

JP1 Version 12

JP1/Automatic Operation Administration Guide

3021-3-D04-40(E)

Notices

■ Relevant program products

- P-2A2C-E1CL JP1/Automatic Operation 12-60 (for Windows Server 2012, Windows Server 2012 R2, Windows Server 2016, Windows Server 2019, Windows Server 2022)

The above product includes the following:

- P-CC2A2C-EACL JP1/Automatic Operation - Server 12-60 (for Windows Server 2012, Windows Server 2012 R2, Windows Server 2016, Windows Server 2019, Windows Server 2022)
- P-CC2A2C-EBCL JP1/Automatic Operation - Contents 12-60 (for Windows Server 2012, Windows Server 2012 R2, Windows Server 2016, Windows Server 2019, Windows Server 2022)
- P-2A2C-E3CL JP1/Automatic Operation Content Pack 12-60 (for Windows Server 2012, Windows Server 2012 R2, Windows Server 2016, Windows Server 2019, Windows Server 2022)
- P-822C-E1CL JP1/Automatic Operation 12-60 (for Red Hat Enterprise Linux 6 (x64), Red Hat Enterprise Linux 7, Oracle Linux 6 (x64), Oracle Linux 7, CentOS 6 (x64), CentOS 7, SUSE Linux 12)

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- P-822C-E3CL JP1/Automatic Operation Content Pack 12-60 (for Red Hat Enterprise Linux 6 (x64), Red Hat Enterprise Linux 7, Red Hat Enterprise Linux 8, Oracle Linux 6 (x64), Oracle Linux 7, Oracle Linux 8, CentOS 6 (x64), CentOS 7, CentOS 8, SUSE Linux 12)

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Summary of amendments

The following table lists changes in this manual (3021-3-D04-40(E)) and product changes related to this manual.

Changes	Location
The following operating systems are now supported: <ul style="list-style-type: none">Windows Server 2022Red Hat Enterprise Linux 8Oracle Linux 8CentOS 8	-
Descriptions of periodically archiving tasks and periodically deleting histories were added.	1.6.5
Descriptions of adding and managing user accounts were added.	1.9
Notes were added regarding the use of products that use the same Common Component.	1.9.1
Descriptions of agentless Connection Destinations were added.	1.12
The procedure for updating the components used in a service template was added.	3.10
Descriptions of the setting items for agentless Connection Destination definitions were changed.	6.3.6
Descriptions of task behavior when the JP1/AO service is restarted were added.	7.16
Descriptions of public log files were added.	8.9.4
The following restrictions were changed: <ul style="list-style-type: none">Character string specified as a user ID of a JP1/AO userCharacter string specified as a password of a JP1/AO userPort number used for connections with SMTP serverCharacter string specified as the user ID for an SMTP serverCharacter string specified as a recipient of notification emails	A.1
The following item was added: <ul style="list-style-type: none">Size of the property files or the external resource provider definition files imported from windows	A.1
The types of events output to the audit log were added.	A.6(1)
External Resource Providers were added to the types of events output to the audit log.	A.6(1)

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

Preface

This manual describes how to use JP1/Automatic Operation. In this manual, JP1/Automatic Operation is abbreviated to *JP1/AO*.

For the glossary and reference information on JP1/AO manuals, see the *JP1/Automatic Operation Overview and System Design Guide*.

■ Intended readers

This manual is intended for:

- Users who operate and manage JP1/AO systems
- Users who want to execute services in a JP1/AO system

■ Microsoft product name abbreviations

This manual uses the following abbreviations for Microsoft product names.

Abbreviation	Full name or meaning
Active Directory	Microsoft(R) Active Directory
Internet Explorer	Windows(R) Internet Explorer(R)
Windows Server 2012	Microsoft(R) Windows Server(R) 2012 Datacenter
	Microsoft(R) Windows Server(R) 2012 Standard
Windows Server 2012 R2	Microsoft(R) Windows Server(R) 2012 R2 Datacenter
	Microsoft(R) Windows Server(R) 2012 R2 Standard
Windows Server 2016	Microsoft(R) Windows Server(R) 2016 Datacenter
	Microsoft(R) Windows Server(R) 2016 Standard
Windows Server 2019	Microsoft(R) Windows Server(R) 2019 Datacenter
	Microsoft(R) Windows Server(R) 2019 Standard
Windows Server 2022	Microsoft(R) Windows Server(R) 2022 Datacenter
	Microsoft(R) Windows Server(R) 2022 Standard

Windows is often used generically to refer to Windows Server 2022, Windows Server 2019, Windows Server 2016, Windows Server 2012 R2, or Windows Server 2012.

■ Formatting conventions used in this manual

The following describes the formatting conventions used in this manual.

Text formatting	Description
<i>Character string</i>	Italic characters indicate a variable. Example: A date is specified in <i>YYYYMMDD</i> format.

Text formatting	Description
Bold - Bold	Indicates selecting menu items in succession. Example: Select File - New . This example means that you select New from the File menu.
key+key	Indicates pressing keys on the keyboard at the same time. Example: Ctrl+Alt+Delete means pressing the Ctrl , Alt , and Delete keys at the same time.

■ Representation of JP1/AO-related installation folders

In this manual, the default installation folders for the Windows version of JP1/AO are represented as follows:

JP1/AO installation folder:

system-drive\Program Files\Hitachi\JP1AO

Common Component installation folder:

system-drive\Program Files\Hitachi\HiCommand\Base64

The installation folders for the Linux version of JP1/AO are as follows:

JP1/AO installation folder:

- /opt/jp1ao
- /var/opt/jp1ao

Common Component installation folder:

/opt/HiCommand/Base64

■ Diagrams of windows in the manual

Some windows in this manual might differ from the windows of your product because of improvements made without prior notice.

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1

Using JP1/AO

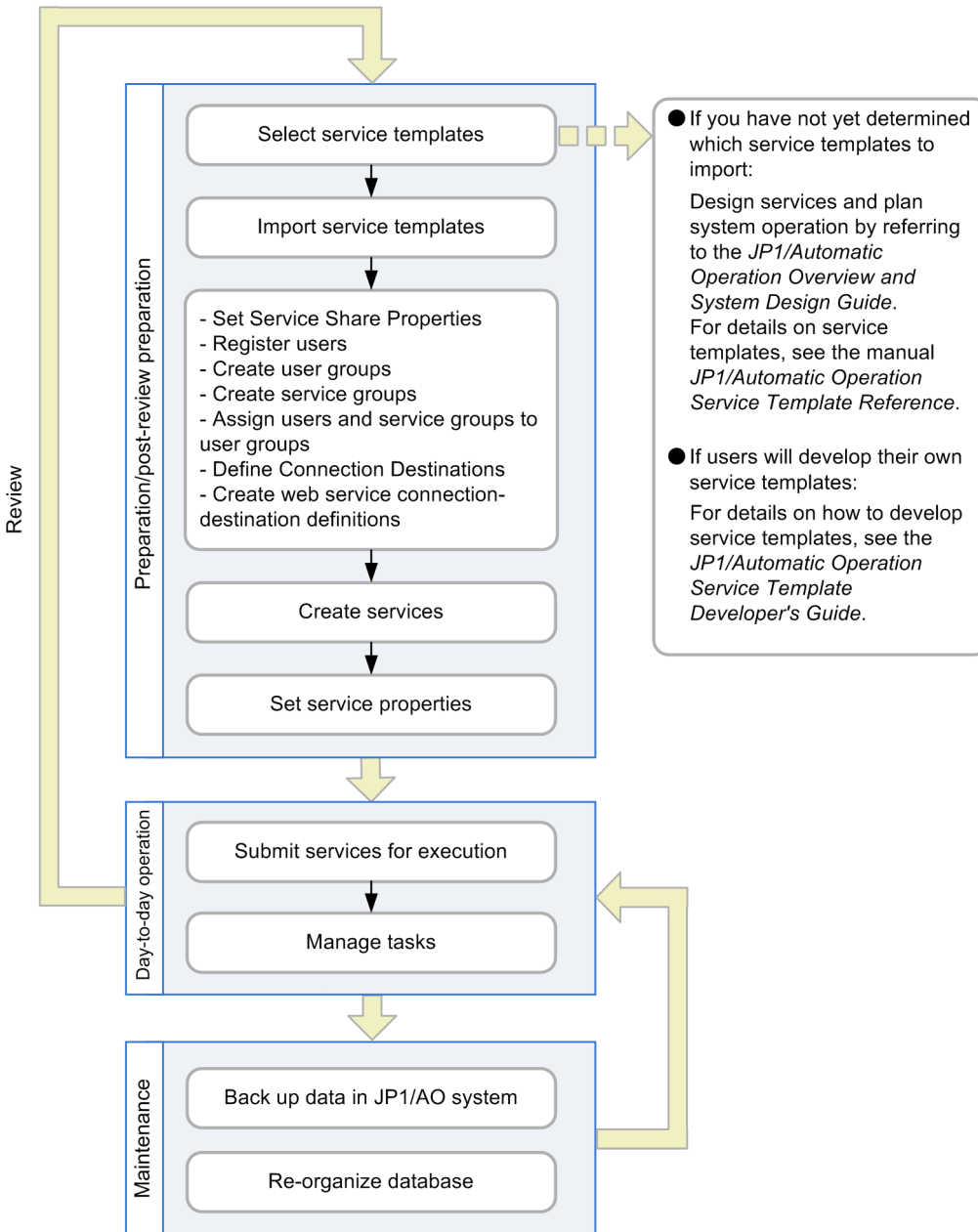
There are several phases to the operation of a JP1/AO system. The first is the preparation phase, followed by the day-to-day operation phase, the maintenance phase, the review phase, and the post-review preparation phase. This chapter describes the tasks you need to perform in each phase and the JP1/AO functionality used to accomplish them.

1.1 Overview of JP1/AO operation

This section describes the basic steps you need to perform in each phase (preparation, day-to-day operation, maintenance, review, and post-review preparation) of JP1/AO operation.

The following figure shows the flow of JP1/AO operation:

Figure 1-1: Phases of JP1/AO system operation



1.1.1 Basic tasks in the preparation phase

After setting up a JP1/AO system, you need to prepare it to automate the operating procedures for which the system is intended.

First, create services based on the decisions reached in the service design and operation planning stages. At this time, also set up the Connection Destinations, properties, users, and groups required to execute those services.

The following describes the basic flow of operations in the preparation phase of a JP1/AO system. The tasks in the example below are shared by two users: User A who is assigned the Admin role and has User Management permissions, and User M who is assigned the Modify role.

Tasks performed by User A (User Management permissions and Admin role)

1. Select service templates according to the decisions made in the service design and operation planning stages.
2. Import the selected service templates into JP1/AO.
Import the service templates selected in the service design stage into JP1/AO.
3. Set Service Share Properties.
Service Share Properties are properties shared by more than one service. In this step, set the property values of the Service Share Properties defined in the imported service templates. The shared built-in service properties are also set as needed.
4. Add users.
Add users who will create and execute services.
5. Create user groups.
A user group is a group of users with certain attributes in common. For example, the users in a user group might belong to the same organization or be responsible for similar tasks.
6. Create service groups.
A service group is a group of services or Connection Destinations.
7. Assign users and service groups to user groups.
By assigning service groups to user groups, you can control the access each user has to specific services. For example, you can efficiently manage services according to the purposes of the relevant user group and provide services that support multi-tenancy.
8. Create web service connection-destination definitions.
To link with a web service, register the information about the connection destination beforehand, if necessary. For example, specify the IP address, authentication information, proxy server information, and other information as a web service connection-destination definition.
9. Define Connection Destinations.
If you want a service to be able to perform operations on remote hosts, you need to register those hosts as Connection Destinations. To define a Connection Destination, specify information about the remote host such as the host name (or IP address) and connection type. You can also specify authentication information such as user IDs and passwords.

Tasks performed by User M (Modify role)

1. Use the service templates imported by User A to create services.
2. Set the service property values.
After these tasks have been performed, the services are ready for execution.

Related topics

- [1.3 Managing service templates](#)
- [1.4 Managing services](#)
- [1.7 Setting Service Share Properties](#)

- [1.9 Managing users](#)
 - [1.10 Managing groups](#)
 - [1.12 Managing Connection Destinations](#)
-

1.1.2 Basic tasks in the day-to-day operation phase

After creating services in the preparation phase, you can execute the services corresponding to the desired operating procedures. The services you execute are processed as tasks whose progress and status you can monitor.

The following describes the basic flow of day-to-day operations in a JP1/AO system. The tasks in the example below are shared by two users: User S who is assigned the Submit role, and User M who is assigned the Modify role.

Tasks performed by User S (Submit role)

1. Execute services.
2. Review email notifications, and handle tasks that are in Waiting for Input, In Progress (with Error), or Failed status.
If a task is in the "waiting for input" status, enter the required information in the window. If a task is in the "in progress (with error)" or "failed" status, take the appropriate action to resolve the issue.
3. Check the progress and results of tasks as needed. You can also pause and resume scheduled and recurring tasks when necessary.

Tasks performed by User M (Modify role)

1. Periodically move tasks that no longer require monitoring from the Tasks list to the History list. You can also delete entries that are no longer needed from the history list.

Related topics

- [1.5 Executing services](#)
 - [1.6 Managing tasks](#)
 - [1.17 Email notification](#)
-

1.1.3 Basic tasks in the maintenance phase

Periodic maintenance is needed to keep the data stored by the JP1/AO system organized. You do not need operating permission for the JP1/AO system to perform maintenance.

The following describes the basic flow of maintenance tasks in a JP1/AO system.

Maintenance tasks

1. Create backup data for the JP1/AO system.
2. Reorganize the database used by the JP1/AO system.

Related topics

- [7. Maintenance](#)
-

1.1.4 Basic tasks in the review phase and the post-review preparation phase

In these phases, review the operation of the JP1/AO system when automated operation procedures need to be modified or new procedures need to be added. Based on the results of this review process, you can apply an updated service template to a service or change the service settings.

The following describes the basic flow of operations in the post-review preparation phase of a JP1/AO system. The tasks in the example below are shared by two users: User A who is assigned the Admin role and has User Management permissions, and User M who is assigned the Modify role. When these operations are completed, you can resume day-to-day operation of JP1/AO under the new settings configured to reflect the review results.

Tasks performed by User A (User Management permissions and Admin role)

1. Import the updated service templates.

You can use a new version of a service template alongside an old version of the same template.

2. Perform other miscellaneous changes, as follows:

- Delete old versions of service templates for which you have no further use
- Change the values of Service Share Properties as needed
- Add or delete users as needed
- Create, edit, or delete user groups as needed
- Create, edit, or delete service groups as needed
- Create, edit, or delete Connection Destinations as needed
- Create, edit, or delete web service connection-destination definitions (if you change the web service connection destination)

Tasks performed by User M (Modify role)

1. Use the Apply Latest Version function to apply new service templates to services.
2. Set the values of service properties.

The new version of a service can inherit the property values set for the old version. Change the property values as needed.



Tip

If you want the old version of the service to remain in the system, create a new service from the new service template. In this case, the new version of the service does not inherit the property values of the old version. You can change the property values as needed.

Related topics

- [1.3 Managing service templates](#)
 - [1.4 Managing services](#)
 - [1.7 Setting Service Share Properties](#)
 - [1.9 Managing users](#)
 - [1.10 Managing groups](#)
 - [1.12 Managing Connection Destinations](#)
-

1.2 List of JP1/AO features

JP1/AO provides a number of features in several categories. The first are automation features that define and execute the services that are responsible for work tasks automation, and the second are resource management features that manage users, Connection Destinations, web service connection destinations, and other resources. In the third category are features that link with other products, including email notification of errors, and the direct-access URL feature which lets you access a specific part of the user interface directly.

The features of JP1/AO are listed in the table below.

For a detailed description of each feature, see the location in the Refer to column in the table.

Table 1-1: Automation features

Feature	Description	Refer to
Service template management	You can import service templates into JP1/AO. You can also delete service templates that are no longer required, and create custom service templates.	1.3 Managing service templates
Service management	You can use service templates to create services to be executed. You can also edit the created services, and delete services that are no longer required. You can also import and export a file (called a <i>property file</i>) that contains all of the property values for a service. This allows you to use the property values for a particular service in another service.	1.4 Managing services
Service execution	JP1/AO can automate work tasks by executing services. Each time a user submits a service for execution, he or she enters the required property values and specifies a schedule type. The required property values differ among services. When a service is executed, a corresponding task is generated and processing begins at the time determined by the schedule type.	1.5 Executing services
Task management	You can check the status and progress of tasks, and control task processing. Tasks that have finished processing can be moved from the Tasks list to the History list.	1.6 Managing tasks
Setting Service Share Properties	You can set Service Share Properties to be shared by more than one service. You can also set the shared built-in service properties defined in advance as common settings within JP1/AO.	1.7 Setting Service Share Properties
Tag settings	You can use tags to classify services, tasks, and service templates by criteria such as purpose and type.	1.8 Setting tags

Table 1-2: Resource management features

Feature	Description	Refer to
User management	You can add, edit, and delete accounts for users who log in to JP1/AO. You can also change user passwords, and lock or unlock user accounts.	1.9 Managing users
Group management	You can create, edit, and delete service groups and user groups. By allocating service groups to user groups, you can control the level of access each user in the user group has to resources. By allocating roles to service groups, you can also control which features are available to each user.	1.10 Managing groups
Web service connection destination management	To link with a web service, you can use these functions to manage the settings for connecting to the web service. If you register these settings in advance, they can be referenced by JP1/AO services.	1.11 Managing the web service connection-destination definitions
Managing Connection Destinations	You can manage the resources on which JP1/AO performs operations as Connection Destinations. By registering the devices to which you want to permit connections as Connection Destinations in JP1/AO, you can allow access to these devices during service execution. The level of access a task has to a device depends on the service group to which the task belongs.	1.12 Managing Connection Destinations

Table 1-3: Linkage features

Feature	Description	Refer to
Linkage with JP1/Base authentication	You can manage JP1/AO users and perform user authentication by linking with the authentication functionality of JP1/Base. The use of JP1/Base authentication eliminates the need to manage users and user groups in JP1/AO. It also allows you to use the JP1 user accounts already in use with other JP1 products.	1.14 Linking with JP1/Base authentication
Active Directory linkage	By linking with Active Directory, you can use the users and groups managed by Active Directory in JP1/AO. Note that you can only link with Active Directory if JP1/AO uses Active Directory as the LDAP directory server.	1.15 Linking with Active Directory
Linkage with JP1/IM event monitoring	If you link JP1/AO with JP1/IM, the JP1 events issued by JP1/AO can be centrally monitored from JP1/IM.	1.16 Linking with JP1/IM event monitoring
Email notification	This feature notifies users by email when JP1/AO detects that a task has failed or entered an abnormal status.	1.17 Email notification
Direct-access URL	You can display a target window immediately after login by specifying the URL of the window as a direct-access URL.	1.18 Direct-access URLs
Linking with Operational Content in JP1/IM - Navigation Platform	You can use single sign-on to display a JP1/IM - Navigation Platform window from the JP1/AO interface.	1.19 Linking with JP1/IM - NP Operational Content

1.3 Managing service templates

You can import service templates for use in the JP1/AO system. You can also delete service templates that are no longer needed, and create custom service templates to meet a specific need.



Tip

There are two types of service template:

- Development service templates

A service template created by a user. Service templates created by copying a release service template are also categorized as development service templates.

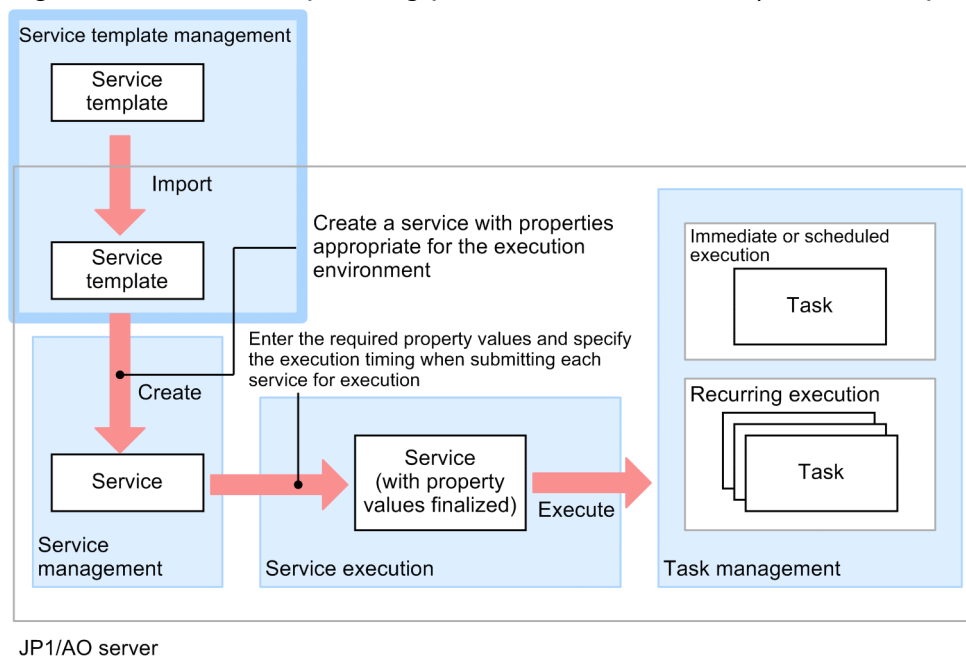
- Release service templates

A service template that was imported into the JP1/AO server by releasing a development service template. Service templates provided by JP1/AO are also categorized as release service templates. Release service templates are used for real-world applications in the active environment. *Released* is set as the configuration type of release service templates.

For details on development service templates and release service templates, see the *JP1/Automatic Operation Service Template Developer's Guide*.

The figure below shows the general procedure for automating operating procedures, and how it relates to service template management.

Figure 1-2: Flow of operating procedure automation (service template management)



The service template management functionality lets you perform the following tasks:

Import service templates

You can import service templates into JP1/AO.

When importing service templates, you can specify an individual service template file (*file-name.st*) or a zip file containing a set of service templates.

Delete service templates

You can delete service templates from JP1/AO when they are no longer needed.

If you have created services from a service template, you must delete the services before deleting the service template.

Output service template lists

You can output a list of service templates to a file in CSV format. Uses for this file include as a reference for managing service templates, and to investigate which service templates need to be added to the system.

Create service templates

You can create a custom service template by copying and editing one of the standard service templates provided with JP1/AO. You can also create your own service templates that are not based on an existing service template.

Note that product support applies to service templates provided by JP1/AO (in the JP1/AO standard package and JP1/AO Content Pack), but not to edited versions of these templates. However, Hitachi will provide support for plug-ins provided by JP1/AO (in the JP1/AO standard package and JP1/AO Content Pack) that are called from an edited service template.

For details on how to create service templates, see the *JP1/Automatic Operation Service Template Developer's Guide*.

Related topics

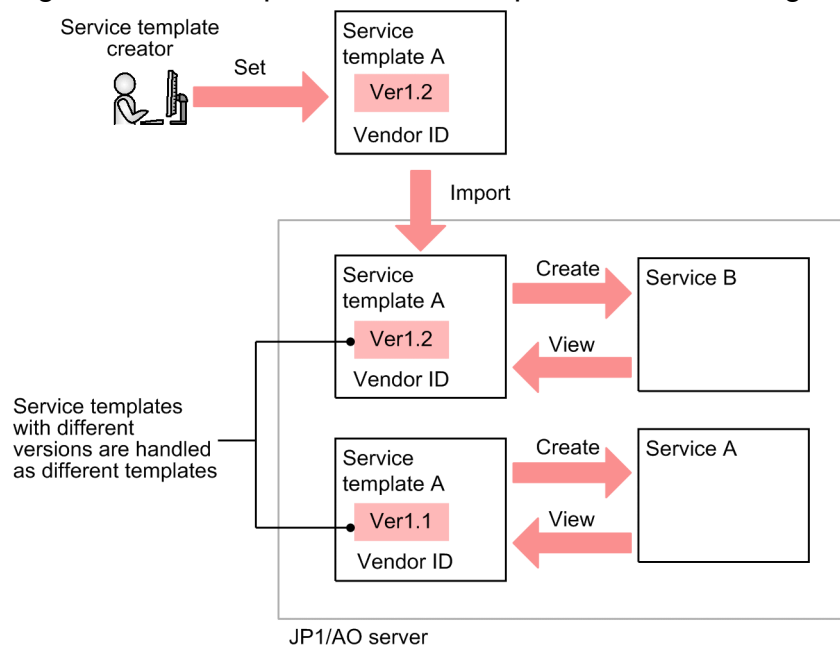
- [3.3 Importing service templates](#)
 - [3.8 Deleting service templates](#)
 - [3.12 Outputting a list of service templates](#)
-

1.3.1 Service template versions

Version information is defined in each service template. JP1/AO manages service templates as separate entities if the version, vendor ID, or template name is different. This allows you to use different versions of a given service template together when needed.

The following figure shows an example of how JP1/AO manages service template versions:

Figure 1-3: Example of service template version management

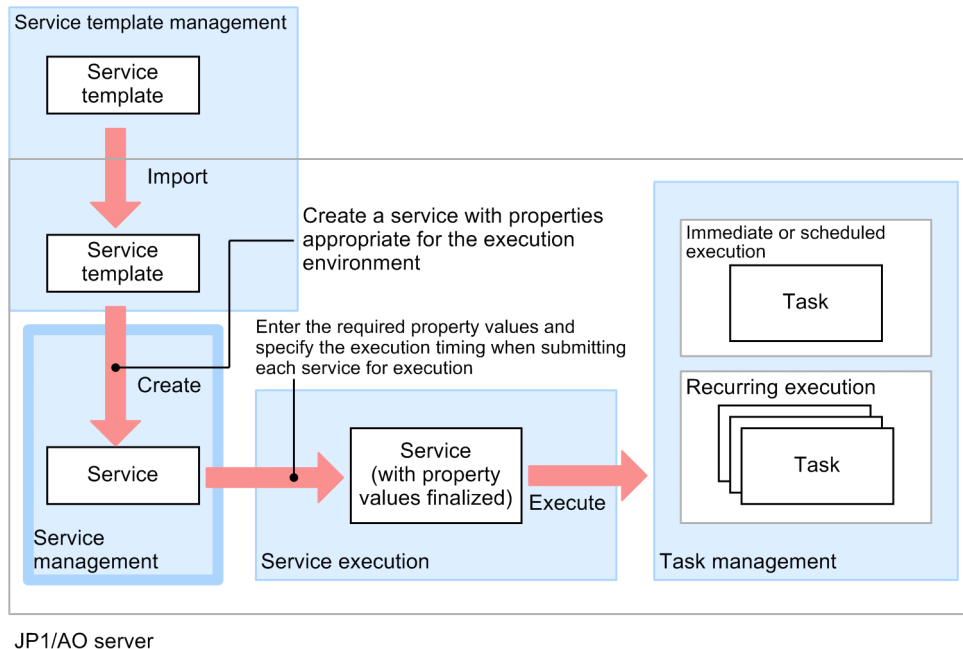


1.4 Managing services

You can use service templates imported into JP1/AO to create services for execution. You can also edit the services you create, and delete services that are no longer required.

The following figure shows the general procedure for automating operating procedures, and how it relates to service management.

Figure 1-4: Flow of operating procedure automation (service management)



The service management functionality of JP1/AO lets you perform the following tasks:

Create services

You can create services for execution in the JP1/AO system. You create a service by entering property values in a service template.

You can create more than one service from the same service template.

Edit services

You can go back and edit the parameters you set when creating a service. However, you cannot modify a service group (a unit that groups services and its Connection Destinations) after the service has been registered. To modify a service group, you need to delete the service and then create it again.

You can edit the properties of an active service even if there are tasks in the system that were generated from that service. Any changes you make do not apply to tasks that are already generated, or to existing task histories.

Delete services

You can delete services from the JP1/AO system when they are no longer needed.

You can only delete a service if there are no tasks in the JP1/AO system that were generated from that service. If such tasks exist, move them to the task history list before deleting the service. You can delete a service for which there are entries in the history list without deleting the history list entries.

Import and export service properties

A file that defines a set of property values for a specific scenario or a particular user environment is called a *property file*. You can import and export property files. This allows you to use the property values defined for a particular service in another service.

Output (export) service lists.

You can output a list of services to a file in CSV format. Uses for this file include as a reference for managing services, and to assess which services need to be created.

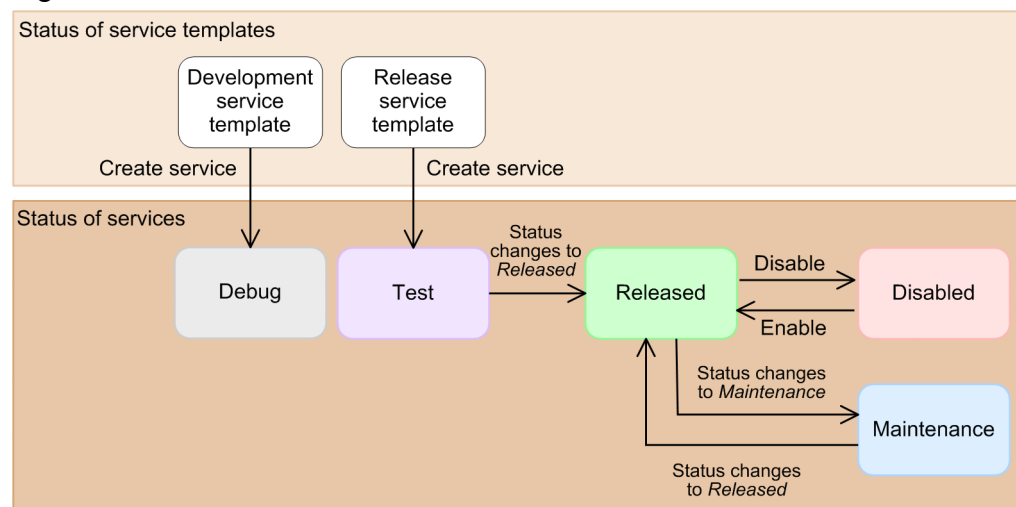
Related topics

- [1.9 Managing users](#)
- [4.3 Creating services](#)
- [4.5 Editing services](#)
- [4.6 Deleting services](#)
- [4.10 Importing service properties](#)
- [4.11 Exporting service properties](#)
- [4.12 Outputting \(exporting\) service lists](#)

1.4.1 Service statuses

Services in JP1/AO are classified by *status*. The status of a service at a given time depends on the type of service template from which the service was created, and the result of operations performed on the service.

Figure 1-5: Service status transitions



The operations you can perform on a service also depend on its status. You can see the status of a service in the **Services** window.

Table 1-4: List of service statuses

Status name	Description
Debug	A service created from a development service template. Only a service template developer (a user assigned the Admin or Develop role) can execute a service in this status. You can execute a service in Debug status to make sure that the service template you are debugging works correctly.

Status name	Description
Test	A service created from a release service template. Only a user assigned the Admin, Develop, or Modify role can execute a service in this status. You use this status when testing the operation of the service. If the test is successful, you can change the status of the service to <i>Released</i> .
Released	A service created from a release template that has passed through Test status. All users can execute services in this status. Services in this status are used for real-world applications in the active environment.
Disabled	A service that was disabled while in Released status. Services in this status cannot be executed by any user. You might use this status when you want to prevent certain services from being executed.
Maintenance	A status used when performing maintenance of a released service. Only a user assigned the Admin, Develop, or Modify role can execute a service in this status. The purpose of this status is to temporarily prevent users in the Submit role from executing a released service during maintenance tasks such as changing the service settings.

Related topics

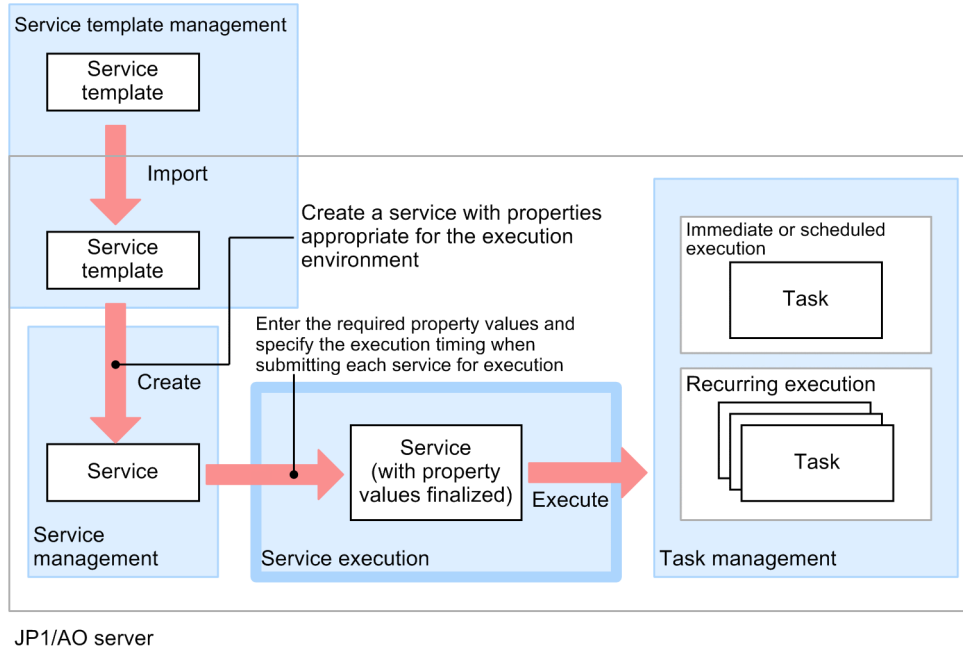
- [4.8 Changing the status of a service](#)
-

1.5 Executing services

The automation of operating procedures begins by submitting services for execution. When you submit a service, you enter the required property values and the schedule type. The required property values differ among services. At service execution, JP1/AO generates a corresponding task which starts processing at the time determined by the schedule type.

The following figure shows the general procedure for automating operating procedures, and how it relates to service execution.

Figure 1-6: Flow of operating procedure automation (service execution)



You can submit a service for immediate execution, scheduled execution, or recurring execution.

Immediate execution

When you submit the service, a task is generated and processing begins immediately.

Scheduled execution

When you submit the service, a task is generated and begins processing at the scheduled start time.

Recurring execution

When you submit the service, a task is generated and begins processing according to the scheduled start time and recurrence interval.

Related topics

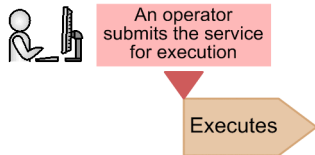
- [4.4 Executing services](#)
- [A.2 Using JP1/AO in time zones that observe daylight saving time](#)

1.5.1 Service schedule types

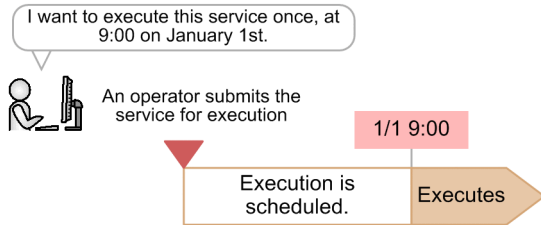
A service that is submitted for execution is processed according to the schedule type specified for the service. The following figure shows the timing of task processing for each schedule type:

Figure 1-7: Service schedule types

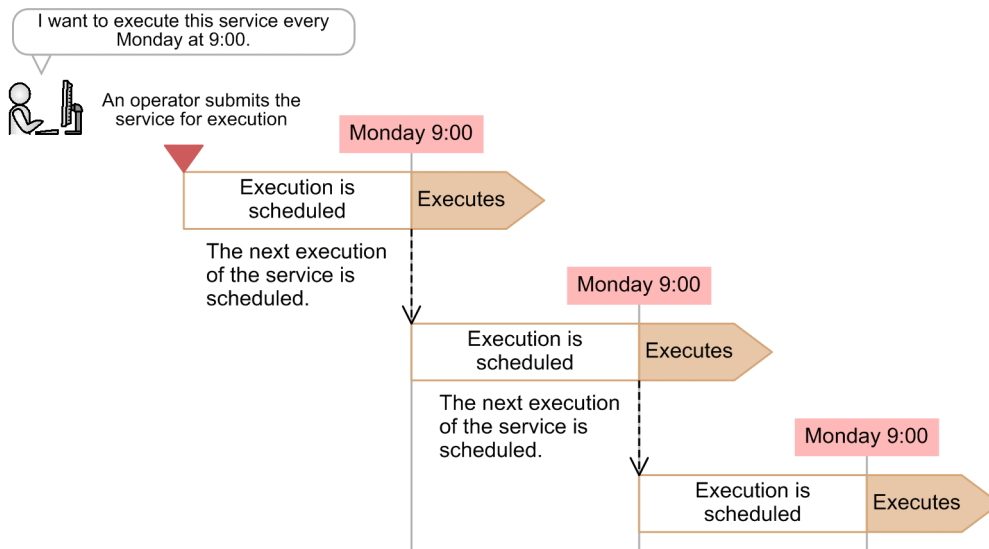
Services submitted for immediate execution



Services submitted for scheduled execution



Services submitted for recurring execution



Legend: : Execution timing

Tasks associated with services registered for scheduled and recurring execution are executed when the scheduled start time arrives.

However, service execution will be delayed in the following circumstances:

- The previous task has not finished executing when the scheduled start time arrives
In this case, the task will be executed when the previous task has finished.
- JP1/AO stops while a task is in Waiting status, and does not restart until the scheduled start time has passed
In this case, the task will be executed after JP1/AO restarts.

An error occurs if you specify an execution start date or time that is in the past.

1.5.2 Process of recurring execution

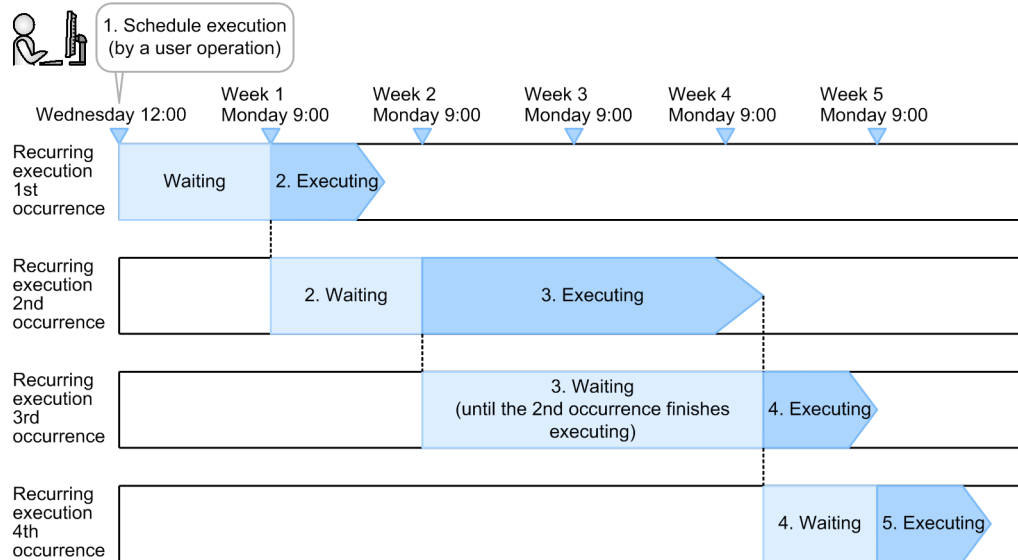
If you specify recurring execution as the schedule type for a service, JP1/AO generates the first task as soon as you submit the service. This task is executed when the scheduled start time arrives, at which point a second task is generated.

The process of executing and generating tasks continues in this way according to the schedule (time and interval) specified for the service.

A generated task remains in Waiting status until execution of the task begins.

Note that task processing might be delayed if the previous task has not finished when the scheduled start time arrives. The following figure shows an example of a service scheduled for recurring execution at 9:00 every Monday:

Figure 1-8: Example of recurring execution



1. Service submitted by user (at 12:00 on Wednesday)

A user submits the service with recurring specified as the schedule type, and an execution schedule of 9:00 every Monday. At this point, JP1/AO generates the first task.

2. First recurring execution (9:00 on Monday of week 1)

JP1/AO executes the first task at the scheduled start time, and then generates the second task.

3. Second recurring execution (9:00 on Monday of week 2)

JP1/AO executes the second task at a time determined by the scheduled start time and interval, and then generates the third task.

4. Third recurring execution (9:00 on Monday of week 3)

If the second task has not finished by the next scheduled start time, JP1/AO executes the third task and generates the fourth when the second task finishes.

5. Fourth recurring execution (9:00 on Monday of week 5)

JP1/AO executes the fourth task at the first occurrence of the scheduled start time (determined by the time and interval) after the fourth task is generated. At this time, the fifth task is also generated.

The process of executing and generating tasks continues in this manner.

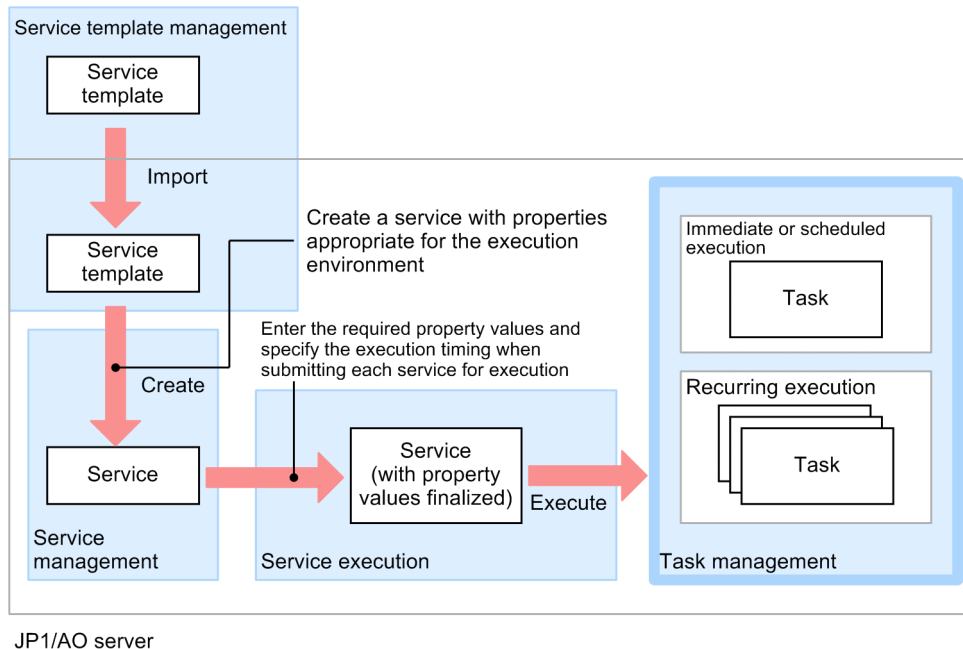
You cannot change the schedule for a service after you have submitted it for execution. If you need to change the schedule, stop any generated tasks and re-submit the service with the new schedule.

1.6 Managing tasks

You can use the task management features of JP1/AO to check the status and progress of tasks, and control task processing.

The following figure shows the general procedure for automating operating procedures, and how it relates to task management.

Figure 1-9: Flow of operating procedure automation (task management)



Tasks that have finished processing can be moved manually or automatically from the Tasks list to the History list in a process called *archiving*. Older task histories moved to the History list can be deleted manually or automatically.

The operations you can perform in relation to task management are listed below.



Tip

Of the operations available in the **Tasks** window, the following can be performed by debug tasks:

- Managing task progress
- Stopping tasks
- Forcibly stopping tasks

For details on how to work with debug tasks, see the *JP1/Automatic Operation Service Template Developer's Guide*.

Check task statuses

You can check the status and progress of executed tasks. The status of a task changes as the task is processed, transitioning through statuses such as In Progress and Completed.

You can view the status of tasks executed by the logged-in user in the task summary area. In the **Tasks** window, you can view the status of all tasks in a list, and check the progress of tasks. You can also check the progress of the flow of a selected task in the **Flow** area.

Provide input to tasks in Waiting for Input status (response entry)

You can enter a response when a task requires input from a user.

When a task requires a user to make a decision or selection, it enters Waiting for Input status. You can identify tasks in this status by checking the task summary, the **Dashboard** window, or the tasks list.

You can configure JP1/AO to notify users by email when a task enters Waiting for Input status. To use this email notification feature, you need to specify SMTP server settings, user IDs, and other information. If you link with JP1/IM, you can use JP1 events to report that a task has entered Waiting for Input status.

Manage schedules

You can suspend, resume, and cancel tasks that are in Waiting or Suspended status. You can only perform schedule management for tasks in these statuses. To stop a task that has already been executed, you need to perform the operation that stops task execution.

Stop task execution

You can stop a task that is in progress.

When you stop execution of a task, steps that are already in progress will continue processing. Steps that had not started executing are left unexecuted and the task enters Failed or Completed status. Note that if you stop a task that is waiting a user response, an error will occur when the user enters a response in the window.

Forcibly stop task execution

You can forcibly stop a task that is in progress.

When you forcibly stop a task, the task stops after the processing of the step that is in progress is stopped. At this time, the task enters Failed or Completed status. When a task is forcibly stopped, the execution result of the plug-in is not applied to the value of service properties.

If you forcibly stop a task when a content plug-in is in progress, the process tree that is being executed on the target device is immediately forcibly stopped, and command execution results are not guaranteed. For details on how the system operates when the plug-in that is in progress is a basic plug-in, see the topic for each basic plug-in in the manual *JP1/Automatic Operation Service Template Reference*.

Note that if you forcibly stop a recurring task, subsequent executions of that task are not affected.

Re-execute tasks

Tasks that have stopped processing (tasks in Completed, Failed, or Canceled status) can be executed as a different task with another task ID.

Note that JP1/AO sets Immediate execution as the schedule type for re-executed tasks. Change the schedule type as needed.

Retry tasks

You can try a task again from a failed step, or from the step after the failed step.

You can retry a task with the same property values and task ID as the original. After retrying a task, you can check the history of the retried task in the task log and the public log.

Move (archive) tasks

You can move finished tasks whose result you have viewed to the History list.

JP1/AO is configured to regularly move tasks to the History list.

Delete task histories

You can delete task histories that are no longer of use.

Note that JP1/AO is configured to regularly delete task histories.

Output (export) task lists

You can output lists of tasks and task histories to a file in CSV format. You can then use this file to compile and analyze task statistics, or use it for record-keeping.

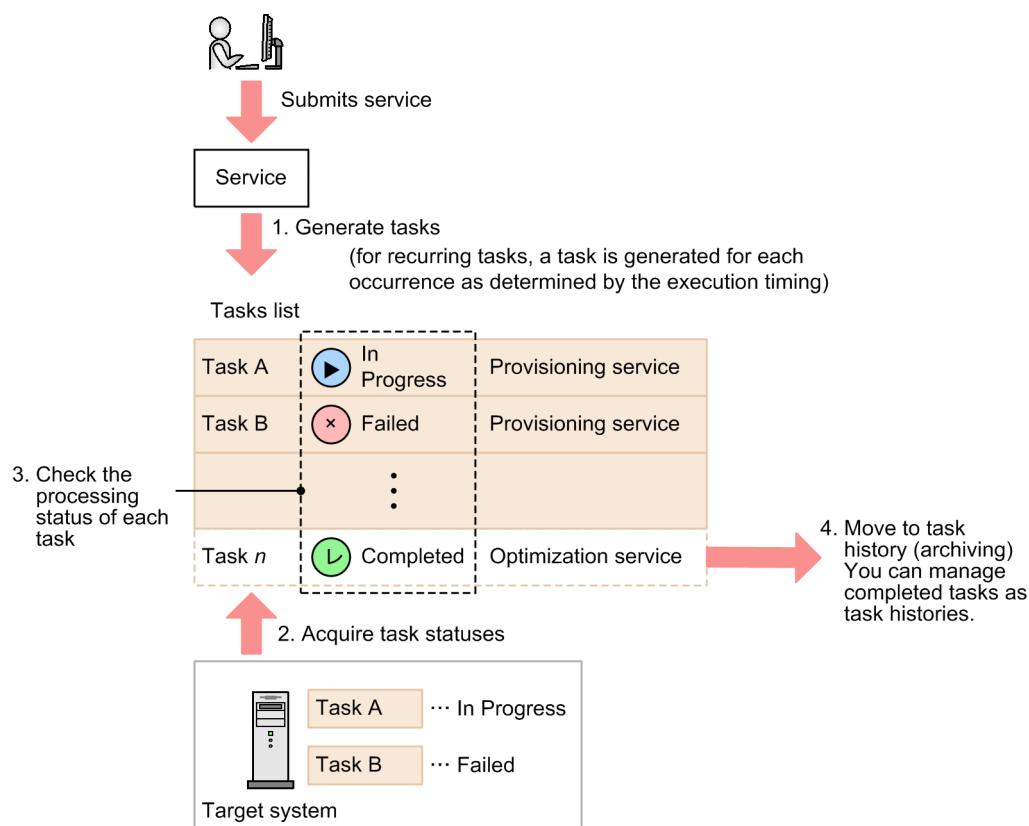
Related topics

- [5.2 Checking task statuses](#)
- [5.4 Providing input to tasks in Waiting for Input status \(response input\)](#)
- [5.5 Suspending tasks \(suspending task schedules\)](#)
- [5.6 Resuming suspended tasks \(resuming task schedules\)](#)
- [5.7 Canceling tasks \(canceling task schedules\)](#)
- [5.8 Stopping tasks](#)
- [5.9 Redoing tasks](#)
- [5.10 Moving tasks to the history list \(archiving\)](#)
- [5.11 Deleting task histories](#)
- [5.12 Exporting tasks lists \(exporting tasks\)](#)

1.6.1 Overview of task management

The following figure provides an overview of task management:

Figure 1-10: Overview of task management

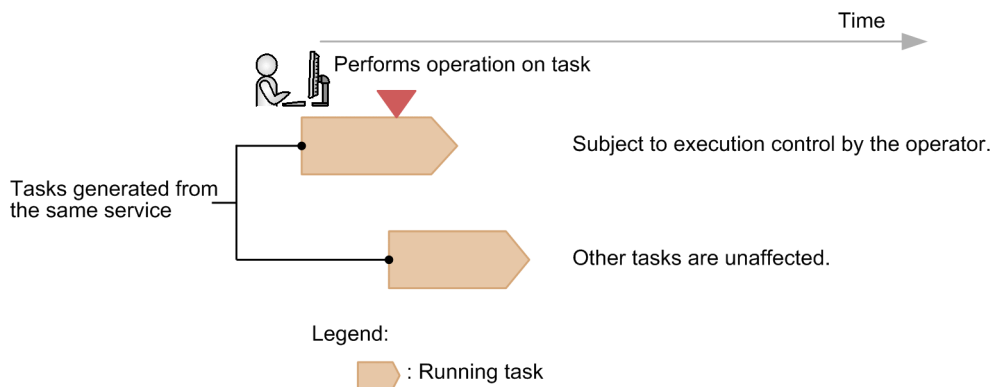


1. When a user submits a service for execution, JP1/AO generates the corresponding task.

2. JP1/AO acquires the task status from the system on which the operation is being performed, and displays it in the Tasks list.
3. The user monitors the processing status of tasks.
The user can, as needed, stop tasks or provide input to tasks in Waiting for Input status.
4. JP1/AO automatically moves tasks whose retention period has elapsed to the History list. You can also do this manually.

Processing performed in relation to a specific task only affects that task. It does not affect other tasks generated from the same service.

Figure 1-11: Scope of task operations



1.6.2 Managing schedules

The schedule management features of JP1/AO allow you to suspend waiting tasks, resume suspended tasks, and cancel waiting or suspended tasks.

Suspending task schedules

You can suspend scheduled and recurring tasks that are in Waiting status.

Execution of the suspended task and generation of subsequent tasks are put on hold until you resume the task schedule.

Resuming task schedules

You can resume suspended tasks.

When you resume a task schedule, tasks that were suspended become executable again (by entering Waiting status) and are executed at the scheduled start time. If you resume a task after the scheduled start time, the task is executed immediately.

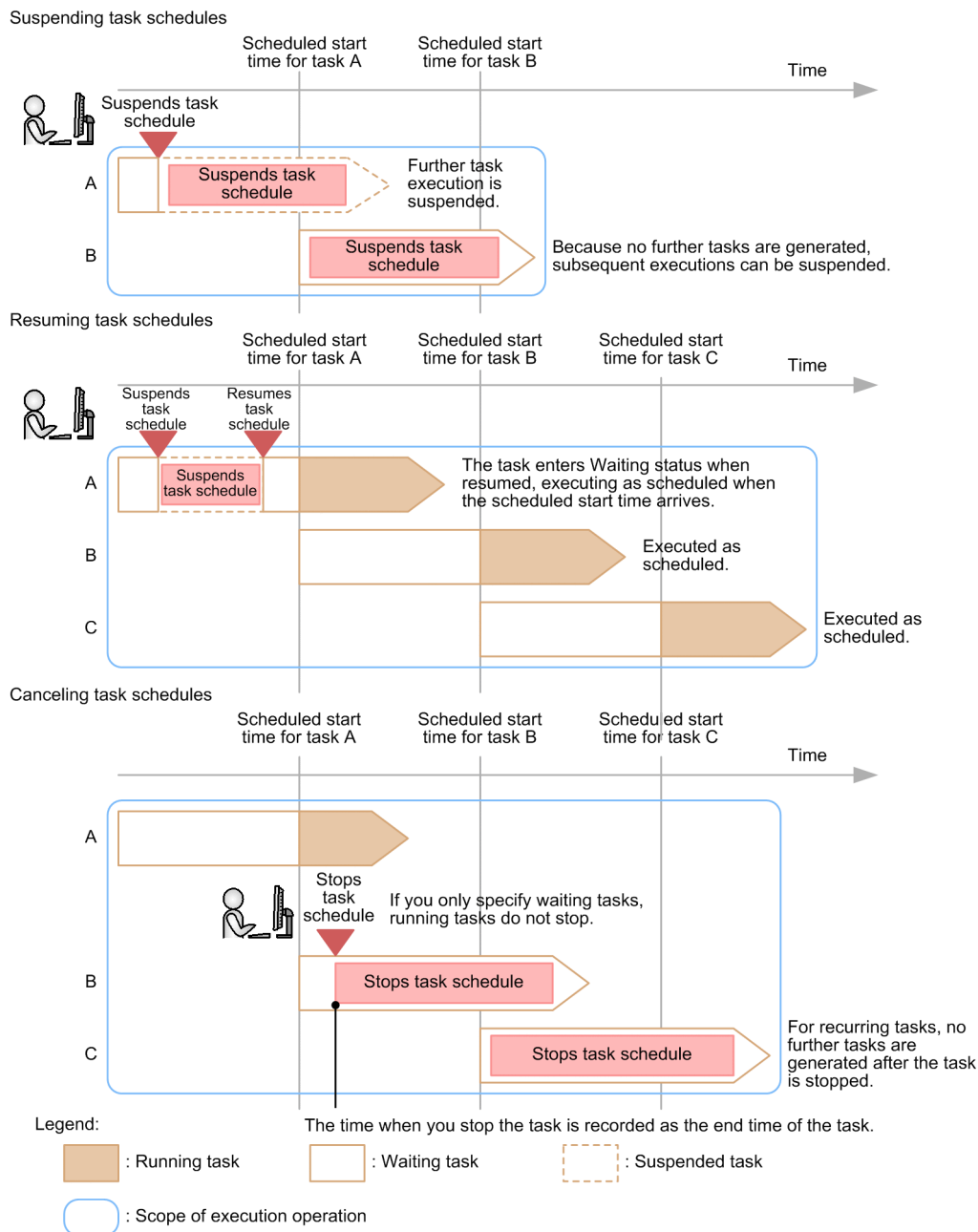
Canceling task schedules

You can cancel scheduled tasks that are waiting or being suspended, and cancel recurring tasks that are in Waiting status. Execution of the task and generation of subsequent tasks are canceled.

If you suspend or cancel the schedule of a recurring task in Waiting status, no further tasks are generated while the schedule is suspended. When you resume the schedule, tasks are executed at the scheduled start time.

The following figure shows how JP1/AO behaves when the schedule of a waiting recurring task is suspended, resumed, or canceled.

Figure 1-12: Suspending and resuming tasks



1.6.3 Checking task statuses

Users can view the status of tasks by using whichever of the following approaches suits their objectives:

Checking the status of tasks executed by the logged-in user

The logged-in user can check the status of the tasks he or she has executed in the task summary area or the **Dashboard** window. The tasks are sorted by status.

You can also display a list of tasks that have a particular status from the task summary area or the **Dashboard** window, when you need to view task details or take action to resolve a problem.

Checking the statuses of all tasks

A user can view a list that shows the statuses of all tasks their permissions allow them to view.

By checking the statuses (such as In Progress or Completed) of the tasks in the task list, the user can get an idea of how automated operations are being processed in the system at a given time.

The list also shows when tasks started and finished processing, who submitted the task, and other information.

Checking the progress of a task

You can check the progress of a task being processed by JP1/AO.

This allows you to find out how far the processing of a task has progressed, which plug-in is currently in progress, and other information.

(1) Checking the general task status

You can view the status of a task on the **Summary** tab of the **Task Details** dialog box. This tab shows the status of the task, when the task started and finished, and other information.

(2) Checking the status of individual steps

In the **Flow** area of the **Tasks** window and the **Flow** tab of the **Task Details** dialog box, the processing status of individual steps is presented in the form of a task flow. These windows show the status, start time, end time, and return value of each step in the flow.

Related topics

- [1.6.7 Task statuses and status transitions](#)
 - [1.6.8 Step statuses](#)
-

1.6.4 Retrying tasks

You can retry a task from a failed step, or from the step after the failed step. The retried task will have the same task ID and inherit the property values of the failed task. The values of Service Share Properties are affected in the following ways:

- Service Share Properties are assigned the property values that applied when the service was first executed
- Shared built-in service properties are assigned the property values set as part of the retry operation

The schedule type of a retried task is immediate execution.

Important

You cannot retry a task if there is no failed step in the task or the task has been restored using the `restoresystem` command.

Information updated when a task is retried

The following information is not updated when a task is retried:

Task ID, task name, task description, input properties, schedule type, and start time

The following information is updated when a task is retried:

End time

The end time is updated when the retried task has ended.

Statuses in which tasks can be retried

Whether a task can be retried depends on the status of the task or step when it ended. The examples below explain circumstances in which tasks can and cannot be retried based on the task or step status.

When a task fails in a step that does not contain a Repeated Execution Plug-in

If you select **Retry the Task From the Step After the Failed Step** when retrying the task, the failed step enters Completed status and JP1/AO executes the task from the step after the failed step.

When a task fails in a step that contains a Repeated Execution Plug-in

If you select **Retry the Task From the Failed Step** when retrying the task, JP1/AO executes the task from the beginning of the Repeated Execution Plug-in.

If you select **Retry the Task From the Step After the Failed Step**, JP1/AO executes the task from the step after the failed step that contains the Repeated Execution Plug-in. At this point, the failed step that contains the Repeated Execution Plug-in enters Completed status, but the status of subordinate steps remain the same.

Depending on the subsequent-step execution condition assigned to the step that contains the Repeated Execution Plug-in, the step that contains the Repeated Execution Plug-in might enter Completed status even if a subordinate step has failed. In this case, you cannot retry the task from the step containing the Repeated Execution Plug-in.

When a step ends with a warning and the task fails

You cannot retry the task because there are no failed steps.

When a task fails at the last step

If you select **Retry the Task From the Step After the Failed Step** when retrying the task, the failed final step enters Completed status. Because this causes the task to end normally, you will be unable to retry the task.

When the setting that specifies whether to permit retry is changed before or after task execution

If you change the service setting that specifies whether to permit retry before or after executing the task, the setting that is in effect at task execution will be inherited. For example, if an attempt to execute a task for which retry is permitted does not succeed, the task can be retried even if, after the task is executed, the service setting is changed so that retry is no longer permitted.

Session behavior when retrying tasks

If processing fails in a subsequent step of a terminal connect plug-in, the session with the remote terminal is disconnected as soon as the task ends. This will cause processing of the terminal command plug-in to fail if you retry the task. In this scenario, re-execute the task instead of retrying it.

However, if the repeated execution flow contains both a terminal connect plug-in and a terminal command plug-in, retrying the Repeated Execution Plug-in causes the repeated execution flow to start from the beginning, and the session is re-established. In this scenario, the terminal command plug-in will be executed with an active session in place.

1.6.5 Automatically archiving tasks and deleting task histories

JP1/AO is configured to automatically archive and delete tasks and task histories.

Automatically archiving tasks

Once a day, JP1/AO archives processed tasks that satisfy the following criteria, in the following order:

1. Tasks whose retention period has elapsed
2. Tasks exceeding the maximum number of tasks that can be retained

Tasks exceeding the maximum number of tasks that can be retained are archived starting from the task with the oldest end time.

Note that the maximum number of tasks that can be retained includes debug tasks.

You can change the retention period and maximum number of retained tasks by editing the user-specified properties file (config_user.properties).



Tip

JP1/AO deletes debug tasks as part of the process of automatically archiving tasks. For details on the automatic deletion of debug tasks, see the topic that describes the procedure for checking the progress of debug tasks from the Tasks window in the *JP1/Automatic Operation Service Template Developer's Guide*.

Automatically deleting task histories

JP1/AO can automatically delete task histories that satisfy certain criteria.

Histories exceeding the maximum number of histories that can be retained are deleted once a day. Deletion starts from the task that was archived earliest.

You can change the maximum number of retained task histories by editing the user-specified properties file (config_user.properties).

In addition to being automatically archived once a day, tasks can also be periodically archived and task histories can be periodically deleted at the specified intervals.

You can change the settings of periodically archiving tasks and periodically deleting task histories by editing the user-specified properties file (config_user.properties).

Periodically archiving tasks

Checks whether the number of tasks has exceeded the value of the property task.periodicalTaskArchive.taskCountThreshold at the intervals specified by the user. If the number of tasks exceeds the value of this property, the tasks that exceed the value of the property task.periodicalTaskArchive.taskCountAfterArchive are to be archived starting from the tasks with the oldest end date and time, regardless of the retention period of the tasks.

Periodically deleting task histories

Automatically deletes the histories that exceed the maximum retention value at the intervals specified by the user. Deletion starts from the task that was archived earliest.

You can change the maximum number of retained task histories by editing the user-specified properties file (config_user.properties).

Related topics

- User-specified properties file (config_user.properties) in the JP1/Automatic Operation Configuration Guide
-

1.6.6 Task categories and generation timing

Tasks can be categorized as follows according to the schedule type specified when the service was submitted for execution.

Table 1-5: Task categories

No.	Task category	Description
1	Immediate	This category of task is generated when a user submits a service for immediate execution. When the service is submitted, the JP1/AO system generates a single task and executes it immediately.
2	Scheduled	This category of task is generated when a user submits a service for execution at a specified date and time. When the service is submitted, the JP1/AO system generates a single task and executes it once at the specified time. Between generation and execution, a scheduled task stays in Waiting status.
3	Recurring	This category of task is generated when a user submits a service for execution on a recurring schedule. When the service is submitted, the JP1/AO system initially generates a single task, and executes it at the specified time. As soon as the first task is executed, JP1/AO generates the next task which it executes based on the recurring schedule. This cycle of execution and generation is repeated on an ongoing basis. Between generation and execution, a recurring task stays in Waiting status.

The following table shows when certain tasks are generated.




Table 1-6: Timing of task generation









No.	Service schedule type	Generated task	Task generation timing	Description
1	Immediate	Immediate execution task	When service is submitted	The task is generated when the user submits the service for execution.
2	Scheduled	Scheduled task		
3	Recurring	Recurring task (first task)		
4		Recurring task (next task)	When the previous task is executed	JP1/AO generates the next task when it executes the preceding task. The cycle of executing a task and then generating the next task continues based on the recurring schedule, until canceled by a user.

1.6.7 Task statuses and status transitions

The following table lists the task statuses used in a JP1/AO system, and shows the corresponding icon.

Table 1-7: Task statuses

No.	Category	Task status	Description	Icon
1	Waiting	Waiting	This status applies to: <ul style="list-style-type: none"> Tasks that are generated but have not started executing Recurring tasks between the start of the previous task and their own execution 	
2		Suspended	This status applies to recurring tasks that have been suspended.	
3	Running	In Progress	This status indicates that the automated process corresponding to the task is running.	

