

Hinemos



Hinemos ver.5.0
User's Manual, 2nd Edition

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This software was developed in response to the delegation of the second half open-source-software activity infrastructure improvement enterprise in fiscal year 2004 by the INFORMATION-TECHNOLOGY PROMOTION AGENCY (IPA), an independent administrative agency.

- The theme name is "Development of an Integrated Manager for Distributed Facilities."
- <http://www.ipa.go.jp/about/jigyoseika/04fy-pro/open.html>

For the latest information about Hinemos, please visit the Hinemos web portal (<http://www.hinemos.info>).

1 Hinemos Overview

1.1 System Overview

Hinemos is an operations management tool intended to operate multiple computers with the image of a single computer. It provides users with a feature to register computers in groups depending on the operation purposes, and an environment that is easy to monitor or operate with a GUI corresponding to the operation purpose.

Use of Hinemos enables groups of business systems comprising multiple computers with differing purposes to achieve efficient operation in fewer steps.

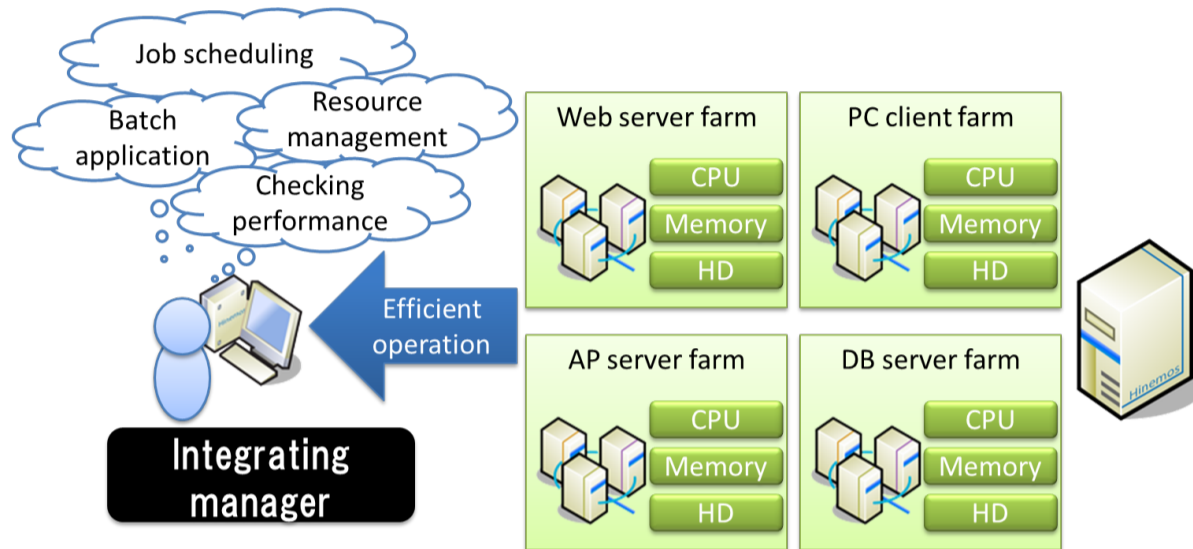


Figure 1-1 An Example of Hinemos Usage

1.2 Feature Overview

The features that comprise Hinemos are shown in Table 1-1.

Table 1-1 Available Features (by platform)

Feature		Linux	Windows	NW equipment
Integration Interface		◎	◎	◎
Repository		◎	◎	◎
Calendar		◎	◎	◎
Monitor	Scope Monitor	◎	◎	◎
	Status Monitor	◎	◎	◎
	Event Monitor	◎	◎	◎
Monitor Setting	Notification	◎	◎	◎
	Mail Template	◎	◎	◎

Monitor Setting (particular)	Hinemos Agent Monitor	○	○	—
	HTTP Monitor (numeric/character string /scenario)	◎	◎	◎
	Resource Monitor (SNMP)	◎ *2	◎ *2*4	◎ *5
	Resource Monitor (WBEM)	◎ *3	—	◎ *5
	JMX Monitor	◎	◎	◎
	PING Monitor	◎	◎	◎
	Service Port Monitor	◎	◎	◎
	Process Monitor (SNMP)	◎ *2	◎ *2	—
	Process Monitor (WBEM)	◎ *3	—	—
	SNMP Monitor (number/character string)	◎ *2	◎ *2	◎
	SQL Monitor (number/character string)	◎	◎	—
	System Log Monitor	◎ *1		◎
	Logfile Monitor	○	○	—
	Custom Monitor	○	○	○ *6
	SNMPTRAP Monitor	◎	◎	◎
Characteristics	Download	◎	◎	◎
	Graph Search	◎	◎	◎
Job	Run Command	○	○ *7	—
	File Transfer	○	—	—
Infrastructure Management		◎	◎	◎ *8
Maintenance	History Delete	◎	◎	◎
Account		◎	◎	◎

◎ Can be used agent-lessly

○ Hinemos Agent installation is required

- No feature

*1 Monitoring is enabled by configuring the monitoring rsyslog/syslogd even if not installing the Hinemos Agent.

*2 Monitoring of some items is enabled by configuring the OS standard SNMP agent even if not installing the Hinemos Agent. Refer to Table 7-2 List of Values Collected by the Resource Monitor for details.

*3 The following items need to be implemented.

- WBEM switching settings

Refer to section 6.8.2 "Method for switching SNMP and WBEM" in the the Administrator's Guide.

- Sets the WinRM user name, User password, Port number, Protocol, Version, Time out and Retry count in the Repository registration information.

Refer to [3.4 Creating/Modifying/Deleting a Node](#) .

*4 The monitor network I/O can be enabled even if not installing the Windows Agent.

*5 HinemosUtility is required. (Some may be supported by the general features.)

*6 A network device may be enabled by running a command to monitor the network device indirectly from a server capable of running the command.

*7 Jobs can be run with the same user permission as Hinemos Agent.

*8 Only environments where communication is possible through SSH or WinRM.

1.2.1 Integration Interface

This feature integrates the operation interfaces used by the operator. Integration of the GUI supports various operation management tasks on screen. Operability can be improved by configuring the various management operation interfaces for each business system or user, and by configuring and saving the interface layout (perspective). It is also possible to operate two or more Hinemos managers with one operation interface.

In addition, concurrent access by multiple operators is supported. In the job feature, Edit Mode is used to ensure mutual exclusion while multiple operators are working at the same time.

1.2.2 Repository

This feature integrates the information required for managing the overall system. Node structure information and asset management information can be registered in the repository. Furthermore, that information can be freely grouped in a hierarchy perspective for management. In Hinemos, this group is referred to as a "Scope".

The operator can arrange scope nodes depending on the administrative purposes or stratify scopes in hierarchies for organization. The repository information configured here can be used from other features.

Example) For hierarchical scopes, multiple scopes can be registered in the hierarchy: ["Nippon building">"4th floor">"west floor"] for location, ["headquarter">"sales"] for organization.

1.2.3 Calendar

This feature is used to set up the working/non-working periods and determine whether or not to run. It can be used from various features.

With this feature, the working days and holidays can be set in the calendar feature, and that setting information can be used from both the Monitor Setting and Job feature.

1.2.4 Notification

This feature notifies the monitoring results and the job execution results for each monitoring feature. Various methods of notification are available, including Status Notification or Event Notification displayed on the Monitor Settings Perspective interface and Mail Notification sent by e-mail.

With this feature, an e-mail is sent when an incident occurs, enabling a job to be run that will restart the related product.

1.2.5 Monitor & Performance

This feature enables failure detection and acquisition of performance information by scope. This enables the user to operate nodes through the GUI of the managed system according to the "Scope". Therefore, it is easy to check the operating status and setup.

More than 10 types of monitoring are available, such as resource usage status and service operation status.

1.2.6 Job

This feature automates regular operations and automates routine tasks and other operations when an incident occurs.

With this feature, personnel costs distributed across routine operations can be reduced.

1.2.7 Infrastructure

This feature allows construction of an environment for a node by executing processing such as distributing files to two or more nodes through a single operation or executing commands .

When a massive number of identical tasks must be performed for multiple nodes, such as installing rpm and sending a configuration file, this feature can be used to perform batch operations in "Scope" units, to simplify and speed up operations.

1.2.8 Maintenance

This feature is used in the administration of Hinemos itself, and is necessary for the operation of Hinemos. Deletion of history information, which will gradually accumulate in the internal database, and setup for operation of Hinemos Manager can be performed.

1.2.9 Account

The user management feature provides a management interface for user and role definition, as well as access permission configuration.

This feature is used to organize operation permission by role. This enables you to perform operations with high-level security.

2 Integrated Interface Feature

2.1 Overview

The integrated interface feature provides the following functions.

- Displays an integration of various operation management interface
- Operation of each feature via an integrated interface
- Customize the interface layout (perspective)
- Save/restore a customized interface layout (perspective)

2.2 Starting Hinemos Manager

Start up the Hinemos Rich Client or Hinemos Web Client according to the Installation Manual.

2.3 Starting Hinemos Client

Start up the Hinemos Client according to the Installation Manual.

2.4 Login

To log in two or more Hinemos managers, Refer to [2.6 Multi-Manager Connection](#) .

Also refer to "7 Rich Client" and "8 Web Client" of the Installation Manual as they explain in detail the overall configuration and how to set URL to connect to when a rich client or a web client is used.

1. Select "Manager Connection"- "Connection" from the menu bar. The Connection[Login] dialog will appear.
2. Enter the URL to the destination URL.

```
http://(Destination Hinemos Manager/Host Name:8080/HinemosWS/
```

3. Enter user ID and password, then click the "Login" button.

Default password

Immediately after the installation, only the user account below will exist.

User: hinemos

Password: hinemos

2.5 Logout

Logout with the procedure below.

1. Select "Manager Connection"- "Connection" from the menu bar. The Connection[Login] dialog will appear.
2. Click the "Logout" button

Once you have logged out, information on Hinemos you have logged out of will not be displayed when each view is updated.

2.6 Multi-Manager Connection

A Hinemos client can log in two or more Hinemos managers to set each Hinemos manager or check the result of monitoring. For relations among components when multiple managers are connected, refer to "7.1.1 Overall configuration" and "8.1.1 Overall configuration" of the Installation Manual.

Connect multiple managers in the following procedure.

1. Select "Manager Connection"- "Connection" from the menu bar. The Connection[Login] dialog will appear.
2. Click "Add login destination" button. Fields to input a user ID, password, and URL to connect to will be added. Input information on Hinemos you want to additionally log in, and click "Login" button.

Manager name

To identify each Hinemos manager logged in on a Hinemos client, each Hinemos manager can be name in any way. The manager name set in this field will be displayed on each view and setup dialog. So to which Hinemos manager each setup and history belong to can be identified.

To use the same ID and/or password

To log in two or more Hinemos managers with the same user ID and/or password, put a check mark to the check box of "Use the same ID and password". Then you can log in all the Hinemos managers by using the user ID and password shown at the top.

To delete information from Hinemos manager you have logged in

"Delete" button is displayed for the login information of a Hinemos manager you have not logged in. Click this "Delete" button. The login setting can be deleted.

2.7 Interface Layout(Perspective)

The following 11 initial interface layouts will be available.

- Account
- Calendar
- Job History
- Job Setting
- Startup
- Maintenance
- Repository
- Performance
- Infrastructure
- Monitor History
- Monitor Setting

Please follow the procedures below to select a interface layout.

1. **Select "Perspective" - "Open Perspective" from the menu bar.**

The Perspective selection dialog will appear. In this software, perspective refers to a specific interface configuration.

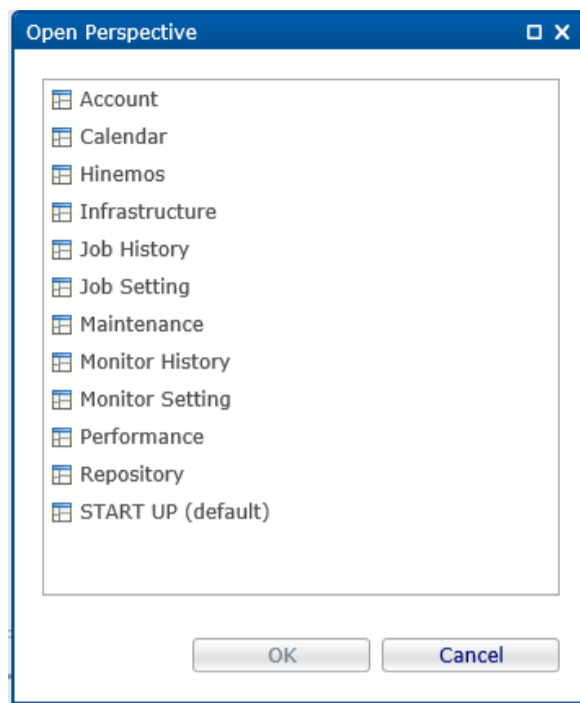


Figure 2-1 Perspective Selection Dialog

2. Select the interface layout (Perspective) to display.
3. Click the "OK" button.

Opening the view of a feature without opening its interface layout (Perspective)

For example, the node management feature view of the repository (Repository[Node] view) can be opened while the interface layout for the Job is open. Select the features or view to open in the "View" menu from the menu bar. Then open the view for the selected feature.

2.8 Startup Perspective

Log in a Hinemos manager and Startup perspective will be displayed. The startup perspective is a collection of perspectives for viewing setting and results which are necessary when you use Hinemos for the first time. Click an image shown on the startup perspective. You can open a perspective necessary for, for example, setting a repository, viewing the setting and result of monitoring, and viewing the setting and execution history of jobs.

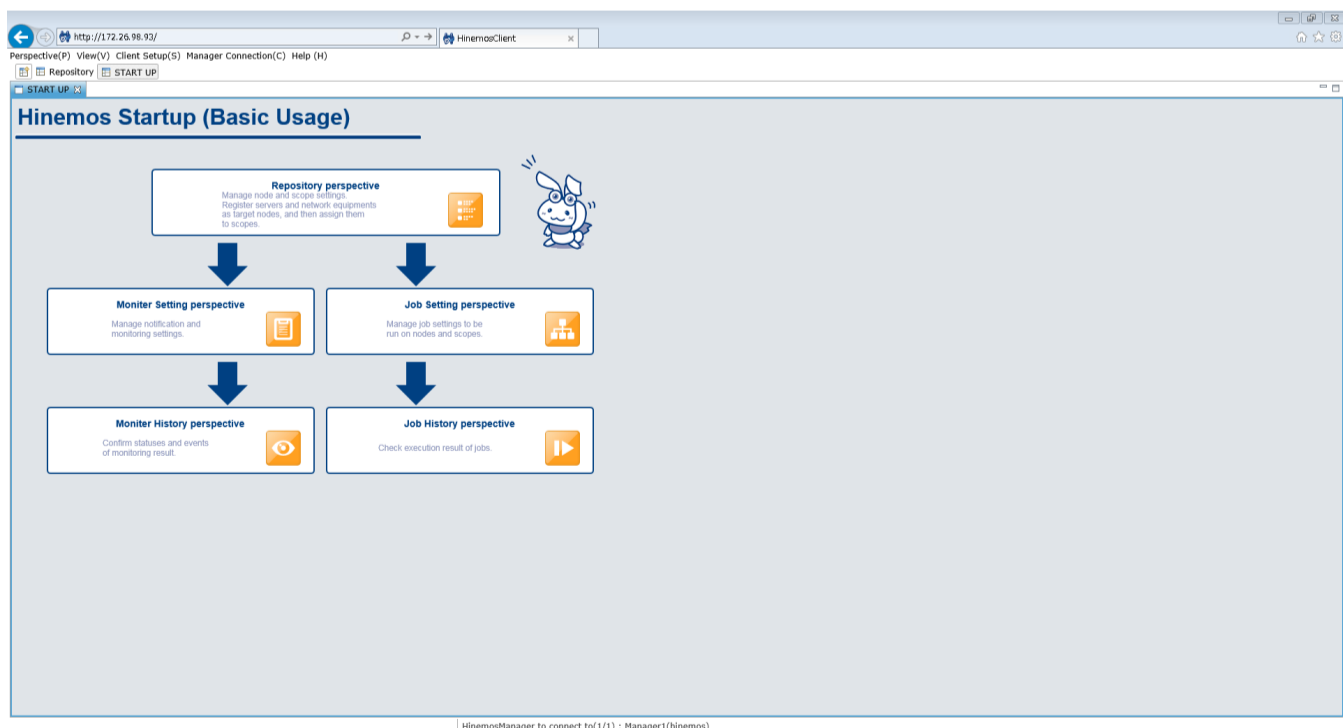


Figure 2-2 Startup Perspective

2.9 Saving Interface Layout(Perspective)

Customized interface layouts can be saved with a different name. A interface layout saved with a different name will be added as an extra choice in the Perspective selection dialog box. Please note that you might need to customized the interface layouts in every different Hinemos Client because such customization settings are not shared between different Clients.

To save a customized interface layout with a different name, follow the procedures below.

1. Right click on a perspective tab and then click "Save As..." from the list shown. The "Save Perspective As..." dialog will appear.
2. Input a name in the "Name" input box.
3. Click the "OK" button.

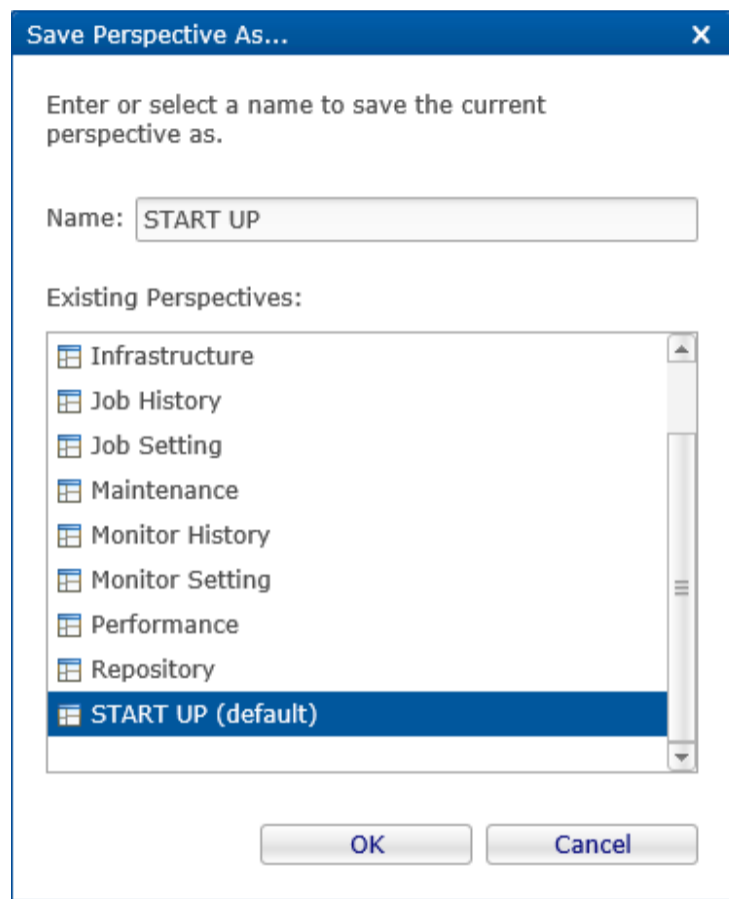


Figure 2-3 Save Perspective As... Dialog

Restoring an interface layout (Perspective) to default

Right-click on a perspective tab, then click "Reset" in the displayed menu to the restore the default interface layout.

Deleting a saved perspective

In Hinemos5.0, individual delete of a saved perspective is not available. You can restore the whole perspective list to default.with the following operations.

- For Hinemos Rich Client

Remove the following file. Note that you have to stop Hinemos Client at first.

(In addition, just in case you might want it back again, it is always better to keep a backup before deleting the file.)

Location: C:\Users\<<USER>\AppData\Roaming\hinemos\Client5.0\workspace\.\ metadata\
plugins\org.eclipse.e4.workbench

File name: workbench.xmi

- For Hinemos Web Client

Delete the cookie of the browser you are using to access the Hinemos Web client. For how to delete the cookie, refer to Help of the browser you are using.

3 Repository Feature

3.1 Overview

The repository feature provides features for registering, modifying, and deleting information managed by Hinemos.

3.1.1 Repository

The Repository is a database that accumulates information on management objects that are managed with Hinemos, in a format that enables management by Scope. Information registered in the repository is used for other features.

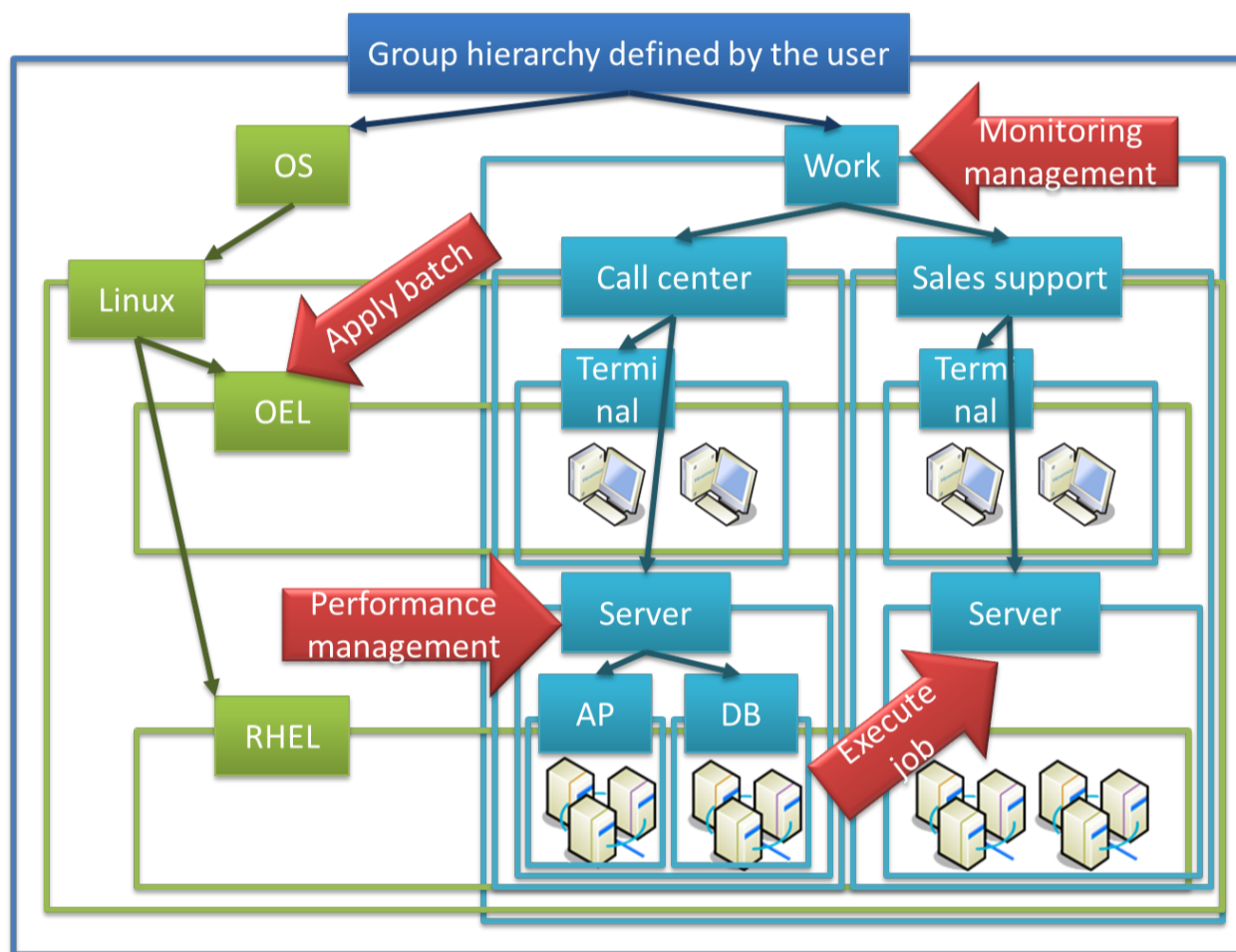


Figure 3-1 Repository Image

3.1.2 Scope and Node

In Hinemos, management objects are handled through the two units, "Scope" and "Node".

- Node

Virtualization of actual machine for management. The following information can be registered as node information.

- Hardware, Network, OS information, information on the Hinemos Agent
- Service (SNMP, WBEM, IPMI, WinRM, SSH)
- Device information (CPU, Memory, NIC, Disk, File system, General Device)
- Cloud/virtualization information
- Other Features

- Scope

Grouping of multiple nodes. Many processing units provided by the Hinemos feature are in the scope unit. Process applied to the scope is reflected to each node that is registered.

Multiple sub-scopes can be registered in a scope. In this case, the scope is in a hierarchical structure, and forms a tree.

3.2 Interface Composition

3.2.1 Default Interface

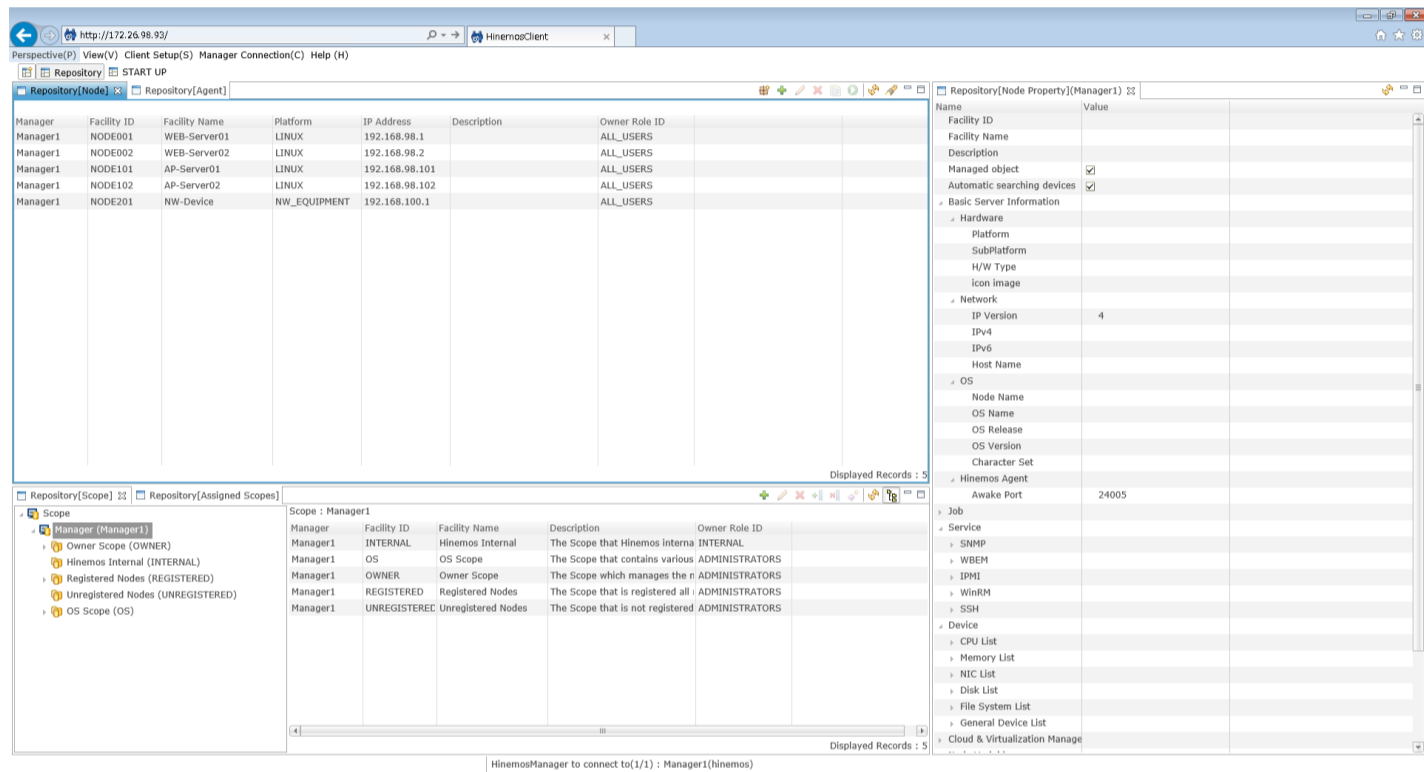


Figure 3-2 Default Interface of Repository Feature

3.2.2 Repository[Node] View

The Repository[Node] view displays a list of registered nodes. Operations related to node information, such as registration or deleting of a node, can be performed in this view.

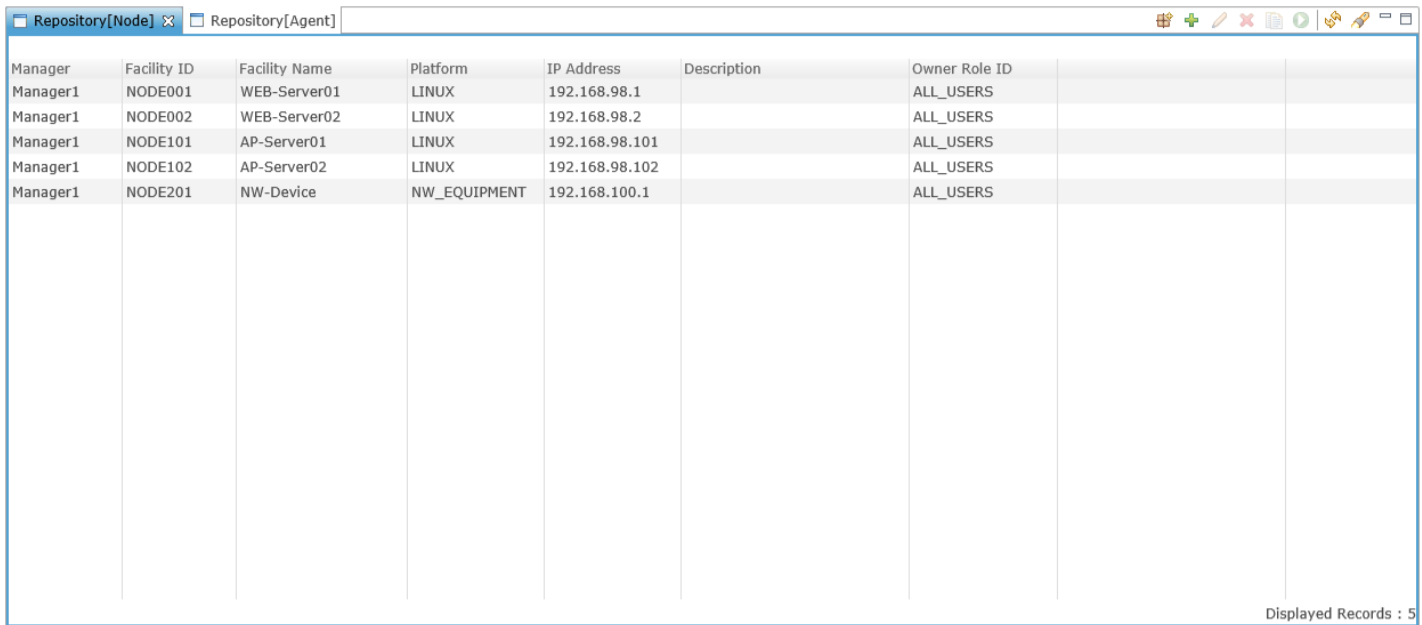


Figure 3-3 Repository[Node] View

Table 3-1 Toolbar

Icon	Button name	Description
	Search Nodes	Run searches of Nodes.
	Create	Create node information.
	Modify	Modify node information.
	Delete	Delete node information.
	Copy	Copy node information.
	Filter	Configure filter of node information list.
	Run	Run a program on client. (*1)
	Update	Update contents of Repository [Node] view.

*1 Run can be used only with the Hinemos rich client.

Specifying a program for the "Program Execution" button

Follow the following steps to specify a program.

1. Click "Client Setup" on the menu bar and then select "Select". A setting dialog will show up.
2. Expand "Hinemos" and select "Repository" from the tree pane positioned on the left hand side.

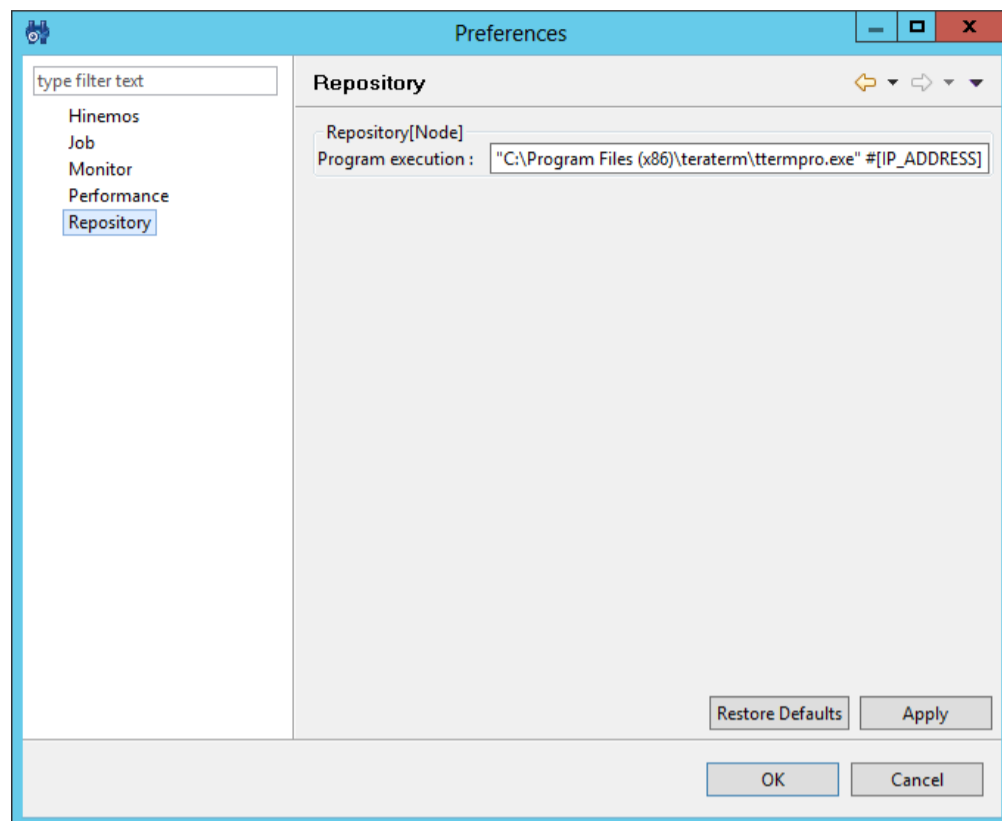


Figure 3-4 Client Setup dialog

3. The following setting can be configured for Repository[Node] view.

- Program execution:

Specify path to the program to execute. Node properties can be used in the path string. Node properties will be automatically replaced to the information of Repository[Node] view when the "Program Execution" button is clicked. (Refer to Table 7-30, Node Properties List, regarding node properties)

e.g. "C:\Program Files (x86)\teraterm\termpro.exe" #[IP_ADDRESS]

3.2.3 Repository[Node Property] View

Repository[Node Property] view is the view that displays the registered content of nodes. It displays the node information selected in Repository[Node] view.

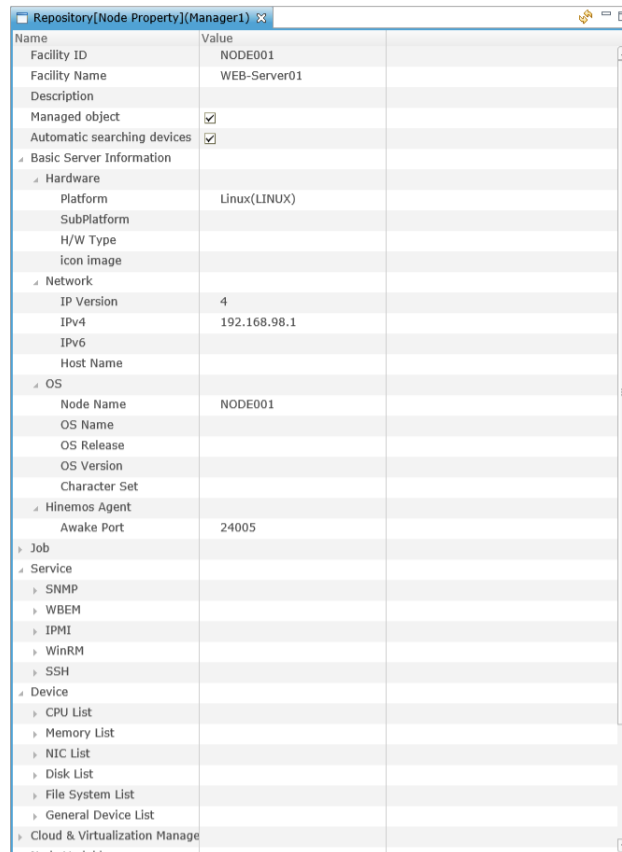


Figure 3-5 Repository[Node Property] View

Table 3-2 Toolbar

Icon	Button name	Description
	Update	Update contents of Repository[Node Property] view

3.2.4 Repository[Assigned Scopes] View

Repository[Assigned Scopes] view displays the list of node assignments to scopes. It displays the assigned status of nodes selected in Repository[Node] view.

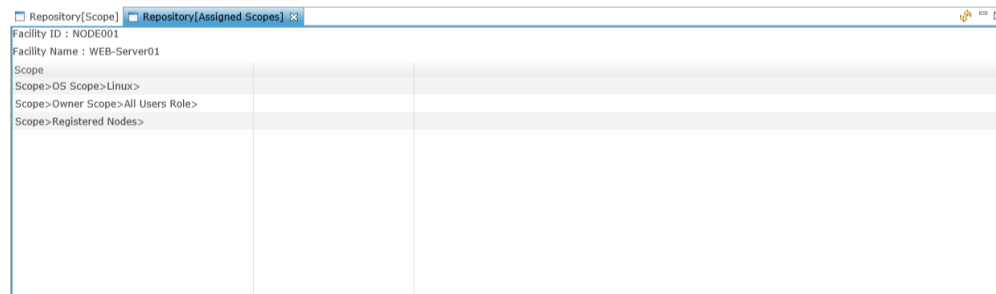


Figure 3-6 Repository[Assigned Scopes] View

Table 3-3 Toolbar

Icon	Button name	Description
	Update	Update contents of Repository[Assigned Scopes].

3.2.5 Repository[Scope] View

Repository[Scope] view displays information of registered nodes. In this view, operations such as registering or deleting of scopes, and node assignment to scopes, can be performed.

On the left of this view, a scope tree showing the hierarchical structure of the scope of each Hinemos manager is displayed.

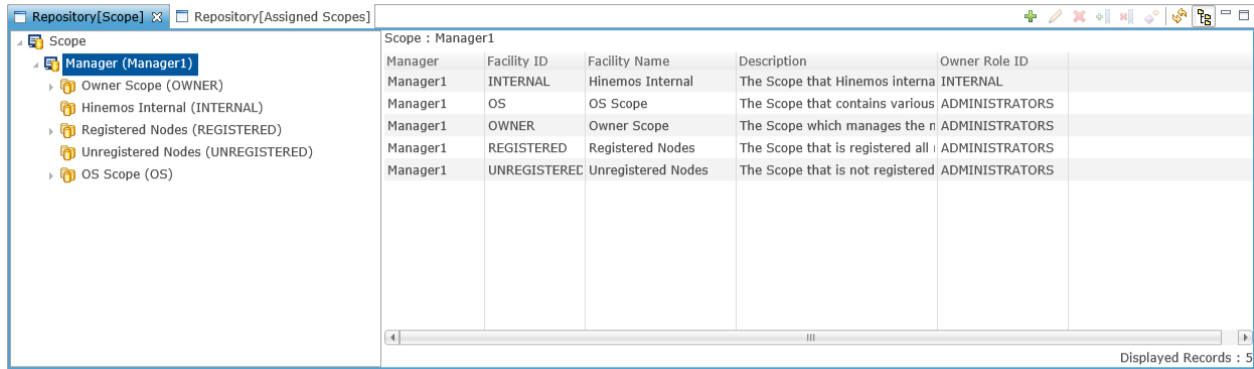


Figure 3-7 Repository[Scope] View

Table 3-4 Toolbar

Icon	Button name	Description
	Create	Create scope.
	Modify	Modify attribution information of scope.
	Delete	Delete scope.
	Assign	Assign node to scope.
	Release	Release node assignment assigned to scope.
	Object Privilege Settings	Assign object privilege to scope.
	Update	Update contents of Repository[Scope] view.
	Show Scope Tree Pane	Toggle the display of the scope tree.

In addition, four scopes, Owner Scope (OWNER), Hinemos Internal (INTERNAL), Registered Nodes (REGISTERED), Unregistered Nodes (UNREGISTERED), and OS Scope (OS), are built into Hinemos; delete/modify/assign cannot be performed. The features for each scope are as follows.

Table 3-5 List of Built-in Scope

Scope	Description
Owner Scope (OWNER)	Scope for confirming information between nodes and their owner role .
Hinemos Internal (INTERNAL)	Scope for storing events occurring in internal Hinemos (internal error and others).
Registered Nodes (REGISTERED)	Scope for confirming information of all registered nodes.
Unregistered Node (UNREGISTERED)	Scope used when receiving system logs and SNMPTRAP from a node not registered in Hinemos.
OS Scope (OS)	Scope for confirming registered nodes by platform.

3.2.6 Repository[Agent] View

This view displays the information on the Hinemos Agent connected to the Hinemos Manager. In this view, you can confirm the agent list, restart the agent, or update the agent.

Manager	Facility ID	Facility Name	Startup Time	Last Login Time	Job Multiplicity	Update
Manager1	NODE001	WEB-Server01	Apr 9, 2015 2:17:42 F	Apr 13, 2015 1:25:47	run=0,wait=0	Done
Manager1	NODE301	DB-Server01	Apr 9, 2015 2:17:42 F	Apr 13, 2015 1:27:07	run=0,wait=0	Done

Displayed Records : 2

Figure 3-8 Repository[Agent] View

Table 3-6 Toolbar

Icon	Button name	Description
	Agent restart	Restarts the Hinemos Agent.
	Module update	Updates the Hinemos modules
	Update	Update contents of the Repository[Agent] view.

3.3 Procedure to Create a Scope Tree

Scope tree is created by the following procedures.

1. Register node information
2. Create scope (scope tree)
3. Assign node to scope

Scope can have multiple sub-scopes, and form trees with a hierarchy structure.

Through registration of multiple nodes in scope, nodes can group and operate together. In addition, a single node can be assigned to multiple scopes.

3.4 Creating/Modifying/Deleting a Node

3.4.1 Creating a Node

Node information is referenced by all features. Since incorrect data can trigger operation errors, use care in setting.

Node information can be registered in the repository by following the procedure below.

