specification value • 22220

Environment setting parameter	Definition	Setting specified by the ajsembdbsetup command [#]
RDBIPC	Method for communication with RDB server	MEMORY
RDBSENDMEMSIZE	Send-data memory size for RDB interprocess memory communication	Either of the following: <ul style="list-style-type: none"> • -s option specification value • 100
RDBRECVMEMSIZE	Receive-data memory size for RDB interprocess memory communication	Either of the following: <ul style="list-style-type: none"> • -r option specification value • 1600

#:

Settings that are numeric values use decimal numbers.

(6) Setting up multiple scheduler databases in one or more embedded database environments

The following describes how to set up multiple scheduler databases in one or more embedded databases.

(a) Setting up a different embedded database environment for each scheduler service

To set up a different embedded database environment for each scheduler service when multiple scheduler services are defined, prepare the following areas separately.

- Embedded database practical directory
- Data area
- System file area
- Embedded database work area
- Unload log file creation directory

Prepare the system file area and unload log file creation directory if these are necessary. For the data area and system file area, specify areas on a shared disk.

When you set up the embedded database environment, specify a port number and a setup identifier for the embedded database so that there are no duplication conflicts with other databases. That is, when executing the `ajsembdbbuild` or `ajsembdbsetup` command, you must specify a unique port number for each embedded database in the `-p` option. Similarly, when executing the `ajsembdbinstl`, `ajsembdbbuild`, or `ajsembdbsetup` command, you must specify a unique embedded database setup identifier for each embedded database in the `-id` option.

A setup example is shown below.

This example assumes that the environment described in *D.2(3) Setting up the embedded database environment* and *D.2(4) Environment setting parameter settings* is already set up.

■ For Windows

Environment for the embedded database:

The following are the details of the environment for the embedded database to be added:

- Data area creation directory: q:\EmbDB\RDArea
- System file area creation directory 1: r:\EmbDB\SYSArea1
- System file area creation directory 2: s:\EmbDB\SYSArea2
- Unload log file creation directory: t:\EmbDB\Unload_Log
- Embedded database work area directory: u:\EmbDB\WorkArea
- Embedded database installation directory: c:\Program Files\Hitachi\JP1AJS2\embdb_JFB
- Scheduler service name: AJSROOT5
- Port number of the embedded database: 22231
- Embedded database setup identifier: _JFB
- Name of the primary node physical host: physical_host
- Logical host name: logical_host

Specification of the ajsembdbinstl command:

```
ajsembdbinstl -mh logical_host
-s "c:\Program Files\Hitachi\JP1AJS2\tools\AJS3DB"
-i "c:\Program Files\Hitachi\JP1AJS2\embdb\_JFB" -id _JFB
```

Specification of the ajsembdbbuild command:

```
ajsembdbbuild -l
-d "q:\EmbDB\RDArea,r:\EmbDB\SYSArea1,s:\EmbDB\SYSArea2"
-ld u:\EmbDB\WorkArea -br -bl t:\EmbDB\Unload_Log
-i "c:\Program Files\Hitachi\JP1AJS2\embdb\_JFB"
-p 22231 -id _JFB -r -mh logical_host -eh physical_host
```

Specification of the ajsembdbsetup command:

```
ajsembdbsetup -F AJSROOT5 -ru l -id _JFB -p 22231
```

```
-mh logical_host
```

■ For UNIX

Environment for the embedded database:

The following are the details of the environment for the embedded database to be added:

- Data area creation directory: /share4/RDArea_JFB
- System file area creation directory 1:/share5/SYSArea_JFB
- System file area creation directory 2:/share6/SYSArea_JFB
- Unload log file creation directory: /Unload_Log_JFB
- Embedded database work area directory: /WorkArea_JFB
- Embedded database practical directory: /opt/jp1ajs2/embdb/_JFB
- Scheduler service name: AJSROOT5
- Port number of the embedded database: 22231
- Embedded database setup identifier: _JFB
- Name of the primary node physical host: physical_host
- Logical host name: logical_host

Specification of the ajsembdbinstl command:

```
ajsembdbinstl -mh logical_host -s /opt/jp1ajs2/tools/AJS3DB  
-i /opt/jp1ajs2/embdb/_JFB -id _JFB
```

Specification of the ajsembdbbuild command:

```
ajsembdbbuild -l  
-d "/share4/RDArea_JFB,/share5/SYSArea_JFB,  
/share6/SYSArea_JFB" -ld /WorkArea_JFB -br  
-bl /Unload_Log_JFB -i /opt/jp1ajs2/embdb/_JFB  
-p 22231 -id _JFB -r -mh logical_host -eh physical_host
```

Specification of the ajsembdbsetup command:

```
ajsembdbsetup -F AJSROOT5 -ru 1 -id _JFB  
-p 22231 -mh logical_host
```


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

(b) Setting up multiple scheduler databases in one embedded database environment

If you want to set up multiple scheduler databases in one embedded database environment, you must create and manage a different table for each scheduler service in the embedded database. To do this, you must change the table name prefix specified when you execute the `ajsembdbsetup` command.