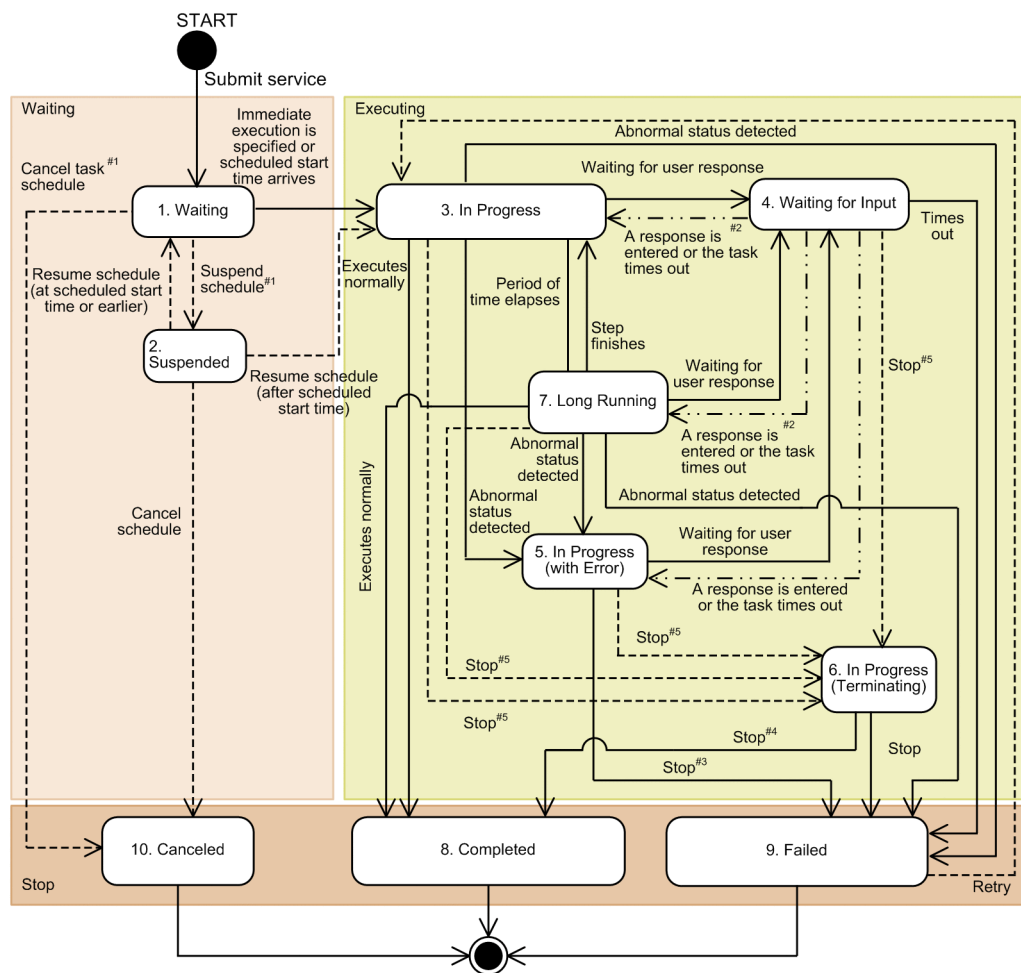
No.	Category	Task status	Description	Icon
4	Running	Waiting for Input	This status applies to tasks whose corresponding automated process requires input from a user.	
5		In Progress (with Error)	This status indicates that an error has been detected in the automated processing corresponding to the task.	
6		In Progress (Terminating)	This status indicates that a user has stopped or forcibly stopped the task, and JP1/AO is in the process of stopping the corresponding automated processing.	
7		Long Running	A status entered when a certain length of time has elapsed since the step started.	
8		Interrupted	A status indicating that a running debug task has been interrupted by the step execution function. This status only appears in the Service Builder Debug window.	
9	Stopped	Completed	Indicates that the corresponding automated process has finished normally.	
10		Failed	Indicates that the corresponding automated process did not finish normally. A task failure occurs when: <ul style="list-style-type: none"> • A task times out while waiting for user input • The automated process corresponding to a task stops because an error occurred • JP1/AO has stopped a task in response to a user request to stop the task[#] • JP1/AO has stopped a task in response to a user request to forcibly stop the task 	
11		Canceled	A status indicating that a user has canceled the task schedule, preventing a scheduled or recurring task from being executed.	

#

If a user stops a task while the final plug-in in the task is being executed, the task enters Completed status.

The figure below shows the transitions that take place between task statuses. The numbers in the figure correspond to the numbers in the Task statuses table.

Figure 1-13: Task status transitions



Legend: —> : Automatic transition - - - -> : Manual transition - · - -> : Automatic or manual transition

- #1:
This transition does not take place for tasks scheduled for immediate execution.
- #2:
If the task is waiting for several responses, the transition takes place when all have been entered.
- #3:
If the user takes no action after the task enters In Progress (with Error) status, the task enters Failed status instead of In Progress (Terminating) status.
- #4:
If the user stops the task while the final plug-in is being executed, the task transitions to Completed status.
- #5:
If the user stops or forcibly stops the task, it enters In Progress (Terminating) status.

For information about the status transitions that take place when a task is restored, see [7.15 Notes on backup and restoration](#).

For information about the task status transitions that take place when you restart the JP1/AO service, see [7.16 Notes on restarting JP1/AO services](#).












Related topics

- Debugging service templates in the JP1/Automatic Operation Service Template Developer's Guide


1.6.8 Step statuses

The **Flow** area provides a graphical representation of the steps in a task, allowing users to see how far a task has progressed. If an arrow conditional-expression is specified for a step, an icon indicating the arrow status will be displayed. Step statuses and their corresponding icons are shown in the table Step statuses and their descriptions, and arrow statuses and their corresponding icons are shown in the table Arrow statuses and descriptions.

Table 1-8: Step statuses and their descriptions

No.	Category	Step status	Description	Icon
1	Waiting	Waiting	This status applies to: <ul style="list-style-type: none"> Steps whose task has been generated but has not started executing Steps that are waiting for the preceding step to finish 	
2		Waiting for Loop Execution	This status indicates that a step or repeated execution flow under a Repeated Execution Plug-in is waiting to be executed. For example, this status applies in the following circumstances: <ul style="list-style-type: none"> Before a Repeated Execution Plug-in is executed When a step in a Repeated Execution Plug-in has been skipped by the debugger function When a task stops before a Repeated Execution Plug-in When a step is waiting because the maximum number of concurrently executable steps^{#1} has been reached during repeated execution 	
3	Running	Interrupted	This status indicates that the step was interrupted immediately before plug-in processing started.	
4		Interrupted (After progressing)	This status indicates that the step was interrupted immediately after plug-in processing finished. This status appears when debugging service templates.	
5		In Progress	This status indicates that the plug-in processing is being executed.	
6		Waiting for Input	This status indicates that plug-in process requires input from a user.	
7		Completed (With Error)	This status indicates that a succeeding step was executed after an error occurred in one or some of the plug-ins in the flow.	
8	Stopped	Completed	Indicates that the corresponding step has finished normally.	
9		Failed	Indicates that the corresponding step did not finish normally. For example, a Failed status might result when: <ul style="list-style-type: none"> The corresponding step is stopped because an error occurred JP1/AO has stopped a step in response to a user request The return value was deemed abnormal on the basis of the subsequent-step execution condition. 	
10		Failed	A status indicating that the corresponding step ended with a warning on the basis of the subsequent-step execution condition.	
11		Unexecuted	A status indicating that the corresponding step was not executed ^{#2} .	

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No.	Category	Step status	Description	Icon
12	Stopped	Bypassed	A status indicating that the corresponding step was not executed because it represents a step not taken by a plug-in that judges a value or return code.	

#1

You can change the maximum number of concurrently executable steps during repeated execution by editing the user-specified properties file (config_user.properties).

#2

Does not include steps that were skipped because a branch by return code Plug-in or branch by property value plug-in selected an alternative flow.

Depending on the step status and plug-in type, some step statuses might not be displayed. The following table shows which statuses are displayed for each type of step.

Table 1-9: Step statuses and whether they are displayed

No.	Category	Step status	Layering step (flow plug-in)	Repeated step	Repeated execution flow	Normal step
1	Waiting	Waiting	Y	Y	Y	Y
2		Waiting for Loop Execution	Y [#]	N	Y	Y [#]
3	Running	Interrupted	N	Y	N	Y
4		Interrupted (After progressing)	N	N	N	Y
5		In Progress	Y	Y	Y	Y
6		Waiting for Input	N	N	N	Y
7		Completed (With Error)	Y	N	Y	N
8		Completed	Y	Y	Y	Y
9	Stopped	Failed	Y	Y	Y	Y
10		Failed	Y	Y	Y	Y
11		Unexecuted	Y	Y	Y	Y
12		Bypassed	Y	Y	N	Y



Legend:


Y: Displayed. N: Not displayed.

#

If the step is under a repeated execution plug-in, the step enters Waiting for Loop Execution status.

Table 1-10: Arrow statuses and their descriptions

Arrow status	Description	Icon
TRUE	This status indicates that the corresponding step matches conditions for execution.	
FALSE	This status indicates that the corresponding step does not match conditions for execution.	

Arrow status	Description	Icon
NOT YET	This status indicates that the corresponding step was not executed.	

Related topics

- User-specified properties file (config_user.properties) in the JP1/Automatic Operation Configuration Guide

1.6.9 Maximum number of concurrently executable plug-ins in a task

There is a limit on the number of plug-ins in a task that can be executed concurrently in a JP1/AO system. The limit for normal tasks is 100, and the limit for debug tasks is 10. These limits are managed separately. If you execute a plug-in that would cause this limit to be exceeded, the plug-in remains in its state prior to execution until a currently running plug-in has finished.

A plug-in that has been put on hold in this way behaves as follows:

- The step enters In Progress status.
- The start date and time of the step are set. However, processing of the plug-in does not yet begin.
- In the case of a debug task, even if you selected the option that interrupts the flow after each step during debugging, the plug-in will not transition from In Progress to Interrupted status. This is because plug-ins are placed on hold before they can enter Interrupted status.
- A message indicating that plug-in execution has started is not output to the task log. This is because plug-ins are placed on hold before the message can be output.

To find out whether plug-ins have been put on hold due to the maximum number of concurrently executable plug-ins being reached, count the number of running plug-ins and compare it against the limit. You can determine how many plug-ins are running by counting them in the task list or debug task list in the **Flow** area.

Related topics

- Procedure to change the maximum number of plug-ins that can be executed concurrently in the JP1/Automatic Operation Configuration Guide

1.6.10 Retention periods for task histories

The retention period for task histories is determined from the maximum retention count and the number of tasks generated per day. Because JP1/AO deletes task histories in excess of the maximum retention count, use the `listtasks` command to export the History list as often as needed. You can set the maximum retention count for task histories in the user-specified properties file.

You can use the following method to calculate how many days of task histories the system can keep:

number-of-days-of-task-histories-to-keep-(truncated at decimal point) = maximum-retention-count / number-of-tasks-generated-per-day

Related topics

- [5.12 Exporting tasks lists \(exporting tasks\)](#)
 - User-specified properties file (config_user.properties) in the JP1/Automatic Operation Configuration Guide
-

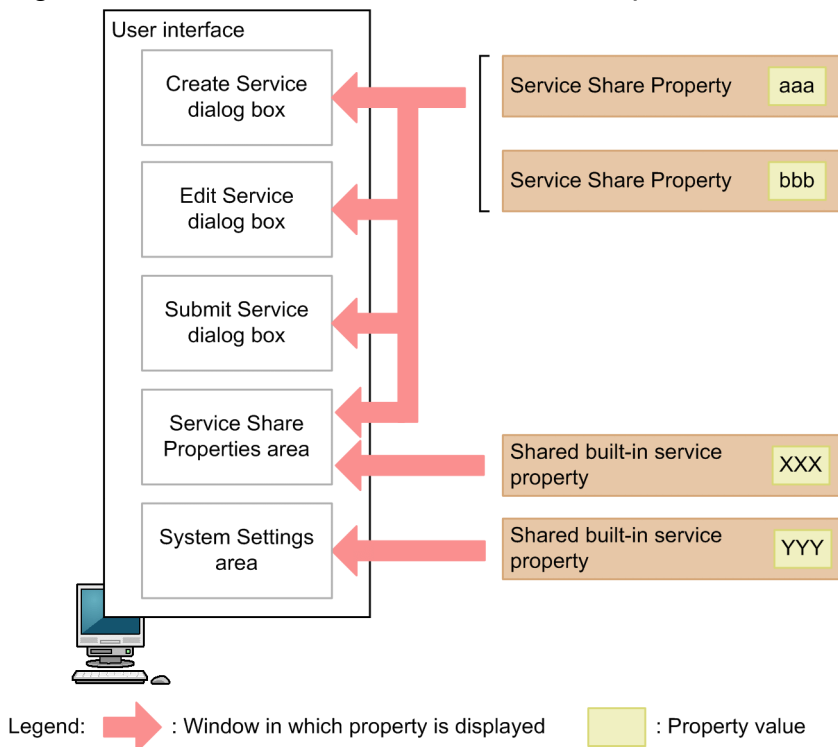
1.7 Setting Service Share Properties

A Service Share Property is a property whose value is shared by more than one service.

For example, if you have a group of service templates whose common purpose is to manage a particular server, you can define the host name, user ID, and password of that server in Service Share Properties. This means you do not have to enter the same server information each time you submit a service for execution.

There are two types of Service Share Properties: ordinary Service Share Properties associated with specific service templates, and shared built-in service properties defined in advance in JP1/AO.

Figure 1-14: Overview of Service Share Properties



Service Share Properties

When you import a service template, the associated Service Share Properties are added to the list in the **Shared Properties Settings** area. They are deleted when the service template is deleted.

The parameters and default values of Service Share Properties depend on the service template.

When creating the service template, you can set the parameters and default values of the Service Share Properties to suit the purpose of the service.

Service Share Properties also appear in the **Service Definition** and **Submit Service** dialog boxes as permitted by the user permissions and service template settings.

Shared built-in service properties

Service Share Properties that are defined in advance in the JP1/AO system are called shared built-in service properties.

Shared built-in service properties appear in the **System Settings** area or **Shared Properties Settings** area of the JP1/AO interface after JP1/AO is installed. You can then assign the appropriate values to the properties. Because shared built-in service properties apply system-wide, they do not appear in the **Service Definition** and **Submit Service** dialog boxes for individual services.

Related topics

- [6.7 Setting Service Share Properties](#)
-

1.8 Setting tags

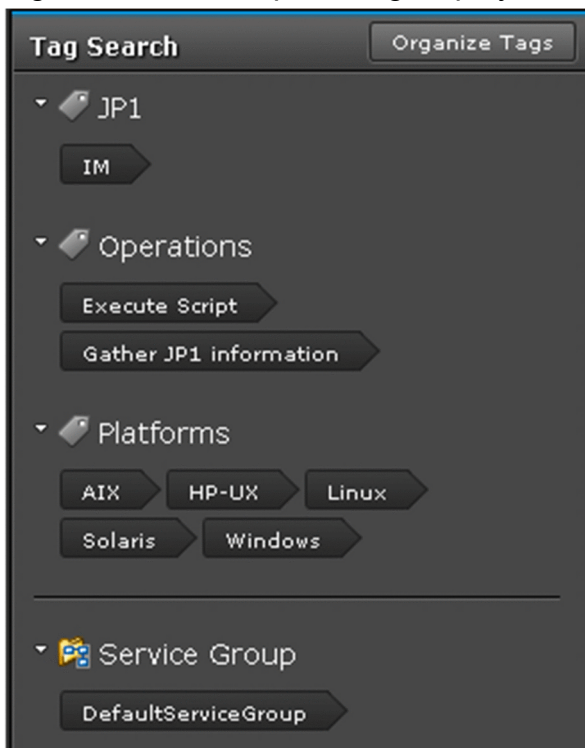
You can assign labels called *tags* to the services, tasks, and service templates managed by JP1/AO. This lets you categorize items by purpose, type, and other criteria. You can also search for resources in JP1/AO by using tags as the search key. You can assign multiple tags to services, tasks, and service templates, allowing you to view a list of items that are associated with a specific business process or are the responsibility of a certain operator.

You can assign tags when creating or editing services, and when creating service templates. Services can inherit the tags of the service templates from which they are generated. Tasks can also inherit the tags assigned to the corresponding service.

You can set tags and tag groups in the **Organize Tags** dialog box.

An example of tag display is shown below.

Figure 1-15: Example of tag display



Related topics

- [2.5.3 Tag Search area](#)
 - [2.5.5 Managing tags and tag groups](#)
-

1.9 Managing users

You can add, edit, and otherwise manage the user accounts used to log in to JP1/AO. You can also lock user accounts. You must have User Management permission to perform most user management operations. More than one user can have User Management permission.

You can also manage users by linking with the authentication function of JP1/Base and Active Directory.

User management in JP1/AO involves the following:

Adding users

Add the user accounts used to log in to JP1/AO.

Editing user information

A user with User Management permission can edit the profiles of all users. Users without this permission can only edit their own profile.

Changing passwords

A user with User Management permission can change the passwords of all users. Users without this permission can only change their own password.

You can set password criteria, such as minimum length and complexity, in the security definition file (security.conf).

Changing User Management permissions

You can control who can manage users in JP1/AO by assigning or revoking User Management permission.

If you change the permission of a logged-user, the original permissions remain in effect for the duration of the login session. The system administrator must instruct any such users to immediately log out and log back in.

However, if the user opens a dialog box (User Management, User Profile, Service Definition, Submit Service, Service Details, Task Details, or Response Input) in a new browser window, the latest permissions for that user apply in the new browser window.

Locking and unlocking user accounts

You can lock a user account to prevent the user from performing operations in JP1/AO. You can also unlock user accounts.

If you lock the account of a logged-in user, that user will be unable to perform any further operations in JP1/AO.

A logged-in user cannot lock his or her own account. The account of a user who fails to log in a specified number of times in succession is automatically locked. If all user accounts have been locked, you must use a command to unlock them.

You cannot lock or unlock the account of a user who logs in using external authentication.

Deleting users

You can delete a user account added to JP1/AO.

Important

- Simply adding a user account is not sufficient to allow the user to manage or submit services. You must also perform the following tasks:
 - Add the user to a user group
 - Assign service groups to the user group
- When external authentication linkage is enabled, the user account (user ID and password) must consist of characters that are valid for both the external authentication server and JP1/AO.



Tip

User IDs are not case sensitive. Passwords are case sensitive.

Related topics

- [6.4.4 Adding users to JP1/AO](#)
- [6.4.5 Editing the user information of another user as an administrator](#)
- [6.8.2 Editing your own user information](#)
- [6.4.6 Changing the password of another user as an administrator](#)
- [6.8.3 Changing your own password](#)
- [6.4.7 Changing the User Management permission settings](#)
- [6.4.8 Locking user accounts](#)
- [6.4.9 Unlocking user accounts](#)
- [6.4.11 Deleting users from JP1/AO](#)
- Security definition file (security.conf) in the JP1/Automatic Operation Configuration Guide

1.9.1 Default user in JP1/AO

When you install JP1/AO, the following user account is registered by default:

System account

A user who logs in using the System account can perform all operations and user management tasks in JP1/AO. You cannot delete this account or change its permissions.

The System account has access to all resources (services and Connection Destinations) in the JP1/AO system as an Admin role user.

When you first log in to a new installation of JP1/AO, log in as the System account user and add users with User Management permission as needed. The default password is *manager*. To prevent unauthorized access, we recommend that you change the password of the System account from the default.



Important

The password of the System account is common across JP1/OA and Hitachi Command Suite products. If the password of the System account has already been changed in JP1/OA or Hitachi Command Suite product installed in your system, the default password will not apply.



Tip

User IDs are not case sensitive. Passwords are case sensitive.

1.10 Managing groups

JP1/AO uses service groups and user groups to control the operation targets and functionality available to each user. A service group is a group of resources (such as services and Connection Destinations), and a user group is a set of users who belong to the same organization or share similar responsibilities.

By allocating service groups to user groups, you can control the access users in that group have to specific resources. By assigning a role to a service group and defining which features of JP1/AO are available to users in that role, you can set the functionality available to each user.

By using the built-in service group and built-in user group created at JP1/AO installation, you can start using JP1/AO without needing to create groups first.

Group management in JP1/AO involves the following:

Creating user groups

You can create user groups in which to register users.

Editing user groups

The changes you can make to a user group include adding users and changing the service groups assigned to the user group.

Changing the user group to which a user belongs

You can add users to and remove users from user groups.

Assigning service groups and roles to user groups

You can assign service groups to user groups. When you allocate a service group to a user group, the users in that user group become able to manage and execute the services in that service group.

You can also assign the Admin, Develop, Modify, or Submit role for each service group you assign to a user group.

If you change the permissions for the user group to which the logged-in user belongs, that user retains his or her original permissions for the duration of the login session. For this reason, the system administrator must instruct any such users to immediately log out and log back in.

Deleting user groups

You can delete user groups.

Deleting a user group does not delete the service groups or users assigned to that user group.

Creating service groups

You can create service groups.

Editing service groups

You can change the name and description of a service group as needed.

Deleting service groups

You can delete service groups as needed.

You cannot delete a service group that contains resources (services, tasks, histories, or Connection Destination definitions).

You can delete a service group even when a role associated with that service group is assigned to a user group.

Important

If JP1/AO is installed on the same server as other Hitachi Command Suite products, the JP1/AO interface displays the service groups and user groups for both JP1/AO and the Hitachi Command Suite products.

User groups in Hitachi Command Suite products

You can manage the user groups for Hitachi Command Suite products in JP1/AO. However, you cannot delete user groups that have been assigned roles in a Hitachi Command Suite product. To delete such a user group, first remove the role or roles from the user group in the relevant Hitachi Command Suite product. You cannot use the JP1/AO interface to change roles assigned in other Hitachi Command Suite products.

Resource groups in Hitachi Command Suite products

You cannot manage resource groups for Hitachi Command Suite products in JP1/AO. Each product manages its own resource groups.

Related topics

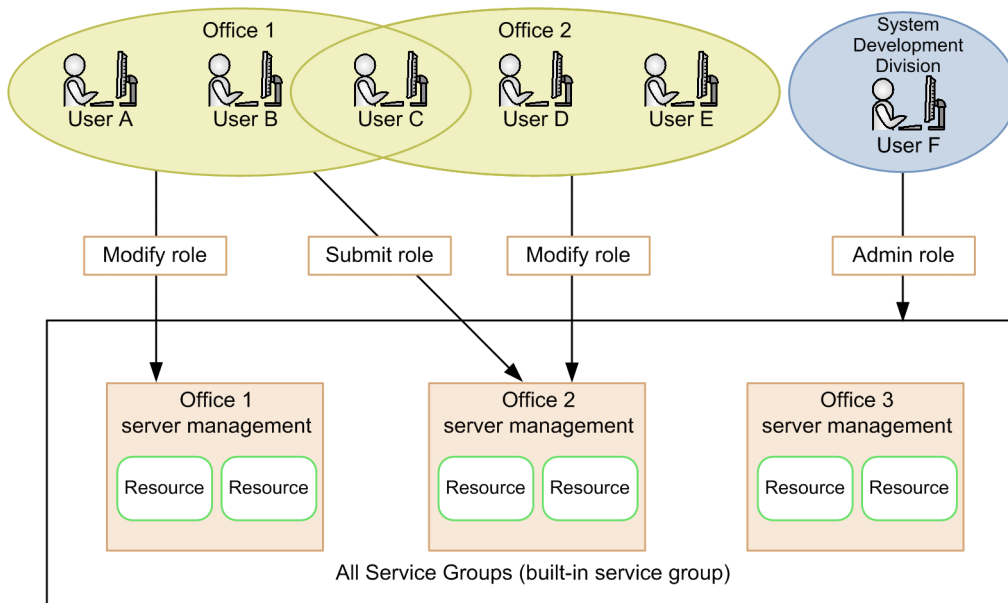
- [6.5.2 Creating user groups](#)
 - [6.5.3 Editing a user group](#)
 - [6.5.5 Assigning users to user groups](#)
 - [6.5.6 Assigning service groups and roles to user groups](#)
 - [6.5.7 Deleting user groups](#)
 - [6.6.2 Creating service groups](#)
 - [6.6.3 Editing service groups](#)
 - [6.6.4 Deleting service groups](#)
-

1.10.1 Controlling access using user groups and service groups

A user group is a group in which JP1/AO users are registered. The users in a user group might belong to the same organization or share similar responsibilities. Service groups are groups of JP1/AO resources (such as services and Connection Destinations), and are created at the level at which you want to control access. To use these groups to control access to functionality such as submitting services and viewing tasks, you assign to each user group the service groups to which you want to permit access.

The following figure shows an example of controlling accesses using user groups and service groups.

Figure 1-16: Example of access control configuration



In this example, the Modify role is assigned to the user group Office 1 for the service group Office 1 Server Management. The user group Office 2 is assigned the Modify role for the service group Office 2 Server Management. The members of these user groups can execute, add, and delete resources in the service group for which they are assigned the Modify role. Because Office 1 also has the Submit role for Office 2 Server Management, users in the Office 1 user group can execute resources in the Office 2 Server Management service group on behalf of users in the Office 2 group. Because the access of the Submit role does not extend to resource management, users A and B who only belong to Office 1 cannot inadvertently delete the resources associated with another office.

In this example, the Office 2 user group is not assigned a role in relation to the Office 1 Server Management service group. Therefore, users D and E who only belong to the Office 2 user group cannot view the resources in the Office 1 Server Management service group. Suppose that User B is transferred from Office 1 to Office 2. In this scenario, you can remove Office 1 from the user groups to which User B belongs, and add Office 2. From that point, User B will no longer be able to view the resources in the Office 1 Server Management group.

User F, who belongs to the System Development Division user group, has access to all services in the JP1/AO system because he or she is assigned the All Service Groups built-in service group.

Managing groups in this way lets you efficiently control the access each user has to specific services.

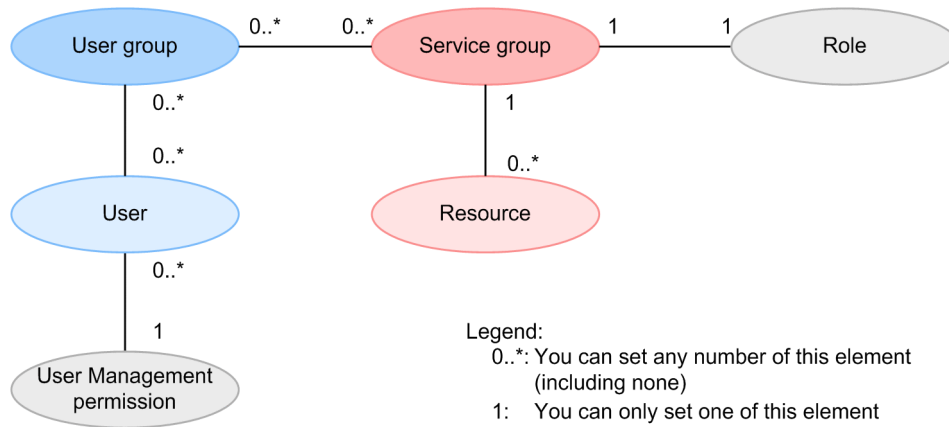
Related topics

- [6.5.5 Assigning users to user groups](#)

1.10.2 Relationship between service groups and user groups

The figure below shows how service groups, user groups, and roles relate to each other.

Figure 1-17: Relationship between elements in group management



Service groups

- Only users in the Admin role can manage service groups.
- You can create multiple service groups.
- Each service group must have a unique name.
- Every resource must belong to a service group, but cannot belong to more than one. You can, however, allocate two separate resources with the same parameters to different service groups.
- The built-in service groups All Service Groups and DefaultServiceGroup are created automatically when you install JP1/AO.

User groups

- Only users with User Management permission can manage user groups.
- You can create multiple user groups.
- Each user group must have a unique name.
- Users can belong to multiple user groups.
- You can assign several service groups to one user group.
- The built-in user groups AdminGroup, DevelopGroup, ModifyGroup, and SubmitGroup are created automatically when you install JP1/AO.

Roles

- You can assign roles at the service group level. When assigning service groups to user groups, only one role can be assigned in relation to each service group.

1.10.3 Built-in service groups and built-in user groups

Built-in service groups and built-in user groups are created automatically when you install JP1/AO.

The users in user groups that are associated with the built-in service group All Service Groups have access to all resources (services and Connection Destinations) managed by JP1/AO. You cannot place specific resources in the All Service Group service group.

JP1/AO provides the following built-in user groups:

AdminGroup

This group is assigned the Admin role for the All Service Groups service group.

DevelopGroup

This group is assigned the Develop role for the All Service Groups service group.

ModifyGroup

This group is assigned the Modify role for the All Service Groups service group.

SubmitGroup

This group is assigned the Submit role for the All Service Groups service group.

When you register users in these built-in user groups, the users gain the permission associated with the assigned role for all resources in the JP1/AO system. This allows you to get up and running immediately without having to create groups first.

Important

- You cannot create, delete, rename, or change the description of a built-in service group or built-in user group.
- JP1/AO also creates built-in user groups for the roles used in Hitachi Command Suite products. However, with JP1/AO, you can only use the AdminGroup, DevelopGroup, ModifyGroup, and SubmitGroup built-in user groups.
- If you install JP1/AO on a server where a Hitachi Command Suite product is installed, and a user group with the same name as a built-in user group already exists, the installer will not create a new instance of that built-in user group.

1.10.4 Roles that can be assigned to service groups

In JP1/AO, you can control the functionality to which each user has access by assigning roles to service groups.

The roles that can be assigned to a service group depend on the service group type. The following table shows the roles that can be assigned to each type of service group.

Table 1-11: Assignable roles by service group type

Role	Available functionality	Can role be assigned?	
		All Service Groups	Service group other than All Service Groups
Admin	<ul style="list-style-type: none">• Service group management• Service template management• Service template development• Service management• Service execution	Y	N
Develop	<ul style="list-style-type: none">• Service template management• Service template development• Service management• Service execution	Y	N
Modify	<ul style="list-style-type: none">• Service management• Service execution	Y	Y

Role	Available functionality	Can role be assigned?	
		All Service Groups	Service group other than All Service Groups
Submit	<ul style="list-style-type: none"> Service execution 	Y	Y

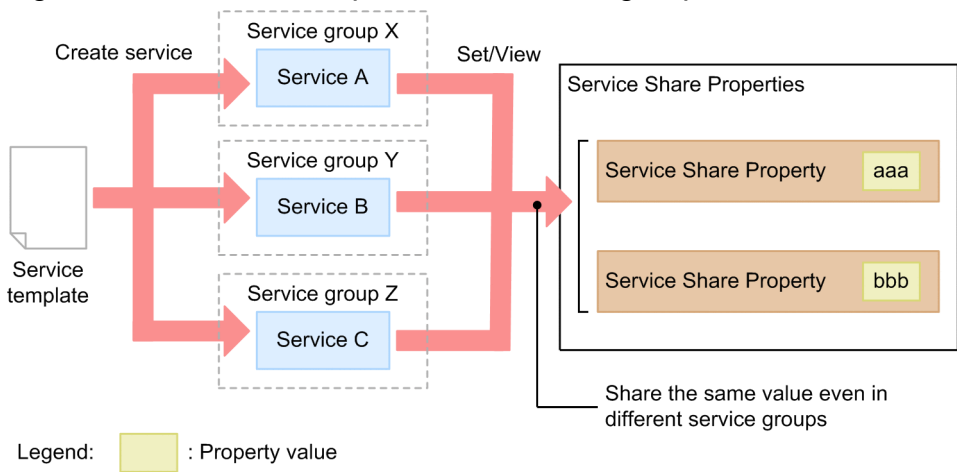
Legend:

Y: Can be assigned. N: Cannot be assigned.

1.10.5 Relationship between service groups and Service Share Properties

The value of a Service Share Property is shared among service groups even when multiple services are created from a service template and assigned to different service groups. A Service Share Property has a single value across the entire JP1/AO system. You cannot give it a different value in different service groups.

Figure 1-18: Relationship between service groups and Service Share Properties



1.11 Managing the web service connection-destination definitions

If the manipulation target is a web service, you can use this function to manage the connection settings. If you register these settings in advance, they can be referenced by JP1/AO services.

The following describes operations related to the management of web service connection-destination definitions.

Creating a web service connection-destination definition

You can create and register the settings of a web service.

The information you can specify as a web service connection-destination definition includes the connection-destination information (such as the host name and IP address) and proxy server information.

Editing a web service connection-destination definition

You can edit a web service connection-destination definition that has already been registered.

Deleting a web service connection-destination definition

You can delete a web service connection-destination definition that has already been registered.

The functions for managing web service connection-destination definitions are available from the **Web Service Connection** area of the **Administration** tab.

1.12 Managing Connection Destinations

In JP1/AO, the host to which a service connects to perform operations is called a Connection Destination. By registering Connection Destination definitions in JP1/AO, when services are submitted for execution, you can restrict access to Connection Destinations based on the service group to which a task belongs.

Note that you need to specify the following to agentless remote connections:

- Operation targets of general command plug-ins
- Operation targets of file-transfer plug-ins
- Operation targets of terminal-connection plug-ins
- Execution target server of content plug-ins

Important

At installation, JP1/AO provides a Connection Destination definition that allows services in the DefaultServiceGroup service group to connect to all connection destination hosts. This means that the connection destinations of services in the DefaultServiceGroup group are not restricted in any way.

To restrict the hosts to which tasks can connect, you need to edit or delete the Connection Destination definition created at installation, and register new definitions that permit connections only to specific hosts.

To use the features for managing Connection Destinations, register the Connection Destinations to which you want to allow access in the **Connection Destination(s)** area. You can then edit the registered Connection Destinations as needed.

Connection Destination management in JP1/AO involves the following:

Creating Connection Destination definitions

You can create and register Connection Destination definitions.

The definition of a Connection Destination consists of connection information such as a host name or IP address, and authentication information such as the user ID and password used to log in to the host.

Editing Connection Destination definitions

You can edit the contents of Connection Destination definitions registered in JP1/AO.

Deleting Connection Destinations

You can delete registered Connection Destinations.

Related topics

- [6.3.2 Adding Connection Destinations](#)
 - [6.3.3 Editing Connection Destinations](#)
 - [6.3.4 Deleting Connection Destinations](#)
 - Prerequisites for connection destinations in the JP1/Automatic Operation Overview and System Design Guide
-

1.12.1 Controlling access using Connection Destination management features

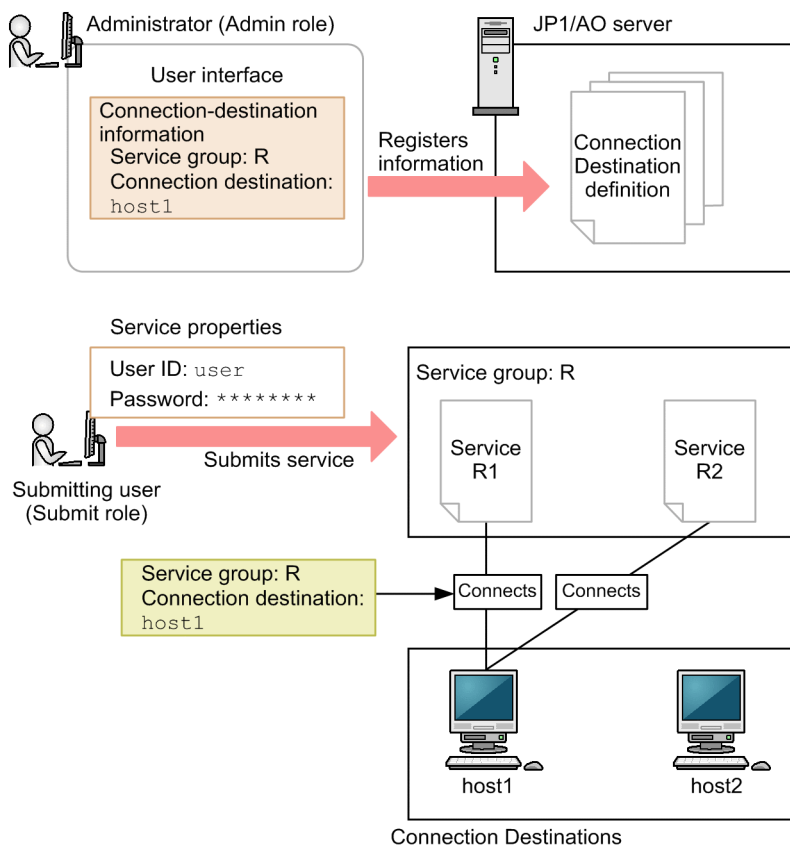
JP1/AO provides two Connection Destination management features: connection-restriction and authentication-information management. This section describes how access to hosts can be controlled using these features.

Connection-restriction feature

In JP1/AO, you can restrict access to connection destination hosts. This is called connection restriction.

You can permit access to a host during service execution by registering the host in advance as a Connection Destination in the JP1/AO system. The definition of a Connection Destination consists of the host name or IP address of the host, the destination type, the service group, and other information. You can register Connection Destinations in the **Connection Destination(s)** area.

Figure 1-19: Accessing Connection Destinations (when using connection restriction)

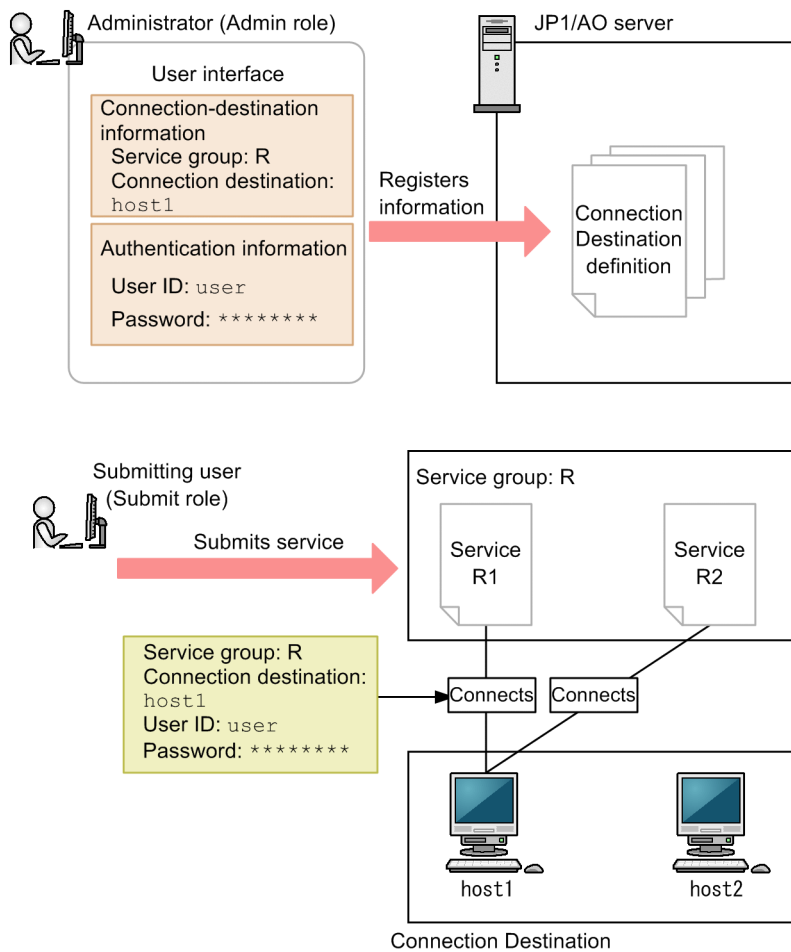


In this example, first, an administrator assigned the Admin role uses the JP1/AO interface to register Connection Destination information. Then, a user assigned the Submit role submits various services to service group R for execution, specifying a user ID and password. Here, the submitting user is only permitted to connect to host1, and connections to other hosts are rejected.

Authentication-information management feature

In addition to information about Connection Destinations, you can register authentication information such as the user ID and password needed to access a host. This is called authentication-information management. By registering authentication information, you can use JP1/AO to manage passwords and other information that is common to a number of services. This means you do not have to enter authentication information each time you submit a service for execution.

Figure 1-20: Accessing Connection Destinations (when using authentication-information management)



In this example, first, a user assigned the Admin role uses the JP1/AO interface to register Connection Destination information and authentication information. Then, a user assigned the Submit role submits various services to service group R for execution. Here, the submitting user is only permitted to connect to host1 for which Connection Destination information is registered. Connections to other hosts are rejected. Also, because authentication information of host1 is registered in JP1/AO, the user does not have to enter a user ID and a password when submitting services.

When creating a service template, you must have registered the Connection Destination information and authentication information (if using the authentication-information management feature) used by the service template before a service generated from the service template is submitted for execution. You can register this information in the JP1/AO user interface, or by using commands. The service will fail to connect to the Connection Destination if this information is missing. For this reason, information about connection-destination hosts must be shared between the creator of the service template and the JP1/AO administrator.

Tip

JP1/AO can keep a record of which definitions for a particular Connection Destination resulted in successful connections. By using a definition that is proven to be successful, you can avoid failed authentication requests and other issues in situations where several sets of authentication information are defined for a single host.

When you edit the definition of a Connection Destination, JP1/AO updates the successful definitions accordingly.

You cannot use this feature to connect to Connection Destinations immediately after installing JP1/AO, or if the maximum number of successful Connection Destination definitions has been reached. In these situations, JP1/AO uses the authentication information registered in the Connection Destination in no particular order.

Related topics

- [1.9 Managing users](#)
 - [1.10.4 Roles that can be assigned to service groups](#)
-

1.12.2 Configuring JP1/AO to reference authentication information when accessing Connection Destinations

You can configure JP1/AO to reference the authentication information specified in Connection Destination definitions when executing services.

How and when you perform this configuration depends on the type of plug-in you are using.

For basic plug-ins

For the following basic plug-ins, specify destination in the `credentialType` property when you create or edit a step. If you specify property for `credentialType`, JP1/AO references the property value of the plug-in instead of the authentication information set in the Connection Destination definition. For details on how to set properties, see the related topics for each plug-in in the manual *JP1/Automatic Operation Service Template Reference*.

- General command plug-in
- File-transfer plug-in
- Terminal connect plug-in

For content plug-ins

When using the **Create Custom Plug-in** or **Edit Custom Plug-in** dialog box to create or edit a plug-in, select **Shared agentless setting** in the **Credential Type** area. If you select **Service input property** for **Credential Type**, JP1/AO will reference the property value of the plug-in instead of the authentication information in the Connection Destination definition.

1.13 Maintenance

You can perform the following maintenance tasks in a JP1/AO system:

Backing up data in a JP1/AO system

You can back up the settings and database information associated with JP1/AO.

Restoring data in a JP1/AO system

You can restore backed up data to JP1/AO.

Maintaining the database

You can use the `hcmds64dbtrans` command to reorganize the database.

Starting the JP1/AO system

You can use the `hcmds64srv` command to start the JP1/AO system.

Stopping the JP1/AO system

You can use the `hcmds64srv` command to stop the JP1/AO system.

Related topics

- [7. Maintenance](#)
-

1.13.1 Restored data

The following table lists the data that is restored when you restore data from a backup:

Table 1-12: Restored data

No.	Category	Restored data
1	Execution information	Tasks
2	History information	Task histories
3	Definition information	Service templates
4		Services
5		Users, user groups, and service groups
6		Connection Destination definitions
7		Service Share Properties
8	Definition files	User-specified properties files, command property files, email notification definition files, connection-destination property files, character-set mapping files, and definition files used for JP1/IM linkage

1.14 Linking with JP1/Base authentication

By linking with JP1/Base, you can use the authentication functionality provided by JP1/Base to manage and authenticate JP1/AO users.

When you use JP1/Base to manage users, you can use the JP1/Base user interface to create JP1 users and assign JP1 resource groups and permission levels. By giving JP1 resource groups and permission levels the same names as JP1/AO service groups and roles, you can manage JP1 users as JP1/AO users.

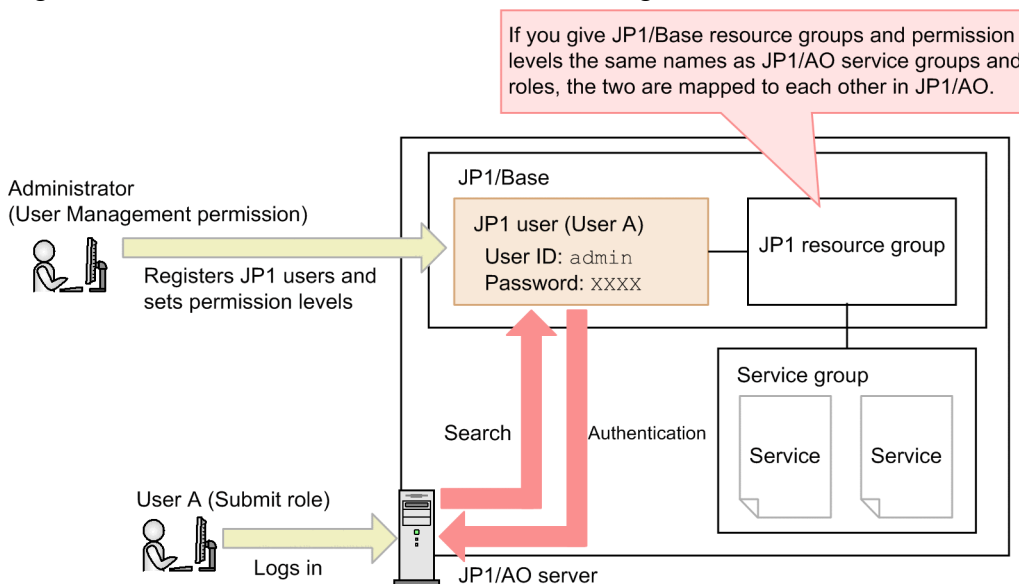
However, a user cannot undergo authentication in JP1/Base if the service group to which the user belongs violates the naming rules for JP1 resource groups.

Linking with JP1/Base offers the following advantages:

- You do not need to manage users and user groups in JP1/AO.
- You can use existing JP1 user accounts in JP1/AO.

The following figure shows a general overview of user authentication when linking with JP1/Base:

Figure 1-21: User authentication when linking with JP1/Base



To link JP1/AO with the authentication functionality of JP1/Base, you need to enter the appropriate settings in the configuration file for external authentication server linkage. In a cluster system, make sure that you configure the active and standby servers using the same settings.

After linking with the JP1/Base authentication functionality, when a user who is not registered in JP1/AO attempts to log in, the authentication process is performed by JP1/Base. When a user who is registered in JP1/AO logs in to JP1/AO, authentication and permissions are managed by JP1/AO without any intervention by JP1/Base.

Related topics

- Linking to the JP1/Base authentication function in the JP1/Automatic Operation Configuration Guide

1.15 Linking with Active Directory

By linking with Active Directory, you can use the users and groups managed by Active Directory in JP1/AO. Note that you can only link with Active Directory when JP1/AO uses Active Directory as the LDAP directory server.

To link with Active Directory, you need to enter the appropriate settings in the configuration file for external authentication server linkage. You can add users or register users and accounts for LDAP search in Active Directory as needed.

When linking with Active Directory, you can select whether to enable group linkage. The available functionality differs depending on whether groups are linked.

- When not using group linkage

Active Directory is responsible for user authentication.
Adding and removing users to and from user groups takes place in JP1/AO.
The same users must be added in JP1/AO and Active Directory. You do not need to set passwords for these users in JP1/AO.
- When using group linkage

Active Directory is responsible for user authentication.
You add groups in Active Directory for use as JP1/AO user groups. Adding and removing users to and from user groups takes place in Active Directory.
Therefore, you do not need to add users in JP1/AO.

Next, the information you need to register in advance and the flow of user authentication are described for a situation in which group linkage is used, and a situation in which it is not.

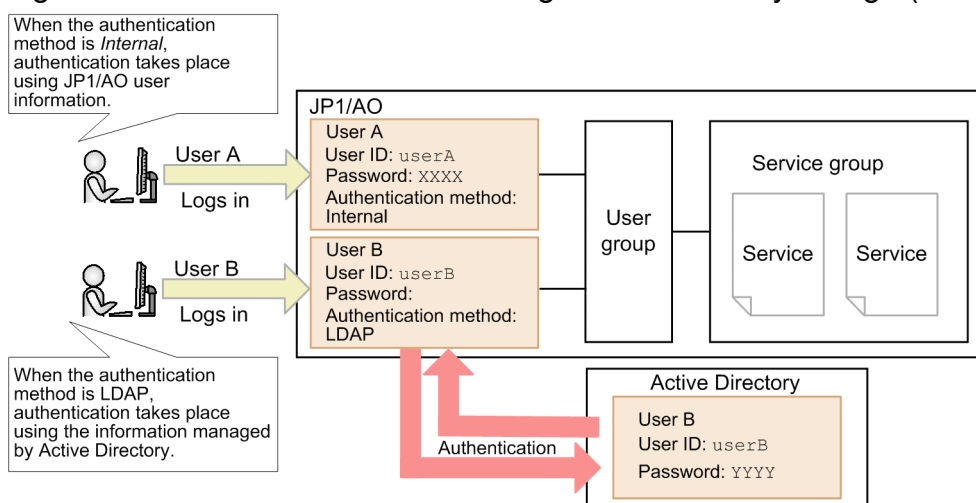
When not using group linkage

When adding users who will log in to JP1/AO, make sure that the user ID in JP1/AO matches the user ID in Active Directory. Passwords need only be registered in Active Directory, and do not need to be managed in JP1/AO.

If LDAP is specified as the authentication method in the JP1/AO user information for a user who logs in to JP1/AO, the login process uses the information managed by Active Directory.

The following figure shows the flow of user authentication when using Active Directory linkage but not group linkage:

Figure 1-22: User authentication using Active Directory linkage (without group linkage)



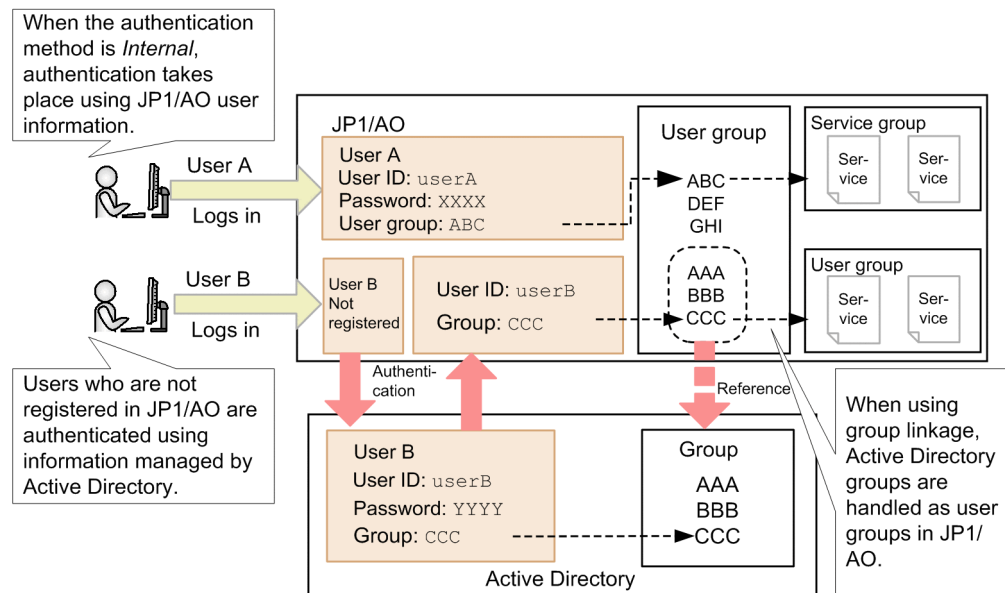
When using group linkage

You can manage Active Directory groups as JP1/AO user groups. This means that you do not need to add users in JP1/AO who are already registered in Active Directory groups. By assigning service groups to an Active Directory group, you can make the resources available to the users in the Active Directory group.

If user information is not registered in JP1/AO when a user logs in to JP1/AO, the login process references the user information in Active Directory.

The following figure shows the flow of user authentication when using Active Directory linkage and group linkage:

Figure 1-23: User authentication using Active Directory linkage (with group linkage)



Related topics

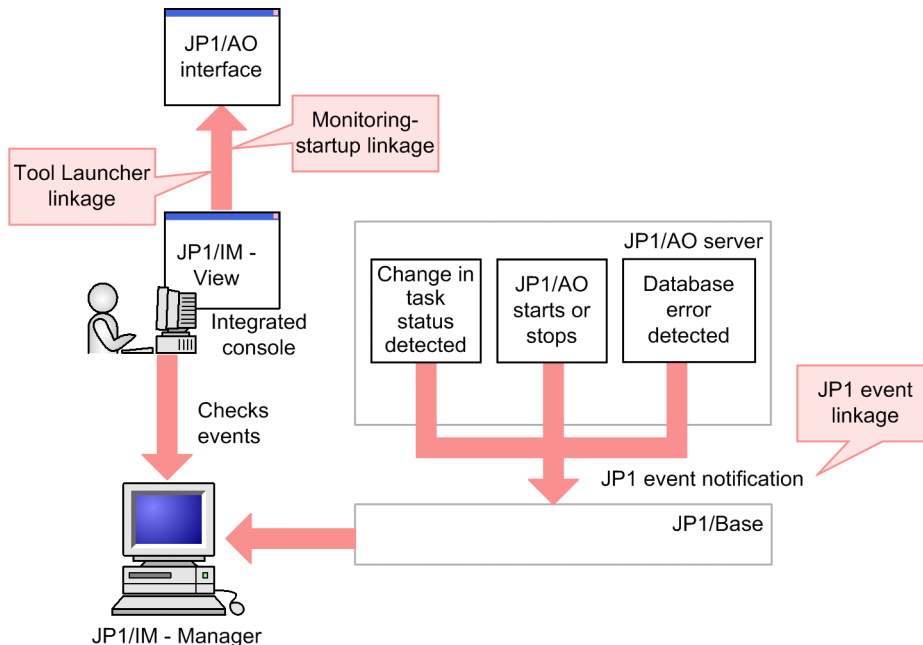
- Linking with Active Directory in the JP1/Automatic Operation Configuration Guide
- [6.4 Managing users](#)
- [6.5 Managing user groups](#)

1.16 Linking with JP1/IM event monitoring

JP1/IM is a product that links with JP1 series products and other middleware to manage the configuration and operation of entire systems from an integrated perspective.

By linking JP1/AO with JP1/IM, you can centrally monitor the JP1 events issued by JP1/AO in JP1/IM.

Figure 1-24: Overview of JP1 event notification



By linking with the event monitoring functionality of JP1/IM, you can use the following features:

JP1 event linkage

JP1 events are forwarded to JP1/IM - Manager via JP1/Base[#]. This allows you to centrally monitor JP1 events from the **Event Console** window of JP1/IM - View.

JP1/AO issues a JP1 event when a change in task status is detected, when JP1/AO starts and stops, and when a database error is detected.

#

In a non-cluster configuration, JP1/AO reports JP1 events to the instance of JP1/Base on the same host. In a cluster environment, JP1 events are reported to the instance of JP1/Base on a host that has the same logical host name as the JP1/AO host.

Monitoring-startup linkage

By defining the window to call in JP1/IM - View in advance, you can display a JP1/AO window from a JP1 event. For example, when investigating a JP1 event that reports a failed JP1/AO task, you can display the JP1/AO window that shows the result of the task directly.

Tool Launcher linkage

By adding JP1/AO to the JP1/IM - View Tool Launcher, you can display JP1/AO windows from JP1/IM - View.

Related topics

- [\(1\) List of JP1 events](#)
- [Linking to the JP1/IM event monitoring function in the JP1/Automatic Operation Configuration Guide](#)

1.16.1 Timing of JP1 event notification

You can use JP1/IM to centrally monitor the JP1 events issued by JP1/AO. The following table describes the timing with which JP1/AO issues JP1 events.

Table 1-13: Timing of JP1 event notification

Timing		Event ID
Category	Subcategory	
Task status detected	A task enters Waiting for Input status	0x00007000
	A task enters Long Running status	
	A task enters Completed status	
	A task enters Failed status	
	A task enters Canceled status	
JP1/AO operating status	JP1/AO starts	0x00007010
	JP1/AO stops	
Error detected in database [#]	An error occurs when connecting to the database	0x00007030

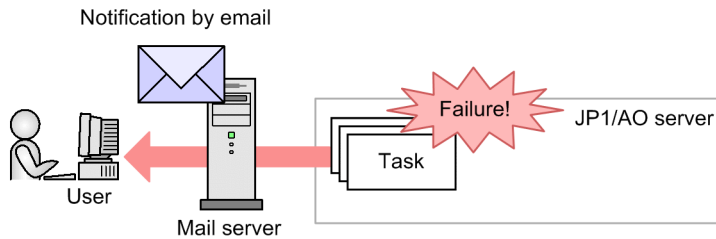
[#] JP1 events resulting from the same occurrence will not be issued for an hour after the first notification.

1.17 Email notification

You can configure JP1/AO to send a notification email when it detects a task error or failure. To use the email notification feature, you need to set the required information in shared built-in service properties and the email notification definition files.

The following figure shows an overview of email notification:

Figure 1-25: Overview of email notification



The following describes the functionality provided by email notification:

Email notification

You can use the SMTP server in the JP1/AO system to send email in text format that reports the abnormal status of a task.

A notification email is sent when:

- JP1/AO detects that a task has entered In Progress (with Error) status
- JP1/AO detects that a task has entered Failed status

Note that JP1/AO does not send a notification email if a task fails because it was stopped by a user. Emails are also not sent if the task was in In Progress (with Error) or In Progress (Terminating) status before transitioning to Failed status.

In addition to these cases, when a service template using email notification plug-in or user-response wait plug-in is executed, a mail notification may be performed.

Related topics

- [A.4 List of email notification settings](#)
 - Email notification definition files (mailDefinition_ja.conf, mailDefinition_en.conf, and mailDefinition_zh.conf) in the JP1/Automatic Operation Configuration Guide
 - Email Notification Plug-in in the manual JP1/Automatic Operation Service Template Reference
-

1.18 Direct-access URLs

You can display a specific window of the JP1/AO interface immediately after logging in by specifying the URL of the window as a direct-access URL.

When you log in with a direct-access URL specified, JP1/AO does not display the intervening windows that usually appear between the **Login** window and the target window.

The following dialog boxes can be displayed using direct-access URLs:

- **Service Definition** dialog box (editing)
A dialog box in which you can view and modify service information.
- **Submit Service** dialog box
A dialog box in which you can submit services for execution.
- **Task Details** dialog box
A dialog box in which you can view detailed information about a task.

Related topics

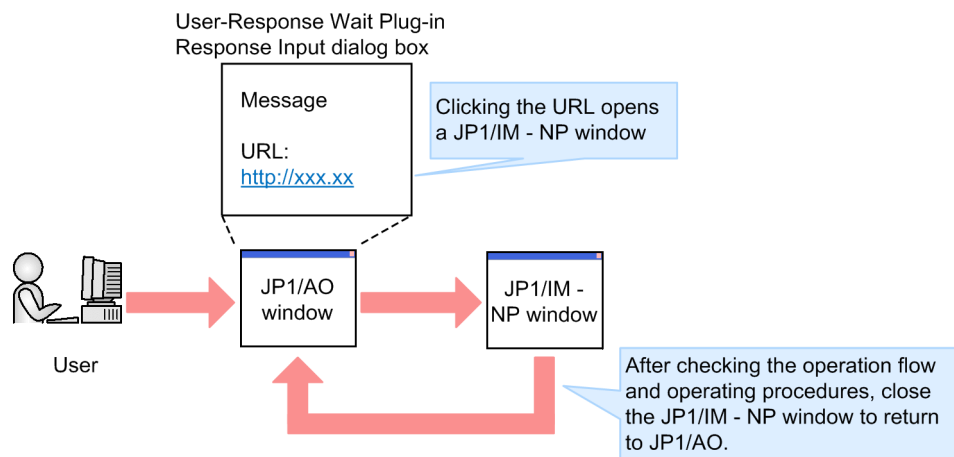
- [A.5 Configuring direct-access URLs](#)
-

1.19 Linking with JP1/IM - NP Operational Content

You can use single sign-on to access a JP1/IM - NP window from the JP1/AO interface. From a **Response Input** dialog box, you can check the flow and operating procedures for a business process by following the Operational Content (Operational Flows and Guides) provided in JP1/IM - NP.

The following figure shows an overview of linking with JP1/IM - NP Operational Content:

Figure 1-26: Overview of linking with JP1/IM - NP Operational Content



A requirement for linking with JP1/IM - NP is that JP1/AO and JP1/IM - NP use the same instance of JP1/Base to perform authentication.

Related topics

- User-Response Wait Plug-in in the manual JP1/Automatic Operation Service Template Reference

2

Windows in the JP1/AO interface

This chapter describes the windows that make up the JP1/AO user interface.

2.1 Login window

You can log in to JP1/AO from the **Login** window. To display the **Login** window, enter one of the URLs shown in the table below. The URL you enter depends on whether your system is in a cluster or non-cluster configuration.

Table 2-1: URLs for the Login window

System configuration	URL	Notes on specification
System in a non-cluster configuration	For HTTP connections: <code>http://host-name-or-IP-address:port-number/Automation/</code> For HTTPS connections: <code>https://host-name-or-IP-address#1:port-number/Automation/</code>	<ul style="list-style-type: none">For <i>host-name-or-IP-address</i>, specify the host name or IP address you specified when installing JP1/AO.The default values for <i>port-number</i> are as follows: For HTTP connections: 22015 For HTTPS connections: 22016 You can change the port number of the JP1/AO system.
System in a cluster configuration	For HTTP connections: <code>http://logical-host-name-or-logical-IP-address:port-number/Automation/</code> For HTTPS connections: <code>https://logical-host-name-or-logical-IP-address#1:port-number/Automation/</code>	The default values of <i>port-number</i> are as follows: For HTTP connections: 22015 For HTTPS connections: 22016 You can change the port number of the JP1/AO system ^{#2} .

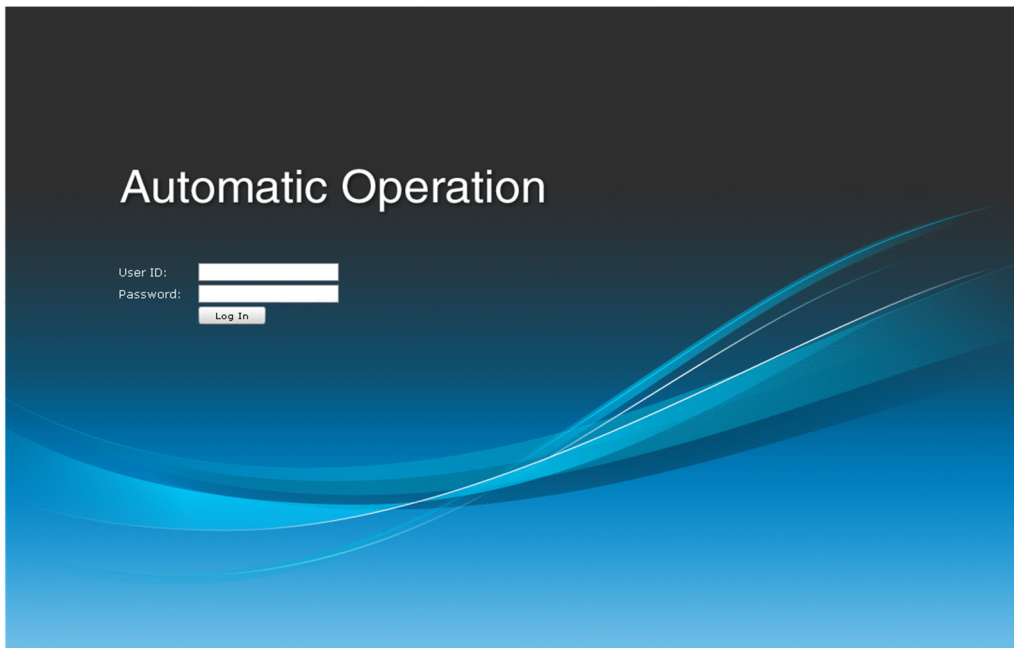
#1

For HTTPS connections, if a host name is specified in the SSL server certificate, we recommend that you specify that host name in the URL. If an IP address is specified in the certificate, specify that IP address in the URL. If the specified value does not match the value in the certificate, a warning or error message is displayed.

#2

If you want to change the port number of a JP1/AO system in a cluster configuration, first stop the service by using the cluster software. When changing the port number, you must make the same change on both the active and standby hosts.

Figure 2-1: **Login** window



The Login window contains the following elements:

User ID text box

Enter your user ID.

Password text box

Enter your password.