1. Click the "Create" button in Repository[Node] view. The Repository[Create/Change Node] dialog box will open.

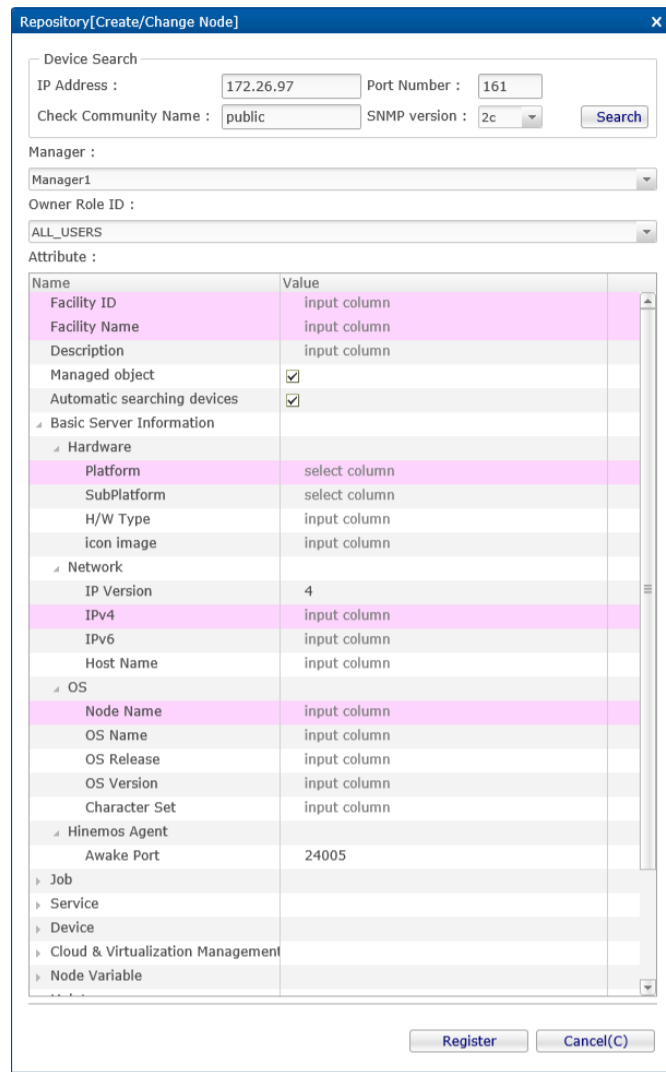


Figure 3-9 Repository[Create/Change Node] Dialog

2. Enter the attribute information. In the properties table where the list of attributes are displayed, click the record for entry, and enter the attribute value. For items that can be registered and their contents, please refer to Table 3-7 Details of node information. In addition, the Facility ID must be unique on the system. Duplicate Facility IDs cannot be registered (upper and lower cases are distinguished).

Also, you can acquire part of the information for the target node by clicking Search after entering the IP address, Port number, Community Name, and version of "Device Search". If "3" is selected for Version when SNMP v3 is used, set items peculiar to SNMP v3, such as security level and user name, will be displayed. Input necessary information and click Search.

The device registered by Device Search obtains only data that has been input/output more than once since the OS reboot. Select Maintenance perspective of Hinemos Client and open Maintenance [Hinemos property] view. When repository.find.by.snmp.verbose=true is set to hinemos.properties, the device that did not have data I/O is also added. Further, when acquiring information on the object node using "Device Search", be careful of the following points:

- Hinemos manager obtains and sets value OID"SNMPv2-MIB::sysName.0" by using SNMP from a node to be monitored. If a domain name is included in the obtained "value", however, everything following the first period (.) is discarded and the value is set as "Host name" and "Node name".
- The Platform column will be "Other" when acquiring network device information.
- For Windows Server where the SNMP expansion agent is not installed, registration of node information will fail when acquiring information using SNMP version 1. Please use version 2c to acquire the information. Further, the node information can be registered for Windows servers with the SNMP expansion agent installed, regardless of which version.

3. Click the "Register" button. The currently entered node information will be registered.

When a node is created it is automatically assigned to the "Registered Nodes (REGISTERED)" Scope.

Table 3-7 Details of node information

Name	Value	Note
Facility ID	Text	No duplicate. Must be within 512 characters. Half-width alphanumeric characters, and symbols "-", "_", ".", and "@" may be used.
Facility Name	Text	
Description	Text	
Management object	Checkbox	Switches whether or not to run Monitor or Job
Automatic searching devices	Checkbox	Switches whether or not to run Automatic searching devices
Server Basic Information		
Hardware		
Platform	List	Select from "Linux", "Windows", "Network Equipment", "Other"
Sub-Platform	List	
H/W Type	Text	
icon image	Text	Used when node map option is used
Network		
IP Version	List	Enter version (4 or 6) for the address that is used (4:IPv4, 6:IPv6)
IPv4 address	Text	If "4" is entered in the IP Version, refer to the value here for the IP address of the node used for other features
IPv6 address	Text	If "6" is entered in the IP Version, refer to the value here for the IP address of the node used for other features
Host Name	Text	Multiple can be registered
OS		
Node Name	Text	Enter the host name of the target machine. Used in the system log monitoring feature
OS Name	Text	
OS Release	Text	
OS Version	Text	
Character Set	Text	
Hinemos Agent		
Awake Port	Numeric	Destination port of awake packet
Job		
Job Priority	Text	Job Priority (if blank, 16)
Job Multiplicity	Text	Maximum number of concurrent jobs (if blank, 0)
Service		
SNMP		
Monitoring using SNMP (SNMP Monitor, Process Monitor, Resource Monitor) uses this value		
User Name	Text	Refer to the value here for the user name using SNMP version 3
Port Number	Numeric	Refer to the value here for the port number of SNMP (if blank, 161)
Community Name	Text	Refer to the value here for the community name of SNMP (if blank, public)
Version	List	Select either "1" or "2c". Refer to the value here for the version of SNMP (if blank, 2c)
Security Level	List	Refer to the value here for security level when SNMP version 3 is used.
Authentication Password	Text	Refer to the value here for authentication password when SNMP version 3 is used.

Encrypted password	Text	Refer to the value here for encrypted password when SNMP version 3 is used.
Authentication protocol	List	Refer to the value here for authentication protocol when SNMP version 3 is used.
Encryption protocol	List	Refer to the value here for encryption protocol when SNMP version 3 is used.
Timeout	Numeric	Refer to the value here for the timeout of SNMP (ms) (if blank, 5000 ms)
Retry Count	Numeric	Refer to the value here for the SNMP retry count (if blank, 3)
WBEM		Monitoring using WBEM (Process Monitor, Resource Monitor) uses this value
User Name	Text	Refer to the value here for the OS user name connecting to the CIM server (if blank, root)
User password	Text	Refer to the value here for the password of OS user connecting to the CIM server (if blank, password)
Port Number	Numeric	Refer to the value here for the port number connecting to the CIM server (if blank, 5988)
Protocol	List	Refer to the value here for the protocol connecting to the CIM server (if blank, http)
Timeout	Numeric	Refer to the value here for the port time out (ms) connecting to the CIM server (if blank, 5000 ms)
Retry Count	Numeric	Refer to the value here for the retry count when connecting to the CIM server (if blank, 3 times)
IPMI		
Address	Text	Refer to the value here for the IPMI address
Port Number	Numeric	Refer to the value here for the IPMI port number
User	Text	Refer to the value here for the user name connecting to the IPMI
User password	Text	Refer to the value here for the password of OS user connecting to the IPMI
Timeout	Numeric	Refer to the value here for the timeout for connecting to the IPMI
Retry Count	Numeric	Refer to the value here for the retry count for connecting to the IPMI (if blank, 3 times)
Protocol	Text	Refer to the value here for the protocol connecting to the IPMI
IPMI Level	Text	Refer to the value here for the IPMI Level connecting to the IPMI
WinRM		Monitoring using WinRM and infrastructure feature use this value
User Name	Text	Refer to the value here for the user name connecting to the WinRM
User password	Text	Refer to the value here for the password of OS user connecting to the WinRM
Version	Text	Refer to the value here for the WinRM connection version (enter 1.1 or 2.0)
Port Number	Numeric	Refer to the value here for the port number connecting to the WinRM (Default 80 port for http WinRM1.1 (Default 443 port for https WinRM1.1 (Default 5985 port for http WinRM2.0 (Default 5986 port for https WinRM2.0
Protocol	List	Refer to the value here for the protocol connecting to the WinRM (enter http or https)
Timeout	Numeric	Refer to the value here for the timeout for connecting to the WinRM
Retry Count	Numeric	Refer to the value here for the retry count for connecting to the WinRM (if blank, 3 times)
SSH		Refer to the value here for infrastructure feature using SSH.

User Name	Text	Refer to the value here for the user name connecting to the SSH
User password	Text	Refer to the value here for the password of OS user
SSH secret key file path	Text	Refer to the value here for the file path to a secret key for connecting SSH.
Pass phrase for SSH secret key	Text	Refer to the value here for the path phrase to a secret key for connecting SSH.
Port Number	Refer to the value here for the port number connecting to the SSH.	
Time out	Text	Refer to the value here for the timeout for connecting to the SSH
Device		
CPU Information		
CPU		Multiple can be registered. Used by the Resource Monitor
Display Name	Text	
Device Name	Text	
Device INDEX	Numeric	
Device Type	Text	cpu (Fixed Value)
Device Size	Numeric	
Device Size Unit		
Description	Text	
Memory Information		
Memory		
Display Name	Text	
Device Name	Text	
Device INDEX	Numeric	
Device Type		mem (Fixed Value)
Device Size	Numeric	
Device Size Unit		
Description	Text	
NIC information		
NIC		Multiple can be registered. Used by the Resource Monitor
Display Name	Text	
Device Name	Text	
Device INDEX	Numeric	
Device Type		nic (Fixed Value)
Device Size	Numeric	
Device Size Unit		
Description	Text	
NIC IP Address	Text	
NIC MAC Address	Text	
Disk Information		
Disk		Multiple can be registered. Used by the Resource Monitor
Display Name	Text	
Device Name	Text	
Device INDEX	Numeric	
Device Type		disk (Fixed Value)
Device Size	Numeric	

Device Size Unit		
Description	Text	
Disk Rpm		
File System Information		
File System		Multiple can be registered. Used by the Resource Monitor
Display Name	Text	
Device Name	Text	
Device INDEX	Numeric	
Device Type		filesystem (Fixed Value)
Device Size	Numeric	
Device Size Unit		
Description	Text	
File System Type		
General Device List		
General Device		Multiple can be registered.
Display Name	Text	
Device Name	Text	
Device INDEX	Numeric	
Device Type		
Device Size	Numeric	
Device Size Unit		
Description	Text	
Cloud & Virtualization Management		
Cloud Service	Text	Used by Cloud & Virtualization Option
Cloud Scope	Text	Used by Cloud & Virtualization Option
Cloud Resource Type	Text	Used by Cloud & Virtualization Option
Cloud Resource ID	Text	Used by Cloud & Virtualization Option
Cloud Resource Name	Text	Used by Cloud & Virtualization Option
Cloud Location	Text	Used by Cloud & Virtualization Option
Node Variable		
Node Variable		Multiple can be registered. These variables can be referred to by each feature.
Node Connection Name	Text	
Node Connection Value	Text	
Maintenance		
Administrator	Text	
Contact	Text	
Created Time	Text	
Created User	Text	
Last Change Time	Text	
User Last Changed	Text	
Note	Text	Multiple can be registered.



Behavior if management object is unchecked

If "management object" is not checked, monitoring, job, and infrastructure management processes will not run. As a result, even if notifications are configured in monitoring and infrastructure features, there will be no notifications. Also, history of the corresponding nodes will not be kept for the job features.

Also, for the job features, jobs of non-"managed target" nodes will not be run and history of the corresponding nodes will not be kept.

Depending on whether "management object" is checked or unchecked, the node icon that appears in the scope tree etc. will change as shown in Table 3-8.

Table 3-8 Node Display Icon

Icon	Description
	Appears when "management object" is checked.
	Appears when "management object" is unchecked.

Adding/deleting items where multiple registrations are possible

- Add items
 1. Select the "Name" column where multiple registrations are possible ("Network - Host Name", "Device", "File System", "note"), then right-click.
 2. A menu showing options to Copy or Delete will be displayed.
 3. Choose Copy.
- Delete items
 1. Select the items where multiple registrations are possible ("Server Basic Information - Network - Host Name", "Device" and "Note") and right click.
 2. A menu showing options to Copy or Delete will be displayed.
 3. Select Delete.

Method of confirming commands of SNMP and WBEM

The following items are explained in advance as commands necessary for operating SNMP/WBEM polling on the monitored server by CLI (Command Line Interface). This command is not required for the operating environments of the Hinemos Manager and the Hinemos Agent, but since it is useful for confirming operations, its installation is recommended.

- For SNMP, use the `snmpwalk` command. To use this command, please install the `net-snmp-utils` package in a Red Hat Enterprise Linux environment which is used for operation.
- For WBEM, use the `wbemcli` command. To use this command, please install the `sblim-wbemcli` package in a Red Hat Enterprise Linux environment which is used for operation. (Installation of the `top-pegasus` package is also required for installation of the `sblim-wbemcli` package)

Entering device information

To collect the performance values of each device in the resource monitor, device information of the nodes must be registered in the registry information.

Method of registering disk information

- If using SNMP for monitoring
 1. Run the following command to find disc information.

```
$ snmpwalk -c public -v 2c (IP address of target machine) 1.3.6.1.4.1.2021.13.15.1.1.2
```

2. Input the numbers following "UCD-DISKIO-MIB::diskIODevice." in the left column of the output results in "Device - Disk Information - Disk - Device Index".
3. Input the value (output to the right of STRING:) of "UCD-DISKIO-MIB::diskIODevice.xx" in "Device - Disk Information - Disk - Device Name".
4. Enter any name for the Display Name (if registered name is long, it may not display on the screen.)

Example) If the output is as follows, the registered contents of the device will be as shown in Table 3-9.

```
UCD-DISKIO-MIB::diskIODevice.1 = STRING: hda
UCD-DISKIO-MIB::diskIODevice.2 = STRING: hda1
UCD-DISKIO-MIB::diskIODevice.3 = STRING: hda2
UCD-DISKIO-MIB::diskIODevice.4 = STRING: hdb
UCD-DISKIO-MIB::diskIODevice.5 = STRING: hdb1
```

Table 3-9 Configuring Device Items

Device	Item	Configured value
First Device	Display Name	(any string)
	Device Name	hda
	Device Index	1
Second Device	Display Name	(any string)
	Device Name	hda1
	Device Index	2
Third Device	Display Name	(any string)
	Device Name	hda2
	Device Index	3
Fourth Device	Display Name	(any string)
	Device Name	hdb
	Device Index	4
Fifth Device	Display Name	(any string)
	Device Name	hdb1
	Device Index	5

- If using WBM for monitoring (only compatible with Linux)

1. Run the following command to find disc information.

```
$ wbemcli ei \
'http://(user name of target machine):(user's password of target machine)@(IP address of target machine):5988/root'
```

2. Enter the characters following the output results for "ElementName" in "Device - Disk Information - Disk - Device Index".
3. Enter any name for the Display Name (if registered name is long, it may not display on the screen.)

Example) If the output is as follows, the registered contents of the device will be as shown in Table 3-10.

```
localhost:5988/root/cimv2:Linux_BlockStorageStatisticalData.InstanceID="Linux:eins.cc.osdc.co.jp_sda" . . . partially omi
ElementName="sda",StartStatisticTime . . . following abbreviated . . .
localhost:5988/root/cimv2:Linux_BlockStorageStatisticalData.InstanceID="Linux:eins.cc.osdc.co.jp_hda" . . . partially omi
ElementName="hda",StartStatisticTime . . . following abbreviated . . .
```

(User name of target machine: root, IP address of the target machine: localhost)

Table 3-10 Configuring Device Items

Device	Item	Configured value
First Device	Display Name	(any string)
	Device Name	sda
	Device Index	0
Second Device	Display Name	(any string)
	Device Name	hda
	Device Index	0

NIC information registration method

- If using SNMP for monitoring

1. To find NIC information, run the following command.

```
$ snmpwalk -c public -v 2c (IP address of target machine) 1.3.6.1.2.1.2.2.1.2
```

2. Enter the number following "IF-MIB::ifDescr." in "Device Index".
3. Enter the value for the output results of "IF-MIB::ifDescr" (output on the right of STRING:) in "Device - NIC Information - NIC - Device name". (This device name can be changed to any name. if the registered name is long, it may not display on the screen.)

- If using WBEM for monitoring

NIC information cannot be monitored in WBEM.

Entering file system information

To collect the file system usage per mount point in the performance feature, the node file system information must be registered in Repository information.

Method of registering mount point information

- If using SNMP for monitoring

1. To find mount point information, run the following command.

```
$ snmpwalk -c public -v 2c (IP address of target machine) 1.3.6.1.2.1.25.2.3.1.3
```

2. From output value (STRING: output on the right) of "HOST-RESOURCES-MIB::hrStorageDescr.xx", Select the mount point to monitor and enter the "Device - File System Information - File System - Device Name". This is not required when the OS of target node is Windows.
3. From the numbers following "HOST-RESOURCES-MIB::hrStorageDescr." on the left side of the output results, enter the numeric value corresponding to the mount point entered in 2 in the "Device - File System Information - File System ? File system INDEX".
4. Enter any name for the Display Name (if registered name is long, it may not display on the screen).

Example) If the output is as follows, the registered contents of the file system will be as shown in Table 3-11.

```
HOST-RESOURCES-MIB::hrStorageDescr.1 = STRING: Memory Buffers
HOST-RESOURCES-MIB::hrStorageDescr.2 = STRING: Real Memory
HOST-RESOURCES-MIB::hrStorageDescr.3 = STRING: Swap Space
HOST-RESOURCES-MIB::hrStorageDescr.4 = STRING: /
HOST-RESOURCES-MIB::hrStorageDescr.5 = STRING: /sys
HOST-RESOURCES-MIB::hrStorageDescr.6 = STRING: /boot
HOST-RESOURCES-MIB::hrStorageDescr.7 = STRING: /proc/sys/fs/binfmt_misc
HOST-RESOURCES-MIB::hrStorageDescr.8 = STRING: /var/lib/nfs/rpc_pipefs
```

Table 3-11 Configuring File System Items

File system	Item	Configured value
First file system	Display Name	(any string)
	File System Index	4
	Mount Point	/
Second file system	Display Name	(any string)
	File System Index	6
	Mount Point	/boot

- If using WBEM for monitoring (only compatible with Linux)
 1. To find mount point information, run the following command.

```
$ wbemcli ei 'http://(user name of target machine):(user's password of target machine)@(IP address of target machine)
```

2. Enter string following the output "Root=" in "Mount Point".
3. Enter any name for the Display Name (if registered name is long, it may not display on the screen).

Example) If the output is as follows, the registered contents of the file system will be as shown in Table 3-12.

```
localhost:5988/root/cimv2:Linux_Ext3FileSystem.CreationClassName="Linux_Ext3FileSystem" . . . partially omitted
Root="/",BlockSize=4096 . . . following abbreviated . . .
localhost:5988/root/cimv2:Linux_Ext3FileSystem.CreationClassName="Linux_Ext3FileSystem" . . . partially omitted
Root="/boot",BlockSize=1024 . . . following abbreviated . . .
```

Table 3-12 Configuring File System Items

File system	Item	Configured value
First file system	Display Name	(any string)
	File System Index	0
	Mount Point	/
Second file system	Display Name	(any string)
	File System Index	0
	Mount Point	/boot

3.4.2 Modifying a Node

The node information registered in the Repository can be changed. There are two ways to change node information.

- Changing Basic Information
 1. Select the node to change from the node list table in Repository[Node] view, and then click the "Modify" button. With selected node information entered, The Repository[Create/Change Node] dialog box will open.
 2. Edit attribute information. Click the record to change in the properties table where the list of attributes are displayed, then enter the attribute value.

By clicking on the Search button on Device Search, just the device and file system information of targeted node information can be obtained by using SNMP. Device Search registers only the devices (disk, nic) with data that have had more than one IN/OUT since the OS reboot, and does not obtain devices that have not had a single data flow since the OS reboot.

3. Click the "Modify" button. The currently entered node information will be registered.



Name	Value
Facility ID	NODE001
Facility Name	WEB-Server01
Description	input column
Managed object	<input checked="" type="checkbox"/>
Automatic searching devices	<input checked="" type="checkbox"/>
Basic Server Information	Expanded
Hardware	Expanded
Platform	Linux(LINUX)
SubPlatform	select column
H/W Type	input column
icon image	input column
Network	Expanded
IP Version	4
IPv4	172.26.98.1
IPv6	input column
Host Name	input column
OS	Expanded
Node Name	NODE001
OS Name	input column
OS Release	input column
OS Version	input column
Character Set	input column
Hinemos Agent	Expanded
Awake Port	24005
Job	
Service	
Device	
Cloud & Virtualization Management	
Node Variable	

Figure 3-10 Repository[Create/Change Node] Dialog

3.4.3 Automatic Device Search

The Hinemos manager periodically executes device search for a node that enables node information "Automatic device search", and automatically updates the device and file system of the node information.

To set interval of automatic device search, select Maintenance perspective of Hinemos Client and open Maintenance [Hinemos property] view, and set up with the following parameter:

```
repository.device.search.interval
```

3.4.4 Deleting a Node

Select the node to change from the node list table in the Repository[Node] view, then click the "Delete" button. It is possible to select multiple nodes at once. (Use the Ctrl key.)

3.4.5 Filtering Node List

The filter can narrow down and display only the node information that matches a specified attribute.

1. Click the "Filter" button in the Repository[Node] view. The Repository[Filter Nodes] dialog will open.
2. Enter the refining conditions for filtering. In the properties table where the list of attributes are displayed, click on the records for refinement, and enter the attribute value. Please leave blank the attribute values that do not apply to the refining.
3. Click the "OK" button in the Repository[Filter Nodes] dialog box, then close the dialog.
To cancel a filter setting, click the "Cancel" button.

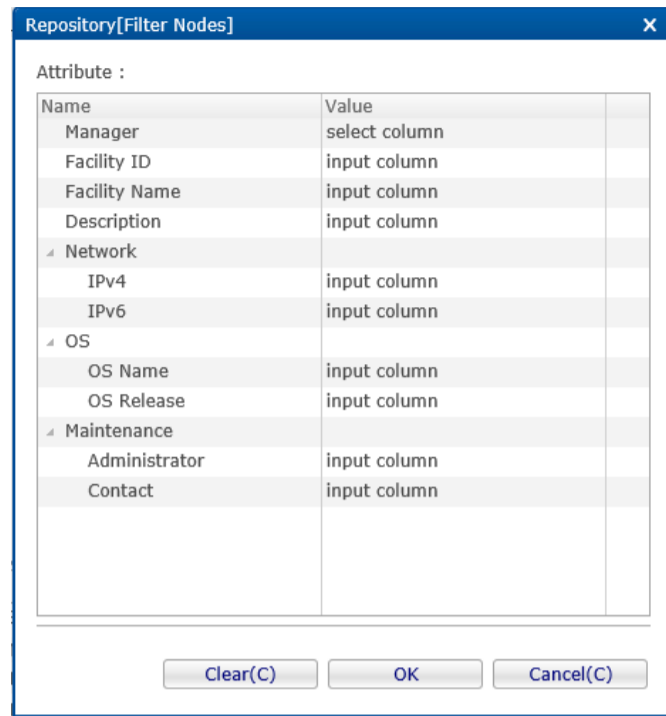


Figure 3-11 Repository[Filter Nodes] Dialog

3.5 Confirming Property Information

Confirm the property information of a node by selecting the node from the list table in Repository[Node] view. The selected node property information and node assignment status are displayed in Repository[Node Property] and Repository[Assigned Scopes] view. Click the "Update" button in each view if the node information settings are changed but not applied.

3.6 Searching Nodes

A specified range of IP addresses can be searched and information on a node to which SNMP responds can be automatically registered in the following procedure.

1. Click the "Search Nodes" button in Repository[Node] view. The Repository[Search Nodes] dialog will open.

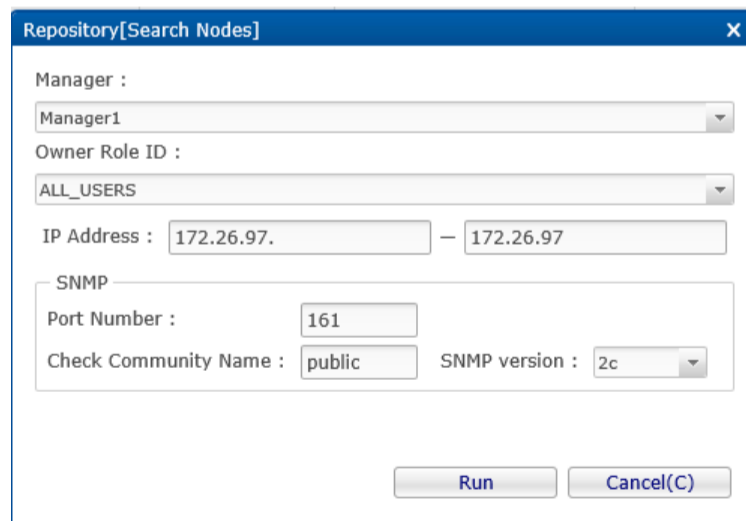


Figure 3-12 Repository[Search Nodes] Dialog

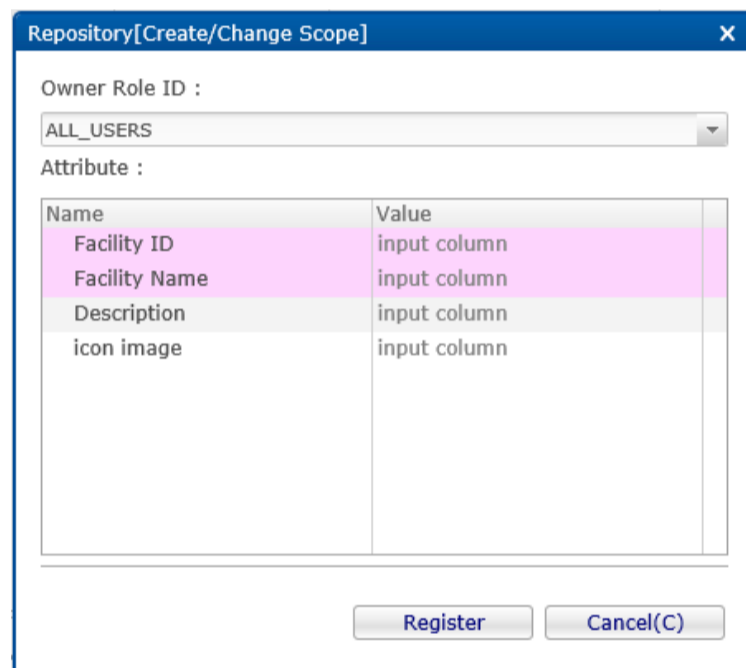
2. Input IP addresses in a range to be searched. Up to 256 IP addresses can be searched.
Also input information on SNMP to be used for search (port number, community name, and version). This item is the same as on Repository [Create/Change Node] dialog. (Refer to 3.4.1 Creating a Node for details.)
3. Click "Run" button. Node search will be executed and a list of registered nodes will be displayed.

3.7 Creating/Modifying/Deleting a Scope

3.7.1 Creating a Scope

A Scope can be created in the repository using the following procedure.

1. From the scope tree in the Repository[Scope] view, choose a scope to be the parent scope. A new scope is created under the selected scope, thus creating a hierarchy structure.
2. Click the "Create" button in the Repository[Scope] view. The Repository[Create/Change Scope] dialog will open.
3. Enter the attribute information. In the properties table where the list of attributes are displayed, click on the record for entry, and enter the attribute value. The Facility ID and Facility Name are mandatory items (may not be omitted). In addition, the Facility ID must be unique on the system. Duplicate Facility IDs cannot be registered (upper and lower cases are distinguished). As the icon image, specify an icon image file name to be displayed when the node map option is used.
4. Click the "Register" button. The entered scope will be registered.



Name	Value
Facility ID	input column
Facility Name	input column
Description	input column
icon image	input column

Figure 3-13 Repository[Create/Change Scope] Dialog

3.7.2 Modifying a Scope

The scope information registered in the repository can be changed.

1. Select the scope to change from the scope tree in Repository[Scope] view.
2. Click the "Modify" button in the Repository[Scope] view. With the attribute information of the scope entered, the Repository[Create/Change Scope] dialog will open.
3. Modify the attribute information. In the properties table where the list of attributes are displayed, click the record for entry, and modify the attribute value.
4. Click the "Register" button. The entered scope will be registered.

3.7.3 Deleting a Scope

1. Select the scope to delete from the scope tree in Repository[Scope] view. It is possible to select multiple scopes at once. (Use the Ctrl key.)
2. Click the "Delete" button in the Repository[Scope] view.

3.8 Node Assignment

3.8.1 Node Assignment

Assignment of a node to a scope. It is possible to assign a single node to multiple scopes.

1. From the scope tree in the Repository[Scope] view, select the scope subject to node assignment. The node will be placed under the scope selected, thus creating a hierarchy structure.
2. Click the "Assign" button in the Repository[Scope] view. The Repository[Select Nodes] dialog will open.
3. Select the node to add to scope from the list of nodes displayed. It is possible to select multiple nodes at once. (Use the Ctrl key.)
4. Click the "Assign" button. The selected node is assigned to the scope.

To refine nodes that appear in the list by specifying conditions

The nodes appearing in the list can be refined by using the filter feature.

1. Click the "Filter" button in the Repository[Select Nodes] dialog. The Repository[Filter Nodes] dialog will open.
2. Enter the refining conditions for filtering. In the properties table where the list of attributes are displayed, click on the records for refinement, and enter the attribute value. Please leave blank the attribute values that do not apply to the refining.
3. Click the "OK" button in the Repository[Filter Nodes] dialog box, then close the dialog. To cancel a filter setting, click the "Cancel" button.

3.8.2 Releasing a Node Assignment

Please follow the procedure below to release an assigned node from a scope.

1. From the scope tree in Repository[Scope] view, select the scope. The node assignment included in the selected scope can be released.
2. Click the "Release" button in the Repository[Scope] view. The Repository[Select Nodes] dialog will open.
3. The selected scope will display a list of nodes that are currently assigned to it. Select the node to release the assignment. It is possible to select multiple nodes at once. (Use the Ctrl key.)
4. Click the "OK" button. The selected node assignment will be released.

To cancel the node assignment release, click the "Cancel" button.

3.9 Restarting and Updating Agent

3.9.1 Restarting Agent

Agent restart is a feature for restarting the selected Hinemos Agent from the Hinemos Manager.

1. From the Repository[Agent] view, select the agent. (Multiple agents can be selected at the same time.) (Use the Ctrl key.)
2. Click the "Restart" button.

The selected agent will restart.

Note when restarting the agent that the agent cannot be restarted from the Hinemos client if the execution account of the agent service of Window is executed with an account without administrator authority.

3.9.2 Agent Update

Agent Update is a feature for remote update of the library file of the selected Hinemos Agent from the Hinemos Manager.

When you run Agent Update, the Hinemos Manager uses the library file (/opt/hinemos/lib/agent/) it holds to update the following library file for the selected Hinemos Agent, and then restarts the Hinemos Agent.

- (For a Linux Agent) /opt/hinemos_agent/lib/
- (For a Windows Agent) [Hinemos Agent install directory]\lib\
 1. From the Repository[Agent] view, select the agent. (Multiple agents can be selected at the same time.) (Use the Ctrl key.)
 2. Click the "Module Update" button.

The module is updated for the selected agent, and restarted.

The image that is generally used is as follows.

1. The new library is placed in the Hinemos Manager's agent library location (/opt/hinemos/lib/agent/).
2. Confirm that the update row in the Repository[Agent] view has become "not.yet".
3. Select the agent to update from the Repository[Agent] view . (Multiple selections are possible.)
4. Click the "Update" button.
5. Confirm that the update row in the Repository[Agent] view has become "done".

Note when updating the agent that the agent cannot be restarted from the Hinemos client if the execution account of the agent service of Window is executed with an account without administrator authority.

4 Calendar Feature

4.1 Overview

You can configure the operating/non-operating periods for the monitoring and job features, and then save it for reference as a calendar.

The operating period can be configured by the two following methods.

1. You can set the operating times and non-operating times for the calendar in units of years, months, days, or weekdays.
 2. You can collectively specify irregular schedules such as national holidays and business days, etc.
- You can set only specific days as operating days or non-operating days.

4.2 Interface Composition

4.2.1 Default Interface

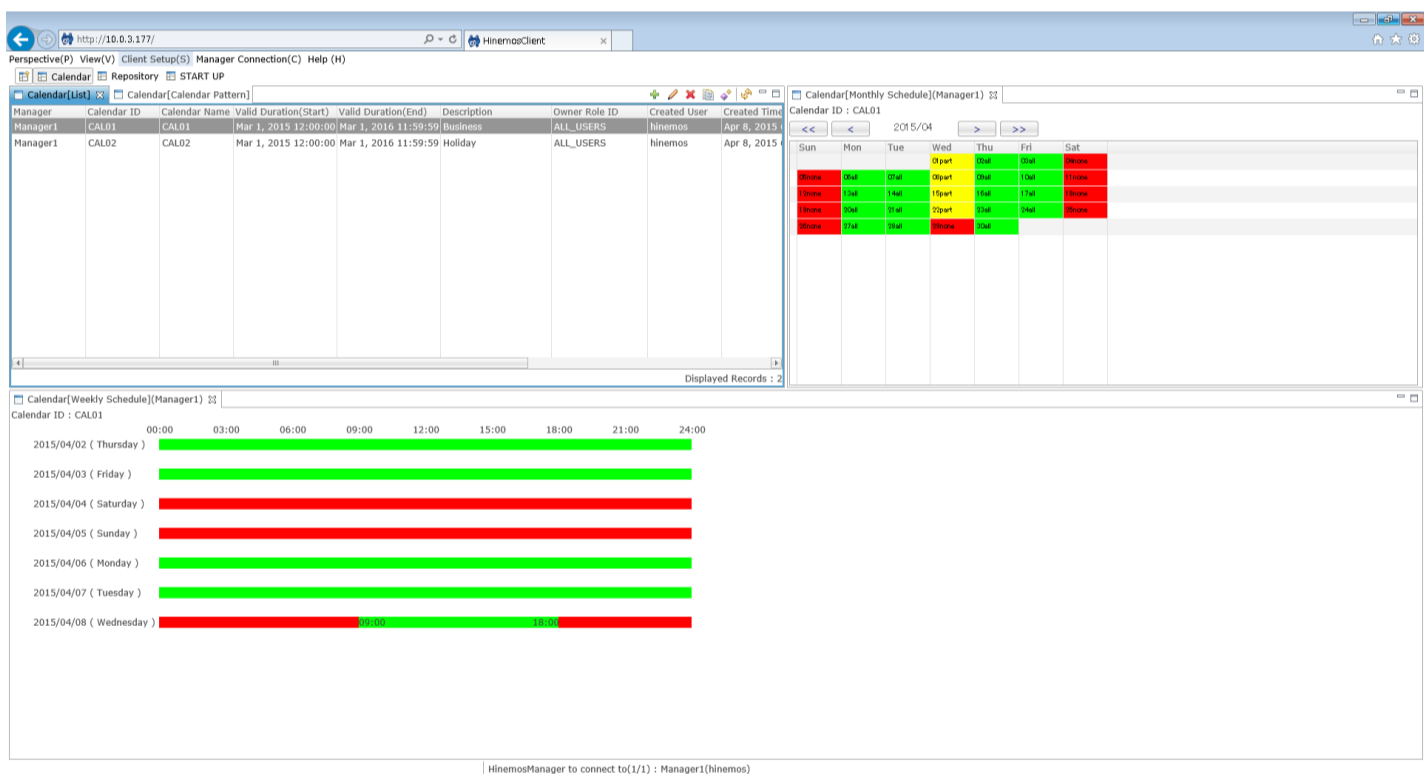


Figure 4-1 Default Interface of Calendar Feature

4.2.2 Calendar[List] view

Manager	Calendar ID	Calendar Name	Valid Duration(Start)	Valid Duration(End)	Description	Owner Role ID	Created User	Created Time	Last Modified Us	Last Modified Time
Manager1	CAL01	CAL01	Mar 1, 2015 12:00:00	Mar 1, 2016 11:59:59	Business	ALL_USERS	hinemos	Apr 8, 2015 6:05:23 F	hinemos	Apr 8, 2015 6:27:05 F
Manager1	CAL02	CAL02	Mar 1, 2015 12:00:00	Mar 1, 2016 11:59:59	Holiday	ALL_USERS	hinemos	Apr 8, 2015 6:06:58 F	hinemos	Apr 8, 2015 6:41:49 F

Figure 4-2 Calendar[List] View

Table 4-1 Toolbar

Icon	Button name	Description
	Create	Create calendar information.
	Change	Change calendar information.
	Delete	Delete calendar information.
	Copy	Copy calendar information.
	Object Privilege Settings	Assign object privilege to calendar.
	Update	Update the contents of the Calendar[List] view.

4.2.3 Calendar[Calendar Pattern] view

Manager	Calendar Pattern ID	Calendar Pattern Name	The number	Registered Date	Owner Role ID	Created User	Created Time	Last Modified Us	Last Modified Time
Manager1	BussinessDay_April	BussinessDay_April	17	2015/4/2 , 2015/4/3 , 2015/4/6 , 2015/4/7 , 2015/4/13 , 2015/4/14 , 2015/4/20 , 2015/4/21 , 2015/4/27 , 2015/4/28	ALL_USERS	hinemos	Apr 8, 2015 6:12:01 F	hinemos	Apr 8, 2015 6:12:01 F
Manager1	holiday2013-2020	holiday2013-2020	120	2013/1/1 , 2013/1/14 , 2013/2/11 , 2013/2/18 , 2013/2/25 , 2013/3/11 , 2013/3/18 , 2013/3/25 , 2013/4/1 , 2013/4/8 , 2013/4/15 , 2013/4/22 , 2013/4/29 , 2013/5/6 , 2013/5/13 , 2013/5/20 , 2013/5/27 , 2013/6/3 , 2013/6/10 , 2013/6/17 , 2013/6/24 , 2013/6/30 , 2013/7/7 , 2013/7/14 , 2013/7/21 , 2013/7/28 , 2013/8/4 , 2013/8/11 , 2013/8/18 , 2013/8/25 , 2013/9/1 , 2013/9/8 , 2013/9/15 , 2013/9/22 , 2013/9/29 , 2013/10/6 , 2013/10/13 , 2013/10/20 , 2013/10/27 , 2013/11/3 , 2013/11/10 , 2013/11/17 , 2013/11/24 , 2013/12/1 , 2013/12/8 , 2013/12/15 , 2013/12/22 , 2013/12/29	ALL_USERS	hinemos	Jan 1, 2013 12:00:00	hinemos	Jan 1, 2013 12:00:00

Figure 4-3 Calendar[Calendar Pattern] View

Table 4-2 Toolbar

Icon	Button name	Description
	Create	Create calendar pattern information.
	Modify	Change calendar pattern information.
	Delete	Delete calendar pattern information.
	Copy	Copy calendar pattern information
	Object Privilege Settings	Assign object privilege to calendar pattern.
	Update	Update contents of the Calendar[Pattern] view.

4.2.4 Calendar[Month Plan] View

Displays the details of the calendar settings that were selected in the Calendar[List] view. You can use the buttons to switch between year and month.

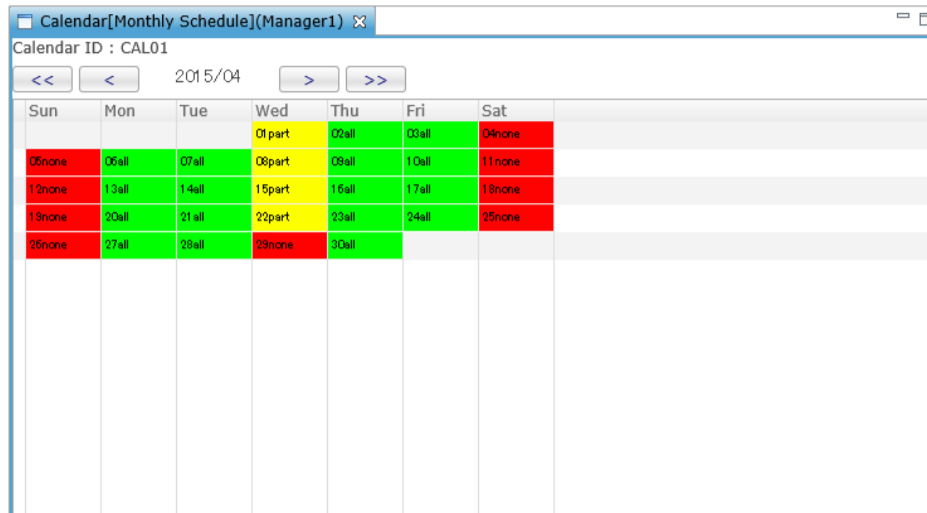


Figure 4-4 Calendar[Month Plan] View

Table 4-3 Toolbar

Button	Button name	Description
<	Previous month	Moves the month display to the previous month.
>	Next month	Advances the month display by one month.
<<	Previous year	Moves the year display to the previous year.
>>	Next year	Advances the year display by one year.

4.2.5 Calendar[Week Plan] View

Displays the detailed plan for one week from the date selected in the Calendar[Week Plan] view.



Figure 4-5 Calendar[Week Plan] View

4.2.6 Calendar[Month Plan] view

The Calendar[Month Plan] view displays the details of the calendar settings selected in the Calendar[List] view. Displays the all-day operating days, all-day non-operating days and part operating days (part non-operating days) using colors and symbols.

Table 4-4 Description of the Calendar[Week Plan] View Display

Display	Name	Description
dd	All-day operating day	Operating 00:00:00 - 24:00:00

ddx	Non-operating day	Not Operating 00:00:00 - 24:00:00
dd△	Part operating Part non-operating	Only operating for some hours in a day i.e.) Operating 06:00:00 - 15:00:00

4.2.7 Calendar[Week Plan] View Confirmation

Displays the detailed plan for one week from the date selected in the Calendar[Week Plan] view. The operating times and non-operating times in a day are distinguished as follows.

- Operating time Displayed in green
- Non-operating time Displayed in red

4.3 Calendar

4.3.1 Creating a Calendar

1. Click the "Create" button on the Calendar[List] view. The Calendar[Create/Change Calendar] dialog will be displayed.
2. Specify the Calendar ID, Calendar Name and Description. Always be sure to enter the "Calendar ID" and "Calendar Name", since both are mandatory fields. The "Calendar ID" must be unique on the system.

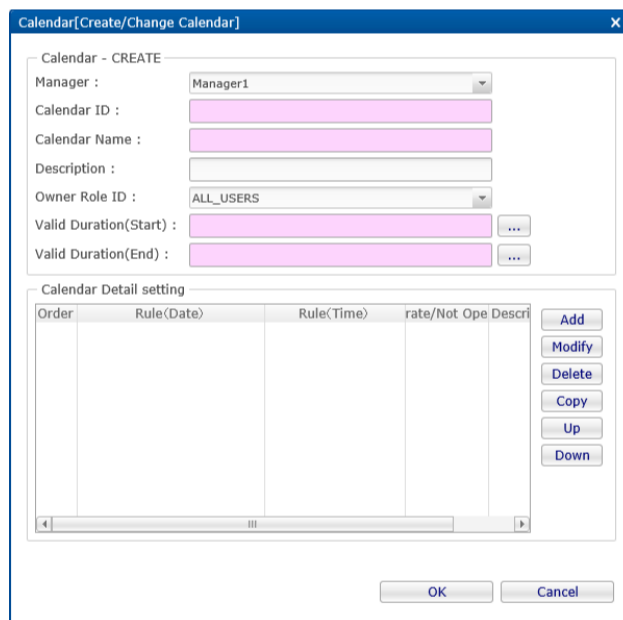


Figure 4-6 Calendar[Create/Change Calendar] Dialog

3. Enter a Valid Duration (Start) and Valid Duration (End) in the Time dialog. The dialog can be opened by clicking the button next to the input field. Please select the date in the dialog. Select a time with the combo box. Calendar creation is valid only during the period (from the time specified for the start to just before the time specified as the end) specified here. Important points about the Valid Duration: **The time specified as Valid Duration (start) becomes valid and calendars can be created. However, The time specified as Valid Duration (end) becomes invalid and calendars can't be created.**

For example) if the Valid Duration is set as "10/1 00:00:00" ~ "11/1 00:00:00",

⇒ "10/1 00:00:00" will be operating and "11/1 00:00:00" will be non-operating.