The following shows an example of specifying the `ajsembdbsetup` command when setting up the second scheduler database in an embedded database environment. Note that the example assumes that the following settings are specified:

- Scheduler service name: `AJSROOT6`
- Table name prefix: `AJS2`
- Port number of the embedded database : `22230`
- Embedded database setup identifier: `_JFA`
- Logical host name: `logical_host`

```
ajsembdbsetup -F AJSROOT6 -tp AJS2 -ru 1
-id _JFA -mh logical_host -p 22230
```

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

Cautionary notes:

- In an embedded database environment in which multiple scheduler databases are set up, you cannot reorganize just one scheduler database. In this environment, you need to reorganize all the scheduler databases that have been set up. If you want to reorganize only one scheduler database, you must prepare an embedded database environment for each scheduler service. For details, see (a) *Setting up a different embedded database environment for each scheduler service*.
- In an embedded database environment in which multiple scheduler databases are set up, you cannot use the `ajsembdbbackup` command to back up only one scheduler database. The `ajsembdbbackup` command can only back up all the scheduler databases set up in an embedded database environment. If a backup created by using the `ajsembdbbackup` command is used for restoration, all the scheduler databases are restored. Therefore, when you use

the `ajsembddbbackup` and `ajsembdbrstr` commands to perform backup and restore operations, you must stop all the scheduler services that access the relevant embedded database beforehand.

If you use the `ajsprint` command to back up only the unit definition, you can create a backup for each scheduler database without stopping scheduler services.

If you want to use the `ajsembddbbackup` command to back up only one scheduler database, you must prepare an embedded database for each scheduler service. For details, see *(a) Setting up a different embedded database environment for each scheduler service*.

- You cannot set up both the scheduler database for the logical host and the scheduler database for the physical host in one environment database environment.

(7) Setting up an embedded database again

For details about setting up the embedded database again, see *C.2(7) Setting up an embedded database again*.

(8) Uninstalling an embedded database

For details about uninstalling an embedded database, see *6.1.1(3) Uninstalling an unnecessary database environment*.

D.3 Setting up an embedded database (on the secondary node)

This section describes the procedures for installing an embedded database, setting up the environment for operating the embedded database, and setting up the embedded database on the secondary node in a cluster configuration.

(1) Tasks required before installing the embedded database

Review the tasks required before installing the embedded database. For details about these tasks, see *C.2(1) Tasks required before installing the embedded database*.

(2) Installing an embedded database

To install an embedded database, you must perform the procedure described in *C.2(2) Installing an embedded database*. If you plan to install the embedded database on the secondary node in a cluster configuration, read the following notes before starting the installation.

Cautionary notes:

- When you install the embedded database, install it on the local disk on the secondary node. Specify the same drive name and folder name for the local disks on the primary and secondary nodes.
- If physical host and multiple logical hosts reside on a single machine and use

different embedded databases, specify unique setup identifiers to avoid duplication conflicts.

Also check the detailed information about installation. For details about installation, see *C.2(2) Installing an embedded database*.

(3) Setting up the embedded database environment

To set up the embedded database environment:

1. Stop services.

Stop all services that access the scheduler database. Such services include the JP1/AJS3, and JP1/AJS3 Console Agent services on the physical host and all logical hosts.

2. In UNIX, delete the environment setting information from the shared memory.

Use the `ajsshmdel` command to delete the environment setting information in the shared memory.

```
ajsshmdel >/dev/null 2>&1
```

3. Execute a command to set up the embedded database environment.

Use the `ajsembdbbbuild` command to set up the embedded database.

When executed, the `ajsembdbbbuild` command performs the following operations:

- Creates the definition information of the embedded database.
- Creates the embedded database work area.

When you execute the `ajsembdbbbuild` command on the secondary node, specify the `-f` option instead of the `-r` option. For other arguments, specify the same settings that you specified for the primary node.

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

The following shows examples of specifying the `ajsembdbbbuild` command when a large-scale embedded database environment is set up. The examples also provide the combination of the item numbers indicated in *Table C-2* and *Table C-3*.

Supplementary note:

You cannot set up an environment that duplexes the system file, but does not use the system log (the combination of items in *Table C-2* and *Table C-3* is 14-A,

16-A, 18-A, 20-A, 22-A, or 24-A).

Cautionary notes:

- In the `hosts` file or in the DNS, you must register the names of both the primary node physical and logical hosts on which an embedded database environment is set up.
- A host name registered in the `jp1hosts` definition file cannot be used as the name of a host on which an embedded database environment will be set up.
- Do not use an alias for the name of a host on which an embedded database environment will be set up.
- The maximum length of the name of a host on which an embedded database can operate is 32 bytes. Therefore, make sure that the name of a primary node physical or logical host on which an embedded database is set up is 1 to 32 bytes.