OK button

After entering your user ID and password, click this button to log in. After you log in, the main window appears.

Important

When you log in to JP1/AO, a message box might appear informing you that an unexpected error has occurred, or the JP1/AO interface might not be displayed correctly. In this situation, delete your web browser's temporary Internet files, restart your browser, and then log in again. For details on how to delete temporary Internet files, see the documentation for your web browser.

Tip

After installing JP1/AO, when you log in to the system for the first time, use the user ID and password for the System account as follows.

- User ID: `system`
- Password: `manager`

To prevent unauthorized access, we recommend that you change the password of the System account. If the other users will use JP1/AO, register them (create user accounts) as needed.

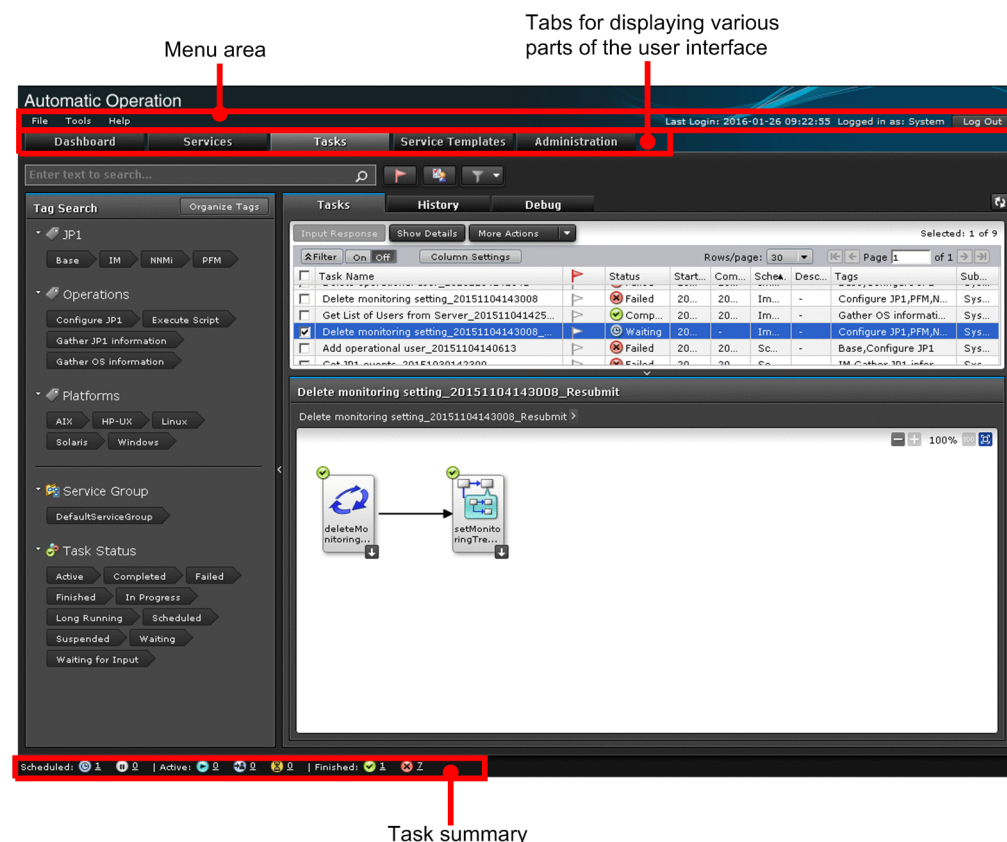
Related topics

- [1.9.1 Default user in JP1/AO](#)
 - [6.4.4 Adding users to JP1/AO](#)
 - [7.13 Stopping a JP1/AO system \(cluster configuration\)](#)
 - [Procedure to change the port number in the JP1/Automatic Operation Configuration Guide](#)
-

2.2 Main window

The main window is the starting point for operations in JP1/AO.

Figure 2-2: Main window



The main window contains the following elements:

Menu area

This area displays the menus of the main window, and the user ID of the logged-in user.

File menu

This menu contains the following commands:

- **Close**
When you click this menu command, a confirmation dialog box appears. Click **OK** to exit JP1/AO and close your web browser.
- **Log Out**
When you click this menu command, a confirmation dialog box appears. Click **OK** to log out of JP1/AO. The **Login** window appears.

Tools menu

This menu contains the following commands:

- **Service Builder**
When you click this menu command, the **Service Builder Home** window appears. This menu command appears only if you are logged in as a user who is assigned the Admin role or Develop role.
- **User Profile**

When you click this menu command, the **User Profile** window for the logged-in user appears.

- **Reset Preferences**

When you click this menu command, the GUI settings revert to their initial values (values set during installation), and you will be logged out of JP1/AO.

Help menu

This menu contains the following commands:

- **Online Manual**

This menu command displays the online manual installed on the JP1/AO server.

- **About**

This menu command displays the **About** dialog box.

Last Login

The time when the logged-in user last logged in is displayed in *YYYY-MM-DD hh:mm:ss* format. *hh* is displayed in 24 hour format.

Logged in as

This area displays the user ID of the logged-in user.

- For JP1 users:

The JP1 user name is displayed.

- For non-JP1 users:

The full name of the logged-in user is displayed. If no full name has been set for the user, the user ID specified at log in will be displayed.

Log Out button

When you click this button, a confirmation dialog box appears. Click **OK** to log out of JP1/AO. You will be returned to the **Login** window.

Dashboard tab

Click this tab to display the **Dashboard** window.

Services tab

Click this tab to display the **Services** window.

Tasks tab

Click this tab to display the **Tasks** window.

Service Templates tab

Click this tab to display the **Service Templates** window.

Administration tab

Click this tab to display the **Administration** window.

Task summary area

This area shows the statuses of tasks executed by the logged-in user, including the number of tasks in each status.

Related topics

- Procedure to install the manual in the JP1/Automatic Operation Configuration Guide
 - Service Builder window in the JP1/Automatic Operation Service Template Developer's Guide
 - [6.8.1 User Profile window](#)
 - [2.2.1 About dialog box](#)
 - [2.3 Dashboard window](#)
 - [3.1 Service Templates window](#)
 - [4.1 Services window](#)
 - [5.1 Tasks window](#)
 - [6.1 Administration window](#)
 - [5.2.1 Checking task statuses from the task summary area](#)
-

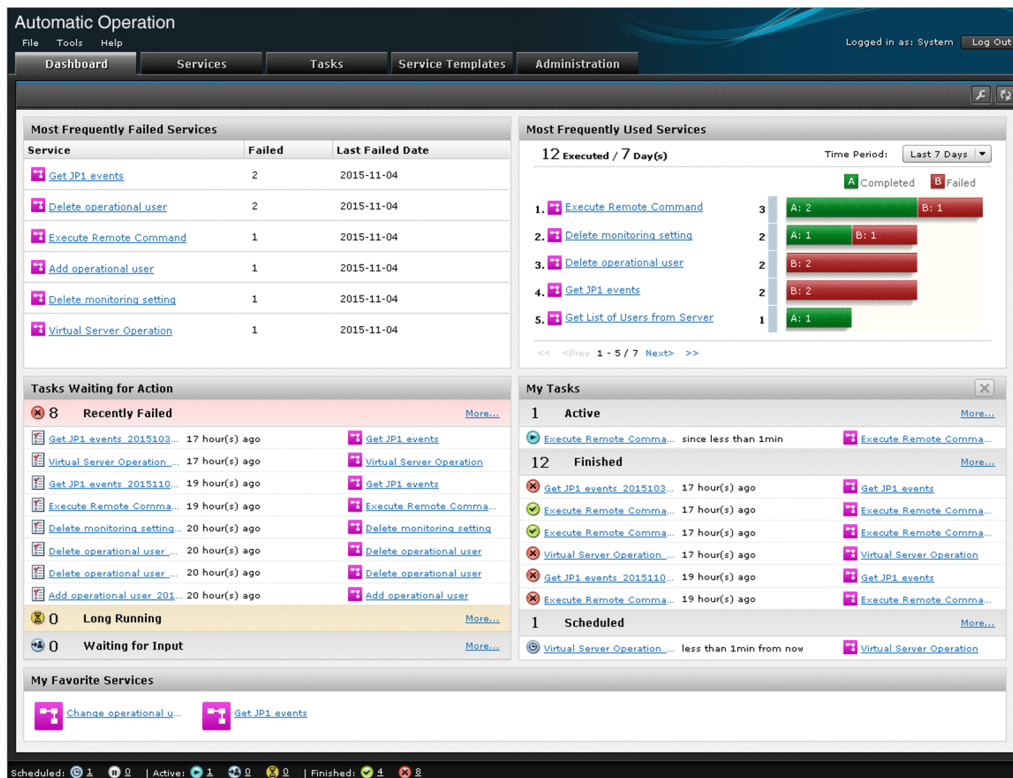
2.2.1 About dialog box

You can use the **About** dialog box to identify the version of JP1/AO you are using. You can display the **About** dialog box by selecting **About** from the **Help** menu.

2.3 Dashboard window

In the **Dashboard** window, you can check the statuses of services and tasks. You can also view reports that present statistics about activity in the JP1/AO system. The **Dashboard** window appears when you log in to JP1/AO and also when you click the **Dashboard** tab.

Figure 2-3: **Dashboard** window



The following reports appear in the **Dashboard** window:

Most Frequently Failed Services

This report that lists the names of the services that generated the most failed tasks in descending order. This report can be used by service administrators to identify and troubleshoot services with a high incidence of failure. The Most Frequently Failed Services report can be viewed by users who have been assigned the Admin, Develop, and Modify roles.

Table 2-2: Items in Most Frequently Failed Services report

Item	Description
Service	The names of services with a high incidence of failure. Only services that can be viewed by the logged-in user appear in the list. When you click the name of a service, the Service Preview dialog box for that service appears. In this dialog box, you can perform operations such as editing or deleting the service.
Failed Count	The number of failed task executions by all users in the system.
Last Failed Date	The date when the task last failed.
More...	When you click the More... anchor text, the Services window appears displaying a list of the services that generated the most failed tasks in descending order.

This report is compiled from the execution results of services executed in Release status. You can reset the counter for a service by selecting **Reset Counter** from the **More Actions** pull-down menu in the **Service Preview** dialog box or the **Services** window.

Most Frequently Used Services

A report that lists the services that were executed most often, in descending order. This report can be viewed by users in the Admin, Develop, and Modify roles.

Table 2-3: Items in Most Frequently Used Services report

Item	Description
Total service execution count	The total number of times services that can be viewed by the logged-in user were executed within the specified time period.
Time Period: pull-down menu	Select Last 7 Days or Last 30 Days as the time period for which to display the report.
Service names	The names of services with a high execution count. When you click the name of a service, the Service Preview dialog box for that service appears. In this dialog box, you can perform operations such as editing or deleting the service.
Execution count per service	For each service that can be viewed by the logged-in user, the number of times the service was executed is displayed. This part of the report also contains a bar graph that shows the ratio of successful to failed executions.

This report is compiled from the execution results of services executed in Release status. Services in Now Running status are not included in the counts.

Tasks Waiting for Action

This report lists failed and long-running services and tasks among those executed by the logged-in user, as well as services and tasks that require user input. This report can be viewed by users in the Admin, Develop, Modify, and Submit roles.

Table 2-4: Items in Tasks Waiting for Action report

Item	Description
Number of tasks	Displays the number of tasks that have failed, are long-running, and are waiting for user input.
Task names	Displays the names of tasks that have failed, are long-running, and are waiting for user input. You can click the name of a task to display the Task Details dialog box for that task. For failed tasks, the report shows when the task finished. For long-running tasks and tasks that are waiting for user input, the report shows when the step started.
Service names	The names of the services that generated the tasks are displayed. When you click the name of a service, the Service Preview dialog box for that service appears. In this dialog box, you can perform operations such as editing or deleting the service.
More...	When you click the More... anchor text, a Tasks window appears whose content is filtered by the status of the selected task (Failed, Long Running, or Waiting for Input).

My Tasks

This report lists the active, completed, and scheduled tasks among those executed by the logged-in user. This report can be viewed by users in the Admin, Develop, Modify, and Submit roles.

Table 2-5: Items displayed in the My Tasks report


Item	Description
Number of tasks	The number of active, finished, and scheduled tasks are displayed.
Task names	The names of the active, finished, and scheduled tasks are displayed.

Item	Description
Task names	You can click the name of a task to display the Task Details dialog box for that task. The report shows when active tasks started, when finished tasks finished, and when scheduled tasks will next start.
Service names	The names of the services that generated the tasks are displayed. When you click the name of a service, the Service Preview dialog box for that service appears. In this dialog box, you can perform operations such as editing or deleting the service.
More...	When you click the More... anchor text, a Tasks window appears whose content is filtered by the status of the selected task (active, finished, or scheduled).



My Favorite Services

This report lists the services the logged-in user has nominated as his or her favorites in the **Services** window. It can be viewed by users in the Admin, Develop, Modify, and Submit roles.

When you click the name of a service, the **Submit Service** window for that service appears.

You can change the sort order of the services by clicking the **Set** button () that appears when you rest your mouse pointer over the title bar.

Tip

- You can use the **Settings** dialog box to select the items that appear in a report. To display the **Settings** dialog box, click the **Settings** button ().
- You can update a report to the latest information by clicking the **Refresh** button ().
- You can re-arrange the reports by dragging their title bars.

Related topics

- [4.1 Services window](#)
- [5.1 Tasks window](#)
- [1.6.7 Task statuses and status transitions](#)
- [5.3 Viewing detailed task information](#)
- [4.4 Executing services](#)

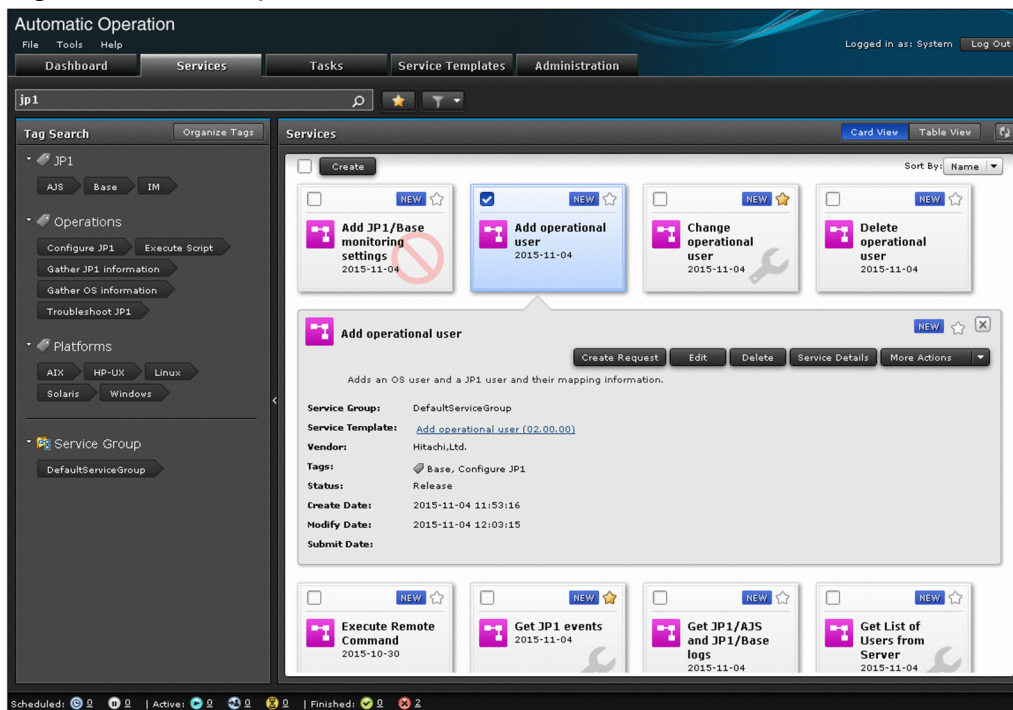
2.4 Card view and table view

The information in the **Services** and **Service Templates** windows can be presented in two ways: card view and table view. You can use the **Card View** and **Table View** buttons to switch between these views. Information in the **Tasks** window is always presented in table view.

Card view

You can use card view in the **Services** and **Service Templates** windows. The figure below shows an example of card view.

Figure 2-4: Example of card view



Card view offers the following advantages:

- Each service and service template is represented by an individual card in a large easy-to-read format.
- A watermark on the background of the card makes the status of the service or service template immediately apparent.
- You can display a preview of a service or service template by clicking the corresponding card.
- Labels on cards let the operator know at a glance when a service template is new or has been recently updated.

Table view

You can use table view in the **Services**, **Tasks**, and **Service Templates** windows. The figure below shows an example of table view.

Figure 2-5: Example of table view

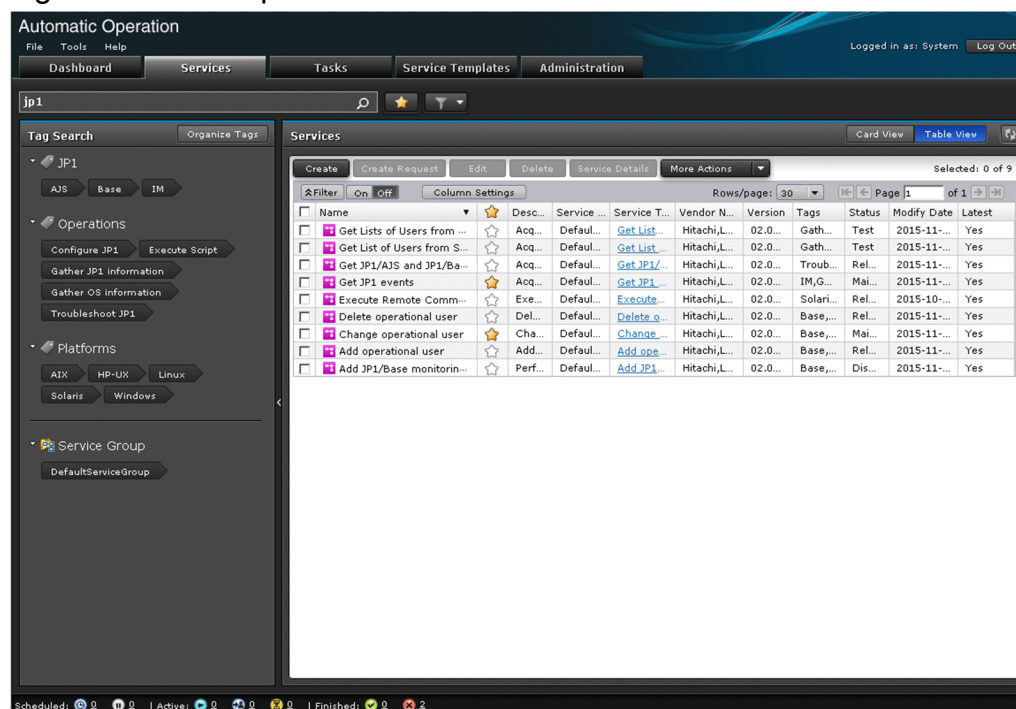


Table view offers the following advantages:

- You can sort data by clicking the column headers in the table.
- You can limit the contents of the table to relevant information by using the tools in the filter area.
- If a list contains a large number of entries, you can use the pagination function to quickly jump to the relevant data.
- You can use the **Column Settings** dialog box to customize the columns in the table.



Tip

When describing how to perform tasks in JP1/AO, this manual assumes that information is displayed in card view. Instructions that relate specifically to table view are presented as tips.

Related topics

- [3.1 Service Templates window](#)
- [4.1 Services window](#)
- [5.1 Tasks window](#)
- [2.5.4 Filter area](#)

2.4.1 Elements displayed in card view

This section describes the elements displayed in card view.

Figure 2-6: Card view in **Services** window

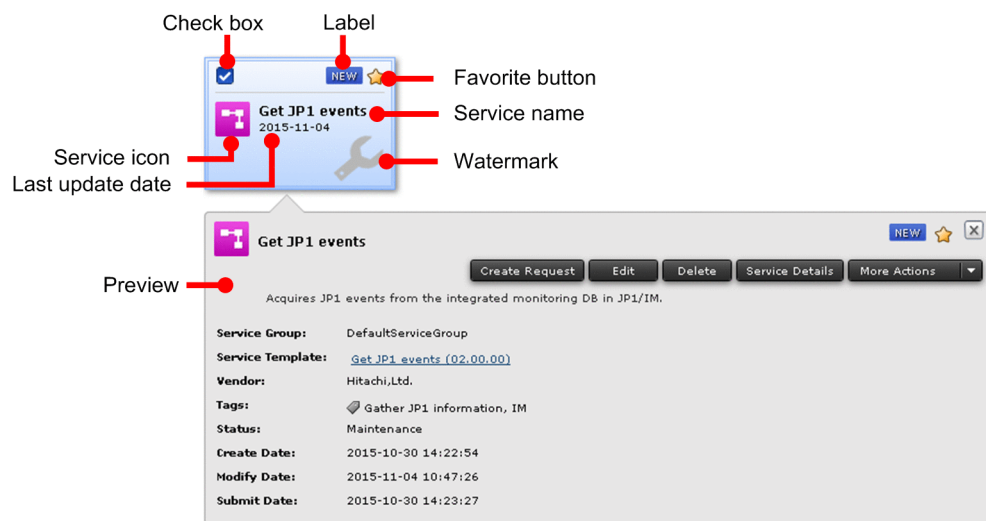


Figure 2-7: Card view in **Service Templates** window

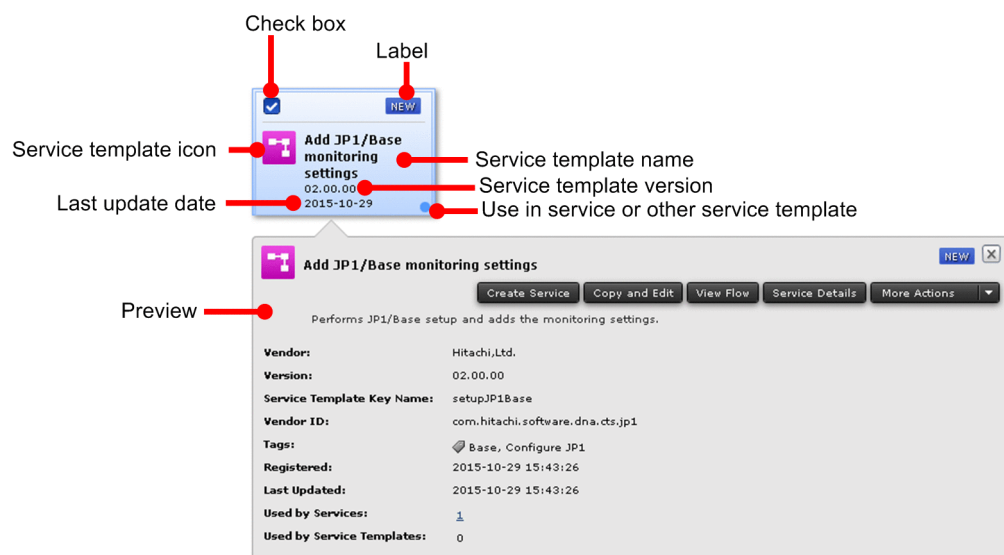


Table 2-6: Items displayed in card view

Item	Description	Displayed in Services window	Displayed in Service Templates window
Check box	When you click a card, that card becomes selected and a tick appears in the check box. You can select multiple cards.	Y	Y
Label	Labels are displayed to let the user know that a service or service template is new or has been recently updated.	Y	Y
Icon	The icon assigned to the service template.	Y	Y
Service name or service template name	The name of the service or service template.	Y	Y
Last update date	The date when the service or service template was last updated.	Y	Y
Watermark	A watermark that indicates the status of the service or service template [#] .	Y	N

Item	Description	Displayed in Services window	Displayed in Service Templates window
Preview	Displays an overview of the service or service template.	Y	Y
Favorite button	Click this button to mark the service or service template as a favorite.	Y	N
Service template version	The version of the service template.	N	Y
Use in service or other service template	This item appears in the following circumstances: <ul style="list-style-type: none"> The service template is being used in a service. The service template is being used as a service component in another service template. 	N	Y

Legend:




Y: Displayed. N: Not displayed.

#

A watermark indicating the status of a service template only appears in the **Select Service Template** dialog box when creating a service.

The labels used in card view depend on the window being displayed. The following table lists the available labels:

Table 2-7: List of labels

Label	Appearance	Description	Displayed in Services window	Displayed in Service Template window
NEW		The service or service template was added within the last 14 days.	Y	Y
OUTDATED		In the Services window: The service is not using the most recent version of the service template. In the Service Templates window: The service template contains an old version of a component.	Y	Y
NEED VUP		There are one or more services in the system that were generated from an old version of the service template.	N	Y





Legend:

Y: Displayed. N: Not displayed.

The watermark displayed as the background of a card depends on the status of the service or service template, and the permissions of the logged-in user. The table below shows the relationship between the status of a service or service template, and the watermark displayed on its card.

Table 2-8: Relationship between service or service template status and watermark

Service status	Service template status	Displayed watermark	Permissions of user
Debug	Debug ^{#1}		Admin or Develop role

Service status	Service template status	Displayed watermark	Permissions of user
Test	--		Admin, Develop, or Modify role
Maintenance	--		Admin, Develop, or Modify role
	--		Submit role
Disabled	--		Admin, Develop, Modify, or Submit role
Release	Release	None	Admin, Develop, Modify, or Submit role ^{#2}

Legend:

--: Not applicable.

#1


Watermarks only appear in the **Select Service Template** area of the **Select Service Template** dialog box when the **Show All Versions** button is selected.

#2

Service template statuses cannot be viewed by users in the Submit role.

2.5 Overview of search functionality in JP1/AO

JP1/AO provides search functionality that lets you search for services, tasks, and service templates in the JP1/AO system. This section describes the search functionality of JP1/AO.

You can conduct searches based on search criteria specified using a combination of these techniques. In this case, the search criteria are combined with the AND operator. You can clear the search criteria by clicking the **Clear** button, and you can save the search criteria by clicking the **Save** button. The saved filter can be selected from  located on the right side of the search text box.

2.5.1 Search box

In the **Services** window, the **Tasks** window, and the **Service Templates** window, you can filter the information listed in the window based on the character string entered in this box. Tags that partially match the character string you enter appear in a drop-down list, and can then be selected.

Figure 2-8: Search box



The scope of searches conducted using the search box depends on the resources you are managing. The following table shows the resources to which searches in the search box apply:




Table 2-9: Targets of searches in search box

Window	Managed resources	Search targets
Services window	Services	<ul style="list-style-type: none">Service namesVendor names of service templatesService descriptionsTags assigned to servicesNames of service templates on which services are based
Tasks window	Tasks	<ul style="list-style-type: none">Task namesTask descriptionsNotesTags assigned to tasksUsers who submitted services for executionNames of services that generated tasks
	Histories	
	Debug tasks	
Service Templates window	Service templates	<ul style="list-style-type: none">Service template namesVendor names of service templatesService template descriptionsTags assigned to service templatesService template vendor IDsService template IDs

2.5.2 Instant filters

Instant filters appear to the right of the search box in the **Services** window and **Tasks** window. They allow you to apply certain pre-defined search criteria with one click. For example, one instant filter lets you display only services you have registered as favorites. The following table lists the available instant filters:

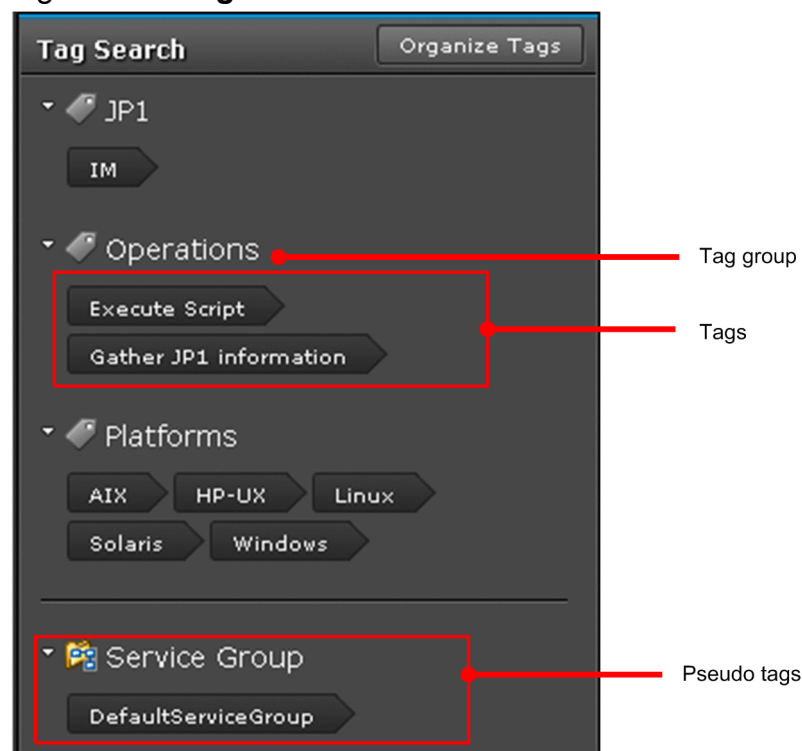
Table 2-10: List of instant filters

Window	Button	Button name	Description
Services window		Favorite button	Click this button to display only the services the logged-in user has marked as favorites.
Tasks window		TODO button	Click this button to display only the tasks to which the logged-in user has applied the TODO flag.
		My Tasks button	Click this button to display only the tasks generated by the logged-in user.

2.5.3 Tag Search area

In the **Services** window, **Tasks** window, and **Service Templates** window, you can use tags to search for services, tasks, and service templates. The **Tag Search** area shows tags arranged by tag group, and pseudo tags. Selecting a tag filters the managed resources by that tag. You can select multiple tags, in which case an AND operator applies between them.

Figure 2-9: Tag Search area



The elements in the Tag Search area are described in the table below.

Table 2-11: Elements in **Tag Search** area

Item	Description
Tag group	Displays the name of the tag group.
Tag	Displays the tags that belong to the tag group. Clicking a tag adds it to the search criteria. Selected tags are displayed in blue.
Pseudo tags	Depending on the window, tags are displayed under the following categories: <ul style="list-style-type: none"> • Services window Service groups • Tasks window Service groups and task statuses • Service Templates window Versions Clicking a tag adds it to the search criteria. Tags that have been selected are displayed in blue.
Organize Tags button	Click this button to display the Organize Tags dialog box. This button only appears if the logged-in user is assigned the Admin or Develop role.

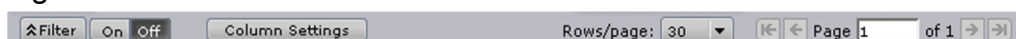
Related topics

- [1.8 Setting tags](#)
- [2.5.5 Managing tags and tag groups](#)

2.5.4 Filter area

In the filter area, you can perform operations such as filtering the information displayed in the window, and selecting which columns are displayed. You can use the filter area in table view only. The settings in the filter area will remain in effect the next time you log in.

Figure 2-10: Filter area



The elements in the filter area are described below.

Filter button

When you click this button, the condition setting area appears.

Condition setting area

When you specify a condition and click the **Apply** button, the information in the list is filtered by the condition you specified.

Figure 2-11: Condition setting area



Attribute: pull-down menu

Select the column to which to apply the filter condition.

Condition pull-down menu

Select the filter condition from the following. The conditions you can select depend on the item selected in the **Attribute:** pull-down menu.

- = (equal to)
- \neq (not equal to)
- > (greater than)
- < (less than)
- \geq (greater than or equal to)
- \leq (less than or equal to)
- starts with
- ends with

Value text box

Specify the value to apply as the filter condition.

- button

Click this button to remove the condition setting you specified.

+ button

Click this button to add a condition setting. This allows you to specify multiple conditions.

Match condition pull-down menu

When multiple conditions are specified, select whether the resource needs to match all or any of the conditions.

Apply button

Click this button to filter the information in the list according to the specified conditions.

Reset button

Click this button to display the filter conditions that are currently set for the information in the list.

Clear button

Click this button to delete the conditions you set.

On button

Select this button to apply the conditions you set to the information in the list.

Off button

Select this button to stop applying the conditions you set.

Column Settings button

Click this button to display the **Column Settings** dialog box.

In this dialog box, you can select which columns to display, and change the order in which they are displayed.

Rows/page: pull-down menu

Select the number of rows to display per page. You can select 30, 50, 100, 250, or 500.

First page button

Click this button to go to the first page of the list.

Previous page button

Click this button to go to previous current page.

Current page text box

This text box displays the current page number. You can also specify the page number you want to display.

Next page button

Click this button to go to the next page.

Last page button

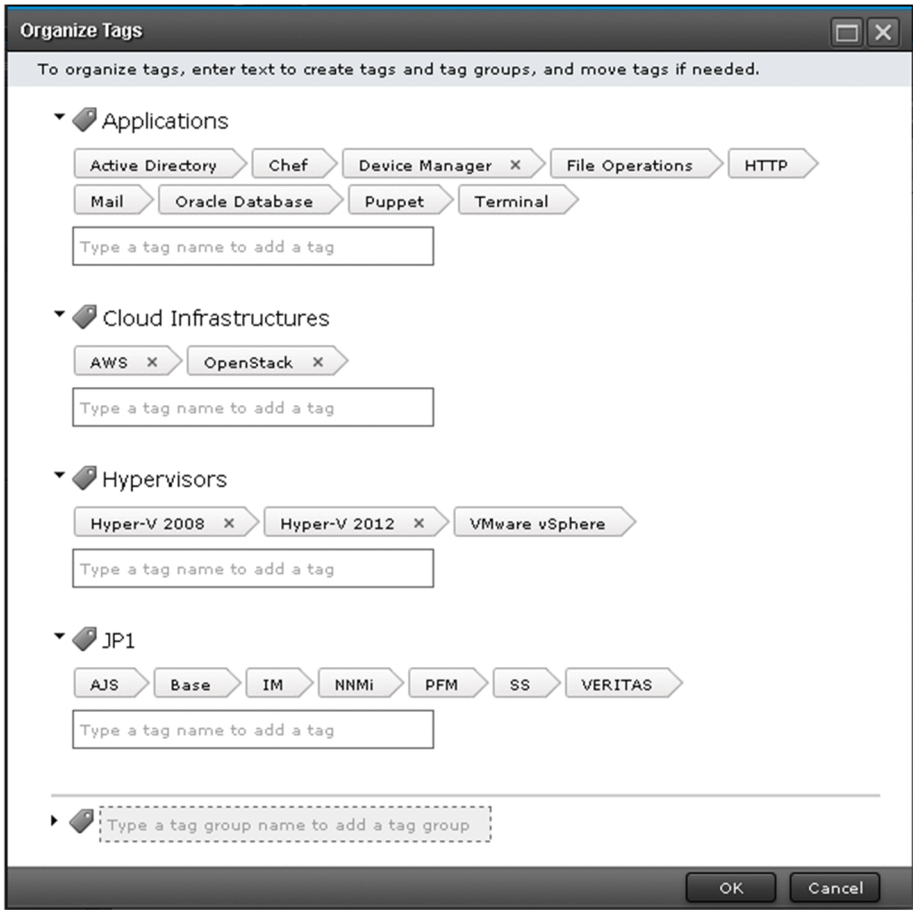
Click this button to go to the last page in the list.

2.5.5 Managing tags and tag groups

This section describes how to create, edit, and delete tags and tag groups. It also describes how to move tags from one tag group to another. You can perform the operations described in this section in the **Organize Tags** dialog box. Note that you cannot edit or move pseudo tags.



Only users with Admin or Develop permission can perform operations in the **Organize Tags** dialog box.

Figure 2-12: **Organize Tags** dialog box



The elements in the **Organize Tags** dialog box are described in the table below.

Table 2-12: Items in **Organize Tags** dialog box

Item	Description
Tag group name	<p>Displays the name of the tag group.</p> <p>When you position your mouse pointer near a tag group name, the following buttons appear:</p> <ul style="list-style-type: none">  <p>Click this button to display a text box in which you can edit the tag group name.</p>  <p>Click this button to delete the tag group. Any tags that belong to the tag group are also deleted. Note that you will be unable to delete the tag group if any of its tags are in use.</p>
Tags	<p>Displays the tags that belong to the tag group.</p> <p>When you place your mouse pointer over a tag, a tooltip appears that shows whether the tag is in use. If the tag is not in use, an x icon appears. You can delete the tag by clicking this icon. You cannot delete a tag that is in use. You can also move a tag by dragging it to another tag group.</p>
New tag text boxes	<p>You can create a new tag by entering the name of the tag in these text boxes. You can enter a maximum of 256 characters as the tag name.</p>
New tag group text box	<p>You can create a new tag group by entering the name of the tag group in this text box. You can enter a maximum of 256 characters as the tag group name.</p>

Related topics

- [1.8 Setting tags](#)
-

2.6 Notes on using web browsers

This section provides cautionary notes that apply when using JP1/AO in a web browser.

Notes on using web browsers:

- The language of the JP1/AO interface is determined by the language setting of your web browser. Specify one of the following as your browser's language setting:
 - Japanese
 - English
 - Chinese (Simplified)
 - German
 - French
 - Spanish
 - Korean
 - Russian

If you do not specify a language setting, some windows might display content in different languages.

- If you specify German, French, Spanish, Korean, or Russian as the language setting of your web browser, the JP1/AO user interface is displayed in English. However, you will be able to enter information in any language. The character strings you enter are converted to UTF-8-encoded strings.
- When a Chinese-language message contains a variable component, the string that replaces it might be displayed in English or the language in which it was entered by the user.
- JP1/AO does not support the input of non-standard characters or characters in surrogate pairs. These characters might appear garbled in the JP1/AO interface, or might not be processed as the intended character.
- When you download or export files from the user interface, the location where the file is saved depends on the web browser configuration. To change the file location, change the appropriate setting in your web browser.
- After you change the icon of a service template, the new icon might not appear right away in the user interface. In this situation, use the functionality of your web browser to refresh the browser window.
- If you enable pop-up blocking in your web browser, operations that involve the display of a pop-up window might not work correctly. You can avoid this issue by adding the JP1/AO address as a permitted site.
- If a problem arises when you attempt to perform any of the following operations in your web browser, restart your web browser and log in again:
 - Navigate to another Web page in your web browser, or click the Back, Next, or Refresh button
 - Zoom in or out using a feature not provided by JP1/AO
 - Press the Esc key or click the Stop button
 - Click Close to close your browser window while logged in
 - Make changes to Internet Options while logged in

Notes on using Internet Explorer:

- When using JP1/AO from a Windows Server terminal, the loading animation might not appear if you are using Internet Explorer in IE ESC (Internet Explorer Enhanced Security Configuration) mode.
- JP1/AO is not compatible with the Modern interface of Internet Explorer.

- When the built-in Administrator user displays a new dialog box in Internet Explorer 11, an empty window might be displayed in addition to the window that contains the dialog box. In this case, close the empty window.
- If you have turned on Enhanced Protection Mode in Internet Explorer, you will be unable to download task logs to any folder other than the current folder. You can avoid this issue by adding the JP1/AO interface to the list of trusted sites.
- If File download is disabled for the Internet zone in the Internet Options, attempts to download or export files might fail. If such attempts fail, enable File download for the Internet zone.

3

Managing service templates

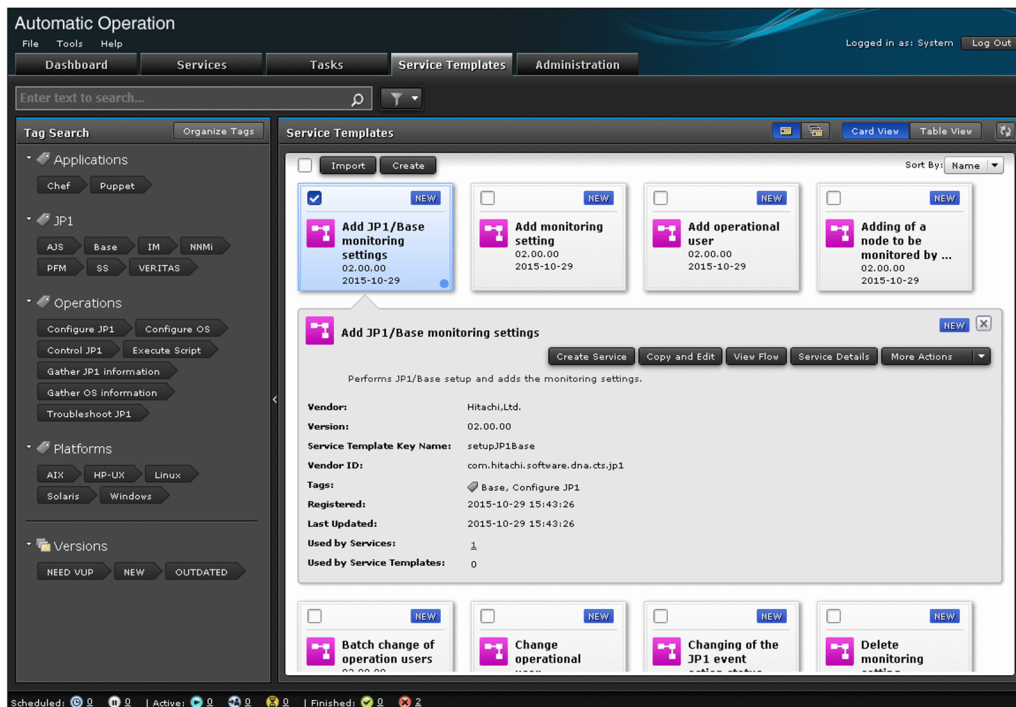
This chapter describes how to manage service templates in JP1/AO.

3.1 Service Templates window

The **Service Templates** window is a window in which you can perform tasks related to service template management. You can display the **Service Templates** window by clicking the **Service Templates** tab in the main JP1/AO window.

The **Service Templates** window can be viewed by users in the Admin, Develop, and Modify roles.

Figure 3-1: **Service Templates** window



The **Service Templates** area displays information about release service templates in list form.

You can perform the following operations in the **Service Templates** area:

- Import service templates
- Create service templates
- Create services
- Copy service templates
- View the flow of a service template
- Export service templates
- Delete service templates
- Apply the latest version of a service template
- Update the components used in a service template
- View a detailed description of a service




The table below describes the items displayed in the list of service templates in the **Service Templates** area. When the information is displayed in table view, you can use the **Column Settings** dialog box to customize the information displayed in the table.

Table 3-1: Items in service template list (**Service Templates** area)

Item	Description
Name	The name of the service template.
Vendor	The vendor of the service template.
Version	The version of the service template.
Description	A description of the service template.
Service Template Key Name	The service template ID.
Vendor ID	The vendor ID.
Tags	The tags assigned to the service template.
Registered	The date and time at which the service template was created.
Updated	The date and time at which the service template was updated.
Latest Version	Whether the service template is the latest version.
Used Services	The number of services that are based on the service template.
Used Service Templates	The number of service templates that use the service template as a component.
Outdated Services	Whether any services are based on an outdated version of the service template.
Outdated Component	Whether the service template incorporates any outdated components.



Tip

- In the **Service Templates** area, you can have the service template list display all versions of a service template, or only the latest version. You can switch between these options by clicking the **Show Latest Version**  and **Show All Versions** buttons .
- The information in the **Service Templates** area can be displayed in card view or table view. To switch between these views, use the **Card View** and **Table View** buttons.
- You can update the window contents to the latest information by clicking the **Refresh** button .

Related topics

- [2.4 Card view and table view](#)
- [2.5 Overview of search functionality in JP1/AO](#)

3.2 Developing service templates

Users of JP1/AO need to develop the service templates required to automate operating procedures.

Who can perform this task:

Users in the Admin role or Develop role

To develop a service template:

For details on how to develop service templates, see the *JP1/Automatic Operation Service Template Developer's Guide*.

3.3 Importing service templates

The following describes how to import service templates into JP1/AO. Importing is the process of adding a service template to the JP1/AO system. This section describes the procedure for importing a release service template. You can perform this task from the user interface, or by using a command.

Development service templates can be imported from the **Service Builder** window, or by executing the `importservicetemplate` command. For details on the procedure for importing development service templates from the **Service Builder** window, see the *JP1/Automatic Operation Service Template Developer's Guide*.

Important

If the service template or zip file that contains service templates is larger than 100 MB, use the `importservicetemplate` command to import the service templates.

Who can perform this task:

Users in the Admin role or Develop role

When using the command to import service templates, the user must also have Administrators or root permission for the operating system.

To import service templates from the user interface:

1. Display the **Service Templates** window.
2. Click the **Import** button in the **Service Templates** area.
3. In the **Import Service Template** dialog box, click the **Browse** button and select the service template file you want to import.

Important

- You cannot select the st file for a service template that is under development.
- The file names of service templates cannot contain multi-byte characters.
- If an External Resource Provider with the same UUID as the External Resource Provider defined in the service template to be imported already exists, the existing External Resource Provider is overwritten with the content of the External Resource Provider defined in the service template when the template is imported.

Tip

If you want to import several service template files (st files) at once, you can do by creating a zip file that contains the st files you want to import. Do not use folders in the zip file.

4. Click the **OK** button.
5. In the **Information** dialog box, click the **OK** button.

To import service templates using a command:

Execute the `importservicetemplate` command.

Result of operation:

The service template or templates are imported to the JP1/AO server. You can view the imported service templates in the **Service Templates** area.



Tip

If you build or release a service template in the **Service Builder**, the service template is imported automatically without any action by the user.

Related topics

- [3.13 Storage location of service templates in the JP1/AO standard package and JP1/AO Content Pack](#)
-

3.4 Creating a service from a selected service template

You can create a service from a service template you select in the **Service Templates** area.

Who can perform this task:

Users in the Admin role, Develop role, or Modify role.

To create a service from a selected service template:

1. Display the **Service Templates** window.
2. From the list of service templates in the **Service Templates** area, select the service template from which you want to create a service, and then click the **Create New Service** button.
3. In the **Service Definition** window (create), set the service information and property information as summarized in the **Navigation** area.

Figure 3-2: **Service Definition** window (create)

The screenshot shows the 'Create Service - Execute Remote Command' window. The 'Overview' tab is active, displaying a description: 'Executes a command on the remote execution target server.' The 'Navigation' pane on the left shows 'General Settings' with the following details: Name: Execute Remote Command, Status: Test, Service Group: DefaultServiceGroup, and Tags: Linux, AIX, Windows, Solaris, HP-UX, Execute Script. The 'Settings' pane on the right contains fields for Name (Execute Remote Command), Description (Executes a command on the remote execution target server), Status (Test), Tags (AIX, Execute Script, HP-UX, Linux, Solaris, Windows), Service Group (DefaultServiceGroup), and Service Template (Execute Remote Command(02.02.00)). Below these are 'Advanced Options' for Scheduling (Immediate, Recurrence, Schedule) and Available Actions (Forcibly Stop, Retry). A red asterisk indicates required fields. At the bottom, there are buttons for Import, Export, Preview, Save and Close, and Cancel.

The property information you can set depends on the service template. For details, see the topic for each service template in the manual *JP1/Automatic Operation Service Template Reference*.

For details on the service information you can set, see [4.13 Items to set when creating, editing, and copying services](#).

4. Click the **Save and Close** button.

Tip

If you click the **Preview** button, a preview of the **Submit Service** window appears in which you can view the execution parameters of the service.

Result of operation:

The service is created. Information about the service now appears in the service list in the **Services** area.

**Tip**

You can create a maximum of 3,000 services.

3.5 Copying service templates

You can copy a service template and define a new service template based on the copy. This section describes the procedure for copying release service templates.

Development service templates can be copied in the **Service Builder** window. For details on how to copy a development service template in the **Service Builder** window, see the *JP1/Automatic Operation Service Template Developer's Guide*.

Who can perform this task:

Users in the Admin role or Develop role

To copy a service template:

1. Display the **Service Templates** window.
2. From the list of service templates in the **Service Templates** area, select the service template you want to copy, and then click the **Copy** button.
3. In the **Copy and Edit** dialog box, enter the definition information for the service template, and then click the **OK** button.
You must change at least one of the service template ID, service template version, and vendor ID.
4. In the **Information** dialog box, click the **OK** button.

Result of operation:

The release service template is copied, and the **Flow** tab of the **Service Builder Edit** window appears.

You can then create and edit the flow and set the service properties. For details on how to perform these tasks in the **Flow** tab of the **Service Builder Edit** window, see the *JP1/Automatic Operation Service Template Developer's Guide*.

3.6 Viewing the flow of a service template

Users of the JP1/AO system can view the flow of a service template. This section describes the procedure for viewing the flow of a release service template.

The flow of development service templates can be viewed in the **Service Builder** window. For details on how to view flows in the **Service Builder** window, see the *JP1/Automatic Operation Service Template Developer's Guide*.

Who can perform this task:

Users in the Admin role, Develop role, or Modify role.

To view the flow of a service template:

1. Display the **Service Templates** window.
2. From the list of service templates in the **Service Templates** area, select the service template whose flow you want to view, and then click the **View Flow** button.
3. View the information in the **Service Builder View** window that appears.

3.7 Exporting service templates

Users of the JP1/AO system can export service templates. This section describes how to export a release service template.

Development service templates can be exported from the **Service Builder** window. For details on how to export service templates from the **Service Builder** window, see the *JP1/Automatic Operation Service Template Developer's Guide*.

Who can perform this task:

Users in the Admin role or Develop role

To export a release service template:

1. Display the **Service Templates** window.
2. From the list of service templates in the **Service Templates** area, select the service template you want to export.
3. From the **More Actions** pull-down menu, select **Export**.
4. Review the information in the **Export** dialog box, and then click the **OK** button.
5. Save the service template file by following the instructions in the dialog box that appears.
The location where the file is saved depends on the configuration of your Web browser.

Result of operation:

The service template file (st file) is exported.

3.8 Deleting service templates

You can delete service templates that are no longer required from JP1/AO. This section describes how to delete release service templates. You can perform this task from the user interface or by using a command.

Development service templates can be deleted from the **Service Builder** window or by using the `deleteservicetemplate` command. For details on how to delete a development service template from the **Service Builder** window, see the *JP1/Automatic Operation Service Template Developer's Guide*.

Conditions for deleting service templates:

You can only delete a service template if the following conditions are met:

- All services based on that service template have been deleted
- The service template is not being used as a service component

Important

When you delete a service template, the service template configuration file under the service template storage folder and the Service Share Properties used by the service template are also deleted. However, Service Share Properties are not deleted if they are being used by another service template.

Who can perform this task:

Users in the Admin role or Develop role

When using the command to delete service templates, the user must also have Administrators or root permission for the operating system.

To delete a release service template from the user interface:

1. Display the **Service Templates** window.
2. From the list of service templates in the **Service Templates** area, select the service template you want to delete.
3. From the **More Actions** pull-down menu, select **Delete**.
4. In the **Delete** dialog box, click the **OK** button.
5. In the **Information** dialog box, click the **OK** button.

To delete a release service template by using a command:

Execute the `deleteservicetemplate` command.

Result of operation:

The release service template is deleted from the JP1/AO server.

Related topics

- [4.6 Deleting services](#)
 - Procedure for deleting development service templates in the *JP1/Automatic Operation Service Template Developer's Guide*
-

3.9 Updating the service template for a service to the latest version

If a service is based on an outdated version of a service template, you can update the service template to the latest version. You can perform this task when the status of the service whose service template you want to update is Release, Maintenance, or Test.

When you update a service template to the latest version, service properties that are the same in the old and new versions inherit the input values assigned in the old version[#]. However, in the following situations, the property values of the old version are not inherited, and the property values for the new version apply.

- The property value in the new version references another property value
- The service template is configured in such a way that a property in the new version cannot be referenced or modified in the **Service Definition** or **Submit Service** dialog box.

The values of Service Share Properties do not change when the service template is updated to the latest version.

#

Service properties that meet the following criteria are considered to be the same before and after the service template is updated:

- The property keys match
- The data types of the properties match
- The property is an input property before and after the update

Who can perform this task:

Users in the Admin role, Develop role, or Modify role.

To update the service template on which a service is based to the latest version:

1. Display the **Service Templates** window.
2. From the list of service templates in the **Service Templates** area, select a service template for which the **NEED VUP** label is displayed.



Tip

If the information is in table view, select a service for which **Yes** is displayed in the **Outdated Services** column.

3. From the **More Actions** pull-down menu, select **Apply Latest Version**.
4. In the **Apply Latest Version** dialog box, review the service template you are applying and the service to which it is being applied. If the information is correct, click the **Apply** button.

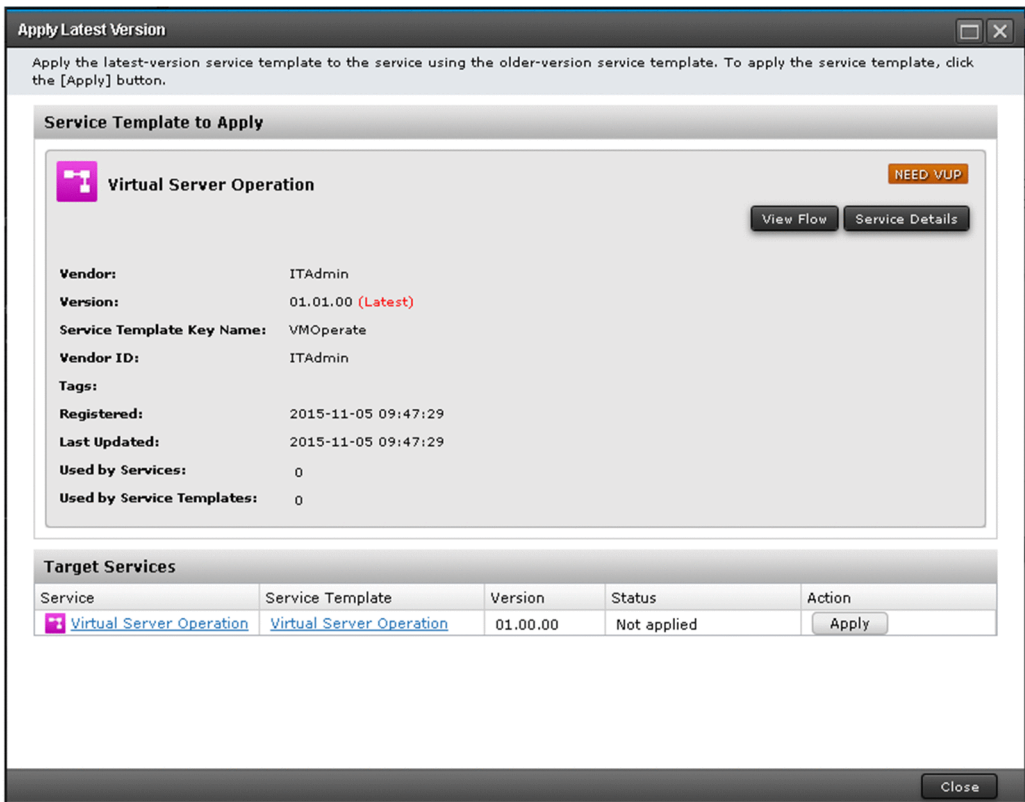


Tip

You can view the flow of the service template by clicking the **View Flow** button.

You can view a detailed description of the service by clicking the **Service Details** button.

Figure 3-3: **Apply Latest Version** dialog box



5. In the **Apply** dialog box, click the **OK** button.
6. In the **Information** dialog box, click the **OK** button.
7. In the **Service Definition** window (editing), review the service information and property information, and change the settings as needed.
8. Click the **Save and Close** button.



Tip

If you click the **Preview** button, a preview of the **Submit Service** window appears in which you can view the execution parameters of the service.

9. Click the **Close** button in the **Apply Latest Version** dialog box.

Result of operation:

The service template on which the service is based is updated to the latest version. Make sure that the **NEED VUP** label no longer appears in the service template list. If the service whose service template was updated was in Release status, that service enters Maintenance status. If the service was in Maintenance or Test status, the status remains unchanged. Change the service status manually as needed.



Tip

If the information in the window is in table view, make sure that **No** is displayed in the **Outdated Services** column in the service template list.

Related topics

- [2.4.1 Elements displayed in card view](#)
 - [4.1 **Services** window](#)
 - [4.8 Changing the status of a service](#)
-

3.10 Updating the components used in a service template

Update the components used in the latest version of the service template.

Who can perform this task:

Users in the Admin role or Develop role

To update the components used in a service template:

1. Display the **Service Templates** window.
2. From the list of service templates in the **Service Templates** area, select the latest version of the service template.



Tip

If the information is in table view, select a service for which **Yes** is displayed in the **Latest** column.

3. From the **More Actions** pull-down menu, select **Apply Latest Version**.
4. In the **Copy Service Template for Component Version Management** dialog box, enter the definition information for the service template, and then click the **OK** button.
5. For details on how to operate the copied service template, see the topic on managing the versions of components used as steps in the *JP1/Automatic Operation Service Template Developer's Guide*.

3.11 Viewing information in the Service Details window

This section describes how to view detailed information about a service template in the **Service Details** window.

Who can perform this task:

Users in the Admin role, Develop role, or Modify role.

To view detailed information about a service template:

1. Display the **Service Templates** window.
2. From the list of service templates in the **Service Templates** area, select the service template for which you want to view detailed information.
3. Click the **Service Details** button.
4. Review the contents of the **Service Details** window that appears.

3.12 Outputting a list of service templates

You can output a list of service templates to a file in CSV format. You can use this list to review service templates that have been imported to the JP1/AO server.

Who can perform this task:

A user who has Administrators or root permission for the operating system, and is assigned the Admin role, Develop role, or Modify role

To output a service template list:

Execute the `listservices` command with `servicetemplates` specified for the output option.

Result of operation:

A list of service templates is output as a CSV file to the location specified in the command.

3.13 Storage location of service templates in the JP1/AO standard package and JP1/AO Content Pack

There are two types of service templates provided by JP1/AO: those that are bundled with the JP1/AO standard package, and those provided separately as part of the JP1/AO Content Pack.

The service templates in the JP1/AO standard package and the JP1/AO Content Pack are stored in the following folders:

Service templates in the JP1/AO standard package

- In Windows:
JP1/AO - Contents-installation-folder\contents\setup
- In Linux:
/opt/jp1aocont/contents/setup

Service templates in the JP1/AO Content Pack

- In Windows:
JP1/AO Content Pack-installation-folder\contents\setup
- In Linux:
/opt/jp1aocontset/contents/setup

The service templates in the JP1/AO standard package and the JP1/AO Content Pack are provided in zip files. You can make these service templates available in JP1/AO by importing the zip file from the **Service Templates** window, or by executing the `importservicetemplate` command with the zip file specified in the `file` option.

Related topics

- Installation folder for each product and JP1/AO Content Pack installation folder in the JP1/Automatic Operation Configuration Guide
-

4

Managing and executing services

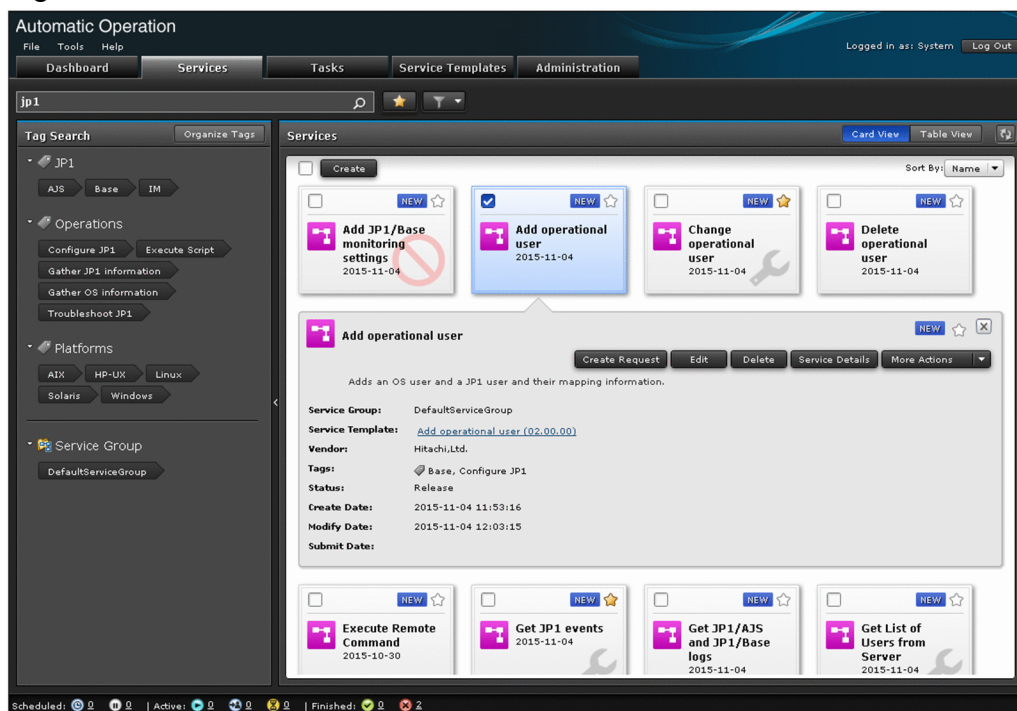
This section describes the procedures for managing and executing services in JP1/AO.

4.1 Services window

In the **Services** window, you can perform operations in relation to services in the JP1/AO system, such as viewing service information and submitting services for execution. You can display the **Services** window by clicking the **Services** tab in the main JP1/AO window.

The **Services** window can be viewed by users in the Admin, Develop, Modify, and Submit roles.

Figure 4-1: **Services** window



In the **Services** area, you can view service information, and create, execute, edit, and delete services.

You can also perform the following actions from the **More Actions** pull-down menu:

- Copy services
- Change the status of a service (release, enabled, disabled, and maintenance)
- Edit service tags
- Nominate favorite services
- Display tasks generated from a service (related tasks)
- Reset the counter (statistics) for a service
- Update service templates
- Display detailed information about a service

The table below describes the service information displayed in the **Services** area. When the information is displayed in table view, you can use the **Column Settings** dialog box to customize the information displayed in the table.


Table 4-1: Service information in **Services** area

Item	Description
Name	The name of the service.

Item	Description
Favorite	A yellow star is displayed if the service is registered as a favorite.
Description	A description of the service.
Service Group	The name of the service group to which the service is assigned.
Service Template	The name of the service template from which the service was created.
Vendor Name	The name of the vendor who created the service template.
Version	The version of the service template from which the service was created.
Tags	The tags assigned to the service.
Status	The status of the service. Possible statuses are Test, Release, Maintenance, Disabled, and Debug.
Create Date	The date and time when the service was created.
Modify Date	The date and time at which the service was last modified.
Submit Date	The date and time at which the service was submitted for execution.
Reset Date	The date and time at which the counter for the service was reset.
Executed Count	The number of times the service has been executed.
Completed Count	The number of times the service completed execution.
Last Failed Date	The date and time when the service last failed.
Failed Count	The number of times the service has failed.
Submit Count	The number of times the currently logged-in user submitted the service for execution.
ID	The service ID.
Latest	Whether the service is based on the latest version of the service template.



Tip

The service information in the **Services** area can be displayed in card view or table view. To switch between these views, use the **Card View** and **Table View** button. You can update the window contents to the latest information by clicking the **Refresh** button .

Related topics

- [2.4 Card view and table view](#)
- [2.5 Overview of search functionality in JP1/AO](#)

4.2 Viewing information about a service

You can view information about a service registered in JP1/AO.

Who can perform this task:

Users in the Admin role, Develop role, Modify role, or Submit role

To view information about a service:

1. Display the **Services** window.
2. View the service information displayed in the **Services** area.

Whether a user can view information about a service depends on the service status and the role assigned to the user. The table below shows the relationship between service statuses and the user roles that allow service information to be viewed.

Table 4-2: Relationship between user roles and service statuses

User role	Services whose information can be viewed				
	Release	Test	Maintenance	Debug	Disabled
Admin role	Y	Y	Y	Y	Y
Develop role	Y	Y	Y	Y	Y
Modify role	Y	Y	Y	N	Y
Submit role	Y	N	Y	N	Y

Legend:

Y: Can be viewed. N: Cannot be viewed.



Tip

- When the information in the Services area is in card view, you can use the **Sort** pull-down menu to sort the displayed services.
- In table view, you can sort the contents of a column in ascending or descending order by clicking the column header. To select which columns are displayed, use the **Column Settings** dialog box.

4.3 Creating services

You can create services based on service templates that have been added to JP1/AO. By creating services, you can execute the automated processing defined in service templates.

When creating services, you can assign tags to use as a search key when searching for services in the JP1/AO system. By assigning a particular tag to services that are associated with a specific business process or are the responsibility of a certain operator, you can use the tag search feature to display only those services in the JP1/AO interface.