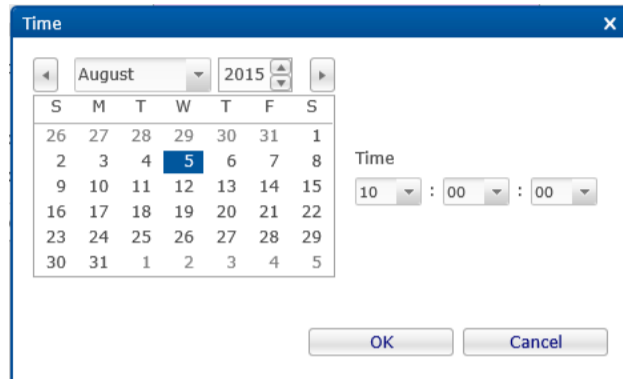


Figure 4-7 Time Dialog

4. Configure the calendar details. The detailed schedule is entered using the Calendar Detail dialog to enter the detailed schedule. Refer to [4.4 Calendar Detail](#) regarding setting the calendar details.
5. Click the "OK" button. The Calendar[Create/Change Calendar] dialog closes and the calendar added in the Calendar[List] view is added.

4.3.2 Modifying a Calendar

1. Select the calendar to be changed in the Calendar[List] view, then click the "Modify" button. The Calendar[Create/Change Calendar] dialog is displayed.
2. Change the content and click the "OK" button.

4.3.3 Deleting a Calendar

1. Select the calendar to be deleted in the Calendar[List] view, then click the "Delete" button. In this case, the calendar can't be deleted if the calendar is being referenced by another function.

4.3.4 Copying a Calendar

1. Select the calendar to be copied in the Calendar[List] view, then click the "Copy" button. The Calendar[Create/Change Calendar] dialog is displayed.
2. Change the Calendar ID and click the "OK" button.

4.4 Calendar Detail

4.4.1 Creating a Calendar Detail

1. Click the "Add" button in the Calendar Detail setting in the Calendar[Create/Change Calendar] dialog. The Calendar[Create/Change Calendar Detail] dialog is displayed.

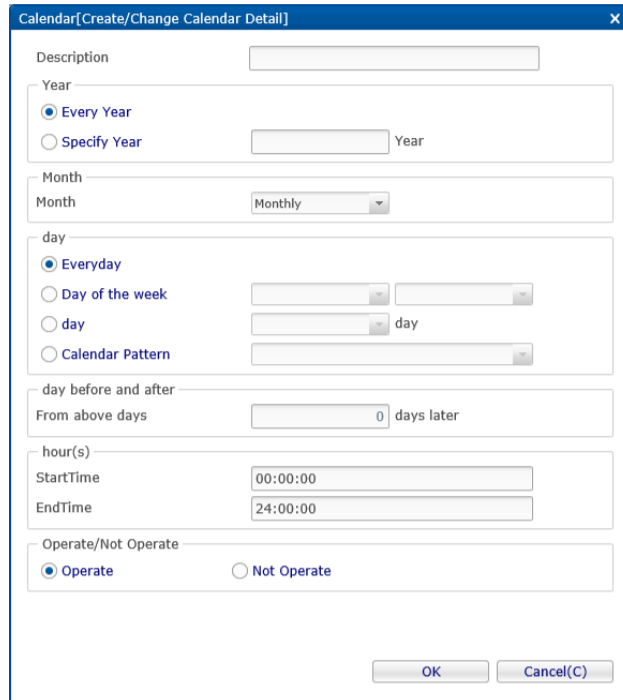


Figure 4-8 Calendar[Create/Change Calendar Detail] Dialog

2. Enter the detail settings. Refer to Table 4-5 Calendar Detail Settings on items that can be set.
3. Click the "OK" button. The entered details are displayed in the Calendar Detail Setting list in the Calendar[Create/Change Calendar] dialog.

Table 4-5 Calendar Detail Settings

Configuration items		Input type	Description
Description		Text	Enter a description of the detail setting.
Year	Every year	Radio button	"Every year" is selected as the default value.
	Specify	Radio button Text	Select "Specify" Enter the using Western calendar years.
Month	Month	Combo box	Select "Monthly" or from "January" ~ "December".
Day	Everyday	Radio button	"Everyday" is selected as the default value.
	Weekday	Radio button Combo box	Select "Weekday" Select "Weekly" or from "1st" ~ "5th". Select from "Sunday" ~ "Saturday".
	Day	Radio button Combo box	Select "Day" Select from "1" ~ "31".
	Calendar Pattern (*1)	Radio button Combo box	Select "Calendar Pattern". Select the Calendar Pattern definition with the combo box.
Days before and after		Text	"0" is entered as the default value. Enter a negative ("-") value to specify days previous.
Hours (*2)	Start time	Text	Enter the hours, minutes and seconds in "hh:mm:ss" format. The range of time that can be specified is "00:00:00" ~ "48:00:00" Also, enter the time so that the Start time < End time. The time specified here (from the time specified as the Start time, to the time just before the specified End time) is the only time valid for detail settings.
	End time		

Operating/Non-operating	Radio button	Select "Operating" or Not Operating" using the radio buttons.
--------------------------------	--------------	---

*1: Refer to [4.5 Calendar Pattern](#) regarding the Calendar Patterns.

*2: The time specified as the Start time is valid for operating. However, the time specified as the End time is invalid so that jobs will not be executed at the End time.

For example) If the Start time and End time are set as "9:00:00" and "15:00:00", it will be valid when the current time is "9:00:00" and it will be invalid when the current time is "15:00:00".

4.4.2 Modifying a Calendar Detail

1. Select the Calendar Detail setting to be changed in the Calendar[Create/Change Calendar] dialog, then click the "Modify" button. The Calendar[Create/Change Calendar Detail] dialog box is displayed.
2. Change the content and click the "Modify" button.

4.4.3 Deleting a Calendar Detail

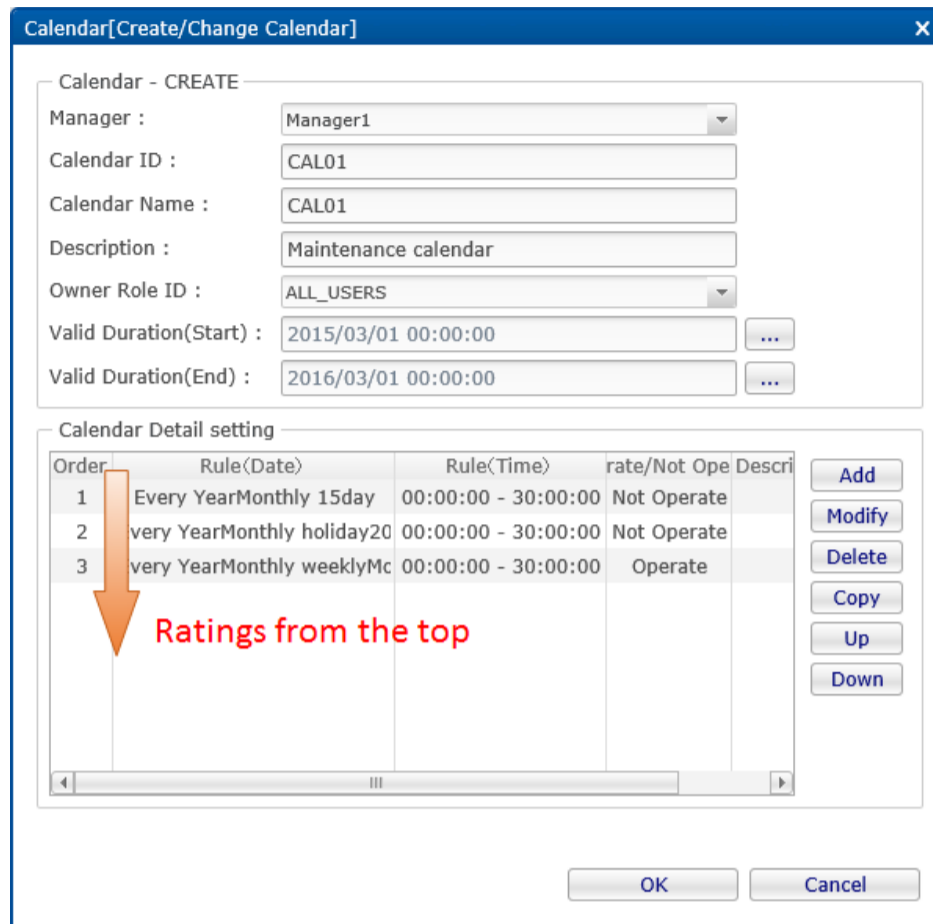
1. Select the setting to be deleted in the Calendar[Create/Change Calendar] view, then click the "Delete" button.

4.4.4 Copying a Calendar Detail

1. Select the Calendar Detail setting to be copied in the Calendar[Create/Change Calendar] dialog, then click the "Copy" button. The Calendar[Create/Change Calendar Detail] dialog box is displayed.
2. Change the content and click the "Modify" button.

4.4.5 Priority of Calendar Details

You can set the priority in the Calendar Detail Definitions. The definitions are evaluated in order from the top (in order from the lowest number). If it conforms to the definitions, subsequent Calendar Detail Definitions won't be evaluated. New definitions will be set as the lowest priority order. To change the priority order, select the definition to be changed from the Calendar Detail setting list, and click the "Up" button or the "Down" button. An example of the evaluation according to the priority order is as follows.



Order	Rule(Date)	Rule(Time)	rate/Not Ope	Descri
1	Every YearMonthly 15day	00:00:00 - 30:00:00	Not Operate	
2	Every YearMonthly holiday20	00:00:00 - 30:00:00	Not Operate	
3	Every YearMonthly weeklyMc	00:00:00 - 30:00:00	Operate	

Figure 4-9 Calendar Priority Order

Definition example) Refer to Figure 4-9 Calendar Priority Order.

- Valid Duration: 2013/3/1 00:00:00 ~ 2014/3/1 00:00:00
 - **Calendar Detail Definition:**
 1. Every Year Monthly 15th 00:00:00 - 30:00:00 Non-operating
 2. Every Year Monthly holiday2013-2020 (*1) 00:00:00 - 30:00:00 Non-operating
 3. Every Year Monthly Monday 00:00:00 - 30:00:00 Operating
- *1: "holiday2013-2020" is a holiday pattern inserted by default during installation

Process example)

- If the current date and time is "2013/03/25 (Monday) 08:00 ⇒ Calendar Detail Definition 3) is satisfied, and therefore Operating
- If the current date and time is "2013/03/26 (Tuesday) 04:00 ⇒ 06:00 - 30:00 in Calendar Detail Definition 3) is satisfied, and therefore Operating
- If the current date and time is "2013/03/26 (Tuesday) 08:00 ⇒ None of the above Calendar Detail Definition is satisfied, and therefore Non-operating
- If the current date and time is "2013/04/15 (Monday) 08:00 ⇒ Calendar Detail Definition 1) is satisfied, and therefore Non-operating
- If the current date and time is "2013/04/29 (Holiday, Monday) 08:00 ⇒ Calendar Detail Definition 2) is satisfied, and therefore Non-operating
- If the current date and time is "2014/03/03 (Monday) 08:00 ⇒ Exceeded the Valid Duration, and therefore Non-operating

4.5 Calendar Pattern

You can set an irregular schedule (business days and holidays) that is difficult to achieve with just year, month, day and day of the week. You can set a specific schedule as Operating and Not Operating by setting a Calendar Pattern.

* The actual holiday might be changed according to law, so please confirm the setting of default calendar pattern before using.

4.5.1 Creating a Calendar Pattern

1. Click the "Create" button in the Calendar[Calendar Pattern] view. The Calendar[Create/Change Calendar Pattern] dialog is displayed.
2. Specify the Calendar Pattern ID, Calendar Pattern Name and Description. Always be sure to enter the Calendar Pattern ID and Calendar Pattern Name, since both are mandatory fields. The Calendar Pattern ID must be unique on the system.

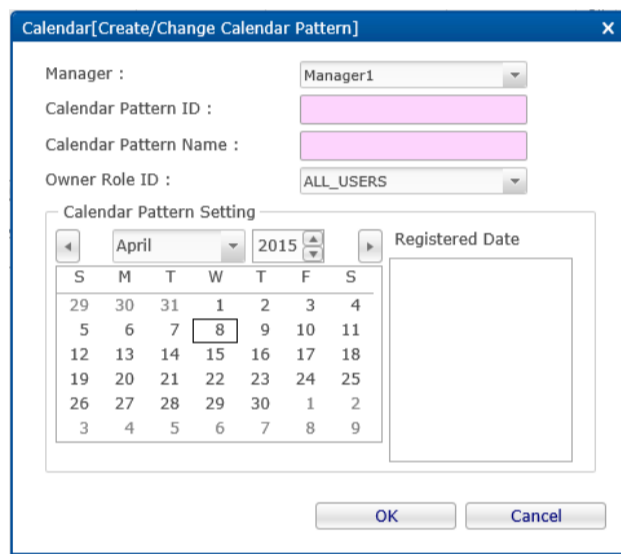


Figure 4-10 Calendar[Create/Change Calendar Pattern] Dialog

3. Set the schedule by clicking on a date in the calendar in the dialog.
4. The set schedule can be released by clicking again.
5. Click the "OK" button. The Calendar[Create/Change Calendar Pattern] dialog closes. The created Calendar Pattern is added to the Calendar[Calendar Pattern] view.

4.5.2 Modifying a Calendar Pattern

1. Select the setting to be changed in the Calendar[Calendar Pattern] view, then click the "Modify" button. The Calendar[Calendar Pattern] dialog is displayed.
2. Change the content and click the "Modify" button.

4.5.3 Deleting a Calendar Pattern

1. Select the setting to be deleted in the Calendar[Calendar Pattern] view, then click the "Delete" button. In this case, a Calendar Pattern can't be deleted if the Calendar Pattern is being referenced by another calendar setting.

4.5.4 Copying a Calendar Pattern

1. Select the calendar to be copied in the Calendar[Calendar Pattern] view, then click the "Copy" button. The Calendar[Calendar Pattern] dialog is displayed.

2. Change the Calendar Pattern ID and click the "OK" button.

5 Monitoring Feature

5.1 Overview

This feature monitors the system and application logs, and the status of the managed nodes.

Specific log information can be specified for the monitoring log, and the information of the monitoring log displayed by scope in a list. In addition, the status can be displayed in a "Status" list.

The following are provided as the main features.

- Display list of log and status information

You can display a list of log and status information by scope. The highest level of priority in the monitoring log information of a scope will be displayed as the priority of the scope itself. Also the total number for each priority is collected and displayed. You can filter and display the monitoring log information according to the attribute item condition. A monitoring log flag shows whether the operator has confirmed the log or not. The "Confirm" operation can be used to hide the confirmed monitoring log information from the list.

- Drill down display

You can "drill down" to reference a lower hierarchy of the log information to match the scope hierarchy structure. Scopes are displayed in a hierarchal list on the screen. By selecting a scope in the tree you can "drill down" to display detailed information of the scope hierarchy structure. The whole scope can be confirmed first, followed by the detailed status.

- Notification feature

You can send e-mail or execute jobs according to the priority of the monitor log information.

- Calendar feature

You can register and refer to the calendar where the working time and the nonworking time are configured, and specify the periods when monitoring is enabled or disabled.

- Job execution triggered by notification

You can execute jobs triggered by notifications in conjunction with the Job feature.

5.2 Interface Composition

5.2.1 Default Interface

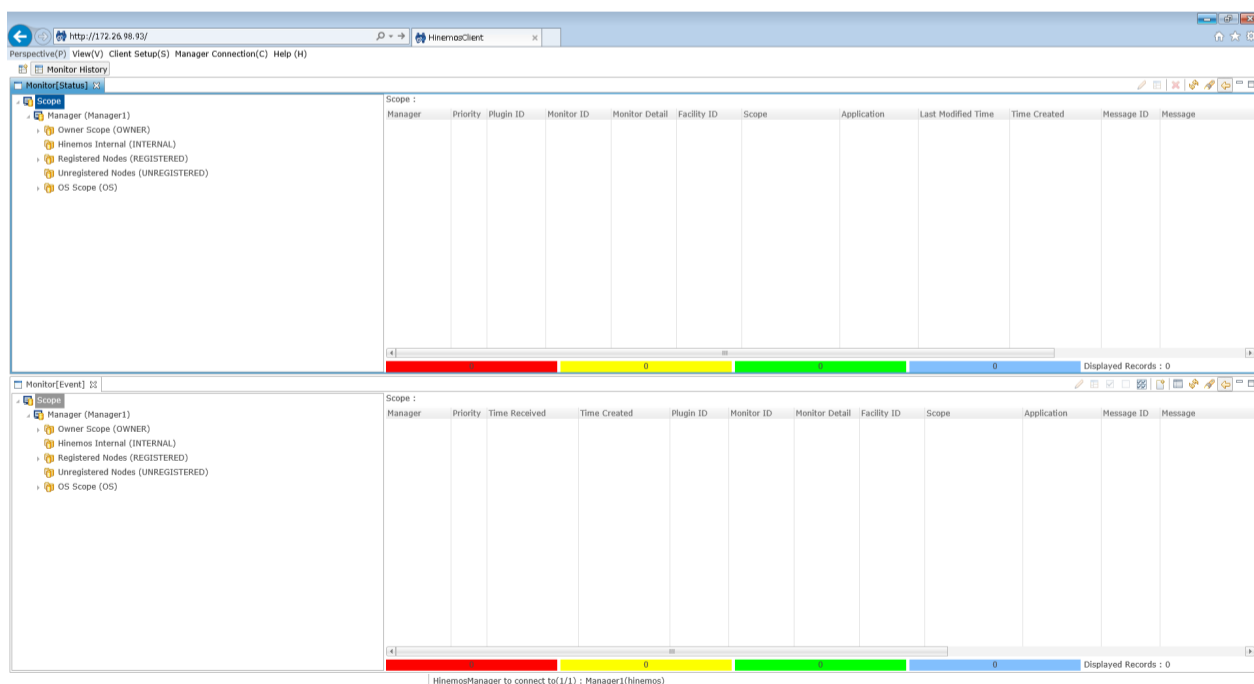


Figure 5-1 Default Interface of Monitoring Feature

5.2.2 Monitor[Scope] View

The Monitor[Scope]view displays the scope status. The log and status information for each log are displayed in this view. This view is not display by default on Monitor History perspective. For how to open an additional view, refer to 2.7 Interface Layout(Perspective) .



Figure 5-2 Monitor[Scope] View

Table 5-1 Toolbar

Icon	Button name	Description
	Update	Update the contents of the view with new information.
	Show Scope Tree Pane	Select display/nondisplay of the scope tree.

At the bottom of the view, the total number of logs is displayed in different colors and counted by priority. Also, the total number of logs shown is displayed in "Displayed Records".

5.2.3 Monitor[Status] View

The Monitor[Status] view displays the scope status.



Figure 5-3 Monitor[Status] View

Table 5-2 Toolbar

Icon	Button name	Description
	Monitor Setting - MODIFY	Open a setting dialog of monitoring setting from which this event information is output.
	Job History	Open Job History perspective and display on Job[Job Detail] view a job from which this event information is output.
	Delete	Delete the status.
	Update	Update the contents of the view with new information.
	Filter	Perform filter monitoring for the status list.
	Show Scope Tree Pane	Select display/nondisplay of the scope tree.

At the bottom of the view, the total number of logs is displayed in different colors and counted by priority. Also, the total number of logs shown is displayed in "Displayed Records".

5.2.4 Monitor[Event] View

The Monitor[Event] view displays the log information being collected.



Figure 5-4 Monitor[Event] View

Table 5-3 Toolbar

Icon	Button name	Description
	Monitor Setting - MODIFY	Open a setting dialog of monitoring setting from which this event information is output.
	Job History	Open Job History perspective and display on Job[Job Detail] view a job from which this event information is output.
	Confirmed	Confirms the process of an event. The user running this process is saved as the confirmation user
	Change to Unconfirmed	Change the "Confirmed" event to "Unconfirmed". The user running this process is saved as the confirmation user
	Confirm All	Confirm all events to which the condition applies.
	Download	Output a list of events to a file.
	Detail	Display detailed contents of an event.
	Update	Update the contents of the view with new information.
	Filter	Performs a filter of the event list.
	Show Scope Tree Pane	Select display/nondisplay of the scope tree.

At the bottom of the view, the total number of logs is displayed in different colors and counted by priority. Also, the total number of logs shown is displayed in "Displayed Records".

* The total number of event information displayed in the Monitor[Event] view is not the total number of event information stored in the Hinemos database.

* You can configure the maximum number of events to display in the Monitor[Event] view. Refer to [5.7 Changing the Display Limits for Monitoring Screen Update Interval and History](#) for each type of setting dialog condition.

5.3 Prerequisites for Using this Feature

When performing settings in the monitoring feature, the following setting must be performed beforehand.

- A monitoring target must be registered as a node and assigned to one of the scopes in the repository.
- The notification method must be configured and registered in the notification feature for monitor settings
- An calendar must be registered at first, in order to be referred to as the valid monitoring period of a monitor setting.
- A job must be registered beforehand in order to be used as job execution that triggered by notification.

5.4 Confirming the Monitor results in the Monitor[Scope] View

The aggregate status and event for each scope is displayed in the Monitor[Scope] view. When a scope is selected from the tree pane on the left side, the status of the selected scope is displayed. The scope with the highest priority from the selected scope is displayed on the right side (including the scope itself).

The displayed status and event information are:

- Status/event with the highest priority
- The last status/event output (if there are multiple status/event output with the same priority)

There are four levels of priority used in Hinemos.

- Critical ... Displayed in red
- Warning ... Displayed in yellow
- Info ... Displayed in green
- Unknown ... Displayed in light blue

Priority levels are:

Critical > Unknown > Warning > Info

5.5 Confirming the Monitor Results in the Monitor[Status] View

In the status monitoring feature, a list of notification information from the monitoring feature will be displayed as the status information for each scope. The information shown here is different than the information shown in the Monitor[Event] view. It always shows only the newest status. The status notification is identified by the "Monitor ID", "Monitor Detail", and "Facility ID". When both "Plugin ID" and "Monitor ID" receive matching notification, the status will be updated.

5.5.1 Displaying Monitor Setting of Status Notification Results

Select a status notification result related to monitoring result from the status list on Monitor[Status] view and click "Monitor Setting – MODIFY". Create/Change dialog of monitor setting from which the status is notified will be displayed. This function can check the content of the monitor setting or change the setting at the notification destination.

For details of Create/Change dialog of each monitor setting, see each monitor item in [7 Monitor Setting Feature \(Monitor Type\)](#) .

5.5.2 Displaying Job History of Status Notification Result

Select a status notification result related to job history from the status list on Monitor[Status] view and click "Job History" button. Job History perspective will be opened and the details of a job that notifies the status will be displayed on Job[History] view and Job[Job Detail] view. This function can check the details of the result of execution of the notifying job.

For details of information to be displayed on Job History perspective, refer to [9 Job Feature](#) .

5.5.3 Deleting the Status Notification Results

In the Monitor[Status] view select the notification to delete, and then click on the "Delete" button.

5.5.4 Filtering of Status Notification Results

1. Click the "Filter" button in the Monitor[Status] view. The Monitor[Filter Status] dialog is displayed.

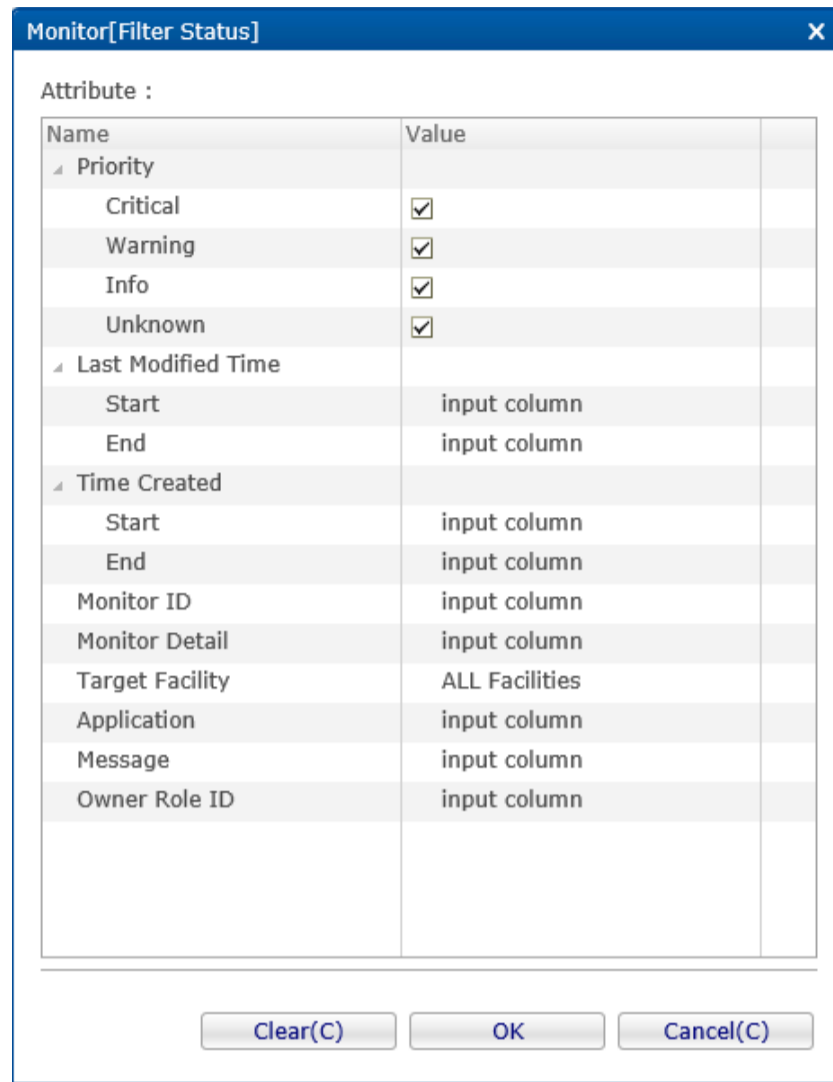


Figure 5-5 Monitor[Filter Status] Dialog

2. Configure the filter condition. When an item is not included in the condition, please leave the field blank. (Please click on the "Clear" button to change the filter conditions back to the default conditions).

- Priority:

Make "Priority" a filter condition. Select the priority level from the combo box.

- Last Change Time:

Make "Last Change Time" a filter condition. Clicking the button on the right side of the input field opens the time dialog. Please select a date. Select a time from the combo box.

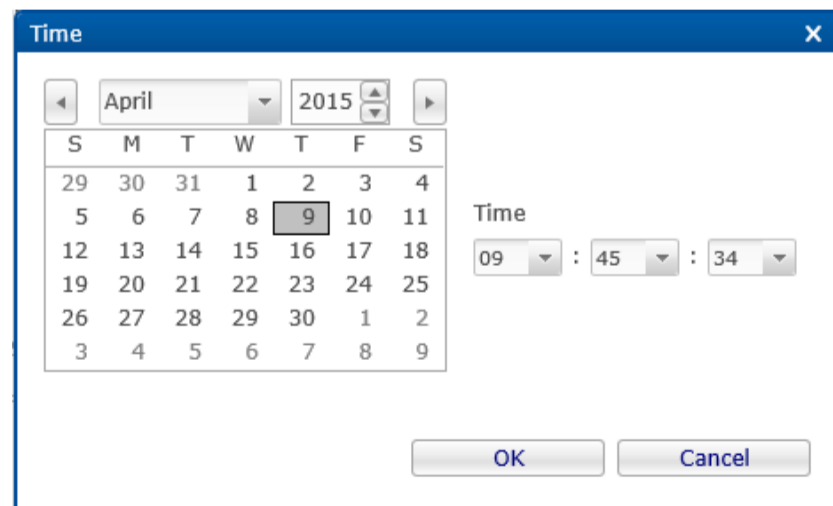


Figure 5-6 Time Dialog

- Time Created:
Make "Time Created" a filter condition. Clicking the button on the right side of the input field opens the time dialog. Please select a date. Select a time from the combo box.
- Monitor ID:
Make "Monitor ID" a filtering condition. Please enter alphanumeric text in the input field (*).
- Monitor Detail
Make "Monitor Detail" a filtering condition. Please enter alphanumeric text in the input field (*).
- Target Facility:
You can select the facility (scopes and nodes) to display.
 - ALL Facilities ... Display the selected scope and all nodes included in the selected scope
 - Sub-scope Facilities Only ... Display the selected scope and only the scope and the node included in the selected scope
- Application:
Make "Application" a filter condition. Please enter alphanumeric text in the input field (*).
- Message:
Make "Message" a filter condition. Please enter alphanumeric text in the input field. The string entered here will be filtered (*).
- Owner Role ID :
Specify an Owner Role ID as a filter condition. Please enter alphanumeric text in the input field (*).

* Filtering is performed by perfect or partial match of entered content.

Example: Only Monitor ID of "PING" is displayed if "PING" is entered as Monitor ID.

Filtering by partial match can be made by entering "%" before or after the entered content.

- Monitor ID starting from "PING" is displayed if "PING%" is entered as Monitor ID (forward match).
- Monitor ID ending with "PING" is displayed if "%PING" is entered as Monitor ID (backward match).
- Monitor ID including "PING" is displayed if "%PING%" is entered as Monitor ID (intermediate match).

Those that do not match can also be filtered by entering "NOT:" at the beginning.

- Monitor ID that is not "PING" is displayed if "NOT:PING" is entered as Monitor ID.
- Monitor ID that does not start from "PING" is displayed if "NOT:PING%" is entered as Monitor ID.

Note, however, that the load of Hinemos manager increases and it takes time to display the result if filtering by backward or intermediate match or by those that do not match is executed.

3. Click the "OK" button. The Monitor[Filter Status] dialog closes, and only the notifications that met the configured conditions are displayed in the Monitor[Status] view.

The field displaying the scope will be renamed as the "Filtered List" and the icon will change to the "Filter" button pressed.

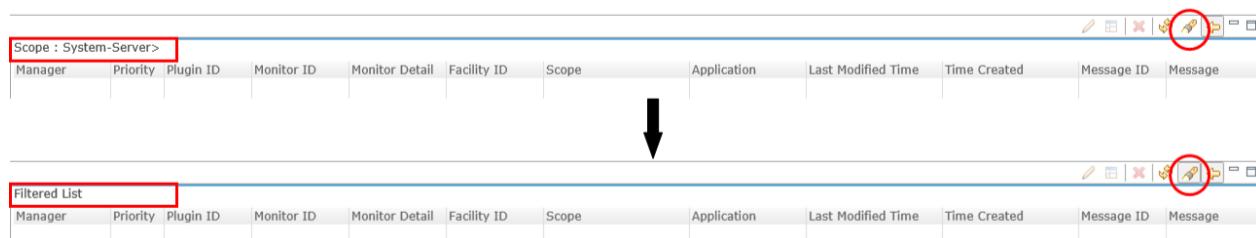


Figure 5-7 Filtered List

5.5.5 Deleting Filtering of Status Notification Results

Click the (pressed) "Filter" button in the Monitor[Status] view.

5.5.6 Confirming Detailed Contents of Status Notification Result

Select and double-click the status to be displayed from the status list on Monitor[Status] view. The Monitor[Status Detail] dialog is displayed.

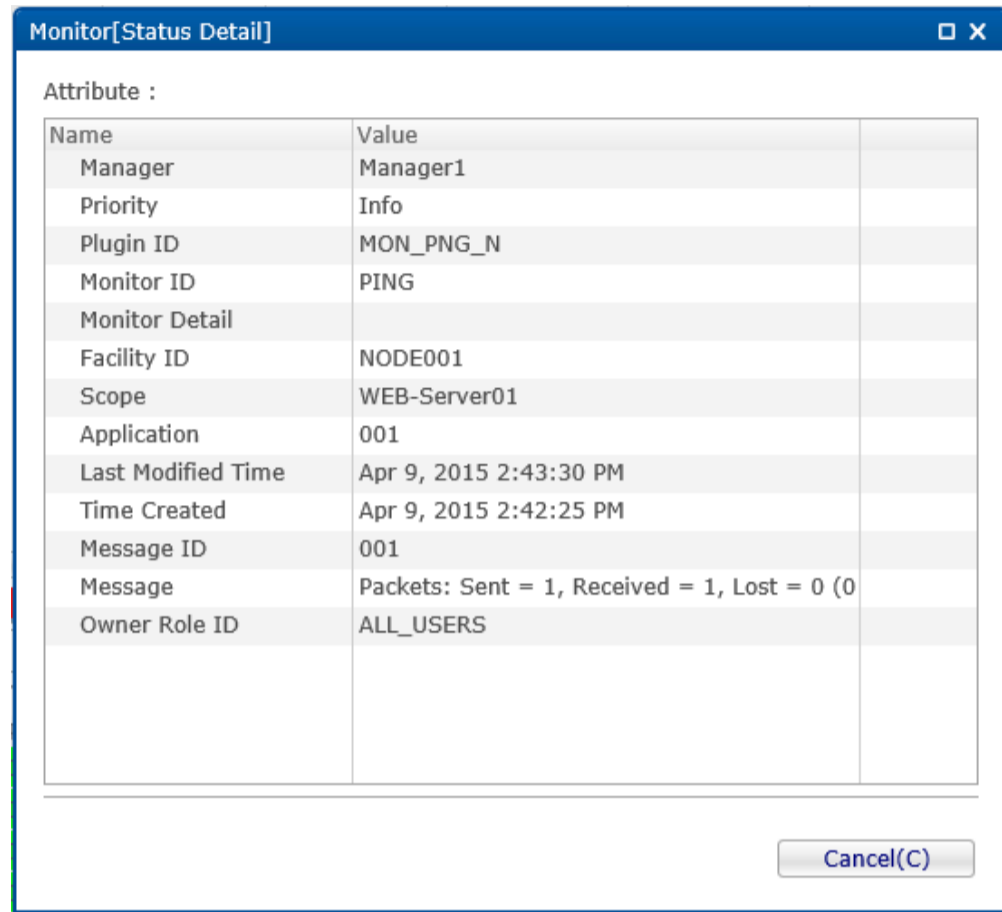


Figure 5-8 Monitor[Status Detail] Dialog

Confirming the message

The "..." button is displayed on the far right when the "Messages" field in the Monitor[Status Detail] dialog is selected. The Messages dialog is displayed when this button is clicked, and the message is confirmed.

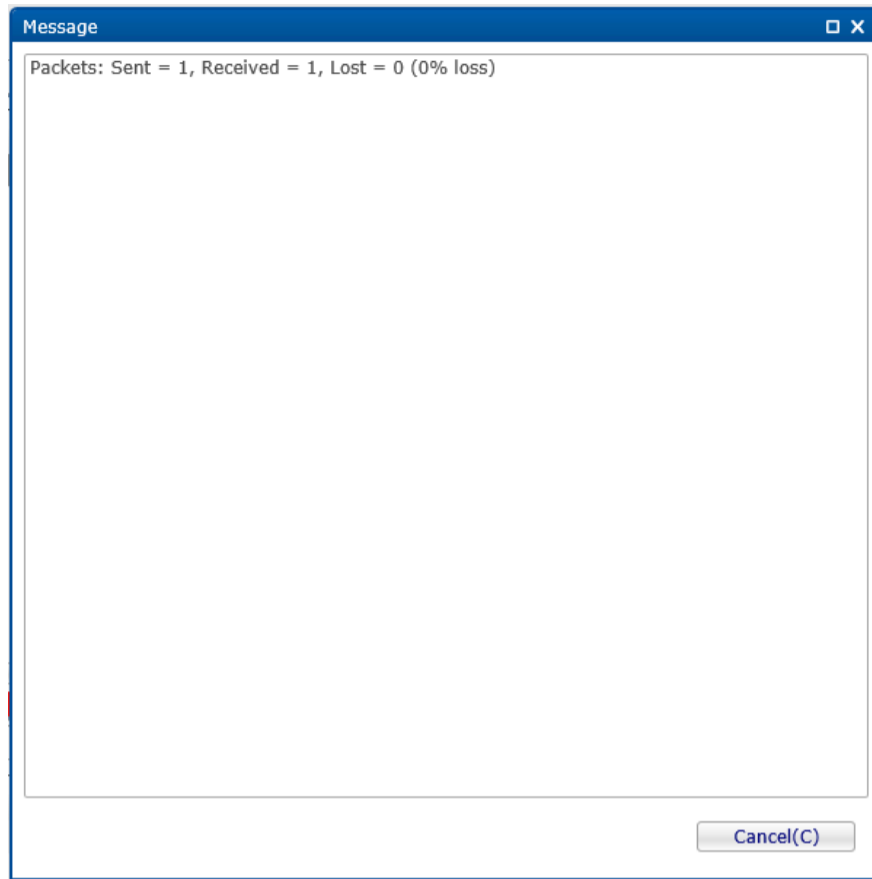


Figure 5-9 Message Dialog

If strings starting with the following URL schemes are included in the messages, the browser is launched when the string is clicked, and then the relevant page (file) is displayed. Note that this feature cannot be used by the Web Client.

- **http://**
- **https://**
- **ftp://**
- **file://**

5.5.7 Date Items in the Monitor[Status] View

The table below describes the Date item displayed in the Monitor[Status] view.

Table 5-4 Date Item in the Monitor[Status] View

Item	Target OS time	Description
Last Change Time	Manager server	Display the time when the last monitoring was executed.
Time Created	Manager server	Display the time when the first monitoring was executed. If the status information was once deleted, display the time when the first monitoring was executed after it was deleted. If the priority was changed and notified, display the time when the changed monitoring was executed.

5.6 Confirming the Monitor Results in the Monitor[Event] View

5.6.1 Displaying Monitor Setting of Event Notification Results

Same as status notification. Refer to the section [5.5.1 Displaying Monitor Setting of Status Notification Results](#) for more details.

5.6.2 Displaying Job History of Event Notification Result

Same as status notification. Refer to the section, [5.5.2 Displaying Job History of Status Notification Result](#) for more details.^

5.6.3 Confirmation of the Event Notification Results

Select the notification to be confirmed in the list of events in the Monitor[Event] view, and then click the "Confirmed" button. The confirmation flag of the specified notification is "Confirmed", and the user that executed the confirmation process is saved as the "Confirmation User".

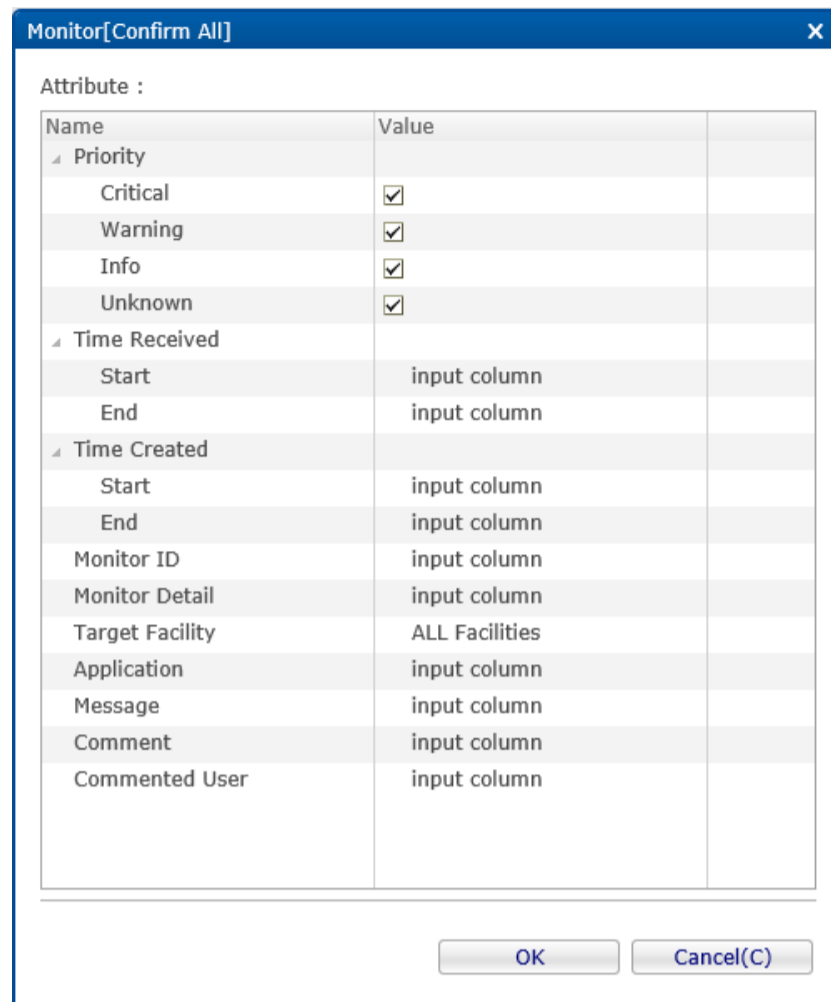
To change confirmed notification to unconfirmed

1. Configure the filtering in the Monitor[Event] view so that the unconfirmed notification is displayed in the list of events (Please refer to the section [5.6.4 Filtering of Event Notification Results](#) for the setting process).
2. Select the notification to change, and then click on the "Change Unconfirmed" button. The confirmation flag of the selected notification is "Unconfirmed", and the user that carries out this process is saved as the "Confirmation User".

Collectively confirm notifications that match the conditions

The Monitor[Confirm All] dialog is displayed when the "Confirm All" button in the Monitor[Event] view is clicked. Next, add refiners to filter specific content. The setting is same as the procedure for filtering (for details, please refer to [5.6.4 Filtering of Event Notification Results](#)).

The confirmation flag of the specified notifications is "Confirmed", and the user that carried out the confirmation process is saved as the "Confirmation User".



Name	Value
Priority	
Critical	<input checked="" type="checkbox"/>
Warning	<input checked="" type="checkbox"/>
Info	<input checked="" type="checkbox"/>
Unknown	<input checked="" type="checkbox"/>
Time Received	
Start	input column
End	input column
Time Created	
Start	input column
End	input column
Monitor ID	input column
Monitor Detail	input column
Target Facility	ALL Facilities
Application	input column
Message	input column
Comment	input column
Commented User	input column

Figure 5-10 Monitor[Confirm All] Dialog

5.6.4 Filtering of Event Notification Results

The Monitor[Filter Events] dialog is displayed when the "Filter" button in the Monitor[Event] view is clicked. Next, specify the refiner. The setting method is similar to status filtering, but the following items can be specified as well. (Refer to the section [5.5.4 Filtering of Status Notification Results](#) for details)

- Confirmed:
Specify the status of the confirmation flag. Specify "Unconfirmed", "Confirmed", or blank from the combo box. If blank is specified, events in both the statuses are displayed.
- Confirmation User:
Specify the user that carried out the confirmation process. Please enter alphanumeric text in the input field. Like the other items entered as alphanumeric text, filtering by perfect or partial match is possible.