(a) For Windows

The specification examples in this subsection assume that the following values are set. Create the following directories before executing the `ajsembdbbuild` command:

- Data area creation directory: `l:\EmbDB\RDArea`
- System file area creation directory 1: `m:\EmbDB\SYSArea1`
- System file area creation directory 2: `n:\EmbDB\SYSArea2`
- Unload log file creation directory: `o:\EmbDB\Unload_Log`
- Embedded database work area directory: `p:\EmbDB\WorkArea`
- Embedded database installation directory: `c:\Program Files\Hitachi\JP1AJS2\embdb_JFA`
- Scheduler service name: `AJSROOT4`
- Embedded database port number: `22230`
- Embedded database setup identifier: `_JFA`
- Name of the primary node physical host[#]: `physical_host`
- Logical host name: `logical_host`

#:

When setting up the environment of the embedded database on the secondary node, specify the name of the primary node physical host for the `-eh` option of the `ajsembdbbuild` command.

- If the system files are not duplicated and the system log is not used (combination 21-A in *Table C-2* and *Table C-3*):

```
ajsembdbbuild -l
-d "l:\EmbDB\RDArea,m:\EmbDB\SYSArea1"
-ld p:\EmbDB\WorkArea -i "c:\Program
Files\Hitachi\JP1AJS2\embdb\_JFA"
-p 22230 -id _JFA -f -mh logical_host -eh physical_host
```

- If the system files are not duplicated and unloading is used (combination 21-B in *Table C-2* and *Table C-3*):

```
ajsembdbbuild -l
-d "l:\EmbDB\RDArea,m:\EmbDB\SYSArea1"
-ld p:\EmbDB\WorkArea -bs -bl o:\EmbDB\Unload_Log
-i "c:\Program Files\Hitachi\JP1AJS2\embdb\_JFA"
-p 22230 -id _JFA
-f -mh logical_host -eh physical_host
```

- If the system files are duplicated and unloading is used (combination 22-B in *Table C-2* and *Table C-3*):

```
ajsembdbbuild -l
-d "l:\EmbDB\RDArea,m:\EmbDB\SYSArea1,
n:\EmbDB\SYSArea2" -ld p:\EmbDB\WorkArea -br
-bl o:\EmbDB\Unload_Log
-i "c:\Program Files\Hitachi\JP1AJS2\embdb\_JFA"
-p 22230 -id _JFA -f -mh logical_host -eh physical_host
```

(b) For UNIX

The specification examples in this subsection assume that the following values are set. Create the following directories before executing the `ajsembdbbuild` command:

- Unload log file creation directory: `/Unload_Log_JFA`
- Embedded database work area directory: `/WorkArea_JFA`
- Embedded database installation directory: `/opt/jp1ajs2/embdb/_JFA`
- Scheduler service name: `AJSROOT4`
- Embedded database port number: `22230`
- Embedded database setup identifier: `_JFA`
- Name of the primary node physical host[#]: `physical_host`

- Logical host name: `logical_host`

#:

When setting up the environment of the embedded database on the secondary node, specify the name of the primary node physical host for the `-eh` option of the `ajsembdbbuild` command.

The following table shows the data area creation directory and system file area creation directory that are used in the specification example.

Type of area	Type of file	
	Normal file	RAW file
Data area creation directory	<code>/share1/RDArea_JFA</code>	<code>/dev/vgshare1/rdb_JFA</code>
System file area creation directory 1	<code>/share2/SYSArea_JFA</code>	<code>/dev/vgshare2/rsys_JFA</code>
System file area creation directory 2	<code>/share3/SYSArea_JFA</code>	<code>/dev/vgshare3/rsys_JFA</code>

- If the system files are not duplicated and the system log is not used

Creating the data area and system file area in a normal file(combination 21-A in *Table C-2* and *Table C-3*):

```
ajsembdbbuild -l
-d "/share1/RDArea_JFA,/share2/SYSArea_JFA"
-lid /WorkArea_JFA -i /opt/jplajs2/embdb/_JFA -p 22230
-id _JFA -f -mh logical_host -eh physical_host
```

Creating the data area and system file area in a RAW file(combination 23-A in *Table C-2* and *Table C-3*):

```
ajsembdbbuild -l
-a "ajssys01=/dev/vgshare1/rdb_JFA,
ajssys11=/dev/vgshare2/rsys_JFA"
-lid /WorkArea_JFA -i /opt/jplajs2/embdb/_JFA -p 22230
-id _JFA -f -mh logical_host -eh physical_host
```

- If the system files are not duplicated and unloading is used

Creating the data area and system file area in a normal file(combination 21-B in

Table C-2 and Table C-3):

```
ajsembdbbuild -l
-d "/share1/RDArea_JFA,/share2/SYSArea_JFA"
-ld /WorkArea_JFA -bs -bl /Unload_Log_JFA
-i /opt/jplajs2/embdb/_JFA -p 22230 -id _JFA
-f -mh logical_host -eh physical_host
```