Tip

You can create multiple services from the same service template.

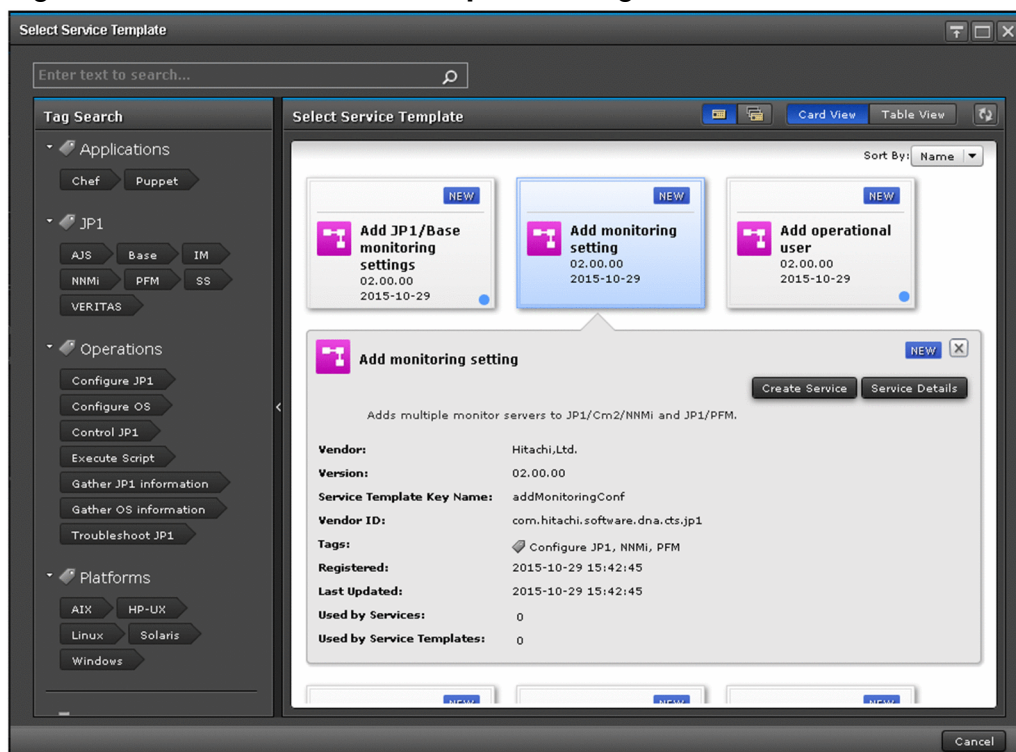
Who can perform this task:

Users in the Admin role, Develop role, or Modify role

To create a service:

1. Display the **Services** window.
2. In the **Services** area, click the **Create** button.
3. From the list of service templates in the **Select Service Template** dialog box, select the service template from which you want to create a service. Then, click the **Create New Service** button.

Figure 4-2: **Select Service Template** dialog box



4. In the **Service Definition** window (create), set the service information and property information as summarized in the **Navigation** area.

Figure 4-3: **Service Definition** window (create)

The screenshot shows the 'Create Service - Execute Remote Command' window. The 'Overview' tab is active, displaying a description: 'Executes a command on the remote execution target server.' The 'Navigation' pane on the left shows 'General Settings' selected, with a list of properties: Name (Execute Remote Command), Status (Test), Service Group (DefaultServiceGroup), and Tags (Linux, AIX, Windows, Solaris, HP-UX, Execute Script). The 'Settings' pane on the right shows the same information, with a 'Test' button next to the Status field. The 'Tags' field is a multi-select list containing AIX, Execute Script, HP-UX, Linux, Solaris, and Windows. The 'Service Group' is set to 'DefaultServiceGroup' and the 'Service Template' is 'Execute Remote Command(02.02.00)'. The 'Advanced Options' section includes 'Scheduling Options' (Immediate, Recurrence, Schedule) and 'Available Actions' (Forcibly Stop, Retry). The 'Import', 'Export', 'Preview', 'Save and Close', and 'Cancel' buttons are at the bottom.

The property information you can set depends on the service template. For details, see the topic for each service template in the manual *JP1/Automatic Operation Service Template Reference*.

For details on the service information you can set, see [4.13 Items to set when creating, editing, and copying services](#).



Tip

- You can set property values as a batch based on the contents of a property file by clicking the **Import** button.
- You can output the values set as property information to a property file by clicking the **Export** button.
- If you click the **Preview** button, a preview of the **Submit Service** dialog box appears in which you can view the execution parameters of the service.

5. Click the **Save and Close** button.

Result of operation:

The service is created. Information about the service now appears in the service list in the **Services** area.



Tip

You can create a maximum of 3,000 services.

Related topics

- [4.10 Importing service properties](#)
- [4.11 Exporting service properties](#)

4.4 Executing services

When you submit a service for execution, JP1/AO executes the automated processing defined in the service template immediately or according to the schedule defined for the service. You can submit services for execution from the user interface, or by using a command.

Who can perform this task:

- When the service status is Release:
Users in the Admin role, Develop role, Modify role, or Submit role[#]
- When the service status is Test or Maintenance:
Users in the Admin role, Develop role, or Modify role[#]
- When the service status is Debug:
Users in the Admin role or Develop role

[#]: When using a command to submit services for execution, the user must also have Administrators or root permission for the operating system.

To execute services from the user interface:

1. Display the **Services** window.
2. In the **Services** area, select the service you want to execute and then click the **Create Request** button.
3. Set the property information and task information as summarized in the **Navigation** area of the **Submit Service** dialog box.

Figure 4-4: **Submit Service** dialog box (Task Settings)

Submit Service Request - Add monitoring setting_20151104133706

Overview

Adds multiple monitor servers to JP1/Cm2/NNMi and JP1/PFM.

[Service Details](#)

Navigation

Monitoring information

Task Settings

Name: Add monitoring setting_20151104133706

Schedule: Starts immediately upon submission.

Settings

Task Name: * Add monitoring setting_20151104133706

Description:

Schedule Type: Immediate

* Required

< Monitoring information |

Import Export Submit Submit and View Task Cancel

The property information you can set depends on the service template. For details, see the topic for each service template in the manual *JP1/Automatic Operation Service Template Reference*.

The table below describes the task information you can set.

Table 4-3: Items in task settings

Item	Description
Task Name	Enter a name for the task.
Description	Enter a description of the task.
Schedule Type	Specify the execution schedule for the task. You can select Immediate, Schedule, or Recurrence.
Start Time	If you selected Schedule as the schedule type, specify the date and time at which you want the task to start.
Schedule Start Date	If you selected Recurrence as the schedule type, specify the start date of the execution schedule.
Execution Time	If you selected Recurrence as the schedule type, specify the execution start time.
Interval	If you selected Recurrence as the schedule type, specify the execution interval. You can select Monthly, Weekly, or Daily.



Tip

- You can set property values as a batch based on the contents of a property file by clicking the **Import** button.
- You can output the values set as property information to a property file by clicking the **Export** button.

4. Click the **Submit** button or the **Submit and View Task** button.

To submit a service for execution using a command:

Execute the `submittask` command.

Result of operation:

A task is generated and automated processing begins immediately or at the time determined by the schedule defined for the service. The task is also added to the tasks list on the **Tasks** tab. If you clicked the **Submit and View Task** button, the **Tasks** window appears after the service is submitted.

Related topics

- [4.10 Importing service properties](#)
 - [4.11 Exporting service properties](#)
 - [4.14 Notes on intervening actions performed when submitting services](#)
-

4.5 Editing services

This section describes the procedure for editing services.

Who can perform this task:

- When the service status is Release, Test, Maintenance, or Disabled:
Users in the Admin role, Develop role, or Modify role
- When the service status is Debug:
Users in the Admin role or Develop role

To edit a service:

1. Display the **Services** window.
2. From the list of services in the **Services** area, select the service you want to edit.
3. Click the **Edit** button.
4. In the **Service Definition** window (editing), set the service information and property information.

Figure 4-5: **Service Definition** window (editing)

The screenshot shows the 'Edit Service - Execute Remote Command' window. The window is divided into several sections:

- Overview:** Displays the service name 'Execute Remote Command' and a description 'Executes a command on the remote execution target server.' It also shows a 'Service Details' link.
- Navigation:** A sidebar on the left with a 'General Settings' section. It lists the service name, status (Test), service group (DefaultServiceGroup), and tags (Linux, AIX, Windows, Solaris, HP-UX, Execute Script). Below this is a 'reserved.defaultGroup' section.
- Settings:** The main area for configuring the service. It includes fields for Name, Description, Status (Test), and Tags (AIX, Execute Script, HP-UX, Linux, Solaris, Windows). It also shows the Service Group (DefaultServiceGroup) and Service Template (Execute Remote Command(02.02.00)).
- Advanced Options:** A section with checkboxes for 'Scheduling Options' (Immediate, Schedule, Recurrence) and 'Available Actions' (Forcibly Stop, Retry).
- Footer:** A bar at the bottom with buttons for 'Import', 'Export', 'Preview', 'Save and Close', and 'Cancel'. It also shows the current service group 'reserved.defaultGroup' and a 'Required' indicator.

The property information you can set depends on the service template. For details, see the topic for each service template in the manual *JP1/Automatic Operation Service Template Reference*.

For details on the service information you can set, see [4.13 Items to set when creating, editing, and copying services](#).

The function for setting constraints in the **Service Definition** window (editing) is a function that enables to specify constraints on input values of integer-type or double-type service properties from the **Service Definition** window (editing). The following constraints can be specified.

Table 4-4: Specifiable constraints

Option type	Description
Single Value	You can specify the same value as the default value by normal input in the Service Definition window (editing).
Multiple Values	From the multiple values specified in the Service Definition window (editing), you can specify one in the Submit Service window.
Range	In the Submit Service window, you can specify a value in the range from the minimum value to the maximum value specified in the Service Definition window (editing).

You can execute the constraints setting of the **Service Definition** window (editing) only for services created from service templates that were created by using **Service Builder** window of JP1/AO 12-01 or later. This function cannot be used if you create services by importing templates that were created by using **Service Builder** window of JP1/AO of a version earlier than 12-01.



Tip

- You can set property values as a batch based on the contents of a property file by clicking the **Import** button.
- You can output the values set as property information to a property file by clicking the **Export** button.
- If you click the **Preview** button, a preview of the **Submit Service** dialog box appears in which you can view the execution parameters of the service.

5. Click the **Save and Close** button.

Result of operation:

The changes to the service information and property information take effect.

Related topics

- [4.10 Importing service properties](#)
- [4.11 Exporting service properties](#)
- [4.15 Notes on intervening actions performed when editing services](#)

4.6 Deleting services

This section describes the procedure for deleting services that are no longer required.

Conditions for deleting a service:

There are no tasks in the tasks list that were generated from the service you want to delete. However, you can delete the service if those tasks are in the history list and not the tasks list.

Who can perform this task:

- When the service status is Release, Test, Maintenance, or Disabled:
Users in the Admin role, Develop role, or Modify role
- When the service status is Debug:
Users in the Admin role or Develop role

To delete services:

1. Display the **Services** window.
2. From the list of services in the **Services** area, select the service you want to delete.



Tip

If the information in the Services area is in table view, you can select multiple services by selecting the check boxes beside the service names. You can also select all services by selecting the check box beside the column header.

3. Click the **Delete** button.
4. In the **Delete Services** dialog box, check the services that are to be deleted, and then click the **OK** button.

Result of operation:

The service or services are deleted.

4.7 Copying services

By copying a service, you can create a service under a different name that retains the underlying service template settings. Use this procedure when you want to create a new service based on an existing service, or to create a revised version of a service.

Who can perform this task:

- When the service status is Release, Test, Maintenance, or Disabled:
Users in the Admin role, Develop role, or Modify role
- When the service status is Debug:
Users in the Admin role or Develop role

To copy a service:

1. Display the **Services** window.
2. From the list of services in the **Services** area, select the service you want to copy.
3. From the **More Actions** pull-down menu, select **Copy**.
4. In the **Service Definition** window (copying), review the service information and property information and make changes as appropriate.

Figure 4-6: **Service Definition** window (copying)

The screenshot shows the 'Create Service - Copy Execute Remote Command' window. The 'Overview' tab is active, displaying a description: 'Executes a command on the remote execution target server.' The 'Service Details' tab is also visible. The 'Navigation' pane on the left shows 'General Settings' with fields for Name, Status, Service Group, and Tags. The 'Settings' pane on the right shows the 'Name' field set to 'Copy Execute Remote Command', the 'Description' field set to 'Executes a command on the remote execution target server', the 'Status' dropdown set to 'Test', and the 'Tags' field containing 'AIX', 'Execute Script', 'HP-UX', 'Linux', 'Solaris', and 'Windows'. The 'Service Group' is set to 'DefaultServiceGroup' and the 'Service Template' is 'Execute Remote Command(02.02.00)'. The 'Advanced Options' section shows 'Scheduling Options' with 'Immediate', 'Recurrence', and 'Schedule' checked, and 'Available Actions' with 'Forcibly Stop' and 'Retry' unchecked. The bottom of the window has buttons for 'Import', 'Export', 'Preview', 'Save and Close', and 'Cancel'.

The default service name for a service created by this process is:

Copy original-service-name

The property information you can set depends on the service template. For details, see the topic for each service template in the manual *JP1/Automatic Operation Service Template Reference*.

For details on the service information you can set, see 4.13 [Items to set when creating, editing, and copying services](#).



Tip

- You can set property values as a batch based on the contents of a property file by clicking the **Import** button.
- You can output the values set as property information to a property file by clicking the **Export** button.
- If you click the **Preview** button, a preview of the **Submit Service** dialog box appears in which you can view the execution parameters of the service.

5. Click the **Save and Close** button.

Result of operation:

The service is copied and a new service is created under a different name. The new service now appears in the services list.

Related topics

- [4.10 Importing service properties](#)
 - [4.11 Exporting service properties](#)
-

4.8 Changing the status of a service

This section describes the procedure for changing the status of a service registered in JP1/AO.

Who can perform this task:

Users in the Admin role, Develop role, or Modify role

To change the status of a service:

1. Display the **Services** window.
2. From the list of services in the **Services** area, select the service whose status you want to change.
3. From the **More Actions** pull-down menu, select **Release**, **Enable**, **Disable**, or **Maintenance**.

The status to which you can change a service depends on the current status. The table below shows the statuses to which services in a particular status can be changed.

Table 4-5: New statuses available based on existing status

Current service status	Status to which service can be changed		
	Release	Maintenance	Disabled
Release	N	Y	Y
Test	Y	N	N
Maintenance	Y	N	N
Disabled	Y [#]	N	N

Legend:

Y: Can be changed. N: Cannot be changed.

#

If you select a service in Disabled status and click **Enable**, the service enters Release status.

4. In the confirmation dialog box, review the tasks whose status will be changed, and then click the **OK** button.

Result of operation:

The status of the service changes. The new status now appears in the **Status** column in the services list.

Related topics

- [1.4.1 Service statuses](#)
 - [4.1 Services window](#)
-

4.9 Applying service template changes to services

When changes are made to a service template on which a service is based, or there are multiple versions of the same service template, you can use this procedure to apply the changes to services.

When applying service template changes to services, you can:

- Apply the latest version of a service template to a service
- Apply a specific version of a service template to a service

When you apply an updated service template to a service, service properties that are the same in the old and new versions inherit the input values assigned in the old version[#]. However, in the following situations, the property values of the old version are not inherited, and the property values for the new version apply.

- The property value in the new version references another property value
- The service template is configured in such a way that a property in the new version cannot be referenced or modified in the **Service Definition** or **Submit Service** dialog box

The values of Service Share Properties do not change when the service template is changed.

#

Service properties that meet the following criteria are considered to be the same before and after the service template is updated:

- The property keys match
- The data types of the properties match
- The property is an input property before and after the update

4.9.1 Applying the latest version of a service template to a service

Use the following procedure to apply the latest version of a service template to a service. To perform this procedure, the status of the selected service must be Release, Maintenance, or Test.

Note that you cannot perform this procedure if the selected service is already based on the latest version of the service template.

Who can perform this task:

Users in the Admin role, Develop role, or Modify role

To apply the latest version of a service template to a service:

1. Display the **Services** window.
2. From the list of services in the **Services** area, select a service for which the **OUTDATED** label is displayed.



Tip

If the information is in table view, select a service for which **No** appears in the **Latest** column.

3. From the **More Actions** pull-down menu, select **Apply Latest Version**.

4. In the **Apply Latest Version** dialog box, check the service template and the service to which it is being applied, and then click the **Apply** button.

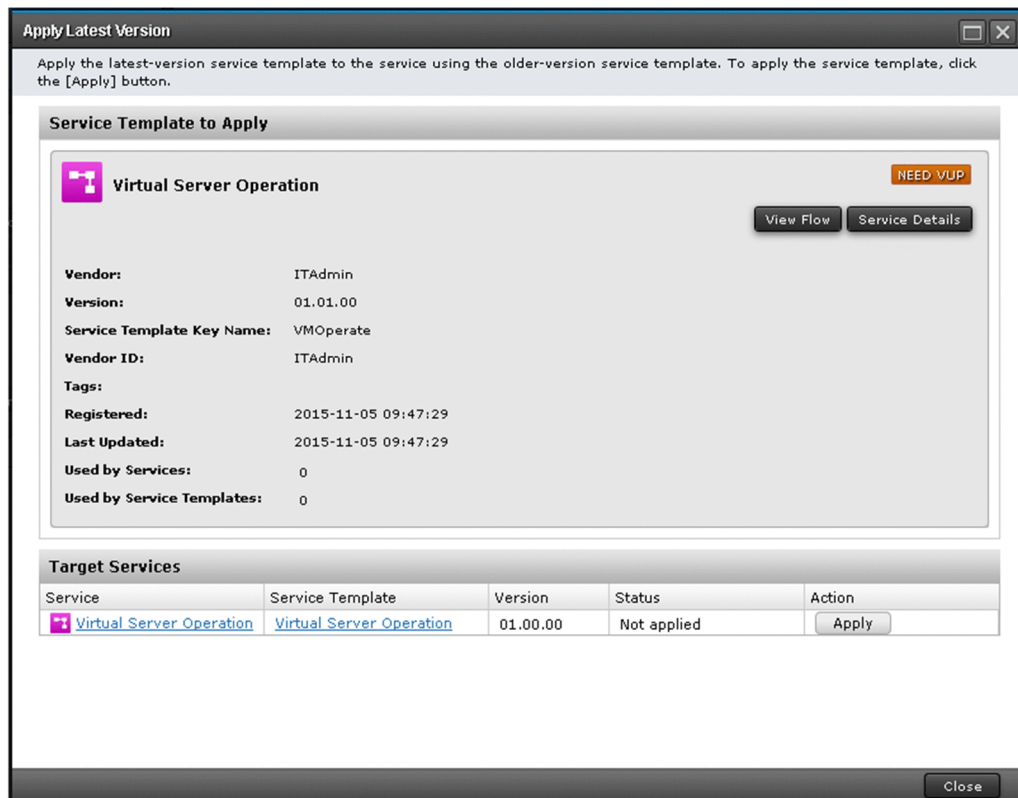


Tip

You can view the flow of the service template by clicking the **View Flow** button.

You can view a detailed description of the service by selecting **Service Details** from the **More Actions** pull-down menu.

Figure 4-7: **Apply Latest Version** dialog box



5. In the **Apply** dialog box, click the **OK** button.
6. In the **Information** dialog box, click the **OK** button.
7. In the **Service Definition** window (editing), review the service information and property information, and change the settings as needed.
8. Click the **Save and Close** button.



Tip

If you click the **Preview** button, a preview of the **Submit Service** dialog box appears in which you can view the execution parameters of the service.

9. Click the **Close** button in the **Apply Latest Version** dialog box.

Result of operation:

The latest version of the service template is applied to the service. Make sure **OUTDATED** label no longer appears in the service list. A service in Release status enter Maintenance status when you update its service template. The status of services in Maintenance or Test status remains unchanged. Change the service status manually as needed.

Tip

If the information in the Services area is in table view, make sure that **Yes** appears in the **Latest** column in the services list.

Related topics

- [4.1 Services window](#)
- [4.8 Changing the status of a service](#)

4.9.2 Applying a specific version of a service template to a service

Use the following procedure to apply a specific version of a service template to a service. To perform this procedure, the status of the selected service must be Release, Maintenance, or Test.

Who can perform this task:

Users in the Admin role, Develop role, or Modify role

To apply a specific version of a service template:

1. Display the **Services** window.
2. Select a service from the list of services in the **Services** area.
3. From the **More Actions** pull-down menu, select **Apply Specified Version**.
4. In the **Apply Specific Service Template Version** dialog box, check the service template and the service to which it is being applied.

Tip

You can view the flow of the service template by clicking the **View Flow** button.

You can view a detailed description of the service by selecting **Service Details** from the **More Actions** pull-down menu.

Figure 4-8: **Apply Specific Service Template Version** dialog box

Apply Specific Service Template Version

Select the version of the service template to apply. To apply the service template, click the [Apply] button.

Service Template to Apply

Service Template Version: 01.01.00 (Latest)

01.00.00 (Current Version)

01.01.00 (Latest)

Virtual Server Operation

NEED VUP

View Flow Service Details

Vendor: ITAdmin

Version: 01.01.00

Service Template Key Name: VMOperate

Vendor ID: ITAdmin

Tags:

Registered: 2015-11-05 09:47:29

Last Updated: 2015-11-05 09:47:29

Used by Services: 0

Used by Service Templates: 0

Target Services

Service	Service Template	Version	Status	Action
Virtual Server Operation	Virtual Server Operation	01.00.00	Not applied	Apply

Close

5. From the **Service Template Version** pull-down menu in the **Apply Specific Service Template Version** dialog box, select the service template version you want to apply, and then click the **Apply** button.
6. In the **Apply** dialog box, click the **OK** button.
7. In the **Information** dialog box, click the **OK** button.
8. In the **Service Definition** window (editing), review the service information and property information, and change the settings as needed.
9. Click the **Save and Close** button.



Tip

If you click the **Preview** button, a preview of the **Submit Service** dialog box appears in which you can view the execution parameters of the service.

10. Click the **Close** button in the **Apply Specific Service Template Version** dialog box.

Result of operation:

The specified version of the service template is applied to the service. A service in Release status enters Maintenance status when you change its service template. The status of services in Maintenance or Test status remains unchanged. Change the service status manually as needed. The service template version is displayed in the **Service Template** field in the service preview.



Tip

If the information in the Services area is in table view, the service template version is displayed in the **Version** column in the services list.

Related topics

- [4.1 Services window](#)
 - [4.8 Changing the status of a service](#)
-

4.10 Importing service properties

By importing a property file, you can assign the values defined in the file to service properties as a batch. You can perform this operation from the user interface, or by using a command.

Who can perform this task:

The required roles and permissions are the same as for the window in which you are performing the task.

When using the command to import service properties, the user must also have Administrators or root permission for the operating system.

To import property values from the user interface:

1. Display the **Service Definition** window (creating, editing, or copying), or the **Submit Service** dialog box.
2. Click the **Import** button.
3. Select the property file to import by following the instructions in the dialog box that appears.

To import property values using a command:

Execute the `submittask` command with the `propertyfile` option specified.

Result of operation:

The values defined in the property file have been applied as a batch to service properties.

Related topics

- [4.3 Creating services](#)
 - [4.4 Executing services](#)
 - [4.5 Editing services](#)
 - [4.7 Copying services](#)
 - [4.16 Overview of property files](#)
-

4.11 Exporting service properties

You can output the service properties assigned to a service to a property file. You can perform this operation from the user interface, or by using a command.

Who can perform this task:

The required roles and permissions are the same as for the window in which you are performing the task.

When using the command to export service properties, the user must also have Administrators or root permission for the operating system.

To export property values from the user interface:

1. Display the **Service Definition** window (creating, editing, or copying), or the **Submit Service** dialog box.
2. Make sure that the property values are input in the window that appears, and then click the **Export** button.
3. Save the property file by following the instructions in the dialog box that appears.

The location where the file is saved depends on the configuration of your Web browser.

To export property values using a command:

Execute the `listtasks` command with `taskdetails` specified in the `output` option.

Result of operation:

The property values assigned to the service are exported to a property file. You can edit the contents of the property file as needed.

The property file is exported in JSON format from the user interface, or in key=value format by the command.

Related topics

- [4.3 Creating services](#)
 - [4.4 Executing services](#)
 - [4.5 Editing services](#)
 - [4.7 Copying services](#)
 - [4.16 Overview of property files](#)
-

4.12 Outputting (exporting) service lists

You can output a list of services to a file in CSV format. This process is called exporting a service list. You can use the resulting file to learn what services are in the system. This procedure outputs a list of services assigned to the service groups associated with a specific user. You specify the user in the `user` option of the `listservices` command.

Who can perform this task:

Users who have Administrators or root permission in the operating system, and belong to the Admin role, Develop role, Modify role, or Submit role

To output a list of services:

Execute the `listservices` command with `services` specified in the `output` option.

Result of operation:

The service list is output to a CSV file at the location specified in the command.

4.13 Items to set when creating, editing, and copying services

The following table shows the items you need to set when creating, editing and copying services.

Table 4-6: Items to set when creating, editing, and copying services

Item	Description
Name	The name of the service template selected in the service template list is automatically entered. You can change the service name provided that the new name does not exceed 128 characters.
Description	The description of the service template selected in the service template list is automatically entered. You can change the description provided that the new description does not exceed 1,024 characters.
Status	The status of the service. The statuses you can specify depend on the status of the service.
Tags	The tags assigned to the service template selected in the service template list are displayed. You can also add and delete tags. The tag names must not exceed 256 characters in total, including the commas between them.
Service Group	Select the service group to which to assign the service. You cannot select a service group when editing a service.
Service Template	The name of the service template is displayed. If you click the service template name, the Service Template Preview dialog box appears in which you can view general information about the service template.
Schedule Type	Specify the execution schedule for the service. You can select Immediate, Schedule, or Recurrence.
Available Actions [#]	Specify which of the following operations can be performed for the task: Forcibly Stop and Retry.

#

By default, both Forcibly Stop and Retry are set for any service created in JP1/AO 11-02 or earlier.

Related topics

- [1.8 Setting tags](#)
-

4.14 Notes on intervening actions performed when submitting services

While you are using the **Submit Service** dialog box, another user might perform an action in relation to a service you are working on (such as editing, deleting, or submitting the service). This section describes the effect the action performed by the other user will have on the action you are about to perform.

The following table shows the results of intervening actions performed by other users:

Table 4-7: Results of intervening actions when using the **Submit Service** dialog box

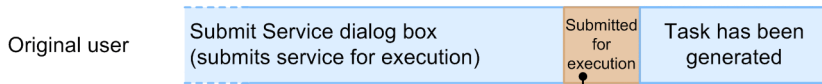
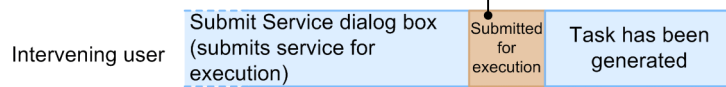
No.	Intervening action	Result of intervening action
1	Submit service	Intervening user This user is able to submit the service. Original user This user is able to submit the service.
2	Edit service	Intervening user This user can edit and save the service. Original user The changes made by the intervening user in the Service Definition (editing) dialog box do not appear in the Submit Service dialog box. However, the new information does apply when the service is submitted.
3	Delete service	Intervening user This user can delete the service. Original user This user cannot submit the service.

The following figure shows how JP1/AO behaves when an intervening action is performed while you are using the **Submit Service** dialog box:

Figure 4-9: Behavior when an intervening action is performed while using the **Submit Service** dialog box

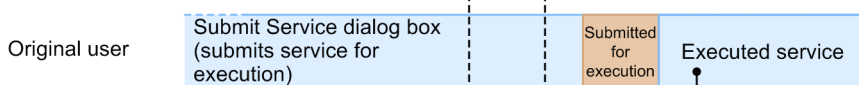
● If a user intervenes and submits a service for execution

The intervening user can submit the service for execution while the original user has the service displayed in the Submit Service dialog box.



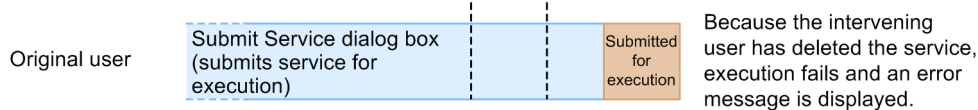
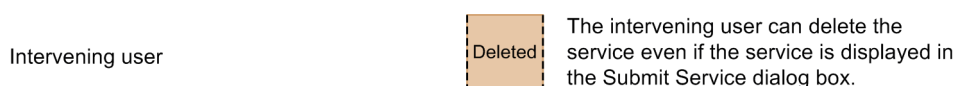
The original user can submit the service for execution even after the intervening user has submitted the same service.

● If a user intervenes and edits a service



The property values in the Service Definition window (editing) are the new values. The property values in the Submit Service dialog box are the original values.

● If a user intervenes and deletes a service



If another user edits or submits a service that you have already submitted for execution, any tasks that have already been generated from that service are unaffected. If another user attempts to delete the service, he or she will be unable to do so as long as tasks generated from that service still appear in the tasks list.

Related topics

- [4.1 Services window](#)
- [4.4 Executing services](#)

4.15 Notes on intervening actions performed when editing services

While you are editing a service in the **Service Definition** (editing) window, another user might perform an action in relation to a service you are editing (such as editing, deleting, or submitting the service). This section describes the effect the action performed by the other user will have on the actions you perform.

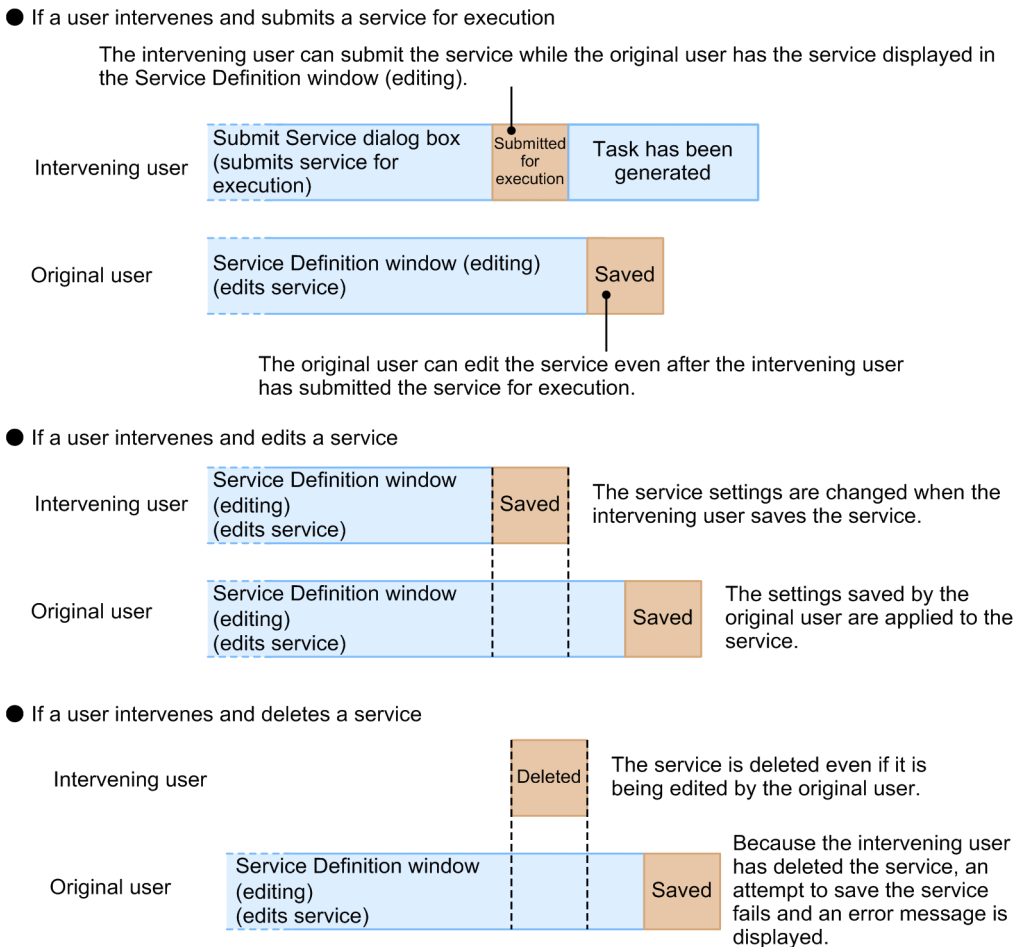
The following table shows the results of intervening actions performed by other users:

Table 4-8: Results of intervening actions when using the **Service Definition** (editing) window

No.	Intervening action	Result of intervening action
1	Submit service	<p>Intervening user This user is able to submit the service. Any changes made by the original user do not apply to the service submitted by the intervening user.</p> <p>Original user This user is able to edit the service.</p>
2	Edit service	<p>Intervening user This user can edit and save the service.</p> <p>Original user When this user edits and saves the service, the settings entered by this user are applied to the service.</p>
3	Delete service	<p>Intervening user This user can delete the service.</p> <p>Original user This use cannot save the edited service.</p>

The following figure shows how JP1/AO behaves when an intervening action is performed while you are using the **Service Definition** (editing) window:

Figure 4-10: Behavior when an intervening action is performed while using the **Service Definition** (editing) window



If another user edits or submits a service that has been submitted for execution, any tasks that have already been generated from that service are unaffected. If another user attempts to delete the service, he or she will be unable to do so as long as tasks generated from that service remain in the tasks list.

Related topics

- [4.1 Services window](#)
- [4.5 Editing services](#)

4.16 Overview of property files

A property file is a file that defines a set of property values to assign to a service. You can use a property file to set, in one operation, the property values that are appropriate for a particular environment or application.

Property files can be in the following formats:

- JSON format
- key=value format
- key@FILE=file-path format

The formats in which JP1/AO can handle property files depend on the method used to import or export the file. The following table shows the relationship between supported file formats and the method used to import or export property files:

Table 4-9: Relationship between supported property file formats and import and export methods

Format of property file	Export method			Import method		
	Exported from Service Definition window or Submit Service dialog box	Exported from Service Builder Debug window	Exported using listtasks command	Imported from Service Definition window or Submit Service dialog box	Imported from Service Builder Debug window	Imported using submittask command
JSON format	Y	Y	N	Y	Y	Y
key=value format	N	N	Y [#]	Y	Y	Y
key@FILE=file-path format	N	N	Y [#]	N	N	Y

Legend:

Y: Can be imported/exported. N: Cannot be imported/exported.

#

Properties whose data type is composite are exported in key@FILE=file-path format.

Related topics

- [4.10 Importing service properties](#)
- [4.11 Exporting service properties](#)
- Procedure for starting debugging in the JP1/Automatic Operation Service Template Developer's Guide
- Settings used when starting debugging in the JP1/Automatic Operation Service Template Developer's Guide
- Importing and exporting step properties in the **Service Builder Debug** window in the JP1/Automatic Operation Service Template Developer's Guide
- listtasks (outputting the list of tasks and the detailed task information) in the manual JP1/Automatic Operation Command and API Reference
- submittask (executing a service and re-registering the tasks in a batch) in the manual JP1/Automatic Operation Command and API Reference

4.16.1 Format of property files in JSON format

The format of a property file in JSON format is described below.

- Enter properties in a JSON-format file as follows:

```
{
  "properties": [
    {
      "keyName": "key-of-property-1",
      "displayName": "property-display-name"
      "description": "property-description"
      "type": "property-data-type"
      "value": "property-value"
    },
    {
      "keyName": "key-of-property-2",
      "displayName": "property-display-name"
      "description": "property-description"
      "type": "property-data-type"
      "value": "property-value"
    },
  ]
}
```

- The file contents must comply with the RFC 4627 standard.
- UTF-8 must be used as the character encoding.
- A property file in JSON format must begin with the properties associative array.
- You must specify a keyname and value field.
- To specify a property without a property value, use the format "value": "".
- The values of Password properties can be specified in plaintext or cyphertext. However, the value field of Password properties will be omitted when exporting the property file.
- In a property file, only specify the properties for which you want to set property values. Properties that are not present in an imported property file will retain their existing values.
- Make sure that the number of properties defined in a property file does not exceed the limit specified in the user-specified properties file (config_user.properties).
- Exported property files are saved with the file name service_properties.json. You can change the file name. The file name can contain multi-byte characters. However, you must use .json as the file extension.

The table below shows how the import process is affected when invalid items are defined in a property file in JSON format. Potential outcomes when you import a property file that contains invalid definitions include errors, and property values not being applied correctly.

Table 4-10: Import process when invalid definitions are specified in a property file (JSON format)

Item with invalid definition	Imported from Service Definition window or Submit Service dialog box	Imported from Service Builder Debug window	Imported using submittask command
The number of properties defined in the property file exceeds the limit specified in the user-specified properties file (config_user.properties)	A	A	E
A property defined in the file does not exist in the service	S	S	E ^{#1}
The same property key is defined more than once	A ^{#2}	A ^{#2}	E

Item with invalid definition	Imported from Service Definition window or Submit Service dialog box	Imported from Service Builder Debug window	Imported using submittask command
The length of a keyName parameter exceeds the limit	S	S	E
A value is specified that is not appropriate for a property (the value has the wrong data type or violates restrictions for the property)	A ^{#3}	A	E

Legend:

A: The property value is applied. S: Processing is skipped without applying the property value. E: An error occurs.

#1

An error occurs when you attempt to import a property whose visibility setting is Edit Window Only.

#2

When the same property key is defined multiple times, the definition that appears last in the file takes effect.

#3

If a value that cannot be set from the user interface is defined for a property whose data type is list or boolean, an empty value is applied to the property.

Related topics

- User-specified properties file (config_user.properties) in the JP1/Automatic Operation Configuration Guide

4.16.2 Format of property files in key=value format

The format of a property file in key=value format is described below.

- Enter properties in the format *property-key=property value* (line feed).
To specify a property without a property value, use the format *property-key =* (line feed).
- UTF-8 must be used as the character encoding.
- Each pair of a property key and the corresponding property value must occupy its own line in the file. Do not specify a line feed anywhere except at the end of a line.
- On each line in the property file, the segment from the first character to the character before the equals sign is treated as the property key. The segment from the character after the equals sign to the end of the line is treated as the property value.
- If a character string contains the character \, specify it as \ in the file.
- You must specify a line feed at the end of each line that defines a property. You can use CR+LF or LF as the line feed.
- Lines that start with a # character or do not contain an equal sign are treated as comments.
- Properties and values are case sensitive.
- Empty lines are ignored.
- You do not need to specify a line feed at the end of the file.
- The delimiting character used between property values depends on the service template on which the service is based.

- In a property file, only specify the properties for which you want to set property values. Properties that are not present in a property file you import retain their existing values.
- Make sure that the number of properties defined in a property file does not exceed the limit specified in the user-specified properties file (config_user.properties).
- You can use any file extension except .json.
- The property file can contain properties in the key@FILE=file-path and key=value formats.

The table below shows how the import process is affected when invalid items are defined in a property file in key=value format. Potential outcomes when you import a property file that contains invalid definitions include errors, and property values not being applied correctly.

Table 4-11: Import process when invalid definitions are specified in a property file (key=value format)

Item with invalid definition	Imported from Service Definition window or Submit Service dialog box	Imported from Service Builder Debug window	Imported using submittask command
The number of properties defined in the property file exceeds the limit specified in the user-specified properties file (config_user.properties)	A	A	E
A property defined in the file does not exist in the service	S	S	E ^{#1}
The same property key is defined more than once	A ^{#2}	A ^{#2}	E
A value is specified that is not appropriate for a property (the value has the wrong data type or violates restrictions for the property)	A ^{#3}	A	E
A line does not contain an equals sign (=)	S	S	S

Legend:

A: The property value is applied. S: Processing is skipped without applying the property value. E: An error occurs.

#1

An error occurs when you attempt to import a property whose visibility setting is Edit Window Only.

#2

When the same property key is defined multiple times, the definition that appears last in the file takes effect.

#3

If a value that cannot be set from the user interface is defined for a property whose data type is list or boolean, an empty value is applied to the property.

Related topics

- User-specified properties file (config_user.properties) in the JP1/Automatic Operation Configuration Guide

4.16.3 Format of property files in key@FILE=file-path format

The format of a property file in key@FILE=file-path format is described below.

```
property-key@FILE=absolute-path-of-property-value-file-or-relative-path-in-relation-to-property-file (line feed)
```

The format of a key@FILE=file-path property file and the import behavior when an invalid item is defined are the same as for a property file in key=value format. You can specify properties in key@FILE=file-path format and key=value format in the same property file.

Define the property values in a property value file. The format of a property value file is as follows:

- The character encoding is UTF-8.
- The delimiting character used between property values depends on the service template on which the service is based.
- A property value file can have any file name.
- You can place a property value file in any location. However, the file must be in a location that is accessible to the user who will import the property file.
- Property value files can contain line feed codes. If you specify a property value file that includes a line feed code for a property that does not permit line feed codes in its values, an error occurs.

5

Managing tasks

This chapter describes how to manage tasks in JP1/AO.

5.1 Tasks window

The **Tasks** window is a window in which you can view the progress and history of task and debug task processing in JP1/AO. You can display the **Tasks** window by clicking the **Tasks** tab in the main JP1/AO window.

The **Tasks** window incorporates the following tabs:

Tasks tab

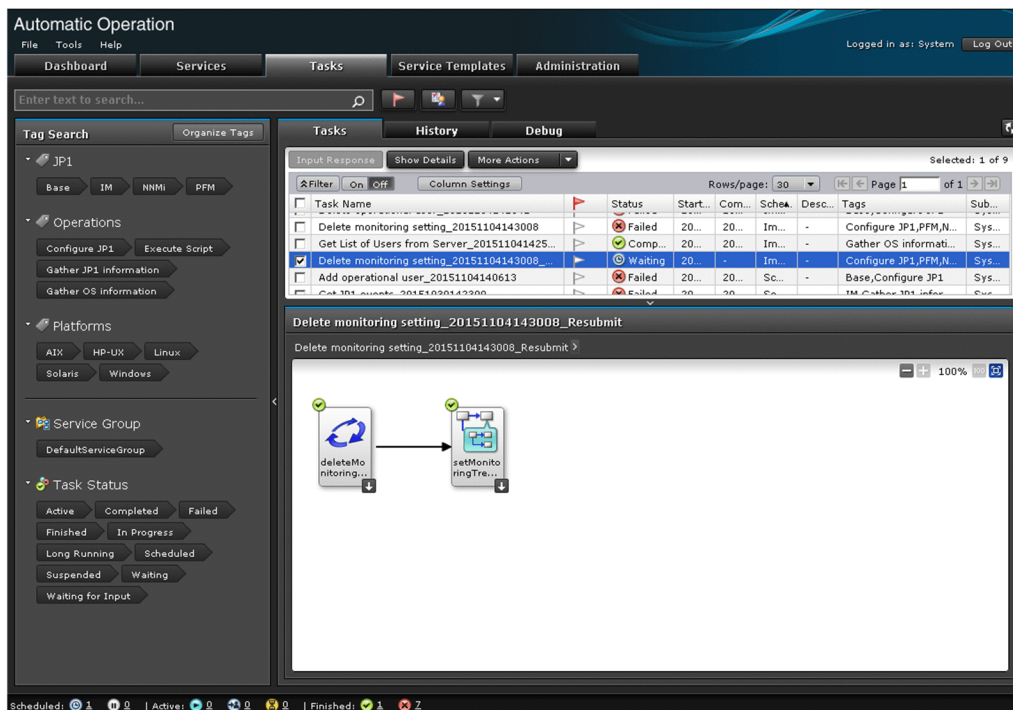
In the **Tasks** tab, you can view information about tasks generated from services executed in Release status. This information is displayed in list and flow formats.

The **Tasks** tab can be viewed by users in the Admin, Develop, Modify, and Submit roles.

You can also perform the following actions in the **Tasks** tab:

- Provide input to a task that is waiting for user input
- Display detailed information about a task
- Change (suspend, resume, or cancel) the schedule of a task
- Stop (or forcibly stop) task execution
- Rerun and retry tasks
- Archive tasks
- Marking tasks as To Do

Figure 5-1: **Tasks** window (**Tasks** tab)

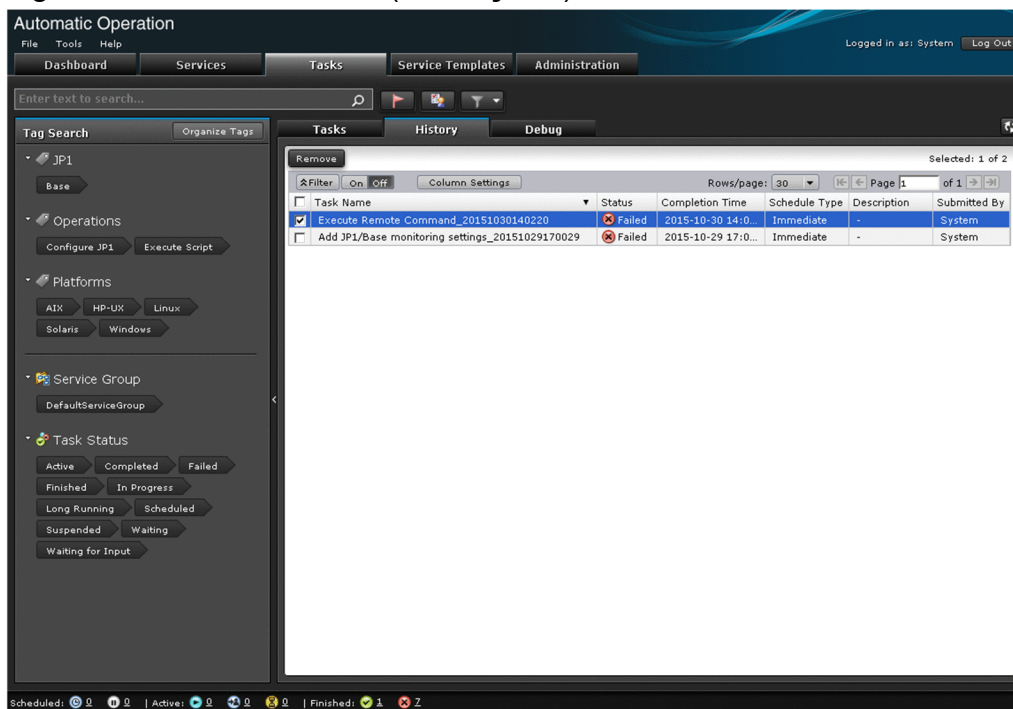


History tab

In the **History** tab, you can view a list of archived tasks and delete task histories.

The **History** tab can be viewed by users in the Admin, Develop, Modify, and Submit roles.

Figure 5-2: **Tasks** window (**History** tab)



Debug tab

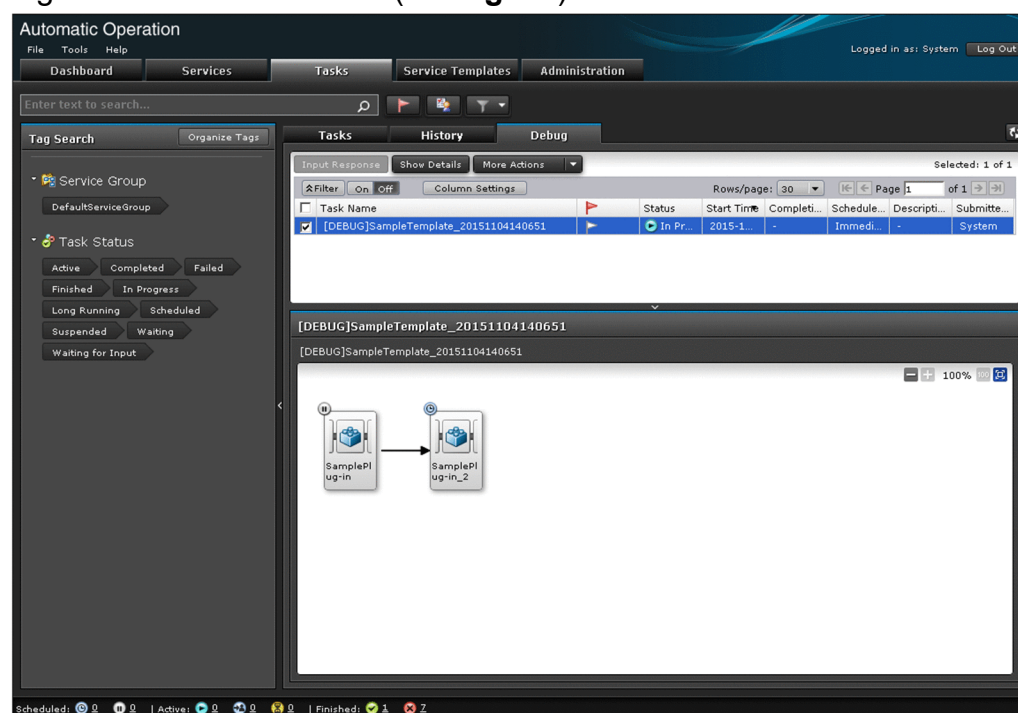
In the **Debug** tab, you can view information about tasks generated when services are executed in Maintenance, Debug, and Test status, and information about debug tasks. The tab displays this information in list and flow formats.

The **Debug** tab can be viewed by users in the Admin, Develop, and Modify roles.

You can also perform the following actions in the **Debug** tab:

- Provide input to a task that is waiting for user input
- Display detailed information about a task
- Change (suspend, resume, or cancel) the schedule of a task
- Stop (or forcibly stop) task execution
- Rerun and retry tasks
- Archive tasks
- Marking tasks as To Do
- Delete debug tasks

Figure 5-3: **Tasks** window (**Debug** tab)



Tip

For details on how to delete a debug task, see the *JP1/Automatic Operation Service Template Developer's Guide*.

The table below describes the task information displayed in the **Tasks** window. You can use the **Column Settings** dialog box to select which items are displayed.


Table 5-1: Items in tasks list (**Tasks** window)

Item	Description
Name	The name of the task.
To Do	The flag icon is red if the task is marked as To Do.
Status	The status of the task.
Scheduled Time	The scheduled start time of the task.
Start Time	The time when the task started.
Completion Time	The time when the task completed.
Schedule Type	The type of the task.
ID	The task ID.
Description	A description of the task.
Service Name	The name of the service.
Service Group	The name of the service group to which the service is assigned.
Tags	The tags assigned to the task.
Submitted By	The user who submitted the service for execution.

Item	Description
Submit Time	The date and time when the user submitted the service for execution.
Schedule Interval	The recurrence pattern of the service.
Recurrence Time	The execution time specified in the recurring schedule.
Schedule Start Date	The date on which application of the recurring schedule started.
Notes	Comments left by users.
Step Start Time	The following date and time are displayed: <ul style="list-style-type: none"> • Date and time at which the step status changed to Waiting for Input • Date and time at which the running time of the step exceeded the time specified for the key <code>server.longRunning.check.interval</code> in the user-specified properties file (<code>config_user.properties</code>)



Tip

You can update the window contents to the latest information by clicking the **Refresh** button  .

Related topics

- [2.4 Card view and table view](#)
- [2.5 Overview of search functionality in JP1/AO](#)

5.2 Checking task statuses

When you submit a service for execution, JP1/AO generates tasks corresponding to that service. By viewing the status of these tasks, you can gain an immediate insight into how service execution is progressing.

You can check the status of a task from the task summary area, and from the **Tasks** window. However, where task statuses can be viewed depends on the status of the submitted service. The following table shows the relationship between the method used to view task statuses and the status of the submitted service:

Table 5-2: Relationship between service status and method of checking task status

Method of checking task status		Status of submitted service			
		Release	Maintenance	Test	Debug
Task summary area		Y	N	N	N
Tasks window	Tasks tab	Y	N	N	N
	History tab	Y	Y	Y	Y
	Debug tab	N	Y	Y	Y

Legend:

Y: Can be checked. N: Cannot be checked.



Tip

You can view the status of debug tasks on the **Debug** tab of the **Tasks** window.

5.2.1 Checking task statuses from the task summary area

In the task summary area at the bottom of the JP1/AO user interface, you can view the status of tasks generated from services executed by the logged-in user. The task summary shows the number of tasks that are in each status.

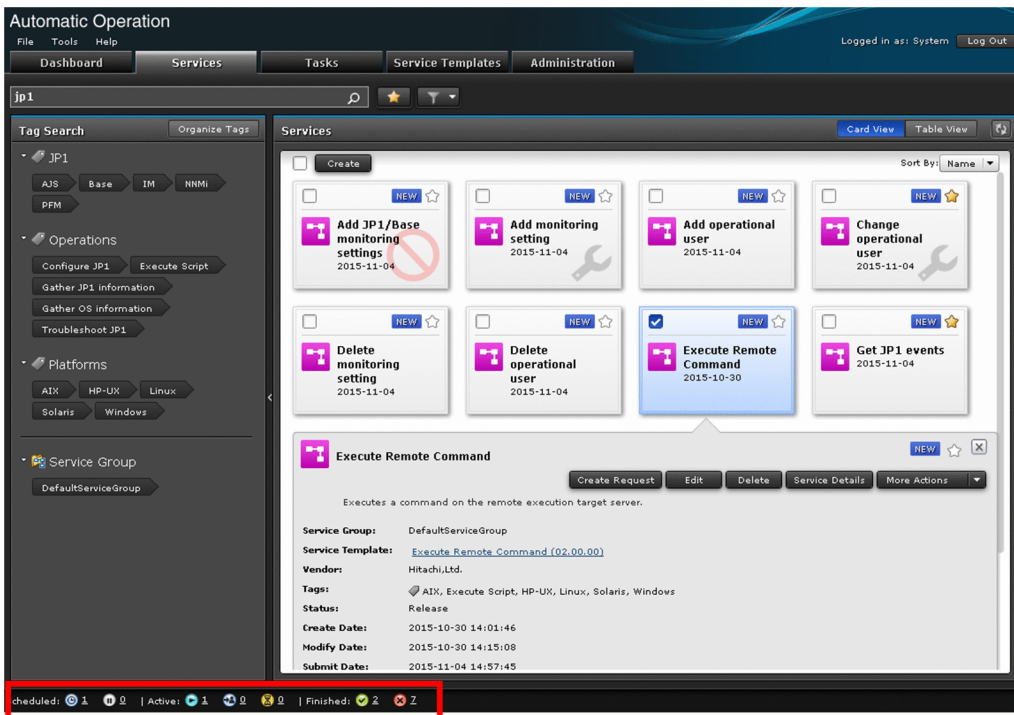
Who can perform this task:

Users in the Admin role, Develop role, Modify role, and Submit role

To check the status of tasks from the task summary area:

1. Display the JP1/AO user interface.
2. The task summary at the bottom of the window shows the task statuses and the number of tasks in each status. By clicking the number beside the status icon, you can display the **Tasks** window with all tasks of that status displayed in the **Tasks** tab.

Figure 5-4: Checking task statuses in task summary area



Related topics

- [5.2.3 Format of task summary area](#)

5.2.2 Checking task statuses from the Tasks window

You can check task statuses from the **Tasks** window. Task statuses are displayed in the tasks list and the **Flow** area. Note that the **Flow** area and **Task Details** window do not appear in the **History** tab.

Users can follow the progress of a task by viewing the information in the tasks list. This information includes when the task started processing, whether it is currently in progress, and whether it has succeeded or failed. Only tasks for which the user has view permission appear in the tasks list.

In the **Flow** area, you can view the processing status of each step in a task. This area presents this information in flow format, allowing users to see how far a task has progressed. In the **Flow** area, you can view the status of tasks regardless of the version of JP1/AO that was used to create or import the service template.

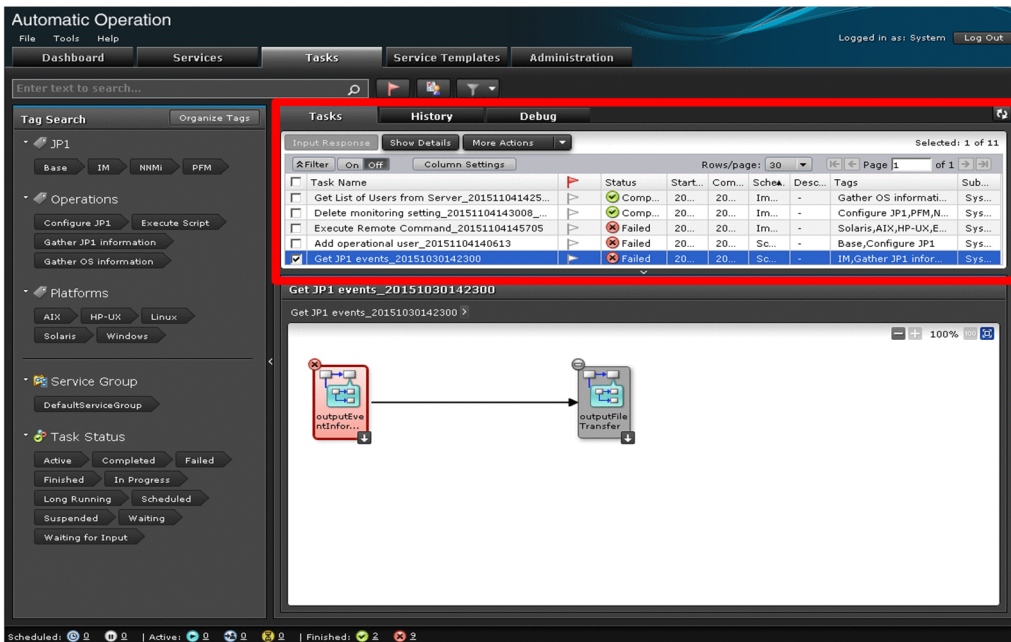
Who can perform this task:

- When the status of the submitted service is Release:
Users in the Admin role, Develop role, Modify role, and Submit role
- When the status of the submitted service is Maintenance or Test:
Users in the Admin role, Develop role, and Modify role
- When the status of the submitted service is Debug:
Users in the Admin role and Develop role

To check the status of a task from the Tasks window:

1. In the **Tasks** window, click the **Tasks** tab, **History** tab, or **Debug** tab.
2. Check the task status in the tasks list. You can sort the information in the tasks list in ascending or descending order by clicking a column header.

Figure 5-5: Checking task statuses from the tasks list

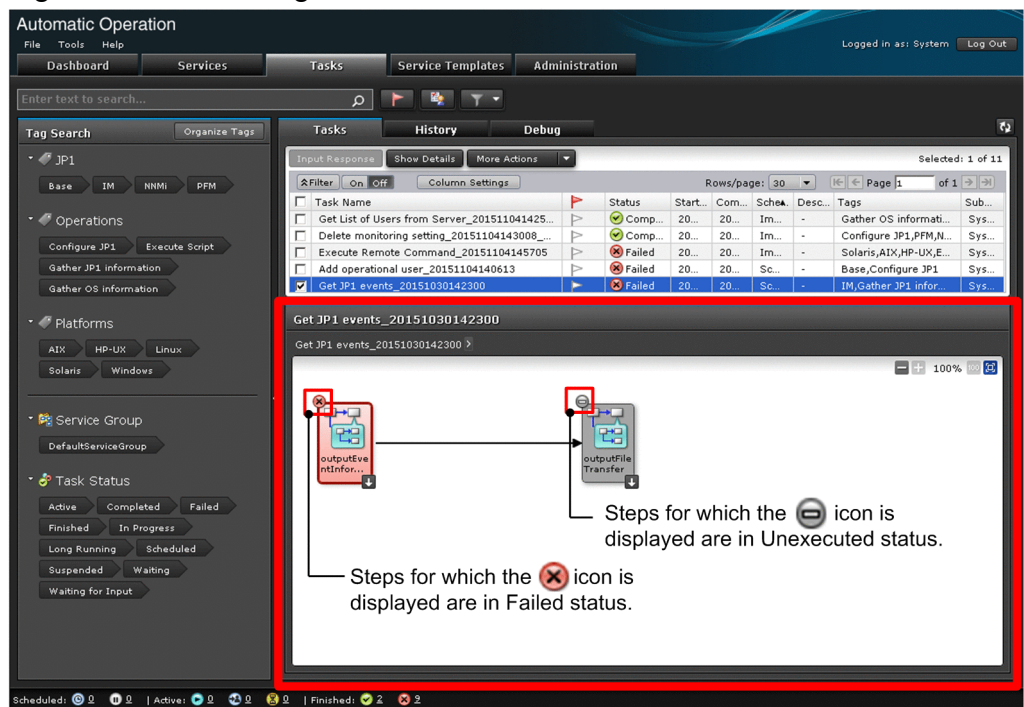


Tip

In the **Tasks** tab and **Debug** tab, you can use the To Do feature to bring a task to the attention of an administrator. For example, you might mark a task as To Do when a problem has occurred during task execution. You can mark or unmark a task as To Do by clicking the flag icon. You can also use the **Mark as "To Do"** and **Unmark "To Do"** buttons in the **Task Details** window.

3. In the tasks list in the **Tasks** tab or **Debug** tab, select the row corresponding to the task whose progress you want to check.
4. View the progress of the task in the **Flow** area. The task progress is displayed above the icon for the step.

Figure 5-6: Checking task statuses from **Flow** area



Tip

- In the **Tasks** tab and **Debug** tab, you can perform the same operation by selecting the **Flow** tab in the **Task Details** window.
- You can display the flow of the hierarchy below a step by double-clicking the step icon in the **Flow** area.
- When you place your mouse pointer over a step icon in the **Flow** area, the step name, status icon, status, start time, end time, and return value appear. Note that the return value only appears when the status is Completed or Failed.
- If you check the progress of a task in flow format when all of the following conditions are met, the input values for repeated execution will appear blank. This means that the name of a repeated execution flow will be displayed as an icon in the format Step[repeated-execution-count]:
 - The task includes a Repeated Execution Plug-in (repeated step)
 - You executed the task in version 10-11 or earlier of JP1/AO, and have since upgraded JP1/AO

Related topics








- [1.6.7 Task statuses and status transitions](#)
- [1.6.8 Step statuses](#)

5.2.3 Format of task summary area

The task summary area summarizes the statuses of tasks generated from services submitted by the logged-in user. This information relates to tasks in the tasks list in the **Tasks** tab. Tasks in the tasks lists in the **History** tab and **Debug** tab are not counted.

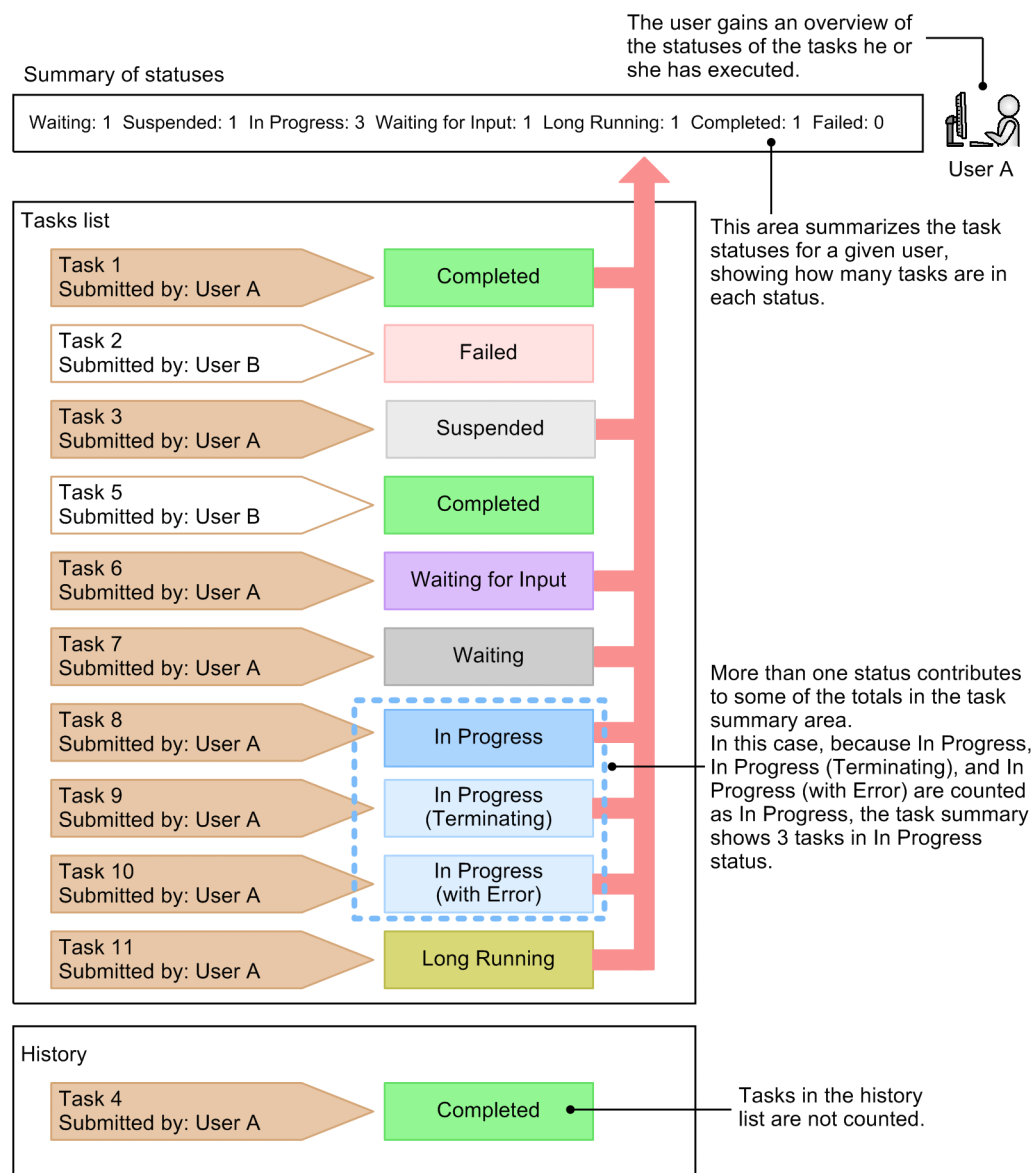
The table below shows the task statuses displayed in the task summary area, and the statuses that contribute to the count for each status. Canceled tasks are not counted in the task summary.