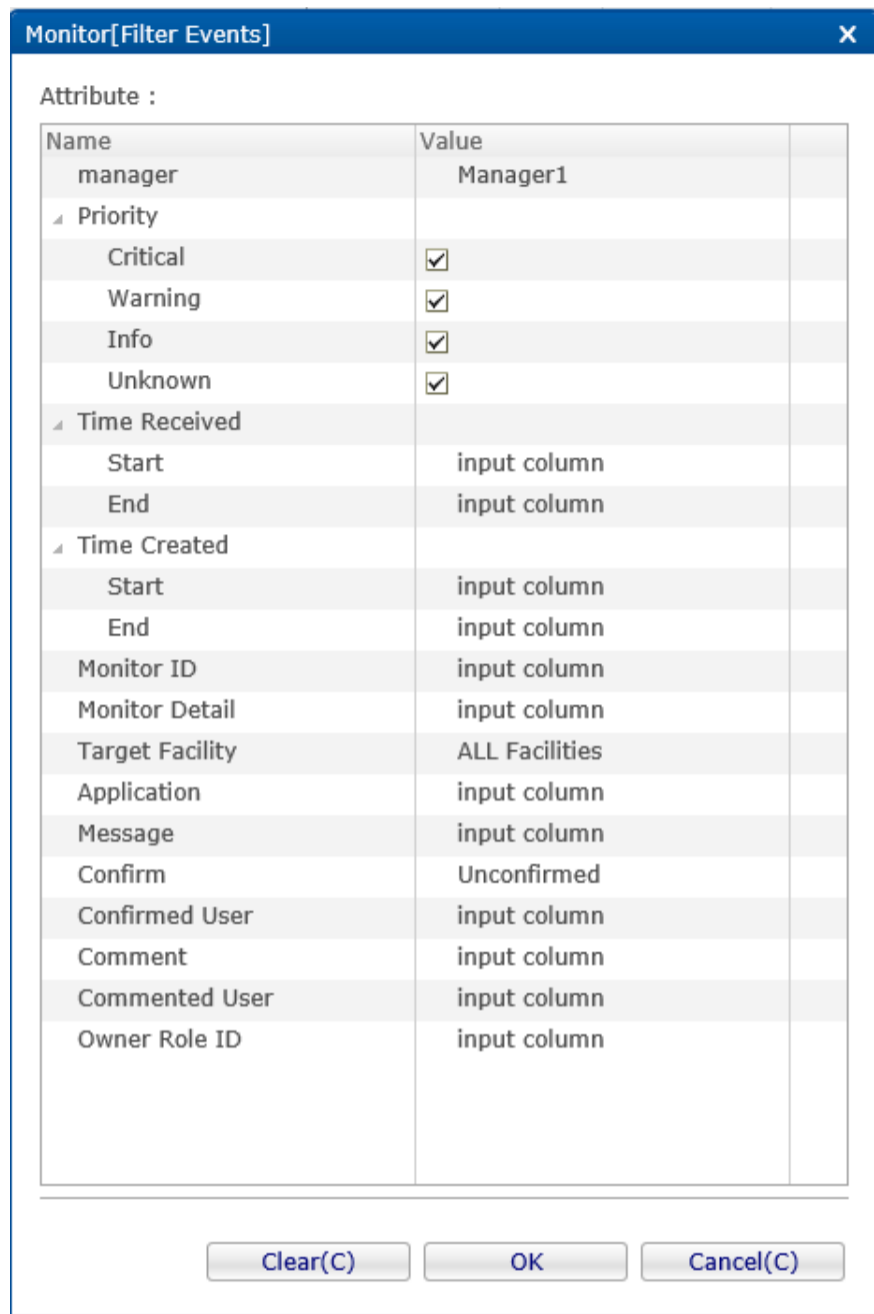
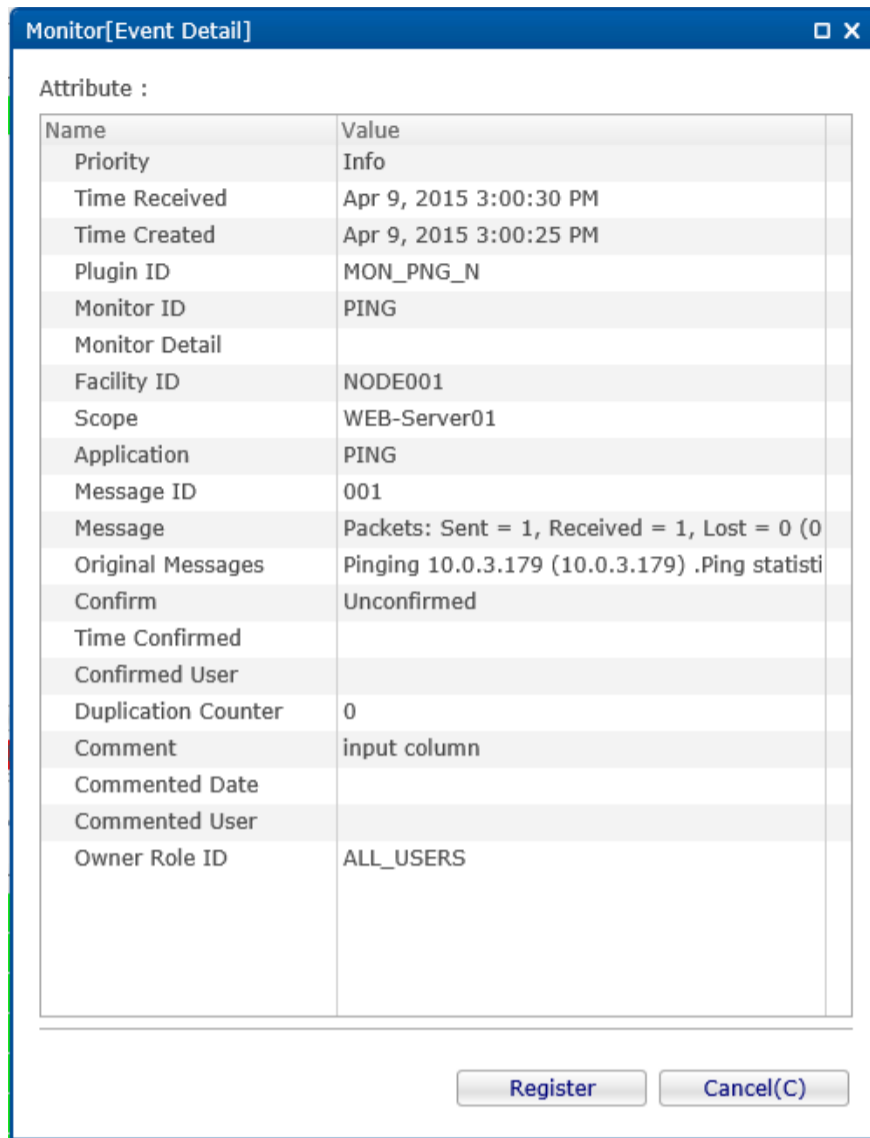


Figure 5-11 Monitor[Filter Events] Dialog

5.6.5 Confirming Detailed Contents of Event Notification Results

Select an event from the list of events in the Monitor[Event] view, and then double-click on it or click the "Detail" button. The Monitor[Detail] dialog is displayed.

The content is the same as the detailed content confirmation of status notification, but comments can also be added. (Refer to [5.5.6 Confirming Detailed Contents of Status Notification Result](#) for more details)



Monitor[Event Detail]

Attribute :

Name	Value
Priority	Info
Time Received	Apr 9, 2015 3:00:30 PM
Time Created	Apr 9, 2015 3:00:25 PM
Plugin ID	MON_PNG_N
Monitor ID	PING
Monitor Detail	
Facility ID	NODE001
Scope	WEB-Server01
Application	PING
Message ID	001
Message	Packets: Sent = 1, Received = 1, Lost = 0 (0
Original Messages	Pinging 10.0.3.179 (10.0.3.179) .Ping statisti
Confirm	Unconfirmed
Time Confirmed	
Confirmed User	
Duplication Counter	0
Comment	input column
Commented Date	
Commented User	
Owner Role ID	ALL_USERS

Register Cancel(C)

Figure 5-12 Monitor[Event Detail] Dialog

Adding comments to the Event Notification Results

You can add a comment for each event notification result.

1. A "..." button is displayed on the far right when the "Comment" field in the Monitor[Event Detail] dialog is selected. A comment input dialog is displayed when you click this button to add or edit comments.
2. Click the "OK" button in the comment dialog, then close the comment dialog.
3. When you click the "Register" button in the Monitor[Event Detail] dialog, the comment is registered.

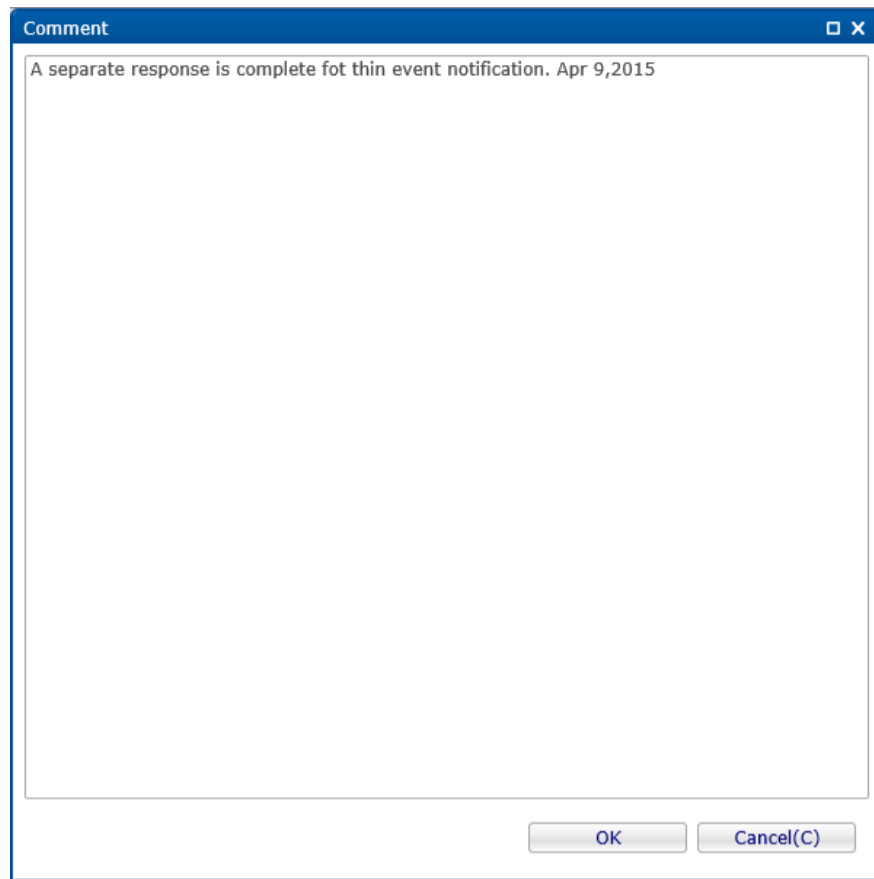


Figure 5-13 Comment Input Dialog

5.6.6 Report Output of the Event Notification Results

The event notification results can be output to a file. The event information is output in CSV format.

Note) The maximum number of event information downloads is limited. (Refer to section 5.1.1 "Configuring the Maximum Number of Downloads" in the Administrator's Guide for details.)

You can output a report using the following procedures.

1. Click the "download" button in the Monitor[Event] view. The monitor[Download events] dialog will be displayed.
2. Enter the destination file.
3. Specify the refiner for the output event. The setting method is similar to the procedure for filtering events (For details, please refer to the section [5.6.4 Filtering of Event Notification Results](#))
4. Click on the "Output" button.
Configured refiner can be cleared by clicking on the "Clear" button.

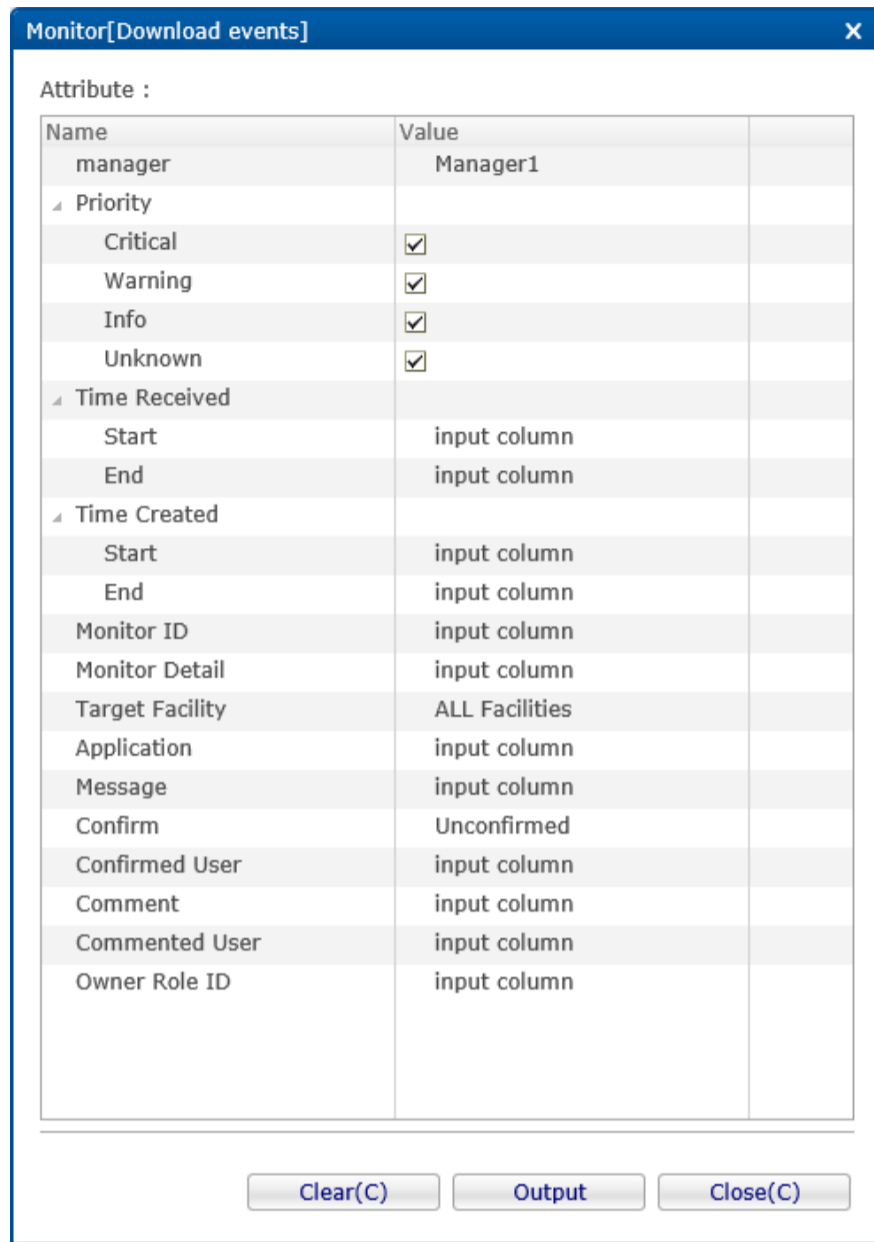


Figure 5-14 Monitor[Download events] Dialog

5.6.7 Date Items in the Monitor[Event] View

The table below describes the date items displayed in the Monitor[Event] view.

Table 5-5 Data Items in the Monitor[Event] View

Item	Monitor Item	Target OS time	Description
Time Received	All monitor items	Manager server	Display the time when an event was stored in the managed DB (PostgreSQL) from the Hinemos Manager side.

Time Created	[Monitoring polling method] Hinemos Agent Monitor, HTTP Monitor, PING Monitor, SQL Monitor, Process Monitor, Service Port Monitor, Windows Service Monitor, Resource Monitor, JMX Monitor	Manager server	Display the time of the manager server at the time of monitoring
	[Monitoring using Hinemos Agent] Custom Monitor, Logfile Monitor, Windows Event Monitor	Managed node	Display the system time of managed node at the time when the Hinemos Agent obtains the result.
	System Log Monitor	Managed node	Display the log output time in the syslog header that Hinemos Manager received.
	SNMPTRAP Monitor	Manager server	Display the system time of the manager server at the time of trap reception.

5.7 Changing the Display Limits for Monitoring Screen Update Interval and History

The screen information is updated regularly by obtaining manager information from the client at regular intervals. Update interval can be changed by the following procedures.

1. Select "Client Setup" - "Setup" from the menu bar. The preferences dialog is displayed.

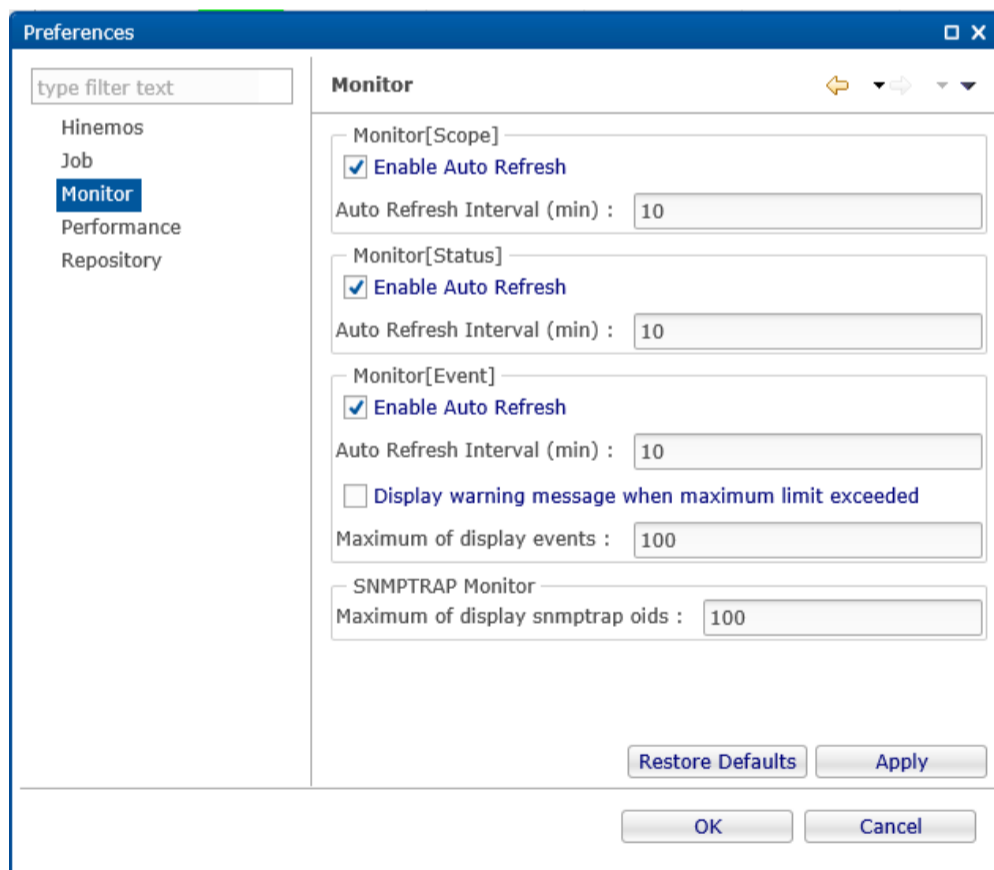


Figure 5-15 Preferences Dialog

2. Select Hinemos - Monitor in the tree pane on the left side.
3. The following setting can be made for each Monitor[Scope] view. You can perform the following various settings.

- Enable Auto Refresh:

The contents of the view will be updated at the specified auto refresh interval when this check box is checked. If unchecked, the contents will not be updated unless the "Update" button is clicked.

- Auto Refresh Interval (min):

If Auto Refresh is enabled, specify the refresh interval in minutes.

In addition, it is possible to set the limit for items to display related to the Monitor[Event] view.

- Display messages when the upper bound is exceeded:

Output message if this check box is checked and if accumulated number of events exceeds the specified number of display events. If unchecked, a message will not be output even if the number of events exceeds the number of display events.

- Number of display events:

Specify the number of histories displayed at once. If you select the highest (scope) of the scope tree while logging in plural Hinemos Manger, the total of the events of the Hinemos Manager you are logging in is displayed without exceeding this set value.

6 Monitor Setting Feature

6.1 Overview

This is a feature for centralized management of the monitor settings. You can confirm the various monitor settings that are set in a list, and add, change or delete the monitor settings. Also, with this feature you can add, change or delete the notification settings that define the notification method for monitor results. The main features that can be set for the Monitor Setting Perspective are as follows.

- Monitor Setting Feature

This is a feature to set up the Monitor. Monitoring of log information and status information for monitored nodes in each Scope prepared in advance can be set up in the Hinemos Repository feature. You can perform notification and confirmation of the monitor results in various locations, based on the setting and with the notification method designated in the notification feature. Also, the monitor results can be accumulated by performance value through numeric monitoring (Refer to [7.1.1 Numeric Monitoring](#) for details) and the result can be displayed as a graph in the Performance feature or downloaded in CSV format.

- Notification Feature

This is a feature to set up the notification method for the monitor results. The method and details of notification and the notification destination can be specified for each level of monitor results priority, based on the monitor settings.

- Mail Template Feature

This feature specifies the e-mail style when the monitor results are notified by e-mail based on the monitor results. Specific monitor result details can be included with the use of fixed variables in the e-mail content.

Refer to the next section for details on each of the monitor settings.

6.2 Interface Composition

6.2.1 Default Interface

The screenshot shows the Hinemos web interface for Monitor Setting. It contains two main data tables:

Manager	Notification ID	Description	Notification Type	Valid/Invalid	Owner	Role ID	Calendar	Created User	Created Time	Last Modified	Last Modified Time
Manager1	COMMAND_FOR_POLLING	for polling monitor (ping, prc: Command Notif)	Invalid		ALL_USERS			hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	COMMAND_FOR_TRAP	for log Monitor, SNMPTRAP P: Command Notif	Invalid		ALL_USERS			hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	EVENT_FOR_POLLING	for polling monitor (ping, prc: Event Notificati)	Valid		ALL_USERS			hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 9, 2015 3:00:46 F
Manager1	EVENT_FOR_TRAP	for log Monitor, SNMPTRAP P: Event Notificati	Valid		ALL_USERS			hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	MAIL_FOR_POLLING	for polling monitor (ping, prc: Mail Notificator)	Invalid		ALL_USERS			hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	MAIL_FOR_TRAP	for log Monitor, SNMPTRAP P: Mail Notificator	Invalid		ALL_USERS			hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	STATUS_FOR_POLLING	for polling monitor (ping, prc: Status Notificat)	Valid		ALL_USERS			hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 9, 2015 2:41:59 F
Manager1	STATUS_FOR_TRAP	for log Monitor, SNMPTRAP P: Status Notificat	Valid		ALL_USERS			hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00

Manager	Monitor ID	Plugin ID	Monitor Type	Description	Facility ID	Facility Name	Calendar	Interv	Monit	Collect	Owner	Role ID	Created User	Created Time	Last Modified	Last Modified Time
Manager1	PING	MON_PNG_N	Numeric		NODE001	WEB-Server01		1min	Valid	Valid	ALL_USERS		hinemos	Apr 9, 2015 10:00:10	hinemos	Apr 9, 2015 3:00:39 F
Manager1	SNMPTRAP_DEI	MON_SNMP_TR	Trap	all trap define in the monitor.	REGISTERED	Scope>Registered Nodes>		-	Invall	Invall	ADMINISTRATORS		hinemos	Aug 8, 2014 11:08:27	hinemos	Aug 8, 2014 11:08:27

Figure 6-1 Default Interface of Monitor Setting Feature

6.2.2 Monitor Settings[Notification] View

The registered notification settings can be viewed as a list. In this view, you can create, change or delete notification information, enable settings, disable settings and perform operations related to notification setting information.

Figure 6-2 Monitor[Notification] View

Table 6-1 Toolbar

Icon	Button name	Description
	Create	Create a new notification setting.
	Change	Change the selected notification setting.
	Delete	Delete the selected notification setting.
	Copy	Copy the selected notification setting.
	Valid	Enable the selected notification setting.
	Invalid	Disable the selected notification setting.
	Object Privilege Settings	Configure object privilege for the selected notification setting.
	Update	Update the table contents with the latest information.

6.2.3 Monitor Settings[Mail template] View

The registered mail templates can be viewed as a list. In this view, you can perform operations related to the mail template setting operation, such as registering, changing or deleting, etc., the mail templates.

Figure 6-3 Monitor Settings[Mail template] View

Table 6-2 Toolbar

Icon	Button name	Description
	Create	Create a new mail template.
	Change	Change the selected mail template.
	Delete	Delete the selected mail template.
	Copy	Copy the selected mail template.
	Object Privilege Settings	Configure object privilege for the selected mail template.
	Update	Update the table contents with the latest information.

6.2.4 Monitor Settings[List] View

The registered Monitor Settings can be viewed as a list. In this view, you can create, change or delete monitor information, enable settings, disable settings and perform operations related to monitor setting information.

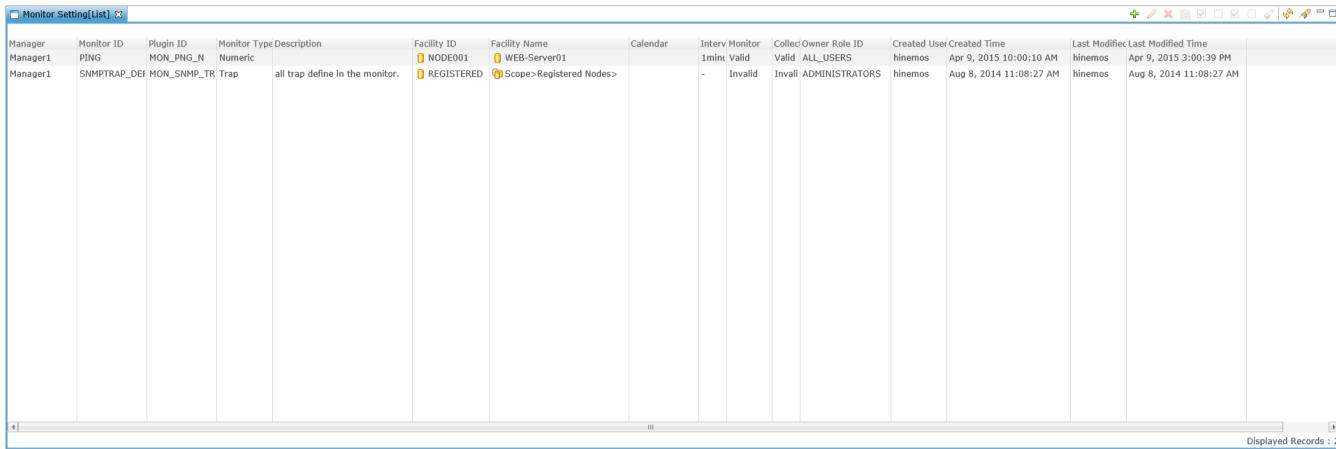


Figure 6-4 Monitor Settings[List] View

Table 6-3 Toolbar

Icon	Button name	Description
	Create	Create a new monitor setting.
	Change	Change the selected monitor setting.
	Delete	Delete the selected monitor setting.
	Copy	Copy the selected monitor setting.
	Valid	Enable the selected monitor setting.
	Invalid	Disable the selected monitor setting.
	Collection Settings	Enable the selected collection strings.
	Collection Settings	Disable the selected collection strings.
	Object Privilege Settings	Configure object privilege for the selected monitor setting.
	Update	Update the table contents with the latest information.
	Filter	Filter the displayed monitor Settings list.

6.3 Notification Feature

6.3.1 Overview

In the notification feature, there is a feature to set the notification method for the monitor results of each monitor feature and for the job execution results. This feature enables display of the monitoring results for each monitor feature and information for the job execution results on the Monitor Setting Perspective, and e-mail notification. Also, you can register a job or run commands according to the monitoring results and job execution results.

With the notification feature, you can specify and save various notification methods. The saved notification information can be referenced and used as a "Template" when notification is performed in the various Hinemos features. When the notification settings designated in the notification feature are specified in the monitor setting or the job setting side, use the "Notification ID" for the notification setting registered in the notification feature.

The following six notification methods can be set in the notification feature.

- Status Notification
- Event Notification
- Mail Notification
- Job Notification
- Log Escalation Notification
- Command Notification

6.3.2 Status Notification

Status notification is a notification feature you can use when you want to confirm the monitor results for each monitor feature and the latest status of the job execution results from the Hinemos Client. Normally, you would use this when you want to confirm the monitor results for each monitor feature and the latest status of the job execution results in real time.

The status notification results are displayed in the Monitor[Status] view. In the notification information displayed in the Monitor[Status] view, the notification information is always overwritten with the latest monitor results and job execution results, etc.

The method for creating new status notification settings is as follows:

1. Open Monitor Setting Perspective.
2. Click the "Create" button in the upper right part of the Monitor Settings[Notification] view; the "Notification Type" dialog opens.
3. Select Status Notification, then click the "next" button.
4. Make an entry in the Notification (Status) [Create - Change] dialog and click the "OK" button.

Also, The method for changing/deleting an existing status notification settings is as follows:

1. Open Monitor Setting Perspective.
2. Select the existing setting from the Monitor Settings [Notification] view and click the "Modify" / "Delete" button in the upper right part.
3. To make a change, change the input value in the Notification (Status) [Create - Change] dialog and click the "OK" button.

Manager	Notification ID	Description	Notification Type	Valid/Invalid	Owner Role ID	Calendar	Created User	Created Time	Last Modified	Last Modified Time
Manager1	COMMAND_FOR_POLLING	for polling monitor (ping, prc: Command Notif	Invalid	ALL_USERS		hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00	
Manager1	COMMAND_FOR_TRAP	for log Monitor, SNMPTRAP P: Command Notif	Invalid	ALL_USERS		hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00	
Manager1	EVENT_FOR_POLLING	for polling monitor (ping, prc: Event Notificati	Valid	ALL_USERS		hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 9, 2015 3:00:46 F	
Manager1	EVENT_FOR_TRAP	for log Monitor, SNMPTRAP P: Event Notificati	Valid	ALL_USERS		hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00	
Manager1	MAIL_FOR_POLLING	for polling monitor (ping, prc: Mail Notificator	Invalid	ALL_USERS		hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00	
Manager1	MAIL_FOR_TRAP	for log Monitor, SNMPTRAP P: Mail Notificator	Invalid	ALL_USERS		hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00	
Manager1	STATUS_FOR_POLLING	for polling monitor (ping, prc: Status Notificat	Valid	ALL_USERS		hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 9, 2015 2:41:59 F	
Manager1	STATUS_FOR_TRAP	for log Monitor, SNMPTRAP P: Status Notificat	Valid	ALL_USERS		hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00	

Figure 6-5 Monitor Settings [Notification] View

Registering Notification Settings

1. Click the "Add" button from the Monitor Settings [Notification] view. The Notification Type dialog box will open.

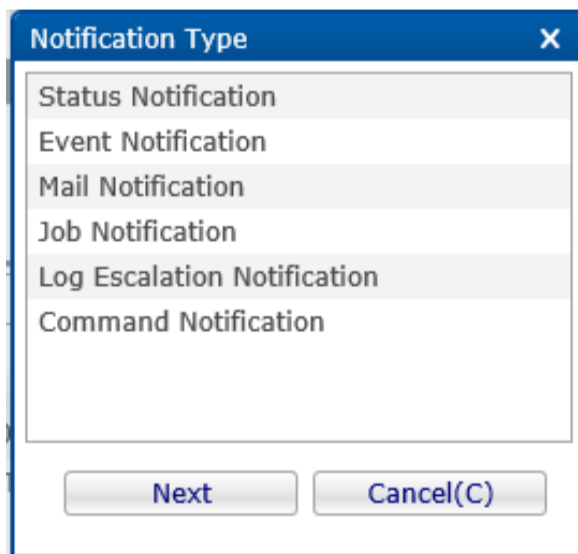


Figure 6-6 Notification Type Dialog

2. Select Status Notification, then click the "next" button. The Notification(Status)[Create/Change] dialog opens.
3. Configure the following items.
 - Manager:

Select a Hinemos Manager for which notification setting is created. Refer to [2.6 Multi-Manager Connection](#) for more information on the multiple manager connection.

- Notification ID:
Enter the notification ID as text. This will be used as an ID to identify which notification feature to use for the monitor and job settings.
 - Description:
Enter a description of the notification setting as text.
 - Owner Role ID:
Select an Owner Role ID for the notification setting. Refer to [12 Account Feature](#) section for more details about Owner Role.
 - Calendar ID:
Select the calendar ID for the calendar you want to set up. Notification is enabled only during the period configured as working hours in the calendar. Refer to the section, [4 Calendar Feature](#) for more details on the calendar. If Calendar ID is not selected, the notification is enabled throughout the day.
 - Initial notification after priority changes:
 - Notify for the first time if the monitoring results are consecutively set at the same priority for more than 0 times
You can specify the timing of the initial notification. After the priority of monitor results for the monitored node changes, notification first occurs when the same priority continues for the specified number of times (if 1 is specified, notification occurs immediately when a priority changes). However, there will be no notification when the priority of the previous notification and the priority of the monitor results after the current change are the same.
 - Do not notify immediately after enabled
Whether the first notification is to be made immediately after notification setting is enabled or not can be specified.
When notification setting is assigned to monitor setting or when monitor setting is enabled, history data used to judge if notification is suppressed will be reset. Consequently, initial notification is judged even when the priority is not changed before and after setting of monitor, and notification is made if condition "Notify for the first time if the monitoring results are consecutively set at the same priority for more than * times" is satisfied.
To disable this operation, check the check box of this setting. The first-time notification immediately after it is enabled can be suppressed.
Refer to Table 6-8 (Example 3) Notification Settings and Whether There Is Notification or Not for details.
 - Second and later notifications after the priority change:
You can specify a suppression method when the priority results are the same as the monitor results. Select from the following three suppression methods.
 - Always notify
Notification is not suppressed even if the notification results are the same priority.
 - Do not notify for 0 minute(s) when notification priority is same as previous.
Notification will not be made for the specified period if notice is given once, followed by monitor results with the same priority. Please enter the suppression time period in minutes in the text box.
 - Do not notify
Notification will not be made as long as the priority does not change, if notice is given once, followed by monitor results with the same priority.
- In addition, use the following keys to determine the notification suppression.
- Monitor Type
 - Monitor ID
 - Monitor Detail (The value saved differs for each monitor feature. Refer to the values in Table 6-4 Monitor Detail for details.)
 - Notification ID
 - Facility ID
 - Priority

Table 6-4 Monitor Detail Values

Monitor Function	Monitor Detail
Hinemos Agent Monitor	(blank)
Ping Monitor	(blank)
HTTP Monitor (Numeric)	(blank)
HTTP Monitor (String)	Pattern Matching Expression
HTTP Monitor (scenario)	(blank) (If all page check included in the scenario is correctly completed.) URL (if page check of the scenario has failed)
SQL Monitor (Numeric)	(blank)
SQL Monitor (String)	Pattern Matching Expression
Process Monitor	(blank)
Windows Service Monitor	(blank)
Service Port Monitor	(blank)
Resource Monitor	Device Name
JXM Monitor	(blank)
SNMP Monitor (Numeric)	(blank)
SNMP Monitor (String)	Pattern Matching Expression
Custom Monitor	Device Name
System Log Monitor	Pattern Matching Expression
Logfile Monitor	Pattern Matching Expression
SNMPTRAP Monitor	"OID"_"Generic ID"_"Specific ID" (*)
Windows Event Monitor	Pattern Matching Expression

* With SNMPTRAP of v2c/v3, "Generic ID" and "Specific ID" are replaced by 0.

- Status Notification:
Please check the priority check boxes for the status notification.
- Duration of Status Information:
Please select the duration period for status information.
- Process after duration:
Status information that has passed the duration period can be processed by the following two methods.
 - Delete the record
After the duration period has passed, the status information is deleted from the Monitor[Status] view.
 - Replace with the message "data is not updated"
When the duration period has passed, the display contents of the status information is replaced with the message "data is not updated". At that time, the priority can be changed. Please select the priority to change.
- Enabling this Setting:
When checked, the notification setting selected in each monitoring feature and the Job feature is valid. If unchecked, the setting is disabled, and although the setting is saved, the notification process will not be executed.

Figure 6-7 Notification (Status) [Create/Change] Dialog

- Click the "OK" button. The newly created setting will be added to the notification list.

Changing Notification Settings

- Select the field to change in Monitor Settings [Notification], then click the "Modify" button. The Notification(Status)[Create/Change] dialog opens.
- Edit the setting details, and then click the "OK" button. (refer to "Registering Notification Settings" for the procedures for entering settings)

Deleting Notification Settings

- Select the field to delete in Monitor Settings [Notification], then click the "Delete" button.

Changing the Valid/Invalid Setting in the Notification Settings

- The valid/invalid settings can be collectively changed in the notification settings. Select the setting to change from the settings list (can select multiple), then click the "Valid" ("Invalid") button. A confirmation dialog is displayed. Click the "OK" button.

Table 6-5 Configuration Items of Notification(Status)

Configuration item	Input type	Description
Manager	Select from list	Select a Hinemos Manager for which notification setting is created.

Notification ID		Text	Enter an ID to identify the notification setting.
Description		Text	Enter a description of the notification setting.
Owner Role ID		Select from list	Select an Owner Role ID for the notification setting.
Calendar ID		Select from list	Select a Calendar ID for the notification setting.
Initial notification after priority changes	Notify for the first time if the monitoring results are consecutively set at the same priority for more than 0 time	Numeric	Enter the suppression setting for when the same notification information continues to occur.
	Do not notify immediately after enabled	Check box	Suppress the first-time notification immediately after setting.
Second or later notification after the priority change		Select with the radio button (part text)	Enter the notification method for the second or later time when the same notification information continues to occur. <ul style="list-style-type: none"> · Always notify Select when not suppressing the second or later notification. · Do not notify for the same priority for 0 minutes after the previous notification Select when suppressing by time the second or later notification. · Do not notify Select when not performing a second or later notification.
Status Notification	Notification (Information / Warning / Critical / Unknown)	Checkbox	Select the priority for notification.
	Duration of Status Information	Select from list	Select duration period of the status information.
	Handling after duration has passed	Select with the radio button	Select the process method for status information that has exceeded the duration period. <ul style="list-style-type: none"> · Delete the information Delete from Monitor[Status] view when the duration period has passed · Replace with the message "Not updated" When the duration period has passed, replace the display contents of status information with the message "Not updated",
	Priority	Select from list	If selecting "Replace with the message data is not updated" , replace the message with the priority here.
Enable this setting		Checkbox	Check to enable notification settings. It will return to the same setting if not checked and notification will not be performed.

Notification example

The following shows an example of notification settings and whether there is notification or not.

Table 6-6 (Example 1) Notification Settings and Whether There Is Notification or Not

	Initial notification	Continued from the first time		Continued from the second time	
	Second or later notification	Always notify	Do not notify	Do not notify	Do not notify
	Notification priority	All	All	All	Warning, Critical, Unknown

Time (Minutes)	Priority	-	-	-	-
0	Information	o	o	-	-
5	Information	o	-	o	-
10	Information	o	-	-	-
15	Warning	o	o(*1)	-*2	-
20	Information	o	o	-	-
25	Information	o	-	-	-
30	Information	o	-	-	-
35	Critical	o	o	-	-
40	Critical	o	-	o	o
45	Critical	o	-	-	-
50	Information	o	o	-	-
55	Information	o	-	o	-
Note		Not recommended because it increases the load on Hinemos	Notification only when changed However, cases such as *1 with a momentary resource surplus will also be detected.	Polling group monitor is recommended (*3)	Polling group monitor is recommended (*3)

o : Notification will be sent; - : Notification will not be sent

*2: There is no notification because the warning did not continue two or more times.

*3: Polling group monitoring is Hinemos Agent Monitor, HTTP Monitor, JMX Monitor, Ping Monitor, SNMP Monitor, SQL Monitor, Windows Service Monitor, Custom Monitor, Service Port Monitor, Process Monitor and Resource Monitor.

Table 6-7 (Example 2) Notification Settings and Whether There Is Notification or Not

	Initial Notification	Continues one or more times	
	Second or later notification	Always notify	Do not notify for 3 minutes
	Notification Priority	All	All
Time	Priority	-	-
0:00:01	Warning	o	o
0:00:05	Warning	o	-
0:00:09	Warning	o	-
0:00:13	Warning	o	-
0:00:17	Warning	o	-
0:03:30	Warning	o	o
0:15:30	Warning	o	o
0:15:41	Warning	o	-
Note			Trap group monitoring recommended (*1)

o : Notification will be sent; - : Notification will not be sent

*1: Trap group monitoring includes SNMPTRAP Monitor, System Log Monitor, Logfile Monitor and Windows Event Monitor.

Table 6-8 (Example 3) Notification Settings and Whether There Is Notification or Not

	Initial Notification	Continues one or more times	
	Does not notify immediately after enabled	Not checked	Checked
	Second or later notification	Do not notify	
	Notification Priority	All	All
Time	Priority		
0:00:00	Information	o	
0:00:05	Warning	o	o
0:00:08	Disable notification settings		
0:00:10	Warning		
0:00:13	Enable notification		
0:00:15	Warning	o	
0:00:20	Warning		
Note			Notification can be suppressed even if the priority is not changed when set notification is changed.

6.3.3 Event Notification

Event notification is used when you want to confirm the monitor results for each monitor feature and save the job execution results as history from the Hinemos Client. Normally, not just the current status, but information including the previous status is saved as the execution results for the monitor results and jobs for each monitor feature, and this can be used to confirm the history.

The event notification results are displayed in the Monitor[Event] view. In the notification information displayed in the Monitor[Event] view, the notification information is not overwritten with the latest monitor results and job execution results, etc.

Refer to the setting procedure in [6.3.2 Status Notification](#) for the process for setting the event notifications.

Figure 6-8 Notification(Event)[Create/Change] Dialog

Table 6-9 Notification (Event) [Create/Change]

Configuration item		Input type	Description
Manager		Select from list	Select a Hinemos Manager for which notification setting is created.
Notification ID		Text	Enter an ID to identify the notification setting.
Description		Text	Enter a description of the notification setting.
Owner Role ID		Select from list	Select an Owner Role ID for the notification setting.
Calendar ID		Select from list	Select a Calendar ID for the notification setting.
Initial notification after priority changes	Notify for the first time if the monitoring results are consecutively set at the same priority for more than 0 times	Numeric	Enter the suppression setting for when the same notification information continues to occur.
	Do not notify immediately after enabled	Check box	Suppress the first-time notification immediately after setting.

Second or later notification after the priority change		Select with the radio button (part text)	Enter the notification method for the second or later time when the same notification information continues to occur. · Always notify Select when not suppressing the second or later notification. · Do not notify for the same priority for 0 minutes after the previous notification Select when suppressing by time the second or later notification. · Do not notify Select when not performing a second or later notification.
Event Notification	Notification (Information / Warning / Critical / Unknown)	Check box	Select the priority for an event notification.
	Status (Information / Warning / Critical / Unknown)	Select from list	You can select from notification of "Unconfirmed" or "Confirmed" for notification of an event. The confirmed notification event will not appear in Monitor[Event] view even if notified (but it can be displayed if you set "Confirmed" events to display in "Filtering" in the Monitor [Event] view.
Enable this setting		Checkbox	Check to enable notification settings. It will return to the same setting if not checked and notification will not be performed.