Creating the data area and system file area in a RAW file(combination 23-B in *Table C-2 and Table C-3):*

```
ajsembdbbuild -l
-a "ajssys01=/dev/vgshare1/rdb_JFA,
ajssys11=/dev/vgshare2/rsys_JFA "
-ld /WorkArea_JFA -bs -bl /Unload_Log_JFA
-i /opt/jplajs2/embdb/_JFA -p 22230 -id _JFA -f
-mh logical_host -eh physical_host
```

- If the system files are duplicated and unloading is used

Creating the data area and system file area in a normal file(combination 22-B in *Table C-2 and Table C-3):*

```
ajsembdbbuild -l
-d "/share1/RDArea_JFA,/share2/SYSArea_JFA,
/share3/SYSArea_JFA"
-ld /WorkArea_JFA -br -bl /Unload_Log_JFA
-i /opt/jplajs2/embdb/_JFA -p 22230 -id _JFA -f
-mh logical_host -eh physical_host
```

Creating the data area and system file area in a RAW file(combination 24-B in *Table C-2 and Table C-3):*

```
ajsembdbbuild -l
-a "ajssys01=/dev/vgshare1/rdb_JFA,
ajssys11=/dev/vgshare2/rsys_JFA,
ajssys17=/dev/vgshare3/rsys_JFA" -ld /WorkArea_JFA
-br -bl /Unload_Log_JFA -i /opt/jplajs2/embdb/_JFA
-p 22230 -id _JFA -f -mh logical_host -eh physical_host
```

(4) Environment setting parameter settings

Set the environment setting parameters for the scheduler service, as considered in *C.1(2)(c) environment setting parameter.*

Also, create the directories you specified in the environment setting parameters.

If you create an environment by specifying the `-s` option in the `jajs_setup_cluster` command, you do not need to specify the settings in this subsection.

For details on setting the environment setting parameters, see *4.2 Environment setting parameter settings* (for Windows) or *13.2 Environment setting parameter settings* (for UNIX).

(5) Setting up the scheduler database in an embedded database environment

Unlike setup on the primary node, you do not need to execute the `ajsembddbsetup` command on the secondary node. However, you must ensure that the common definition information specified on the primary node and that specified on the secondary node are the same.

If you create an environment by specifying the `-s` option in the `jajs_setup_cluster` command, you do not need to specify the settings in this subsection.

To specify the common definition information:

1. Set up the embedded database on the primary node.
2. Execute the `jbsgetcnf` command on the primary node to back up the common definition information to a file.

Execute the following command:

```
jbsgetcnf -h logical-host-name > backup-file-name
```

3. Copy the file you created in step 2 to a file on the secondary node.
4. Execute the `jbssetcnf` command on the secondary node to specify the common definition information.

Execute the following command:

```
jbssetcnf backup-file-name
```

This completes setup on the secondary node.

For details about setup on the primary node see *D.2(5) Setting up the scheduler database in an embedded database environment* or *D.2(6) Setting up multiple scheduler databases in one or more embedded database environments*.

For details about the `jbsgetcnf` and `jbssetcnf` commands, see the *Job Management Partner 1/Base User's Guide*.

(6) *Setting up multiple scheduler databases in one or more embedded database environments*

The following describes how to set up multiple scheduler databases in one or more embedded databases.

(a) **Setting up a different embedded database environment for each scheduler service**

To set up a different embedded database environment for each scheduler service when multiple scheduler services are defined, prepare the areas listed below separately.

- Embedded database practical directory
- Embedded database work area
- Unload log file creation directory

Prepare the unload log file creation directory if it is necessary.

When you set up an environment on the secondary node, it is not necessary to create the data area and system file area. Create these areas on a shared disk when the environment is created on the primary node.

When you set up an embedded database environment, specify a port number and embedded database setup identifier so that there are no duplication conflicts with other databases. That is, when executing the `ajsembdbbuild` command, you must specify a unique port number for each embedded database in the `-p` option. Similarly, when executing the `ajsembdbinstl` or `ajsembdbbuild` command, you must specify a unique embedded database setup identifier for each embedded database in the `-id` option.

An example of setup is shown below.

This example assumes that the environment described in *D.3(3) Setting up the embedded database environment* and *D.3(4) Environment setting parameter settings* is already set up.