Table 5-3: Tasks statuses and contributing statuses in task summary

No.	Category	Status icon	Status displayed in task summary	Statuses that contributed to task status count
1	Scheduled		Waiting	Waiting
2			Suspended	Suspended
3	Active		In Progress	In Progress, In Progress (with Error), and In Progress (Terminating)
4			Waiting for Input	Waiting for Input
5			Long Running	Long Running
6	Finished		Completed	Completed
7			Failed	Failed

The following figure shows how task statuses are summarized in the task summary area:

Figure 5-7: Overview of task summarization in task summary



5.3 Viewing detailed task information

In the **Task Details** window, you can view detailed information about a task, such as the property values assigned to the underlying service and the entries in the task log.

Who can perform this task:

- When the status of the submitted service is Release:
Users in the Admin role, Develop role, Modify role, and Submit role
- When the status of the submitted service is Maintenance or Test:
Users in the Admin role, Develop role, and Modify role
- When the status of the submitted service is Debug:
Users in the Admin role and Develop role

To view detailed information about a task:

1. In the **Tasks** window, click the **Tasks** tab or the **Debug** tab.
2. In the tasks list, select the row corresponding to the task for which you want to view detailed information.
3. Click the **Task Detail** button.



Tip

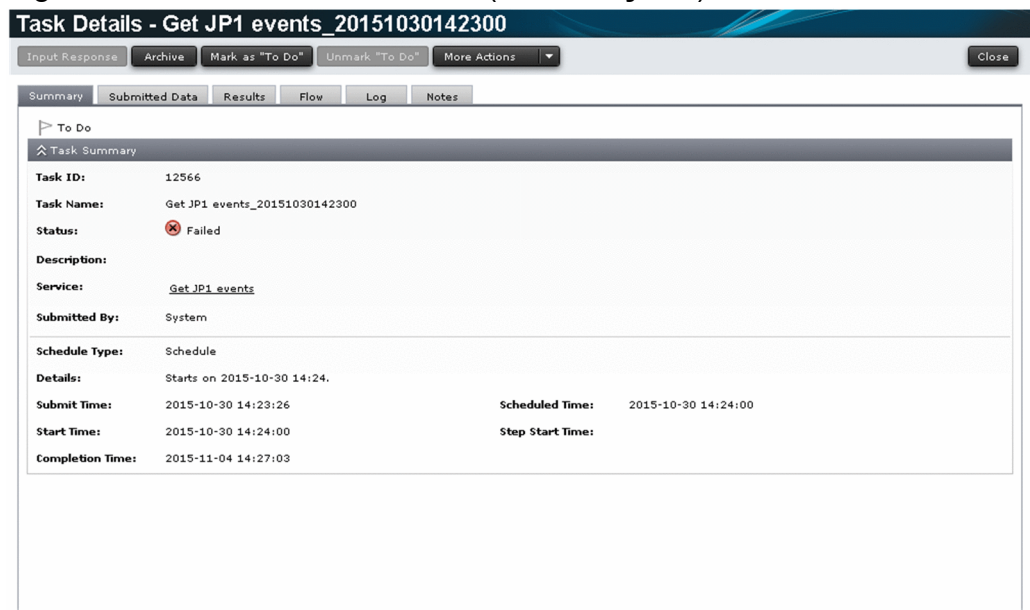
Alternatively, you can click the **Task Detail** button in the **Flow** area.

4. In the **Task Details** window, display the information you want to check by clicking the appropriate tabs.

Table 5-4: items you can check in the **Task Details** window

Tab title	Description
Summary	Displays a summary of the task. This information includes the task ID, task name, and status.
Input	Displays the property values assigned to the task.
Output	Displays the execution results of the task.
Flow	Displays the progress of the task and the status of individual steps.
Log	You can view and download the task log.
Notes	You can enter comments in relation to task information.

Figure 5-8: Task Details window (Summary tab)



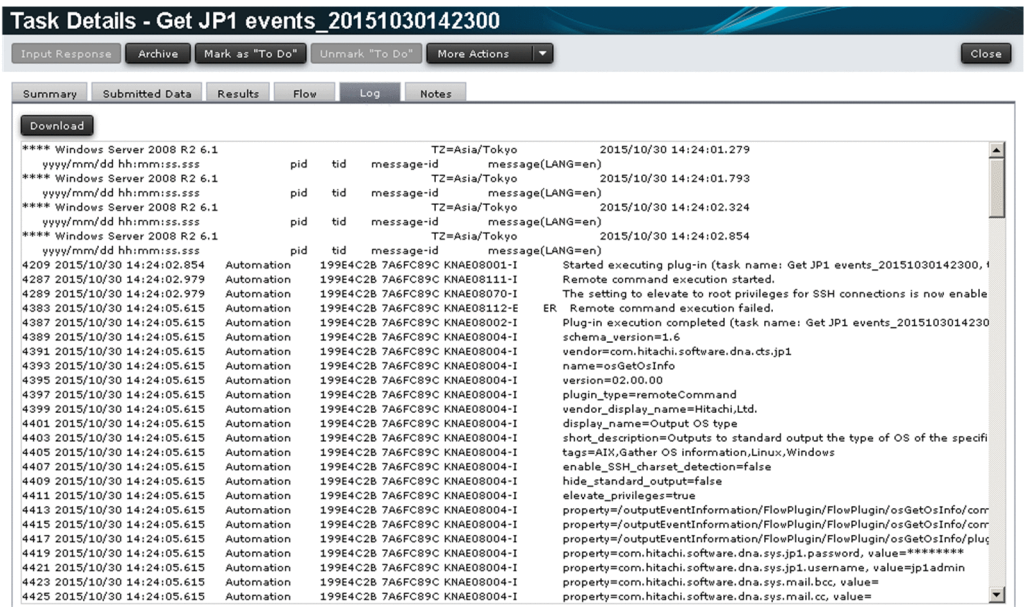
Result of operation:

You are able to view detailed information about the task.

5.3.1 Overview of task log

You can view the log information generated when a task is executed by displaying the **Log** tab of the **Task Details** window. You can also download the task log by clicking the **Download** button.

Figure 5-9: Task Details window (Log tab)



Information is output to the task log when a task enters the following statuses:

- In Progress

- Waiting for Input
- In Progress (with Error)
- In Progress (Terminating)
- Completed
- Failed

The task log displayed on the **Log** tab is not updated as new information arrives. To display the latest information, close the **Task Details** window and then open it again.

Important

If you click the **Download** button and then use another part of the JP1/AO interface while the Save As window is still open, subsequent operations in JP1/AO might not work correctly. Make sure that you have closed the dialog box where you select a destination for the file before performing any further operations in JP1/AO. If a problem of this nature does occur, restart your Web browser and log in again.

Tip

For details on how to display the task log for a debug task, see the *JP1/Automatic Operation Service Template Developer's Guide*.

Related topics

- [8.9.3 Task log details](#)
-

5.4 Providing input to tasks in Waiting for Input status (response input)

This section describes what to do when a running task requires input (a decision or selection) by a user. The process of providing input to a task that is in Waiting for Input status is called *response input*. When you input a response, JP1/AO continues or stops task processing according to the input received.

Who can perform this task:

- When the status of the submitted service is Release:
Users in the Admin role, Develop role, Modify role, and Submit role
- When the status of the submitted service is Maintenance or Test:
Users in the Admin role, Develop role, and Modify role
- When the status of the submitted service is Debug:
Users in the Admin role and Develop role

To provide a response to a task that is waiting for user input:

1. In the **Tasks** window, click the **Tasks** tab or **Debug** tab.
2. From the tasks list, select the task in Waiting for Input status for which you want to provide input, and then click the **Input Response** button.



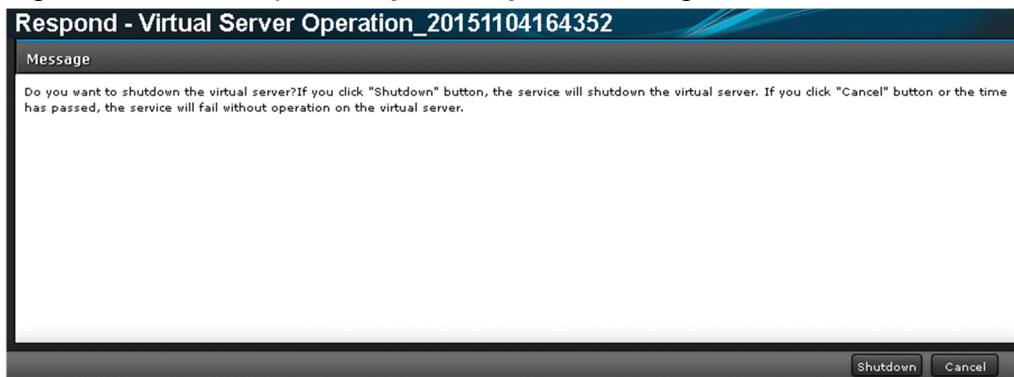
Tip

Alternatively, you can click the **Input Response** button in the **Flow** area or the **Task Details** window.

You can also click the URL in the notification email sent when a task is waiting for input, and log in from the **Login** window that appears.

3. Read the message in the **Input Response** dialog box, and click the button for the action you want to perform.

Figure 5-10: Example of **Input Response** dialog box



Important

If processing of the task stops while the **Input Response** dialog box is displayed, an error occurs when you enter a response.

Result of operation:

JP1/AO continues or stops processing of the task according to the input you provided.

5.5 Suspending tasks (suspending task schedules)

You can suspend the schedule of a task that is in **Waiting** status. When you suspend a task schedule, the task remains in **Suspended** status until the schedule is resumed.

Who can perform this task:

- When the status of the submitted service is **Release**:
Users in the **Admin** role, **Develop** role, **Modify** role, and **Submit** role
- When the status of the submitted service is **Maintenance** or **Test**:
Users in the **Admin** role, **Develop** role, and **Modify** role
- When the status of the submitted service is **Debug**:
Users in the **Admin** role and **Develop** role

To suspend a task:

1. In the **Tasks** window, click the **Tasks** tab or the **Debug** tab.
2. In the tasks list, select a waiting task whose schedule you want to suspend.



Tip

You can select multiple tasks by selecting the check boxes beside the task names.

3. From the **More Actions** pull-down menu, select **Suspend Schedules**.



Tip

Alternatively, you can select **Suspend Schedules** from the **More Actions** pull-down menu in the **Flow** area.

4. In the **Suspend Schedules** dialog box, check the tasks whose schedules are to be suspended, and then click the **OK** button.

Result of operation:

The task or tasks whose schedule you suspended enter **Suspended** status.

You can confirm the status of the tasks in the **Status** column in the tasks list.

Related topics

- [1.6.2 Managing schedules](#)
 - [5.6 Resuming suspended tasks \(resuming task schedules\)](#)
-

5.6 Resuming suspended tasks (resuming task schedules)

You can resume the schedule of a suspended task. When you resume a task schedule, the task enters Waiting status. If you resume a schedule after the scheduled start time, processing of the task begins immediately.

Who can perform this task:

- When the status of the submitted service is Release:
Users in the Admin role, Develop role, Modify role, and Submit role
- When the status of the submitted service is Maintenance or Test:
Users in the Admin role, Develop role, and Modify role
- When the status of the submitted service is Debug:
Users in the Admin role and Develop role

To resume a suspended task:

1. In the **Tasks** window, click the **Tasks** tab or the **Debug** tab.
2. In the tasks list, select a suspended task or tasks that you want to resume.



Tip

You can select multiple tasks by selecting the check boxes beside the task names.

3. From the **More Actions** pull-down menu, select **Resume Schedules**.



Tip

Alternatively, you can select **Resume Schedules** from the **More Actions** pull-down menu in the **Flow** area.

4. In the **Resume Schedules** dialog box, check the tasks whose schedules are to be resumed, and then click the **OK** button.

Result of operation:

The resumed tasks enter Waiting or In Progress status.

You can check the task statuses in the Status column in the tasks list.

Related topics

- [1.6.2 Managing schedules](#)
 - [5.5 Suspending tasks \(suspending task schedules\)](#)
-

5.7 Canceling tasks (canceling task schedules)

You can cancel the schedule of a waiting task. When you cancel a task schedule, the task enters Canceled status.

Who can perform this task:

- When the status of the submitted service is Release:
Users in the Admin role, Develop role, Modify role, and Submit role
- When the status of the submitted service is Maintenance or Test:
Users in the Admin role, Develop role, and Modify role
- When the status of the submitted service is Debug:
Users in the Admin role and Develop role

To cancel a task:

1. In the **Tasks** window, click the **Tasks** tab or the **Debug** tab.
2. From the tasks list, select the waiting task or tasks whose schedule you want to cancel.



Tip

You can select multiple tasks by selecting the check boxes beside the task names.

3. From the **More Actions** pull-down menu, select **Cancel Schedules**.



Tip

Alternatively, you can select **Cancel Schedules** from the **More Actions** pull-down menu in the **Flow** area.

4. In the **Cancel Schedules** dialog box, check the tasks whose schedules are to be canceled, and then click the **OK** button.

Result of operation:

The task or tasks whose schedule you canceled enter Canceled status.

You can check the task statuses in the Status column in the tasks list.

Related topics

- [1.6.2 Managing schedules](#)
-

5.8 Stopping tasks

You can stop or forcibly stop a task that is in progress. These methods are respectively called execution stop and forced stop. The difference between these methods is as follows:

- Execution stop
The task stops after the step that is in progress has finished.
- Forced stop
The task stops after the processing of the step that is in progress is stopped.



Tip

You can also stop and forcibly stop execution of debug tasks. For details on how to do so, see the topic on managing debug tasks in the *JP1/Automatic Operation Service Template Developer's Guide*.

The subsections below describe how to stop and forcibly stop execution of a task that is in progress.

5.8.1 Stopping tasks (execution stop)

This section describes how to stop execution of a task that is in progress. When you stop execution of a task, the task enters Failed status.

Who can perform this task:

- When the status of the submitted service is Release:
Users in the Admin role, Develop role, Modify role, and Submit role
- When the status of the submitted service is Maintenance or Test:
Users in the Admin role, Develop role, and Modify role
- When the status of the submitted service is Debug:
Users in the Admin role and Develop role

To stop execution of a task:

1. In the **Tasks** window, click the **Tasks** tab or the **Debug** tab.
2. From the tasks list, select the in-progress task or tasks whose execution you want to stop.



Tip

You can select multiple tasks by selecting the check boxes beside the task names.

3. From the **More Actions** pull-down menu, select **Stop Tasks**.



Tip

Alternatively, you can select **Stop Tasks** from the **More Actions** pull-down menu in the **Flow** area.

4. In the **Stop Tasks** dialog box, check the tasks that are to be stopped, and then click the **OK** button.
5. In the **Results** dialog box, click the **OK** button.

Result of operation:

The tasks whose execution you stopped enter Failed status.

You can check the status of the tasks in the Status column in the tasks list. In addition to task statuses, you can check the status, start time, and end time of steps in the **Task Details** window or the **Flow** area.

The start and end times of tasks, information about executed plug-ins, and error information can be viewed in the task log and public log.

Important

If a user stops execution of a task while the last plug-in is in progress, the task enters Completed status.

Related topics

- [5.8.3 Processing when task execution is stopped](#)

5.8.2 Stopping tasks (forced stop)

This section describes how to forcibly stop a task that is in progress. When you forcibly stop a task, the task enters Failed status. Note that you can forcibly stop a task only if the service settings are configured to allow the forcible stopping of tasks.

Who can perform this task:

- When the status of the submitted service is Release:
Users in the Admin role, Develop role, Modify role, and Submit role
- When the status of the submitted service is Maintenance or Test:
Users in the Admin role, Develop role, and Modify role
- When the status of the submitted service is Debug:
Users in the Admin role and Develop role

To forcibly stop a task:

1. In the **Tasks** window, click the **Tasks** tab or the **Debug** tab.
2. From the tasks list, select the in-progress task or tasks whose execution you want to forcibly stop.

Tip

You can select multiple tasks by selecting the check boxes beside the task names.

3. From the **More Actions** pull-down menu, select **Forcibly Stop**.

Tip

Alternatively, you can select **Forcibly Stop** from the **More Actions** pull-down menu in the **Flow** area or the **Task Details** window.

4. In the **Forcibly Stop** dialog box, check the tasks that are to be forcibly stopped, and then click the **OK** button.

Result of operation:

The tasks whose execution you forcibly stopped enter Failed status.

You can check the status of the tasks in the Status column in the tasks list. In addition to task statuses, you can check the status, start time, and end time of steps in the **Task Details** window or the **Flow** area.

The start and end times of tasks, information about executed plug-ins, and error information can be viewed in the task log and public log.

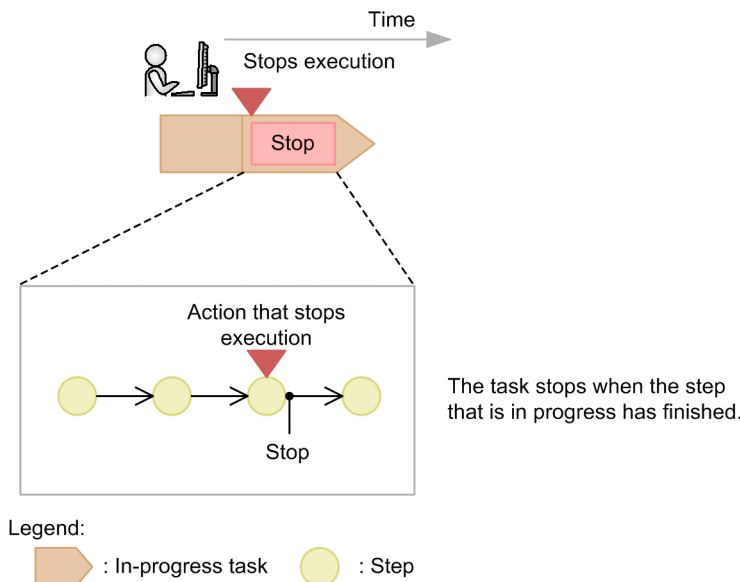
Related topics

- [5.8.4 Processing when task execution is forcibly stopped](#)
-

5.8.3 Processing when task execution is stopped

This section describes the processing that takes place in the JP1/AO system when execution of a task is stopped. When you stop execution of a running task, the task stops when the step that is in progress has completed.

Figure 5-11: Stopping task execution

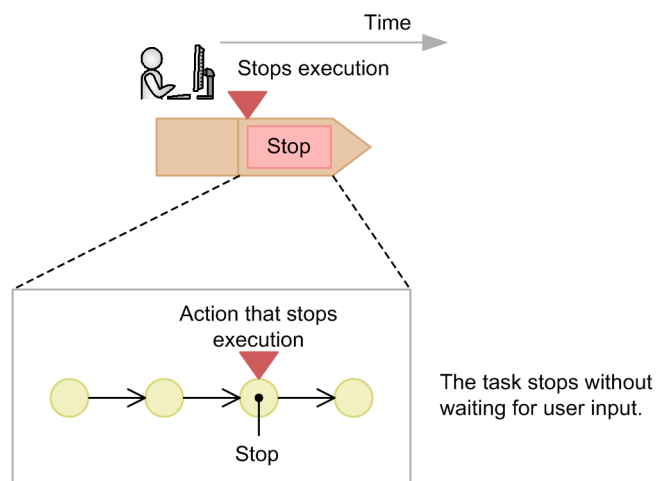


However, the processing that takes place differs when the step that is in progress contains a User-Response Wait Plug-in, a Repeated Execution Plug-in or a Interval plug-in.



Processing when task execution is stopped during execution of a User-Response Wait Plug-in

If you stop execution of a task while a User-Response Wait Plug-in is in progress, the task stops without waiting for a response from the user.

Figure 5-12: Stopping execution while the task is waiting for a response



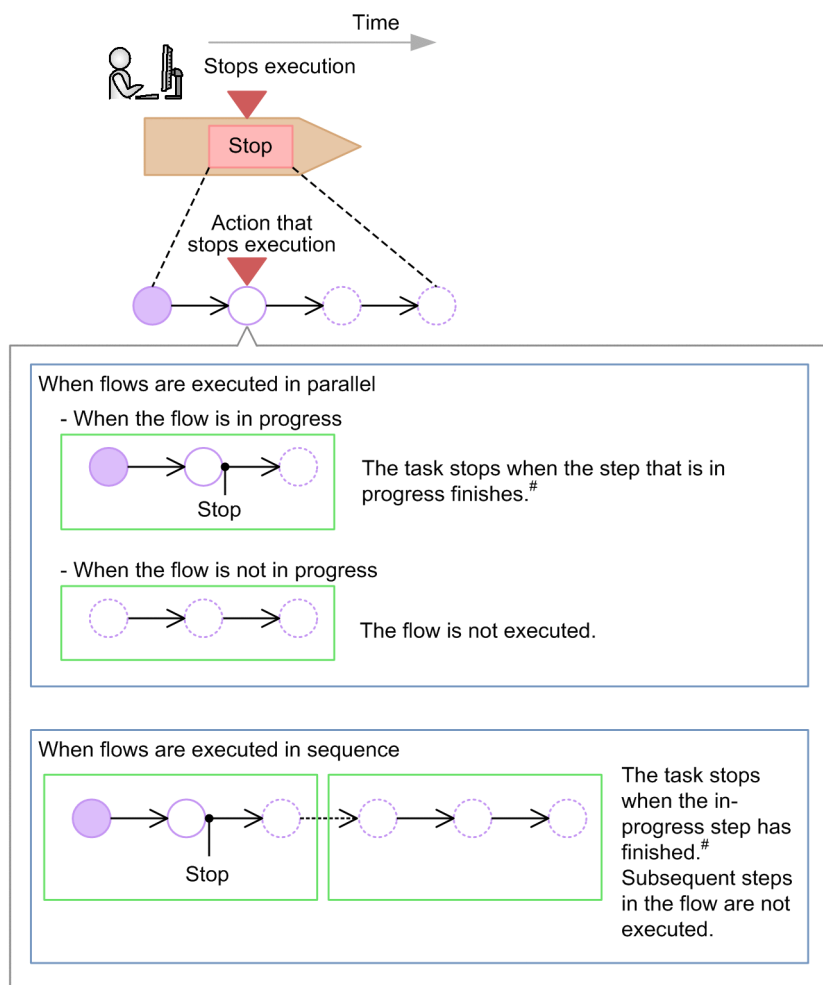
Legend:

 : In-progress task  : Step

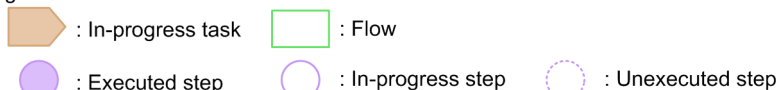
Processing when task execution is stopped during execution of a Repeated Execution Plug-in

If you stop execution of a task while a Repeated Execution Plug-in is in progress, the flow that is in progress stops as soon as the running step is completed. Flows that had not been executed remain unexecuted.

Figure 5-13: Stopping execution during execution of a Repeated Execution Plug-in



Legend:



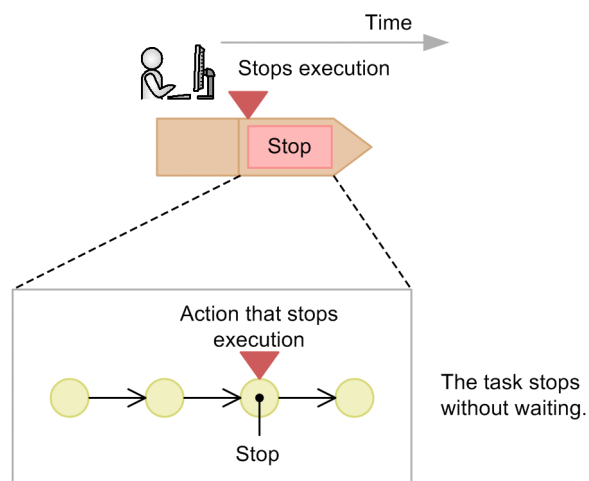
#

In the case of a User-Response Wait Plug-in, the step stops without waiting for user input.

Processing when task execution is stopped during execution of a Interval plug-in

If you stop execution of a task while a Interval plug-in is in progress, the task stops immediately.

Figure 5-14:



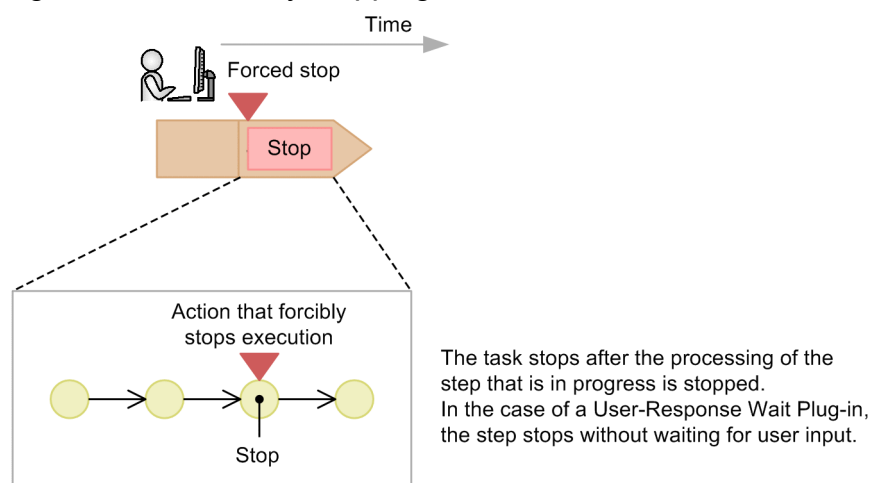
Legend:

: In-progress task : Step

5.8.4 Processing when task execution is forcibly stopped

When you forcibly stop execution of a running task, stop the task by stopping the processing of the step that is in progress.

Figure 5-15: Forcibly stopping task execution



Legend:

: In-progress task : Step

5.9 Redoing tasks

There are two ways in which you can redo a task in the JP1/AO system: by re-executing the task, or by retrying it. The difference between these methods is described below.

- **Re-executing tasks**

You can re-execute a task whose processing has stopped (tasks in Completed, Failed, and Canceled status), under a different task ID. You can set any property values you wish.

- **Retrying tasks**

You can retry a task whose processing has failed. The task will retain its original property values and task ID. You might retry a task when a task fails for reasons related to the execution environment, such a temporary loss of network connectivity.

You can select either of the following options when using the retry function to redo a task:

- Retry the task from the failed step
- Retry the task from the step after the failed step

Important

Before retrying a task, identify and resolve the cause of the failure based on the execution status and results of the individual steps in the task, and the contents of the task log.

The subsections below describe how to re-execute and retry tasks.

5.9.1 Re-executing tasks

You can re-execute a task whose processing has stopped (tasks in Completed, Failed, and Canceled status). The re-executed task will have a different task ID.

When you re-execute a task, it inherits the property values and description of the original task. You can change the property values and description as needed. By default, Immediate is selected as the schedule type.

Who can perform this task:

- When the status of the submitted service is Release:
Users in the Admin role, Develop role, Modify role, and Submit role
- When the status of the submitted service is Maintenance or Test:
Users in the Admin role, Develop role, and Modify role
- When the status of the submitted service is Debug:
Users in the Admin role and Develop role

To re-execute a stopped task:

1. In the **Tasks** window, click the **Tasks** tab or the **Debug** tab.
2. From the tasks list, select the task you want to re-execute.
3. From the **More Actions** pull-down menu, select **Resubmit**.



Tip

Alternatively, you can click the **Resubmit** button in the **Flow** area or the **Task Details** window.



Important

If the service template on which the service that generated the task is based has been modified since the task was generated, an error message might be displayed. In this case, instead of re-executing the task, submit the service for execution again from the **Submit Service** dialog box with the appropriate property values entered.

4. In the **Submit Similar Request** window, review the property information and modify the property values as needed.

Figure 5-16: **Submit Similar Request** window

5. Review the task settings, and modify the settings as needed.
The following default name appears in the **Task Name** field:
*original-task-name*_Resubmit
6. From the **Schedule Type** pull-down menu, select the execution schedule for the task.
7. Click the **Submit** button or the **Submit and View Task** button.
8. In the **Submit Service** dialog box, click the **OK** button.

Result of operation:

A task is generated, and task processing takes place according to the schedule type.

You can view the generated task in the tasks list.

Related topics

- [4.4 Executing services](#)

5.9.2 Retrying a task from a failed step

You can retry a task from the step where processing failed. When you retry a task, it inherits the property values that were in effect when the task stopped, and is retried with the same task ID from the failed step. Note that you can retry a task only if the service is configured to permit the retry of tasks.

Who can perform this task:

- When the status of the submitted service is Release:
Users in the Admin role, Develop role, Modify role, and Submit role
- When the status of the submitted service is Maintenance or Test:
Users in the Admin role, Develop role, and Modify role
- When the status of the submitted service is Debug:
Users in the Admin role and Develop role

To retry a task from a failed step:

1. In the **Tasks** window, click the **Tasks** tab or the **Debug** tab.
2. From the tasks list, select the task you want to retry.
3. From the **More Actions** pull-down menu, select **Retry the Task From the Failed Step**.



Tip

Alternatively, you can select **Retry the Task From the Failed Step** from the **More Actions** pull-down menu in the **Flow** area or the **Task Details** window.

4. In the **Retry the Task From the Failed Step** dialog box, click the **OK** button.
5. In the Information dialog box, click the **OK** button.

Result of operation:

A task is generated and starts processing immediately. You can view the generated task in the tasks list.



Tip

You can view the history of the retried task in task log and the public log.

Related topics

- [1.6.4 Retrying tasks](#)
-

5.9.3 Retrying a task from the step after a failed step

You can retry a task from the step after a step where processing failed. When you retry a task, it inherits the property values that were in effect when the task stopped, and is retried with the same task ID from the step after the failed step. Note that you can retry a task only if the service is configured to permit the retry of tasks.

Who can perform this task:

- When the status of the submitted service is Release:
Users in the Admin role, Develop role, Modify role, and Submit role
- When the status of the submitted service is Maintenance or Test:
Users in the Admin role, Develop role, and Modify role
- When the status of the submitted service is Debug:
Users in the Admin role and Develop role

To retry a task from the step after a failed step:

1. In the **Tasks** window, click the **Tasks** tab or the **Debug** tab.
2. From the tasks list, select the task you want to retry.
3. From the **More Actions** pull-down menu, select **Retry the Task From the Step After the Failed Step**.



Tip

Alternatively, you can select **Retry the Task From the Step After the Failed Step** from the **More Actions** pull-down menu in the **Flow** area or the **Task Details** window.

4. In the **Retry the Task From the Step After the Failed Step** dialog box, click the **OK** button.
5. In the Information dialog box, click the **OK** button.

Result of operation:

A task is generated and starts processing immediately. You can view the generated task in the tasks list.



Tip

You can view the history of the retried task in task log and the public log.

Related topics

- [1.6.4 Retrying tasks](#)
-

5.10 Moving tasks to the history list (archiving)

When a task has finished processing, you can move it to the history list. This process is called archiving. Archived tasks are removed from the tasks list, and are managed in the history list from then on.

Who can perform this task:

- When the status of the submitted service is Release, Maintenance, or Test:
Users in the Admin role, Develop role, and Modify role
- When the status of the submitted service is Debug:
Users in the Admin role and Develop role

To move tasks to the history list:

1. In the **Tasks** window, click the **Tasks** tab or the **Debug** tab.
2. From the tasks list, select the task or tasks you want to archive.



Tip

You can select multiple tasks by selecting the check boxes beside the task names. You can also select all tasks by selecting the check box beside the column header.

3. From the **More Actions** pull-down menu, select **Archive**.



Tip

Alternatively, you can select **Archive** from the **More Actions** pull-down menu in the **Flow** area, or click the **Archive** button in the **Task Details** window.

4. In the **Archive Tasks** dialog box, review the tasks to be archived, and then click the **OK** button.

Result of operation:

The tasks are deleted from the tasks list.

You can view the tasks you removed from the tasks list by clicking the **History** tab in the **Tasks** window.



Tip

You can also configure JP1/AO to automatically archive tasks by setting a retention period or maximum number of tasks to keep in the user-specified properties file (config_user.properties).

Related topics

- [1.6.5 Automatically archiving tasks and deleting task histories](#)
 - User-specified properties file (config_user.properties) in the JP1/Automatic Operation Configuration Guide
-

5.11 Deleting task histories

You can manually delete task histories that are no longer required. You can also configure JP1/AO to delete task histories automatically by setting a maximum number of task histories to keep in the user-specified properties file (config_user.properties).

Who can perform this task:

Users in the Admin role, Develop role, and Modify role

To delete task histories:

1. In the **Tasks** window, click the **History** tab.
2. From the history list, select the task histories that you want to delete.



Tip

You can select multiple task histories by selecting the check boxes beside the task names. You can also select all task histories by selecting the check box beside the column header.

3. Click the **Delete Histories** button.
4. In the **Delete Task Histories** dialog box, review the task histories to be deleted, and then click the **OK** button.

Result of operation:

The selected task histories are removed from the history list.

Related topics

- [1.6.5 Automatically archiving tasks and deleting task histories](#)
 - User-specified properties file (config_user.properties) in the JP1/Automatic Operation Configuration Guide
-

5.12 Exporting tasks lists (exporting tasks)

You can output a list of tasks to a CSV file. The process of outputting tasks lists is called exporting tasks. By specifying a time period, you can narrow down the information output to the file.

Who can perform this task:

Users who have Administrators or root permission for the operating system, and belong to the Admin role, Develop role, Modify role, or Submit role

To output a tasks list:

Execute the `listtasks` command with `tasks` specified for the `output` option.

Result of operation:

A list of tasks is output as a CSV file to the location specified in the command. The tasks output in the tasks list are those that are assigned to the service groups associated with the user specified in the `user` option of the `listtasks` command.



Tip

You can output a history list by executing the `listtasks` command with `histories` specified in the `output` option.

5.13 Outputting detailed task information as a batch

You can output detailed information about tasks including information about their input and output properties.

Who can perform this task:

Users who have Administrators or root permission for the operating system and belong to the Admin role

To output detailed task information as a batch:

Execute the `listtasks` command with `taskdetails` specified for the `output` option.

Result of operation:

Detailed task information is output to the location specified in the command.

5.14 Re-registering scheduled tasks and recurring tasks as a batch

You can re-register scheduled and recurring tasks with the same settings as a batch, based on detailed task information output by the `listtasks` command.

Who can perform this task:

Users who have Administrators or root permission for the operating system and belong to the Admin role

To re-register scheduled and recurring tasks as a batch:

Execute the `submittask` command with the `reregister` and `taskdetaildir` options specified. In the `taskdetaildir` option, specify the folder in which the detailed task information output by the `listtasks` command is stored.

Result of operation:

Scheduled and recurring tasks are re-registered as a batch based on detailed task information specified in the command.

6

Managing JP1/AO

This chapter describes how to manage various aspects of the JP1/AO system.

6.1 Administration window

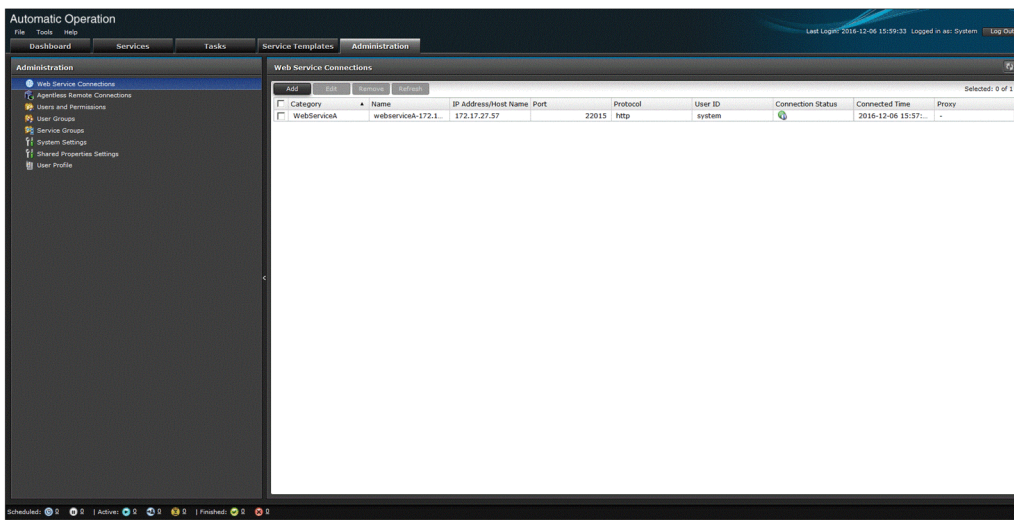
In the **Administration** window, you can manage users, service groups, and other aspects of the JP1/AO system. You can display the **Administration** window by clicking the **Administration** tab in the main window.

The **Administration** window can be viewed by users in the Admin role.

The **Administration** window consists of an **Administration** area in which you can select the aspect of the system you want to manage, and an area whose content depends on the menu item selected in the **Administration** area.

Note that selecting the **Users and Permissions** and **User Profile** menu commands displays the **Users and Permissions** window and **User Profile** window respectively.

Figure 6-1: **Administration** window



In the **Administration** window, you can:

- Manage web service connections
- Manage agentless remote connections
- Manage users
- Manage user groups
- Manage service groups
- Manage Service Share Properties
- Manage user profiles

6.2 Managing the web service connection-destination definitions

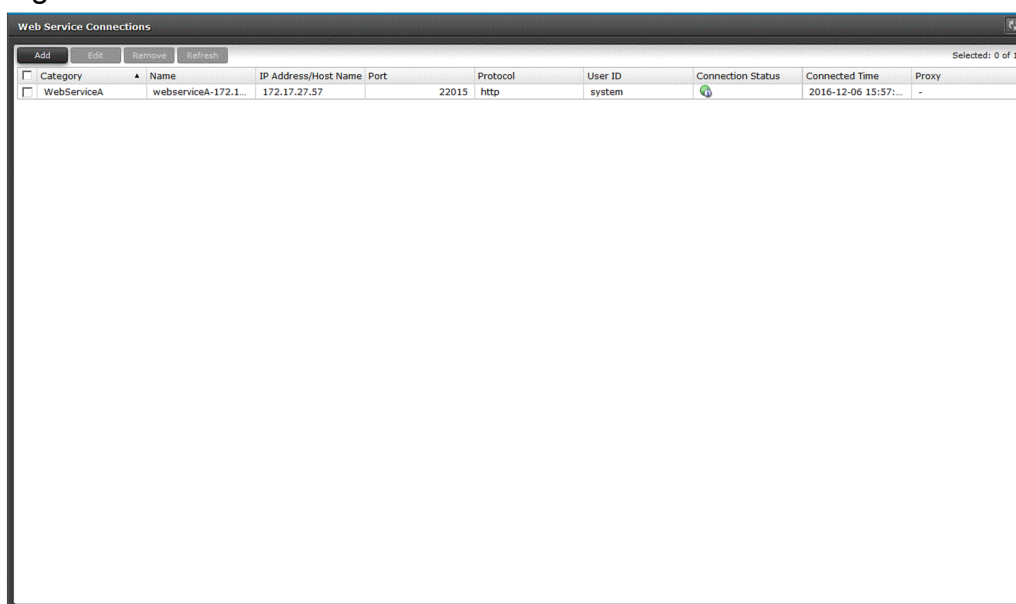
The following describes the procedure for managing the web service connection-destination definitions.

6.2.1 Web Service Connection area

In the **Web Service Connection** area, you can view a list of web service connection destinations, and add, edit, and delete service connection-destination definitions.

To display the **Web Service Connection** area, in the **Administration** area, from the **Connection Settings** tree, select the **Web Service Connection** menu item.

Figure 6-2: **Web Service Connection** area



The items displayed in this area are described later.

List of web service connection-destination definitions


The web service connection-destination definitions are listed. If you click the title of a column, the list will be sorted in ascending or descending order of the values in that column.

Table 6-1: Items displayed in the list of web service connection-destination definitions (**Web Service Connection** area)

Item	Description
Category	The category of the connection destination.
Name	The name of the connection destination.
IP Address/Host Name	The IP address or host name of the connection destination.
Port	The port number of the connection destination.
Protocol	The protocol that is used to connect to the web service.
User ID	The user ID that is used to connect to the web service.
Connection Status	The status of the connection to the web service.

Item	Description
Connected Time	The last time when a connection to the web service was established.
Proxy	The host name or IP address of the proxy server.

Tip

- If you select the check box beside the method of the target web service connection-destination definition and then click the **Refresh** button, the connection status will be updated with the latest information.
- If you click the **Refresh** button (), the information in the **Web Service Connection** area will be refreshed.

6.2.2 Adding a web service connection-destination definition

The following describes how to register a web service connection-destination definition in JP1/AO. If you have registered a definition in advance, when you execute a service, you will be able to access the defined web service or use the information specified by a plug-in of a service template.

Who can perform this task:

Users assigned the Admin role

To add a web service connection-destination definition:

1. Display the **Administration** window.
2. In the **Administration** area, from the **Connection Settings** tree, select the **Web Service Connection** menu item.
3. In the **Web Service Connection** area, click the **Add** button.
4. In the **Add Web Service Connection** dialog box, enter the necessary information.
5. Click the **OK** button.

Tip

To test the connection to the web service, click the **Connection Test** button.

Result of operation:

Information about the added web service connection-destination definition is displayed in the **Web Service Connection** area.

6.2.3 Editing a web service connection-destination definition

The following describes how to edit a web service connection-destination definition.

Who can perform this task:

Users assigned the Admin role

To edit a web service connection-destination definition:

1. Display the **Administration** window.
2. In the **Administration** area, from the **Connection Settings** tree, select the **Web Service Connection** menu item.
3. In the **Web Service Connection** area, select the check box of the target web service connection-destination definition next to *Category*, and then click the **Edit** button.
4. In the **Edit Web Service Connection** dialog box, edit the information as needed.
5. Click the **OK** button.



Tip

To check the connection to the web service, click the **Connection Test** button.

Result of operation:

Information about the web service connection-destination definition that was edited is displayed in the **Web Service Connection** area.

6.2.4 Deleting a web service connection-destination definition

The following describes how to delete a web service connection-destination definition.

Who can perform this task:

Users assigned the Admin role

To delete a web service connection-destination definition:

1. Display the **Administration** window.
2. In the **Administration** area, from the **Connection Settings** tree, select the **Web Service Connection** menu item.
3. In the **Web Service Connection** area, select the target web service connection-destination definition, and then click the **Delete** button.



Tip

You can use the check boxes next to *Category* to select multiple web service connection-destination definitions. If you select the check box next to the table header, you can select all web service connection-destination definitions.

4. In the **Delete** dialog box, click the **OK** button.

Result of operation:

The selected web service connection-destination definition or definitions are deleted.

6.2.5 Settings specified in a web service connection-destination definition

The following describes the settings to be specified when you add or edit a web service connection-destination definition.

A web service connection-destination definition consists of the following two types of information:

- Web service connection-destination information
Information for connecting to a web service
- Proxy server setting information
Information about the proxy server that is used to connect to a web service (required only if a proxy server is used)

The following table describes the settings specified in a web service connection-destination definition.

Type	Setting	Description
Web service connection-destination information	Category	Specify the category name of the web service. You can enter any name. You can also select an already registered category name from the list.
	Name	Specify the destination name.
	IP Address/Host Name	Specify the IP address or host name.
	Protocol	Select the connection protocol to be used from the following: <ul style="list-style-type: none">• http• https
	Port	Specify the port number.
	User ID	Specify the user ID to be used to log in to the web service.
	Password	Specify the password to be used to log in to the web service.
Proxy server setting information	Use Proxy Server	Specify whether to use a proxy server to connect to the web service.
	IP Address/Host Name	Specify the IP address or host name of the proxy server.
	Port	Specify the port number of the proxy server.
	Authentication	Specify whether to perform user authentication on the proxy server.
	Authentication Type	If user authentication is to be performed by using a proxy server, select the authentication method to be used from the following: <ul style="list-style-type: none">• Basic• Digest
	User ID	Specify the user ID to be used for user authentication performed on the proxy server.
	Password	Specify the password to be used for user authentication performed on the proxy server.

6.3 Managing Connection Destinations

This section describes how to manage the connection-destination hosts (Connection Destinations) to which services in JP1/AO connect to perform the operations for which they are designed.

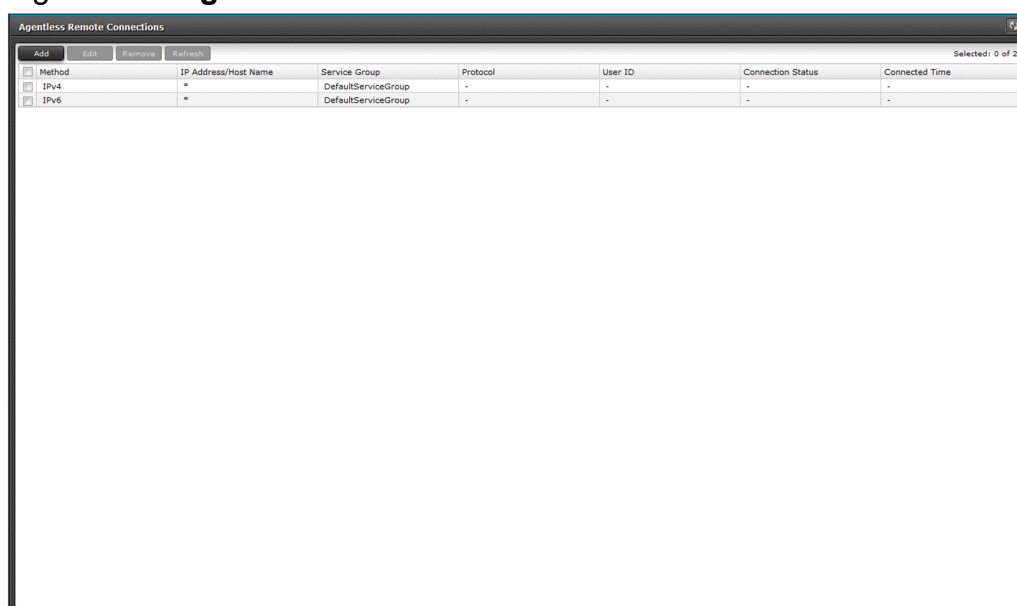
You can manage Connection Destinations from the JP1/AO interface, and by using commands.

6.3.1 Agentless Remote Connections area

In the **Agentless Remote Connections** area, you can view a list of Connection Destinations defined in the system. You can also add, edit, and delete Connection Destination definitions.

You can display the **Agentless Remote Connections** area by clicking the **Agentless Remote Connections** menu command in the **Administration** area.

Figure 6-3: **Agentless Remote Connections** area



The items displayed in this area are described below.

Connection Destinations List


A list of Connection Destinations is displayed. You can sort the list in ascending or descending order by clicking a column header.

Table 6-2: Items in Connection Destinations List (**Agentless Remote Connections** area)

Item	Description
Method	The method used to specify the Connection Destination (as Host Name, IPv4, or IPv6).
Destination	The host name or IP address of the Connection Destination.
Service Group	The name of the service group to which the Connection Destination belongs.
Protocol	The protocol used when connecting to the Connection Destination.
User ID	The user ID used when connecting to the Connection Destination.

Item	Description
Connection Status	<p>The status when a connection to the agentless remote connection destination was last established. The displayed information varies depending on the connection-destination registration method:</p> <ul style="list-style-type: none"> • If the connection destination was registered by using the "single destination" specification method: A status indicating one of the following is displayed: successfully connected, failed to connect, or not connected. • If the connection destination was registered by using the "range of destinations" specification method or the "all destinations" specification method: A hyphen (-) is displayed.
Connected Time	The time when a connection to the agentless remote connection destination was last established.

Tip

- If you select the check box next to a method of the target agentless remote connection-destination definition and then click the **Refresh** button, the connection status will be updated with the latest information.
- If you click the **Refresh** button (), the information in the **Agentless Remote Connections** area will be refreshed.

6.3.2 Adding Connection Destinations

You can register a Connection Destination by adding its definition to JP1/AO. By registering a device as a Connection Destination in JP1/AO, you can make that device accessible to services executed in the JP1/AO system. The concept of Connection Destinations lets you restrict access to devices based on the service group to which a task belongs. You can add definitions from the user interface, or by using a command.

Who can perform this task:

Users assigned the Admin role

To perform this task using a command, the user must also have Administrators permission or root permission for the operating system.

To add a Connection Destination from the user interface:

1. Display the **Administration** window.
2. In the **Administration** area, click the **Agentless Remote Connections** menu command.
3. In the **Agentless Remote Connections** area, click the **Add** button.
4. In the **Add Agentless Remote Connection** dialog box, enter the definition information for the Connection Destination.
5. Click the **OK** button.



Tip

- You can use the following methods to set the authentication information used when executing a service:
 - Registering authentication information as part of the Connection Destination definition
 - Specifying authentication information when submitting the service
- To test the connection to the destination, click the **Connection Test** button.

To add a Connection Destination by using a command:

Execute the `setremoteconnection` command.

Result of operation:

The definition for the Connection Destination is added to the system. Information about the Connection Destination now appears in the **Agentless Remote Connections** area.



Tip

You can register a maximum of 10,000 Connection Destinations.

Related topics

- [6.3.6 Information set in definitions of Connection Destinations](#)
-

6.3.3 Editing Connection Destinations

The following describes how to edit the definition of a Connection Destination. This allows you to change the devices that are accessible to each service group after JP1/AO becomes operational. You can perform this task from the user interface or by using a command.

Who can perform this task:

Users assigned the Admin role

To perform this task using a command, the user must also have Administrators permission or root permission for the operating system.

To edit a Connection Destination from the user interface:

1. Display the **Administration** window.
2. In the **Administration** area, click the **Agentless Remote Connections** menu command.
3. In the **Agentless Remote Connections** area, select the check box beside the Method column for the Connection Destination whose definition you want to edit, and then click the **Edit** button.
4. In the **Edit Agentless Remote Connection** dialog box, edit the definition information.
5. Click the **OK** button.



Tip

To test the connection to the destination, click the **Connection Test** button.

To edit a Connection Destination using a command:

Execute the `setremoteconnection` command.

Result of operation:

The changes you made to the definition of the Connection Destination take effect. The updated information now appears in the **Agentless Remote Connections** area.

Related topics

- [6.3.6 Information set in definitions of Connection Destinations](#)
-

6.3.4 Deleting Connection Destinations

The following describes how to delete a Connection Destination from JP1/AO. You can perform this task from the user interface or by using a command.

Who can perform this task:

Users assigned the Admin role

To perform this task using a command, the user must also have Administrators permission or root permission for the operating system.

To delete a Connection Destination from the user interface:

1. Display the **Administration** window.
2. In the **Administration** area, click the **Agentless Remote Connections** menu command.
3. In the **Agentless Remote Connections** area, select the Connection Destinations you want to delete, and then click the **Remove** button.



Tip

You can select multiple Connection Destinations by selecting the check boxes beside the Method column. To select every Connection Destination in the list, select the check box beside the column header.

4. In the **Remove** dialog box, click the **OK** button.

To delete Connection Destinations using a command:

Execute the `deleteremoteconnection` command.

Result of operation:

The selected Connection Destinations are deleted.

6.3.5 Outputting a list of Connection Destinations

The following describes how to output a list of Connection Destinations to a file in CSV format. You can perform this operation using a command.

Who can perform this task:

Users assigned the Admin role who also have Administrators or root permission for the operating system

To output a list of Connection Destinations:

Execute the `listremoteconnections` command.

Result of operation:

A list of Connection Destinations is output to a CSV file.

Related topics

- [6.3.6 Information set in definitions of Connection Destinations](#)
 - [6.3.8 Input format for Connection Destinations](#)
-

6.3.6 Information set in definitions of Connection Destinations

This section describes the definition information you set when adding or editing a Connection Destination in the JP1/AO interface or by using a command.

Broadly speaking, there are two categories of information that make up the definition of a Connection Destination:

- **Destination information**
Information that permits a service to connect to a Connection Destination. You must set destination information if you want a service in any service group other than DefaultServiceGroup to be able to connect to a particular device.
- **Authentication information**
Information used to undergo authentication with the Connection Destination. You do not need to specify authentication information in the definition of the Connection Destination if the user will enter it when submitting the service.

The following table lists the information in the definition of a Connection Destination:

Table 6-3: Information in Connection Destination definition

Category	Item	Description
Destination information	Method	Select the format in which the Connection Destination is specified, as one of the following: <ul style="list-style-type: none">• Host Name^{#1}• IPv4• IPv6
	Destination	Specify the destination or destinations in the appropriate format. You can specify a maximum of 1,024 characters. You can use the following methods: <ul style="list-style-type: none">• Single destination

Category	Item	Description
Destination information	Destination	<ul style="list-style-type: none"> Range of destinations All destinations
	Service Group	<p>Specify the name of the service group with which to associate the Connection Destination.</p> <p>Services in the specified service group can only access the Connection Destinations specified by the destination information.</p> <p>If you specify DefaultServiceGroup, all services in DefaultServiceGroup will have access to all Connection Destinations.</p>
Authentication information ^{#2}	Protocol	<p>Select one of the following authentication protocols to use for communication with the destination host:</p> <ul style="list-style-type: none"> SSH Windows Telnet
	SSH Authentication Method	<p>If you select SSH as the protocol, specify the authentication method to use for communication with the destination host.</p> <p>Specify one of the following:</p> <ul style="list-style-type: none"> Password Authentication Public Key Authentication Keyboard Interactive Authentication
	User ID	<p>Specify the user ID of a user account that can remotely log in to the destination host.</p> <p>When specifying a domain user, use one of the following formats:</p> <ul style="list-style-type: none"> <i>domain-name\user-name</i> <i>user-name@domain-name</i>
	Password	<p>Specify the password corresponding to the user ID.</p> <p>You must specify a password if either of the following applies:</p> <ul style="list-style-type: none"> Windows is selected as the protocol Password Authentication or Keyboard Interactive Authentication is selected as the SSH authentication method
	Superuser Password ^{#3}	<p>If you selected SSH or Telnet as the protocol, specify the password of the superuser on the destination host.</p> <p>Whether you need to specify the superuser password depends on the definition of the service template. For example, you must specify a superuser password if the service template definition requires root privileges for the command line or file transfer operations. Check the specifications of the service template and plug-ins used by the service.</p>

#1

If the host name resolves to more than one IP address, JP1/AO allocates all of the IP addresses to the destination.

#2

Specify only one set of authentication information for each destination. If you specify more than one set of authentication information for the same destination, authentication might fail.

#3

- When executing a General command plug-in, file-transfer plug-in, or content plug-in, a service uses SSH to connect to target devices that run UNIX. When using SSH, JP1/AO logs in as the user specified as the User ID in the authentication information. If the service is configured to elevate the user to a root user after login, you must specify the superuser password in the authentication information. How you specify whether to elevate the user depends on the plug-in, as follows:

- For General command plug-ins and file-transfer plug-ins
Specify true (elevate to root user) or false (do not elevate to root user) in the elevatePrivileges plug-in property.
- For content plug-ins
To elevate to root user, select the **Enabled** check box for **Execute with root privileges (SSH)** in the **Create Custom Plug-in** or **Edit Custom Plug-in** dialog box. If you do not want to elevate the user, leave the check box cleared.
- In a terminal command plug-in, if you specify the reserved property reserved.terminal.suPassword as the value of the commandLine plug-in property, you must specify the superuser password.
- For a General command plug-in, file-transfer plug-in, or content plug-in, if you want to use SSH as the protocol when connecting to the destination, the shell specified as the default on the connection destination host must meet the condition below. The condition depends on whether the user will be elevated to a root user. Specify the shell as follows:
 - When elevating the user to root user
The default shell for the connecting user and the root user must be sh, bash, ksh, csh, or tcsh.
 - When not elevating the user to root user
The default shell for the connecting user must be sh, bash, ksh, csh, or tcsh.

Related topics

- [6.3.7 Resolving IP addresses from host names](#)
 - [6.3.8 Input format for Connection Destinations](#)
 - [6.3.9 Default Connection Destinations](#)
 - Topics on the General command plug-in, file-transfer plug-in, and terminal command plug-in in the manual JP1/Automatic Operation Service Template Reference
-

6.3.7 Resolving IP addresses from host names

If you specify Host Name for Method in the definition of a Connection Destination, JP1/AO performs IP address resolution when executing the service. Be sure to specify a host name from which the operating system can resolve an IP address.

If you specify Host Name for Method when editing or creating a service template, you must also specify Host Name for Method when defining the plug-in properties. In contrast, if you specify IP Address for Method, you can specify a host name or IP address in the plug-in properties. This is because JP1/AO automatically converts the host names specified in the plug-in properties to IP addresses and assigns them to the appropriate Connection Destinations.

The following table shows the Method setting in the Connection Destination definition and destinations that can be specified in plug-in properties:

Table 6-4: Method setting and connection destination specification

Method specified in Connection Destination	Method of specifying destination in plug-in properties		
	Host Name [#]	IPv4	IPv6
Host Name	Y	N	N
IPv4	Y	Y	N
IPv6	Y	N	Y

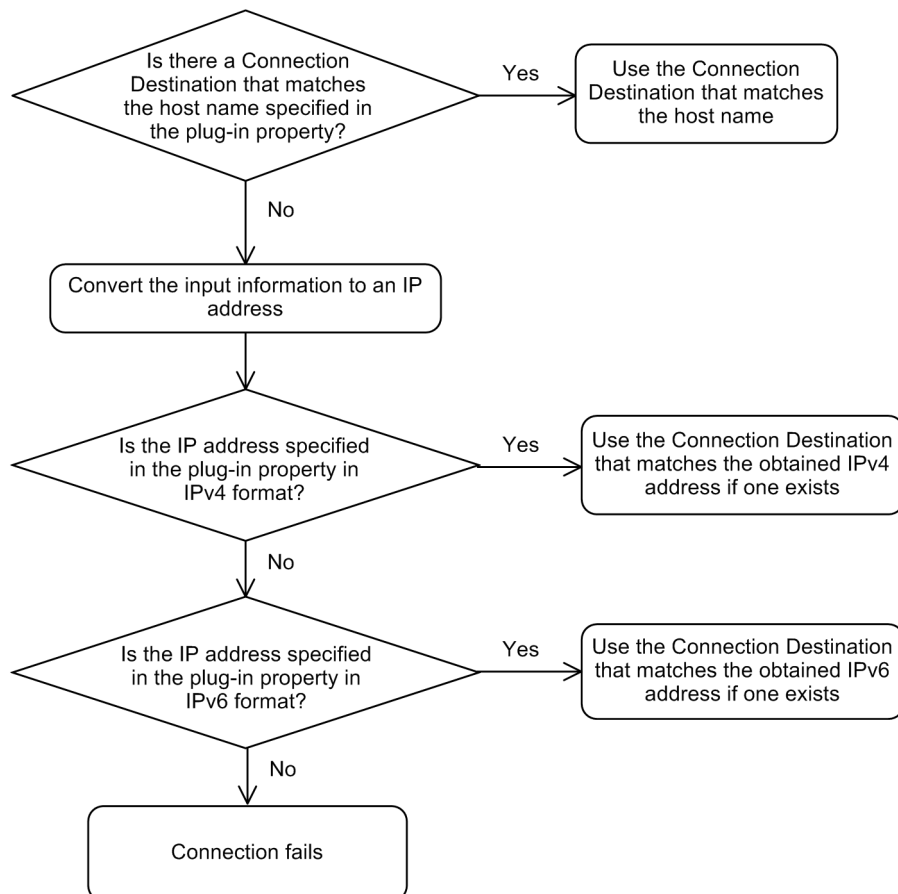
Legend:

Y: Can be specified. N: Cannot be specified.

#

When you specify a host name in a plug-in property, JP1/AO uses the host name if it finds a Connection Destination that matches the host name. If there is no Connection Destination defined that matches the host name, JP1/AO converts the input information to an IP address. If this process yields an IPv4 address, JP1/AO uses the IPv4 definition. If it yields an IPv6 address, JP1/AO uses the IPv6 definition. If there is no Connection Destination defined that matches the host name or IP address specified in the plug-in property, the connection fails.

Figure 6-4: Behavior when host names are specified in plug-in properties



6.3.8 Input format for Connection Destinations

The format in which you enter Connection Destinations depends on how the destinations are specified (as a single destination, a range of destinations, or all destinations).

Table 6-5: Input format for connection destinations

Method	Specification method	Input format	Description
Host Name	Single destination	Enter the Connection Destination in regular expression format. The pattern of the regular expression must conform to the PCRE specification. You can use a regular expression to specify multiple host names.	The check that compares whether a host name registered in a Connection Destination definition is the same as a host name specified in a plug-in property is not case sensitive.
	Range of destinations		
	All destinations		

Method	Specification method	Input format	Description
IPv4	Single destination	<i>xxx.xxx.xxx.xxx</i>	Represents the IP address <i>xxx.xxx.xxx.xxx</i> <i>xxx</i> A number from 0 to 255. . A delimiter between numbers.
	Range of destinations	<i>xxx.xxx.xxx.aaa-bbb</i>	Indicates IP addresses in the range from <i>xxx.xxx.xxx.aaa</i> to <i>xxx.xxx.xxx.bbb</i> . <i>xxx</i> A number from 0 to 255. . A delimiter between numbers. <i>aaa</i> A number from 0 to 255. - A symbol indicating that a range of IP addresses is specified. <i>bbb</i> A number from <i>aaa</i> + 1 to 255.
	All destinations	*	Indicates all IP addresses.
IPv6	Single destination	Specify a RFC2373-compliant unicast address.	
	Range of destinations	Specify an address range using a network prefix as defined in RFC2373.	
	All destinations	*	Indicates all IP addresses.

Table 6-6: Example of specifying destinations in IPv4 format

Example	Description
192.168.1.5	Indicates the IP address 192.168.1.5.
192.168.1.1-255	Indicates IP addresses in the range from 192.168.1.1 to 192.168.1.255.
192.168.1.5-15	Indicates IP addresses in the range from 192.168.1.5 to 192.168.1.15.
*	Indicates all IP addresses.

6.3.9 Default Connection Destinations

Immediately after installation, Connection Destination definitions are available in JP1/AO that allow services in the DefaultServiceGroup service group to connect to all destination hosts.

Table 6-7: List of parameters of default Connection Destinations

Connection Destination definition	Parameter	Value
For IPv4	Method	IPv4
	Destination	*
	Service group	DefaultServiceGroup
	Protocol	No default value

Connection Destination definition	Parameter	Value
For IPv4	SSH Authentication Method	No default value
	User ID	No default value
	Password	No default value
	Superuser Password	No default value
For IPv6	Method	IPv6
	Destination	*
	Service group	DefaultServiceGroup
	Protocol	No default value
	SSH Authentication Method	No default value
	User ID	No default value
	Password	No default value
	Superuser Password	No default value

6.4 Managing users

This section describes how to manage users in JP1/AO.