6.3.4 Mail Notification

Mail Notification is a feature for notification by external e-mail of the monitoring results and the job execution results for each monitoring feature. (When performing mail notification, special settings for the Hinemos Manager environment settings are necessary, in addition to the settings from the Hinemos Client. (Refer to 5.2.1 "Enable Mail Notification" in the Administrator's Guide for details.

Refer to the setting procedures in [6.3.2 Status Notification](#) for the process thereafter.

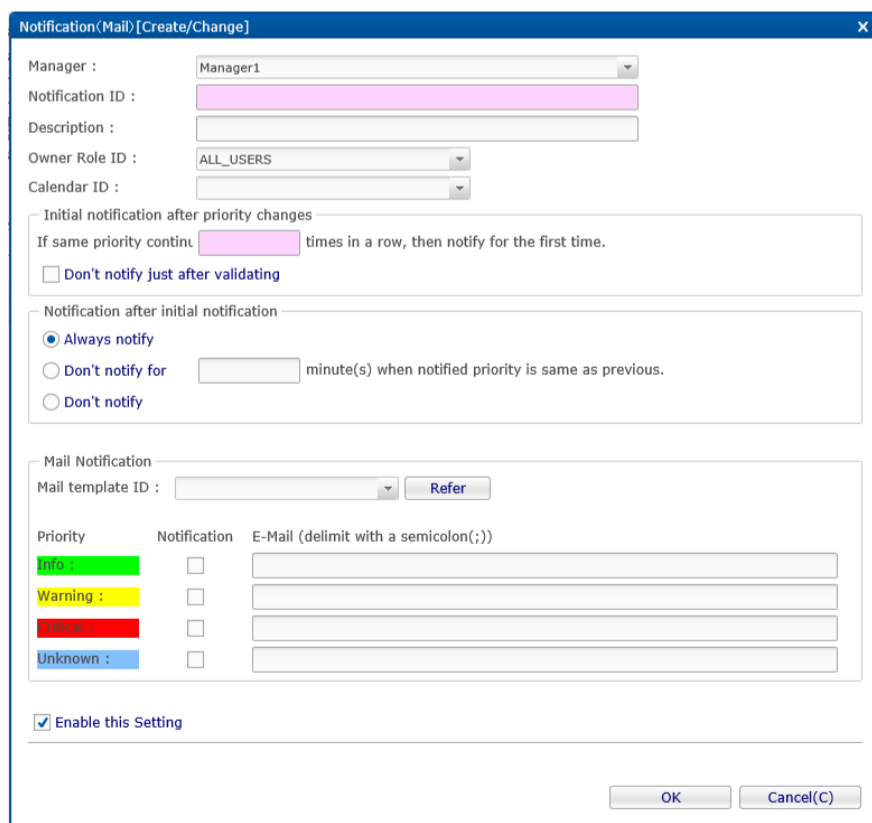


Figure 6-9 Notification (Mail) [Create/Change] Dialog

Table 6-10 Configuration Items of Notification (Mail)

Configuration item		Input type	Description
Manager		Select from list	Select a Hinemos Manager for which notification setting is created.
Notification ID		Text	Enter an ID to identify the notification setting.
Description		Text	Enter a description of the notification setting.
Owner Role ID		Select from list	Select an Owner Role ID for the notification setting.
Calendar ID		Select from list	Select a Calendar ID for the notification setting.
Initial notification after priority changes	Notify for the first time if the monitoring results are consecutively set at the same priority for more than 0 times	Numeric	Enter the suppression setting for when the same notification information continues to occur.
	Do not notify immediately after enabled	Check box	Suppress the first-time notification immediately after setting.
Second or later notification after the priority change		Select with the radio button (part text)	Enter the notification method for the second or later time when the same notification information continues to occur. <ul style="list-style-type: none"> · Always notify Select when not suppressing the second or later notification. · Do not notify for the same priority for 0 minutes after the previous notification Select when suppressing by time the second or later notification. · Do not notify Select when not performing a second or later notification.
Mail Notification	Mail template ID Select from list	Specify mail template ID used to	send mail (refer to 6.4 Mail Template Feature).
	Notification (Information / Warning / Critical / Unknown)	Checkbox	Select the priority to send mail
	E-Mail address (Information / Warning / Critical / Unknown)	Text	Enter the e-mail address (*1). Separate Multiple e-mail addresses by semicolon. (Note: even if same e-mail addresses are repeated multiple times, the notification e-mail to the same address will be sent only once.) Further, 1024 bytes of e-mail addresses can be registered. (including spaces and semicolons) If "CC mail address" or "BCC mail address" is entered, each mail is sent as CC or BCC.
Enable this setting		Checkbox	Check to enable notification settings. It will return to the same setting if not checked and notification will not be performed.

*1: The domain part of an email address will be validated according to RFC822 and RFC1034. Common examples not based on RFC 822 and RFC 1034 are shown as follows.

- Characters other than alphanumeric characters, "-" (hyphen) and "." (period) are used in the domain part.
- Continuous "." (period) are used in the domain part.
- A "-" (hyphen) or "." (period) are used at the end of the domain part.

*2: For the value that can be used, refer to Table 6-17 List of Strings Supporting Replacement ([6.4 Mail Template Feature](#)).

When a Mail Template is Not Specified

If a mail template is not specified, the following content is sent.

Table 6-11 Sent Contents When a Mail Template is Not Specified

Type	Content
Subject	Hinemos Notification(#[PRIORITY])
Body	Date and Time Created: #[GENERATION_DATE] Application: #[APPLICATION] Priority: #[PRIORITY] Message: #[MESSAGE] Scope: #[SCOPE]

When sending an e-mail, each monitoring result is replaced with its corresponding content as follows.

- #[PRIORITY] ... Replaced by the Priority according to the locale language of Hinemos Manager
- #[GENERATION_DATE] ... Replaced by the Date and Time Created
- #[SCOPE] ... Replaced by the Facility Name
- #[APPLICATION] ... Replaced by the Application
- #[MESSAGE] ... Replaced by the Message

6.3.5 Job Notification

The job notification feature provides notification of the monitor results for each monitor feature and the job execution results based on job execution.

Refer to [9 Job Feature](#) for settings for the job to be executed.

Refer to the setting procedures in [6.3.2 Status Notification](#) for the process thereafter.

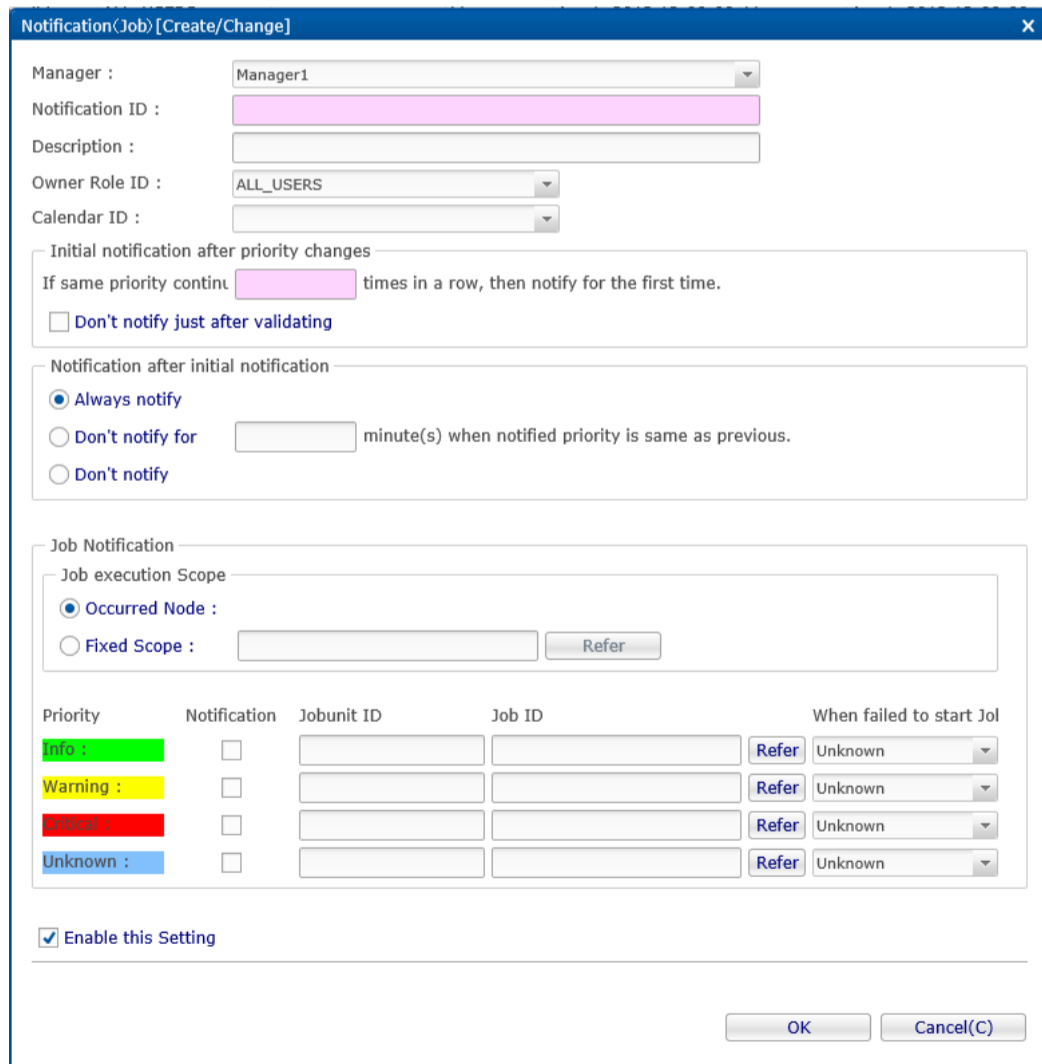


Figure 6-10 Notification(Job)[Create/Change] Dialog

Table 6-12 Configuration Items of Notification (Job)

Configuration item		Input type	Description
Manager		Select from list	Select a Hinemos Manager for which notification setting is created.
Notification ID		Text	Enter an ID to identify the notification setting.
Description		Text	Enter a description of the notification setting.
Owner Role ID		Select from list	Select an Owner Role ID for the notification setting.
Calendar ID		Select from list	Select a Calendar ID for the notification setting.
Initial notification after priority changes	Notify for the first time if the monitoring results are consecutively set at the same priority for more than 0 times	Numeric	Enter the suppression setting for when the same notification information continues to occur.
	Do not notify immediately after enabled	Check box	Suppress the first-time notification immediately after setting.
Second or later notification after the priority change		Select with the radio button (part text)	Enter the notification method for the second or later time when the same notification information continues to occur. <ul style="list-style-type: none"> · Always notify Select when not suppressing the second or later notification. · Do not notify for the same priority for 0 minutes after the previous notification Select when suppressing by time the second or later notification. · Do not notify Select when not performing a second or later notification.
Job Notification Job execution Scope	Scope where the event occurred Fixed Scope	Select with the radio button	Specify scope (or node) for job execution. <ul style="list-style-type: none"> · Scope where the event occurred Scope (or node) where the notification information occurred will be the job execution target. · Fixed Scope Select the scope (or node) for job execution from the scope tree. To make the scope (or node) specified here the object of job execution, the Job Parameter ([FACILITY_ID]) must be enabled for the job execution scope specified below.
Job Notification	Notification (Information / Warning / Critical / Unknown)	Checkbox	Select the priority for job execution.
	Job unit ID, Job ID (Information / Warning / Critical / Unknown)	Select from the job tree	Select the job to execute.
	When failed to start Job (Information / Warning / Critical / Unknown)	Select from the list	Set the priority for calling the job when the job call failed.
Enable this setting		Checkbox	Check to enable notification settings. It will return to the same setting if not checked and notification will not be performed.

6.3.6 Log Escalation Notification

Log escalation notification is a feature to send an external notification by log (syslog format) of the monitoring results for each monitoring feature and the job execution results.

Refer to the setting procedure in 6.3.2 Status Notification for the process for setting the log escalation notifications.

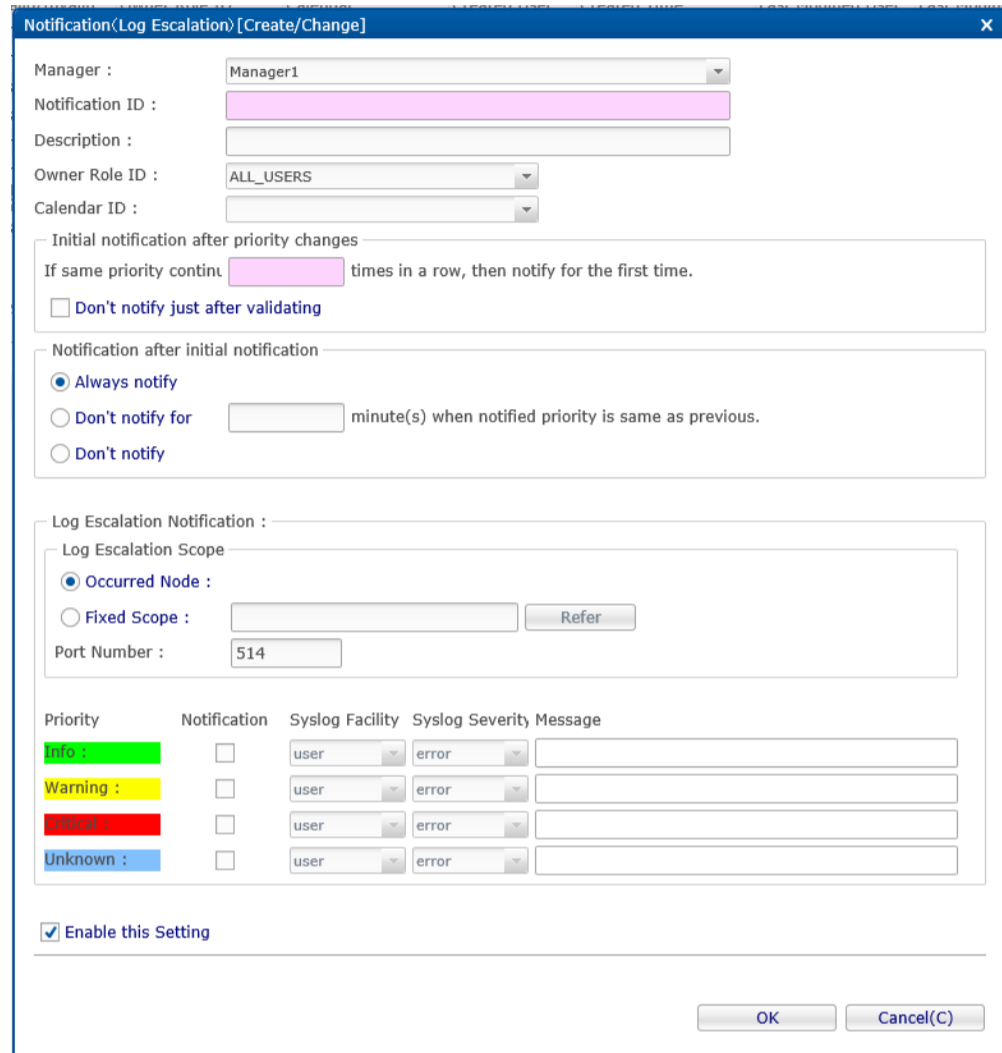


Figure 6-11 Notification(Log Escalation)[Create/Change] Dialog

Table 6-13 Configuration Items of Notification(Log Escalation)

Configuration item		Input type	Description
Manager		Select from list	Select a Hinemos Manager for which notification setting is created.
Notification ID		Text	Enter an ID to identify the notification setting.
Description		Text	Enter a description of the notification setting.
Owner Role ID		Select from list	Select an Owner Role ID for the notification setting.
Calendar ID		Select from list	Select a Calendar ID for the notification setting.
Initial notification after priority changes	Notify for the first time if the monitoring results are consecutively set at the same priority for more than 0 times	Numeric	Enter the suppression setting for when the same notification information continues to occur.
	Do not notify immediately after enabled	Check box	Suppress the first-time notification immediately after setting.

Second or later notification after the priority change		Select with the radio button (part text)	Enter the notification method for the second or later time when the same notification information continues to occur. <ul style="list-style-type: none"> · Always notify Select when not suppressing the second or later notification. · Do not notify for the same priority for 0 minutes after the previous notification Select when suppressing by time the second or later notification. · Do not notify Select when not performing a second or later notification.
Log Escalation Notification Log Escalation Scope	Scope where the event occurred Fixed Scope	Specify the scope (or node) which sent the log.	<ul style="list-style-type: none"> · Scope where the event occurred The scope (or node) with notification information is the send target for the log. · Fixed Scope From the scope tree, select the scope (or node) for the log.
	Port Number	Text	Specify the port number (UDP) for sending the log (default is syslog 514).
Log Escalation Notification	Notification (Information / Warning / Critical / Unknown)	Checkbox	Select the priority to send the log.
	Syslog Facility (Information / Warning / Critical / Unknown)	Select from list	Select Facility when sending the log.
	Syslog Severity (Information / Warning / Critical / Unknown)	Select from the list	Select Severity when sending the log.
	Message (Information / Warning / Critical / Unknown)	Text	Enter message to send.
Enable this setting		Checkbox	Check to enable notification settings. It will return to the same setting if not checked and notification will not be performed.

Syslog message in the Log Escalation Notification

Send log in syslog format (RFC 3164).

Syslog messages are composed of a PRI part, a HEADER part, and a MSG part (maximum size of syslog messages is 1024bytes).

<PRI> HEADER MSG

PRI part:

The value calculated from Severity and Facility in the Log Escalation Notification is configured.

Since syslog is standard, refer to RFC 3164 for the detailed calculation method.

HEADER part:

Creation time of the syslog message and the node name (default) of the Hinemos Manager is configured.

* In addition to the node name of the Hinemos Manager, a specified string or facility ID of the facility can be set where the event occurred. Refer to 5.3 "Log Escalation Notification" in the Administrator's Guide for the setting method.

MSG part:

Content specified in "Message" is configured.

The MSG part is composited of TAG field and CONTENT field. The character set used in these two fields should be explicitly configured as specified in RFC 3164. The length of character set used in TAG field is 32 or less and a non-alphanumeric character such as ":" (colon) is used to separate them.

To display monitoring result in the message

Entering the designated replacement strings in messages sent by the log escalation notification enables insertion of details corresponding to the monitoring results. For the designated strings, refer to Table 6-17 List of Strings Supporting Replacement (6.4 Mail Template Feature).

6.3.7 Command Notification

The command notification feature provides notification of the monitor results for each monitor feature and the command execution results based on job execution.

Refer to the setting procedure in 6.3.2 Status Notification for the process for setting the command notifications.

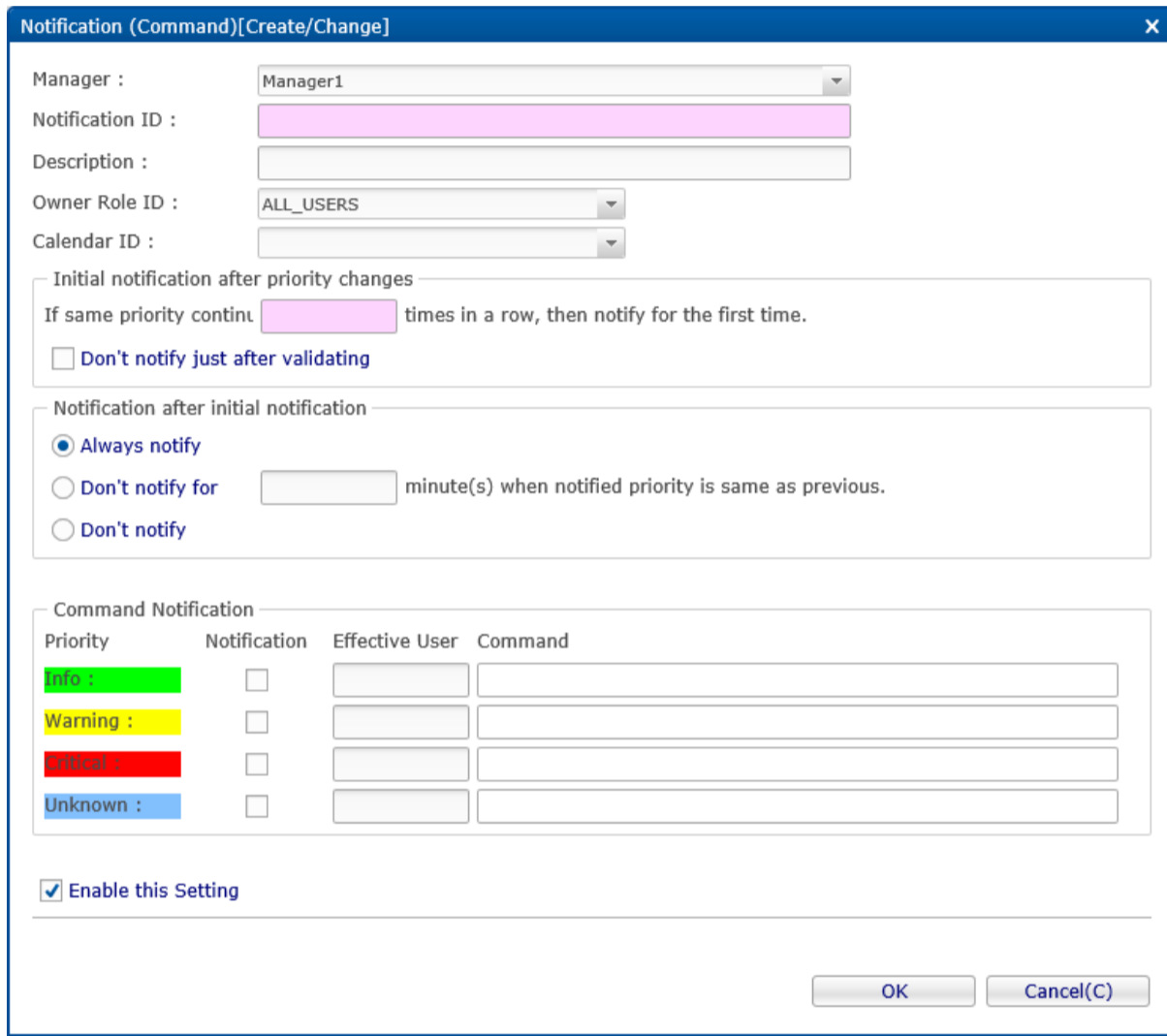


Figure 6-12 Notification (Command)[Create/Change] Dialog

Table 6-14 Configuration Items of Notification (Command)

Configuration item	Input type	Description
Manager	Select from list	Select a Hinemos Manager for which notification setting is created.
Notification ID	Text	Enter an ID to identify the notification setting.
Description	Text	Enter a description of the notification setting.
Owner Role ID	Select from list	Select an Owner Role ID for the notification setting.
Calendar ID	Select from list	Select a Calendar ID for the notification setting.

Initial notification after priority changes	Notify for the first time if the monitoring results are consecutively set at the same priority for more than 0 times	Numeric	Enter the suppression setting for when the same notification information continues to occur.
	Do not notify immediately after enabled	Check box	Suppress the first-time notification immediately after setting.
Second or later notification after the priority change		Select with the radio button (part text)	Enter the notification method for the second or later time when the same notification information continues to occur. <ul style="list-style-type: none"> · Always notify Select when not suppressing the second or later notification. · Do not notify for the same priority for 0 minutes after the previous notification Select when suppressing by time the second or later notification. · Do not notify Select when not performing a second or later notification.
Command Notification	Notification (Information / Warning / Critical / Unknown)	Checkbox	Select the priority for command execution.
	Effective User (Information / Warning / Critical / Unknown)	Text	Specify the effective user.
	Command (Information / Warning / Critical / Unknown)	Text	Specify the effective command. If the designated strings are entered, the string will be replaced with detail corresponding to each monitoring result.*
Enable this setting		Checkbox	Check to enable notification settings. It will return to the same setting if not checked and notification will not be performed.

* Refer to Table 6-17 List of Strings Supporting Replacement (6.4 Mail Template Feature) for the designated strings.

Command Notification Timeout

The default timeout for command notification is 15 seconds.

6.3.8 Notification Message

When notifying results from the Monitor Setting feature and the Job feature, the job result is notified as a message or an original message. Display the list of message and original messages formats by distinguish functions.

Table 6-15 Notification Content of Message ·#[MESSAGE] Strings

Feature		Status		Message/#[MESSAGE] strings
Monitor Settings feature	Hinemos Agent	Successful value acquisition	Format	Hinemos Agent is available
			Example	Hinemos Agent is available
		Failed value acquisition	Format	Hinemos Agent is not available
			Example	Hinemos Agent is not available

Monitor Settings feature	PING	Successful value acquisition	Format	Packets: Sent = [number of ping execution], Received = [number of responses received], Lost =[number of lost response] ([response rate]% loss)
			Example	Packets: Sent = 1, Received = 1, Lost = 0 (0% loss)
Monitor Settings feature	HTTP(Numeric)	Successful value acquisition	Format	Response Time(msec) : [Response Time]
			Example	Response Time(msec) : 25
		Failed value acquisition	Format	Could not get value
			Example	Could not get value
Monitor Settings feature	HTTP(String)	Successful value acquisition	Format	User defined (strings configured in the "Message" column of the Monitor Setting)
			Example	JBossFilterMessage
		Failed value acquisition	Format	Could not get value
			Example	Could not get value
Monitor Settings feature	HTTP (scenario)	Successful value acquisition	Format	Overall response time (msec): [Response time]
			Example	Overall response time (msec) : 20
		Failed value acquisition	Format	User defined (strings configured in the "Message" column of the Monitor setting)
			Example	JBossFilterMessage
Monitor Settings feature	SQL (Numeric)	Successful value acquisition	Format	Acquired value : [Acquired value]
			Example	Acquired value : 1.0
		Failed value acquisition	Format	Failed to execute SQL statement
			Example	Failed to execute SQL statement
Monitor Settings feature	SQL(String)	Successful value acquisition	Format	User defined (strings configured in the "Message" column of the Monitor Settings)
			Example	HinemosFilter
		Failed value acquisition	Format	Failed to execute SQL statement
			Example	Failed to execute SQL statement
Monitor Settings feature	Process	Successful value acquisition	Format	Number of process : [number of process]
			Example	Number of process : 1
		Failed value acquisition	Format	Timed out
			Example	Timed out

Monitor Settings feature	Windows service	Successful value acquisition	Format	[Service name] Service is Running
			Example	SNMP Service is Running
		Failed value acquisition	Format	[Service name] Service is not Running
			Example	SNMP Service is not Running
Monitor Settings feature	Service Port	Successful value acquisition	Format	Response Time = [Response Time] ms ([Service port - Service Protocol] / [Port Number])
			Example	Response Time = 1ms(DNS/53)
		Failed value acquisition	Format	[Detailed information] ([Service port - Service Protocol] / [Port Number])
			Example	Connection refused[SocketException](DNS/53)
Monitor Settings feature	Resource	Successful value acquisition	Format	[Monitor Item] : [Collection value]
			Example	File System Utilization[/] : 13.651
		Failed value acquisition	Format	[Monitor Item] : Could not get value
			Example	File system usage [/] : Could not get value
Monitor Settings feature	JMX	Successful value acquisition	Format	[Monitor Item] : [Collection value]
			Example	Number of classes currently loaded: 11,404
		Failed value acquisition	Format	[Monitor Item] : Could not get value
			Example	Number of classes currently loaded : Value could not be obtained.
Monitor Settings feature	SNMP(Numeric)	Successful value acquisition	Format	Acquired value : [Acquired value]
			Example	Acquired value : 0.0
		Failed value acquisition	Format	Could not get value [Detailed information]
			Example	Could not get value snmpTimeoutError./192.168.0.1 .1.3.6.1.4.1.2021.11.53.0
Monitor Settings feature	SNMP(String)	Successful value acquisition	Format	User defined (strings configured in the "Message" column of the Monitor Settings)
			Example	HOSTNAME
		Failed value acquisition	Format	Could not get value [Detailed information]
			Example	Could not get value snmpTimeoutError./192.168.0.1 .1.3.6.1.2.1.1.5.0

Monitor Settings feature	Custom	Failed value acquisition	Format	VALUE : [Item name] = [Value]
			Example	VALUE : FOO = 123.0
		Failed value acquisition	Format	[Detailed information]
			Example	FAILURE : command execution failed (timeout or no stdout)...
Monitor Settings feature	System log	Successful value acquisition	Format	User defined (strings configured in the "Message" column of the Monitor Settings (If the replacement string #[LOG_LINE] in the "Message" column is specified, it will be replaced in the log details of the system log)
			Example	SYSLOG01_MSG
Monitor Settings feature	Log file	Successful value acquisition	Format	[log content of Log file]
			Example	Apr 16 16:36:57 common_db root: syslog-test-info
Monitor Settings feature	SNMPTRAP	Successful value acquisition	Format	["Message" defined by Trap Definition]
			Example	Agent Interface Up (linkUp Trap)interface Network01
Monitor Settings feature	Windows Event	Successful value acquisition	Format	<[Event Log];[Event Source];[Initial of Event Level] [Event ID];>[Message] (If the replacement string #[LOG_LINE] in the "Message" column is specified, it will be replaced in the log details of the system log.)
			Example	<Application;EventCreate;I1000;>log-test-info
Job feature	Execute command	Starting Start Command	Format	Job[[Job Name]]([Job ID])started successfully (Session ID: [Job Session ID])
		Ending Start Command	Format	Job[[Job Name]]([Job ID]) stopped (End Status: Normal)(Session ID:[Job Session ID]) Job[[Job Name]]([Job ID]) stopped (End Status: Warning) (Session ID:[Job Session ID]) Job[[Job Name]]([Job ID]) stopped (End Status: Error) (Session ID:[Job Session ID])
		Delay of start	Format	Job[[Job Name]]([Job ID]) Delay of start occurred (Session ID:[Job Session ID])
		Delay of end	Format	Job[[Job Name]]([Job ID]) Delay of end occurred (Session ID:[Job Session ID])
Job feature	File Transfer	Starting File Transfer	Format	File Job[[Job Name]]([Job ID])started successfully (Session ID:[Job Session ID])
		Ending File Transfer	Format	File Transfer Job[[Job Name]]([Job ID]) stopped (End Status: Normal)(Session ID:[Job Session ID]) File Transfer Job[[Job Name]]([Job ID]) stopped (End Status: Warning)(Session ID:[Job Session ID]) File Transfer Job[[Job Name]]([Job ID]) stopped (End Status: Error)(Session ID:[Job Session ID])
Common feature	Maintenance	Success	Format	Maintenance ID[[Maintenance ID]] stopped (End Status: Success)
			Example	Maintenance ID[MT_PRF-DEFAULT] stopped (End Status: Success)

Infrastructure Management	Module execution	When started	For mat	Execution of the module has been started.
			Exa mple	Execution of the module has been started.
		If successful	For mat	The module has been successfully executed.
			Exa mple	The module has been successfully executed.
		If failed	For mat	Execution of the module has failed.
			Exa mple	Execution of the module has failed.
	Module check	When started	For mat	Checking the module has started.
			Exa mple	Checking the module has started.
		If successful	For mat	Checking the module has been successful.
			Exa mple	Checking the module has been successful.
		When failed	For mat	Checking the module has failed.
			Exa mple	Checking the module has failed.

Table 6-16 Notification content of Original Message ·#[ORG_MESSAGE] strings

Feature		Status		Original Message#[ORIGINAL_MSG] strings
Monitor Settings feature	Hinemos Agent	Successful value acquisition	For mat	-(*)
			Exa mple	-
		Failed value acquisition	For mat	-(*)
			Exa mple	-
Monitor Settings feature	PING	Successful value acquisition	For mat	Pinging [target IP address] (target IP address) . [Detailed information]
			Exa mple	Pinging 192.168.0.1 (192.168.0.1) . Ping statistics for 192.168.0.1: Packets: Sent = 1, Received = 1, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 0.64ms, Maximum = 0.64ms, Average = 0.64ms

Monitor Settings feature	HTTP (Numeric)	Successful value acquisition	Format	URL : [Monitored URL] Status code : [Status code of HTTP](0 if cannot acquire) Header : [HTTP Header section] Body : [HTTP Body section]
			Example	URL : http://192.168.0.1/index.html Status code : 200 Header : Date: Mon, 16 Apr 2012 05:18:57 GMT Server: Apache/2.2.3 (Red Hat) Last-Modified: Fri, 23 Mar 2012 02:25:10 GMT Content-Type: text/html; charset=UTF-8 Body : <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN" " http://www.w3.org/TR/xhtml1
		Failed value acquisition	Format	Error Message URL : [Monitored URL] Status code : [Status code of HTTP](0 if cannot acquire) Header : [HTTP Header section] Body : [HTTP Body section]
			Example	http requesting failure. (I/O error : unreachable or timeout) URL : http://192.168.0.1/index.html Status code : 0
Monitor Settings feature	HTTP(String)	Successful value acquisition	Format	Refer to HTTP(Numeric)
			Example	Refer to HTTP(Numeric)
		Failed value acquisition	Format	Refer to HTTP(Numeric)
			Example	Refer to HTTP(Numeric)
Monitor Settings feature	HTTP (scenario)	Successful value acquisition	Format	Overall response time : [Response time] Page No. : [Page No.] Request URL : [URL of subject to monitoring on each page] Status code: [HTTP status code on each page] Response time (msec): [Response time of each page]
			Example	Overall response time : 100 Page No.: 1 Request URL : http://192.168.0.1/first.html Status code : 200 Response Time (msec): 20 Page No.: 2 Request URL : http://192.168.0.2/second.html Status code : 200 Response Time (msec): 80
		Failed value acquisition	Format	Error Message [Detailed information]
			Example	An unexpected status code is returned. Page No.: 1 Request URL : http://192.168.0.1/first.html Expected status code: 200 Status code : 404

Monitor Settings feature	SQL(Numeric)	Successful value acquisition	Format	Value of Record : [Value of Record], Number of Records : [Number of Records] Connection URL : [Connection URL]
			Example	Value of Record : hinemos, Number of Records : 1 Connection URL : jdbc:postgresql://192.168.0.1/postgres
		Failed value acquisition	Format	SQL Statement : [Issued SQL Statement](Error message) Connection URL : [Connection URL]
			Example	SQL Statement : SELECT 1 (FATAL: no pg_hba.conf entry for host "192.168.0.1", user "hinemos", database "hinemos1") Connection URL : jdbc:postgresql://192.168.0.1/postgres
Monitor Settings feature	SQL(String)	Successful value acquisition	Format	Refer to SQL(Numeric)
			Example	Refer to SQL(Numeric)
		Failed value acquisition	Format	Refer to SQL(Numeric)
			Example	Refer to SQL(Numeric)
Monitor Settings feature	Process	Successful value acquisition	Format	Command : [Matching strings specified for the "Command" column in the settings], Command Line Arguments : [Matching strings specified for the "Command Line Arguments" column in the settings]
			Example	Command : .*snmp.*, Argument : .*
		Failed value acquisition	Format	Command : [Matching strings specified for the "Command" column in the settings], Command Line Arguments : [Matching strings specified for the "Command Line Arguments" column in the settings]
			Example	Command : .*snmp.*, Argument : .*
Monitor Settings feature	Windows service	Successful value acquisition	Format	[Service name] Service is Running
			Example	SNMP Service is Running
		Failed value acquisition	Format	[Service name] Service is another state : Stopped
			Example	SNMP Service is another state : Stopped
Monitor Settings feature	Service - Port	Successful value acquisition	Format	Monitoring the [Service Port name or "port"] of [Host name][[IP Address]]:[Port Number]. [Detailed information]
			Example	Monitoring the port of common_port[192.168.0.1]:143. Mon Apr 16 19:06:18 JST 2012 Tried to Connect: Response Time = 1ms
		Failed value acquisition	Format	Monitoring the port of [Host name][[IP Address]]:[Port Number]. [Detailed information]
			Example	Monitoring the port of common_port[192.168.0.1]:143. Mon Apr 16 14:55:18 JST 2012 Tried to Connect: Connection refused[SocketException]

Monitor Settings feature	Resource	Successful value acquisition	Format	[Monitor Item] : [Collection value] [Detailed information](Only for device-specific information)
			Example	File System Utilization[/] : 13.651 Device Name : / Device Index : 4
		Failed value acquisition	Format	[Monitor Item] : NaN
			Example	File System Utilization[/] : NaN
Monitor Settings feature	JMX	Successful value acquisition	Format	[Monitor Item] : [Collection value]
			Example	Number of classes currently loaded: 11,421
		Failed value acquisition	Format	[Monitor Item] : [Detailed information]
			Example	Number of classes currently loaded: Failed to retrieve RMIserver stub: javax.naming.ServiceUnavailableException [Root exception is java.rmi.ConnectException: Connection refused to host: 192.168.0.1; nested exception is: java.net.ConnectException: Connection has been rejected.]
Monitor Settings feature	SNMP(Numeric)	Successful value acquisition	Format	OID : [OID]
			Example	OID : .1.3.6.1.4.1.2021.11.53.0
		Failed value acquisition	Format	OID : [OID]
			Example	OID : .1.3.6.1.4.1.2021.11.53.0
Monitor Settings feature	SNMP(String)	Successful value acquisition	Format	OID : [OID], Value : [Value]
			Example	OID : .1.3.6.1.2.1.1.5.0, Value : st17-01
		Failed value acquisition	Format	OID : [OID]
			Example	OID : .1.3.6.1.2.1.1.5.0
Monitor Settings feature	Custom	Failed value acquisition	Format	VALUE : [Output results] = [Value] COMMAND : [Run Command] [Detailed information]
			Example	VALUE : FOO = 123.0 COMMAND : sh -c echo "FOO,123" COLLECTION DATE : 2012-04-16 19:52:00 executed at 2012-04-16 19:52:50 exited (or timeout) at 2012-04-16 19:52:50 EXIT CODE : 0 [STDOUT] FOO,123 [STDERR]
		Failed value acquisition	Format	[Detailed information] COMMAND : [Run Command] [Detailed information]
			Example	FAILURE : command execution failed (timeout or no stdout)... COMMAND : sh -c dir "FOO,123" COLLECTION DATE : 2012-04-16 20:03:00 executed at 2012-04-16 20:03:42 exited (or timeout) at 2012-04-16 20:03:42 EXIT CODE : 2 [STDOUT] [STDERR]

Monitor Settings feature	System log	Successful value acquisition	Format	pattern=[Pattern string]log.line[Content of Log file]
			Example	pattern=.*Warn.* log.line=<13>Jul 17 15:52:42 test_rhel6432 root: Warn
Monitor Settings feature	Log file	Successful value acquisition	Format	log.file=[Filename]pattern=[Pattern string] log.line=[Content of Log file]
			Example	log.file=/tmp/test.log pattern=.*Warn.* log.line=TestWarn
Monitor Settings feature	SNMPTRAP	Successful value acquisition	Format	OID=[OID] TrapName=[Trap Name defined by Trap Definition] CommunityName=[Community Name defined by Trap Definition] VarBind=[VarBind list defined by Trap Definition] Pattern=[Match expression when "judged" by VarBind] Message=[Detailed message defined by Trap Definition] (*1)
			Example	OID=1.3.6.1.4.1.1991 TrapName=vendor/foundry/traps/snTrapL4LinkDown CommunityName=public VarBind=BBBB,CCCC Pattern=.* Message=The SNMP trap that is generated when ISP link goes down snL4TrapLinkName BBBB; snL4LinkVirtualInterface CCCCC;
Monitor Settings feature	Windows Event	Successful value acquisition	Format	pattern=[Pattern string] xAlog.line=<[Event Log];[Event Source] ;[Initial of Event Level][Event ID];>[Message]
			Example	pattern=.*log-test-info.*xAlog.line=<Application;EventCreate;I1000;>log-test-info
Job feature	Execute Command	Starting Start Command	Format	-(*)
		Ending Start Command	Format	-(*)
		Delay of start	Format	-(*)
		Delay of end	Format	-(*)
	File Transfer	Starting File Transfer	Format	-(*)
		Ending File Transfer	Format	-(*)
Common feature	Maintenance	Success	Format	[Maintenance Type]: [Deleted number] records
			Example	DELETE_RERF_DATA : 0 records

Infrastructure Management feature	Command module	When execution is started	For mat	Execution of the module has been started.
			Exa mple	Execution of the module has been started.
		When execution ends	For mat	exitCode=[End Value] out=[Standard Output] err=[Standard Error Output]
			Exa mple	exitCode=0 out=Starting hinemos_agent (via systemctl): [OK] err=
		When checking is started	For mat	Check of the module has been started.
			Exa mple	Check of the module has been started.
	When checking has ended	For mat	exitCode=[End Value] out=[Standard Output] err=[Standard Error Output]	
		Exa mple	exitCode=0 out=Hinemos Agent (PID 930) is running... err=	
	File Transfer module	When execution is started	For mat	Execution of the module has been started.
			Exa mple	Execution of the module has been started.
		When execution has been successful	For mat	exitCode=[End Value]
			Exa mple	exitCode=0
		When checking is started	For mat	Check of the module has been started.
			Exa mple	Check of the module has been started.
When checking has been successful		For mat	equal file. MD5=[MD5 of the file]	
		Exa mple	equal file. MD5=5a0eca65e476f6039d105fee67bbb27f	
When checking has failed	For mat	not equal file. MD5(new)=[MD5 of file to be transferred], MD5(old)=[MD5 of file at transfer destination]		
	Exa mple	not equal file. MD5(new)=bb6a25fadc6267fa02ed4dbacddd389a, MD5(old)=bed3c89b33e809f288d2be65506bc996		

* The CommunityName and Varbind in the original message can be hidden by changing the following parameters in hinemos.properties.

```
monitor.snmptrap.org.message.community=false
monitor.snmptrap.org.message.varbind=false
```

*2 "-" means that nothing was displayed in the original message. Also, it does not mean that "[ORG_MESSAGE]" was substituted for "-" .

6.4 Mail Template Feature

6.4.1 Overview

The mail template feature sets and saves a sample of the mail subject and body that will be sent to the notification destination in a template format. Mail templates created with this feature are designated as mail notification setting units when used by the notification feature with job and the monitor feature. Mail templates created using this feature use the "Mail template ID" when specified by the mail notification feature.

6.4.2 Mail Template Registration

The mail template can be registered by the following the procedures.

1. Click the "Create" button in the Monitor Setting[Mail Template] view.
2. The Mail template[Create/Modify] dialog opens.