■ **For Windows**

Environment for the embedded database:

The following are the details of the embedded database environment to be added:

- Data area creation directory: `q:\EmbDB\RDArea`
- System file area creation directory 1: `r:\EmbDB\SYSArea1`
- System file area creation directory 2: `s:\EmbDB\SYSArea2`
- Unload log file creation directory: `t:\EmbDB\Unload_Log`
- Embedded database work area directory: `u:\EmbDB\WorkArea`

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- Embedded database installation directory: c:\Program Files\Hitachi\JP1AJS2\embdb_JFB
- Scheduler service name: AJSROOT5
- Embedded database port number: 22231
- Embedded database setup identifier: _JFB
- Physical host name of the primary node: physical_host
- Logical host name: logical_host

Specification of the ajsembdbinstl command:

```
ajsembdbinstl -mh logical_host  
-s "c:\Program Files\Hitachi\JP1AJS2\tools\AJS3DB"  
-i "c:\Program Files\Hitachi\JP1AJS2\embdb\_JFB" -id _JFB
```

Specification of the ajsembdbbuild command:

```
ajsembdbbuild -l  
-d "q:\EmbDB\RDArea,r:\EmbDB\SYSArea1,s:\EmbDB\SYSArea2"  
-ld u:\EmbDB\WorkArea -br -bl t:\EmbDB\Unload_Log  
-i "c:\Program Files\Hitachi\JP1AJS2\embdb\_JFB" -p 22231  
-id _JFB -f -mh logical_host -eh physical_host
```

Procedure for setup in an embedded database environment:

For details about how to set up scheduler databases in an embedded database environment, see the specification examples in *D.3(5) Setting up the scheduler database in an embedded database environment*.

■ For UNIX

Environment for the embedded database:

The following are the details of the embedded database environment to be added:

- Data area creation directory: /share4/RDArea_JFB
- System file area creation directory 1: /share5/SYSArea_JFB
- System file area creation directory 2: /share6/SYSArea_JFB
- Unload log file creation directory: /Unload_Log_JFB
- Embedded database work area directory: /WorkArea_JFB
- Embedded database practical directory: /opt/jp1ajs2/embdb/_JFB
- Scheduler service name: AJSROOT5

- Embedded database port number: 22231
- Embedded database setup identifier: `_JFB`
- Physical host name of the primary node: `physical_host`
- Logical host name: `logical_host`

Specification of the `ajsembdbinstl` command:

```
ajsembdbinstl -mh logical_host -s /opt/jp1ajs2/tools/AJS3DB
-i /opt/jp1ajs2/embdb/_JFB -id _JFB
```

Specification of the `ajsembdbbuild` command:

```
ajsembdbbuild -l
-d "/share4/RDArea_JFB, /share5/SYSArea_JFB,
/share6/SYSArea_JFB"
-ld /WorkArea_JFB -br -bl /Unload_Log_JFB
-i /opt/jp1ajs2/embdb/_JFB -p 22231 -id _JFB
-f -mh logical_host -eh physical_host
```

Procedure for setup in an embedded database environment:

For details about how to set up scheduler databases in an embedded database environment, see the specification examples in *D.3(5) Setting up the scheduler database in an embedded database environment*.

For details about the `ajsembdbinstl` and `ajsembdbbuild` commands, see 2. *Commands Used during Setup* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*.

(b) Setting up multiple scheduler databases in one embedded database environment

For details, see *D.3(5) Setting up the scheduler database in an embedded database environment*.

(7) Setting up an embedded database again

To set up an embedded database again:

1. Use the `ajsembdbunset` command to delete the data about the embedded database environment.
2. If you need to change the embedded database practical directory, uninstall the embedded database, and then reinstall it.
3. Use the `ajsembdbbuild` command to set up the embedded database.

4. Set the common definition information of the primary node on the secondary node.

When you have completed setup of the primary node, execute the `jbsgetcnf` command on the primary node to save the common definition information to a file.

Copy the saved file to the secondary node, specify the name of the saved file in the `jbssetcnf` command, and execute the following commands:

- Command to be executed on the primary node:

```
jbsgetcnf -h logical-host-name > backup-file-name
```

- Command to be executed on the secondary node:

```
jbssetcnf backup-file-name
```

For details about the `ajsembdbunset` and `ajsembdbbuild` commands, see 2. *Commands Used during Setup* in the manual *Job Management Partner 1/Automatic Job Management System 3 Command Reference 2*. For details about the `jbsgetcnf` and `jbssetcnf` commands, see the *Job Management Partner 1/Base User's Guide*.

(8) Uninstalling an embedded database

For details about uninstalling an embedded database, see 6.1.1(3) *Uninstalling an unnecessary database environment*.

D.4 Changing the settings of an embedded database in a cluster configuration

This section describes the system definition related to a cluster that can be changed.

The system definition described in this section is the system definition that is set in the system common definition file. The system common definition file is located in the following directory:

In Windows:

```
embedded-database-practical-directory\conf\pdsys
```

In UNIX:

```
embedded-database-practical-directory/conf/pdsys
```

The system common definition file is created by using the `ajsembdbbuild` command, so edit this file after you execute the `ajsembdbbuild` command.

You can change the following clustering system definitions:

- Starting the embedded database, `pd_mode_conf` =

You can set the following values for `pd_mode_conf`:

- **MANUAL1**

The embedded database is started manually. However, if it terminates abnormally, it is restarted automatically.