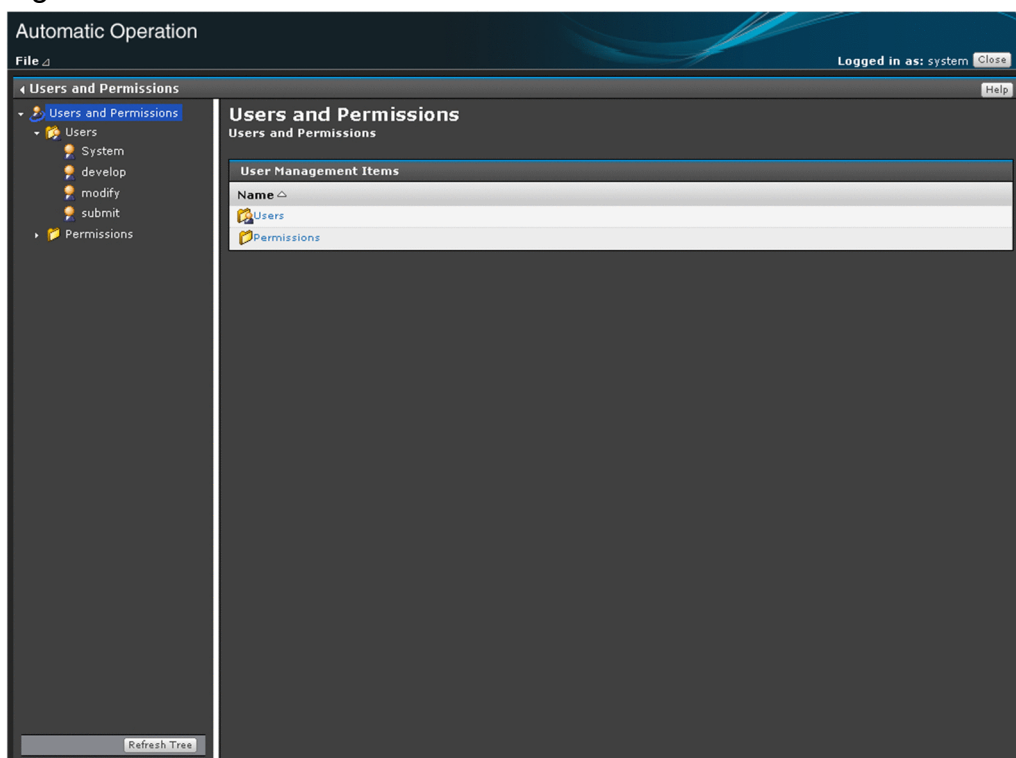
6.4.1 Users and Permissions window

In the **Users and Permissions** window, you can manage JP1/AO user profiles, permissions, and Active Directory groups that link with JP1/AO.

You can display the **Users and Permissions** window by clicking the **Users and Permissions** menu command in the **Administration** area.

The left pane of the **Users and Permissions** window contains a list of users and permissions in tree format, and content of the right pane depends on the item selected in the tree. Note that you can manage Active Directory groups from this window when group linkage with Active Directory is enabled in JP1/AO.

Figure 6-5: **Users and Permissions** window



Tip

You can update the tree to the latest content by clicking the **Refresh Tree** button.

Related topics

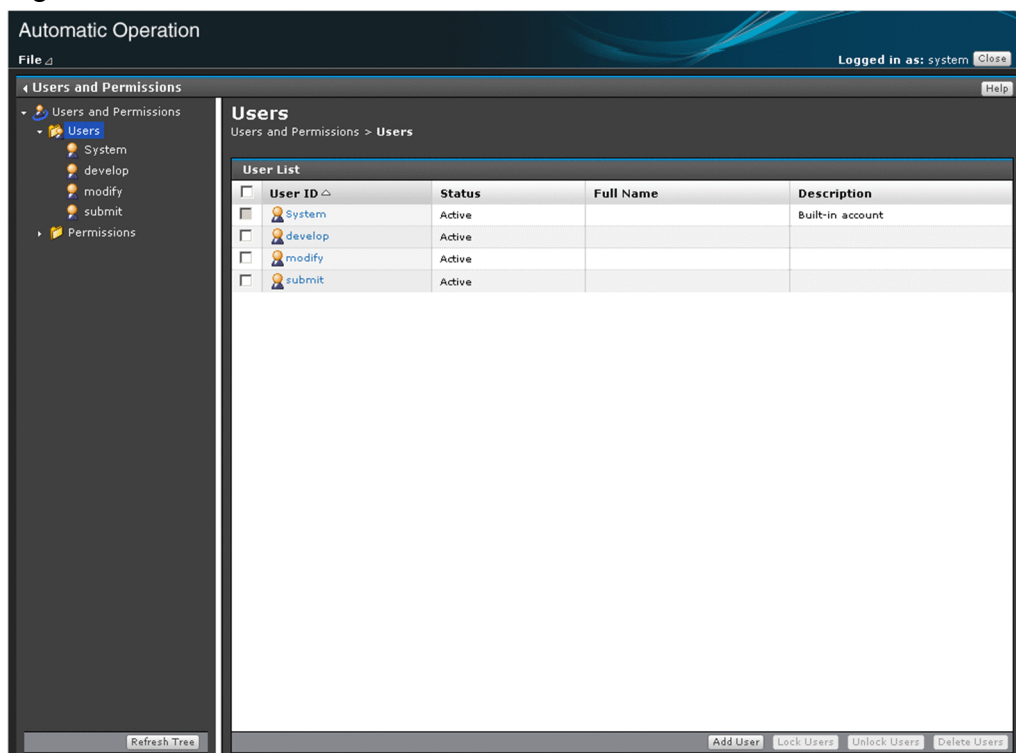
- [6.4.2 User List area](#)
- [6.4.4 Adding users to JP1/AO](#)

6.4.2 User List area

In the **User List** area, you can view a list of users and add users to the system. You can also remove user accounts that are no longer needed.

You can display the **User List** area by clicking the **Users** node in the **Users and Permissions** window.

Figure 6-6: **User List** area



In the User List area, you can:

- Add and delete users
- Lock and unlock user accounts
- Change the authentication method

You can change the authentication method when linkage with Active Directory is configured in the configuration file for external authentication server linkage (exauth.properties).

The items displayed in the **User List** area are described below.

User list

This area displays a list of users registered in JP1/AO. You can sort the information in the user list in ascending or descending order by clicking a column header.

Table 6-8: Items in user list (**User List** area)

Item	Description
User ID	The user ID of the user. You can display the User Profile area for the user by clicking the user ID.
Status	The status of the user (Active or Locked)

Item	Description
Authentication	The authentication method for the user (internal or LDAP) is displayed when linkage with Active Directory is configured in the configuration file for external authentication server linkage (exauth.properties).
Full Name	The name of the user.
Description	A description of the user.

Related topics

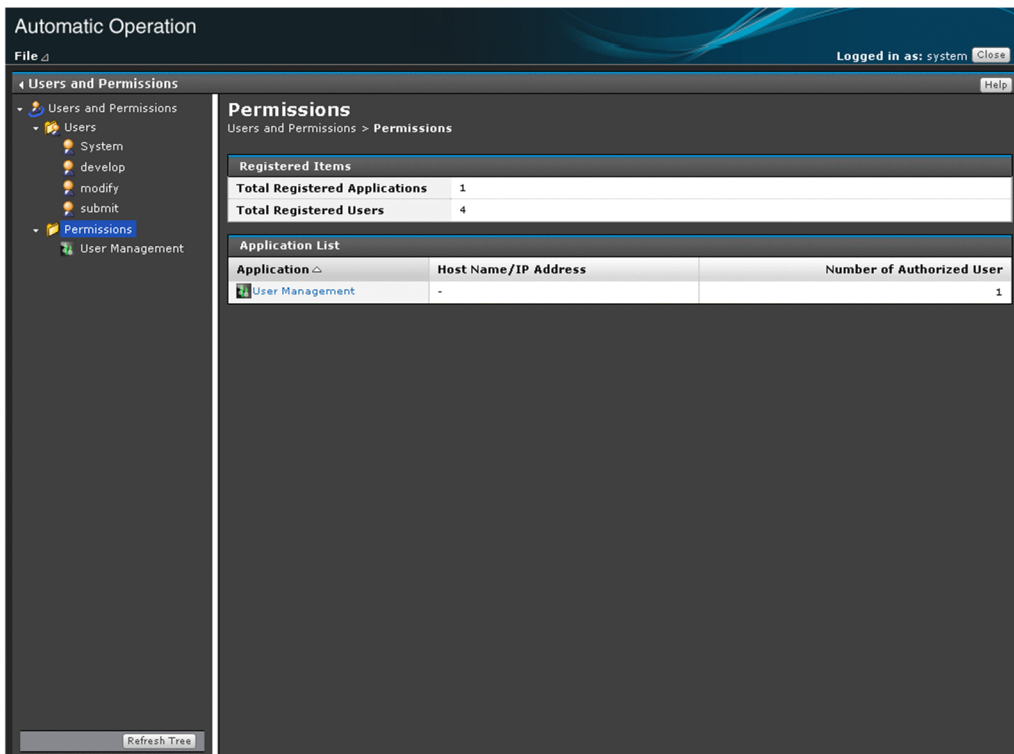
- [6.4.1 Users and Permissions window](#)

6.4.3 Permissions area

In the **Permissions** area, you can see which permissions are assigned to users and groups.

You can display the **Permissions** area by clicking the **Permissions** node in the **Users and Permissions** window.

Figure 6-7: **Permissions** area



The items displayed in the **Permissions** area are described below.

Registered Items

This table shows the status of permission registration.

Table 6-9: Items displayed in Registered Items table (**Permissions** area)

Item	Description
Total Registered Applications	The number of assigned permissions.
Total Registered Users and Groups	The number of users with a permission registered in the system. If external authentication linkage is enabled, this row shows the total number of users and groups. If the system is linked with the authentication function of JP1/Base, this number does not include JP1 users and JP1 resource groups registered in JP1/Base.

Application List

This table shows a list of permissions. You can sort the information in ascending or descending order by clicking a column header.

Table 6-10: Items displayed in Application List table (**Permissions** area)

Item	Description
Application	Displays the name of the permission. When you click a permission name and external authentication linkage is disabled, the Authorized User List area for the selected permission appears. If external authentication linkage is enabled, the Authorized User and Group List area for the permission appears.
Host Name/IP Address	Displays the host name or IP address.
Total Number of Authorized Users and Groups	The number of users who are assigned the permission. If external authentication linkage is enabled, this row shows the total number of users and groups who are assigned the permission. If the system is linked with the authentication function of JP1/Base, this number does not include JP1 users and JP1 resource groups registered in JP1/Base.

Related topics

- [6.4.12 Identifying which users have a particular permission](#)
- [6.4.13 Identifying which users and groups have a particular permission](#)

6.4.4 Adding users to JP1/AO

This section describes how to add users to JP1/AO.

Who can perform this task:

Users who have User Management permission and belong to the Admin role

To add a user to JP1/AO:

1. Display the **Administration** window.
2. In the **Administration** area, click the **Users and Permissions** menu command.
3. In the tree in the **Users and Permissions** window, select the **Users** node.
4. In the **User List** area, click the **Add Users** button.
5. In the **Add Users** dialog box, enter the profile information for the user you are adding.

You can enter the following settings:

Table 6-11: Settings in **Add Users** dialog box

Item	Description
User ID	Enter the user ID of the user you are adding, using a maximum of 256 characters.
Password	Enter the password of the user you are adding, using a maximum of 256 characters.
Verify Password	Enter the same character string that you entered in the Password field.
Full Name	Enter the name of the user you are adding, using a maximum of 80 characters.
E-mail	Enter the email address of the user you are adding, using a maximum of 255 bytes.
Description	Enter a description of the user you are adding, using a maximum of 80 characters.

6. Click the **OK** button.

Result of operation:

The user is added. Information about the user you added now appears in the **User List** area.

Add the new user to user groups, and assign the appropriate service groups and roles to the user groups.



Tip

If Active Directory linkage is configured in JP1/AO, LDAP is set as the authentication method for the user. If Active Directory linkage is not configured, Internal is set.

You can change the authentication method for the user in the **Change Authentication Method** dialog box.

Related topics

- [6.4.1 Users and Permissions window](#)
 - [6.4.2 User List area](#)
 - [6.4.10 Changing the authentication method of a user](#)
-

6.4.5 Editing the user information of another user as an administrator

An administrator can edit the user information of another user.

Who can perform this task:

Users who have User Management permission and belong to the Admin role

To edit the user information of another user as an administrator:

1. Display the **Administration** window.
2. In the **Administration** area, click the **Users and Permissions** menu command.
3. In the tree in the **Users and Permissions** window, click the **Users** node.
4. In the **User List** area, select the user ID for the user whose information you want to edit.
5. In the **User Profile** area for the selected user, click the **Edit Profile** button.

6. Edit the user information in the **Edit Profile** dialog box. You cannot change the user ID.

You can enter the following settings:

Table 6-12: Settings in **Edit Profile** dialog box (**User Profile** area)

Item	Description
Full Name	The full name entered when adding the user. You can edit the full name provided that the new name does not exceed 80 characters.
E-mail	The E-mail address entered when adding the user. You can edit the E-mail address provided that the new address does not exceed 255 bytes.
Description	The description entered when adding the user. You can edit the description provided that the new description does not exceed 80 characters.

7. Click the **OK** button.

Result of operation:

The changes to the user information take effect. The new user information now appears in the **User List** area.

Related topics

- [6.4.1 Users and Permissions window](#)
 - [6.4.2 User List area](#)
-

6.4.6 Changing the password of another user as an administrator

An administrator can change the password of the user account of another user. If the user account is being managed on an external authentication server, the administrator must change the password on the external authentication server.

Who can perform this task:

Users who have User Management permission and belong to the Admin role

To change the password of another user as an administrator:

1. Display the **Administration** window.
2. In the **Administration** area, click the **Users and Permissions** menu command.
3. In the tree in the **Users and Permissions** window, click the **Users** node.
4. In the **User List** area, click the user ID of the user whose password you want to change.
5. In the **User Profile** area for the selected user, click the **Change Password** button.
6. In the **Change Password** dialog box, change the password information.

You can enter the following settings:

Table 6-13: Settings in **Change Password** dialog box (**User Profile** area)

Item	Description
New Password	Enter the new password. You can use a maximum of 256 characters.
Verify Password	Enter the same character string that you entered in the New Password field.

7. Click the **OK** button.

! Important

When using JP1/AO in a cluster system, if you change the password for the System account, you must make the same change on every node in the cluster.

Result of operation:

The password is changed. The user whose password was changed can now use the new password when logging in.

6.4.7 Changing the User Management permission settings

The following describes how to change the settings for the User Management permission assigned to a user.

Who can perform this task:

Users who have User Management permission and belong to the Admin role

To change the User Management permission settings:

1. Display the **Administration** window.
2. In the **Administration** area, click the **Users and Permissions** menu command.
3. In the tree in the **Users and Permissions** window, click the **Users** node.
4. In the **User List** area, click the user ID for the user whose permission setting you want to change.
5. In the **User Profile** area for the selected user, click the **Change Permission** button.
6. Change the permissions in the **Change Permission** dialog box.

Figure 6-8: **Change Permission** dialog box (**User Profile** area)

Granted Permission	
Application	Admin
All Applications	<input type="checkbox"/>
User Management	<input type="checkbox"/>

7. Click the **OK** button.

! Important

- If you change the permission of a logged-in user, the original permissions remain in effect for the duration of the login session. The system administrator must instruct any such users to immediately log out and log back in.
- Users who manage and submit services in JP1/AO do so subject to the roles assigned to the user group to which they belong. These actions are not controlled based on User Management permission.

- A user with User Management permission cannot revoke his or her own permission. To revoke the permission of a user with User Management permission, log in to JP1/AO using the System account or another account with User Management permission.

Result of operation:

The User Management permission for the selected user is changed. The new User Management permission information for the user now appears in the **User Profile** area.

Related topics

- [6.4.1 Users and Permissions window](#)
 - [6.4.2 User List area](#)
-

6.4.8 Locking user accounts

The following describes how to lock a user account to prevent a user from accessing JP1/AO. When you lock the account of a logged-in user, that user can no longer perform operations in JP1/AO.

Who can perform this task:

Users who have User Management permission and belong to the Admin role

To lock a user account:

1. Display the **Administration** window.
2. In the **Administration** area, click the **Users and Permissions** menu command.
3. In the tree in the **Users and Permissions** window, click the **Users** node.
4. In the **User List** area, select the user whose account you want to lock, and then click the **Lock Users** button.



Tip

You can select multiple users by selecting the check boxes beside the User ID column. You can also select all users except for built-in accounts by selecting the check box beside the column header.

5. In the **Lock Users** dialog box, click the **OK** button.

Result of operation:

The accounts of the selected users are locked. The new status (Locked) appears for those users in the Status column in the **User List** area.

Related topics

- [6.4.1 Users and Permissions window](#)
 - [6.4.2 User List area](#)
-

6.4.9 Unlocking user accounts

The following describes how to unlock a user account. You can perform this task from the user interface or by using a command.

Who can perform this task:

Users who have User Management permission and belong to the Admin role

To perform this task using a command, the user must also have Administrators permission or root permission for the operating system.

To unlock a user account from the user interface:

1. Display the **Administration** window.
2. In the **Administration** area, click the **Users and Permissions** menu command.
3. In the tree in the **Users and Permissions** window, click the **Users** node.
4. In the **User List** area, select the user or users whose account you want to unlock, and then click the **Unlock Users** button.



Tip

You can select multiple users by selecting the check boxes beside the User ID column. You can also select all users except for built-in accounts by selecting the check box beside the column header.

5. In the **Unlock Users** dialog box, click the **OK** button.

To unlock user accounts using a command:

Execute the `hcnds64unlockaccount` command.

Result of operation:

The accounts of the selected users are unlocked. The new status (Active) appears in the Status column in the **User List** area.

Related topics

- [6.4.1 Users and Permissions window](#)
 - [6.4.2 User List area](#)
-

6.4.10 Changing the authentication method of a user

The following describes how to change the authentication method of a user.

Who can perform this task:

Users who have User Management permission and belong to the Admin role

To change the authentication method of a user:

1. Display the **Administration** window.
2. In the **Administration** area, click the **Users and Permissions** menu command.
3. In the tree in the **Users and Permissions** window, click the **Users** node.
4. In the **User List** area, select the user or users whose authentication method you want to change, and then click the **Change Authentication Method** button.



Tip

You can select multiple users by selecting the check boxes beside the User ID column. You can also select all users except for built-in accounts by selecting the check box beside the column header.

5. From the **Authentication** pull-down menu in the **Change Authentication Method** dialog box, select the new authentication for the user or users.
To perform user authentication in JP1/AO, select **Internal**. To perform user authentication in Active Directory, select **LDAP**.
6. In the **Change Authentication Method** dialog box, click the **OK** button.

Result of operation:

The user authentication method is changed.



Important

If you change the authentication method from **LDAP** to **Internal** for a user whose password is not managed in JP1/AO, the user account is locked automatically, and that user can no longer log in to JP1/AO. The user account will be unlocked when you set a password for the user in JP1/AO, or change the authentication method back to **LDAP**.

Related topics

- [6.4.1 Users and Permissions window](#)
 - [6.4.2 User List area](#)
 - [6.4.6 Changing the password of another user as an administrator](#)
-

6.4.11 Deleting users from JP1/AO

The following describes how to delete users from JP1/AO.

Who can perform this task:

Users who have User Management permission and belong to the Admin role

To delete users from JP1/AO:

1. Display the **Administration** window.
2. In the **Administration** area, click the **Users and Permissions** menu command.

3. In the tree in the **Users and Permissions** window, click the **Users** node.
4. In the **User List** area, select the user or users you want to delete, and then click the **Remove Users** button.

**Tip**

You can select multiple users by selecting the check boxes beside the User ID column. You can also select all users except for built-in accounts by selecting the check box beside the column header.

5. In the **Remove Users** dialog box, click the **OK** button.

Result of operation:

The selected user or users are removed from the JP1/AO system.

Related topics

- [6.4.1 Users and Permissions window](#)
 - [6.4.2 User List area](#)
-

6.4.12 Identifying which users have a particular permission

The following describes how to view a list of users who have been assigned a particular permission. You can perform this operation in systems where external authentication linkage is disabled.

Who can perform this task:

Users who have User Management permission and belong to the Admin role

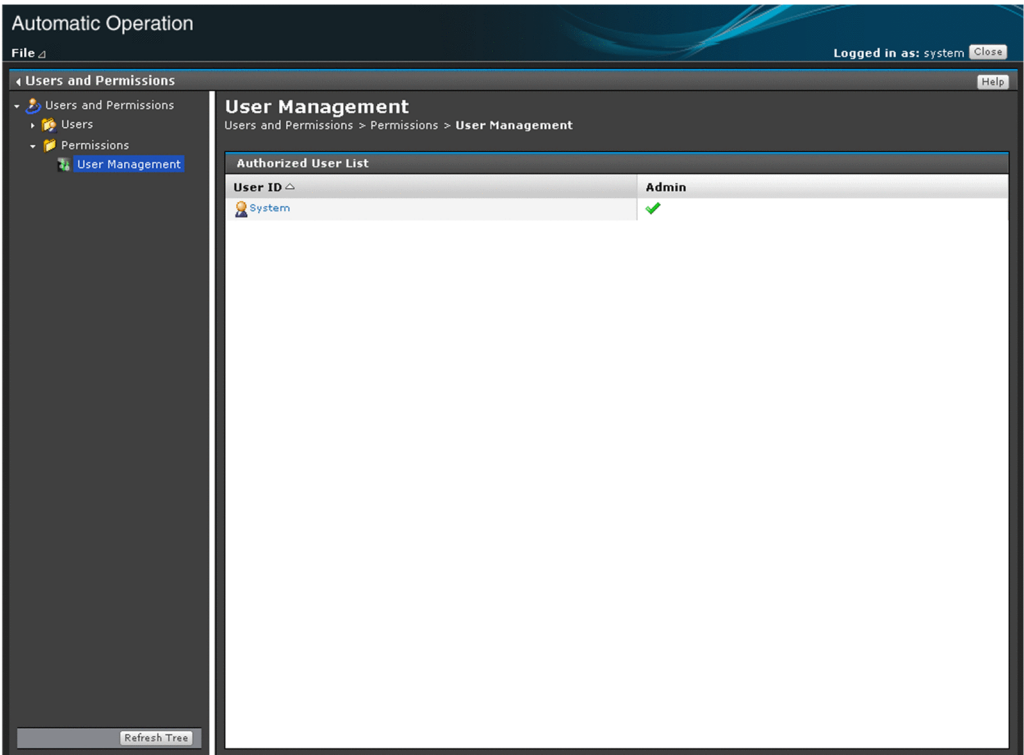
To view users who are assigned a particular permission:

1. Display the **Administration** window.
2. In the **Administration** area, click the **Users and Permissions** menu command.
3. In the tree in the **Users and Permissions** window, click the **Permissions** node.
4. In the **Application List** in the **Permissions** area, click the name of a permission.

Result of operation:

A list of users who are assigned the permission you clicked appears in the **Authorized User List** area. You can sort the list in ascending or descending order by clicking a column header.

Figure 6-9: Authorized User List area



The items displayed in this area are described below.

Table 6-14: Items in Authorized User List (Authorized User List area)

Item	Description
User ID	Displays the user IDs of the users who have the permission. You can display the User Profile area for a user by clicking his or her user ID.
Admin	A tick appears in this column for users who have User Management permission.

Related topics

- [6.4.3 Permissions area](#)

6.4.13 Identifying which users and groups have a particular permission

The following describes how to view a list of users and groups that are assigned a particular permission. You can perform this operation in systems where external authentication linkage is enabled.

Who can perform this task:

Users who have User Management permission and belong to the Admin role

To view users and groups that are assigned a particular permission:

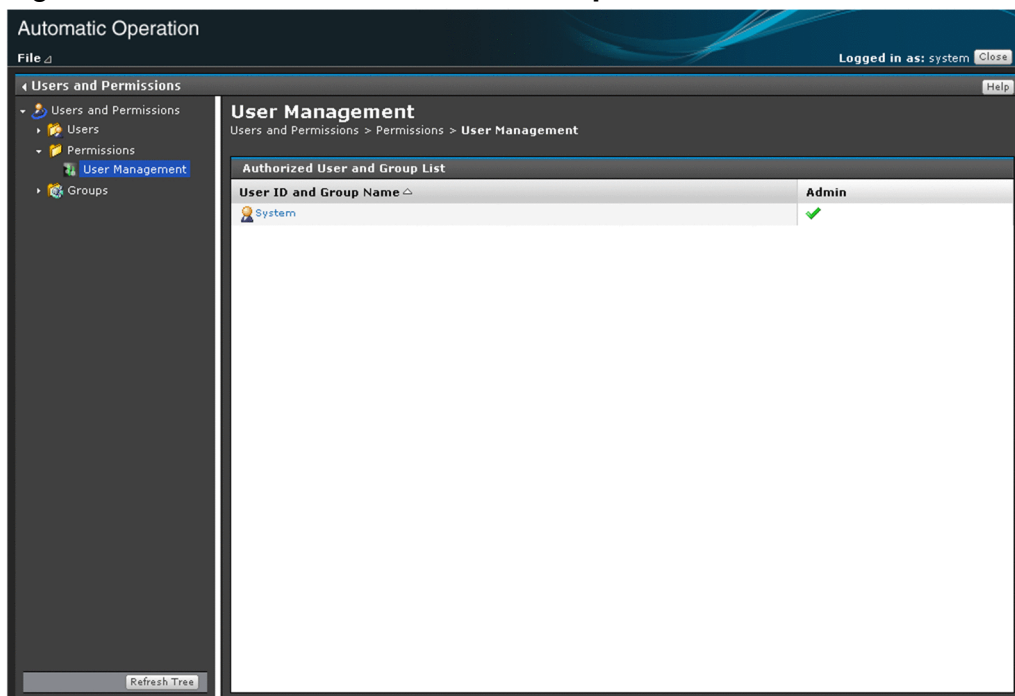
1. Display the **Administration** window.
2. In the **Administration** area, click the **Users and Permissions** menu command.

3. In the tree in the **Users and Permissions** window, click the **Permissions** node.
4. In the **Application List** in the **Permissions** area, click the name of a permission.

Result of operation:

A list of users and groups who are assigned the permission you clicked is displayed. You can sort the list in ascending or descending order by clicking a column header. If the system is linked with the authentication function of JP1/Base, the list does not include JP1 users and JP1 resource groups registered in JP1/Base.

Figure 6-10: **Authorized User and Group List** area



The items displayed in this area are described below.

Table 6-15: Items in Authorized User and Group List (**Authorized User and Group List** area)

Item	Description
User ID and Group Name	Displays the user IDs and groups that are assigned the selected permission. You can display the User Profile area for a user by clicking his or her user ID.
Admin	A tick appears in this column for users and groups that have User Management permission.

Related topics

- [6.4.3 Permissions area](#)

6.4.14 Setting password criteria

You can set password criteria (such as a minimum length and complexity requirements) in a security definition file (security.conf).

After setting password criteria, the system administrator should direct all users to immediately change their passwords.

The new password criteria apply when you add a new user or change the password of an existing user. Because the new criteria do not apply to existing passwords, existing users will be able to log in to the JP1/AO system using passwords that do not meet the criteria. The new password criteria do not apply system-wide until all users have changed their passwords to ones that satisfy the new criteria.

In a cluster system, make sure to specify the same criteria on the active and standby servers.

Related topics

- Security definition file (security.conf) in the JP1/Automatic Operation Configuration Guide
-

6.5 Managing user groups

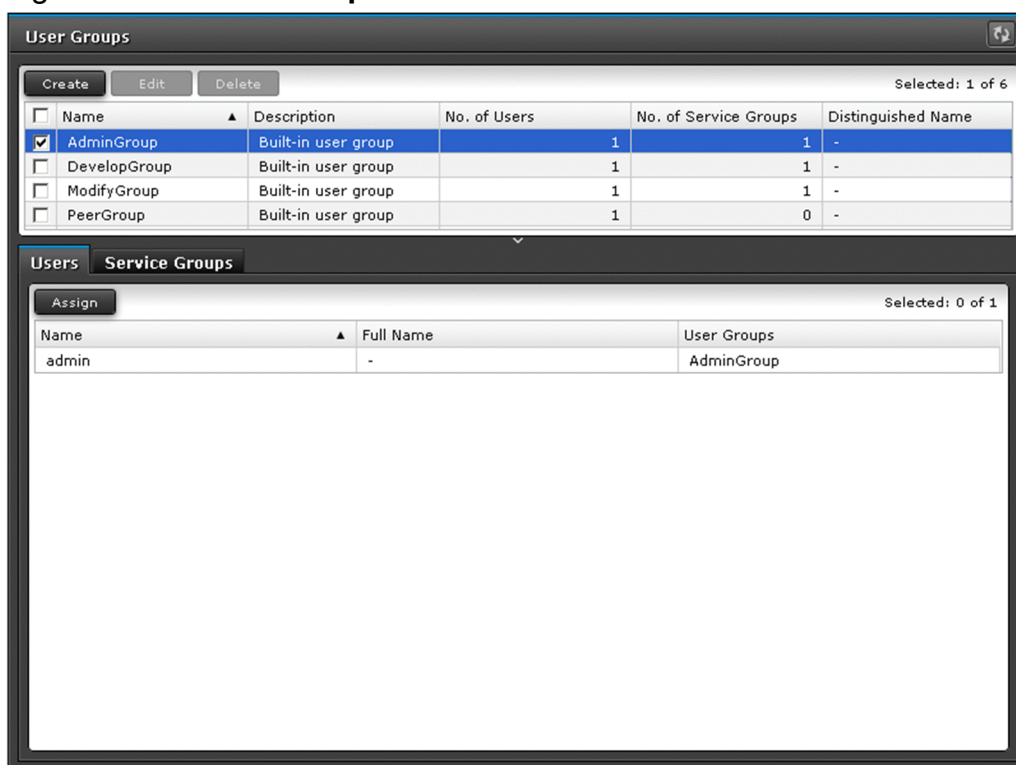
This section describes how to manage user groups in JP1/AO.

6.5.1 User Groups area

In the **User Groups** area, you can view a list of user groups in the JP1/AO system. You can also create, edit, and delete user groups, assign users to user groups, and associate service groups with user groups. The **User Groups** area appears when the logged-in user has User Management permission.

You can display the **User Groups** area by clicking the **User Groups** menu command in the **Administration** window.

Figure 6-11: **User Groups** area



The items displayed in this area are described below.

User Groups List

A list of user groups. You can sort the list in ascending or descending order by clicking a column header.

Table 6-16: Items in User Groups List

Item	Description
Name	The name of the user group.
Description	A description of the user group. If the user group is a built-in group, Built-in user group is displayed ^{#1} .
No. of Users	The number of users registered in the user group ^{#1} .
No. of Service Groups	The number of service groups assigned to the user group ^{#1} .
Distinguished Name	The name that identifies the group in Active Directory ^{#2} .

#1

Not displayed for an Active Directory group.

#2

Not displayed for a built-in user group or a user group created in JP1/AO.

Users tab


When you select a user group in the User Groups List, this tab displays a list of users who belong to the selected user group. You can also assign users to user groups on this tab.

Service Groups tab

When you select a user group in the User Groups List, this tab displays a list of service groups that are assigned to the selected user group. You can also assign service groups to user groups on this tab.



Tip

You can update the window contents by clicking the **Refresh**  button.

Related topics

- [6.5.2 Creating user groups](#)
- [6.5.3 Editing a user group](#)
- [6.5.4 Creating Active Directory groups that link with JP1/AO](#)
- [6.5.6 Assigning service groups and roles to user groups](#)
- [6.5.5 Assigning users to user groups](#)
- [6.5.7 Deleting user groups](#)

6.5.2 Creating user groups

This section describes how to create user groups whose members can log in to and perform operations in JP1/AO.

Who can perform this task:

Users who have User Management permission and belong to the Admin role

To create a user group:

1. Display the **Administration** window.
2. In the **Administration** area, click the **User Groups** menu command.
3. In the **User Groups** area, click the **Create** button.
4. In the **Create User Group** dialog box, enter the information for the user group.

The following describes the information you can set.

Table 6-17: Settings in **Create User Group** dialog box

Item	Description
Name	Enter the name of the user group using a maximum of 64 characters.
Description	Enter a description of the user group using a maximum of 80 characters.

5. Click the **OK** button.

Result of operation:

The user group is added. Information about the user group now appears in the **User Groups** area.

You must register at least one user in the user group you added. You must also assign service groups to the user group. When you assign a service group to a user group, the users in that user group become able to view and perform operations on the resources in that service group.

Related topics

- [6.5.1 User Groups area](#)
- [6.4.4 Adding users to JP1/AO](#)
- [6.5.6 Assigning service groups and roles to user groups](#)
- [6.6.2 Creating service groups](#)

6.5.3 Editing a user group

The following describes how to edit the information for a user group.

Who can perform this task:

Users who have User Management permission and belong to the Admin role

To edit a user group:

1. Display the **Administration** window.
2. In the **Administration** area, click the **User Groups** menu command.
3. In the **User Groups** area, select the check box beside the user group you want to edit, and then click the **Edit** button.
4. In the **Edit User Group** dialog box, edit the information for the user group.

The following describes the information you can set.

Table 6-18: Settings in **Edit User Group** dialog box

Item	Description
Name	Enter the name of the user group using a maximum of 64 characters.
Description	Enter a description of the user group using a maximum of 80 characters.

5. Click the **OK** button.

Result of operation:

The changes to the user group take effect. The new user group information now appears in the **User Groups** area.

Related topics

- [6.5.1 User Groups area](#)
- [6.5.5 Assigning users to user groups](#)
- [6.5.6 Assigning service groups and roles to user groups](#)

6.5.4 Creating Active Directory groups that link with JP1/AO

If you want to implement group linkage for Active Directory groups in JP1/AO, you can use the procedure in this section to create user groups in JP1/AO that correspond to Active Directory groups.

Who can perform this task:

Users who have User Management permission and belong to the Admin role

To create groups that link with Active Directory groups in JP1/AO:

1. Display the **Administration** window.
2. In the **Administration** area, click the **Users and Permissions** menu command.
3. In the tree in the **Users and Permissions** window, select the **Groups** node.
4. In the **Groups List** area, click the domain to which the group you want to register belongs.
5. In the **Groups List** area, click the **Add Groups** button.
6. In the **Distinguished Name** text box in the **Add Groups** dialog box, enter the name that identifies the Active Directory group that you want to link with JP1/AO.
The name you specify must conform to the RFC 4514 specification.
7. If necessary, check the name you entered by clicking the **Check DN** button.
This button initiates a verification process that checks whether the distinguished name is specified correctly, and whether the name is registered in Active Directory.
8. Click the **OK** button.

Result of operation:

A group is created that corresponds to an Active Directory group linked with JP1/AO.

Related topics

- [6.5.1 User Groups area](#)
-

6.5.5 Assigning users to user groups

A user group must have at least one user. The following describes how to assign users to a user group.

Who can perform this task:

Users who have User Management permission and belong to the Admin role

To assign users to a user group:

1. Display the **Administration** window.
2. In the **Administration** area, click the **User Groups** menu command.
3. In the **User Groups** area, select the check box beside the name of the user group to which you want to assign users.
Then, click the **Assign** button in the **Users** tab.
4. Use the **Assign Users** dialog box to assign or unassign users to or from the user group.

Figure 6-12: **Assign Users** dialog box

Assign Users

Available Users Selected: 1 of 3

<input type="checkbox"/> Name	Full Name	User Groups
<input type="checkbox"/> admin	-	AdminGroup
<input type="checkbox"/> develop	-	DevelopGroup
<input checked="" type="checkbox"/> modify	-	ModifyGroup

▼ Add ▲ Remove

Assigned Users Selected: 0 of 1

<input type="checkbox"/> Name	Full Name	User Groups
<input type="checkbox"/> submit	-	PeerGroup

OK Cancel

- To assign users to the user group
In the **Available Users** area, select the users you want to assign to the user group, and then click the **Add** button.
- To unassign users from the user group
In the **Assigned Users** area, select the users that you want to remove from the user group, and then click the **Remove** button.

5. Click the **OK** button.

Result of operation:

Users are assigned or unassigned to or from the user group. Users who are added to the user group can now perform operations in JP1/AO subject to the roles assigned to that user group.

The new user information now appears on the **Users** tab of the **User Groups** area.

! Important

If you change the permissions associated with a user group to which a logged-in user belongs, that user retains his or her original permissions for the duration of the login session. For this reason, the system administrator must instruct any such users to immediately log out and log back in.

Related topics

- [6.5.1 User Groups area](#)
- [6.5.2 Creating user groups](#)

6.5.6 Assigning service groups and roles to user groups

A service group must be assigned to at least one user group. You can assign service groups and roles to user groups.



Tip

You can also use the procedure in this section to assign service groups and roles to Active Directory groups registered as JP1/AO user groups.

Who can perform this task:

Users who have User Management permission and belong to the Admin role

To assign service groups and roles to user groups:

1. Display the **Administration** window.
2. In the **Administration** area, click the **User Groups** menu command.
3. In the **User Groups** area, select the check box beside the user group to which you want to assign service groups and roles. Then, click the **Assign** button in the **Service Groups** tab.
4. In the **Assign Service Groups** dialog box, select which service groups and roles to assign to the user group.

Figure 6-13: **Assign Service Groups** dialog box

Available Service Groups		Selected: 0 of 2
<input type="checkbox"/> Name	Description	
<input type="checkbox"/> All Service Groups	default service groups which contains all services	
<input type="checkbox"/> DefaultServiceGroup	default service group	

Assigned Service Groups			Selected: 0 of 1
<input type="checkbox"/> Name	Description	Role	
<input type="checkbox"/> Service Group_3	-	Submit	

- To assign service groups to a user group:
In the **Available Service Groups** area, select the service groups that you want to assign to the user group, and then click the **Add** button.
You can also select a role for the service group in the **Role** column in the **Assigned Service Groups** area.
 - To unassign service groups from a user group:
In the **Assigned Service Groups** area, select the service groups you want to unassign from the user group, and then click the **Remove** button.
5. Click the **OK** button.

Result of operation:

The service groups and role settings are applied to the user group. The new service group and role information now appears on the **Service Groups** tab in the **User Groups** area.

Related topics

- [6.5.1 User Groups area](#)
 - [6.5.2 Creating user groups](#)
 - [6.6.2 Creating service groups](#)
-

6.5.7 Deleting user groups

The following describes how to remove a user group from JP1/AO.

Who can perform this task:

Users who have User Management permission and belong to the Admin role

To delete a user group:

1. Display the **Administration** window.
2. In the **Administration** area, click the **User Groups** menu command.
3. In the **User Groups** area, select the user group you want to delete, and then click the **Delete** button.



Tip

You can select multiple user groups by selecting the check boxes beside the user group names. You can also select all user groups by selecting the check box beside the column header.

4. In the **Delete** dialog box, review the user groups you are about to delete, and then click the **OK** button.



Important

You cannot delete user groups that have been assigned roles in a Hitachi Command Suite product. To delete such a user group, you must first remove the role from the group in the Hitachi Command Suite product. You cannot use the JP1/AO interface to change roles assigned in Hitachi Command Suite products.

Result of operation:

The selected user group or user groups are deleted.

Related topics

- [6.5.1 User Groups area](#)
-

6.6 Managing service groups

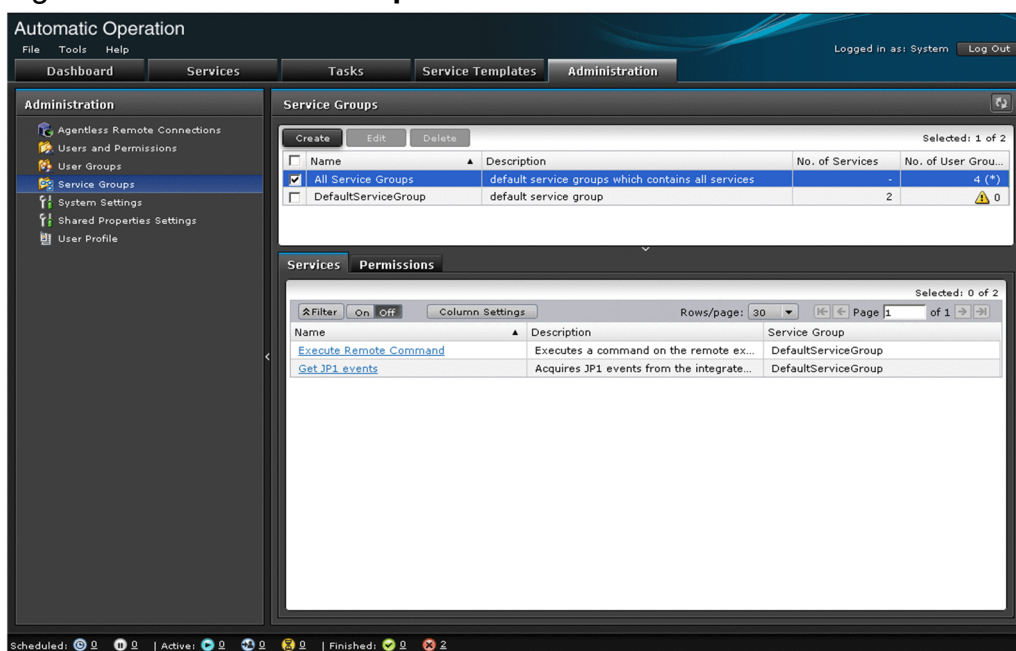
This section describes how to manage service groups in JP1/AO.

6.6.1 Service Groups area

The **Service Groups** area shows a list of service groups in the JP1/AO system. From this area, you can create, edit, and delete service groups. You can also view the services that are allocated to the service group, and assign service groups to user groups.

You can display the **Service Groups** area by clicking the **Service Groups** menu command in the **Administration** area.

Figure 6-14: **Service Groups** area



The items displayed in this area are described below.

Service Groups List

A list of service groups. You can sort the list in ascending or descending order by clicking a column header.

Table 6-19: Items in Service Groups List

Item	Description
Name	The name of the service group.
Description	A description of the service group.
No. of Services	The number of services assigned to the service group.
No. of User Groups	The number of user groups to which the service group is assigned.

Services tab


When you select a service group in the Service Groups List, the **Services** tab displays a list of services that belong to the selected service group. You can view general information about a service by clicking the service name. You can also create, copy, and delete services on this tab.

Permissions tab

When you select a service group in the Service Groups List, the **Permissions** tab displays a list of user groups to which the service group is assigned. You can also assign service groups to user groups on this tab.



Tip

You can update the list to the latest information by clicking the **Refresh** button  .

Related topics

- [6.5.5 Assigning users to user groups](#)
- [6.6.2 Creating service groups](#)
- [6.6.3 Editing service groups](#)
- [6.6.4 Deleting service groups](#)

6.6.2 Creating service groups

This section describes how to create service groups to group services or associate services with a user group.



Important

Create user groups before you create service groups.

Who can perform this task:

Users assigned the Admin role

To create a user group:

1. Display the **Administration** window.
2. In the **Administration** area, click the **Service Groups** menu command.
3. In the **Service Groups** area, click the **Create** button.
4. In the **Create Service Group** dialog box, enter information about the service group.

The information you can enter is described below.

Table 6-20: Settings in **Create Service Group** dialog box

Item	Description
Name	Enter the name of the service group using a maximum of 80 characters. If JP1/AO uses JP1/Base functionality for user authentication, you can use a maximum of 63 characters.
Description	Enter a description of the service group using a maximum of 80 characters.



Important

You cannot use All Resources as the name of a service group.

5. Click the **OK** button.

Result of operation:

The service group is created. Information about the new service group now appears in the **Service Groups** area.

A service group must be allocated to at least one user group. By allocating a service group to a user group, you can control which operations users in that group can perform on the resources in the service group.

Related topics

- [6.6.1 Service Groups area](#)
- [6.5.2 Creating user groups](#)
- [6.5.6 Assigning service groups and roles to user groups](#)

6.6.3 Editing service groups

The following describes how to edit service groups.

Who can perform this task:

Users assigned the Admin role

To edit a service group:

1. Display the **Administration** window.
2. In the **Administration** window area, select the **Service Groups** menu command.
3. In the **Service Groups** area, select the check box beside the name of the service group you want to edit, and then click the **Edit** button.
4. In the **Edit Service Group** dialog box, edit the name and description of the service group.

The information you can enter is described below.

Table 6-21: Settings in **Edit Service Group** dialog box

Item	Description
Name	Enter the name of the service group using a maximum of 80 characters. If JP1/AO uses JP1/Base functionality for user authentication, you can use a maximum of 63 characters.
Description	Enter a description of the service group using a maximum of 80 characters.



Important

You cannot use All Resources as the name of a service group.

5. Click the **OK** button.

Result of operation:

The changes to the service group take effect. The new information now appears in the **Service Groups** area.

Related topics

- [6.6.1 Service Groups area](#)
-

6.6.4 Deleting service groups

The following describes how to delete service groups.

Who can perform this task:

Users assigned the Admin role

To delete service groups:

1. Display the **Administration** window.
2. In the **Administration** area, click the **Service Groups** menu command.
3. In the **Service Groups** area, select the check box beside the name of the service group you want to delete, and then click the **Delete** button.



Tip

You can select multiple service groups by selecting the check boxes beside the service group names.
To select all service groups in the list, select the check box beside the column header.

4. In the **Delete Service Group** dialog box, click the **OK** button.

Result of operation:

The selected service groups are deleted.

Related topics

- [6.6.1 Service Groups area](#)
-

6.7 Setting Service Share Properties

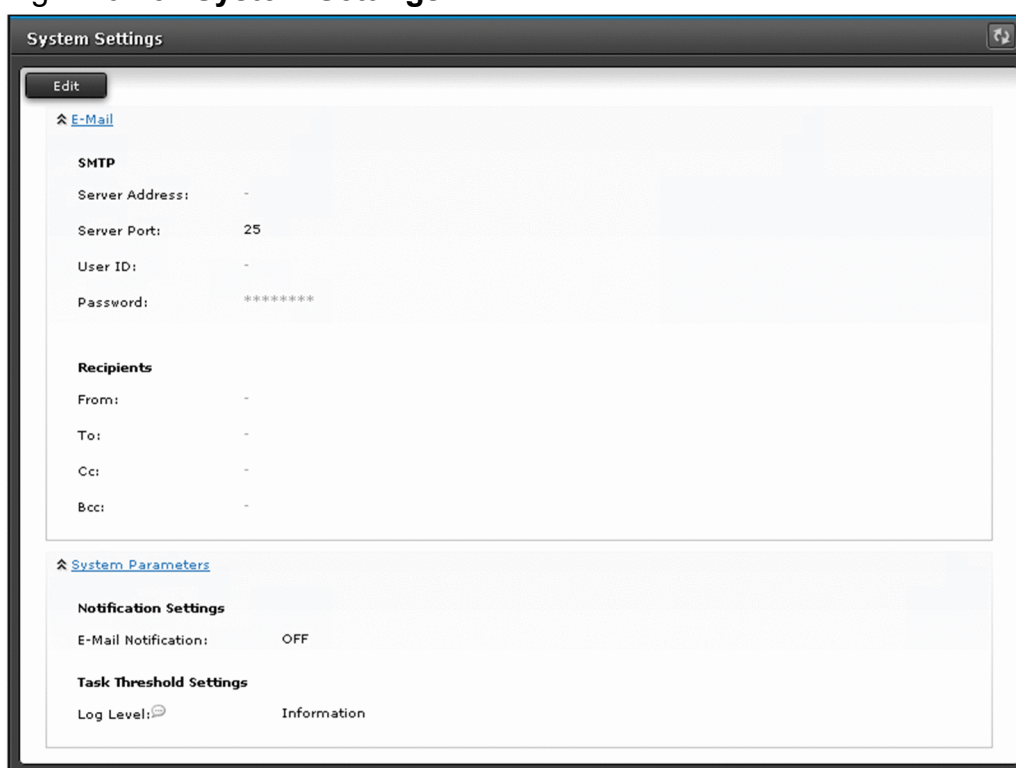
This section describes how to set Service Share Properties that are shared among services. By setting Service Share Properties, you can have multiple services reference and update the same property value. You can view and set Service Share Properties by clicking the **System Settings** or **Shared Properties Settings** menu command in the **Administration** window.

6.7.1 System Settings area

In the **System Settings** area, you can view and set shared built-in service properties that relate to E-mail and system parameters.

You can display the **System Settings** area by clicking the **System Settings** menu command in the **Administration** window.

Figure 6-15: **System Settings** area



The screenshot shows a window titled "System Settings" with a dark header bar. Below the header is a light gray area with a dark "Edit" button. The main content area is divided into two sections. The first section, "E-Mail", has a blue header with a small upward arrow. It contains two sub-sections: "SMTP" and "Recipients". The "SMTP" sub-section has four rows: "Server Address:" with a dash, "Server Port:" with the value "25", "User ID:" with a dash, and "Password:" with a masked value "*****". The "Recipients" sub-section has four rows: "From:", "To:", "Cc:", and "Bcc:", each followed by a dash. The second section, "System Parameters", also has a blue header with a small upward arrow. It contains two sub-sections: "Notification Settings" and "Task Threshold Settings". The "Notification Settings" sub-section has one row: "E-Mail Notification:" with the value "OFF". The "Task Threshold Settings" sub-section has one row: "Log Level:" with a speech bubble icon and the value "Information".

The items displayed in this area are described below.


E-mail

This area displays the settings of E-mail-related Service Share Properties.

System Parameters

This area displays the settings of Service Share Properties that relate to notifications and task thresholds.

Tip

You can update the window contents to the latest information by clicking the **Refresh** button  .

Related topics

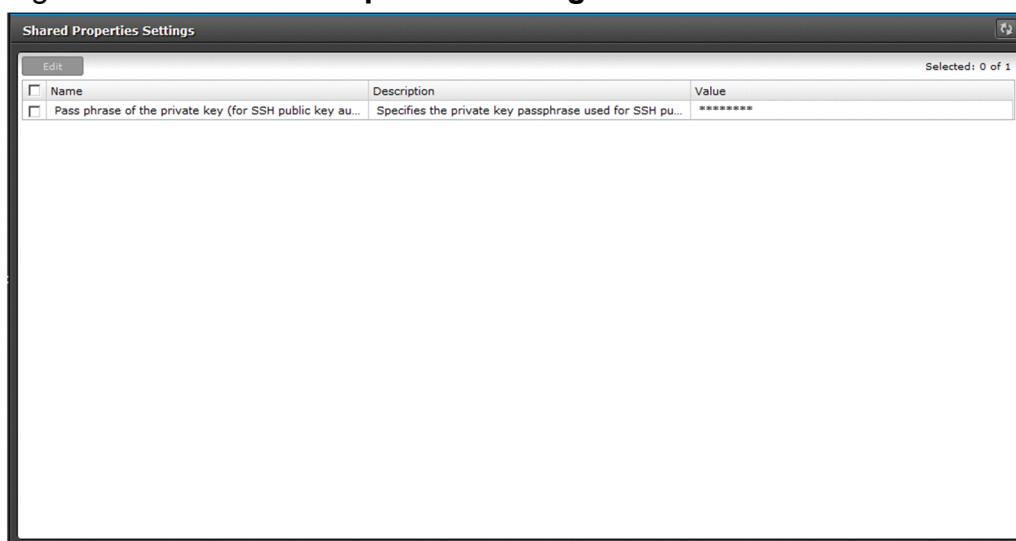
- 6.7.3 Editing Service Share Properties from the **System Settings** area
 - 6.7.5 List of shared built-in service properties
-

6.7.2 Shared Properties Settings area

In the **Shared Properties Settings** area, among shared built-in service properties, you can check and edit a passphrase for the private key (for SSH public key authentication) and settings for Service Share Properties that have been assigned to various service templates.

You can display the **Shared Properties Settings** area by clicking the **Shared Properties Setting** menu command in the **Administration** window.

Figure 6-16: **Shared Properties Settings** area



The items displayed in this area are described below.


Shared Properties List

This area lists information about Service Share Properties. You can sort the list in ascending or descending order by clicking a column header.

Table 6-22: Items in Shared Properties List (**Shared Properties Settings** area)

Item	Description
Name	The name of the Service Share Property.
Description	A description of the Service Share Property.

Tip

You can update the list to the latest information by clicking the **Refresh** button  .

Related topics

- 6.7.4 Editing Service Share Properties from the **Shared Properties Settings** area
 - 6.7.5 List of shared built-in service properties
-

6.7.3 Editing Service Share Properties from the System Settings area

This section describes how to edit Service Share Properties from the **System Settings** area. From this area, you can edit shared built-in service properties that relate to E-mail notification and system parameters.

Who can perform this task:

Users assigned the Admin role

To edit Service Share Properties from the System Settings area:

1. Display the **Administration** window.
2. In the **Administration** area, click the **System Settings** menu command.
3. In the **System Settings** area, click the **Edit** button.
4. Edit the property values, and then click the **Save** button.

Figure 6-17: **System Settings** area (when editing)

The screenshot shows the 'System Settings' window with the following details:

- Title Bar:** System Settings
- Buttons:** Save, Cancel
- E-Mail Section:**
 - SMTP:**
 - Server Address: Enter SMTP server name or IP address
 - Server Port: * 25
 - User ID: Enter mail account
 - Password: Enter new password
 - ☐ Change password
 - Recipients:**
 - From: Enter email address
 - To: Enter email address
 - Cc: Enter email address
 - Bcc: Enter email address
- System Parameters Section:**
 - Notification Settings:**
 - E-Mail Notification: OFF
 - Task Threshold Settings:**
 - Log Level: Information

* Required

Result of operation:

The changes you made to the values of the Service Share Properties take effect. The new values now appear beside the property names in the **System Settings** area.

Related topics

- [6.7.1 System Settings area](#)
 - [6.7.5 List of shared built-in service properties](#)
 - [6.7.6 Notes on editing Service Share Properties](#)
-

6.7.4 Editing Service Share Properties from the Shared Properties Settings area

This section describes how to edit Service Share Properties from the **Shared Properties Settings** area. From this area, among shared built-in service properties, you can edit a passphrase for the private key (for SSH public key authentication) and settings for the Service Share Properties that are assigned to various service templates.

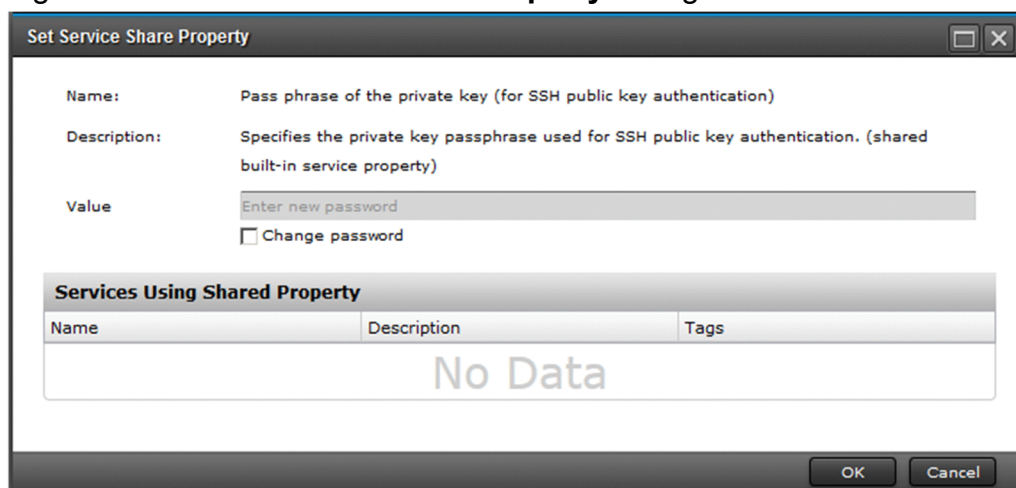
Who can perform this task:

Users assigned the Admin role

To edit Service Share Properties from the Shared Properties Settings area:

1. Display the **Administration** window.
2. In the **Administration** area, click the **Shared Properties Settings** menu command.
3. In the **Shared Properties Settings** area, select the Service Share Property you want to edit, and then click the **Edit** button.
4. Edit the property values in the **Set Service Share Property** dialog box, and then click the **OK** button.

Figure 6-18: **Set Service Share Property** dialog box



The dialog box titled "Set Service Share Property" contains the following elements:

- Name:** Pass phrase of the private key (for SSH public key authentication)
- Description:** Specifies the private key passphrase used for SSH public key authentication. (shared built-in service property)
- Value:** A text input field with the placeholder "Enter new password". Below it is a checkbox labeled "Change password".
- Services Using Shared Property:** A table with columns "Name", "Description", and "Tags". The table is currently empty, displaying "No Data".
- Buttons:** "OK" and "Cancel" buttons at the bottom right.

Result of operation:

The changes to the value of the Service Share Property take effect. The new value now appears beside the property name in the **Shared Properties Settings** area.

Related topics

- [6.7.2 Shared Properties Settings area](#)
- [6.7.5 List of shared built-in service properties](#)

- [6.7.6 Notes on editing Service Share Properties](#)

6.7.5 List of shared built-in service properties

The following shared built-in service properties are defined in advance in JP1/AO. These properties can be used as common properties in the JP1/AO system.

Table 6-23: List of shared built-in service properties

Window in which property is set	Item		Description
System Settings (E-mail)	SMTP	IP Address or Host Name	Specifies the address of the SMTP server. You can specify a host name, or an IP address in IPv4 or IPv6 format.
		Port Number	Specifies the port number of the SMTP server. The default is 25.
		User ID	Specifies the user ID of the account used to log in to the SMTP server. When specifying a domain user, use one of the following formats: <ul style="list-style-type: none"> • <i>domain-name\user-name</i> • <i>user-name@domain-name</i>
		Password	Specifies the password of the account used to log in to the SMTP server.
	Recipients	From	Specifies the sender (From field) of notification emails.
		To [#]	Specifies the recipients (TO field) of notification emails. You can specify multiple addresses by separating them with commas.
		Cc [#]	Specifies the recipients (Cc field) of notification emails. You can specify multiple addresses by separating them with commas.
		Bcc [#]	Specifies the recipients (Bcc field) of notification emails. You can specify multiple addresses by separating them with commas.
System Settings (System Parameters)	Notification Settings	E-Mail Notification	Specifies whether to enable (ON) or disable (OFF) the email notification function. The default is OFF.
	Task Threshold Settings	Log Level	Specifies the logging level for tasks. The default is 10.
Service Share Properties	Pass phrase of the private key (for SSH public key authentication)		Specifies the passphrase for the private key when using public key authentication for SSH connections.

#

Make sure the email addresses you specify are valid. If even one address is invalid, the notification email will not be sent to any recipients.

Related topics

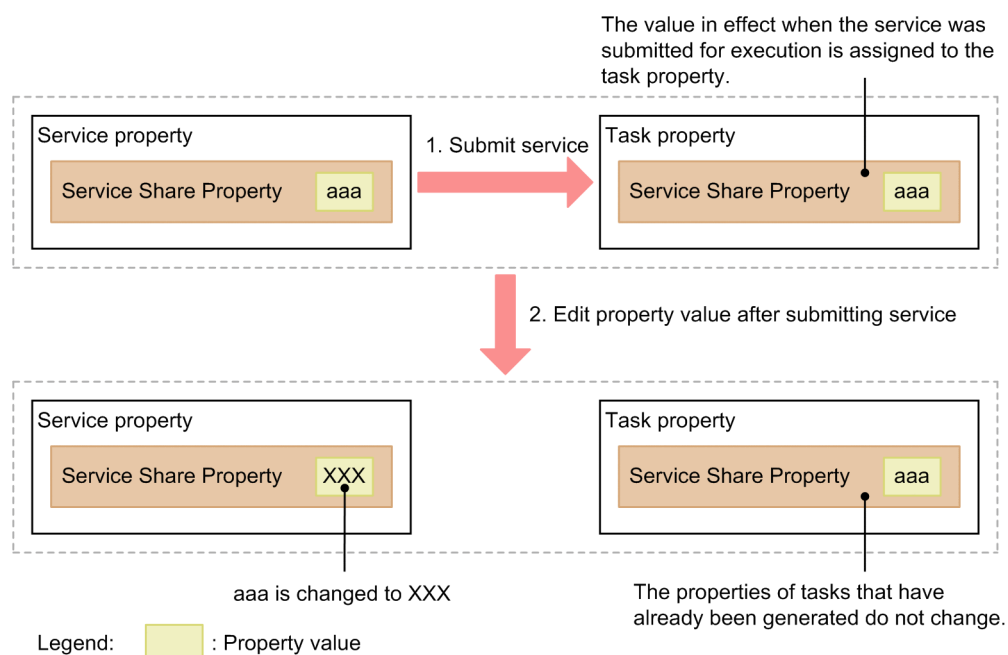
- [A.4 List of email notification settings](#)
- [8.9.3 Task log details](#)

6.7.6 Notes on editing Service Share Properties

Only users assigned the Admin role can edit the property values of Service Share Properties displayed in the **System Settings** area and **Shared Properties Settings** area.

When you change the value of a Service Share Property, the new value takes effect when the service is submitted for execution (when JP1/AO generates the task). Changes made to property values do not affect services that have already been submitted for execution. Property values set in the **Submit Service** dialog box only apply to the tasks generated from that service. If you need the changes to apply to a service that has already been submitted, stop the service and submit it again.

Figure 6-19: Behavior when property values are changed after submitting a service



If you change the value of a shared built-in service property after submitting a service for execution, the change applies when the system next references the property. For example, if you change the property value that specifies the recipient (TO field) of notification emails, the new setting applies the next time the JP1/AO system sends a notification email.

In a service template, you can define a Service Share Property with the same key name as a shared built-in service property. In this case, changes to the value of the Service Share Property take effect when the service is submitted.

6.8 Setting your own user profile

The logged-in user can view his or her own user profile, and change the information in the profile as needed.

6.8.1 User Profile window

In the **User Profile** window, you can view the information in the user profile and the permissions assigned to your account. You can also edit your profile information and change your password.

You can display the **User Profile** window by selecting **User Profile** from the **Tools** menu in the JP1/AO interface.



Tip

A user assigned the Admin role can perform the same operations by clicking the **User Profile** menu command in the **Administration** area of the **Users and Permissions** window.

Figure 6-20: **User Profile** window

Automatic Operation

File Logged in as: system Close

User Profile Edit Profile Change Password Help

User Profile

User ID	System
Full Name	
E-mail	
Description	Built-in account

Granted Permission

Application	Admin
User Management	✓

The items in this window are described below.

User Profile

This area displays the information in the profile of the user.

Table 6-24: Items in User Profile area (**User Profile** window)

Item	Description
User ID	The ID of the user.
Full Name	The name of the user.

Item	Description
E-mail	The email address of the user.
Description	A description of the user.

Granted Permission

This area lists the permissions assigned to the user. You can sort the information in ascending or descending order by clicking a column header.

Table 6-25: Items in Granted Permission area (**User Profile** window)

Item	Description
Application	The name of the permission assigned to the user.
Admin	A tick appears in this column if the user has User Management permission.

Related topics

- [6.8.2 Editing your own user information](#)
- [6.8.3 Changing your own password](#)

6.8.2 Editing your own user information

The logged-in user can edit his or her own user information by following the procedure below.

Who can perform this task:

All users

To edit your own user information:

1. In the main JP1/AO window, from the **Tools** menu, select **User Profile**.
2. In the **User Profile** window, click the **Edit Profile** button.
3. Edit the user information in the **Edit Profile** dialog box.

The items you can set are described below. Note that you cannot change your user ID.

Table 6-26: Items in **Edit Profile** dialog box

Item	Description
Full Name	This field displays the full name that was entered when adding the user. You can specify a new name using a maximum of 80 characters.
E-mail	This field displays the email address that was entered when adding the user. You can specify a new email address using a maximum of 255 bytes.
Description	This field displays the description that was entered when adding the user. You can specify a new description using a maximum of 80 characters

4. Click the **OK** button.

Result of operation:

The changes to the user information take effect. The updated information now appears in the **User Profile** window.

Related topics

- [6.8.1 User Profile window](#)
-

6.8.3 Changing your own password

The logged-in user can change his or her own password. If the user account is being managed on an external authentication server, you need to make the change on the external authentication server.

Who can perform this task:

All users

To change your own password:

1. In the main JP1/AO window, from the **Tools** menu, select **User Profile**.
2. In the **User Profile** window, click the **Change Password** button.
3. Change your password information in the **Change Password** dialog box.