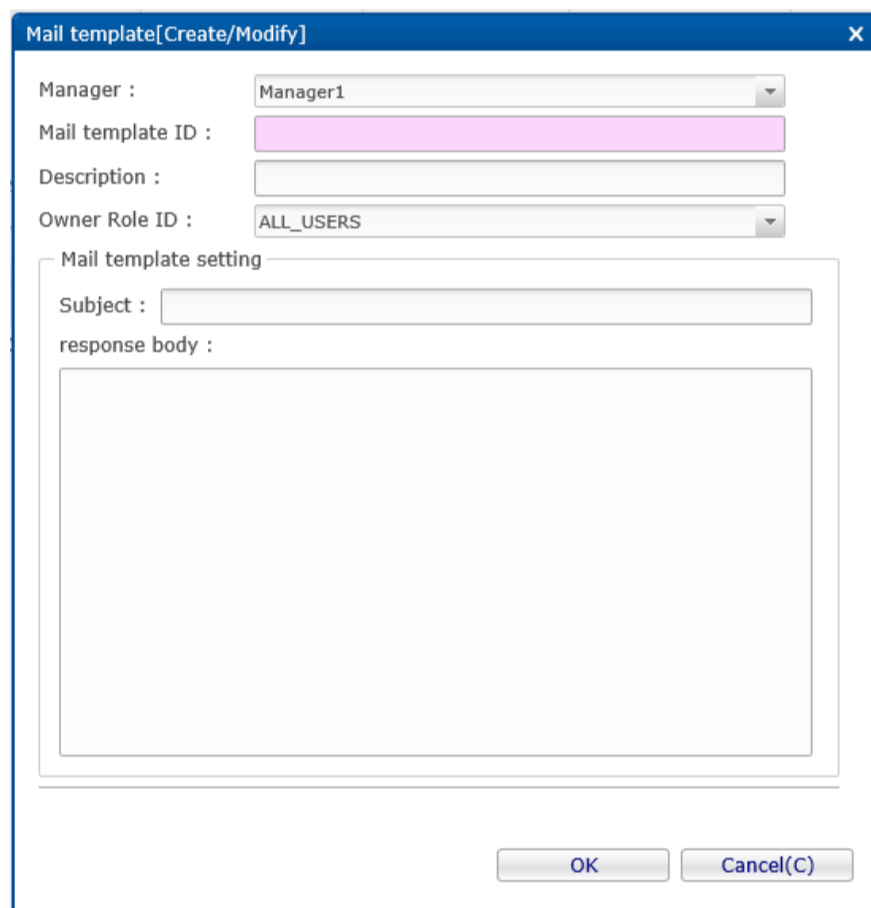


Figure 6-13 Mail template ID[Create/Modify] Dialog

3. Set up the mail template ID. Features that use mail templates can select a mail template by specifying this ID.
4. Enter the Description field in alphanumeric text.
5. Select an Owner Role ID from the drop-down list.
6. Enter the Subject in alphanumeric text.
7. Enter the response body in alphanumeric text.
 - To display the monitoring result in the Subject or the response body

If the following designated strings are entered, when sending the e-mail, the string will be replaced with corresponding content to each monitoring result.

Table 6-17 List of Strings Supporting Replacement

Strings	Content to be replaced	Notification source setting			
		Monitor	Job	Maintenance	Infra management
#[PRIORITY]	Replaced by the Priority according to the locale language of Hinemos Manager	o	o	o	o
#[PRIORITY_NUM]	Convert to Priority (numeric) (Critical:0 Unknown:1 Warning:2 Info:3).	o	o	o	o
#[PRIORITY_JP]	Convert to Priority (Japanese).	o	o	o	o
#[PRIORITY_EN]	Convert to Priority (English).	o	o	o	o
#[PLUGIN_ID]	Replace by Plugin ID (For details, refer to Table 6-15 List of Plugin ID).	o	o	o	o
#[MONITOR_ID]	Replace by Monitor ID.	o	o	o	o
#[MONITOR_DETAIL_ID]	Replace by Monitor Detail ID.	o	-	-	-
#[MONITOR_DESCRIPTION]	Replace by description of a specific monitor.	o	-	-	-
#[MONITOR_OWNER_ROLE_ID]	Replace by Owner Role ID of a specific monitor.	o	-	-	-
#[CALENDAR_ID]	Replace by Calendar ID.	o	o *1	o	o
#[SCOPE]	Replace by Scope Name.	o	o *2	o	o
#[GENERATION_DATE]	Replace by Time Created.	o	o	o	o
#[APPLICATION]	Replace by Application.	o	o	o	o
#[MESSAGE_ID]	Replace by Message ID.	o	o	o	o
#[MESSAGE]	Replace by Message. (For details, refer to Table 6-15 Notification Content of Message ·#[MESSAGE] Strings).	o	o	o	o
#[ORG_MESSAGE]	Replace by Original Messages.	o	-	o	o
#[NOTIFY_ID]	Replace by Notification ID.	o	o	o	o
#[NOTIFY_DESCRIPTION]	Replace by description of a specific notification.	o	o	o	o
#[JOB_MESSAGE:facilityId]	Replace by description of the message row in Job[Node Detail] view	-	o	-	-
#[NODE PROPERTY NAME]	Replace by the value of node property (*3, *4)	o	o *2	o	o

*1: Not replaced if the setting source is JobUnit.

*2: Not replaced if the setting source is JobUnit or JobNet.

*3: If monitoring result is per scope, will not be replaced.

*4: Refer to Table 7-30, Node Properties List, regarding node properties

When replacing the character string for #[MESSAGE], #[ORG_MESSAGE], and #[JOB_MESSAGE], if the replacement string includes a backslash (\) or control code, etc., the same string can be replaced according to the list in Table 6-18.

Table 6-18 #[MESSAGE], #[ORG_MESSAGE], #[JOB_MESSAGE] Replacement Support List

Characters	Contents for replacement
Backslash (\)	\\ (The representation is double byte, but it is actually replaced by two half width backslashes.)
Quote (')	\'
Double quote (")	\"
Back quote (`)	\`
Control code	from 0x00 - 0x20, 0x7F (Example: Line feed LF -> 0x0A)

This is noted as ":original" but you can disable the replacement handling noted in Table 6-18 in #[MESSAGE], #[ORG_MESSAGE], #[JOB_MESSAGE]. (Example : #[MESSAGE:original])

If notified from each function, the corresponding Plugin ID (#[PLUGIN_ID]) for replacement is as follows.

Table 6-19 List of Plugin IDs

Hinemos functions	Replacement strings of Plugin ID
Monitor Settings	MON
Hinemos Agent Monitor	MON_AGT B
HTTP Monitor (Numeric)	MON_HTP N
HTTP Monitor (String)	MON_HTP S
HTTP Monitor (Scenario)	MON_HTP SCE
JMX Monitor	MON_JMX N
Ping Monitor	MON_PNG N
SNMP Monitor (Numeric)	MON_SNMP N
SNMP Monitor (String)	MON_SNMP S
SNMPTRAP Monitor	MON_SNMP_TRP
SQL Monitor (Numeric)	MON_SQL N
SQL Monitor (String)	MON_SQL S
Windows Service Monitor	MON_WINSERVICE B
Windows Event Monitor	MON_WINEVENT S
Custom Monitor	MON_CUSTOM N
Service Port Monitor	MON_PRT N
System Log Monitor	MON_SYSLO SG
Process Monitor	MON_PRC N
Resource Monitor	MON_PRF N
Logfile Monitor	MON_LOGFILE S
Job	JOB
Self Check	SYS_SFC
Maintenance	MAINTENANCE
Infrastructure Management	INFRA

Note) The name of the Plugin ID cannot be changed.

[Example of creating a Mail Template]

```
[=====Subject starts here=====]
Hinemos event #[FACILITY_ID]
[=====Subject ends here=====]
[=====response body starts here=====]
The following events occurred.

Node : #[FACILITY_ID]
Priority : #[PRIORITY]
Time Created : #[GENERATION_DATE]
Message :
#[APPLICATION] #[GENERATION_DATE] #[ORG_MESSAGE]

Above.
[=====response body ends here=====]
```

6.4.3 Changing the Mail Template

1. Select the subject to change in the Monitor Settings [Mail template[List]] dialog, then click the "Modify" button. The Mail template[Create/Modify] dialog opens.
2. Edit the contents of the configuration, then click the "OK" button (refer to the [6.4.2 Mail Template Registration](#) section for the setting procedures).

6.4.4 Deleting the Mail Template

Select the subject to delete in the Monitor Settings [Mail template[List]] dialog, then click the "Delete" button.

6.5 Monitor Setting Feature (Create - Change - Delete - Setting Enable - Disable)

6.5.1 Overview

The Monitor Setting feature performs operations related to the monitor settings such as to create, change, delete, enable or disable monitor settings. Perform operations related to monitor settings in the Monitor Setting[List] view.

6.5.2 Create Monitor Settings

Creating various new monitor settings is performed in the setting dialog for each monitor feature. The setting dialog can be opened with the following operations.

1. Click the "Create" button from the Monitor Setting[List] view.
2. Select the monitor feature you want to use from the Monitor Type dialog and click the "Next" button

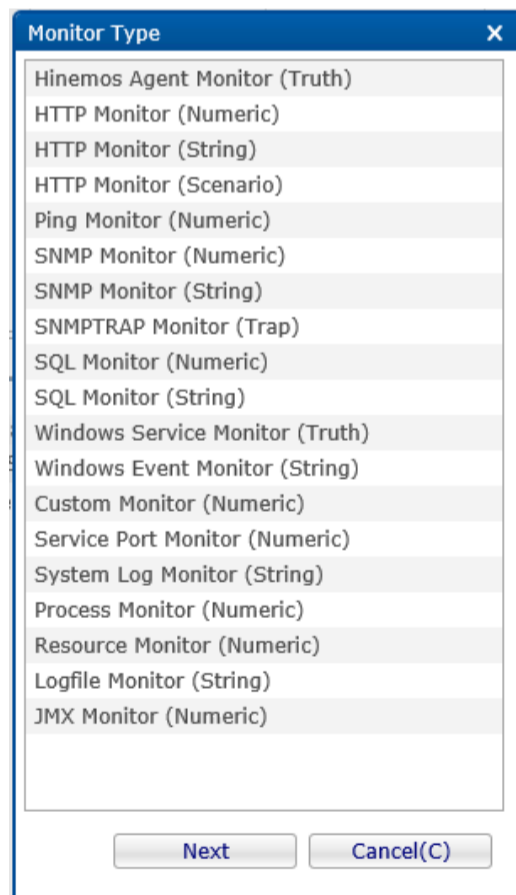


Figure 6-14 Monitor Type Dialog

3. A dialog for setting the various monitor settings opens. Refer to the next section for each of the monitor setting methods.

6.5.3 Changing Monitor Settings

Changing the settings for existing monitor settings is performed in the setting dialog for each monitor feature. The setting dialog can be opened with the following operations.

1. Select the monitor setting which you would like to change from the Monitor Setting[List] view.
2. Click the "Modify" button in the Monitor Setting[List] view.
3. A dialog for setting the various monitor settings opens.
4. After changing the settings, you can save the setting changes by clicking the "OK" button at the bottom of the settings dialog.

Refer to the next section for each of the monitor setting methods.

6.5.4 Deleting Monitor Setting

Delete existing monitor settings from the Monitor Setting[List] view. Delete existing monitor settings with the following operation.

1. Select the monitor setting which you would like to delete from the Monitor Setting[List] view.
2. Click the "Delete" button from the Monitor Setting[List] view.
3. After confirming the deletion details displayed in the confirmation dialog, and if there are no problems, then click the "OK" button.

Further, if you delete the settings ("Collect" is valid in the monitor settings) for a monitor result that has accumulated "Numeric Monitoring", by default the collection values that had been collected to that point by that monitor setting will be deleted when the monitor setting is deleted.

This setting can be changed. Refer to 6.9 "Numeric Value Monitoring Collection Value Setting" in the Administrator's Guide for details.

6.5.5 Monitor Enable for the Monitor Setting

With Hinemos, the various monitor settings can be saved as Valid or Invalid. Also, the saved monitor settings can be enabled or disabled at any time by user operation.

The operation to enable existing monitor settings is:

- Check the "Monitor" checkbox in the setting dialog for the various monitor settings.
- Use the "Monitor Valid" button in the Monitor Setting[List] view.

This operation can be performed with either of the above methods.

Refer to the following chapter for the setting method when enabling an existing monitor setting with the "Monitor" checkbox in the various monitor setting dialogs.

When enabling existing monitor settings, perform the following operation with the "Monitor Valid" button in the Monitor Setting[List] view.

1. Select the monitor setting that you would like to enable from the Monitor Setting[List] view. In this case, the operation to enable the monitor can be performed collectively by selecting multiple monitor settings.
2. Click the "Monitor Valid" button in the Monitor Setting[List] view.
3. After confirming the enable details displayed in the confirmation dialog, and if there are no problems, then click the "OK" button.

6.5.6 Monitor Disable for the Monitor Setting

The operation to disable existing monitor settings is:

- Remove the check from the "Monitor" checkbox in the setting dialog for the various monitor settings.
- Use the "Monitor Invalid" button in the Monitor Setting[List] view.

This operation can be performed with either of the above methods.

Refer to the following chapter for the setting method when disabling an existing monitor setting with the "Monitor" checkbox in the various monitor setting dialogs.

When disabling existing monitor settings, perform the following operation with the "Monitor Invalid" button in the Monitor Setting[List] view.

1. Select the monitor setting that you would like to disable from the Monitor Setting[List] view. In this case, the operation to disable the monitor can be performed collectively by selecting multiple monitor settings.
2. Click the "Monitor Invalid" button in the Monitor Setting[List] view.
3. After confirming the disable details displayed in the confirmation dialog, and if there are no problems, then click the "OK" button.

6.5.7 Collection Enable for the Monitor Setting

With Hinemos, when performing numeric value monitoring and scenario monitoring (refer to [7.1.1 Numeric Monitoring](#) or [7.1.5 Scenario Monitoring](#) for details) in the various monitor settings, the monitor results can be collected and saved for each monitor setting unit. Also, the saved monitor setting collector settings can be enabled or disabled at any time by user operation.

The operation to enable existing monitor settings collector settings is:

- Check the "Collector" checkbox in the setting dialog for the various monitor settings.
- Use the "Collector Valid" button in the Monitor Setting[List] view.

This operation can be performed with either of the above methods.

Refer to the following chapter for the setting method when disabling an existing monitor setting collector setting with the "Collector" checkbox in the various monitor setting dialogs.

When enabling existing monitor setting collector settings, perform the following operation with the "Collector Valid" button in the Monitor Setting[List] view.

1. Select the collector setting that you would like to enable from the Monitor Setting[List] view. In this case, the operation to enable the collector can be performed collectively by selecting multiple monitor settings.
2. Click the "Collector Valid" button in the Monitor Setting[List] view.
3. After confirming the enable details displayed in the confirmation dialog, and if there are no problems, then click the "OK" button.

6.5.8 Collection Disable for the Monitor Setting

The operation to disable existing monitor settings collector settings is:

- Remove the check from the "Collector" checkbox in the setting dialog for the various monitor settings.
- Use the "Collector Invalid" button in the Monitor Setting[List] view.

This operation can be performed with either of the above methods.

Refer to the following chapter for the setting method when disabling an existing monitor setting with the "Collector" checkbox in the various monitor setting dialogs.

When disabling existing monitor setting collector settings, perform the following operation with the "Collector Invalid" button in the Monitor Setting[List] view.

1. Select the collector setting that you would like to disable from the Monitor Setting[List] view. In this case, the operation to disable the collector can be performed collectively by selecting multiple monitor settings.
2. Click the "Collector Invalid" button in the Monitor Setting[List] view.
3. After confirming the disable details displayed in the confirmation dialog, and if there are no problems, then click the "OK" button.

6.5.9 Filtering Monitor Settings

By using the "Filter" button, you can display only those monitor settings out of the existing monitor settings that meet the filter conditions in the Monitor Settings[Filter] dialog.

1. Click the "Filter" button in the Monitor Setting[List] view. The Monitor Setting[List] dialog is displayed.

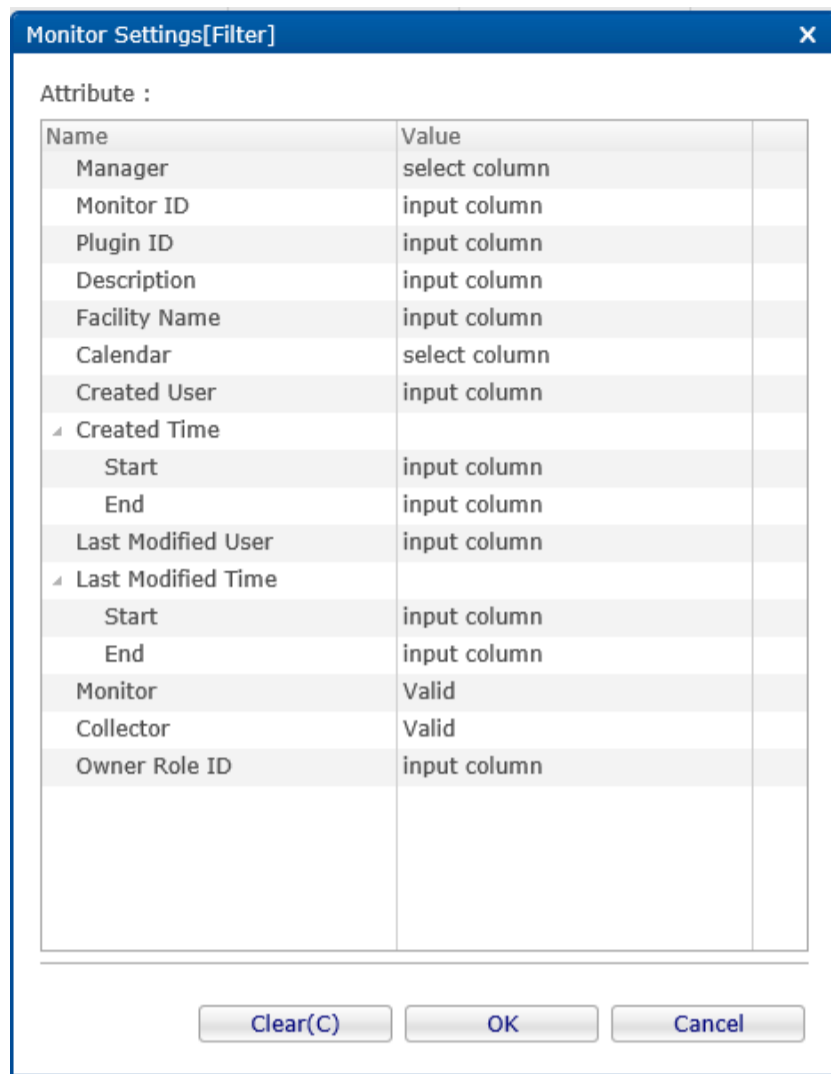


Figure 6-15 Monitor Setting[Filter] Dialog

2. Configure the filter condition. When an item is not included in the condition, please leave the field blank.
 (Please click on the "Clear" button to change the filter conditions back to the default conditions).

- Manager
 Make "Manager" a filtering condition.
- Monitor ID
 Make "Monitor ID" a filter condition (*).
- Plugin ID
 Make the Plugin ID of the monitor setting a filter condition (*).
- Description
 Make the "Description" text of the monitor setting a filter condition (*).
- Facility Name
 Make the monitored facility name of the monitor setting a filter condition.
- Calendar
 Make the calendar ID for the calendar specified in the monitor setting a filter condition (*).
- Created User
 Make the new created user in the monitor setting a filter condition (*).
- Created Time
 Make the created time for the monitor setting a filter condition. Clicking the button on the right side of the input field opens the time dialog. Please select a date and time. Select the date and time from the combo box.
- User Last Changed
 Make the User Last Changed in the monitor setting a filter condition (*).

- Last Change Time

Make the Last Change Time in the monitor setting a filter condition. Clicking the button on the right side of the input field opens the time dialog. Please select a date and time. Select the date and time from the combo box.

- Monitor

Make the "Valid", "Invalid" status in the monitor setting a filter condition.

- Collector

Make the "Valid", "Invalid" status for the collector in the monitor setting a filter condition.

-Owner Role ID

Specify an Owner Role ID of Monitor Settings as a filter condition.

* Filtering is performed by perfect or partial match.

Example: Only Monitor ID of "PING" is displayed if "PING" is entered as Monitor ID.

Filtering by partial match can be made by entering "%" before or after the entered content.

- Monitor ID starting from "PING" is displayed if "PING%" is entered as Monitor ID (forward match).
- Monitor ID ending with "PING" is displayed if "%PING" is entered as Monitor ID (backward match).
- Monitor ID including with "PING" is displayed if "%PING%" is included in Monitor ID (intermediate match).

7 Monitor Setting Feature (Monitor Type)

7.1 Monitor Type

There are five types of categories of monitor settings that can be created from the Monitor Settings[List].

- Numeric monitoring
- Character string monitoring
- Truth monitoring
- Trap monitoring
- Scenario monitoring

Following is an explanation of the characteristics of each of those features.

7.1.1 Numeric Monitoring

- Monitor Target

With numeric monitoring, numeric values are the target of monitoring. A threshold value determination is performed for the target numeric values, the priority, Information, Warning or Critical is judged and notification is sent. If the monitoring target numeric values cannot be obtained, the priority is "Unknown".

i.e.) HTTP Monitor (Numeric) default setting

- Monitor target: Response Time
- Threshold value setting:
 - Information: (lower limit) more than 0 msec, (upper limit) up to 1000 msec
 - Warning: (lower limit) more than 1000 msec, (upper limit) up to 3000 msec
 - Critical: Other than information or critical
 - Unknown: Timeout occurs
- Timeout: 5000 msec

The monitoring target numeric values differ depending on each of the features. Refer to the section for the object feature for more information.

- Monitoring Operation

When judgement of the priority of the monitor results for the numeric values acquired from the monitor target is performed, the priority is judged (decided) according to the following procedure.

1. If acquisition of the numeric value for the monitor target failed (including when acquisition was attempted and timeouts) -> the priority is judged to be "Unknown"
2. If the priority of the numeric value for the monitor target is included in the threshold value for "Information" -> the priority is judged to be "Information"
3. If the priority of the numeric value for the monitor target is included in the threshold value for "Warning" -> the priority is judged to be "Warning"
4. If the priority of the numeric value for the monitor target is not included in the threshold values for "Information" or "Warning" -> the priority is judged to be "Critical"

- Collection value accumulation

The monitoring target numeric value can be accumulated as the collection values only for numeric monitoring and scenario monitoring. The accumulated collection values can be displayed as a graph or downloaded in CSV format with the Performance feature.

Accumulation of collection values is started by enabling the "Collector" check on the [Create/Change] dialog for monitor.

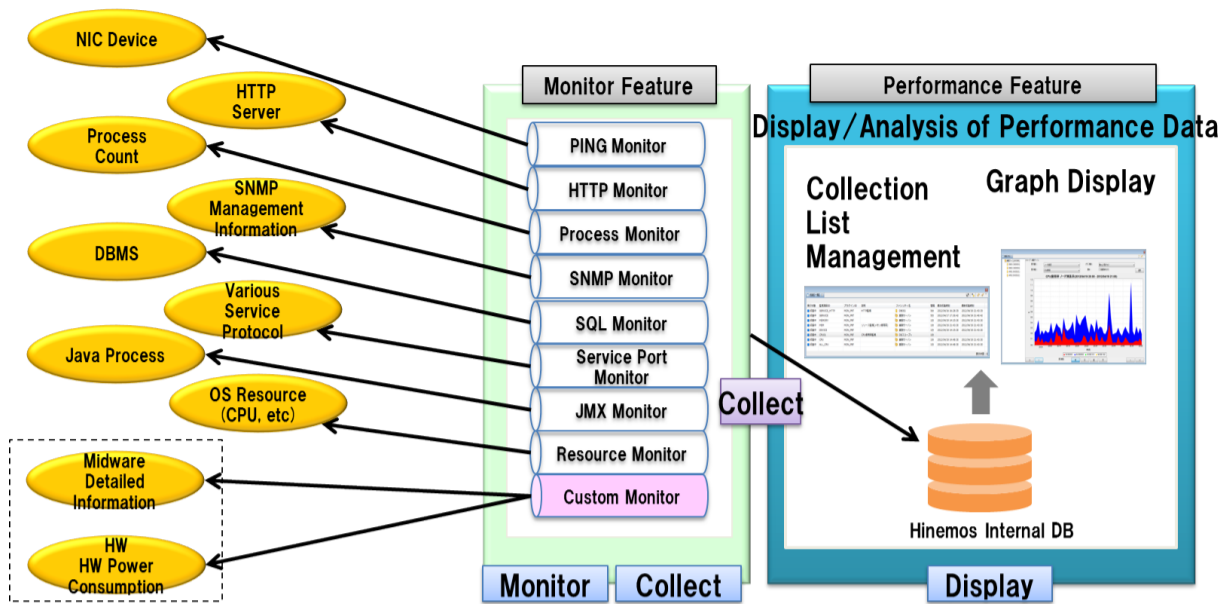


Figure 7-1 Accumulation of Numerical Monitoring and Graph Display

The numeric values handled by the Hinemos Performance feature become the values handled by numeric monitoring. Except for Resource Monitor and JMX Monitor, the display name for the collection value (Collected Item Name) and units (Collected Item Units) can be changed in the client setting screen.

The list of numeric values handled by numeric monitoring other than the Resource Monitor and JMX Monitor is shown in the table below.

Table 7-1 List of Numeric Values Handled by Numeric Monitoring Other Than Resource Monitor and JMX Monitor

Monitor Type	Collected Item Name	Collected Item Units
HTTP Monitor (Numeric value)	Response Time	msec
HTTP Monitor (Scenario)	Response Time	msec
PING Monitor (Numeric value)	Response Time	msec
SNMP Monitor (Numeric value)	Value *1	(Blank character string)*1
SQL Monitor (Numeric value)	Value *1	(Blank character string)*1
Custom Monitor (Numeric value)	(Blank character string)*1	(Blank character string)*1
Service Port Monitor (Numeric value)	Response Time	msec
Process Monitor (Numeric value)	Number of Processes	Units

*1 The display name and units are not set up for the general monitor features.

The collection value that can be acquired with the Resource Monitor depends on the platform of the node property. You can select from Linux, Windows, Network Equipment and Other by default for the platform, but there are no collection values that can be acquired if it is Other.

Also, SNMP (default) and WBEM are the protocols used to acquire the collection values. When these protocols differ, the collection values they can acquire also differ. Refer to 6.8 "Polling Protocol Settings" in the Administrator's Guide for the method for changing the protocol.

You can acquire detailed collection data for each device with the Resource Monitor. The device types cpu, mem, disk, nic and filesystem correspond to the specified collection value items. These collection values for each device can only be acquired where the repository CPU information, memory information, NIC information, disk information and file system information are for registered nodes. If a scope or node is specified as the monitor target, refer to the section on the Resource Monitor for details on the collection values for each device that can be acquired.

The numeric values handled by the Resource Monitor are shown in the table below.

Table 7-2 List of Values Collected by the Resource Monitor

Category	Collected Item Name	Collected Units	Device Type	SNMP			WB EM
				Linux	Windows	Network Equipment	Linux
CPU Related	CPU Usage	%	-	☉	o	-	☉
	CPU Usage (User)	%	-	☉	o	-	☉
	CPU Usage (System)	%	-	☉	o	-	☉
	CPU Usage (Nice Process)	%	-	☉			-
	CPU Usage (I/O Wait)	%	-	☉			☉
	CPU Usage by Core	%	cpu	☉	☉	-	-
	Interrupt Rate	count/s	-	☉	o	-	-
	Context Switches	count/s	-	☉	o	-	-
	1 Minute Load Averages	units/s	-	☉	-	-	-
	5 Minute Load Averages	units/s	-	☉	-	-	-
	15 Minute Load Averages	units/s	-	☉	-	-	-
Disk Related	Disk I/O Count for Each Device	count/s	disk	☉	o	-	☉
	Disk I/O Count For Each Device (Read)	count/s	disk	☉	o	-	☉
	Disk I/O Count For Each Device (Write)	count/s	disk	☉	o	-	☉
	Disk I/O Bytes For Each Device	byte/s	disk	☉	o	-	☉
	Disk I/O Bytes For Each Device (Read)	byte/s	disk	☉	o	-	☉
	Disk I/O Bytes For Each Device (Write)	byte/s	disk	☉	o	-	☉
File System Related	File System Usage	%	filesystem	☉	☉	-	-
	File System Usage (ext3)	%	filesystem	-	-	-	☉
	File System Usage (ext4)	%	filesystem	-	-	-	☉
	File System Usage (xfs)	%	filesystem	-	-	-	☉
	Mass Storage File System Usage	%	filesystem	☉* 2	-	-	-
Memory Related	Memory Usage	%	-	☉	o	-	☉
	Memory Usage (Swap)	%	-	☉	o	-	☉
	Memory Usage (Physical)	%	-	☉	o	-	☉
	Swap Space Memory Usage	%	-	☉	o	-	☉
	Memory Usage in Physical Memory	%	-	☉	o	-	☉
	Physical Memory Usage (User)	%	-	☉	o	-	-
	Physical Memory Usage (Buffer)	%	-	☉	o	-	-
	Physical Memory Usage (Cached)	%	-	☉	o	-	-
	Swap I/O	kB/s	-	☉	o	-	☉
	Swap I/O (In)	kB/s	-	☉	o	-	-
	Swap I/O (Out)	kB/s	-	☉	o	-	-
	Swap Block Count	blocks/s	-	☉	-	-	-
	Swap Block Count (In)	blocks/s	-	☉	-	-	-
	Swap Block Count (Out)	blocks/s	-	☉	-	-	-

Network Related	Packet Count	count/s	-	⊙	⊙*1	⊙	-
	Packet Count (received)	count/s	-	⊙	⊙*1	⊙	-
	Packet Count (sent)	count/s	-	⊙	⊙*1	⊙	-
	Packets For Each Device	count/s	nic	⊙	⊙*1	⊙	-
	Packets For Each Device (received)	count/s	nic	⊙	⊙*1	⊙	-
	Packets For Each Device (sent)	count/s	nic	⊙	⊙*1	⊙	-
	Error Packet Count	count/s	-	⊙	⊙*1	⊙	-
	Error Packet Count (received)	count/s	-	⊙	⊙*1	⊙	-
	Error Packet Count (sent)	count/s	-	⊙	⊙*1	⊙	-
	Error Packets For Each Device	count/s	nic	⊙	⊙*1	⊙	-
	Error Packets For Each Device (received)	count/s	nic	⊙	⊙*1	⊙	-
	Error Packets For Each Device (sent)	count/s	nic	⊙	⊙*1	⊙	-
	Network Amount used	byte/s	-	⊙	⊙*1	⊙	-
	Network Amount used (received)	byte/s	-	⊙	⊙*1	⊙	-
	Network Amount used (sent)	byte/s	-	⊙	⊙*1	⊙	-

⊙ Can be used agent-lessly

o Hinemos Agent installation is required

*1 Even if you do not use the SNMP extension agent included with the Hinemos Agent, you can do the same monitoring by specifying the SNMP agent that came with OS.

*2 See Section 6.10.1, "Settings for mass storage filesystem monitoring", in the Administrator's Guide for details about Mass Storage File System Usage.

The related collection values for some of the items with Resource Monitor can be collected in a batch as specification items. The various collection values of the detail items and the specification items included in the collection values are as follows:

Table 7-3 List of Collection Values of the Specification Items and the Specification Items Included in the Collection Values

Category	Collection values of the specification items	Detail item
CPU Related	CPU Usage	CPU Usage (user)
		CPU Usage (System)
		CPU Usage (Nice Process)
		CPU Usage (IO Wait)
Disk Related	Disk IO Count For Each Device	Disk IO Count For Each Device (Read)
		Disk IO Count For Each Device (Write)
	Disk IO Amount For Each Device	Disk IO Amount For Each Device (Read)
		Disk IO Amount For Each Device (Write)

Memory Related	Memory Usage	Memory Usage (Swap)
		Memory Usage (Physical)
	Memory Usage in Physical Memory	Memory Usage in Physical Memory (user)
		Memory Usage in Physical Memory (buffer)
		Memory Usage in Physical Memory (cache)
	Swap I/O	Swap I/O (In)
		Swap I/O (Out)
	Swap Block Count	Swap Block Count (In)
Swap I/O (Out)		
Network Related	Packet Count	Packet Count (received)
		Packet Count (sent)
	Packet Count for Each Device	Packet Count for Each Device (received)
		Packet Count for Each Device (sent)
	Error Packet Count	Error Packet Count (received)
		Error Packet Count (sent)
	Error Packet Count for Each Device	Error Packet Count for Each Device (received)
		Error Packet Count for Each Device (received)
	Network Information Amount	Network Information Amount (received)
		Network Information Amount (sent)
	Network Information Amount for Each Device	Network Information Amount for Each Device (received)
		Network Information Amount for Each Device (sent)

Table 7-4 List of Values Collected by the JMS Monitor

Collected Item Name	Collected Item Units
Number of classes currently loaded	Classes
Total number of classes loaded	Classes
Number of classes unloaded	Classes
Number of collections by garbage collector "ConcurrentMarkSweep"	Collections
Total consumption time of garbage collector "ConcurrentMarkSweep"	ms
Number of collections by garbage collector "Copy"	Collections
Total consumption time of garbage collector "Copy"	ms
Number of collections by garbage collector "ParNew"	Collections
Total consumption time of garbage collector "ParNew"	ms
Number of pending for finalization	Collections
Heap memory committed	byte
Heap memory used	byte
Heap memory not committed	byte
Heap memory not used	byte
Memory pool "CMS Old Gen" committed	byte
Memory pool "CMS Old Gen" used	byte
Memory pool "CMS Perm Gen" committed	byte
Memory pool "CMS Perm Gen" used	byte
Memory pool "Code Cache" committed	byte
Memory pool "Code Cache" used	byte

Memory pool "Eden Space" committed	byte
Memory pool "Eden Space" used	byte
Memory pool "Par Eden Spacen" committed	byte
Memory pool "Par Eden Spacen" used	byte
Memory pool "Par Survivor Space" committed	byte
Memory pool "Par Survivor Space" used	byte
Memory pool "Survivor Space" committed	byte
Memory pool "Survivor Space" used	byte
Process CPU time	ns
Process operation time	ms
Number of daemon threads	threads
Maximum number of threads	threads
Number of threads under execution	threads
Total number of threads started	threads

7.1.2 Character String Monitoring

- Monitor Target

Character string values are the target of character string monitoring. Filtering is performed on the filter list with pattern matching expression specified for the character strings sent or acquired from the monitoring target, and notification is performed according to the settings specified in the conforming filter conditions.

Items that can be specified as filter conditions:

- Pattern matching strings (regular expression)
- Distinguish /Do not distinguish between upper and lower case
- Process/Do not process if the condition is matched
- Priority
- Message (using the notification feature)

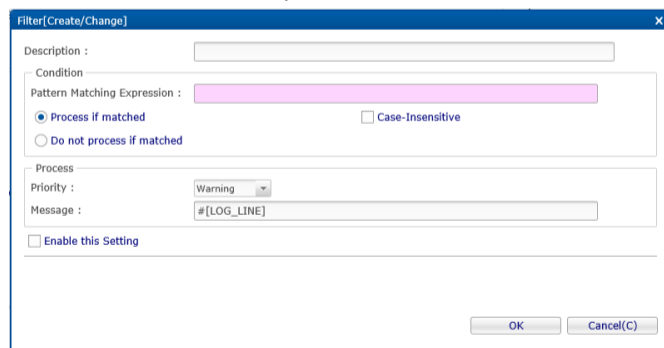


Figure 7-2 Filter [Create/Change] Dialog

Table 7-5 Configuration Items on Filter [Create/Change] Dialog

Configuration item	Input type	Description
Description	Text	Enter a description of the pattern matching setting.

Condition	Pattern Matching Expression	Text	Specify a string for the pattern matching condition in regular expression.
	Process if matched No/Yes	Radio Button	<ul style="list-style-type: none"> Process if matched If the specified pattern matching expression matches, follow the setting defined by the process and it is a notification target. Do not process if matched If the specified pattern matching expression matches, processing will not continue and it will not be a notification target.
	Case-insensitive	Checkbox	Check to perform string matching without distinguishing between upper and lower case characters.
Processing	Priority	Select from list	Select the notification priority.
	Message	Text	Enter a message in alphanumeric text. *The replacement string #[LOG_LINE] can be specified for System Log Monitor, Logfile Monitor and Windows Event Monitor. #[LOG_LINE] can replace the details of detected logs.
Enable this Setting		Checkbox	Pattern matching condition is enabled when checked. If not checked, the pattern matching setting cannot be used for string matching.

• Monitoring Operation

An order is defined for each filter condition in the filter list where the pattern matching strings are defined. Filtering is performed in order from the newest. If there are multiple filter conditions that match, the processing defined by the first matching filter is performed. No processing is performed if there are no matching filter conditions.

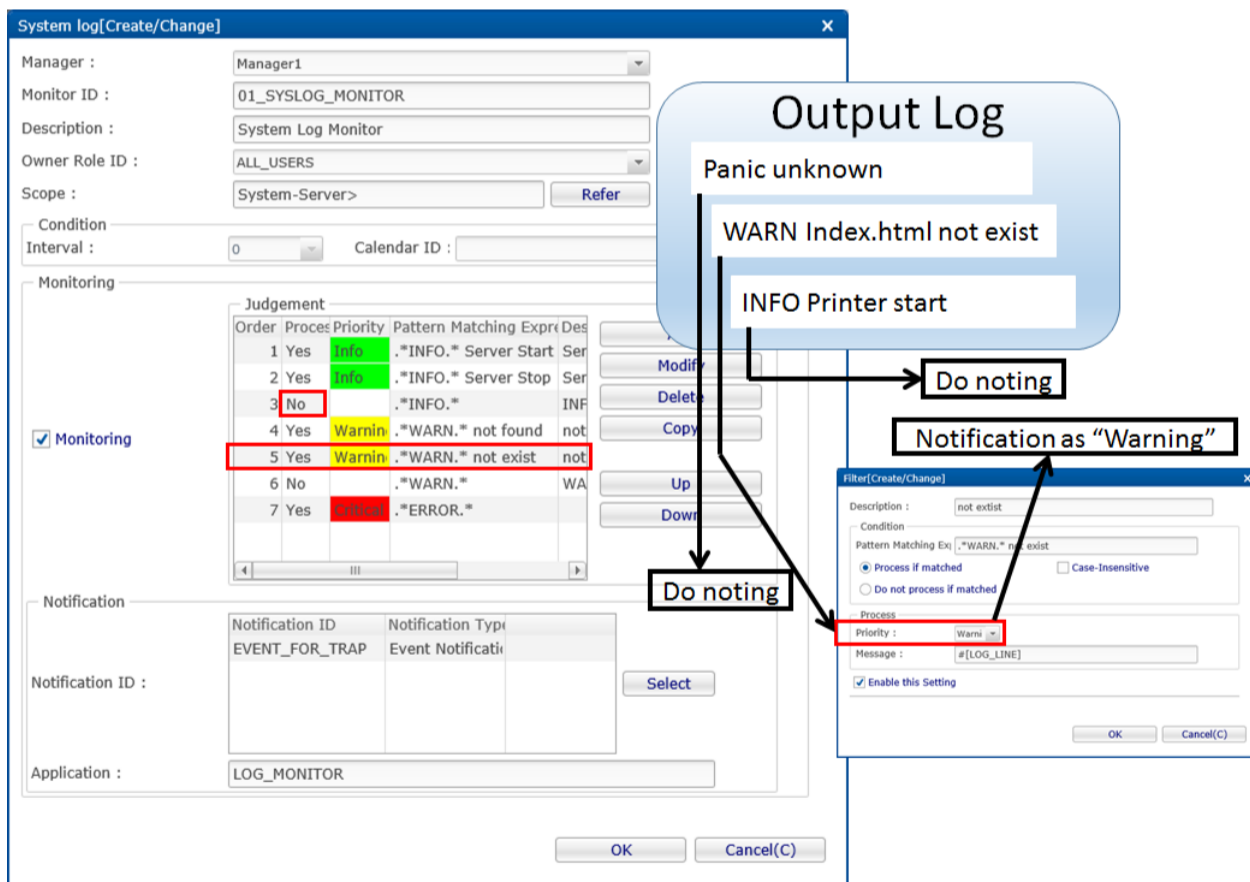


Figure 7-3 String Filtering

7.1.3 Truth Monitoring

- Monitor Target

Truth monitoring judges whether the status of the monitoring target is "OK" or "NG" (no good) and monitors the judged result. A priority of Normal, Warning, Critical or Unknown is set for each "OK" and "NG". If acquisition of information for the status of the object being monitored fails, and the monitoring judgement cannot be performed, the priority of the judgement results is Unknown.

7.1.4 TRAP Monitoring

- Monitor Target

This category only applies to SNMPTRAP Monitoring. Which OID for the MIB is monitored is set in the monitoring target. A priority of Normal, Warning, Critical or Unknown can be set for each of these OIDs. If there is an OID that matches the SNMPTRAP that was sent, notification is sent with the defined priority.

In addition, strings can be filter by the content of varbind included in SNMPTRAP to judge the priority.

7.1.5 Scenario Monitoring

- Monitor Target

This category only applies to SNMPTRAP Monitoring. By access plural URLs sequentially instead of a single URL, whether a correct response can be returned when the target to be monitored is accessed as expected is monitored. A priority can be set by judging the string of the content of the status code and HTTP response when each URL is accessed. A collection of a list of these URLs and judgment of the strings of the HTTP response content is called a scenario.

In addition, like numeric value monitoring, the response time of each URL and overall response time can be accumulated as collection values.

7.2 Monitor Classification

Hinemos has various monitoring features to enable support for varied applications and objectives. An explanation of the details of each feature is given in the following chapter, but the application and objectives of each monitoring feature is classified and a summary explanation is given here. (*)

- General IP network device Alive/Status Monitoring

PING Monitor	Monitors the Alive status by judging whether or not there is a PING response from the monitoring target.
SNMPTRAP Monitor	Acquires the status of the target device by receiving the SNMPTRAP from the target device.

- Product and Process Alive/Status Monitoring

Hinemos Agent Monitor	Monitors the Alive status of the Hinemos Agent.
HTTP Monitor	Monitors the status from the HTTP response details, existence of a response and the response time for the Web server.
SQL Monitor	Monitors the status from the SQL response details and existence of a response for the DB server.
Process Monitor	Monitors the status from the number of processes that are running.
Windows Service Monitor	Monitors the Windows service status.
Service Port Monitor	Monitors the status from existence of a response and the response time for a specific service port.
SNMPTRAP Monitor	Monitors the status by the SNMPTRAP generated by processes such as middleware.
JMX monitoring Monitor	Monitors the status of Java application such as heap memory size.

- Resource status monitoring for the various devices

Resource Monitor	Acquires resource information for the monitoring target and monitors that status.
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- Log message monitoring

System Log Monitor	Monitors the messages output by the system logs of the various OSs.
Logfile Monitor	Monitors the messages output by a particular log file.
Windows Event Monitor	Monitors the messages output by the Windows Event Log.

- General / Extensible monitor feature

SNMP Monitor	Monitors details of the response from the general protocol SNMP.
Custom Monitor	Monitors the execution results of a user defined command or script.

(*) There may be some redundancy depending on usage because they can be used for a variety of applications.

7.3 Hinemos Agent Monitor

The Hinemos Agent monitor feature monitors the Hinemos Agent status and provides notification. The Hinemos Agent monitor feature belongs to the truth monitoring category.

The Hinemos Agent monitor is set up from the Hinemos Agent[Create/Change] dialog. The Hinemos Agent[Create/Change] dialog is opened with the following process.

1. Click the "Create" button from the Monitor Settings[List] view.
2. Select Hinemos Agent Monitor (Truth) from the Monitor Type dialog, and click the "Next" button.