- **MANUAL2**

The embedded database is started manually. Unlike **MANUAL1**, if the embedded database terminates abnormally, it is not restarted automatically.

- **AUTO**

The embedded database is started automatically. When the OS starts, the embedded database starts automatically. If the embedded database terminates abnormally, it is restarted automatically.

If the environment was set up with the `-r` or `-f` option when the `ajsembddbbuild` command was executed, the initial value of `pd_mode_conf` is **MANUAL1**.

Specify **MANUAL1** or **MANUAL2** in a cluster configuration. Change the value to match the environment that will be set up.

To edit the system common definition file:

- On the primary node:

1. Stop the scheduler service that uses the embedded database.
2. Stop the embedded database.
3. Edit the system common definition file.
4. Start the embedded database.
5. Start the scheduler service that uses the embedded database.

- On the secondary node:

After completing the tasks on the primary node, use either of the following operations to change the system common definition file:

- Copy the system common definition file edited on the primary node to the secondary node environment.
- Edit the system common definition file so that the result is the same as the editing result in step 3 for the primary node above.

E. Recovery Procedure Used When An Incorrect Environment Settings Parameter Is Set

The following explains the recovery procedure if you define the environment settings parameter incorrectly.

E.1 For Windows

If you have set the environment settings parameter incorrectly, use the following recovery procedure:

The following shows an example of an environment settings parameter that has been set incorrectly, and then shows a correct environment settings parameter:

Incorrect environment settings parameter

```
[JP1_DEFAULT\JP1NBQAGENT\Variable]
"USSER-ENVIRONMENT1"="ENVIRONMENT-VALUE1"
```

Correct environment settings parameter

```
[JP1_DEFAULT\JP1NBQAGENT\Variable]
"USER-ENVIRONMENT1"="ENVIRONMENT-VALUE1"
```

To delete an environment settings parameter that has been set incorrectly, as indicated above, and to set a correct environment settings parameter:

1. Execute the following commands to save the definition information:

- For a physical host
jbsgetcnf > *backup-file-name*

- For a logical host
jbsgetcnf -h *logical-host-name* > *backup-file-name*

The path of the jbsgetcnf command is *JP1/Base-installation-folder\bin\jbsgetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

2. Execute the following command to delete the *Variable* subkey:

- For a physical host:
jbsunsetcnf -h JP1_DEFAULT -c JP1NBQAGENT -n Variable

- For a logical host:
jbsunsetcnf -h *logical-host-name* -c JP1NBQAGENT -n Variable

The path of the `jbsunsetcnf` command is *JPI/Base-installation-folder\bin\jbsunsetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

3. Edit the backup file saved in step 1:

Before the change

```
[JP1_DEFAULT\JP1NBQAGENT\Variable]
"JP1AJS2_JPOEXEPATH"="C:\Program Files\HITACHI\JP1AJS2\bin"
"JP1AJS2_JPQNOP"="C:\Program
Files\HITACHI\JP1AJS2\bin\jppqnop.exe"
"JP1AJS2_JPWDEXEPATH"="C:\Program
Files\Hitachi\JP1PowerMonitor\bin"
"USSER-ENVIRONMENT1"="ENVIRONMENT-VALUE1"
```

After the change

```
[JP1_DEFAULT\JP1NBQAGENT\Variable]
"JP1AJS2_JPOEXEPATH"="C:\Program Files\HITACHI\JP1AJS2\bin"
"JP1AJS2_JPQNOP"="C:\Program
Files\HITACHI\JP1AJS2\bin\jppqnop.exe"
"JP1AJS2_JPWDEXEPATH"="C:\Program
Files\Hitachi\JP1PowerMonitor\bin"
```

Note:

Delete the incorrectly added portions, taking care not to delete any existing environment setting parameters.

To change the logical host environment, specify `JP1_DEFAULT` in the logical host name.

4. Save the file and execute the following command to recover the definition:

```
jbssetcnf name-of-the-backup-file-created-in-step-1
```

The path of the `jbssetcnf` command is *JPI/Base-installation-folder\bin\jbssetcnf*. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

This returns you to the state in which the environment settings parameter was added.

5. Use a text editor such as Windows Notepad to create a configuration file that contains the following definition:

```
[JP1_DEFAULT\JP1NBQAGENT\Variable]
"USER-ENVIRONMENT1"="ENVIRONMENT-VALUE1"
```

6. Save the file and execute the following command:

```
jbssetcnf configuration-file-name
```

7. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

E.2 For UNIX

If you have set the environment setting parameter incorrectly, use the following recovery procedure.