You can set the following information:

Table 6-27: Settings in **Change Password** dialog box

Item	Description
Old Password	Enter your current password.
New Password	Enter the new password using a maximum of 256 characters.
Verify Password	Enter the same character string that you entered in the New Password field.

4. Click the **OK** button.

Result of operation:

The password is changed. You can now log in using the new password.

Related topics

- [6.8.1 User Profile window](#)
-

7

Maintenance

This chapter describes how to perform various tasks related to maintenance of a JP1/AO system. This includes backup, restoration, and maintenance of database and configuration data, starting and stopping services, and restoring JP1/AO servers remotely from backup files. If you are using the JP1/AO interface when JP1/AO services are restarted, you will need to log out and log in again.

7.1 Backing up data in JP1/AO (non-cluster configuration)

This section describes how to back up configuration information and database information for JP1/AO before performing tasks such as migrating JP1/AO to a new host or maintaining the database.

Important

- When you back up and restore data in a JP1/AO system, some elements of the data do not survive the backup process. For example, some detailed task information (step lists and progress information) is lost, and some task statuses are changed.

You can output detailed task information by executing the `listtasks` command before beginning the backup process. By executing the `submittask` command after restoration, you can use the detailed task information you output to re-register scheduled and recurring tasks as new tasks with the same settings.

- Make sure that sufficient free space is available on the disk on which the folder for backup files is located. As a general rule, the amount of free space should exceed the size of the backup files by 20 MB.

Who can perform this task:

Users who have Administrators or root permission for the OS

To back up a JP1/AO system (non-cluster configuration):

1. Make sure that there are no tasks in execution status (In Progress, Waiting for Input, In Progress (with Error), In Progress (Terminating), or Long Running). If there are such tasks in the system, either stop the tasks, or wait until they enter Completed or Failed status.
2. Shut down the JP1/AO system by executing the `hcnds64srv` command with the `stop` option specified.
3. Execute the `backupsystem` command to back up the JP1/AO database and configuration information.

Tip

The `backupsystem` command does not back up the files below. Back them up manually as needed.

- SSL server certificate files for https connections
- Private key files for https connections
- Private key files for public key authentication

4. Start the JP1/AO system by executing the `hcnds64srv` command with the `start` option specified.

Result of operation:

The data is backed up to the specified backup folder.

Related topics

- [7.15 Notes on backup and restoration](#)
-

7.2 Backing up data in JP1/AO (Windows cluster configuration)

This section describes how to back up configuration information and database information for JP1/AO before performing tasks such as migrating JP1/AO to a new host or maintaining the database.

Important

- When you back up and restore data in a JP1/AO system, some elements of the data do not survive the backup process. For example, some detailed task information (step lists and progress information) is lost, and some task statuses are changed.
- Make sure that sufficient free space is available on the disk on which the folder for backup files is located. As a general rule, the amount of free space should exceed the size of the backup files by 20 MB.

Who can perform this task:

Domain users who have Administrators permission for the OS and cluster management permission

To back up a JP1/AO system (cluster configuration):

1. Make sure that there are no tasks in execution status (In Progress, Waiting for Input, In Progress (with Error), In Progress (Terminating), or Long Running). If there are such tasks in the system, either stop the tasks, or wait until they enter Completed or Failed status.
2. Take the following services and scripts offline in the cluster software:
 - HAutomation Engine Web Service
 - HBase 64 Storage Mgmt Web Service
 - HBase 64 Storage Mgmt SSO Service
 - HBase 64 Storage Mgmt Web SSO Service
 - Services associated with Hitachi Command Suite products
3. Shut down the JP1/AO system by executing the `hcnds64srv` command with the `stop` option specified.
4. In the cluster software, take the `HiRDB/ClusterService_HD1` service offline.
5. Disable failover of the services and scripts below in the cluster software.
Configure the cluster software to not restart resources that enter Failed status.
 - `HiRDB/ClusterService_HD1`
 - HBase 64 Storage Mgmt SSO Service
 - HBase 64 Storage Mgmt Web Service
 - HBase 64 Storage Mgmt Web SSO Service
 - HAutomation Engine Web Service
 - Services associated with Hitachi Command Suite products
6. Execute the `backupsystem` command to back up the JP1/AO database and configuration information.

Tip

The `backupsystem` command does not back up the files below. Back them up manually as needed.

- SSL server certificate files for https connections
- Private key files for https connections
- Private key files for public key authentication

7. Shut down the JP1/AO system by executing the `hcnds64srv` command with the `stop` option specified.

8. Enable failover of the services and scripts below in the cluster software.

Configure the cluster to attempt to restart failed resources on the same node, and then fail over those resources if the attempt to restart them fails.

- HiRDB/ClusterService_HD1
- HBase 64 Storage Mgmt SSO Service
- HBase 64 Storage Mgmt Web Service
- HBase 64 Storage Mgmt Web SSO Service
- HAutomation Engine Web Service
- Services associated with Hitachi Command Suite products

9. In the cluster software, place the following services and scripts online:

- HiRDB/ClusterService_HD1
- HBase 64 Storage Mgmt SSO Service
- HBase 64 Storage Mgmt Web Service
- HBase 64 Storage Mgmt Web SSO Service
- HAutomation Engine Web Service
- Services associated with Hitachi Command Suite products

Result of operation:

Data is backed up to the specified backup folder.

Related topics

- [7.15 Notes on backup and restoration](#)
-

7.3 Backing up data in JP1/AO (Linux cluster configuration)

This section describes how to back up configuration information and database information for JP1/AO before performing tasks such as migrating JP1/AO to a new host or maintaining the database.

Important

- When you back up and restore data in a JP1/AO system, some elements of the data do not survive the backup process. For example, some detailed task information (step lists and progress information) is lost, and some task statuses are changed.
- Make sure that sufficient free space is available on the disk on which the folder for backup files is located. As a general rule, the amount of free space should exceed the size of the backup files by 20 MB.

Who can perform this task:

Users who have root permission for the OS and cluster management permission

To back up a JP1/AO system (cluster configuration):

1. Make sure that there are no tasks in execution status (In Progress, Waiting for Input, In Progress (with Error), In Progress (Terminating), or Long Running). If there are such tasks in the system, either stop the tasks, or wait until they enter Completed or Failed status.
2. In the cluster software, take the resource group in which JP1/AO is registered offline.
3. Disable starting, stopping, and monitoring of the following resources in the cluster software. For details on how to do so, see the documentation for the cluster software.
 - Common component database
 - HBase 64 Storage Mgmt SSO Service
 - HBase 64 Storage Mgmt Web SSO Service
 - HBase 64 Storage Mgmt Web Service
 - HAutomation Engine Web Service
4. In the cluster software, place online the resource group in which JP1/AO is registered.
5. Execute the `backupsystem` command to back up the JP1/AO database and configuration information.

Tip

The `backupsystem` command does not back up the files below. Back them up manually as needed.

- SSL server certificate files for https connections
- Private key files for https connections
- Private key files for public key authentication
- Cluster service control commands created by users

6. In the cluster software, take the resource group in which JP1/AO is registered offline.
7. Enable starting, stopping, and monitoring of the following resources in the cluster software. For details on how to do so, see the documentation for the cluster software.

- Common component database
- HBase 64 Storage Mgmt SSO Service
- HBase 64 Storage Mgmt Web SSO Service
- HBase 64 Storage Mgmt Web Service
- HAutomation Engine Web Service

8. In the cluster software, place online the resource group in which JP1/AO is registered.

Result of operation:

Data is backed up to the specified backup folder.

Related topics

- [7.15 Notes on backup and restoration](#)
-

7.4 Restoring data in a JP1/AO system (non-cluster configuration)

This section describes how to restore backup data for JP1/AO to the server after performing tasks such as migrating JP1/AO to a new host or performing database maintenance.

Important

- When you back up and restore data in a JP1/AO system, some elements of the data do not survive the backup process. For example, some detailed task information (step lists and progress information) is lost, and some task statuses are changed.

You can output detailed task information by executing the `listtasks` command before beginning the backup process. By executing the `submittask` command after restoration, you can use the detailed task information you output to re-register scheduled and recurring tasks as new tasks with the same settings.

- You create the backup data by executing the `backupsystem` command.
- Make sure that the following items are the same on the host where the backup data was created and the host to which the backup data is being restored:
 - The JP1/AO installation folder path
 - The version, revision, and restriction code of the installed JP1/AO^{#1}
 - The host name^{#2}
 - The IP address
 - The system locale

^{#1} You can view the version, revision, and restriction code of JP1/AO in the **About** dialog box.

^{#2} The host names do not need to be the same if you are restoring data as part of the process of changing the host name of the JP1/AO server or migrating to an environment with a different host name.

Who can perform this task:

Users who have Administrators or root permission for the OS

To restore a JP1/AO system (non-cluster configuration):

1. Make sure that there are no tasks in execution status (In Progress, Waiting for Input, In Progress (with Error), In Progress (Terminating), or Long Running). If there are such tasks in the system, either stop the tasks, or wait until they enter Completed or Failed status.
2. Shut down the JP1/AO system by executing the `hcnds64srv` command with the `stop` option specified.
3. Execute the `restoresystem` command to restore the JP1/AO configuration and database information.

Tip

The `restoresystem` command does not restore the files below. Restore them manually as needed.

- SSL server certificate files for https connections
- Private key files for https connections
- Private key files for public key authentication

Place the files for https connections in the location defined in the `user_httpsd.conf` file, and the files for public key authentication in the location defined in the user-specified properties file (`config_user.properties`).

4. Reconfigure the following definition files to suit the environment in which the data is being restored.

These definition files are backed up as part of the backup process, but are not restored.

- Configuration file for external authentication server linkage (`exauth.properties`)
- Security definition file (`security.conf`)
- Port number settings (`user_httpsd.conf`)

The definition files are stored in the following folders:

- *backup-folder*\HBase\base\conf or *backup-folder*/HBase/base/conf
- *backup-folder*\HBase\base\httpsd.conf or *backup-folder*/HBase/base/httpsd.conf

5. Enable https if you intend to use https for connections between JP1/AO and Web browsers.

6. If you changed the port number used for communication between JP1/AO and the Web browser, make the same change again by following the procedure for changing port numbers.

7. Start the JP1/AO system by executing the `hcnds64srv` command with the `start` option specified.

Result of operation:

The data is restored to the specified host.

Related topics

- [7.15 Notes on backup and restoration](#)
 - [1.13.1 Restored data](#)
 - Procedure to change the host name of the JP1/AO server in the JP1/Automatic Operation Configuration Guide
 - JP1/AO system migration procedure (to an environment with a different host name or IP address) in the JP1/Automatic Operation Configuration Guide
 - Procedure for setting up the configuration file for external authentication server linkage in the JP1/Automatic Operation Configuration Guide
 - User-specified properties file (`config_user.properties`) in the JP1/Automatic Operation Configuration Guide
 - Security definition file (`security.conf`) in the JP1/Automatic Operation Configuration Guide
 - Procedure to enable HTTPS connections between Web browsers and JP1/AO in the JP1/Automatic Operation Configuration Guide
 - Procedure to change the port number in the JP1/Automatic Operation Configuration Guide
-

7.5 Restoring the JP1/AO system (Windows cluster configuration)

This section describes how to restore backup data for JP1/AO to the server after performing tasks such as migrating JP1/AO to a new host or performing database maintenance.

Important

- When you back up and restore data in a JP1/AO system, some elements of the data do not survive the backup process. For example, some detailed task information (step lists and progress information) is lost, and some task statuses are changed.

You can output detailed task information by executing the `listtasks` command before beginning the backup process. By executing the `submittask` command after restoration, you can use the detailed task information you output to re-register scheduled and recurring tasks as new tasks with the same settings.

- Execute the `restoresystem` command on the active server (the server whose mode is set to online in the `cluster.conf` file).
- You create the backup data by executing the `backupsystem` command.
- Make sure that the following items are the same on the host where the backup data was created and the host to which the backup data is being restored:
 - The JP1/AO installation folder path
 - The version, revision, and restriction code of the installed JP1/AO^{#1}
 - The host name^{#2}
 - The IP address
 - The system locale

^{#1} You can view the version, revision, and restriction code of JP1/AO in the **About** dialog box.

^{#2} The host names do not need to be the same if you are restoring data as part of the process of changing the host name of the JP1/AO server or migrating to an environment with a different host name.

Who can perform this task:

Domain users who have Administrators permission for the OS and cluster management permission

To restore a JP1/AO system (cluster configuration):

1. Make sure that there are no tasks in execution status (In Progress, Waiting for Input, In Progress (with Error), In Progress (Terminating), or Long Running). If there are such tasks in the system, either stop the tasks, or wait until they enter Completed or Failed status.
2. Take the following services and scripts offline in the cluster software:
 - HAutomation Engine Web Service
 - HBase 64 Storage Mgmt Web Service
 - HBase 64 Storage Mgmt SSO Service
 - HBase 64 Storage Mgmt Web SSO Service
 - Services associated with Hitachi Command Suite products
3. Shut down the JP1/AO system by executing the `hcnds64srv` command with the `stop` option specified.
4. In the cluster software, take the `HiRDB/ClusterService_HD1` service offline.

5. Disable failover of the services and scripts below in the cluster software.

Configure the cluster software to not restart resources that enter Failed status.

- HiRDB/ClusterService _HD1
- HBase 64 Storage Mgmt SSO Service
- HBase 64 Storage Mgmt Web Service
- HBase 64 Storage Mgmt Web SSO Service
- HAutomation Engine Web Service
- Services associated with Hitachi Command Suite products

6. Place the shared disk of the active server online.

7. Execute the `restoresystem` command on the active server to restore the JP1/AO configuration and database information.



Tip

The `restoresystem` command does not restore the files below. Restore them manually as needed.

- SSL server certificate files for https connections
- Private key files for https connections
- Private key files for public key authentication

Place the files for https connections in the location defined in the `user_httpsd.conf` file, and the files for public key authentication in the location defined in the user-specified properties file (`config_user.properties`).

8. Shut down the JP1/AO system by executing the `hcnds64srv` command with the `stop` option specified.

9. Reconfigure the following definition files on the active server to suit the environment in which the data is being restored.

These definition files are backed up as part of the backup process, but are not restored.

- Configuration file for external authentication server linkage (`exauth.properties`)
- Security definition file (`security.conf`)
- Port number settings (`user_httpsd.conf`)

The definition files are stored in the following folders:

- *backup-folder*\HBase\base\conf
- *backup-folder*\HBase\base\httpsd.conf

10. If you changed the port number used for communication between JP1/AO and the Web browser, make the same change again by following the procedure for changing port numbers.

11. Enable https on the active server if you intend to use https for connections between JP1/AO and Web browsers.

12. Steps 8, 9, 10, and 11 must also be performed on the standby server.

13. Enable failover of the services and scripts below in the cluster software.

Configure the cluster to attempt to restart failed resources on the same node, and then fail over those resources if the attempt to restart them fails.

- HiRDB/ClusterService _HD1
- HBase 64 Storage Mgmt SSO Service

- HBase 64 Storage Mgmt Web Service
- HBase 64 Storage Mgmt Web SSO Service
- HAutomation Engine Web Service
- Services associated with Hitachi Command Suite products

14. In the cluster software, place the following services and scripts online:

- HiRDB/ClusterService_HD1
- HBase 64 Storage Mgmt SSO Service
- HBase 64 Storage Mgmt Web Service
- HBase 64 Storage Mgmt Web SSO Service
- HAutomation Engine Web Service
- Services associated with Hitachi Command Suite products

Result of operation:

Data is restored to the specified host.

Related topics

- [7.15 Notes on backup and restoration](#)
 - [1.13.1 Restored data](#)
 - Procedure to change the host name of the JP1/AO server in the JP1/Automatic Operation Configuration Guide
 - JP1/AO system migration procedure (to an environment with a different host name or IP address) in the JP1/Automatic Operation Configuration Guide
 - Procedure for setting up the configuration file for external authentication server linkage in the JP1/Automatic Operation Configuration Guide
 - User-specified properties file (config_user.properties) in the JP1/Automatic Operation Configuration Guide
 - Security definition file (security.conf) in the JP1/Automatic Operation Configuration Guide
 - Procedure to change the port number in the JP1/Automatic Operation Configuration Guide
 - Procedure to enable HTTPS connections between Web browsers and JP1/AO in the JP1/Automatic Operation Configuration Guide
-

7.6 Restoring the JP1/AO system (Linux cluster configuration)

This section describes how to restore backup data for JP1/AO to the server after performing tasks such as migrating JP1/AO to a new host or performing database maintenance.

Important

- When you back up and restore data in a JP1/AO system, some elements of the data do not survive the backup process. For example, some detailed task information (step lists and progress information) is lost, and some task statuses are changed.

You can output detailed task information by executing the `listtasks` command before beginning the backup process. By executing the `submittask` command after restoration, you can use the detailed task information you output to re-register scheduled and recurring tasks as new tasks with the same settings.

- Execute the `restoresystem` command on the active server (the server whose mode is set to online in the `cluster.conf` file).
- You create the backup data by executing the `backupsystem` command.
- Make sure that the following items are the same on the host where the backup data was created and the host to which the backup data is being restored:
 - The JP1/AO installation directory path
 - The version, revision, and restriction code of the installed JP1/AO^{#1}
 - The host name^{#2}
 - The IP address
 - The system locale

^{#1} You can view the version, revision, and restriction code of JP1/AO in the **About** dialog box.

^{#2} The host names do not need to be the same if you are restoring data as part of the process of changing the host name of the JP1/AO server or migrating to an environment with a different host name.

Who can perform this task:

Users who have root permission for the OS and cluster management permission

To restore a JP1/AO system (cluster configuration):

1. Make sure that there are no tasks in execution status (In Progress, Waiting for Input, In Progress (with Error), In Progress (Terminating), or Long Running). If there are such tasks in the system, either stop the tasks, or wait until they enter Completed or Failed status.
2. In the cluster software, take the resource group in which JP1/AO is registered offline.
3. Disable starting, stopping, and monitoring of the resources below in the cluster software. For details on how to do so, see the documentation for the cluster software.
 - Common component database
 - HBase 64 Storage Mgmt SSO Service
 - HBase 64 Storage Mgmt Web SSO Service
 - HBase 64 Storage Mgmt Web Service
 - HAutomation Engine Web Service

4. In the cluster software, place online the resource group in which JP1/AO is registered.
5. Place the shared disk of the active server online.
6. Execute the `restoresystem` command on the active server to restore the JP1/AO configuration and database information.

Tip

The `restoresystem` command does not restore the files below. Restore them manually as needed.

- SSL server certificate files for https connections
- Private key files for https connections
- Private key files for public key authentication
- Cluster service control commands created by users

Place the files for https connections in the location defined in the `user_httpsd.conf` file, and the files for public key authentication in the location defined in the user-specified properties file (`config_user.properties`).

7. Shut down the JP1/AO system by executing the `hcmds64srv` command with the `stop` option specified.
8. On the active server, re-configure the following definition files to suit the environment in which the data is being restored.
These definition files are backed up as part of the backup process, but are not restored.
 - Configuration file for external authentication server linkage (`exauth.properties`)
 - Security definition file (`security.conf`)
 - Port number settings (`user_httpsd.conf`)The definition files are stored in the following folders:
 - *backup-folder*/HBase/base/conf
 - *backup-folder*/HBase/base/httpsd.conf
9. On the active server, if you changed the port number used for communication between JP1/AO and the Web browser, make the same change again by following the procedure for changing port numbers.
10. Enable https on the active server if you intend to use https for connections between JP1/AO and Web browsers.
11. Steps 7, 8, 9, and 10 must also be performed on the standby server.
12. In the cluster software, take the resource group in which JP1/AO is registered offline.
13. Enable starting, stopping, and monitoring of the following resources. For details on how to do so, see the documentation for the cluster software.
 - Common component database
 - HBase 64 Storage Mgmt SSO Service
 - HBase 64 Storage Mgmt Web SSO Service
 - HBase 64 Storage Mgmt Web Service
 - HAutomation Engine Web Service
14. In the cluster software, place online the resource group in which JP1/AO is registered.

Result of operation:

Data is restored to the specified host.

Related topics

- [7.15 Notes on backup and restoration](#)
 - [1.13.1 Restored data](#)
 - Procedure to change the host name of the JP1/AO server in the JP1/Automatic Operation Configuration Guide
 - JP1/AO system migration procedure (to an environment with a different host name or IP address) in the JP1/Automatic Operation Configuration Guide
 - Procedure for setting up the configuration file for external authentication server linkage in the JP1/Automatic Operation Configuration Guide
 - User-specified properties file (config_user.properties) in the JP1/Automatic Operation Configuration Guide
 - Security definition file (security.conf) in the JP1/Automatic Operation Configuration Guide
 - Procedure to change the port number in the JP1/Automatic Operation Configuration Guide
 - Procedure to enable HTTPS connections between Web browsers and JP1/AO in the JP1/Automatic Operation Configuration Guide
-

7.7 Database maintenance (non-cluster configuration)

To ensure that the JP1/AO database remains optimized, you need to use the `hcmds64dbtrans` command to reorganize the database.

Important

- JP1/AO reclaims free segments of the database when it automatically archives tasks. Fragmentation that cannot be resolved by the day-to-day reclamation of free segments can be remedied by reorganizing the database. Consider reorganizing the database when JP1/AO is stopped for regular maintenance, or on a regular schedule such as once a year.
- For details on the timing with which tasks are automatically archived, see the topic on the user-specified properties file (`config_user.properties`) in the *JP1/Automatic Operation Configuration Guide*.

Who can perform this task:

Users who have Administrators or root permission for the OS

To perform database maintenance (non-cluster configuration):

1. Make sure that there are no tasks in execution status (In Progress, Waiting for Input, In Progress (with Error), In Progress (Terminating), or Long Running). If there are such tasks in the system, either stop the tasks, or wait until they enter Completed or Failed status.
2. Shut down the JP1/AO system by executing the `hcmds64srv` command with the `stop` option specified.
3. Start the database by executing the `hcmds64dbsrv` command with the `start` option specified.
4. Export the JP1/AO database by executing the `hcmds64dbtrans` command with the following options specified:
 - `export` option
 - `workpath` option
Specify the path of the work folder.
 - `file` option
Specify the path for the archive file.
5. Import the JP1/AO database by executing the `hcmds64dbtrans` command with the following options specified:
 - `import` option
 - `type` option
Specify Automation.
 - `workpath` option
Specify the path of the work folder.
 - `file` option
Specify the path for the archive file.
6. Start the JP1/AO system by executing the `hcmds64srv` command with the `start` option specified.

Result of operation:

The JP1/AO database is reorganized.

Important

If the database is corrupted and cannot be repaired by the `restoresystem` and `hcnds64dbtrans` commands, use the `hcnds64dbrepair` command to repair the database.

Related topics

- [1.6.5 Automatically archiving tasks and deleting task histories](#)
-

7.8 Database maintenance (Windows cluster configuration)

To ensure that the JP1/AO database remains optimized, you need to use the `hcmds64dbtrans` command to reorganize the database.

Important

JP1/AO reclaims free segments of the database when it automatically archives tasks. Fragmentation that cannot be resolved by the day-to-day reclamation of free segments can be remedied by reorganizing the database. Consider reorganizing the database when JP1/AO is stopped for regular maintenance, or on a regular schedule such as once a year.

For details on the timing with which tasks are automatically archived, see the topic on the user-specified properties file (`config_user.properties`) in the *JP1/Automatic Operation Configuration Guide*.

Who can perform this task:

Domain users who have Administrators permission for the OS and cluster management permission

To perform database maintenance (cluster configuration):

1. Make sure that there are no tasks in execution status (In Progress, Waiting for Input, In Progress (with Error), In Progress (Terminating), or Long Running). If there are such tasks in the system, either stop the tasks, or wait until they enter Completed or Failed status.
2. Take the following services and scripts offline in the cluster software:
 - HAutomation Engine Web Service
 - Services associated with Hitachi Command Suite products
 - HiRDB/ClusterService_HD1
 - HBase 64 Storage Mgmt Web Service
 - HBase 64 Storage Mgmt SSO Service
 - HBase 64 Storage Mgmt Web SSO Service
3. Start the database by executing the `hcmds64dbsrv` command with the `start` option specified.
4. Export the JP1/AO database by executing the `hcmds64dbtrans` command with the following options specified:
 - `export` option
 - `workpath` option
Specify the path of the work folder.
 - `file` option
Specify the path for the archive file.
5. Import the JP1/AO database by executing the `hcmds64dbtrans` command with the following options specified:
 - `import` option
 - `type` option
Specify Automation.
 - `workpath` option
Specify the path of the work folder.

- `file` option

Specify the path for the archive file.

6. Stop the database by executing the `hcnds64dbsrv` command with the `stop` option specified.

7. In the cluster software, place the following services and scripts online:

- HAutomation Engine Web Service
- HBase 64 Storage Mgmt Web Service
- HBase 64 Storage Mgmt SSO Service
- HBase 64 Storage Mgmt Web SSO Service
- Services associated with Hitachi Command Suite products
- HiRDB/ClusterService _HD1

Result of operation:

The JP1/AO database is reorganized.



Important

If the database is corrupted and cannot be repaired by the `restoresystem` and `hcnds64dbtrans` commands, use the `hcnds64dbrepair` command to repair the database.

Related topics

- [1.6.5 Automatically archiving tasks and deleting task histories](#)
-

7.9 Database maintenance (Linux cluster configuration)

To ensure that the JP1/AO database remains optimized, you need to use the `hcmds64dbtrans` command to reorganize the database.

Important

JP1/AO reclaims free segments of the database when it automatically archives tasks. Fragmentation that cannot be resolved by the day-to-day reclamation of free segments can be remedied by reorganizing the database. Consider reorganizing a database when JP1/AO is stopped for regular maintenance, or on a regular schedule such as once a year.

For details on the timing with which tasks are automatically archived, see the topic on the user-specified properties file (`config_user.properties`) in the *JP1/Automatic Operation Configuration Guide*.

Who can perform this task:

Users who have root permission for the OS and cluster management permission

To perform database maintenance (cluster configuration):

1. Make sure that there are no tasks in execution status (In Progress, Waiting for Input, In Progress (with Error), In Progress (Terminating), or Long Running). If there are such tasks in the system, either stop the tasks, or wait until they enter Completed or Failed status.
2. Take the following resources offline in the cluster software:
 - Common component database
 - HBase 64 Storage Mgmt SSO Service
 - HBase 64 Storage Mgmt Web SSO Service
 - HBase 64 Storage Mgmt Web Service
 - HAutomation Engine Web Service
3. Start the database by executing the `hcmds64dbsrv` command with the `start` option specified.
4. Export the JP1/AO database by executing the `hcmds64dbtrans` command with the following options specified:
 - `export` option
 - `workpath` option
Specify the path of the work folder.
 - `file` option
Specify the path for the archive file.
5. Import the JP1/AO database by executing the `hcmds64dbtrans` command with the following options specified:
 - `import` option
 - `type` option
Specify Automation.
 - `workpath` option
Specify the path of the work folder.
 - `file` option

Specify the path for the archive file.

6. Stop the database by executing the `hcnds64dbsrv` command with the `stop` option specified.

7. In the cluster software, place the following resources online:

- Common component database
- HBase 64 Storage Mgmt SSO Service
- HBase 64 Storage Mgmt Web SSO Service
- HBase 64 Storage Mgmt Web Service
- HAutomation Engine Web Service

Result of operation:

The JP1/AO database is reorganized.



Important

If the database is corrupted and cannot be repaired by the `restoresystem` and `hcnds64dbtrans` commands, use the `hcnds64dbrepair` command to repair the database.

Related topics

- [1.6.5 Automatically archiving tasks and deleting task histories](#)
-

7.10 Starting a JP1/AO system (non-cluster configuration)

This section describes how to start a JP1/AO system. To start a system, use the `hcnds64srv` command, not the Service Control Manager. If you use Service Control Manager, the service might fail to start.

Who can perform this task:

Users who have Administrators or root permission for the OS

To start a JP1/AO system (non-cluster configuration):

Execute the `hcnds64srv` command with the `start` option specified.

Result of operation:

The JP1/AO system starts.



Important

You can use the `server AutomationWebService` option when the Common Component services are already running and you only want to start the JP1/AO services. When starting JP1/AO in the course of day-to-day operations, omit this option and start all services.

7.11 Starting a JP1/AO system (cluster configuration)

This section describes how to start a JP1/AO system. In a cluster system, you bring the services online in the cluster software rather than starting them directly.

Who can perform this task:

Users who have Administrators or root permission for the OS and have cluster management permission

To start a JP1/AO system (cluster configuration):

In Windows environments, right-click the resource group that contains the JP1/AO service in Failover Cluster Manager, and click **Bring this service or application online**.

In Linux environments, consult the documentation for your cluster software.

Result of operation:

The JP1/AO system starts.

7.12 Stopping a JP1/AO system (non-cluster configuration)

This section describes how to stop a JP1/AO system. To stop a system, use the `hcnds64srv` command, not the Service Control Manager. If you use Service Control Manager, the service might fail to stop.

Who can perform this task:

Users who have Administrators or root permission for the OS

To stop a JP1/AO system (non-cluster configuration):

1. Make sure that there are no tasks in execution status (In Progress, Waiting for Input, In Progress (with Error), In Progress (Terminating), or Long Running). If there are such tasks in the system, either stop the tasks, or wait until they enter Completed or Failed status.
2. Execute the `hcnds64srv` command with the `stop` option specified.

Result of operation:

The JP1/AO system stops.



Important

You can use the `server AutomationWebService` option when the Common Component services are running and you only want to stop the JP1/AO services. When stopping JP1/AO in the course of day-to-day operations, omit this option and stop all services.

7.13 Stopping a JP1/AO system (cluster configuration)

This section describes how to stop a JP1/AO system. In a cluster system, you take the services offline in the cluster software rather than stopping them directly.

Who can perform this task:

Users who have Administrators or root permission for the OS and have cluster management permission

To stop a JP1/AO system (cluster configuration):

1. Make sure that there are no tasks in execution status (In Progress, Waiting for Input, In Progress (with Error), In Progress (Terminating), or Long Running). If there are such tasks in the system, either stop the tasks, or wait until they enter Completed or Failed status.
2. Take the following resources offline in the cluster software:

In Windows:

- HiRDB/ClusterService _HD1
- HBase 64 Storage Mgmt SSO Service
- HBase 64 Storage Mgmt Web Service
- HBase 64 Storage Mgmt Web SSO Service
- HAutomation Engine Web Service

In Linux:

- Common component database
- HBase 64 Storage Mgmt SSO Service
- HBase 64 Storage Mgmt Web SSO Service
- HBase 64 Storage Mgmt Web Service
- HAutomation Engine Web Service

Result of operation:

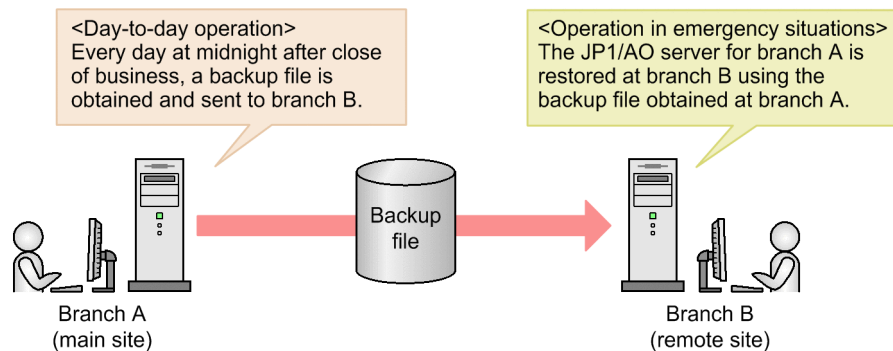
The JP1/AO system stops.

7.14 Restoring a JP1/AO server at a remote site using backup files

If a JP1/AO server stops for some reason, you can restore it at a remote site using backup files. You can use this method to perform disaster recovery when a large-scale disaster or system failure occurs.

An example is shown in the figure below.

Figure 7-1: Example of restoring a JP1/AO server at a remote site using backup files



In this example, branch A is the main site and branch B the remote site. Branch A obtains a backup file at midnight after close of business every day, which it sends to branch B. This means that branch B always has a backup file for branch A created the previous midnight. If a disaster of some kind occurs that causes the JP1/AO server to stop, the JP1/AO server at branch A can be restored to a server at branch B from the backup file created at midnight.

The procedure for restoring a JP1/AO server at a remote site using a backup file is described below.

Prerequisites

- The following items are the same on the JP1/AO servers at the main site and the remote site:
 - The system locale
 - The version, revision, and restriction code of JP1/AO
 - The JP1/AO installation folder
 - In environments with Hitachi Command Suite products installed, the environments of the Hitachi Command Suite products (configuration, versions, revisions, and restriction codes)
 - When using public key authentication for connections with devices, the locations of the private key files
The following approaches to key allocation can be used:
 - Allocating the same key to the main site and the remote site
A private key file is created on the main site and sent to the remote site.
 - Allocating different keys to the main site and the remote site
Separate keys are created at the main site and remote site, and the corresponding public key file is allocated to devices on which operations will be performed.
- JP1/AO is not operating in a cluster environment.
- JP1/AO was not installed by an upgrade installation from version 10-02 or earlier.

General procedure for restoring a JP1/AO server at a remote site using a backup file

The following table shows the general procedure for using a backup file to restore a JP1/AO server at a remote site:

Table 7-1: Restoring a JP1/AO server at a remote site using a backup file

Timing	Tasks on main site	Tasks on remote site
During normal operation	Acquire a backup file [#] .	--
	Send the backup file to the remote site.	--
In the event of a disaster or failure	--	Restore the JP1/AO server that was operating at the main site by using the most recent backup file.

Legend:

--: Not applicable.

We recommend that you acquire backup files regularly by an automatic process.

Procedure during normal operation

Acquire the latest backup file for the main site, and send it to the remote site.

1. Acquire the latest backup file for the main site.
For details on how to acquire the backup file for a JP1/AO server, see [7.1 Backing up data in JP1/AO \(non-cluster configuration\)](#).
2. Send the backup file for the main site to the remote site.

Tip

The `backupsystem` command does not back up the files below. If you intend to use the same files at the main site and the remote site, back up these files manually, and send them to the remote site.

- SSL server certificate files for https connections
- Private key files for https connections
- Private key files for public key authentication

You can use different certificate and key files at the main and remote sites. In this case, acquire or create certificate or key files separately for the main and remote sites and place them in the appropriate locations.

Procedure in the event of a disaster or failure

Use the most recent backup file of the main site to restore the JP1/AO server at the remote site.

Tip

You can skip steps 4 to 6 if the following settings are the same on the JP1/AO servers at the main site and the remote site:

- Configuration file for external authentication server linkage (`exauth.properties`)
- Security definition file (`security.conf`)
- Port number settings (`user_httpsd.conf`)
- Https connection settings (`user_httpsd.conf`)

- Port number used for communication between JP1/AO and Web browsers

1. Make sure that there are no tasks in execution status (In Progress, Waiting for Input, In Progress (with Error), In Progress (Terminating), or Long Running). at the remote site. If there are such tasks at the remote site, either stop the tasks, or wait until they enter Completed or Failed status.
2. If the JP1/AO system is running, shut it down by executing the `hcnds64srv` command with the `stop` option specified.
3. Restore the JP1/AO settings and database data for the main site by executing the `restoresystem` command.



Tip

The `restoresystem` command does not restore the files below. If you intend to use the same files at the main site and the remote site, manually place them in the appropriate locations.

- SSL server certificate files for https connections
- Private key files for https connections
- Private key files for public key authentication

Place the files for https connections in the location defined in the `user_httpsd.conf` file, and the files for public key authentication in the location defined in the user-specified properties file (`config_user.properties`).

4. Reconfigure the following definition files to suit the environment of the remote site.

These definition files are backed up by the `backupsystem` command, but are not restored by the `restoresystem` command.

- Configuration file for external authentication server linkage (`exauth.properties`)
- Security definition file (`security.conf`)
- Port number settings (`user_httpsd.conf`)
- Https connection settings (`user_httpsd.conf`)

The definition files are stored in the following folders:

- *backup-folder\HBase\base\conf* or *backup-folder/HBase/base/conf*
- *backup-folder\HBase\base\httpsd.conf* or *backup-folder/HBase/base/httpsd.conf*

5. Configure https connections as needed.
6. If the following port numbers used for communications between JP1/AO and Web browsers were changed from the default, make the same change again by following the procedure for changing port numbers.
7. Start the JP1/AO system by executing the `hcnds64srv` command with the `start` option specified.
8. Execute the `hcnds64chgurl` command to update the URL information to suit the environment at the remote site.

Result of operation:

The JP1/AO server that was operating at the main site is recovered at the remote site.

Related topics

- Procedure for setting up the configuration file for external authentication server linkage in the JP1/Automatic Operation Configuration Guide

- Security definition file (security.conf) in the JP1/Automatic Operation Configuration Guide
 - Procedure to enable HTTPS connections in the JP1/Automatic Operation Configuration Guide
 - Procedure to change the port number in the JP1/Automatic Operation Configuration Guide
 - Procedure to change the URL in the JP1/Automatic Operation Configuration Guide
 - Procedure to set public key authentication for SSH connections in the JP1/Automatic Operation Configuration Guide
-

7.15 Notes on backup and restoration

When you back up and restore data in a JP1/AO system, some detailed task information (step lists and progress information) is lost, and some task statuses are changed.

A restored task or debug task will sometimes have a different status from the original task. For details on the statuses of tasks and debug tasks after restoration, see the topic on the `restoresystem` command (restoring the JP1/AO system) in the manual *JP1/Automatic Operation Command and API Reference*.

Tasks and debug tasks that were in Waiting or Suspended status when the backup was created enter Canceled status when restored. You can re-register scheduled or recurring tasks that were in Waiting or Suspended status as new tasks with the same settings by using the `listtasks` and `submittask` commands.

If you intend to re-register such tasks, use the `listtasks` command to output detailed task information before initiating the backup process. You can then use the `submittask` command to re-register this task information as a batch after restoration. By doing so, you can re-register tasks as different tasks with the same settings.

Related topics

- [1.6.6 Task categories and generation timing](#)
 - [1.6.7 Task statuses and status transitions](#)
 - [7.1 Backing up data in JP1/AO \(non-cluster configuration\)](#)
 - [7.2 Backing up data in JP1/AO \(Windows cluster configuration\)](#)
 - [7.3 Backing up data in JP1/AO \(Linux cluster configuration\)](#)
 - [7.4 Restoring data in a JP1/AO system \(non-cluster configuration\)](#)
 - [7.5 Restoring the JP1/AO system \(Windows cluster configuration\)](#)
 - [7.6 Restoring the JP1/AO system \(Linux cluster configuration\)](#)
-

7.16 Notes on restarting JP1/AO services

When you restart the JP1/AO service, some tasks might fail depending on the status of the task when the service was stopped. The following table describes the behavior of tasks when the JP1/AO service restarts:

Table 7-2: Task behavior when JP1/AO service restarts

No.	Task status when JP1/AO service stops	Task behavior when JP1/AO service restarts	
		Default behavior	behavior when true is specified for <code>task.execute.skip.serverStart</code> in the user-specified properties file (<code>config_user.properties</code>).
1	Waiting	<ul style="list-style-type: none">• If the service restarts before the scheduled start time: The task remains in Waiting status.• If the service restarts after the scheduled start time: The task starts executing immediately.	<ul style="list-style-type: none">• If the service restarts before the scheduled start time: The task remains in Waiting status.• If the service restarts after the scheduled start time: The task enters Canceled status.^{#1}
2	Suspended	The task remains in Suspended status.	<ul style="list-style-type: none">• If the service restarts before the scheduled start time: The task remains in Suspended status.• If the service restarts after the scheduled start time: The task enters Canceled status.^{#1}
3	In Progress	The task enters Failed status.	The task enters Failed status.
4	Waiting for Input	The task enters Failed status.	The task enters Failed status.
5	In Progress (with Error)	The task enters Failed status.	The task enters Failed status.
6	In Progress (Terminating)	The task enters Failed status.	The task enters Failed status.
7	Long Running	The task enters Failed status.	The task enters Failed status.
8	Completed	The task remains in Completed status.	The task remains in Completed status.
9	Failed	The task remains in Failed status.	The task remains in Failed status.
10	Canceled	The task remains in Canceled status.	The task remains in Canceled status.

#1

For a recurring task, the task to be executed next is generated in the Waiting status.

8

Troubleshooting during system operation

This chapter describes how to deal with issues that arise when using JP1/AO to automate aspects of an IT system. It also provides details about the log data used to identify and resolve issues.

8.1 Types of problem

Refer to the troubleshooting method for the type of problem you are trying to resolve.

Table 8-1: Types of problem

Problem type	Troubleshooting method
A running task fails	8.2 When a running task fails
A task does not finish	8.3 When a task does not finish
Public key authentication with a Connection Destination fails	8.4 When public key authentication with a Connection Destination fails
You cannot access the JP1/AO GUI	8.5 When you cannot access the JP1/AO GUI (in Windows)
You cannot log in to JP1/AO	8.6 When you cannot log in to JP1/AO
JP1/AO does not start	8.7 When JP1/AO does not start
Login window is not displayed	8.8 Login window is not displayed

8.2 When a running task fails

If a task that is in progress fails, resolve the issue that caused it to fail, and then submit the task for execution again. You can re-submit tasks by re-executing or retrying them.

Procedure

1. Select the failed task in the tasks list in the **Tasks** tab or **Debug** tab of the **Tasks** window.
2. View the failed steps in the **Flow** area.
You can view the return value of a failed step in the tool tip that appears when you place your mouse pointer over the step icon.
3. Click the **Show Details** button.
4. In the **Task Details** window, click the **Log** tab and view the task log[#].
5. Identify which plug-in failed from the information related to plug-in definitions in the task log.
6. In the task log, identify the cause of the problem from the return value of the plug-in.
If a content plug-in has failed, view the topic on return values of content plug-ins in the *JP1/Automatic Operation Service Template Developer's Guide*, and take the appropriate action for the problem the return code represents. For basic plug-ins, view the topic for each basic plug-in in the manual *JP1/Automatic Operation Service Template Reference*.
7. Take action according to the error messages and exception details in the task log.
8. Review the requirements for the service template, and make sure that your environment fulfills the requirements.
You can find the requirements for specific service templates in the manual *JP1/Automatic Operation Service Template Reference*.
9. After eliminating the cause of the problem, re-submit the failed task.

#

You can download the task log by clicking the **Download** button on the **Log** tab of the **Task Details** window.

Related topics

- [8.9.3 Task log details](#)
 - [5.9 Redoing tasks](#)
-

8.3 When a task does not finish

When all of the conditions below are true, commands executed on a target device will not stop executing. This might cause some tasks to remain in In Progress status.

- The OS of the target device is UNIX
- The command line executed on the target device contains non-ASCII characters
- The criteria that allow a command line containing non-ASCII characters to be executed in UNIX are not met

If a command executed remotely under these conditions does not finish, check the processing of running steps and plugins in the **Flow** area of the **Tasks** window or the task log. Forcibly stop the task after making sure that doing so will not cause any issues.

Related topics

- [5.8.2 Stopping tasks \(forced stop\)](#)
 - Prerequisites for executing command lines containing non-ASCII characters in UNIX in the JP1/Automatic Operation Service Template Reference
-

8.4 When public key authentication with a Connection Destination fails

If an attempt to undergo public key authentication with a Connection Destination fails, save the following information and make sure that it is correct.

- Public key files
- Private key files
- Passphrases for private keys

Procedure

Using an SSH client product that supports public key authentication, check whether you can successfully perform authentication using the user ID, private key, and passphrase set for the target device on the JP1/AO server.

If authentication fails, there might be a problem with the public key, private key, passphrase for the private key, or SSH server. In this case, take remedial action such as re-creating the key or reviewing the SSH server settings.

If you are unable to solve the problem, contact customer support.

8.5 When you cannot access the JP1/AO GUI (in Windows)

If you are unable to access the GUI for a Windows edition of JP1/AO, follow the procedure below.

Procedure

1. Check which JP1/AO components are running by executing the `hcnds64srv` command with the `status` option specified.
2. If the HAutomation Engine Web Service, HBase 64 Storage Mgmt SSO Service, and HBase 64 Storage Mgmt Web SSO Service are running but the HBase 64 Storage Mgmt Web Service is not, a port number might be duplicated. Check the event log.
3. If the event log contains the following entry, review the port number settings used by the JP1/AO server.

Table 8-2: Log entry

Parameter	Content
Level	Error
Source	CosminexusHTTPServer
Message	The service named HBase 64 Storage Mgmt Web Service reported the following error: >>> (OS 10048)Only one usage of each socket address (protocol/network address/port) is normally permitted. : make_sock: could not bind to address [::]:[<i>duplicated-port-number</i>]

8.6 When you cannot log in to JP1/AO

If you are unable to log in to JP1/AO, review the relevant settings by performing the steps below:

- Make sure the user ID and password are specified correctly.
- Make sure the user is registered as a JP1/AO user[#].
- Make sure a service group and role are assigned to the user group to which the user belongs[#].
- Make sure the user account is unlocked[#].

#

These tasks require User Management permission. Ask a user with User Management permission to check for you.

If you cannot display the **Login** window, see [8.7 When JP1/AO does not start](#) and [8.8 Login window is not displayed](#).

8.7 When JP1/AO does not start

If you are unable to start JP1/AO, follow the procedure below.

Procedure when the Login window does not appear

1. Check whether the JP1/AO services are running by executing the `hcmds64srv` command with the `status` option specified.
If the JP1/AO services are not running, start the services.
2. Use your Web browser to make sure there are no issues affecting communication with the JP1/AO server.
If a firewall is in place, configure the firewall to permit traffic to and from JP1/AO.
3. Make sure that your Web browser is supported by JP1/AO.
For details on the Web browsers supported by JP1/AO, see the release notes for JP1/AO.
4. View the log information, and take action according to the contents of any error messages.
5. If there are no error messages in the log information, or you are unable to resolve the problem despite following the steps above, execute the `hcmds64getlogs` command to acquire log data and then contact the system administrator.

Procedure when JP1/AO does not start

1. Make sure that sufficient memory, disk space, and other resources are available on the JP1/AO server.
2. Make sure that JP1/AO is installed on supported hardware running a supported operating system.
For details on the hardware and operating systems that JP1/AO supports, see the JP1/AO release notes.
3. View the log information, and take action according to the contents of any error messages.
4. If there are no error messages in the log information, or you are unable to resolve the problem despite following the steps above, execute the `hcmds64getlogs` command to acquire log data and then contact the system administrator.

Related topics

- The manual JP1/Automatic Operation Messages
 - [8.9 Detailed description of log information](#)
-

8.8 Login window is not displayed

If an internal component fails to start, the **Login** window is not displayed.

To determine whether internal components have started successfully, perform either of the following operations:

- Check the OS event log.
- Execute the `hcnds64srv` command with the `status` option specified.

Internal components might fail to start due to an error in changing a setting.

If this problem occurs after changing a setting, make sure that there is no error in the changed setting.

8.9 Detailed description of log information

JP1/AO outputs three types of log information in the course of operation:

- Task logs
Information is output to the task log each time a task is executed in the JP1/AO system. JP1/AO generates task log entries indicating when tasks start and stop, and entries containing information about called plug-ins and errors.
You can view and download the contents of the task log from the **Task Details** dialog box in the **Tasks** tab.
- Integrated trace log, event log, and syslog
These logs record information about the system starting and stopping, and errors that occurred in the system.
- Public log
This log records messages output by JP1/AO, including messages output to the integrated trace log, event log, and syslog, and messages about problems that occurred in JP1/AO functions.

Related topics

- [8.9.3 Task log details](#)
- [8.9.4 Details on integrated trace log, event log, syslog, and public log](#)

8.9.1 Format of log entries

JP1/AO outputs log information in the following format:

Figure 8-1: Format of log information

Serial number	Date	Time	rsvd	Program name	pid	tid	ID	Event type	Message text	Linefeed code
---------------	------	------	------	--------------	-----	-----	----	------------	--------------	---------------

The contents of this log information is described below.

Table 8-3: Contents of log information

No.	Item	Description	Length
1	Serial number	The serial number of the message.	4 bytes
2	Date	The date on which the message was output (in the format <i>yyyy/mm/dd</i>).	10 bytes
3	Time	The time at which the message was output (in the format <i>hh:mm:ss:xxx</i>), where <i>xxx</i> is milliseconds.	12 bytes
4	rsvd	A reserved space.	4 bytes
5	Program name	The name of the program. If the program name is longer than 16 characters, an abbreviated but recognizable form of the product name is used.	16 bytes
6	pid	In the integrated trace log, this item is the process ID assigned by the OS. In product log data specific to JP1/AO, this item is the hash value assigned by the JavaVM to the Runtime instance.	8 bytes

No.	Item	Description	Length
7	tid	In the integrated trace log, this item is a value derived from the thread name. In product log data specific to JP1/AO, this item is the hash value assigned by the JavaVM to the Thread instance.	8 bytes
8	ID	A message ID including a prefix that identifies the product.	16 bytes
9	Event type	The type of event that caused the message to be output.	4 bytes
10	Message text	The text of the message.	4,095 bytes or less
11	Linefeed code	CRLF: 0x0D, 0x0A	4 bytes

8.9.2 Collecting log information

The following describes how to acquire log information.

Preparation

Log in to the JP1/AO server as a user with Administrators or root permission for the OS

Procedure

Execute the `hcnds64getlogs` command.

Log information is output to a file with the following name in the specified folder. Hitachi does not disclose the content or format of these files.

In Windows:

- Automation_1st_log.jar
- *output-folder*\Automation_log.jar
- *output-folder*\HiCommand_log_64.jar
- *output-folder*\HiCommand_log_64.hdb.jar
- *output-folder*\HiCommand_log_64.db.jar
- *output-folder*\HiCommand_log_64.csv.jar

In Linux:

- *output-folder*/HiCommand_log_64.jar
- *output-folder*/HiCommand_log_64.hdb.jar
- *output-folder*/HiCommand_log_64.db.jar
- *output-folder*/HiCommand_log_64.csv.jar

In a cluster environment, acquire log information on the active and standby servers.

8.9.3 Task log details

To the task log, JP1/AO outputs information about tasks starting and stopping, called plug-ins, return values of plug-ins, and other activity.

JP1/AO creates a task log folder for each task it executes. You can view and download the contents of the task log from the **Task Details** dialog box in the **Tasks** tab.

You can specify the maximum size (in KB) of the task log file in the user-specified properties file (config_user.properties). If the task log file size exceeds the maximum value, task log data is overwritten from the oldest data.

(1) Name and output location of task log files

The name and location of task log files are as follows:

- In Windows
JP1/AO-installation-folder\data\task\task-ID\task_task-ID_1.log
In a cluster environment, interpret *JP1/AO-installation-folder* as *shared-folder-name\jp1ao*.
- In Linux
/var/opt/jp1ao/data/task/task-ID/task_task-ID_1.log
In a cluster environment, interpret */var/opt/jp1ao* as *shared-folder-name/jp1ao*.

(2) Information output to task log

The table below shows the information output to the task log, followed by an example of a task log entry.

Table 8-4: Contents of task log

Output sequence	Type	Example message
1	Basic information	<i>message-ID</i> Plug-in execution has started.
2	Plug-in definition	<i>message-ID</i> Plug-in definition information
3	Property (before plug-in execution)	<i>message-ID</i> Property information at plug-in execution
4	Basic information	<i>message-ID</i> Plug-in execution has completed.
5	Property (after plug-in execution)	<i>message-ID</i> Property information after plug-in execution
6	Standard output	Standard output of plug-in execution results
--	Error information	<i>message-ID</i> An error occurred during plug-in execution.
--	Debug information	<i>message-ID</i> Arbitrary debug information
--	Messages related to task operations	<ul style="list-style-type: none">• <i>message-ID</i> Task execution was stopped.• <i>message-ID</i> Task execution was forcibly stopped.• <i>message-ID</i> The task was retried from the failed step.• <i>message-ID</i> The task was retried from the step after the failed step.
--	Messages related to debug operations	<ul style="list-style-type: none">• <i>message-ID</i> Processing stopped before (or after) execution of plug-in processing.• <i>message-ID</i> Plug-in processing was resumed.• <i>message-ID</i> Changes were applied to plug-in properties.• <i>message-ID</i> Changes were applied to plug-in return values.

Legend:

--: Output when a failure occurs, or when a task or debug operation is performed.

The following is an example of task log output:

```
KNAE08001-I Plug-in execution started (Task name: JP1/AJS root jobnet migration_multi_20131107141827,Task ID:5859,Step ID:/getRootJobnetKeyList,Execution ID:@A571).
KNAE08005-I vendor=com.hitachi.software.dna.cts.jp1
KNAE08005-I name=osReadCSVExcelFileColumn
KNAE08005-I version=01.10.00
:
KNAE08006-I property=plugin.destinationHost, value=192.168.1.1
KNAE08111-I Remote command execution started.
KNAE08102-I Remote command execution succeeded (Command: osReadCSVExcelFileColumn.bat "C:\AJS.xlsx" "Sheet 1" "1" "" "" "" "" 2>&1).
:
KNAE08010-I <Standard output (first line)>
KNAE08010-I <Standard output (second line)>
:
KNAE08010-I <Standard output(nth line)>
KNAE08002-I Plug-in execution finished (Task name: Obtain list of JP1/Cm2 monitored nodes,Task ID:3969,Step ID:/getNodeListFileJP1Cm2,Execution ID:@A105,Plug-in return value:0).
```

(3) Task log output levels

You can set the output level for task logs in a Service Share Property.

The output level setting determines what information is output to the task log. The following table describes the information output at each output level:

Table 8-5: Task log output levels

Output level	Output information								Task-related	Debugger function	Description
	Error information	Basic information	Plug-in definitions (before plug-in execution)	Properties (before plug-in execution)	Plug-in definition (after plug-in execution)	Properties (after plug-in execution)	Standard output	Debug information			
0	Y	N	N	N	N	N	N	N	N	N	Only error information is output.
10	Y	Y	N	N	Y/N	Y/N	Y/N	N	Y	Y	When the return value of the plug-in is 0, JP1/AO outputs error information and basic information. When the return value of the plug-in is other than 0, JP1/AO outputs error information, basic information, plug-in definitions (after plug-in execution), properties (after plug-in execution), and standard output.

Output level	Output information								Task-related	Debugger function	Description
	Error information	Basic information	Plug-in definitions (before plug-in execution)	Properties (before plug-in execution)	Plug-in definition (after plug-in execution)	Properties (after plug-in execution)	Standard output	Debug information			
20	Y	Y	Y	N	N	Y	Y/N	N	Y	Y	When the return value of the plug-in is 0, JP1/AO outputs error information, basic information, plug-in definitions (before plug-in execution), and properties (after plug-in execution). When the return value of the plug-in is other than 0, JP1/AO outputs error information, basic information, plug-in definitions (before plug-in execution), properties (after plug-in execution), and standard output.
30	Y	Y	Y	Y [#]	N	Y [#]	Y	N	Y	Y	JP1/AO outputs all information except plug-in definitions (after plug-in execution) and debug information.
40	Y	Y	Y	Y [#]	N	Y [#]	Y	Y	Y	Y	JP1/AO outputs all information except plug-in definitions (after plug-in execution) for debugging purposes.

Legend:

Y: Output according to the log level of the message when an event occurs that generates message output.

N: Not output.

Y/N: Output when the return value of the plug-in is other than 0.

#

When the data type of the property is password, ***** is output as the property value.

When the value of a property with the Composite data type is 4,097 characters or longer, an ellipsis (...) replaces the 4,097th and subsequent characters.

Related topics

- [6.7.3 Editing Service Share Properties from the System Settings area](#)
- [6.7.5 List of shared built-in service properties](#)

8.9.4 Details on integrated trace log, event log, syslog, and public log

(1) Name and location of integrated trace log files

The name and location of integrated trace log files are as follows:

- In Windows
`system-drive\Program Files\Hitachi\HNTRLib2\spool\hntr2[n].log`
- In Linux
`/var/opt/hitachi/HNTRLib2/spool/hntr2[n].log`

[*n*] is an integer from 1 to 4.

(2) Location of event log and syslog files and their viewing method

The files associated with the event log and syslog are in the location specified in the OS settings.

You can view the contents of the event log with the Windows Event Viewer.

(3) Name and location of public log file

The name and location of public log files are as follows. Public log files are output in WRAP2 format.

- Location
 - In Windows
`JP1/AO-installation-folder\logs`
In a cluster environment, interpret *JP1/AO-installation-folder* as *shared-folder-name\jp1ao*.
 - In Linux
`/var/opt/jp1ao/logs`
In a cluster environment, interpret `/var/opt/jp1ao` as *shared-folder-name/jp1ao*.
- File name
`Server[n].log`
A message is output when a JP1/AO service is started, and messages are output as needed while the JP1/AO service is running.
`Command_ command-name[n].log`
A message is output when the corresponding command is executed.
[*n*] is an integer.

Appendix

A. Reference Information

This appendix provides reference information for users of JP1/AO.

A.1 List of limits

The table below shows the limits that apply to various JP1/AO features.

For details on the limits that apply to a specific command or to a service template or plug-in provided by JP1/AO, see the topic for that command, service template, or plug-in.

Table A-1: List of limits

Category	Item	Limit	Specifiable characters
Connections to JP1/AO	The number of terminals that can connect to an instance of JP1/AO on the same server.	64 terminals	--
Windows	Maximum number of main windows that can be opened on a given host	2 windows	--
	Maximum number of Users and Permissions windows that can be opened from one main window	1 window	--
	Maximum number of User Profile windows that can be opened from one main window	1 window	--
	Character string specified in a query parameter of a direct-access URL	1,024 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)
	Size of the property files or the external resource provider definition files imported from windows	200 MB	--
Users	Character string specified as a user ID of a JP1/AO user	256 characters	Single-byte alphanumeric characters, exclamation marks (!), hash marks (#), dollar signs (\$), percent signs (%), ampersands (&), single quotation marks ('), left parentheses ((), right parentheses ()), asterisks (*), plus signs (+), hyphens (-), periods (.), equal signs (=), at marks (@), backslashes (\), carets (^), underscores (_), and vertical bars ()
	Character string specified as a password of a JP1/AO user	256 characters	Single-byte alphanumeric characters, exclamation marks (!), hash marks (#), dollar signs (\$), percent signs (%), ampersands (&), single quotation marks ('), left parentheses ((), right parentheses ()), asterisks (*), plus signs (+), hyphens (-), periods (.), equal signs (=), at marks (@), backslashes (\), carets (^), underscores (_), and vertical bars ()
	Character string specified as a full name of a JP1/AO user	80 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F) You cannot specify two or more consecutive dollar signs (\$).