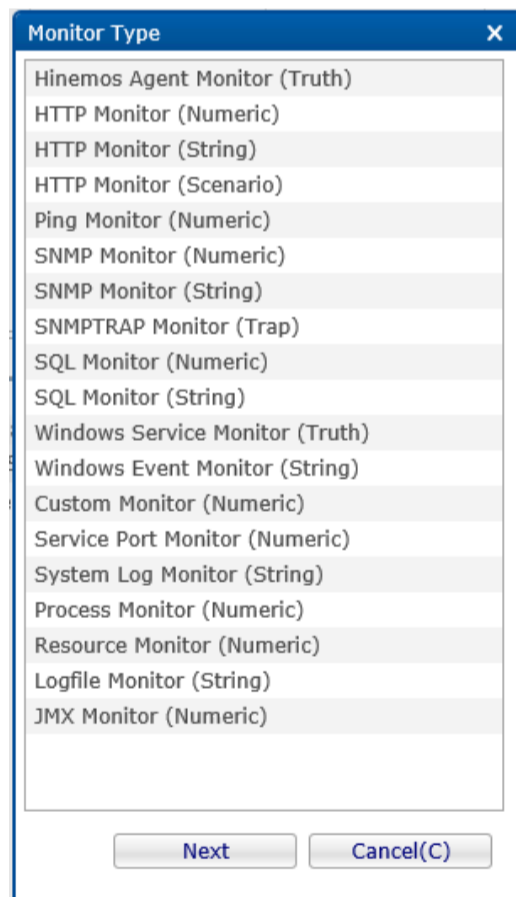


Figure 7-4 Monitor Type Dialog

3. The Hinemos Agent[Create/Change] dialog opens.

Registering Monitoring Setting

1. The Hinemos Agent[Create/Change] dialog opens.
2. Set up the following items.

- Manager Select a Hinemos manager for which monitoring setting is created. (Refer to [2.6 Multi-Manager Connection](#) for more information on the multiple manager connection.)
 - Monitor ID:
Enter the Monitor ID as text. The Monitor ID is used as an ID to identify which monitoring configuration generated the notification.
 - Description:
Enter a description of the monitoring setting as text.
 - Owner Role ID:
Select an Owner Role ID for the monitoring setting. Refer to [12 Account Feature](#) section for more details about Owner Role.
 - Scope:
Enter the target scope. Click the "Refer" button on the right to display the Select Scope dialog. Select the target scope from the scope tree in the dialog.
3. Set up the monitoring conditions. Enter the following items.
- Interval:
Check the connection to the Hinemos Agent at the interval specified here.
 - Calendar ID:
Select the calendar ID for the calendar you want to set up. Monitoring is enabled only during the period configured as working hours in the calendar (Refer to the section, [4 Calendar Feature](#) for more details on the calendar). If Calendar ID is not selected, the monitoring is enabled all day.
4. Specify whether to enable this setting. Set it with the checkbox below.
When checked, the setting is enabled. If unchecked and it is specified as disabled, the setting is saved, but the monitoring process will not be executed.
5. Define the priority for each monitor result. Enter the following items.
- OK:
If the connection status with the Hinemos Agent is checked and communication is possible, notification is made with the priority set here.
 - NG:
If the connection status with the Hinemos Agent is checked and communication is not possible, notification is made with the priority set here.
6. Configure the notification details. Enter the following items.
- Notification ID:
Select from the list the Notification ID that is the notification method used in the notification setting. (Refer to the section [6.3 Notification Feature](#) regarding notification settings) When you click the "Select" button on the right, the Notification[List] dialog is displayed. Select the notification method.
 - Application:
Enter an application name in alphanumeric text. This is displayed as the notification information.
7. Click the "OK" button. The newly created setting is added to the setting list.

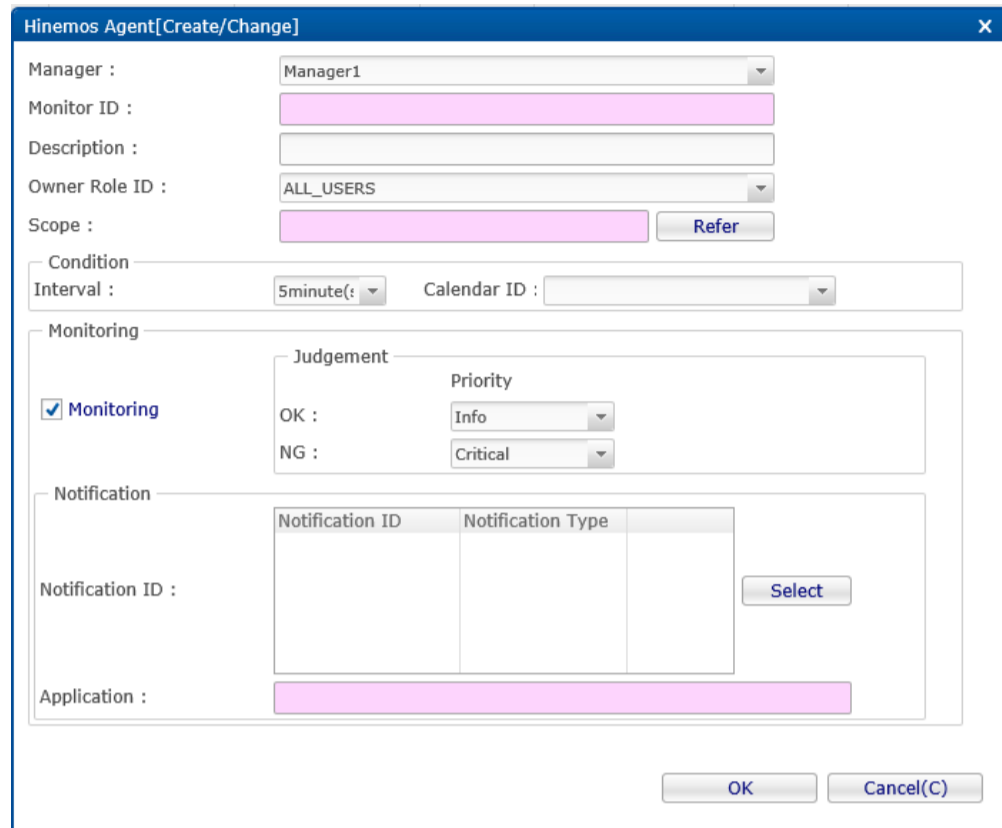


Figure 7-5 Hinemos Agent[Create/Change] Dialog

Changing the Monitor Settings

1. Select the object to change from the monitor setting list displayed in the Monitor Settings[List] dialog, then click the "Modify" button. The Hinemos Agent[Create/Change] dialog opens.
2. Edit the setting details, and then click the "OK" button. (Refer to "Registering Monitor Setting" for the procedures for entering settings)

Deleting Monitor Setting

Select the object to delete from the monitor setting list displayed in the Monitor Settings[List] dialog, then click the "Delete" button.

Changing the Valid/Invalid Setting in the Monitor Setting

You can collectively change the valid/invalid settings in the monitor setting. Select the settings to change from the monitor setting list displayed in the Monitor Settings[List] dialog (multiple can be selected). Then click the "Valid" ("Invalid") button. A confirmation dialog is displayed. Click the "OK" button.

Table 7-6 Configuration Items of Hinemos Agent Monitor

Configuration item		Input type	Description
Manager ID		Select from list	Select Hinemos Manager.
Monitor ID		Text	Enter an ID to identify which notification setting caused the notification.
Description		Text	Enter a description of the monitoring setting.
Owner Role ID		Select from list	Select an Owner Role ID for the monitoring setting.
Scope		Select from the scope tree	Select a scope subject for monitoring.
Condition	Interval	Select from list	Specify the monitoring interval.
	Calendar ID	Select from list	Select the calendar ID for the calendar to set up. Monitoring is enabled only during the period configured as working hours in the calendar

Monitor	Monitor		Checkbox	When checked, the monitoring setting is enabled. If unchecked, the setting is disabled. The setting will be saved, but the monitoring process will not be executed.
	OK/NG	Priority	Select from list	If the monitor result is judged to be OK/NG, the priority for notification of the monitor results is specified.
Notification	Notification ID		Select from list	Select a notification ID to be used as a notification method.
	Application		Text	Enter an application name to be displayed as the notification information.

7.4 HTTP Monitor

The HTTP Monitor feature monitors the WEB server status using the HTTP(HTTPS) protocol and provides notification of those results. The HTTP Monitor feature belongs in the category of numeric monitoring, string monitoring, or scenario monitoring.

The following three types of monitoring methods are provided.

- Threshold monitoring of the response time of the HTTP request
- String matching on the page obtained by the HTTP request
- Judgment of the result of HTTP request based on a specified scenario

Further, perform the setup for HTTPS described in 6.3 "HTTP Monitor" in the Administrator's Guide when monitoring the WEB server status using the HTTPS protocol.

HTTP Monitor is setup in the HTTP[Create/Change] dialog. The HTTP[Create/Change] dialog is opened with the following process.

1. Click the "Create" button from the Monitor Settings[List] view.
2. The HTTP[Create/Change] dialog opens.
 - To perform threshold monitoring of the response time of the HTTP request, select HTTP Monitor (Numeric) from the Monitor Type dialog and click the "Next" button.
 - To perform string matching on the page obtained by the HTTP request, select HTTP Monitor (String) from the Monitor Type dialog and click the "Next" button.
 - To monitor the server status by the HTTP request based on a scenario, select HTTP Monitor (scenario) from the Monitor Type dialog and click the "Next" button.
3. The HTTP[Create/Change] dialog opens.

Registering Monitoring Setting

To register threshold monitoring of the response time of the HTTP request

1. Click the "Create" button in the upper right part of the Monitor Settings[List] view to display the "Monitor Type" dialog.
2. Select HTTP Monitor (Numeric) and click the "Next" button to display the HTTP[Create/Change] dialog.
3. Enter the following items for the monitor target.
 - Manager Select a Hinemos manager for which monitoring setting is created. (Refer to [2.6 Multi-Manager Connection](#) for more information on the multiple manager connection.)
 - Monitor ID:
Enter the Monitor ID as text. The Message ID is used as an ID to identify the monitor setting that output the message information.
 - Description:
Enter a description for the monitoring setting as text.
 - Owner Role ID:
Select an Owner Role ID for the monitoring setting. Refer to [12 Account Feature](#) section for more details about Owner Role.

- Scope:

Click the "Refer" button shown on the right to display the Select Scope dialog. Select the scope or node that is monitor target from the scope tree in the displayed dialog. If you selected a scope, all of the nodes assigned under it are monitor targets.

4. Enter the following items for the monitor setting operation.

- Interval:

This is the interval for monitor setting operation. An HTTP request is generated and the Web server status is confirmed at this interval.

- Calendar ID:

The Calendar ID registered to the calendar feature is assigned and the interval for monitor setting operation can be specified. The monitor setting will only operate at the interval specified as the operating times in the calendar. (Refer to the section, [4 Calendar Feature](#) for more details on the calendar)

The monitor settings will always operate if a Calendar ID is not selected.

- Check Settings:

- URL

Enter the URL that is the object of the HTTP request as text. A node property can also be included in the URL string. (Refer to Table 7-30, Node Property List, regarding node properties)

Example: [http://#\[IP_ADDRESS\]/index.html](http://#[IP_ADDRESS]/index.html)

Note) Handling of special characters other than alphabet and numbers

The specifications of types of characters that can be used for URL are based on RFC2396 and RFC2732.

Characters included in US-ASCII does not have to be escaped.

However, escaping is necessary for the following characters that are included in US-ASCII:

? :

This character can be placed as a reserved character between a path and a query string of URI to separate them. Escape this character (%+2-digit hexadecimal) if it is placed any other location.

% :

This character escapes characters that cannot be used for URI as is. Escape this character (%+2-digit hexadecimal) to use it for a purpose other than that.

[and]:

These can be placed only immediately before and after of IPv6 IPMI IP address. Escape this character (%+2-digit hexadecimal) if it is placed any other location.

- Time out (msec)

Enter the time-out value for the HTTP request. When there is a timeout because the Web server response was late, it is notified with the priority "Unknown".

5. Enter the following items for the value of the threshold value judgement for the monitor target.

- Monitor:

Checked when judging the threshold value against the response time for the HTTP request.

- Response Time (msec):

Enter the threshold value for the response time of the HTTP request.

If within the range of "Information", it is notified as "Information" priority.

If it is outside the range of "Information" and is in the range of "Warning", it is notified as "Warning" priority.

If it is not in the range of "Information" or "Warning", it is notified as "Critical" priority.

- Notification ID:

Click the "Select" button shown on the right to display the Notification[List] dialog.

Select the Notification ID assigned to the monitor target from the Notification ID list registered in the notification feature shown in the dialog. (Refer to [6.3 Notification Feature](#) regarding the notification setup)

- Application:

Enter the string to be displayed as the application name for the notification feature as text.

6. Enter the following items for the value of the collection for the monitor target.

- Collector:

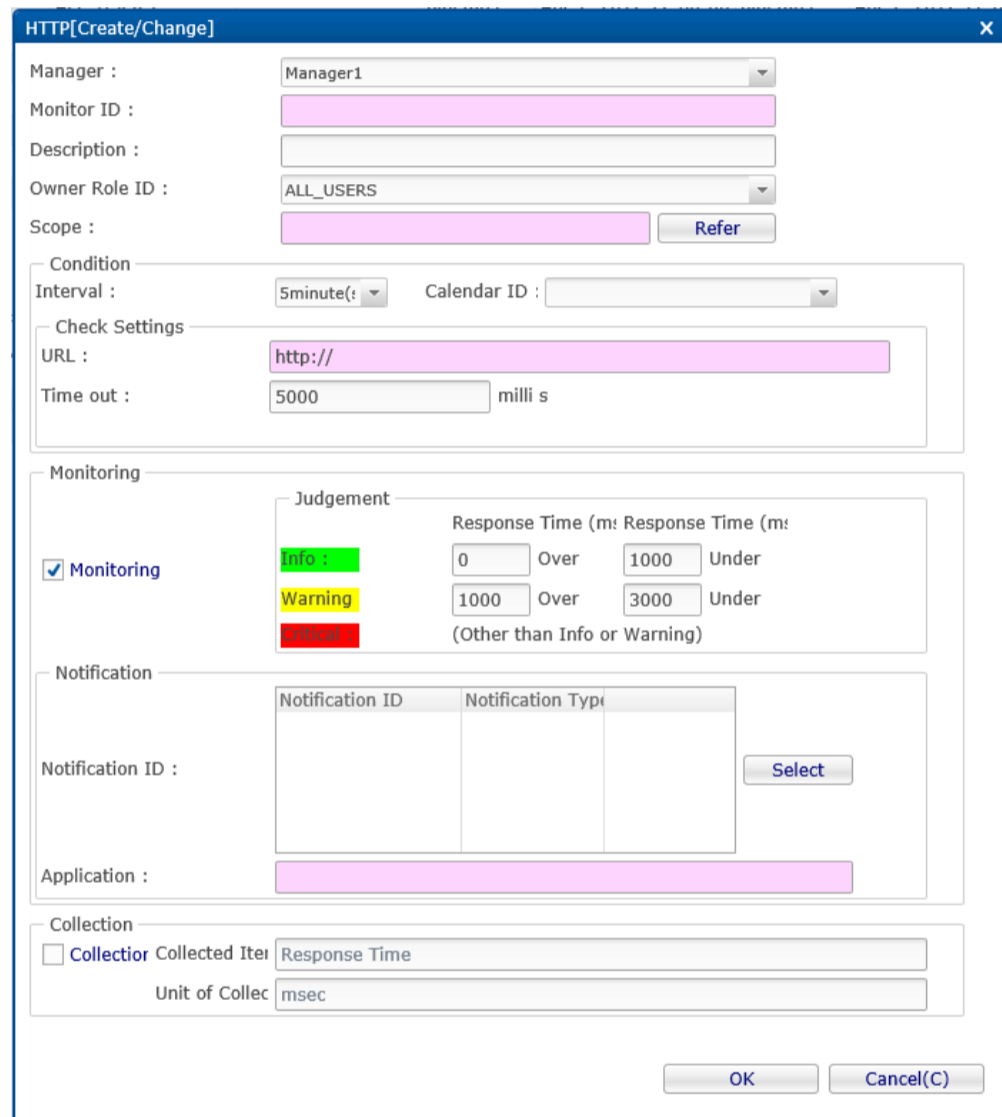
Checked when collecting and accumulating the response time for the HTTP request. This is connected to the Performance feature and the accumulated response time can be displayed as a graph.

- Collected Item Name:

Enter the display name for the collected value. This display name is used by the Performance feature's graph, etc.

- Collection units:

Enter the units for the collected value. These units are used by the Performance feature's graph, etc.



The screenshot shows the 'HTTP[Create/Change]' dialog box with the following fields and settings:

- Manager :** Manager1
- Monitor ID :** (empty text field)
- Description :** (empty text field)
- Owner Role ID :** ALL_USERS
- Scope :** (empty text field) Refer
- Condition**
 - Interval :** 5minute
 - Calendar ID :** (empty dropdown)
- Check Settings**
 - URL :** http://
 - Time out :** 5000 milli s
- Monitoring**
 - Monitoring
 - Judgement**

Level	Response Time (m:)	Response Time (m:)
Info	0	1000
Warning	1000	3000
Critical	(Other than Info or Warning)	
- Notification**
 - Notification ID :** (empty dropdown) Select
 - Application :** (empty text field)
- Collection**
 - Collector
 - Collected Item :** Response Time
 - Unit of Collec :** msec

Buttons: OK, Cancel(C)

Figure 7-6 HTTP[Create/Change] Dialog (Numeric)

7. Edit the necessary items, then click the "OK" button

To register the character matching monitor setting for the data acquired with the HTTP request

1. Click the "Create" button in the upper right part of the Monitor Settings[List] view to display the "Monitor Type" dialog.
2. Select HTTP Monitor (String) and click the "Next" button to display the HTTP[Create/Change] dialog.
3. Enter the following items for the monitor target.

- Manager Select a Hinemos manager for which monitoring setting is created. (Refer to [2.6 Multi-Manager Connection](#) for more information on the multiple manager connection.)

- Monitor ID:

Enter the Monitor ID as text. The Message ID is used as an ID to identify the monitor setting that output the message information.

- Description:

Enter a description for the monitoring setting as text.

- Owner Role ID:

Select an Owner Role ID for the monitoring setting. Refer to [12 Account Feature](#) section for more details about Owner Role.

- Scope:

Click the "Refer" button shown on the right to display the Select Scope dialog. Select the scope or node that is monitor target from the scope tree in the displayed dialog. If you selected a scope, all of the nodes assigned under it are monitor targets.

4. Enter the following items for the monitor setting operation.

- Interval:

This is the interval for monitor setting operation. An HTTP request is generated and the Web server status is confirmed at this interval.

- Calendar ID:

The Calendar ID registered to the calendar feature is assigned and the interval for monitor setting operation can be specified. The monitor setting will only operate at the interval specified as the operating times in the calendar. (Refer to the section, [4 Calendar Feature](#) for more details on the calendar)

The monitor settings will always operate if a Calendar ID is not selected.

- Check Settings:

- URL

Enter the URL that is the object of the HTTP request as text.

The URL can be set up to a maximum of 2083 characters. A node property can also be included in the URL string. (Refer to Table 7-30, Node Property List, regarding node properties)

Example: [http://#\[IP_ADDRESS\]/index.html](http://#[IP_ADDRESS]/index.html)

- Time out (msec)

Enter the time-out value for the HTTP request. When there is a timeout because the Web server response was late, it is notified with the priority "Unknown".

5. Enter the following items related to string matching for the monitor target.

- Monitor:

For the data (string) obtained by HTTP request, this is checked when performing monitoring by string matching.

- Judge:

You can add, change and delete pattern matching conditions for string matching.

- Adding a pattern matching condition:

Click the "Add" button, and the Filter[Create/Change] dialog is displayed.

Edit the necessary items below, then click the "OK" button

- Description:

Enter a description related to the pattern matching condition as text.

- Condition:

- Pattern Matching Expression:

Enter the expression to be used in string matching. (Refer to <http://docs.oracle.com/javase/jp/7/api/java/util/regex/Pattern.html> regarding expressions)

- Do not classify Large/Small Characters

Check this to do string matching without distinguishing between upper and lower case characters.

- Process if matched:

If a string exists in the string acquired by the HTTP request that matches the pattern matching expression, follow the settings defined in process.

- Do not process if matched

If a string exists in the string acquired by the HTTP request that matches the pattern matching expression, there is no further matching process.

- Processing:

If "Process if matched" is selected, enter the following items.

- Priority:

Select the priority for notification.

- Message:

Enter a message assigned to the notification information.

- Enabling this Setting:

Check this to enable the pattern matching condition.

- Changing the Pattern Matching condition:

From the list of pattern matching conditions displayed in Judge, select the object to change, and then click the "Modify" button. Edit the entry items in the Filter[Create/Change] dialog and click the "OK" button. (Refer to Adding Pattern Matching Conditions for the setting details for each entry item)

- Deleting a Pattern Matching Condition:

From the list of pattern matching conditions displayed in Judge, select the object to delete, and then click the "Delete" button.

- Changing Precedence of Pattern Matching Conditions:

The Matching process is processed in Order from pattern matching condition with the smallest "Order" number.

If a matching pattern matching condition is found, the process defined in that file's settings is followed, and further pattern matching conditions will not be evaluated. To change the precedence of the pattern matching conditions, select the subject to change from the list of pattern matching conditions, and click the "Up" button or the "Down" button.

- Notification ID:

Click the "Select" button shown on the right to display the Notification[List] dialog.

Select the Notification ID assigned to the monitor target from the Notification ID list registered in the notification feature shown in the dialog. (Refer to [6.3 Notification Feature](#) regarding the notification setup)

- Application:
Enter the string to be displayed as the application name for the notification feature as text.



Figure 7-7 HTTP[Create/Change] Dialog (string)

6. Edit the necessary items, then click the "OK" button
- To perform monitoring by the HTTP request based on a specified scenario
1. Click the "Create" button in the upper right part of the Monitor Settings[List] view to display the "Monitor Type" dialog.
 2. Select HTTP Monitor (Scenario) and click the "Next" button to display the HTTP[Create/Change] dialog.
 3. Enter the following items for the monitor target.
 - Manager:
Select a Hinemos manager for which monitoring setting is created. (Refer to [2.6 Multi-Manager Connection](#) for more information on the multiple manager connection.)
 - Monitor ID:
Enter the Monitor ID as text. The Message ID is used as an ID to identify the monitor setting that output the message information.
 - Description:
Enter a description for the monitoring setting as text.
 - Owner Role ID:
Select an Owner Role ID for the monitoring setting. Refer to [12 Account Feature](#) section for more details about Owner Role.

- Scope:

Click the "Refer" button shown on the right to display the Select Scope dialog. Select the scope or node that is monitor target from the scope tree in the displayed dialog. If you selected a scope, all of the nodes assigned under it are monitor targets.

4. Enter the following items for the monitor setting operation.

- Interval:

This is the interval for monitor setting operation. An HTTP request is generated and the Web server status is confirmed at this interval.

- Calendar ID:

The Calendar ID registered to the calendar feature is assigned and the interval for monitor setting operation can be specified. The monitor setting will only operate at the interval specified as the operating times in the calendar. (Refer to the section, [4 Calendar Feature](#) for more details on the calendar)

The monitor settings will always operate if a Calendar ID is not selected.

- Check Settings:

- Connection timeout:

Enter the time-out value for the HTTP request. If a timeout occurs because connection with the Web server is too slow, it is judged that checking the page has failed.

- Request timeout:

Enter a request timeout value for HTTP request. If a timeout occurs because the Web server response was late, it is judged that checking the page has failed.

- User-Agent:

Enter as alphanumeric text the User-Agent that is sent to the Web server at the time of an HTTP request.

- Authentication:

Select an authentication method when accessing URL that needs authentication.

- User:

Enter alphanumeric text as a user ID to be used for authentication.

- Password:

Enter a password as text to be used for authentication.

- Proxy:

Check this to use a proxy server at the time of HTTP request.

- URL:

Enter alphanumeric text as the URL of the proxy server.

- Port:

Enter alphanumeric text as the port of the proxy server.

- User:

Enter alphanumeric text as a user ID if the proxy server needs to be authenticated.

- Password:

Enter alphanumeric text as password if the proxy server needs to be authenticated.

- To also collect information in page units during collection:

If "Collection" is enabled, the response time taken by the entire scenario is collected. If this item is checked, the response time in page units is also collected. This item does not affect the operation of monitoring.

5. Enter the following items related to the scenario to be used for monitoring:

- Page:

The setting of each page to be used for scenario can be added, changed, or deleted.

Addition of page setup:

Click "Add" button, and Page [Create/Change] dialog is displayed.

Edit the necessary items below, then click the "OK" button

- Description:

Enter alphanumeric text of explanation on the page.

- Page check setting:

- URL:

Enter the URL that is the object of the HTTP request as text. The URL can be set up to a maximum of 2083 characters. A variable or node property set for "Variable that can be used from next pages" can also be embedded in the URL string. (Refer to Table 7-30, Node Property List, regarding node properties)

Example: [http://#\[IP_ADDRESS\]/index.html](http://#[IP_ADDRESS]/index.html)

- Status code

Enter alphanumeric text as a status code to be expected when the page is accessed. If a status code different from this is obtained, it is judged that checking the page has failed.

To specify two or more status codes, each can be delimited by a comma from the other. In this case, if the obtained status code does not match any of the specified status codes, it is judged that checking the page has failed.

- POST

When passing data by POST at the time of HTTP request, the data can be set in the following format:

```
name=value
```

*When specifying two or more data, delimit each by & from the other.

A variable set for "Variable that can be used from next pages" or node property can be embedded in the data string of POST. (Refer to Table 7-30, Node Property List, regarding node properties.)

- Page content judgment

A pattern matching condition for string matching of the content of the HTTP response on each page can be added, changed, or deleted.

- Adding a pattern matching condition:

Click "Add" button to display Pattern [Create/Change] dialog.

- Description:

Enter a description related to the pattern matching condition as text.

- Pattern Matching Expression:

Enter the regular expression to be used in string matching. (Refer to <http://docs.oracle.com/javase/jp/6/api/java/util/regex/Pattern.html> regarding regular expression)

- Do not classify Large/Small Characters

Check this to do string matching without distinguishing between upper and lower case characters.

- To next page if condition is met:

If a string exists in the string acquired by the HTTP request that matches the pattern matching expression, It is judged that checking the page has been successful and the order proceeds to the next page check.

- Page check failure if condition is met:

If a string exists in the string acquired by the HTTP request that matches the pattern matching expression, follow the settings defined in process.

- Enabling this Setting:

Check this to enable the pattern matching condition.

- Changing the Pattern Matching condition:

From the list of pattern matching conditions displayed in Judge, select the object to change, and then click the "Modify" button. Edit the entry items in the Pattern[Create/Change] dialog and click the "OK" button. (Refer to Adding Pattern Matching Conditions for the setting details for each entry item)

Deleting a Pattern Matching Condition:

From the list of pattern matching conditions displayed in Judge, select the object to delete, and then click the "Delete" button.

Changing Precedence of Pattern Matching Conditions:

The Matching process is processed in Order from pattern matching condition with the smallest "Order" number.

If a matching pattern matching condition is found, the process defined in that file's settings is followed, and further pattern matching conditions will not be evaluated. To change the precedence of the pattern matching conditions, select the subject to change from the list of pattern matching conditions, and click the "Up" button or the "Down" button.

- Notification

- Notification priority in case of page check failure:

Specify a priority of notification to be made if it is judged that checking the page has failed. It is judged in the following cases that page check has failed:

- The status code of the HTTP response does not match the specified "status code".
 - The specified status code matches the pattern matching expression of "Page check failure if condition is met" of page content judgement.
 - The specified status code does not match all the pattern matching expression of page content judgement.
 - HTTP request timeout occurs.

If page check is judged to have failed, the subsequent page check is not executed.

- Message:

Enter alphanumeric text of the content of a message to be notified in case of a page check failure.

- Variable that can be used from next pages

Variables that can be used for "URL" and "POST" on the next pages to be set can be added, changed, or deleted.

- Add variable

Click "Add" button. Variable [Create/Change] dialog will be displayed.

- Variable name.

Enter alphanumeric text as a variable name.

- Value

Enter alphanumeric text as a variable value.

If "Get from current page" is checked, a value corresponding to the part enclosed by 0 of the pattern matching expression can be set from the body of an HTTP response.

Example: *sessionid" type="text" value="(.)". *

Changing page setup:

Select a page to be changed from a list of page setup displayed on the page and click "Change" button. Edit the entry items in the Page[Create/Change] dialog and click the "OK" button. (For the content of setting of each item entered, see Addition of page setup.)

Deletion of page:

Select a page to be deleted from the list of page setup displayed on the page and click "Delete" button.

Changing order of page setup:

The scenario sequentially executes page setup from the setup with the lowest number of "Order".

To change the order of page setup, select a page to be changed from the list of page setup, and click "Up" or "Down" button.

6. Enter the following items related to string matching for the monitor target.

- Monitor:

To perform monitoring by an HTTP request based on a specified scenario and lower case characters.

- Notification ID:

Click the "Select" button shown on the right to display the Notification[List] dialog.

Select the Notification ID assigned to the monitor target from the Notification ID list registered in the notification feature shown in the dialog. (Refer to [6.3 Notification Feature](#) regarding the notification setup)

- Application:

Enter the string to be displayed as the application name for the notification feature as text.

7. Enter the following items for the value of the collection for the monitor target.

- Collector:

Checked when collecting and accumulating the response time for the HTTP request.

- Collected Item Name:

Enter the display name for the collected value. This display name is used by the Performance feature's graph, etc.

- Collection units:

Enter the units for the collected value. These units are used by the Performance feature's graph, etc.

8. Edit the necessary items, then click the "OK" button

Figure 7-8 HTTP[Create/Change] Dialog (Scenario)

Changing the Monitor Setting

1. Select the field to change in Monitor Setting[List], then click the "Modify" button.
2. Edit the entry items in the displayed HTTP[Create/Change] dialog and click the "OK" button.

Deleting Monitor Setting

1. Select the field to delete in Monitor Setting[List], then click the "Delete" button.

Changing the Valid/Invalid Setting in the Monitor Setting

You can collectively change the valid/invalid settings in the monitor settings. Select the settings to change from the monitor setting list displayed in the Monitor Settings[List] dialog (multiple can be selected). Then click the "Valid" ("Invalid") button. A confirmation dialog is displayed. Click the "OK" button.

Changing the Valid/Invalid Setting in the Collection Settings

You can collectively change the valid/invalid settings in the collection settings. Select the settings to change from the monitor setting list displayed in the Monitor Settings[List] dialog (multiple can be selected). Then click the "Valid" ("Invalid") button. A confirmation dialog is displayed. Click the "OK" button.

Table 7-7 Configuration Items of HTTP Monitor (Numeric)

Configuration item	Input type	Description
--------------------	------------	-------------

Monitor ID		Text	Enter an ID to identify the monitor setting which output the notification information.
Description		Text	Enter a description of the monitoring setting.
Owner Role ID		Select from list	Select an Owner Role ID for the monitoring setting.
Scope		Select from the scope tree	Select a scope or node as object for monitoring.
Condition	Interval		Select from list Select the monitoring interval.
	Calendar ID		Select from list Select the calendar setting assigned in the monitor setting. If selected, the monitor setting will operate in the time zone specified in the calendar operation time.
	Check Set up	URL	Text Enter the URL that is the object of the HTTP request. (a node property can be included)
		Time out(sec)	Text(numeric) Enter the time for the HTTP request time out.
Monitor	Monitor		Checkbox Check to perform monitoring by threshold value judgement.
	Judge	Lower Threshold	Text (numeric) Enter the lower limit for the threshold value judgement. (To judge "More than" the lower limit)
		Upper Threshold	Text (numeric) Specify the upper limit value for the threshold value judgement. (To judge "Less than" the upper limit)
	Notification	Notification ID	Select from list Select the notification setting assigned to the monitor setting.
		Application	Text Enter an application name that is assigned as the notification information.
Collection	Collection		Checkbox Check to acquire the value of the monitor target.
	Collected Item Name		Text Enter the display name for the collected value.
	Collected value units		Text Enter the units for the collected value.

Table 7-8 Configuration Items of HTTP Monitor (String)

Configuration item		Input type	Description	
Manager		Select from list	Select a Hinemos Manager for which monitoring setting is set.	
Monitor ID		Text	Enter an ID to identify the monitor setting which output the notification information.	
Description		Text	Enter a description of the monitoring setting.	
Scope		Select from the scope tree	Select a scope or node as object for monitoring.	
Condition	Interval	Select from list	Select the monitoring interval.	
	Calendar ID	Select from list	Select the calendar setting assigned in the monitor setting. If selected, the monitor setting will operate in the time zone specified in the calendar operation time.	
	Check Set up	URL	Text	Enter the URL that is the object of the HTTP request. (a node property can be included)
		Time out(sec)	Text(numeric)	Enter the time for the HTTP request time out.
Monitor	Monitor	Checkbox	Check to perform monitoring by string matching.	
	Judge	Order	Change the order with the "Up" button or the "Down button	String matching is checked in order from the one with the smallest order number.
		Edit	Edit string matching with the "Add" button, the "Modify" button, the "Delete" button or the "Copy" button	Edit the pattern matching expression to be used for string matching.
	Notification	Notification ID	Select from list	Select the notification setting assigned to the monitor setting.
		Application	Text	Enter an application name that is assigned as the notification information.

Table 7-9 Configuration Items of HTTP Monitor (Scenario)

Configuration item		Input type	Description
Manager		Select from list	Select a Hinemos manager for which monitoring setting is set.
Monitor ID		Text	Enter an ID to identify the monitor setting which output the notification information.
Description		Text	Enter a description of the monitoring setting.
Owner Role ID		Select from list	Select an Owner Role ID for the monitoring setting.
Scope		Select from the scope tree	Select a scope or node as object for monitoring.

Condi on	Interval		Select from list	Select the monitoring interval.	
	Calendar ID		Select from list	Select the calendar setting assigned in the monitor setting. If selected, the monitor setting will operate in the time zone specified in the calendar operation time.	
	Chec k Set Up	Connection Time out		Text (value)	Enter the connection timeout time of an HTTP request.
		Request Timeout		Text (value)	Enter the request timeout time of an HTTP request.
		User-Agent		Text	Enter User-Agent that is sent to a website when an HTTP request is made.
	Auth entic ation	Authenticat ion	Select from list.	Select an authentication method if the HTTP request needs to be authenticated. (*)	
		User	Text	Enter a user ID if the HTTP request needs to be authenticated.	
		Passwor d	Text	Enter a password if the HTTP request needs to be authenticated.	
	Proxy	Proxy	Check box	Check this to make an HTTP request via proxy server.	
		URL	Text	Enter the URL of the proxy server.	
		User	Text	Enter a user ID if the proxy server needs to be authenticated.	
		Passwor d	Text	Enter password if the proxy server needs to be authenticated.	
	To also collect units informatio n in page		Checkbox	<p>If checked</p> <p>The response time of each page is also collected if "Collection" is enabled. This allows the performance feature to visualize the response time of each page and information when a graph is displayed during collection. There is no effect on the operation if this check "Monitor" is valid.</p> <p>If not checked</p> <p>The response time of each page is not collected if "Collection" is enabled.</p>	
	Page	Order	Change the order by the "Up" or "Down" button.	Pages will be sequentially checked from the one with the lowest order number.	
		Edit	Edit string matching with the "Add" button, the "Modify" button, the "Delete" button or the "Copy" button.	Edit page setting.	
Monito r	Monitor		Checkbox	Check to perform monitoring by string matching.	
	Notif icat ion	Notification ID	Select from list	Select the notification setting assigned to the monitor setting.	
		Application	Text	Enter an application name that is assigned as the notification information.	
Collect ion	Collection		Checkbox	Check to acquire the value of the monitor target.	
	Collected Item Name		Text	Enter the display name for the collected value.	
	Collected value units		Text	Enter the units for the collected value.	

* For authentication method, BASIC, DIGEST, and NTLM are supported.

Table 7-10 Configuration Items of Page

Configuration item		Input type	Description
Description		Text	Enter a description of the monitoring setting.
Page Check Settings	URL	Text	Enter the URL that is the object of the HTTP request. (Variables set by node property and on a page are available.)
	Status code	Text	Of the status codes of the HTTP response, enter those which are judged to be OK, delimiting each by comma from the other.
	POST	Text	Enter data to be sent by POST when an HTTP request is made. Two or more pairs of a parameter name and a value may be specified, delimiting each by & from the other, like Parameter name = Value & Parameter name = Value. (Variables set by node property and on a page can be used.)
	Page Content judgment	Order	Change the order by "Up" button, "Down" button.
Edit		Edit character matching by "Add" button, the "Modify" button, the "Delete" button or the "Copy" button.	Edit page setting.
Notification	Notification priority in case of page check failure	Select from list	Select the priority of notification when page check is judged to have failed in page check.
	Message	Text	Enter the message of notification when page check is judged to have failed in page check
Variable usable from next page		Edit variables by "Add" button, "Modify" button, the "Delete" button.	Edit variables that can be used for URL and POST for setting the subsequent pages.

Table 7-11 Configuration Items of Variables

Configuration item	Input type	Description
Node Connection Name	Text	Input name that identifies variables
Value	Text	Input value of variables.
Obtain from current page	Check box	Check this to set the value of a variable based on the content of the HTTP response. (If a pattern matching string is input to a value, a string that matches the part enclosed by () is set as the value.)

Table 7-12 Detailed Conditions of the HTTP Monitor

Item	Condition
Character code for matching the string monitoring	Auto-detect HTTP response

HTTP Monitor Condition	HTTP Response ·Status code=200 ·Content-type is text (string monitoring only) Note 1) It is not possible to monitor the redirecting URL Note 2) It is not possible to monitor the string of the redirecting URL when the Web browser function transitions from a URL to a different URL Note 3) If text is not included in Content-type, subsequent monitoring (matching of strings) is not possible (string monitoring only). (in this case, "Failed to check because Content-Type was not "TEXT"" is displayed) Note 4) String matching is not possible if the PDF file, the DOC file, the image file and others are directly specified as the URL (in this case, "Failed to check because Content-Type was not "TEXT"" is displayed)
Monitoring the BASIC authentication page	Can be monitored by HTTP monitoring (scenario) (HTTP monitoring (value/string) is not possible).
Response time of the HTTP Monitor	The period starting from the time when HTTP request is sent until the response data is received
Original message (number/character string)	Status code/header body Example) Status code: Status code=200 Header: Date, Server, Last-Modified, ... Body: <html>~</html>
Original message (Scenario)	If all pages have been successfully checked, Total response time/response time of each page Example) Overall response time : 1000, Page No.: 1, Request URL/Status code/Response time (msec), Page No.: 2... If page check has failed, Cause of judgment that page check has failed/Details of page check content Example) An unexpected status is returned. Page number, Request URL, Expected status code, Status code
Pattern matching target range	Body: <html>~</html>

7.5 Ping Monitor

The Ping Monitor feature monitors and gives notification of the Alive status of the monitor target node by transmission and reception of a PING from the Hinemos Manager. The Ping monitor feature belongs to the Numeric monitoring category.

Ping Monitor is setup in the Ping[Create/Change] dialog. The Ping[Create/Change] dialog is opened with the following process.

1. Click the "Create" button from the Monitor Setting[List] view.
2. Select Ping Monitor (Numeric) from the Monitor Type dialog and click the "Next" button.
3. The PING[Create/Change] dialog opens.

Refer to the set up process in HTTP Monitor (Numeric) in [7.4 HTTP Monitor](#) for the configuration procedure from here.

Figure 7-9 Ping[Create/Change] Dialog

Table 7-13 Configuration Items of Ping Monitor

Configuration item		Input type	Description	
Manager		Select from list	Select a Hinemos Manager for which monitoring setting is created.	
Monitor ID		Text	Enter an ID to identify which notification setting generated the notification.	
Description		Text	Enter a description of the monitoring setting.	
Owner Role ID		Select from list	Select an Owner Role ID for the monitoring setting.	
Scope		Select from the scope tree	Select a scope subject for monitoring.	
Condition	Interval	Select from list	Specify the monitoring interval.	
	Calendar ID	Select from list	Select the calendar ID for the calendar to set up. Monitoring is enabled only during the period configured as working hours in the calendar	
	Check Settings	Number of times	Text (numeric)	Specify the number of ping executions when checked once.
		Interval	Text (numeric)	Specify the interval for ping executions when checked once.
		Time out(m sec)	Text (numeric)	Specify the ping time-out.
Monitor	Monitor	Checkbox	Check to perform monitoring by threshold value judgement.	
	Judge Information/Warning	Greater than or equal to Response Time (msec)	Text (numeric)	Enter the lower limit for the response time. (To judge "More than" the lower limit)
		Less than Response Time (msec)	Text (numeric)	Specify the upper limit for the response time. (To judge "Less than" the upper limit)
	Notification	Notification ID	Select from list	Select the notification setting assigned to the monitor setting.
		Application	Text	Enter an application name that is assigned as the notification information.
Collection	Collection	Checkbox	Check to acquire the value of the monitor target.	
	Collected Item Name	Text	Enter the display name for the collected value.	
	Collected value units	Text	Enter the units for the collected value.	

The priority for Ping Monitor is judged by the average response time for the number of times the Ping was successful.

Note) Regarding the protocol for the ping Monitor,

the default ping protocol used in Hinemos is ICMP. ICMP is a protocol generally used by ping. If a router or FW is located on the managed node, configure them so that ICMP passes through the router and FW.

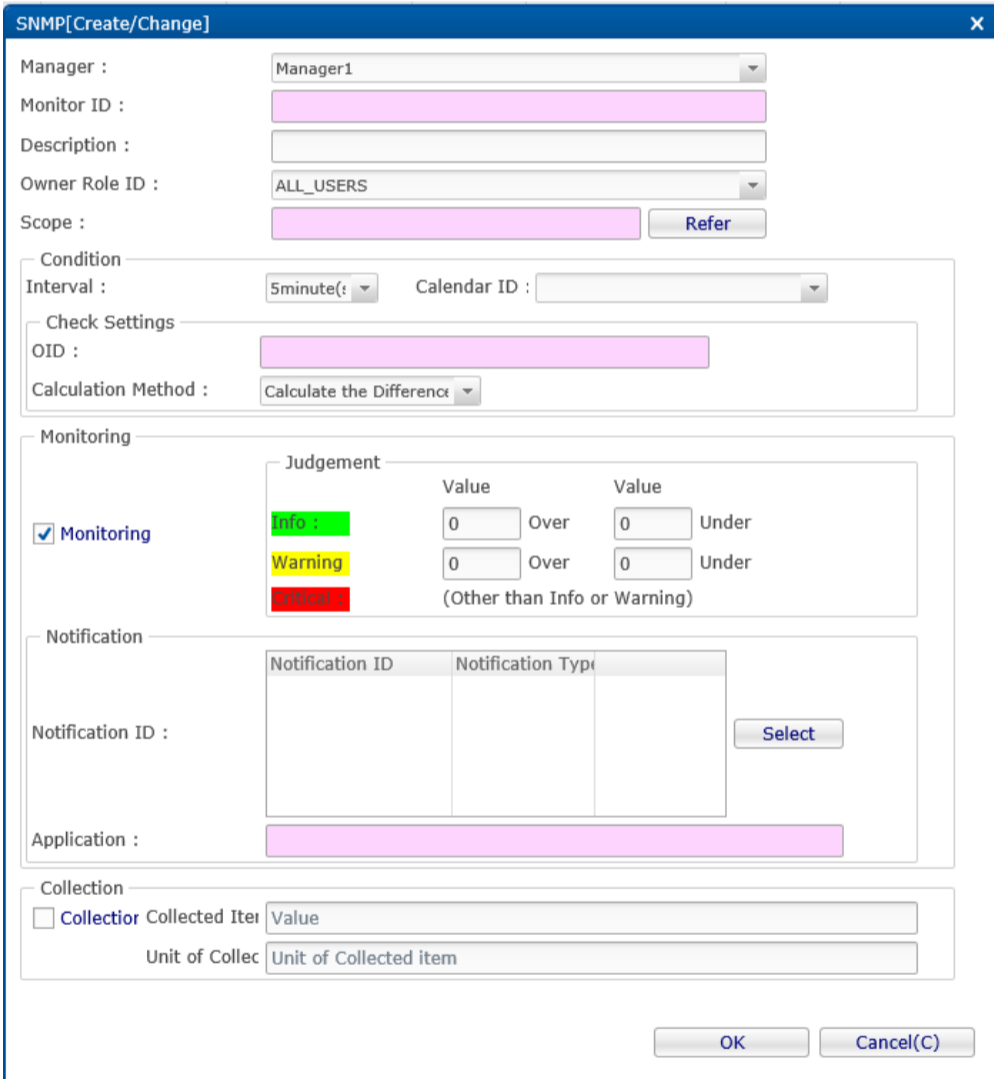
7.6 SNMP Monitor

The SNMP Monitor feature performs monitoring of the values acquired by SNMP polling. The SNMP Monitor feature belongs in the category of numeric monitoring or string monitoring. If a value obtained by SNMP is a numerical value, you can evaluate threshold of the numerical value. If the value obtained by SNMP is a string, you can monitor with regular expression pattern matching.