The following shows an example of an environment setting parameter that has been set incorrectly, and then shows a correct environment setting parameter:

Incorrect environment settings parameter

```
[JP1_DEFAULT\JP1NBQAGENT\Variable]  
"USER-ENVIRONMENT1" = "ENVIRONMENT-VALUE1"
```

Correct environment setting parameter

```
[JP1_DEFAULT\JP1NBQAGENT\Variable]  
"USER-ENVIRONMENT1" = "ENVIRONMENT-VALUE1"
```

To delete an environment setting parameter that has been set incorrectly, as indicated above, and to set a correct environment setting parameter:

1. Execute the following command to save the definition.

- For a physical host:

```
jbsgetcnf > backup-file-name
```

- For a logical host:

```
jbsgetcnf -h logical-host-name > backup-file-name
```

The path of the `jbsgetcnf` command is `/opt/jp1base/bin/jbsgetcnf`. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

2. Execute the following command to delete the `Variable` subkey:

- For a physical host:

```
jbsunsetcnf -h JP1_DEFAULT -c JP1NBQAGENT -n Variable
```

- For a logical host:

```
jbsunsetcnf -h logical-host-name -c JP1NBQAGENT -n Variable
```


The path of the `jbsunsetcnf` command is `/opt/jp1base/bin/jbsunsetcnf`. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

3. Edit the backup file saved in step 1:

Before the change

```
[JP1_DEFAULT\JP1NBQAGENT\Variable]
"JP1AJS2_JPOEXEPATH"="C:\Program Files\HITACHI\JP1AJS2\bin"
"JP1AJS2_JPQNOP"="C:\Program
Files\HITACHI\JP1AJS2\bin\jppqnop.exe"
"JP1AJS2_JPWDEXEPATH"="C:\Program
Files\Hitachi\JP1PowerMonitor\bin"
"USSER-ENVIRONMENT1"="ENVIRONMENT-VALUE1"
```

After the change

```
[JP1_DEFAULT\JP1NBQAGENT\Variable]
"JP1AJS2_JPOEXEPATH"="C:\Program Files\HITACHI\JP1AJS2\bin"
"JP1AJS2_JPQNOP"="C:\Program
Files\HITACHI\JP1AJS2\bin\jppqnop.exe"
"JP1AJS2_JPWDEXEPATH"="C:\Program
Files\Hitachi\JP1PowerMonitor\bin"
```

Note:

Delete the incorrectly added portions, taking care not to delete any existing environment setting parameters.

To change the logical host environment, specify `JP1_DEFAULT` in the logical host name.

4. Save the file and execute the following command to recover the definition:

```
jbssetcnf name-of-the-backup-file-created-in-step-1
```

The path of the `jbssetcnf` command is `/opt/jp1base/bin/jbssetcnf`. For details on this command, see the *Job Management Partner 1/Base User's Guide*.

This returns you to the state that existed before the environment configuration parameter was added.

5. Using a text editor such as `vi`, create a configuration file that contains the following definition:

```
[JP1_DEFAULT\JP1NBQAGENT\Variable]
```

E. Recovery Procedure Used When An Incorrect Environment Settings Parameter Is Set

```
"USER-ENVIRONMENT1" = "ENVIRONMENT-VALUE1"
```

6. Save the file and execute the following command:

```
jbsetcnf configuration-file-name
```

7. Restart JP1/AJS3.

The contents of the configuration file are applied to the system.

F. Values Recommended for the Environment Settings Set in JP1/AJS3

In JP1/AJS3, in a new installation and setup, the recommended values are automatically specified for the environment settings. In an upgrade, the previous settings are inherited. To use the recommended values, you must manually set them.

For details on the setup procedure, see 3. *Setup* for Windows. For UNIX, see 12. *Setup*.

(1) Environment settings related to the scheduler service

The following table lists the environment setting parameters related to the scheduler service, their default values, and the recommended values.

Table F-1: Environment settings related to the scheduler service

Environment setting parameters	Default value	Recommended value set in JP1/AJS3
"VRSHIFT_INTRERUN"	V6	V5
"MONSYSLOG"	none	all
"LOGSIZE"	dword:00001400	dword:00002800
"RDBCHECKINTERVAL"	dword:00000000	dword:0000012C
"LOGINFOALL"	no	yes
"LOGHEADER"	none	PID
"INFOLOG"	none	all
"UNITDEFINERELOAD"	no	yes
"AJSPRINTNETSCHPRF"	yes	no
"BACKGROUNDLEAVE"	no	yes
"NONRELOADHOLDING"	no	yes

(2) Environment settings related to the job execution environment

The following table lists the environment setting parameters related to the job execution environment, their default values, and the recommended values.

Table F-2: Environment settings related to the job execution environment

Environment setting parameters	Default value	Recommended value set in JP1/AJS3
"PreserveTerm"	dword:00000007	dword:00000001
"DeleteFlashOption"	1	0
"StartUpDelete"	1	0
"IsSigchldDefault"	dword:00000000	dword:00000001

(3) Environment settings related to the event job startup

The following table lists the environment setting parameters related to event job startup, their default values, and the recommended values.