Category	Item	Limit	Specifiable characters
Users	Character string specified as an email address of a JP1/AO user	255 bytes	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)
	Character string specified as a description of a JP1/AO user	80 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)
	Character string specified as a user group name	64 characters	<p>You can specify any characters except the following:</p> <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Double quotation marks ("), asterisks (*), commas (,), forward slashes (/), colons (:), semicolons (;), left angle brackets (<), right angle brackets (>), question marks (?), vertical bars (), backslashes (\), and multi-byte characters <p>You cannot specify an existing user group name or a name that consists only of single or double-byte spaces.</p>
	Character string specified as a description of a user group	80 characters	<p>You can specify any characters except the following:</p> <ul style="list-style-type: none"> Control characters Surrogate pair characters
Email notification	Character string specified as the IP address or host name of an SMTP server	0 to 255 characters	<p>You can specify any characters except the following:</p> <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Surrogate pair characters
	Port number used for connections with SMTP server	1 to 65535	Numerals
	Character string specified as the user ID for an SMTP server	255 character	<p>You can specify any characters except the following:</p> <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Surrogate pair characters
	Character string specified as the password for an SMTP server	1,024 characters	<p>You can specify any characters except the following:</p> <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Surrogate pair characters
	Character string specified as a recipient of notification emails	255 characters	<p>You can specify any characters except the following:</p> <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Surrogate pair characters
Web service connection-destination definition	Character string that can be specified as a category	32 characters	Halfwidth alphanumeric characters, hyphens (-), underscores (_), and periods (.)
	Character string that can be specified as the name of a connection destination	64 characters	Halfwidth alphanumeric characters, hyphens (-), underscores (_), and periods (.)
	Character string that can be specified as an IP address or a host name	64 characters	<p>You can specify any characters except the following:</p> <ul style="list-style-type: none"> Control characters (\u0000 to \u001F, and \u007F to \u009F) Surrogate pair characters
	Port number	1 to 65,535	Numerals
	Character string that can be specified as a user ID	256 characters	<p>You can specify any characters except the following:</p> <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Surrogate pair characters
	Character string that can be specified as a password	256 characters	<p>You can specify any characters except the following:</p> <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Surrogate pair characters

Category	Item	Limit	Specifiable characters
Web service connection-destination definition	Character string that can be specified as the IP address or host name of a proxy server	64 characters	You can specify any characters except the following: <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Surrogate pair characters
	Port number of a proxy server	1 to 65,535	Numerals
	Character string that can be specified as a user ID for a proxy server	256 characters	You can specify any characters except the following: <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Surrogate pair characters
	Character string that can be specified as a password for a proxy server	256 characters	You can specify any characters except the following: <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Surrogate pair characters
Connection Destinations	Maximum number of Connection Destinations	10,000	--
	Number of retained successful authentications	10,000	--
	Character string specified as the host name of a connection destination	1,024 characters	Characters used in the regular expression format supported by Java SE5
	Character string specified as an IP address when the connection type is IPv4	1,024 characters	Single-byte numerals, asterisks (*), hyphens (-), and periods (.)
	Character string specified as an IP address when the connection type is IPv6	1,024 characters	<ul style="list-style-type: none"> Characters specifiable in RFC 2373-compliant unicast addresses Characters specifiable in RFC 2373-compliant network prefixes Asterisks (*)
	Character string specified as the user ID for a Connection Destination	256 characters	Single-byte alphanumeric characters, exclamation marks (!), hash marks (#), dollar signs (\$), percent signs (%), ampersands (&), single quotation marks ('), left parentheses ((), right parentheses ()), asterisks (*), plus signs (+), hyphens (-), periods (.), equal signs (=), at marks (@), backslashes (\), carets (^), underscores (_), and vertical bars ()
	Character string specified as the password for a Connection Destination	256 characters	Single-byte alphanumeric characters, exclamation marks (!), hash marks (#), dollar signs (\$), percent signs (%), ampersands (&), single quotation marks ('), left parentheses ((), right parentheses ()), asterisks (*), plus signs (+), hyphens (-), periods (.), equal signs (=), at marks (@), backslashes (\), carets (^), underscores (_), and vertical bars ()
	Character string specified as the superuser password for a Connection Destination	256 characters	Any ASCII characters except control characters (\u0000 to \u001F and \u007F to \u009F)
External authentication	Character string specified as a Distinguished Name used when linking with Active Directory	250 characters	Characters usable in RFC 4514-compliant identifiers
Service groups	Character string specified as a service group name	80 characters When linking with JP1/Base, specify no more than 63 characters.	You can specify any characters except the following: <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Surrogate pair characters

Category	Item	Limit	Specifiable characters
Service groups	Character string specified as a service group name	You cannot specify All Resources.	You can specify any characters except the following: <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Surrogate pair characters
	Character string specified as a description of a service group	80 characters	You can specify any characters except the following: <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Surrogate pair characters
Services	Character string specified as a service name	128 characters	You can specify any characters except the following: <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Surrogate pair characters
	Character string specified as a description of a service	1,024 characters	You can specify any characters except the following: <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Surrogate pair characters
Tasks	Character string specified as a task name	128 characters	You can specify any characters except the following: <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Surrogate pair characters
	Character string specified as a description of a task	1,024 characters	You can specify any characters except the following: <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Surrogate pair characters
	Execution date and time specifiable when submitting a task for scheduled execution	00:00 January 1st, 1994 to 23:59 December 31st, 2036	You can specify the time using single-byte numerals. The execution date is selected from a calendar.
	Execution date specifiable when submitting a recurring task for execution	January 1st, 1994 to December 31st, 2036	Select the date from the calendar.
	Execution time specifiable when submitting a recurring task for execution	00:00 to 23:59	Single-byte numerals
	Character string input in a Notes field	1,024 characters	Characters supported in XML 1.0
Tags	Character strings specified as tag names	256 characters Note that this limit of 256 characters applies to the total number of characters in all tag names assigned to the service or service template, including the commas used as delimiting characters between tags.	You can specify any characters except the following: <ul style="list-style-type: none"> Control characters Commas (,), forward slashes (/), and backslashes (\) Surrogate pair characters Leading and trailing single-byte spaces are ignored.
	Character string specified as a tag group name	256 characters	You can specify any characters except the following: <ul style="list-style-type: none"> Control characters Surrogate pair characters Leading and trailing single-byte spaces are ignored.
	Maximum number of tags that can be registered	5,000 tags	--

Category	Item	Limit	Specifiable characters
Tags	Maximum number of tag groups that can be registered	5,000 tag groups	--
Service templates	Size of service template files imported from windows	100 MB	--
	Character string specified as a service template ID	64 characters	<p>Single-byte alphanumeric characters, hyphens (-), underscores (_), and periods (.).</p> <p>An error occurs in the following circumstances:</p> <ul style="list-style-type: none"> The service template ID contains any of the following reserved words: CON, PRN, AUX, CLOCK\$, NUL, COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9, LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, or LPT9 The service template ID begins or ends with a period (.)
	Character string specified as a service template version	8 characters	Single-byte numerals and periods (.)
	Character string specified as a vendor ID	64 characters	<p>Single-byte alphanumeric characters, hyphens (-), underscores (_), and periods (.).</p> <p>An error occurs in the following circumstances:</p> <ul style="list-style-type: none"> The vendor ID contains any of the following reserved words: CON, PRN, AUX, CLOCK\$, NUL, COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9, LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, or LPT9 The vendor ID begins or ends with a period (.) The vendor ID begins with <code>com.hitachi.software.dna</code>
	Character string specified as a service template name	64 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)
	Character string specified as a vendor name	64 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)
	Character string specified as a description of a service template	1,024 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)
	Character string specified as the file name of a custom file	64 characters	<p>You can specify any characters except the following:</p> <ul style="list-style-type: none"> Surrogate pair characters Multi-byte characters
	Character string specified as the file name (relative path) on the Service Details window	64 characters	<p>ASCII characters.</p> <p>However, you cannot specify the following characters:</p> <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Question marks (?), asterisks (*), double quotation marks ("), right angle brackets (>), left angle brackets (<), vertical bars (), colons (:), or backslashes (\) Multi-byte characters <p>An error occurs in the following circumstances:</p> <ul style="list-style-type: none"> The name of a file or folder contains any of the following reserved words: CON, PRN, AUX, CLOCK\$, NUL, COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9, LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, or LPT9 The file name begins or ends with a forward slash (/) or period (.) Two or more consecutive forward slashes (//) are entered

Category	Item	Limit	Specifiable characters
Service templates	Character string specified as a service overview file name (relative path)	64 characters	<p>ASCII characters.</p> <p>However, you cannot specify the following characters:</p> <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Question marks (?), asterisks (*), double quotation marks ("), right angle brackets (>), left angle brackets (<), vertical bars (), colons (:), or backslashes (\) Multi-byte characters <p>An error occurs in the following circumstances:</p> <ul style="list-style-type: none"> The name of a file or folder contains any of the following reserved words: CON, PRN, AUX, CLOCK\$, NUL, COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9, LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, or LPT9 The file name begins or ends with a forward slash (/) or period (.) Two or more consecutive forward slashes (//) are entered
	Character string specified as a property key	128 characters	<p>Single-byte alphanumeric characters, hyphens (-), underscores (_), and periods (.).</p> <p>You cannot specify a property key that begins with <code>reserved.</code> (in lower-case letters).</p>
Service properties (including variables)	Character string specified as a property name	128 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)
	Character string specified as a description of a service property	1,024 characters	No restrictions.
	Character string specified as a value of a service property whose data type is <code>string</code>	1,024 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)
	Character string specified as a value of a service property whose data type is <code>integer</code>	-2147483648 to 2147483647	Single-byte numerals and hyphens (-)
	Character string specified as a value of a service property whose data type is <code>double</code>	17 characters (-9999999999999999 to 9999999999999999)	Single-byte numerals, hyphens (-), and periods (.)
	Character string specified as a value of a service property whose data type is <code>date</code>	1900-01-01 to 2100-12-31	The value is selected from the calendar.
	Character string specified as a value of a service property whose data type is <code>password</code>	1,024 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)
	Character string specified as a value of a service property whose data type is <code>list</code>	1,024 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)
	Size of a value specified in a service property whose data type is <code>composite</code>	30 MB	No restrictions.
	Character string specified as a list item	1,024 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)

Category	Item	Limit	Specifiable characters
Flows	Number of hierarchical levels in a flow (including the levels in the service template on which the service component is based)	25 levels	--
	Number of steps in one level of a flow	80 steps	--
Steps	Number of steps per service template	320 steps	--
	Character string specified as a step ID	30 characters	Single-byte alphanumeric characters, hyphens (-), underscores (_), and periods (.). You cannot specify a step ID that begins with a period (.).
	Character string specified as a step name	64 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)
	Character string specified as a description of a step	1,024 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)
	Character string specified as a threshold condition for executing subsequent steps	0 to 255	Single-byte numerals
	Character string specified as a warning threshold condition for executing subsequent steps	1 to 255	Single-byte numerals
Step properties	Character string specified as the value of a step property (when mapping is configured)	1,024 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F) However, you can use line feeds (\u000D and \u000A) and tab characters (\u0009).
	Character string specified as a value of a step property (when specifying the value directly)	From the minimum value of the input property to the maximum	Single-byte alphanumeric characters and hyphens (-)
Property groups	Character string specified as a property group ID	32 characters	Single-byte alphanumeric characters, hyphens (-), underscores (_), and periods (.).
	Character string specified as a property group name	128 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)
	Character string specified as a description of a property group	1,024 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)
Plug-ins	Number of plug-ins that can be added to JP1/AO. This value is the total number of development plug-ins and release plug-ins. It does not include basic plug-ins.	5,000 plug-ins	--
	Character string specified as a plug-in ID	64 characters	Single-byte alphanumeric characters, hyphens (-), underscores (_), and periods (.). An error occurs in the following circumstances: <ul style="list-style-type: none"> The ID contains any of the following reserved words:

Category	Item	Limit	Specifiable characters
Plug-ins	Character string specified as a plug-in ID	64 characters	CON, PRN, AUX, CLOCK\$, NUL, COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9, LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, or LPT9 <ul style="list-style-type: none"> The ID begins or ends with a period (.)
	Character string specified as a plug-in version	8 characters	Single-byte numerals and periods (.)
	Character string specified as a vendor ID	64 characters	Single-byte alphanumeric characters, hyphens (-), underscores (_), and periods (.) An error occurs in the following circumstances: <ul style="list-style-type: none"> The ID contains any of the following reserved words: CON, PRN, AUX, CLOCK\$, NUL, COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9, LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, or LPT9 The ID begins or ends with a period (.) The ID begins with com.hitachi.software.dna
	Character string specified as a plug-in name	64 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)
	Character string specified as a vendor name	64 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)
	Character string specified as a description of a plug-in	1,024 characters	No restrictions.
	Character string specified as the command line of a remote command	8,192 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)
	Character string specified as the file name of a script used as a remote command	90 characters	ASCII characters. However, you cannot specify the following characters: <ul style="list-style-type: none"> Control characters (\u0000 to \u001F and \u007F to \u009F) Question marks (?), asterisks (*), double quotation marks ("), right angle brackets (>), left angle brackets (<), vertical bars (), colons (:), backslashes (\), or forward slashes (/) Multi-byte characters Note that you cannot specify a file name that includes any of the following reserved words: CON, PRN, AUX, CLOCK\$, NUL, COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9, LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, or LPT9
	Character string specified as a script used as a remote command	5,000 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F). However, you can use tab characters (\u0009) and line feeds (\u000D and \u000A).
	Character string specified as the execution directory of a remote command	256 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F).
	Character string specified as the name of an environment variable	256 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F).
	Character string specified as the value of an environment variable	2,048 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F).

Category	Item	Limit	Specifiable characters
Plug-ins	Character string specified as an output filter for standard output and standard error output	1,024 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F).
	Character string specified as standard output and standard error output when verifying the output filter	500,000 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F). However, you can use spaces (" \u0020"), tab characters (\u0009), and line feeds (\u000D and \u000A).
Plug-in properties	Character string specified as a property key	128 characters	Single-byte alphanumeric characters, hyphens (-), underscores (_), and periods (.). You cannot specify a property key that starts with <code>reserved.</code> (lower case) or <code>plugin.</code> (lower case).
	Character string specified as a property name	128 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)
	Character string specified as a description of a plug-in property	1,024 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)
	Character string specified as the default value of an input property	1,024 characters	Characters other than control characters (\u0000 to \u001F and \u007F to \u009F)

Legend:

--: Not applicable.

A.2 Using JP1/AO in time zones that observe daylight saving time

When you use JP1/AO in a time zone that observes daylight saving time, the following start times are affected:

- Start times of services submitted for scheduled execution
- Start times of services submitted for recurring execution

The explanation below uses the example of Central Daylight Time (USA and Canada). The start and end times for CDT are as follows:

- Start of daylight saving
2:00:00 on the second Sunday in March
- End of daylight saving
2:00:00 on the first Sunday in November

(1) Transitioning from standard time to daylight saving time

The timing with which tasks start after the system switches from standard time to daylight saving time is determined from the start time set for the task, and the time difference between standard and daylight saving time. When the clock reaches what would be 2:00:00 on the second Sunday in March, it instead jumps to 3:00:00. This means that the time from 2:00:00 to 2:59:59 is skipped over. If you set up a task to start within this period, it will start between 3:00:00 and 3:59:59 daylight saving time. This means that the task will start an hour later in relative terms.

If you set up a task to start at 3:00:00 or later while in standard time, it will still start at 3:00:00 or later after the transition to daylight saving has taken place.

The following table shows how tasks are scheduled around the transition from standard time to daylight saving time:

Table A-2: Scheduling at the transition from standard time to daylight saving time

Scheduled start time	1:59:59 or earlier	2:00:00 to 2:59:59	3:00:00 or later
Actual start time	Executed at 1:59:59 or earlier standard time	Executed at 3:00:00 to 3:59:59 daylight saving time	Executed at 3:00:00 or later daylight saving time

(2) Transitioning from daylight saving time to standard time

The timing with which tasks start after the system switches from daylight saving time to standard time is determined from the start time set for the task, and the time difference between standard and daylight saving time. When the time reaches what would be 2:00:00 on the first Sunday of November, the clock jumps back to 1:00:00 standard time. The result is an extra hour after switching to standard time, from 1:00:00 to 2:00:00. Tasks that were scheduled to start between 1:00:00 and 1:59:59 start at the scheduled time while still in standard time, and do not start in daylight saving time. If you schedule a task to start at 2:00:00 or later while in daylight saving time, it will still start at 2:00:00 or later after the transition to standard time has taken place.

The following table shows how tasks are scheduled around the transition from daylight saving time to standard time:

Table A-3: Scheduling at the transition from daylight saving time to standard time

Scheduled start time	0:59:59 or earlier	1:00:00 to 1:59:59	2:00:00 or later
Actual start time	Executed at 0:59:59 or earlier daylight saving time	Executed between 1:00:00 and 1:59:59 standard time	Executed at 2:00:00 or later standard time

A.3 List of JP1 events output by JP1/AO

(1) List of JP1 events

The table below lists the JP1 events output by JP1/AO.

Table A-4: JP1 events

Event ID	Event name	Output when	Message ID
0x00007000	Task status detection event (Waiting for Input)	A task enters Waiting for Input status	KNAE01317-I
	Task status detection event (Long Running)	A task enters Long Running status	KNAE01351-I
	Task status detection event (Completed)	A task enters Completed status	KNAE01315-I
	Task status detection event (Failed)	A task enters Failed status	KNAE01318-E
	Task status detection event (Canceled)	A task enters Canceled status	KNAE01322-I
0x00007010	JP1/AO start event	The JP1/AO service starts	KNAE03020-I
	JP1/AO stop event	The JP1/AO service stops	KNAE03021-I
0x00007030	Database error detection event	A database error is detected	KNAE01321-E

(2) JP1 event attributes

The table below lists the attributes of the JP1 events output by JP1/AO.

Table A-5: Attributes of task status detection event (Waiting for Input)

Attribute type	Item	Attribute name	Value
Basic attributes	Event ID	ID	0x00007000
	Message	MESSAGE	KNAE01317
Extended attributes (common information)	Severity	SEVERITY	Information
	User name	USER_NAME	<i>user-who-submitted-service-for-execution</i>
	Product name	PRODUCT_NAME	/HITACHI/JP1/AO
	Object type	OBJECT_TYPE	/HITACHI/JP1/AO/TASK
	Object name	OBJECT_NAME	<i>task-name</i>
	Root object type	ROOT_OBJECT_TYPE	/HITACHI/JP1/AO/SERVICE
	Root object name	ROOT_OBJECT_NAME	<i>service-name</i>
	Object ID	OBJECT_ID	<i>task-ID</i>
	Occurrence	OCCURRENCE	WAITING_RESPONSE
	Start date and time	START_DATE	<i>date-and-time-when-task-starts</i>
	End date and time	END_DATE	<i>date-and-time-when-task-ends</i>
Extended attributes (event-specific information)	Service group name	RESOURCE_GROUP	<i>service-group-name</i>
	Task type	TASK_KIND	<i>task-type</i>
	Tag	SERVICE_CATEGORY	<i>tag</i>
	Task status	TASK_STATUS	<i>task-status</i>
	Scheduled start date and time	PLANNED_START_DATE	<i>scheduled-start-date-and-time</i> ^{#1}
	Date and time when task submitted for execution	EXECUTION_DATE	<i>execution-start-date-and-time</i>
	Recurrence pattern	SCHEDULE_PERIOD	<i>recurrence-pattern</i> ^{#2}
	Recurrence time	SCHEDULE_TIME	<i>recurrence-time</i> ^{#2}
	Recurrence start date	SCHEDULE_START_DATE	<i>recurrence-start-date</i> ^{#2}
	URL where information about the task can be viewed	TASK_DETAILS_URL	<i>URL-for-information-about-task</i>

#1

Output for recurring tasks and tasks submitted for scheduled execution.

#2

Output for recurring tasks.

Table A-6: Attributes of task status detection event (Long Running)

Attribute type	Item	Attribute name	Value
Basic attributes	Event ID	ID	0x00007000
	Message	MESSAGE	KNAE01351
Extended attributes (common information)	Severity	SEVERITY	Information
	User name	USER_NAME	<i>user-who-submitted-service-for-execution</i>
	Product name	PRODUCT_NAME	/HITACHI/JP1/AO
	Object type	OBJECT_TYPE	/HITACHI/JP1/AO/TASK
	Object name	OBJECT_NAME	<i>task-name</i>
	Root object type	ROOT_OBJECT_TYPE	/HITACHI/JP1/AO/SERVICE
	Root object name	ROOT_OBJECT_NAME	<i>service-name</i>
	Object ID	OBJECT_ID	<i>task-ID</i>
	Occurrence	OCCURRENCE	LONG_RUNNING
	Start date and time	START_DATE	<i>date-and-time-when-task-starts</i>
	End date and time	END_DATE	<i>date-and-time-when-task-ends</i>
Extended attributes (event-specific information)	Service group name	RESOURCE_GROUP	<i>service-group-name</i>
	Task type	TASK_KIND	<i>task-type</i>
	Tag	SERVICE_CATEGORY	<i>tag</i>
	Task status	TASK_STATUS	<i>task-status</i>
	Scheduled start date and time	PLANNED_START_DATE	<i>scheduled-start-date-and-time</i> ^{#1}
	Date and time when task submitted for execution	EXECUTION_DATE	<i>execution-start-date-and-time</i>
	Recurrence pattern	SCHEDULE_PERIOD	<i>recurrence-pattern</i> ^{#2}
	Recurrence time	SCHEDULE_TIME	<i>recurrence-time</i> ^{#2}
	Recurrence start date	SCHEDULE_START_DATE	<i>recurrence-start-date</i> ^{#2}
	URL where information about the task can be viewed	TASK_DETAILS_URL	<i>URL-for-information-about-task</i>

#1

Output for recurring tasks and tasks submitted for scheduled execution.

#2

Output for recurring tasks.

Table A-7: Attributes of task status detection event (Completed)

Attribute type	Item	Attribute name	Value
Basic attributes	Event ID	ID	0x00007000

Attribute type	Item	Attribute name	Value
Basic attributes	Message	MESSAGE	KNAE01315
Extended attributes (common information)	Severity	SEVERITY	Information
	User name	USER_NAME	<i>user-who-submitted-service-for-execution</i>
	Product name	PRODUCT_NAME	/HITACHI/JP1/AO
	Object type	OBJECT_TYPE	/HITACHI/JP1/AO/TASK
	Object name	OBJECT_NAME	<i>task-name</i>
	Root object type	ROOT_OBJECT_TYPE	/HITACHI/JP1/AO/SERVICE
	Root object name	ROOT_OBJECT_NAME	<i>service-name</i>
	Object ID	OBJECT_ID	<i>task-ID</i>
	Occurrence	OCCURRENCE	END
	Start date and time	START_DATE	<i>date-and-time-when-task-started</i>
	End date and time	END_DATE	<i>date-and-time-when-task-ended</i>
Extended attributes (event-specific information)	Service group name	RESOURCE_GROUP	<i>service-group-name</i>
	Task type	TASK_KIND	<i>task-type</i>
	Tag	SERVICE_CATEGORY	<i>Tag</i>
	Task status	TASK_STATUS	<i>task-status</i>
	Scheduled start date and time	PLANNED_START_DATE	<i>scheduled-start-date-and-time</i> ^{#1}
	Date and time task submitted	EXECUTION_DATE	<i>execution-start-date-and-time</i>
	Recurrence pattern	SCHEDULE_PERIOD	<i>recurrence-pattern</i> ^{#2}
	Recurrence time	SCHEDULE_TIME	<i>recurrence-time</i> ^{#2}
	Recurrence start date	SCHEDULE_START_DATE	<i>recurrence-start-date</i> ^{#2}
	URL where information about the task can be viewed	TASK_DETAILS_URL	<i>URL-for-information-about-task</i>

#1

Output for recurring tasks and tasks submitted for scheduled execution.

#2

Output for recurring tasks.

Table A-8: Attributes of task status detection event (Failed)

Attribute type	Item	Attribute name	Value
Basic attributes	Event ID	ID	0x00007000
	Message	MESSAGE	KNAE01318

Attribute type	Item	Attribute name	Value
Extended attributes (common information)	Severity	SEVERITY	Error
	User name	USER_NAME	<i>user-who-submitted-service-for-execution</i>
	Product name	PRODUCT_NAME	/HITACHI/JP1/AO
	Object type	OBJECT_TYPE	/HITACHI/JP1/AO/TASK
	Object name	OBJECT_NAME	<i>task-name</i>
	Root object type	ROOT_OBJECT_TYPE	/HITACHI/JP1/AO/SERVICE
	Root object name	ROOT_OBJECT_NAME	<i>service-name</i>
	Object ID	OBJECT_ID	<i>task-ID</i>
	Occurrence	OCCURRENCE	STOP
	Start date and time	START_DATE	<i>date-and-time-when-task-started</i>
	End date and time	END_DATE	<i>date-and-time-when-task-ended</i>
Extended attributes (event-specific information)	Service group name	RESOURCE_GROUP	<i>service-group-name</i>
	Task type	TASK_KIND	<i>task-type</i>
	Tag	SERVICE_CATEGORY	<i>Tag</i>
	Task status	TASK_STATUS	<i>task-status</i>
	Scheduled start date and time	PLANNED_START_DATE	<i>scheduled-start-date-and-time</i> ^{#1}
	Date and time task submitted	EXECUTION_DATE	<i>execution-start-date-and-time</i>
	Recurrence pattern	SCHEDULE_PERIOD	<i>recurrence-pattern</i> ^{#2}
	Recurrence time	SCHEDULE_TIME	<i>recurrence-time</i> ^{#2}
	Recurrence start date	SCHEDULE_START_DATE	<i>recurrence-start-date</i> ^{#2}
	URL where information about the task can be viewed	TASK_DETAILS_URL	<i>URL-for-information-about-task</i>

#1

Output for recurring tasks and tasks submitted for scheduled execution.

#2

Output for recurring tasks.

Table A-9: Attributes of task status detection event (Canceled)

Attribute type	Item	Attribute name	Value
Basic attributes	Event ID	ID	0x00007000
	Message	MESSAGE	KNAE01322
Extended attributes (common information)	Severity	SEVERITY	Information
	User name	USER_NAME	<i>user-who-submitted-service-for-execution</i>

Attribute type	Item	Attribute name	Value
Extended attributes (common information)	Product name	PRODUCT_NAME	/HITACHI/JP1/AO
	Object type	OBJECT_TYPE	/HITACHI/JP1/AO/TASK
	Object name	OBJECT_NAME	<i>task-name</i>
	Root object type	ROOT_OBJECT_TYPE	/HITACHI/JP1/AO/SERVICE
	Root object name	ROOT_OBJECT_NAME	<i>service-name</i>
	Object ID	OBJECT_ID	<i>task-ID</i>
	Occurrence	OCCURRENCE	NORESTART
	Start date and time	START_DATE	<i>date-and-time-when-task-started</i>
	End date and time	END_DATE	<i>date-and-time-when-task-ended</i>
Extended attributes (event-specific information)	Service group name	RESOURCE_GROUP	<i>service-group-name</i>
	Task type	TASK_KIND	<i>task-type</i>
	Tag	SERVICE_CATEGORY	<i>Tag</i>
	Task status	TASK_STATUS	<i>task-status</i>
	Scheduled start date and time	PLANNED_START_DATE	<i>scheduled-start-date-and-time</i> ^{#1}
	Date and time task submitted	EXECUTION_DATE	<i>execution-start-date-and-time</i>
	Recurrence pattern	SCHEDULE_PERIOD	<i>recurrence-pattern</i> ^{#2}
	Recurrence time	SCHEDULE_TIME	<i>recurrence-time</i> ^{#2}
	Recurrence start date	SCHEDULE_START_DATE	<i>recurrence-start-date</i> ^{#2}
	URL where information about the task can be viewed	TASK_DETAILS_URL	<i>URL-for-information-about-task</i>

#1

Output for recurring tasks and tasks submitted for scheduled execution.

#2

Output for recurring tasks.

Table A-10: Attributes of JP1/AO start event

Attribute type	Item	Attribute name	Value
Basic attributes	Event ID	ID	0x00007010
	Message	MESSAGE	KNAE03020
Extended attributes (common information)	Severity	SEVERITY	Information
	User name	USER_NAME	System
	Product name	PRODUCT_NAME	/HITACHI/JP1/AO
	Object type	OBJECT_TYPE	--

Attribute type	Item	Attribute name	Value
Extended attributes (common information)	Object name	OBJECT_NAME	SYSTEM
	Root object type	ROOT_OBJECT_TYPE	--
	Root object name	ROOT_OBJECT_NAME	SYSTEM
	Object ID	OBJECT_ID	--
	Occurrence	OCCURRENCE	START
	Start date and time	START_DATE	<i>date-and-time-when-JP1/AO-started</i>
	End date and time	END_DATE	--

Legend:

--: Not used.

Table A-11: Attributes of JP1/AO stop event

Attribute type	Item	Attribute name	Value
Basic attributes	Event ID	ID	0x00007010
	Message	MESSAGE	KNAE03021
Extended attributes (common information)	Severity	SEVERITY	Information
	User name	USER_NAME	System
	Product name	PRODUCT_NAME	/HITACHI/JP1/AO
	Object type	OBJECT_TYPE	--
	Object name	OBJECT_NAME	SYSTEM
	Root object type	ROOT_OBJECT_TYPE	--
	Root object name	ROOT_OBJECT_NAME	SYSTEM
	Object ID	OBJECT_ID	--
	Occurrence	OCCURRENCE	STOP
	Start date and time	START_DATE	--
	End date and time	END_DATE	<i>date-and-time-when-JP1/AO-stopped</i>

Legend:

--: Not used.

Table A-12: Attributes of database error detection event

Attribute type	Item	Attribute name	Value
Basic attributes	Event ID	ID	0x00007030
	Message	MESSAGE	KNAE01321
Extended attributes (common information)	Severity	SEVERITY	Error
	User name	USER_NAME	System

Attribute type	Item	Attribute name	Value
Extended attributes (common information)	Product name	PRODUCT_NAME	/HITACHI/JP1/AO
	Object type	OBJECT_TYPE	--
	Object name	OBJECT_NAME	SYSTEM
	Root object type	ROOT_OBJECT_TYPE	--
	Root object name	ROOT_OBJECT_NAME	SYSTEM
	Object ID	OBJECT_ID	--
	Occurrence	OCCURRENCE	EXCEPTION
	Start date and time	START_DATE	--
	End date and time	END_DATE	--

Legend:

--: Not used.

A.4 List of email notification settings

To use the email notification feature, you need to set shared built-in service properties and enter settings in the user-specified properties file (config_user.properties) and email notification definition files (mailDefinition_ja.conf, mailDefinition_en.conf, and mailDefinition_zh.conf).

The following table lists the settings required to implement email notification:

Table A-13: List of email notification settings

Item		File where set	Required or optional
SMTP	IP address or host name	Shared built-in service properties	Required
	Port number		Required
	User ID		Required
	Password		Required
Addresses	From ^{#1}		Required
	To		Required
	Cc		Optional
	Bcc		Optional
Notification setting	E-mail notification		Required
Number of retry attempts and retry interval when attempts to send notification emails fail		User-specified properties file (config_user.properties)	Optional ^{#2}
Title and body of email		Email notification definition files (mailDefinition_ja.conf, mailDefinition_en.conf, and mailDefinition_zh.conf)	Optional ^{#2}

#1

Also serves as the reply-to address of notification emails.

#2

Change the values in the user-specified properties file (config_user.properties) and email notification definition files (mailDefinition_ja.conf, mailDefinition_en.conf, and mailDefinition_zh.conf) from the defaults as needed.

Notification emails are encoded in UTF-8. Note that the configuration of the SMTP server (such as character limits) can affect the contents of notification emails. Review the settings of your SMTP server before setting the parameters for email notification.

Related topics

- [6.7.5 List of shared built-in service properties](#)
 - User-specified properties file (config_user.properties) and Email notification definition files (mailDefinition_ja.conf, mailDefinition_en.conf, and mailDefinition_zh.conf) in the JP1/Automatic Operation Configuration Guide
-

A.5 Configuring direct-access URLs

You can use the direct-access URL function to quickly access a specific window after logging in.

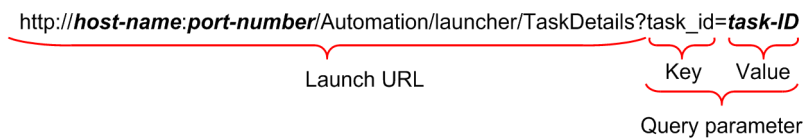
(1) Format and parameters of direct-access URLs

A direct-access URL consists of a launch URL that specifies the window to display, and query parameters that specify the information to display in the window. The launch URL and query parameters are delimited by a question mark (?).

The character string that prefixes the direct-access URL depends on the communication method used between the Web browser and the JP1/AO server. The examples below show the URLs for an HTTP connection. For HTTPS connections, interpret http as https where appropriate.

Figure A-1: Format of direct-access URL (**Task Details** window)

(for **Task Details** dialog box)



If you specify an invalid launch URL, an error output by the Web client or Web server appears instead of the **Login** window.

If you specify a query parameter incorrectly, an error message appears in the **Login** window.

The formats of the direct-access URLs for each dialog box are as follows:

- For the **Service Definition** dialog box (editing)
`http://host-name:port-number/Automation/launcher/ConfigService?sg=service-group-name-of-service&sn=service-name#1`
- For the **Submit Service** dialog box

`http://host-name:port-number/Automation/launcher/SubmitTask?sg=service-group-name-of-service&sn=service-name&tn=task-name&td=task-description&pr_property-key=property-value#1#2`

#1

If you use `rg` instead of `sg` to indicate the service group name, the window will still display correctly. The `rg` parameter was used in JP1/AO version 10-52 and earlier.

#2

You can specify `pr_property-key=property-value` multiple times by separating each parameter with an ampersand (&), in the format `&pr_property-key-1=property-value-1&pr_property-key-2=property-value-2`.

- For the **Task Details** dialog box

`http://host-name:port-number/Automation/launcher/TaskDetails?task_id=task-ID`

Parameters of direct-access URLs

The following table shows the parameters of direct-access URLs:

Table A-14: Parameters of direct-access URLs

No.	Component	Parameter	Description
1	Launch URL	<i>host-name</i>	Specifies the host name or IP address of the JP1/AO server.
2		<i>port-number</i>	Specifies the port number of the JP1/AO Web server.
3	Query parameters	<i>sg=service-group-name-of-service</i>	Specifies the name of the service group that contains the service you want to display, as a URL-encoded ^{#1} character string. The service group of a service is shown in the JP1/AO interface. You can also identify the service group from the value in the Service Group column of the file output by the command that outputs a services list (<code>listservices</code>). You can specify <code>rg</code> instead of <code>sg</code> . The <code>rg</code> parameter was used in JP1/AO version 10-52 and earlier.
4		<i>sn=service-name</i>	Specify the name of the service you want to display, as a URL-encoded ^{#1} character string (using the UTF-8 character set). The name of a service appears in the JP1/AO interface. You can also identify the service name from the value in the Service Name column of the file output by the command that outputs a services list (<code>listservices</code>).
5		<i>task_id=task-ID</i>	Specify the ID of the task you want to display. The ID of a task appears in the JP1/AO interface. You can also identify the task ID from the value in the TaskID column of the file output by the command that outputs a tasks list (<code>listtasks</code>).
6		<i>tn=task-name^{#2}</i>	Specify the task name you want to enter, as a URL-encoded ^{#1} character string (UTF-8). You can specify a maximum of 128 characters.
7		<i>td=task-description^{#2}</i>	Specify the task description you want to enter, as a URL-encoded ^{#1} character string (UTF-8). You can specify a maximum of 1,024 characters.
8		<i>pr_property-key=property-value^{#2}</i>	Specify the property keys and values you want to enter. You can specify this parameter multiple times by using an ampersand as a delimiting character, in the format <code>&pr_property-key-1=property-value-1&pr_property-key-2=property-value-2</code> . Specify the property values as URL-encoded ^{#1} character strings (UTF-8). The property values specified in a direct-access URL only take effect when the URL displays the Submit Service dialog box. They do not apply to the Service Definition dialog box or Set Service Share Property dialog box.

#1

URL encoding is the process of converting characters that are not permitted in URLs to characters that can be interpreted by a Web browser.

An example of a URL used to display the **Service Definition** dialog box (editing) is shown below.

Service settings

Host name: host01

Port number: 22015

Service group name: DefaultServiceGroup

Service name: JP1/AJS jobnet execution registration

URL to specify

http://host01:22015/Automation/launcher/ConfigService?sg=DefaultServiceGroup&sn=JP1%2fAJS%e3%82%b8%e3%83%a7%e3%83%96%e3%83%8d%e3%83%83%e3%83%88%e5%ae%9f%e8%a1%8c%e7%99%bb%e9%8c%b2

#2

The number of characters that can be specified in query parameters is limited. For details on the formula for estimating and checking the number of characters in query parameters, see [A.5\(2\) Estimating the number of characters in query parameters](#).

The following table shows which parameters can be omitted for each type of dialog box.

Table A-15: Parameters that can be omitted

No.	Component	Parameter	Service Definition dialog box (editing)	Submit Service dialog box	Task Details dialog box
1	Launch URL	<i>host-name</i>	N	N	N
2		<i>port-number</i>	N	N	N
3	Query parameters	<i>sg=service-group-name-of-service</i>	N	N	--
4		<i>sn=service-name</i>	N	N	--
5		<i>task_id=task-ID</i>	--	--	N
6		<i>tn=task-name</i>	--	Y	--
7		<i>td=task-description</i>	--	Y	--
8		<i>pr_property-key=property-value</i>	--	Y	--

Legend:

Y: Can be omitted. N: Cannot be omitted. --: Not applicable.

Notes on specifying query parameters

- Use ASCII characters in query parameters.
- You can specify a maximum of 1,024 characters.
- You cannot specify a character string that contains URL-encoded surrogate pair characters or control characters.
- You can specify the following characters in the key of a query parameter:
 - Single-byte alphabetic characters (a to z and A to Z)
 - Single-byte numerals (0 to 9)

- Single-byte hyphens (-)
- Single-byte underscores (_)
- Single-byte periods (.)
- A query parameter that uses valid characters but is not listed in the table will be ignored.
- If you omit the value for an optional query parameter, no value is set for that parameter.
- Consider the security implications before specifying sensitive information such as passwords in a direct-access URL.

Specifying `pr_property-key=property-value`

- As the property key, specify an input property that appears in the **Submit Service** dialog box.
- You must specify a property value if a property is mandatory and has list or boolean as its data type.
- The format in which you specify a query parameter depends on the data type of the property. The following table shows the format for each data type:

Table A-16: Specification format by property data type

Data type of parameter	Format
string	Specify a character string of no more than 1,024 characters.
boolean	Specify true or false.
integer	Specify an integer within a range from -2,147,483,648 to 2,147,483,647.
double	Specify a double precision floating point number from approximately $\pm 4.9 \times 10^{-324}$ to $\pm 1.7 \times 10^{308}$.
date	Specify a date in the format <i>YYYY-MM-DD</i> . You can specify a date from 1900-01-01 to 2100-12-31. <ul style="list-style-type: none"> • <i>YYYY</i>: Year • <i>MM</i>: Month • <i>DD</i>: Day
password	Specify a character string of no more than 1,024 characters.
list	Specify a property value that appears in the pull-down menu.
composite	You cannot use this data type in a query parameter.

(2) Estimating the number of characters in query parameters

You can specify a maximum of 1,024 characters in the query parameters of a direct-access URL. Use the following formula to find out how many characters you can specify.

$$(\text{number-of-characters-in-service-group-name} + \text{characters-in-service-name} + \text{characters-in-task-name} + \text{characters-in-task-description}) + 16 + (\text{characters-in-property-key} + \text{characters-in-property-value} + 5) \times n^{\#} \leq 1,024$$

#: n is the number of properties you specify.

A.6 Outputting audit log data

An audit log is a file kept for security purposes that contains information about the operations performed in a JP1/AO system. An audit log entry includes information about who executed what operation, on what subject, and at what time.

(1) Event types for which audit log data is output

The event type is an identifier that categorizes the events output to the audit log. The following table lists the types of events output to the audit log, and what causes JP1/AO to output each type of event:

Table A-17: Event types output to audit log

No.	Event type	Event name	Event description	Timing of output by JP1/AO	Output message
1	StartStop	Startup or shutdown	JP1/AO has started successfully or failed to start.	The <code>hcmds64srv</code> command is successfully executed with the <code>start</code> option specified.	KNAE23001-I
				An attempt to execute the <code>hcmds64srv</code> command with the <code>start</code> option specified fails.	KNAE23017-E
			JP1/AO has stopped.	The <code>hcmds64srv</code> command is executed with the <code>stop</code> option specified.	KNAE23002-I
2	Authentication	Identification and authentication	User authentication has failed.	Authentication fails at login.	KNAE20001-E
			A user has logged in successfully, failed to log in, or logged out.	A user logs in successfully.	KNAE20002-I
				A user attempts to log in but fails.	KNAE20003-W
				A user logs out.	KNAE20004-I
3	ConfigurationAccess	Configuration definition	Indicates the outcome of an attempt to configure a user group.	A user group was created successfully.	KNAE20006-I
				An attempt to create a user group has failed.	KNAE20007-E
				A user group was edited successfully.	KNAE20008-I
				An attempt to edit a user group has failed.	KNAE20009-E
				A user group was deleted successfully.	KNAE20010-I
				An attempt to delete a user group has failed.	KNAE20011-E
			Indicates the outcome of an attempt to assign user groups.	A user was successfully assigned to a user group.	KNAE20044-I
				An attempt to assign a user to a user group has failed.	KNAE20045-E
			Indicates the outcome of an attempt to define a Connection Destination.	A Connection Destination was successfully defined.	KNAE20012-I
				An attempt to define a Connection Definition has failed.	KNAE20013-E
				A Connection Destination definition was successfully edited.	KNAE20014-I
				An attempt to edit a Connection Destination definition has failed.	KNAE20015-E
				A Connection Destination definition was successfully deleted.	KNAE20016-I

No.	Event type	Event name	Event description	Timing of output by JP1/AO	Output message
3	ConfigurationAccess	Configuration definition	Indicates the outcome of an attempt to define a Connection Destination.	An attempt to delete a Connection Destination definition has failed.	KNAE20017-E
			Indicates the outcome of an attempt to configure a Service Share Property.	A Service Share Property was successfully edited.	KNAE21005-I
				An attempt to edit a Service Share Property failed.	KNAE21006-E
			Indicates the outcome of an attempt to configure a service group.	A service group was successfully created.	KNAE20020-I
				An attempt to create a service group has failed.	KNAE20021-E
				A service group was successfully edited.	KNAE20022-I
				An attempt to edit a service group has failed.	KNAE20023-E
				A service group was successfully deleted.	KNAE20024-I
				An attempt to delete a service group has failed.	KNAE20025-E
				A user group was successfully assigned to a service group.	KNAE20078-I
				An attempt to assign a user group to a service group has failed.	KNAE20079-E
				A user group was successfully unallocated from the service group.	KNAE20080-I
				An attempt to unallocate a user group from the service group has failed.	KNAE20081-E
			Indicates the outcome of an attempt to execute a command.	A command (backupsystem/ restoresystem/ setupcluster/ encryptpassword) was successfully executed.	KNAE23003-I
				An attempt to execute a command (backupsystem/ restoresystem/ setupcluster/ encryptpassword) has failed.	KNAE23004-E
			Indicates the outcome of a task related to service template development.	A service template was successfully created.	KNAE20048-I
				An attempt to create a service template has failed.	KNAE20049-E
				A service template was successfully edited.	KNAE20050-I
				An attempt to edit a service template has failed.	KNAE20051-E

No.	Event type	Event name	Event description	Timing of output by JP1/AO	Output message
3	ConfigurationAccess	Configuration definition	Indicates the outcome of a task related to service template development.	A service template was successfully deleted.	KNAE20052-I
				An attempt to delete a service template has failed.	KNAE20053-E
				A service template was successfully copied.	KNAE20054-I
				An attempt to copy a service template has failed.	KNAE20055-E
				A service template was successfully built.	KNAE20056-I
				An attempt to build a service template has failed.	KNAE20057-E
				A service template was successfully released.	KNAE20058-I
				An attempt to release a service template has failed.	KNAE20059-E
				A plug-in was successfully created.	KNAE20060-I
				An attempt to create a plug-in has failed.	KNAE20061-E
				A plug-in was successfully edited.	KNAE20062-I
				An attempt to edit a plug-in has failed.	KNAE20063-E
				A plug-in was successfully copied.	KNAE20064-I
				An attempt to copy a plug-in has failed.	KNAE20065-E
				A plug-in was successfully deleted.	KNAE20066-I
				An attempt to delete a plug-in has failed.	KNAE20067-E
		Indicates the outcome of an attempt to create, edit, or delete an external resource provider.		An external resource provider was successfully created.	KNAE23066-I
				An attempt to create an external resource provider has failed.	KNAE23067-E
				An external resource provider was successfully edited.	KNAE23068-I
				An attempt to edit an external resource provider has failed.	KNAE23069-E
				An external resource provider was successfully imported.	KNAE23070-I
				An attempt to import an external resource provider has failed.	KNAE23071-E
				An external resource provider was successfully updated.	KNAE23072-I

No.	Event type	Event name	Event description	Timing of output by JP1/AO	Output message
3	ConfigurationAccess	Configuration definition	Indicates the outcome of an attempt to create, edit, or delete an external resource provider.	An attempt to update an external resource provider has failed.	KNAE23073-E
				An external resource provider was successfully deleted.	KNAE23074-I
				An attempt to delete an external resource provider has failed.	KNAE23075-E
4	ContentAccess	Access to important information	Indicates the outcome of an attempt to add, edit, delete, or execute a service.	A service was successfully added.	KNAE20026-I
				An attempt to add a service failed.	KNAE20027-E
				A service was successfully edited.	KNAE20028-I
				The counter for a service were successfully reset.	
				An attempt to edit a service has failed.	KNAE20029-E
				An attempt to reset the counter for a service has failed.	
				A service was successfully deleted.	KNAE20030-I
				An attempt to delete a service has failed.	KNAE20031-E
				A service was successfully submitted for execution.	KNAE22014-I
				An attempt to submit a service for execution has failed.	KNAE22015-E
			Indicates the outcome of an attempt to suspend, resume, or cancel a task.	A task schedule was successfully suspended.	KNAE20034-I
				An attempt to suspend a task schedule has failed.	KNAE20035-E
				A task schedule was successfully resumed.	KNAE20036-I
				An attempt to resume a task schedule has failed.	KNAE20037-E
				A task schedule was successfully canceled.	KNAE20038-I
				An attempt to cancel a task schedule has failed.	KNAE20039-E
			Indicates the outcome of an attempt to stop execution of a task.	Execution of a task has successfully stopped.	KNAE20040-I
				An attempt to stop execution of a task has failed.	KNAE20041-E
			Indicates the outcome of an attempt to forcibly stop a task.	A task was forcibly stopped.	KNAE20068-I
				An attempt to forcibly stop a task has failed.	KNAE20069-E
			Indicates the outcome of an attempt to retry a task.	A task was successfully retried from a failed step.	KNAE20070-I

No.	Event type	Event name	Event description	Timing of output by JP1/AO	Output message
4	ContentAccess	Access to important information	Indicates the outcome of an attempt to retry a task.	An attempt to retry a task from a failed step has failed.	KNAE20071-E
				A task was successfully retried from the step after a failed step.	KNAE20072-I
				An attempt to retry a task from the step after a failed step has failed.	KNAE20073-E
			Indicates the outcome of an attempt to archive tasks, delete task histories, delete debug tasks, or edit a task.	Tasks were successfully archived.	KNAE20042-I
				An attempt to archive a task has failed.	KNAE20046-E
				Task histories were successfully deleted.	KNAE20043-I
				An attempt to delete task histories has failed.	KNAE20047-E
				Debug tasks were successfully deleted.	KNAE20076-I
				An attempt to delete debug tasks has failed.	KNAE20077-E
				Tasks were automatically archived.	KNAE21001-I
				An attempt to automatically archive tasks has failed.	KNAE21003-E
				Tasks were periodically archived. #	KNAE21001-I
				An attempt to periodically archive tasks has failed. #	KNAE21003-E
				Task histories were automatically deleted.	KNAE21002-I
				An attempt to automatically delete task histories has failed.	KNAE21004-E
				Debug tasks were automatically deleted.	KNAE21007-I
				An attempt to automatically delete debug tasks has failed.	KNAE21008-E
				A task was successfully edited.	KNAE23023-I
				An attempt to edit a task has failed.	KNAE23024-E
			Indicates the outcome of an attempt to debug a service template.	A service template was successfully debugged.	KNAE20074-I
				An attempt to debug a service template has failed.	KNAE20075-E
			Indicates the outcome of an attempt to delete a service template, import a service template, or update the service template associated with the service.	A service template was successfully deleted.	KNAE22005-I
				An attempt to delete a service template has failed.	KNAE22006-E
				A service template was successfully imported.	KNAE22007-I

No.	Event type	Event name	Event description	Timing of output by JP1/AO	Output message
4	ContentAccess	Access to important information	Indicates the outcome of an attempt to delete a service template, import a service template, or update the service template associated with the service.	An attempt to import a service template has failed.	KNAE22008-E
				The service template associated with the service was successfully updated.	KNAE22009-I
				An attempt to update the service template associated with the service has failed.	KNAE22010-E
			Indicates the outcome of an attempt to edit a service property.	A service property was successfully edited.	KNAE20082-I
				An attempt to edit a service property has failed.	KNAE20083-E
			Indicates the outcome of an attempt to execute a command.	The <code>submittask</code> command was successfully executed.	KNAE23005-I
				An attempt to execute the <code>submittask</code> command has failed.	KNAE23006-E
				The <code>stoptask</code> command was successfully executed.	KNAE23007-I
				An attempt to execute the <code>stoptask</code> command has failed.	KNAE23008-E
				The <code>listtasks</code> command was successfully executed.	KNAE23009-I
				An attempt to execute the <code>listtasks</code> command has failed.	KNAE23010-E
				The <code>listservices</code> command was successfully executed.	KNAE23011-I
				An attempt to execute the <code>listservices</code> command has failed.	KNAE23012-E
				The <code>importservicetemplate</code> command was successfully executed.	KNAE23013-I
				An attempt to execute the <code>importservicetemplate</code> command has failed.	KNAE23014-E
				The <code>deleteservicetemplate</code> command was successfully executed.	KNAE23015-I
				An attempt to execute the <code>deleteservicetemplate</code> command has failed.	KNAE23016-E
				Tasks were successfully re-submitted using the <code>submittask</code> command.	KNAE23018-I

No.	Event type	Event name	Event description	Timing of output by JP1/AO	Output message
4	ContentAccess	Access to important information	Indicates the outcome of an attempt to execute a command.	An attempt to re-submit tasks using the <code>submittask</code> command has failed.	KNAE23019-E
				An attempt to re-submit tasks using the <code>submittask</code> command has partially failed.	KNAE23020-W
				The <code>listtasks</code> command was used to successfully output detailed task information.	KNAE23021-I
				An attempt to use the <code>listtasks</code> command to output detailed task information has failed.	KNAE23022-E
				The <code>listremoteconnections</code> command was successfully executed.	KNAE23059-I
				An attempt to execute the <code>listremoteconnections</code> command has failed.	KNAE23060-E
				The <code>setremoteconnection</code> command was executed successfully.	KNAE23061-I
				An attempt to execute the <code>setremoteconnection</code> command has failed.	KNAE23062-E
				The <code>deleteremoteconnection</code> command was executed successfully.	KNAE23063-I
				An attempt to execute the <code>deleteremoteconnection</code> command has failed.	KNAE23064-E
				The <code>setremoteconnection</code> command has partially failed.	KNAE23065-W
			Indicates the outcome of an attempt to create, edit, or delete the external server entry.	The external server entry was successfully created.	KNAE23035-I
				An attempt to create the external server entry has failed.	KNAE23036-E
				The external server entry was successfully edited.	KNAE23037-I
				An attempt to edit the external server entry has failed.	KNAE23038-E
				The external server entry was successfully deleted.	KNAE23039-I
				An attempt to delete the external server entry has failed.	KNAE23040-E

#

The function that automatically archives tasks is internally used by the function that periodically archives tasks, so both functions are output to the same audit logs.

(2) Storage format of audit log data

The output destination for audit log data and the file names assigned to audit log files are described below.

Audit log data is not output by default. You can specify whether to output audit log data in the user-specified properties file. In this file, you can also set the output destination and other parameters for audit logs.

Output destination

JP1/AO-installation-directory\logs or /var/opt/jp1ao/logs

Output file name

Audit*n*.log

n is replaced with an integer representing the number of the log file.

Definition example

The following is a definition example for a situation in which audit log data is output to a shared disk used by Windows machines in a cluster configuration.

```
logger.Audit.enable = 1
logger.Audit.path = shared-disk\\jp1ao\\logs
```

Related topics

- User-specified properties file (config_user.properties) in the JP1/Automatic Operation Configuration Guide
-

(3) Output format of audit log data

This section describes the destination to which JP1/AO outputs audit log data, and the contents of entries in audit log files.

(a) Audit log output format

An audit log entry consists of the string CALFHM indicating the information is formatted as an audit log, followed by the revision number of the audit log, and finally the relevant output items.

The following figure shows the format in which audit log entries are output:

Figure A-2: Audit log output format

```
CALFHM 1.0,output-item-1=value-1,output-item-2=value-2, ...,output-item-n=value-n
```

(b) Output destination of audit log entries

For details on the output destination of audit log entries, see [A.6\(2\) Storage format of audit log data](#).

(c) Output items

There are three types of information output to the audit log:

- **Header information**
The date and time when the event was output to event log or syslog, and other information derived from the operating system.
- **Common information**
Information used to categorize and monitor the event that triggered the audit log entry.
- **Event-specific information**
Detailed information about the event that triggered the audit log entry.

The following table lists the items output to the audit log:

Table A-18: Items output to audit log

No.	Output item			Value
	Type	Name	Output attribute name	
1	Header information	Common specification identifier	--	CALFHM
2		Common specification revision number	--	1.0
3	Common information	Sequence number	seqnum	<i>sequence-number</i>
4		Message ID	msgid	<i>message-ID</i>
5		Date and time	date	<i>date-and-time</i>
6		Source program name	progid	JP1AO
7		Source component	compid	<ul style="list-style-type: none">• api• Command• GUI• Server
8		Source process ID	pid	<i>process-ID</i>
9		Location information	ocp:host/ipv4/ipv6	<i>host-name</i>
			outp:host/ipv4/ipv6	<i>host-name</i>
			subjp:host/ipv4/ipv6	<i>host-name</i>
			dtp:host/ipv4/ipv6	<i>host-name</i>
			agent:host/ipv4/ipv6	<i>host-name</i>
10		Event type	ctgry	<ul style="list-style-type: none">• Authentication• ConfigurationAccess• ContentAccess• StartStop
11		Event result	result	<ul style="list-style-type: none">• Success• Failure
12		Subject identification information	subj:uid	<i>login-user-ID</i>
			subj:euid	<i>Windows-user-ID</i>
			subj:pid	<i>process-ID</i>

No.	Output item			Value
	Type	Name	Output attribute name	
13	Event-specific information	Object information	obj	<ul style="list-style-type: none"> • autoAuth • autoJOB
14		Operation information	op	<ul style="list-style-type: none"> • Add • Delete • Login • Logout • Start • Stop • Update
15		Log type information	logtype	BasicLog
16		Optional message	msg	<i>message</i>

Legend:

--: Not output.

(d) Example of audit log output

An example of audit log output is shown below.

```
CALFHM 1.0, seqnum=1, msgid=KNAE23001-I, date=2012-01-01T00:00:00.000+09:00,
progid=JP1AO, compid=Command, pid=1234, ocp:host=host01, ctgry=StartStop,
result=Success, subj:euid=user01, obj=autoJOB, op=Start, logtype=BasicLog,
msg="A service has started."
```

(4) Configuring JP1/AO to output audit log data

You can configure audit log output by entering settings in the user-specified properties file (config_user.properties). For details on the user-specified properties file, see the *JP1/Automatic Operation Configuration Guide*.

Related topics

- User-specified properties file (config_user.properties) in the JP1/Automatic Operation Configuration Guide

A.7 JP1/AO services

When you install JP1/AO, the JP1/AO services listed in the table below are registered in the operating system.

Table A-19: JP1/AO services

Service display name	Service name	Startup type	Product
HAutomation Engine Web Service	AutomationWebService64	Automatic ^{#1}	JP1/AO
HiRDB/EmbeddedEdition_HD1	HiRDBEmbeddedEdition_HD1	Automatic	Common Component
HiRDB/ClusterService_HD1 ^{#2}	HiRDBClusterService_HD1	Manual	Common Component
HBase 64 Storage Mgmt SSO Service	HBase64StgMgmtSSOService	Automatic ^{#1}	Common Component

Service display name	Service name	Startup type	Product
HBase 64 Storage Mgmt Web Service	HBase64StgMgmtWebService	Automatic ^{#1}	Common Component
HBase 64 Storage Mgmt Web SSO Service	HBase64StgMgmtWebSSOService	Automatic ^{#1}	Common Component

#1

Changes to Manual after a cluster environment is set up.

#2

Registered when setting up a cluster environment.

A.8 Version changes

(1) Changes in version 12-60

- The following operating systems are now supported:
 - Windows Server 2022
 - Red Hat Enterprise Linux 8
 - Oracle Linux 8
 - CentOS 8
- Descriptions of periodically archiving tasks and periodically deleting histories were added.
- Descriptions of adding and managing user accounts were added.
- Notes were added regarding the use of products that use the same Common Component.
- Descriptions of agentless Connection Destinations were added.
- The procedure for updating the components used in a service template was added.
- Descriptions of the setting items for agentless Connection Destination definitions were changed.
- Descriptions of task behavior when the JP1/AO service is restarted were added.
- Descriptions of public log files were added.
- The following restrictions were changed:
 - Character string specified as a user ID of a JP1/AO user
 - Character string specified as a password of a JP1/AO user
 - Port number used for connections with SMTP server
 - Character string specified as the user ID for an SMTP server
 - Character string specified as a recipient of notification emails
- The following item was added:
 - Size of the property files or the external resource provider definition files imported from windows
- The types of events output to the audit log were added.
- External Resource Providers were added to the types of events output to the audit log.

(2) Changes in version 12-01

- An explanation was added regarding the email notification that is sent when a service template is run that uses a user-response wait plug-in.
- A description was added regarding the External Resource Provider defined in the service template.
- A description was added regarding the function for setting constraints in the Service Definition window (editing).

(3) Changes in version 12-00

- None

(4) Changed in version 11-50

- The descriptions of forcibly stopping tasks were changed.
- Notes on retrying tasks were added.
- The location of the folder where definition files are stored was changed.
- The descriptions of the behavior of tasks when the system switches from standard time to daylight saving time, and vice versa, were changed.

(5) Changes in version 11-10

- The definitions of web service connection-destinations can now be managed. This is now described in the manual, and figures depicting the relevant windows were added.
- JP1/AO no longer uses JP1/AJS3 as a task processing engine, and content indicating otherwise was deleted.
- An explanation of the case where changing the setting for whether a task can be retried around the time that the task was executed was added to the examples of statuses in which tasks can be retried.
- Restored tasks can now be retried and their progress can be displayed, and content indicating otherwise was deleted.
- Task statuses can now be detected immediately. Accordingly, the explanations of task status transitions and the timing of JP1 event notifications were changed.
- The **Service Builder** window was updated and the name of the window was changed.
- The following was added: a description of the arrow statuses that are displayed when an arrow conditional-expression is set.
- JP1/AO no longer requires JP1/Base as a prerequisite product, and descriptions of this requirement were deleted.
- Detecting a task status of Long Running was added to the trigger of JP1 event notifications, and an description of this was added.
- Adobe Flash Player is no longer required, and descriptions of this requirement were deleted.
- Search criteria can now be saved as a filter. This is now described in the manual, and figures depicting the relevant windows were changed.
- Available Actions can now be set for services. This is now described in the manual, and figures depicting the relevant windows were changed.
- A string up to 1,024 characters can now be specified for the description of the following items:
Tasks, service templates, steps, property groups, plug-in properties, and services
- An explanation was added noting that services can be forcibly terminated or retried only when doing so is permitted in the service settings.

- Connected Time and Connection Status were added to the list of agentless remote connections. This is now described in the manual, and figures depicting the relevant windows were changed.
- Agentless remote connections can now be tested, and a description of this was added.
- Within Service Share Properties, the JP1 user name and password no longer need to be set. The manual was revised accordingly, and figures depicting the relevant windows were changed.
- AJS_log.jar is no longer output when the `hcmds64getlogs` command is executed, and content indicating otherwise was deleted.
- The return values of the following plug-ins are now output to the task log: flow plug-ins, interval plug-ins, branch by return code plug-ins, abnormal end plug-ins, and branch by property value plug-ins. The manual was revised accordingly.

(6) Changes in version 11-01

- The last login time now appears in the main window.
- The description of the Step Start Time item displayed in the tasks list was changed.
- A situation in which the **Login** window does not appear was added to the troubleshooting procedures.
- An explanation was added regarding information output to the task log, stating that when the value of a property with the Composite data type is 4,097 characters or longer, an ellipsis (...) replaces the 4,097th and subsequent characters.

(7) Changes in version 11-00

(a) Changes from 3021-3-083-70

- The following operating systems are now supported:
 - Linux 7
 - Oracle Linux 6 (x64)
 - Oracle Linux 7
 - CentOS 6 (x64)
 - CentOS 7
 - SUSE Linux 12
- The following operating systems are no longer supported:
 - Linux 5 (AMD/Intel 64)
 - Linux 5 Advanced Platform (AMD/Intel 64)
- The product was migrated from 32-bit Windows to 64-bit Windows.
- The installation folder was changed for the Windows version of JP1/AO and the Common Component.
- A description of using JP1/AO in English and Chinese-language environments was added.
- The port numbers used for communication between JP1/AO and Web browsers were changed.
- The structure and contents of the manual were changed to reflect the redesign of the JP1/AO interface.
- *Status of service* was added as a way to classify JP1/AO services.
- *Tag management* was added as a way to classify service templates and services. Accordingly, category management was removed as a classification method.
- A function was added that exports service templates.

- A function was added that updates the service templates used by a service to a chosen version.
- A Dashboard window was added in which users can view statistical information about services and tasks.
- Service groups were added as a way to manage resources. Accordingly, resource groups were removed.
- A function that imports and exports service properties was added. Accordingly, the section on setting preset properties was removed.
- The section on starting Hitachi Command Suite products using the Link&Launch function was removed.
- The name of a basic plug-in was changed from File-Forwarding Plug-in to File-Transfer Plug-in.
- The name of a basic plug-in was changed from Judge ReturnCode Plug-in to Branch by ReturnCode Plug-in.
- The name of a basic plug-in was changed from Judge Value Plug-in to Branch by Property Value Plug-in.

(b) Changes from 3021-3-314-20(E)

- Linux was added as a supported operating system.
- The installation folder was changed for the Windows version of JP1/AO and the Common Component.
- The port numbers used for communication between JP1/AO and Web browsers were changed.
- The product was migrated from 32-bit Windows to 64-bit Windows.
- The structure and contents of the manual were changed to reflect the redesign of the JP1/AO interface.
- The maximum number of concurrently executable plug-ins in an ordinary task was changed to 100.
- Keyboard interactive authentication was added as an authentication method used for SSH connections with connection-target hosts.
- A description of the local execution function was added. This function allows users to start processes directly on local hosts and perform tasks such as executing commands and copying files.
- A cautionary note was added explaining that the version, revision number, and restriction code of JP1/AO must match on the source and destination hosts of backup and restoration operations.
- A description of the services registered when setting up a cluster system was added.
- *Status of service* was added as a way to classify JP1/AO services.
- *Tag management* was added as a way to classify service templates and services. Accordingly, category management was removed as a classification method.
- A function was added that exports service templates.
- A function was added that updates the service templates used by a service to an arbitrary version.
- A Dashboard window was added in which users can view statistical information about services and tasks.
- Service groups were added as a way to manage resources. Accordingly, resource groups were removed.
- A function was added that imports and exports service properties. Accordingly, the section on setting preset properties was removed.
- The section on starting Hitachi Command Suite products using the Link&Launch function was removed.
- The name of a basic plug-in was changed from File-Forwarding Plug-in to File-Transfer Plug-in.
- The name of a basic plug-in was changed from Judge ReturnCode Plug-in to Branch by ReturnCode Plug-in.
- The name of a basic plug-in was changed from Judge Value Plug-in to Branch by Property Value Plug-in.

(8) Changes in 10-52

(a) Changes in 3021-3-083-70

- Linux was added as a supported operating system.
- The maximum number of concurrently executable plug-ins in an ordinary task was changed to 100.
- Keyboard interactive authentication was added as an authentication method used for SSH connections with connection-target hosts.
- A description of the local execution function was added. This function allows users to start processes directly on local hosts and perform tasks such as executing commands and copying files.
- A cautionary note was added explaining that the version, revision number, and restriction code of JP1/AO must match on the source and destination hosts of backup and restoration operations.
- A description of the services registered when setting up a cluster system was added.

(9) Changes in 10-50

(a) Changes in 3021-3-083-60

- JP1/AO can now perform external authentication linkage by linking with Active Directory.
- Public key authentication was added as an authentication method for managed devices.
- The https protocol can now be used between the JP1/AO server and a Web browser.
- A description was added indicating that the following files are excluded from command-based backup and restore operations:
 - SSL server certificate file for https connections
 - Private key files for https connections
 - Private key files for public key authentication
- The `stopcluster` command was added.

This command can be executed when preparing to stop JP1/AO services in a cluster environment.
- A description of the procedure for restoring a JP1/AO server remotely from a backup file was added.

(b) Changes in 3021-3-314-20(E)

- As of December 2014, the manual name and document number have changed as follows:

Before

JP1/Automatic Operation GUI and Command Reference (3021-3-315)

After

JP1/Automatic Operation GUI, Command, and API Reference (3021-3-366)

- Windows Server 2012 R2 was added as a supported operating system.
- JP1/AO can now perform external authentication linkage by linking with Active Directory.
- A function was added that allows users to forcibly stop tasks.
- A function to retry steps was added.
- Users can now view the progress of tasks in the **Task Monitor** view.
- A description of the maximum number of plug-ins in a task that can be executed concurrently was added.

- Public key authentication was added as an authentication method for managed devices.
- The maximum number of preset properties that can be added to one service template can now be set in a property file (`config_user.properties`).
- For General command plug-ins, file-forwarding plug-ins, and content plug-ins, you can now specify whether to elevate the user to superuser.
- Detailed task information can now be output as a batch, and scheduled and recurring tasks can now be re-registered in a batch operation.
- The https protocol can now be used between the JP1/AO server and a Web browser.
- Descriptions of the procedures for displaying and downloading the task log were added.
- A description was added indicating that the following files are excluded from command-based backup and restore operations:
 - SSL server certificate file for https connections
 - Private key files for https connections
 - Private key files for public key authentication
- The `stopcluster` command was added.
This command can be executed when preparing to stop JP1/AO services in a cluster environment.
- A description of the procedure for restoring a JP1/AO server remotely from a backup file was added.
- A note was added regarding the action to take when a task is taking too long to execute in an environment with no external network connection.
- The recommended action when a task does not end was changed.
- The information output to the task log was changed. A description of the plug-in return values recorded in the task log was added.

(10) Changes in version 10-12

(a) Changes in 3021-3-083-50

- Windows Server 2012 R2 was added as a supported operating system.
- A function was added that allows users to forcibly stop tasks.
- A function to retry steps was added.
- Users can now view the progress of tasks in the **Task Monitor** view.
- A description of the maximum number of plug-ins in a task that can be executed concurrently was added.
- The maximum number of preset properties that can be added to one service template can now be set in a property file (`config_user.properties`).
- For General command plug-ins, file-forwarding plug-ins, and content plug-ins, you can now specify whether to elevate the user to superuser.
- Descriptions of the procedures for displaying and downloading the task log were added.
- The recommended action when a task does not end was changed.
- The information output to the task log was changed. A description of the plug-in return values recorded in the task log was added.

(11) Changes in version 10-11

(a) Changes in 3021-3-083-40

- Detailed task information can now be output as a batch, and scheduled and recurring tasks can now be re-registered in a batch operation.
- A note was added regarding the action to take when a task is taking too long to execute in an environment with no external network connection.

(12) Changes in version 10-10

(a) Changes in 3021-3-083-30

- A description of how to set preset properties was added.
- A description of linking with JP1/IM - NP operational content was added.
- The Develop role was added as a role that can be set for resource groups.
- The DevelopGroup built-in user group was added.
- Users in the Admin role can now develop service templates.
- A procedure for developing service templates was added.
- The Develop role was added under the Who can perform this task heading.
- Restrictions regarding category specification were added.

(b) Changes in 3021-3-314-10(E)

- A description of how to set preset properties was added.
- Information about linking with JP1/AJS3 was added.
- A description of linking with JP1/IM - NP operational content was added.
- A description of the storage locations of the service templates in the JP1/AO standard package and the JP1/AO Content Set was added.
- The Develop role was added as a role that can be set for resource groups.
- The DevelopGroup built-in user group was added.
- Telnet was added as a supported protocol.
- Users in the Admin role can now develop service templates.
- A description of maintenance was added.
- A function was added that allows users to specify task names, task descriptions, and property values for direct-access URLs in the **Submit Service** dialog box.
- A method for estimating the length of query parameters was added.
- A procedure for developing service templates was added.
- The Develop role was added under the Who can perform this task heading.
- Restrictions regarding category specification were added.

(13) Changes in version 10-02

(a) Changes in 3021-3-083-20

- Information about linking with JP1/AJS3 was added.
- Telnet was added as a supported protocol.
- A function was added that allows users to specify task names, task descriptions, and property values for direct-access URLs in the **Submit Service** dialog box.
- A method for estimating the length of query parameters was added.

(14) Changes in version 10-01

(a) Changes in 3021-3-083-10

- A description of the storage locations of the service templates in the JP1/AO standard package and the JP1/AO Content Set was added.
- A description of maintenance was added.

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