Table F-3: Environment settings related to event job startup

Environment setting parameters	Default value	Recommended value set in JP1/AJS3
"MacVarDQuotation"	N	Y
"LogSize_jpomanager"	dword:000A0000	dword:00200000
"LogSize_jpomgrsub"	dword:000A0000	dword:00100000
"LogNumFiles_jpomanager"	dword:00000008	dword:00000006
"LogNumFiles_jpomgrsub"	dword:00000006	dword:00000008
"FilewatchinfContinue"	N	Y
"EVProcessHA"	N	Y
"LogSize_jpoagent"	dword:00060000	dword:00100000
"LogSize_jpoagsub"	dword:00060000	dword:00100000
"LogSize_jpocwtfMain"	dword:00140000	dword:00200000
"LogSize_jpoeventwatch"	dword:000A0000	dword:00100000
"LogSize_jpocwtmMain"	dword:00020000	dword:00040000
"LogNumFiles_jpoeventwatch"	dword:00000004	dword:00000008
"LogNumFiles_jpocwtmMain"	dword:00000002	dword:00000006

(4) Environment settings related to the queueless job execution environment

The following table lists the environment setting parameters that are related to the

queueless job execution environment and for which recommended values are set. For each parameter listed, the table shows the default used in JP1/AJS2 08-00 or earlier, the recommended value set in JP1/AJS2 08-00 or later, and the recommended value set in JP1/AJS3.

Note that in JP1/AJS2 08-00 or later and in JP1/AJS3, the defaults are the same as the recommended values.

Table F-4: Environment setting parameters related to the queueless job execution environment

Environment setting parameters	Default in JP1/AJS2 08-00 or earlier	Recommended value set in JP1/AJS2 08-00 or later (default in JP1/AJS2 08-00 or later)	Recommended value set in JP1/AJS3 (default in JP1/AJS3)
"AJSQL_JOBMAX"	dword:00000400	In Windows: dword:00000005 In UNIX: dword:00000400	In Windows: dword:00000005 In UNIX: dword:00000400
"AJSQL_JOBWAITMAX"	dword:00000000	In Windows: dword:00000800 In UNIX: dword:00000000	In Windows: dword:00000800 In UNIX: dword:00000000
"AJSQL_LOGSIZE"	dword:00001000	dword:00002000	dword:00002000
"AJSQL_STATSIZE"	dword:00000000	dword:00000800	dword:00000800
"AJSQL_CJOBMAX"	dword:00000400	In Windows: dword:00000005 In UNIX: dword:00000400	In Windows: dword:00000005 In UNIX: dword:00000400
"AJSQL_CJOBWAITMAX"	dword:00000000	In Windows: dword:00000800 In UNIX: dword:00000000	In Windows: dword:00000800 In UNIX: dword:00000000

G. Version Revisions

This appendix lists the changes in each version of the JP1/AJS series programs.

G.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 (jqman) 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

- 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.

G.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)
- `ajsembdbrolog` command (unloads and reloads an embedded database)
- `ajsembdbstr` 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.

G.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.

G.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.

- 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

H. Changes in 3020-3-S05-04(E)

The following table list the changes in this manual (3020-3-S05-04(E)).

Table H-1: Changes in 3020-3-S05-04(E)

No.	Location	Changes
1	All	Windows 7 has been added as an OS supported by JP1/AJS3 - View.
2	2.1.1, 11.1.1	A description applying when automatic setup is not selected during a new installation of JP1/Base has been added.
3	2.2.1, 11.2.1	Points to be checked when JP1/AJS2 - Manager is upgraded to JP1/AJS3 - Manager have been added.
4	2.2.2	The explanation of the procedure for upgrade installation has been changed.
5	2.2.2, 11.2.1	<ul style="list-style-type: none"> The explanation of the procedure for upgrade installation from JP1/AJS2 - Manager to JP1/AJS3 - Manager in a standard configuration in a cluster system has been changed. An explanation of the procedure for upgrade installation from JP1/AJS2 - Manager to JP1/AJS3 - Manager in a compatible ISAM configuration in a cluster system has been added.
6	6.3.12, 6.3.13, 6.3.14, 6.3.15, 6.3.16, 14.3.13, 14.3.14, 14.3.15, 14.3.16, 14.3.17	A description of the settings for communication related to event/action control has been added.
7	8.2.2	The setup procedures on the primary and secondary nodes in a cluster system have been changed.
8	16.2.2	The setup procedure on the primary node in a cluster system has been changed.
9	Appendix B.1	The description of the database auto-increment function has been changed.
10	Appendix C.1	<ul style="list-style-type: none"> A description of the number of logs to keep has been added to the table that provides the guidelines for determining the scale of the embedded database environment. For <code>pd_lck_pool_size</code> (size of the pool for locks), a description of the operation method, and the procedure for changing the system definition, as well as notes, has been added.
11	Appendix C.2, Appendix D.2, Appendix D.3	The specification of the <code>ajsembdbinstl</code> command has been added.

I. 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 `ajsembddb`.

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.

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 `?AJS2xxxxxxxx? : 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 `jpqjobs` 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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