SNMP Monitor is set up in the SNMP[Create/Change] dialog. The SNMP[Create/Change] dialog is opened with the following process.

1. Click the "Create" button from the Monitor Setting[List] view.
2. The SNMP[Create/Change] dialog will open.
 - To perform threshold monitoring of the numeric value acquired by SNMP, select SNMP Monitor (Numeric) from the Monitor Type dialog and click the "Next" button.
 - To perform string matching on the string acquired by SNMP, select SNMP Monitor (String) from the Monitor Type dialog and click the "Next" button.
3. The SNMP[Create/Change] dialog opens.

Refer to the setting process in HTTP Monitor (Numeric) or HTTP Monitor (String) in [7.4 HTTP Monitor](#) for the setting process from here.



The screenshot shows the 'SNMP[Create/Change]' dialog box with the following fields and options:

- Manager :** Manager1
- Monitor ID :** (empty)
- Description :** (empty)
- Owner Role ID :** ALL_USERS
- Scope :** (empty) Refer
- Condition**
 - Interval :** 5minute(Calendar ID : (empty)
- Check Settings**
 - OID :** (empty)
 - Calculation Method :** Calculate the Difference
- Monitoring**
 - Monitoring
 - Judgement**

	Value	Over	Value	Under
Info	0		0	
Warning	0		0	
Critical	(Other than Info or Warning)			
- Notification**
 - Notification ID :** (empty) Select
 - Application :** (empty)
- Collection**
 - Collector Collected Item: Value
 - Unit of Collection: Unit of Collected item

Buttons: OK, Cancel(C)

Figure 7-10 SNMP [Create/Change] Dialog (Numeric)

Figure 7-11 SNMP[Create/Change] Dialog (string)

Table 7-14 Configuration Items of SNMP Monitor (Numeric)

Configuration item	Input type	Description
Manager	Select from list	Select a Hinemos Manager for which monitoring setting is created.
Monitor ID	Text	Enter an ID to identify which notification setting generated the notification.
Description	Text	Enter a description of the monitoring setting.
Owner Role ID	Select from list	Select an Owner Role ID for the monitoring setting.
Scope	Select from the scope tree	Select a scope subject for monitoring.

Condition	Interval		Select from list	Specify the monitoring interval.
	Calendar ID		Select from list	Select the calendar ID for the calendar to set up. Monitoring is enabled only during the period configured as working hours in the calendar
	Check Setting	OID	Text	Specify the OID for SNMP polling. (The MIB symbol name cannot be specified.)
		Calculation Method	Select from list	Specify the calculation method. <ul style="list-style-type: none"> • Do Nothing Judge the threshold value for the acquired value as is. • Calculate the Difference Judge the threshold value from the difference of the acquired value and the previously acquired value.
Monitor	Monitor		Checkbox	Check to perform monitoring by threshold value judgement.
	Judge Information/Warning	Greater than or equal to Acquired value	Text (numeric)	Enter the lower limit for the acquired value. (To judge "More than" the lower limit)
		Less than Acquired value	Text (numeric)	Specify the upper limit value for the acquired value. (To judge "Less than" the upper limit)
	Notification	Notification ID	Select from list	Select the notification setting assigned to the monitor setting.
		Application	Text	Enter an application name that is assigned as the notification information.
Collection	Collection		Checkbox	Check to acquire the value of the monitor target.
	Collected Item Name		Text	Enter the display name for the collected value.
	Collected value units		Text	Enter the units for the collected value.

The following types can be monitored by the SNMP Monitor (numeric).

- Integer32
- Counter32
- Counter64
- Gauge32
- OCTET STRING (only if the obtained value can be converted into an actual value)

Table 7-15 Configuration Items of SNMP Monitor (String)

Configuration item	Input type	Description
Manager	Select from list	Select a Hinemos Manager for which monitoring setting is created.
Monitor ID	Text	Enter an ID to identify which notification setting generated the notification.
Description	Text	Enter a description of the monitoring setting.
Scope	Select from the scope tree	Select a scope subject for monitoring.

Condition	Interval		Select from list	Specify the monitoring interval.
	Calendar ID		Select from list	Select the calendar ID for the calendar to set up. Monitoring is enabled only during the period configured as working hours in the calendar
	Check Setting	OID	Text	Specify the OID for SNMP polling. (The MIB symbol name cannot be specified.)
Monitor	Monitor		Checkbox	Check to perform monitoring by string matching.
	Judge	Order	Change the order with the "Up" button or the "Down button	String matching is checked in order from the one with the smallest order number.
		Edit	Edit string matching with the "Add" button, the "Modify" button, the "Delete" button, or the "Copy" button	Edit the pattern matching expression to be used for string matching.
	Notification	Notification ID	Select from list	Select the notification setting assigned to the monitor setting.
		Application	Text	Enter an application name that is assigned as the notification information.

- Only strings comprised of ASCII can be monitored by SNMP Monitor(string). You cannot monitor strings with multi byte characters. If multi byte characters are included in the subject string, the feature will not work effectively even if the filtered string contains only ASCII.

7.7 SNMPTRAP Monitor

SNMPTRAP Monitor allows receiving and notification of SNMPTRAPs with Hinemos Manager. The SNMPTRAP Monitor feature belongs to the Trap monitoring category.

Note) Currently, Hinemos supports SNMP protocol versions 1, 2c, and 3 for the SNMPTRAP monitoring feature usage.

The SNMP Monitor is set up in the SNMPTRAP[Create/Change] dialog. The SNMPTRAP[Create/Change] dialog is opened with the following process.

1. Click the "Create" button from the Monitor Setting[List] view.
2. Select SNMP Monitor (Trap) from the Monitor Type dialog and click the "Next" button.
3. The SNMPTRAP[Create/Change] dialog opens.

Registering Settings

1. The SNMPTRAP[Create/Change] dialog opens.
2. Set up the following items.
 - Manager
Select a Hinemos manager for which monitoring setting is created. (Refer to [2.6 Multi-Manager Connection](#) for more information on the multiple manager connection.)
 - Monitor ID:
Enter the Monitor ID as text. The Monitor ID is used as an ID to identify which monitoring configuration generated the notification.
 - Description:
Enter a description of the monitoring setting as text.

- Owner Role ID:

Select an Owner Role ID for the monitoring setting. Refer to [12 Account Feature](#) section for more details about Owner Role.

- Scope:

Enter the target scope. When the "Select" button on the right is clicked on, the select Scope dialog opens. Select the target scope from the scope tree in the dialog.

"Unregistered node (UNREGISTERED)" scope can be selected in SNMPTRAP Monitor. If "Unregistered node (UNREGISTERED)" is selected here, it is processed according to the trap condition of the nodes other than nodes registered in the repository.

- Calendar ID:

Select the calendar ID for the calendar you want to set up. Monitoring is enabled only during the period configured as working hours in the calendar (Refer to the section, [4 Calendar Feature](#) for more details on the calendar). If Calendar ID is not selected, the monitoring is enabled all day.

- Monitor:

When checked, monitoring is enabled. If unchecked, the configuration is saved, but the monitoring process will not be executed.

3. Set up the Community

- Valid

Only a specific community name can be received if "Valid" is checked. Otherwise, all community names will be received by SNMPTRAP.

- Community Name

To receive a specific community name only, check "Valid" and specify a community name.

4. Specify the Encoding Character Code

- Valid

If "Valid" is not checked, multi byte encoding character code will not be used in SNMPTRAP. Multi byte characters other than UTF-8 are corrupted.

- Character Code of SNMPTRAP

If SNMPTRAP includes multi byte characters other than UTF-8, check "Valid" check box and specify the multi byte character code included in SNMPTRAP. There are two character codes that can be entered here as the character code are EUC-JP and MS932.

5. Set trap definition to receive.

- Notify when unspecified trap is received.

If notification should be made when SNMPTRAP that does not fall under the trap definition set later and is received, check "Notify when unspecified trap is received" and specify a priority.

- Filtering

Filter processing narrows down on and displays a list of traps, candidates for selection, from trap definition information. Filtering is performed with the following two items.

- MIB:
 - Select the object MIB from the combo box list.
- Trap Name:
 - Enter the matching condition for the trap name in regular expression.

The maximum number of trap definitions that can be displayed on a trap list is limited. The number of trap definitions set for monitoring setting and the number displayed are displayed at the lower left part of the trap definition information. The number exceeding the limit is not displayed. Narrow down on and display the number by the above filter processing.

Number of definitions displayed: (Number of OIDs displayed)/(Number of OIDs registered)

The maximum number for display can be changed by the following procedure:

1. Select [Client Setup] - [Setup] from the menu bar. A setting dialog will show up.

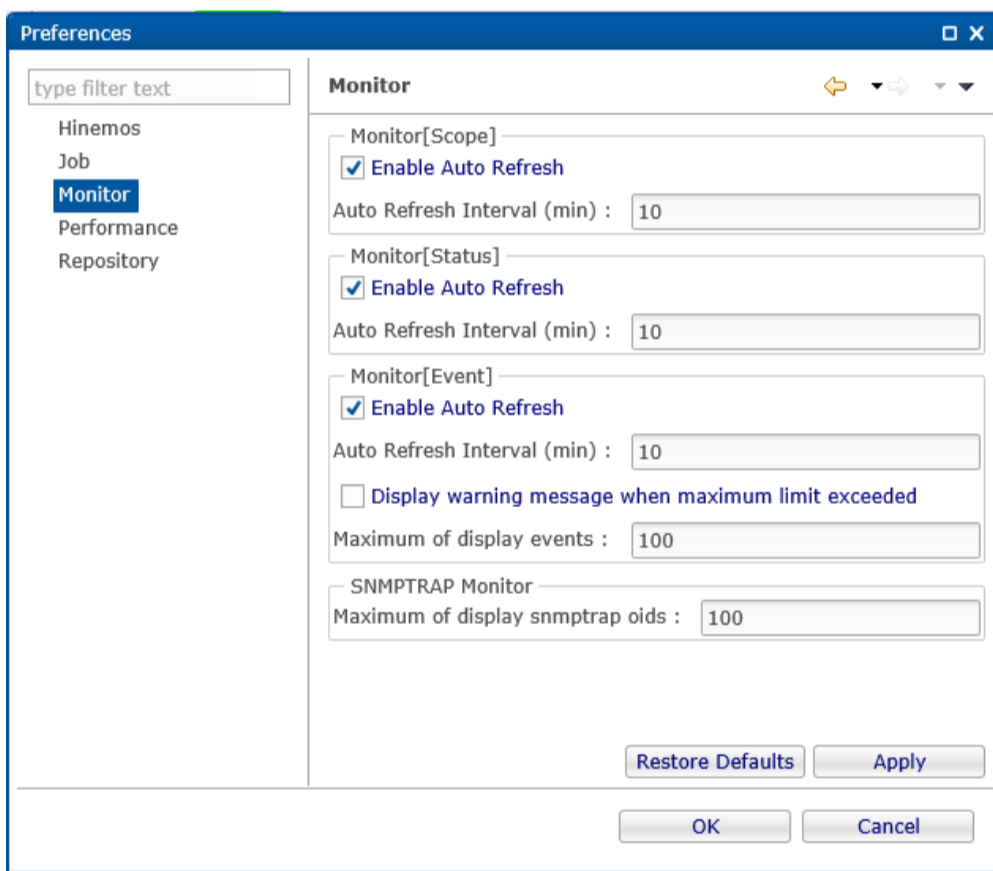


Figure 7-12 Preferences dialog

2. Select Monitor in the tree pane on the left side.
3. The following setting can be made for SNMPTRAP Monitor.
 - Number of OIDs displayed for SNMPTRAP monitoring

Specify the maximum number of trap definitions that can be displayed on a trap list. Follow the next step, 6, to specify OID to be monitored.

6. You can add, change, and delete trap definitions using the following procedures.

Adding Trap Definitions

Click on the "Add" button. The SNMPTRAP[Add Trap Definition] dialog is displayed.

The dialog box is titled "SNMPTRAP[Create/Change]". It contains several sections:

- General:** Manager (dropdown: Manager1), Monitor ID (text field), Description (text field), Owner Role ID (dropdown: ALL_USERS), Scope (text field), Refer button.
- Condition:** Interval (dropdown: 0), Calendar ID (dropdown).
- Monitoring:**
 - Monitor
 - Trap Definition:**
 - Community: Valid Check Commu. (text field)
 - Encode Character Code: Valid Encode Character Code of SM (text field)
 - OID: Notify the receipt trap of unspecified. (dropdown: Unknown)
 - Filter: (text field)
 - MIB: (dropdown)
 - Trap Name: (text field), Clear(C) button, Search button
 - Table:**

MIB	Trap Name	Version	OID	Generic ID	Specific ID	V...
 - Buttons: Add, Modify, Delete, Copy
 - Displayed Records: 0/0
- Notification:**
 - Notification ID: (table with columns Notification ID, Notification Type), Select button
 - Application: (text field)

Buttons at the bottom: OK, Cancel(C)

Figure 7-13 SNMPTRAP[Add Trap Definition] Dialog

- MIB
Enter the MIB name of the subject trap. Trap definition can be grouped by MIB name and filtered on SNMPTRAP[Create/Change] dialog.
- Trap Name
Enter the trap name of the subject trap.
- Version
Select a trap and the version of SNMPTRAP.
- OID
Enter the OID of the subject trap.
- generic_id
Enter Generic ID if the version of the subject trap is v1.
- specific_id
Enter Specific ID if the version of the subject trap is v1.

- Message
Specify a message to notify when the subject trap is received.
- Detail Message
Specify an original message to notify when the subject trap is received.
In describing "%parm[#n]%", notify by replacing the n-th variable that is bound to the received trap.
- Judge
A priority when the subject trap is received in more detail can be set.
 - Notify regardless of variable.
When a trap whose OID, Generic ID, and Specific ID match those specified, it is always notified with the specified priority.
 - Judge by variable.
When a trap with OID, Generic ID, and Specific ID matching those specified is received, Strings are matched based on the content of the variable bound to the received trap and the priority of notification is decided.
To make a judgment with a variable, also set the following:
 - Object string
Set character strings subject to string matching. In describing "%parm[#n]%", notify by replacing the n-th variable that is bound to the received trap.
 - Judgment condition
Set a pattern matching expression for the string to be judged. For how to set a judgment condition, see 'HTTP monitoring'_HTTP monitoring (string) setting procedure.
- Enabling this Setting
When checked, the setting is enabled. If unchecked, the setting is disabled, and although the setting is saved, the notification process will not be executed even when SNMPTRAP that meets the trap definition is received.

Changing Trap Definitions

Select the subject to be changed from the trap list, and then click the "Modify" button. The SNMPTRAP[Change Trap Definition] dialog opens.

Refer to Add Trap Definition for the setting details for each entry item

Deleting Trap Definitions

Select the subject to change from the trap list (can select multiple), then click the "Delete" button.

6. Enter the notification setting.

- Notification ID:
Select from the list the Notification ID that is the notification method used in the notification setting. (Refer to the section [6.3 Notification Feature](#) regarding notification settings) When you click the "Select" button on the right, the Notification[List] dialog is displayed. Select the notification method.
- Application:
Enter an application name in alphanumeric text. This is displayed as the notification information.

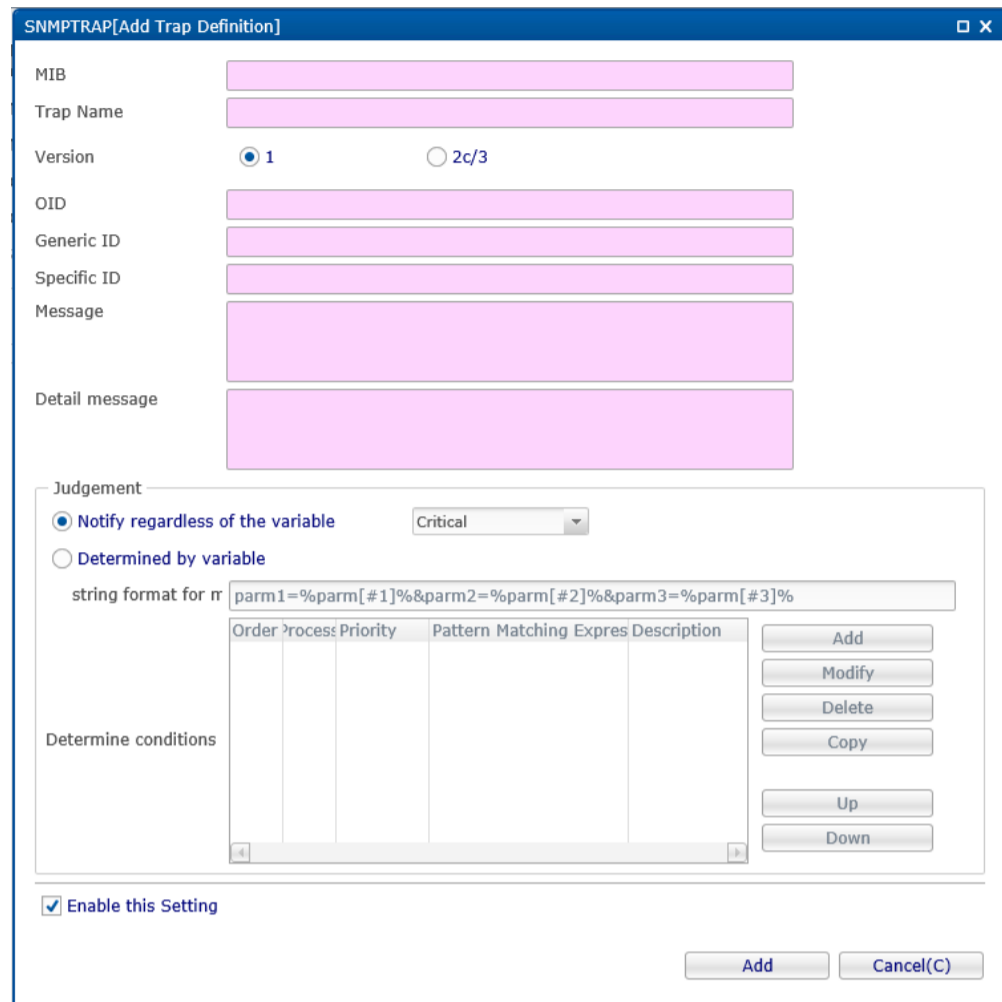


Figure 7-14 SNMPTRAP[Create/Change] Dialog

7. Click the "OK" button. The newly created setting is added to the setting list.

Changing the Setting

1. Select the subject to change from the configuration list, and then click the "Modify" button. The SNMPTRAP[Create/Change] dialog will open.
2. Edit the setting details, and then click the "OK" button. (Refer to "Adding Settings" for the procedures for entering settings).

Deleting Monitor Setting

Select the object to delete from the setting list, and then click the "Delete" button.

Changing the Valid/Invalid Setting in the Monitor Setting

You can collectively change the valid/invalid settings in the monitor setting. Select the setting to change from the setting list (can select multiple). Then click the "Valid" ("Invalid") button. A confirmation dialog is displayed. Click the "OK" button.

Table 7-16 Configuration Items of SNMPTRAP Monitor

Configuration item	Input type	Description
Manager	Select from list	Select a Hinemos manager for which monitoring setting is set.
Monitor ID	Text	Enter an ID to identify which notification setting caused the notification.
Description	Text	Enter a description of the monitoring setting.
Owner Role ID	Select from list	Select an Owner Role ID for the monitoring setting.
Scope	Select from the scope tree	Select a scope or node as object for monitoring.

Condition	Interval		Select from list	This monitoring is performed during trap acquisition so the monitor interval cannot be selected.
	Calendar ID		Select from list	Select the calendar setting assigned in the monitor setting. If selected, the monitor setting will operate in the time zone specified in the calendar operation time.
Monitoring	Monitoring		Check box	Check to perform monitoring the received trap.
	Community	Valid	Check box	Check this to monitor only a trap of a specific community name.
		Community name	Text	Enter the community name of trap to be monitored.
	Convert Character Code	Valid	Check box	Check this to convert the character code of the received trap.
		Character Code of SNMPTRAP	Text	Enter the character code of the receiving trap.
	OID	Notify when an unspecified trap is received	Check box	Check this to notify reception of a trap that is not in trap definition.
			Select from list	Select the priority of notification that is made when an unspecified trap is received.
		Edit	Edit Trap Definition with the "Add" button, the "Modify" button, the "Delete" button, or the "Copy" button	Edit the trap definition to be monitored.
	Notification	Notification ID	Select from list	Select the notification setting assigned to the monitor setting.
		Application	Text	Enter an application name that is assigned as the notification information.

Table 7-17 Configuration Items of Trap Definition

Configuration item	Input type	Description
MIB	Text	Enter the MIB name of trap to be monitored.
Trap name	Text	Enter the trap name of trap to be monitored.
Version	Select from 1, 2c, or 3	Select the version of trap to be monitored.
OID	Text	Enter the OID of trap to be monitored.
generic_id	Text	Enter Generic ID to be monitored (for only version 1).
specific_id	Text	Enter Specific ID to be monitored (for only version 1).
Message	Text box	Enter a message to notify when a trap is received.
Detailed Message	Text box	Enter an original message to notify when a trap is received.

Judgment	Notify regardless of variable.	Radio button	Check this always to notify with a specific priority when a trap with OID, Generic ID, and Specific ID matching those specified.
		Select from list	Select the priority of notify.
	Judge by variable.	Radio button	Select this to execute string matching of a variable bound to a trap with OID, generic_id, and specific_id matching those specified when such a trap is received.
	String to be judged	Text	Enter a string subject to string matching. Writing %parm[#n]% can perform conversion into variable n. Example: Where the first variable is abcde and the second is 12345, specifying "parm1=%parm[#1]% & parm2=%parm[#2]%" as a string for judgment executes string matching to "parm1=abcde & parm2=12345" in the judgment condition.
Judgment condition	Order	Change the order by "Up" button, "Down" button	String matching sequentially checks strings from the one with the lowest order number.
	Edit	Edit string matching with the "Add" button, the "Modify" button, the "Delete" button, or the "Copy" button	Edit a pattern matching expression used for string matching.
Enable this setting .		Check box	Check this to monitor this trap definition.

Monitoring setting set in advance

To Hinemos manager, Monitoring setting of SNMPTRAP monitoring with monitoring item ID "SNMPTRAP_DEFAULT" is registered in advance. General MIB is registered by default to this monitoring setting. (For the list of MIBs registered, refer to Administrator Guide.)

This monitoring setting is registered as "Invalid" immediately after installation. By "Valid" it or copying and modifying the monitoring setting in accordance with the environment, SNMPTRAP can be easily monitored.

Setting to receive SNMPTRAP of version

To receive SNMPTRAP of version 3, set a security level and authentication password to Hinemos property.

To set, open Maintenance perspective of Hinemos client Open Maintenance [Hinemos property] view and change the following parameters

```
monitor.snmptrap.v3.user
monitor.snmptrap.v3.auth.password
monitor.snmptrap.v3.priv.password
monitor.snmptrap.v3.auth.protocol
monitor.snmptrap.v3.priv.protocol
monitor.snmptrap.v3.security.level
```

Hinemos Manager must be restarted in order to reflect configuration changes on this property file.

7.8 SQL Monitor

The SQL Monitor feature runs the SQL statement via the JDBC Driver for the DB server (RDBMS) and monitors the results. The SQL Monitor feature belongs in the category of numeric monitoring or string monitoring.

The following two types of monitoring methods are provided.

- Threshold monitoring for the numeric value returned as the SQL execution result
- Pattern matching for the string returned as the SQL execution result

The SQL Monitor is set up in the SQL[Create/Change] dialog. The SQL[Create/Change] dialog is opened with the following process.

1. Click the "Create" button from the Monitor Setting[List] view.

2. The SQL[Create/Change] dialog opens.

(1) To perform threshold monitoring for the numeric value returned as the SQL execution result, select SQL Monitor (Numeric) from the Monitor Type dialog and click the "Next" button.

(2) To perform pattern matching for the string returned as the SQL execution result, select SQL Monitor (String) from the Monitor Type dialog and click the "Next" button.

3. The SQL [Create/Change] dialog opens.

Refer to the setting method in HTTP Monitor (Numeric) or HTTP Monitor (String) in [7.4 HTTP Monitor](#) for the noted process from here.

The screenshot shows the 'SQL[Create/Change]' dialog box with the following fields and sections:

- Manager :** Manager1
- Monitor ID :** [Empty text box]
- Description :** [Empty text box]
- Owner Role ID :** ALL_USERS
- Scope :** [Empty text box] **Refer**
- Condition**
 - Interval :** 5minute
 - Calendar ID :** [Empty dropdown]
- Check Settings**
 - URL to connect to :** jdbc
 - DB to connect to :** PostgreSQL
 - User ID :** [Empty text box]
 - Password :** [Empty text box]
 - SQL Statement :** [Empty text box]
- Monitoring**
 - Monitoring**
 - Judgement**

	Value		Value
Info	0	Over	0
Warning	0	Over	0
Critical	(Other than Info or Warning)		
- Notification**
 - Notification ID :** [Empty text box] **Select**
 - Notification Type :** [Empty table]
 - Application :** [Empty text box]
- Collection**
 - Collector** Collected Item: Value
 - Unit of Collection: Unit of Collected item

Buttons: **OK** **Cancel(C)**

Figure 7-15 SQL [Create/Change] Dialog (Numeric)

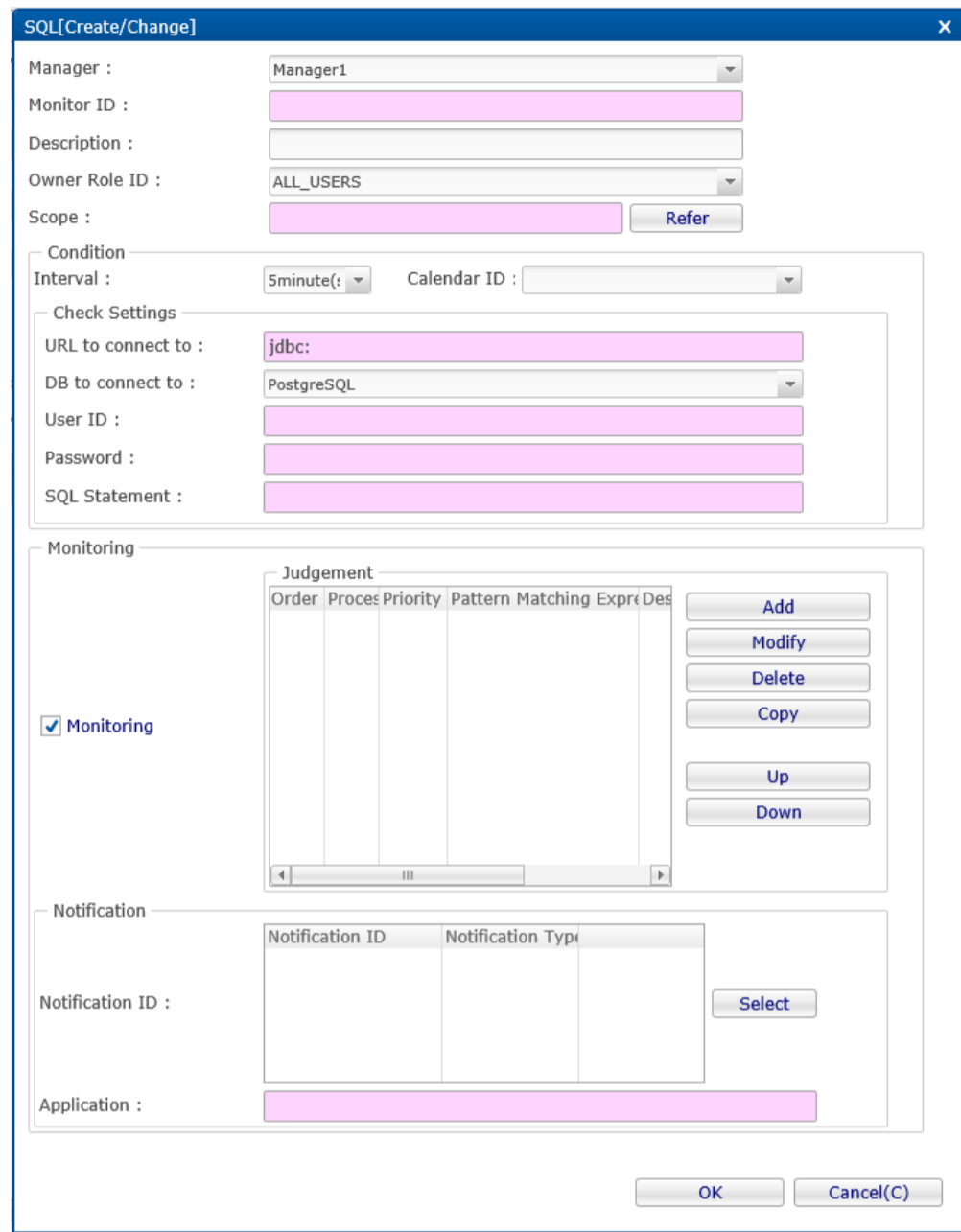


Figure 7-16 SQL [Create/Change] Dialog (string)

Table 7-18 Configuration Items of SQL Monitor (Numeric)

Configuration item	Input type	Description
Manager	Select from list	Select a Hinemos Manager for which monitoring setting is set.
Monitor ID	Text	Enter an ID to identify the monitor setting which output the notification information.
Description	Text	Enter a description of the monitoring setting.
Owner Role ID	Select from list	Select an Owner Role ID for the monitoring setting.
Scope	Select from the scope tree	Select a scope or node as object for monitoring.

Condition	Interval		Select from list	Select the monitoring interval.
	Calendar ID		Select from list	Select the calendar setting assigned in the monitor setting. If selected, the monitor setting will operate in the time zone specified in the calendar operation time.
	Check Set up	Connection URL	Text	Enter the URL for the RDBMS that the JDBC Driver connects to. (a node property can be included) Example) jdbc:postgresql://192.168.0.1:5432/database
		Connection DB	Select from list	Select the destination RDBMS.
		User ID	Text	Input a user ID when connecting to RDBMS.
		Password	Text	Input a password when connecting to RDBMS.
SQL Statement	Text	Specify the SQL segment (SQL segment that returns a numeric value) to run during monitoring. Example) select count(*) from table;		
Monitor	Monitor		Checkbox	Check to perform monitoring by threshold value judgement.
	Judge Information/Warning	Lower Threshold	Text (numeric)	Enter the lower limit for the threshold value judgement. (To judge "More than" the lower limit)
		Upper Threshold	Text (numeric)	Specify the upper limit value for the threshold value judgement. (To judge "Less than" the upper limit)
	Notification	Notification ID	Select from list	Select the notification setting assigned to the monitor setting.
Application		Text	Enter an application name that is assigned as the notification information.	
Collection	Collection		Checkbox	Check to acquire the value of the monitor target.
	Collected Item Name		Text	Enter the display name for the collected value.
	Collected value units		Text	Enter the units for the collected value.

Table 7-19 Configuration Items of SQL Monitor (String)

Configuration item	Input type	Description
Manager	Select from list	Select a Hinemos Manager for which monitoring setting is set.
Monitor ID	Text	Enter an ID to identify the monitor setting which output the notification information.
Description	Text	Enter a description of the monitoring setting.
Owner Role ID	Select from list	Select an Owner Role ID for the monitoring setting.
Scope	Select from the scope tree	Select a scope or node as object for monitoring.

Condition	Interval		Select from list	Select the monitoring interval.
	Calendar ID		Select from list	Select the calendar setting assigned in the monitor setting. If selected, the monitor setting will operate in the time zone specified in the calendar operation time.
	Check Set up	Connection URL	Text	Enter the URL for the RDBMS that the JDBC Driver connects to. (a node property can be included) Example) <code>jdbc:postgresql://192.168.0.1:5432/database</code>
		Connection DB	Select from list	Select the destination RDBMS.
		User ID	Text	Input a user ID when connecting to RDBMS.
		Password	Text	Input a password when connecting to RDBMS.
		SQL State ment	Text	Specify the SQL segment (SQL segment that returns a numeric value) to run during monitoring. Example) <code>select count(*) from table;</code>
Monitor	Monitor		Checkbox	Check to perform monitoring by string matching.
	Judge	Order	Change the order with the "Up" button or the "Down" button	String matching is checked in order from the one with the smallest order number.
		Edit	Edit string matching with the "Add" button, the "Modify" button, the "Delete" button, or the "Copy" button	Edit the pattern matching expression to be used for string matching.
	Notific ation	Notificatio n ID	Select from list	Select the notification setting assigned to the monitor setting.
		Application	Text	Enter an application name that is assigned as the notification information.

Table 7-20 Tested RDBMS

RDBMS	JDBC Driver version
PostgreSQL 9.3.5	9.3-1102 JDBC 4

7.9 Process Monitor

The process monitor feature monitors the number of processes that are operating on the managed node with SNMP polling or WBEM polling (Linux only). The Process monitor feature belongs to the Numeric monitoring category.

The Process Monitor is set up in the Process[Create/Change] dialog. The Process[Create/Change] dialog is opened with the following process.

1. Click the "Create" button from the Monitor Setting[List] view.
2. Select Process Monitor (Numeric) from the Monitor Type dialog and click the "Next" button.
3. The Process [Create/Change] dialog will open.

Refer to the setting method noted in HTTP Monitor (Numeric) or HTTP Monitor (String) in [7.4 HTTP Monitor](#) for the process from here.

Figure 7-17 Process[Create/Change] Dialog

The SNMP configuration must be registered in the repository of the managed node if changing the port number, the community name, and the SNMP version during the SNMP polling (refer to 3.4 Creating/Modifying/Deleting a Node for details).

If changing the connection user, the port number, the time-out, the retry count, etc. during the WBEM polling of each WBEM node, the WBEM configuration must be registered in the registered information repository of the managed node (refer to 3.4 Creating/Modifying/Deleting a Node for details).

Table 7-21 Configuration Items of Process Monitor

Configuration item	Input type	Description
Manager	Select from list	Select a Hinemos Manager for which monitoring setting is set.
Monitor ID	Text	Enter an ID to identify which notification setting generated the notification.
Description	Text	Enter a description of the monitoring setting.
Owner Role ID	Select from list	Select an Owner Role ID for the monitoring setting.
Scope	Select from the scope tree	Select a scope subject for monitoring.

Condition	Interval		Select from list	Specify the monitoring interval.
	Calendar ID		Select from list	Select the calendar ID for the calendar to set up. Monitoring is enabled only during the period configured as working hours in the calendar
	Check Settings	Command	Text	Specify the command name of the process. It is possible to enter regular expression.
		Command Line Arguments	Text	Specify an argument of the process. Enter a regular expression. * If specifying any argument, it is necessary to enter ". *" (single-byte characters).
	Case-insensitive	Checkbox	Check this to do string matching case-insensitively.	
Monitor	Monitor		Checkbox	Check to perform monitoring by threshold value judgement.
	Judge Information/Warning	Greater than or equal to Number of Processes	Text (numeric)	Enter the lower limit for the number of processes. (To judge "More than" the lower limit)
		Less than Number of Processes	Text (numeric)	Specify the upper limit value for the number of processes. (To judge "Less than" the upper limit)
	Notification	Notification ID	Select from list	Select the notification setting assigned to the monitor setting.
Application		Text	Enter an application name that is assigned as the notification information.	
Collection	Collection		Checkbox	Check to acquire the value of the monitor target.
	Collected Item Name		Text	Enter the display name for the collected value.
	Collected value units		Text	Enter the units for the collected value.

Method to obtain process information

- If using SNMP

"Command" and "Command Line Arguments" matching is performed on the results obtained for the OID below.

Table 7-22 OID for SNMP Polling to Obtain Process Information

1.3.6.1.2.1.25.4.2.1.2	(HOST-RESOURCES-MIB::hrSWRunName)
1.3.6.1.2.1.25.4.2.1.4	(HOST-RESOURCES-MIB::hrSWRunPath)
1.3.6.1.2.1.25.4.2.1.5	(HOST-RESOURCES-MIB::hrSWRunParameters)

- If using WBEM (only compatible with Linux)

"Command" and "Command Line Arguments" matching is performed on the results obtained for the class below.

Linux_UnixProcess

Pattern matching in case of the Linux Agent

- If using SNMP

Specify "Command"

Specify "Command" from the polling execution result for 1.3.6.1.2.1.25.4.2.1.4(HOST-RESOURCES-MIB::hrSWRunPath).

- Confirmation command:

```
$ snmpwalk -c public -v 2c (IP address of target machine) 1.3.6.1.2.1.25.4.2.1.4
```

- Execution result:

```
HOST-RESOURCES-MIB::hrSWRunPath.[PID] = STRING: "[command path name]"
```

The [command path name] output here has matching by regular expression executed with the specified [Command] field.

Example)

```
HOST-RESOURCES-MIB::hrSWRunPath.21000 = STRING: "/usr/sbin/snmpd"
```

Specify "Command Line Arguments"

Specify the "Command Line Arguments" from the polling execution result for 1.3.6.1.2.1.25.4.2.1.(-RESOURCES-MIB::hrSWRunParameters).

- Confirmation command:

```
$ snmpwalk -c public -v 2c (IP address of target machine) 1.3.6.1.2.1.25.4.2.1.5
```

- Execution result:

```
HOST-RESOURCES-MIB::hrSWRunParameters.[PID] = STRING: "[startup parameter]"
```

The [startup parameter] output here has matching by regular expression executed with the specified [Command Line Arguments] field.

Example)

```
HOST-RESOURCES-MIB::hrSWRunParameters.21000 = STRING: "-Lsd -Lf /dev/null -p /var/run/snmpd.pid -a"
```

- Set up example

If monitoring the number of above processes, configure the following.

- Command : /usr/sbin/snmpd
- Command Line Arguments : -Lsd -Lf /dev/null -p /var/run/snmpd.pid -a

- If using WBEM

Specify "Command" and "Command Line Arguments"

From the polling result against Linux_UnixProcess, specify the "Command" and the "Command Line Arguments" from the "Parameters" property.

- Confirmation command:

```
$ wbemcli ei 'http://(user name of target machine):(user's password of target machine)@(IP address of target machine)
```

- Execution result:

```
(IP address of target machine):5988/(user name of the target machine)/cimv2:Linux_UnixProcess.CreationClassName=
Parameters="[command path name],[argument 1],[argument 2]" ...omitted hereafter...
```

The [command path name] and the [argument] output here have the matching process by regular expression executed with the specified "Command" field and "Command Line Arguments" field.

Example)

```
(IP address of target machine):5988/root/cimv2:Linux_UnixProcess.CreationClassName="Linux_UnixProcess" .
..partially omitted... Parameters="syslog-ng","-f","/etc/syslog-ng/syslog-ng.conf",ProcessNiceValue=0 .
..omitted hereafter...
```

- Example setting

If monitoring the number of above processes, configure the following.

- Command : syslog-ng
- Command Line Arguments : -f /etc/syslog-ng/syslog-ng.conf

Pattern matching in the case of a Windows Agent

Specify "Command"

Specify "Command" from the polling result for 1.3.6.1.2.1.25.4.2.1.2(HOST-RESOURCES-MIB:: hrSWRunName) and 1.3.6.1.2.1.25.4.2.1.4(HOST-RESOURCES-MIB::hrSWRunPath).

- To use this command, please install the net-snmp-utils package in the server installed Hinemos Manager.

- Confirmation command:

```
$ snmpwalk -c public -v 2c (IP address of target machine) 1.3.6.1.2.1.25.4.2.1.2
$ snmpwalk -c public -v 2c (IP address of target machine) 1.3.6.1.2.1.25.4.2.1.4
```

- Execution result:

```
HOST-RESOURCES-MIB::hrSWRunName.[PID] = STRING: "[command name]"
HOST-RESOURCES-MIB::hrSWRunPath.[PID] = STRING: "[command path name]"
```

The combined "Command name" and "Command path name" output here has matching by regular expression executed with the specified [Command] field.

Example)

```
HOST-RESOURCES-MIB::hrSWRunName.1372 = STRING: "snmp.exe"
```

```
HOST-RESOURCES-MIB::hrSWRunPath.1372 = STRING: "C:\WINDOWS\System32\"
```

In this case, the matching target is "C:\WINDOWS\System32\snmp.exe".

Specify "Command Line Arguments"

Specify the "Command Line Arguments" from the polling execution result for 1.3.6.1.2.1.25.4.2.1.(-RESOURCES-MIB::hrSWRunParameters).

- Confirmation command:

```
$ snmpwalk -c public -v 2c (IP address of target machine) 1.3.6.1.2.1.25.4.2.1.5
```

- Execution result:

```
HOST-RESOURCES-MIB::hrSWRunParameters.[PID] = STRING: "[startup parameter]"
```

The [startup parameter] output here has matching by regular expression executed with the specified [Command Line Arguments] field.

Example)

```
HOST-RESOURCES-MIB::hrSWRunParameters. 1372 = ""
```

Since the matching argument is identified blank, the "Command Line Arguments" field is configured blank.

7.10 Windows Service Monitor

The Windows Service Monitor feature monitors whether or not the specified Windows service has a status of "Started" on the management object Windows Server. The Windows Service Monitor feature belongs to the truth monitoring category.

Windows Remote Management (hereafter WinRM) must be set up on the management object Windows Server. Refer to 6.6, "Windows Service Monitor" in the Administrator's Guide regarding the method for setting up WinRM on the management object Windows Server. To connect to WinRM for the management object, the WinRM user name, password, port number, protocol, time out and retry count must be set in the Repository registration information. Refer to [3.4 Creating/Modifying/Deleting a Node](#) for details.

The Windows Service Monitor is set up in the Windows Service Monitor[Create/Change] dialog. The Windows Service Monitor[Create/Change] dialog is opened with the following process.

1. Click the "Create" button from the Monitor Setting[List] view.
 2. Select Windows Service Monitor (Numeric) from the Monitor Type dialog and click the "Next" button.
 3. The WinsowsService[Create/Change] dialog opens.
- Refer to the [7.3 Hinemos Agent Monitor](#) for the setting method.

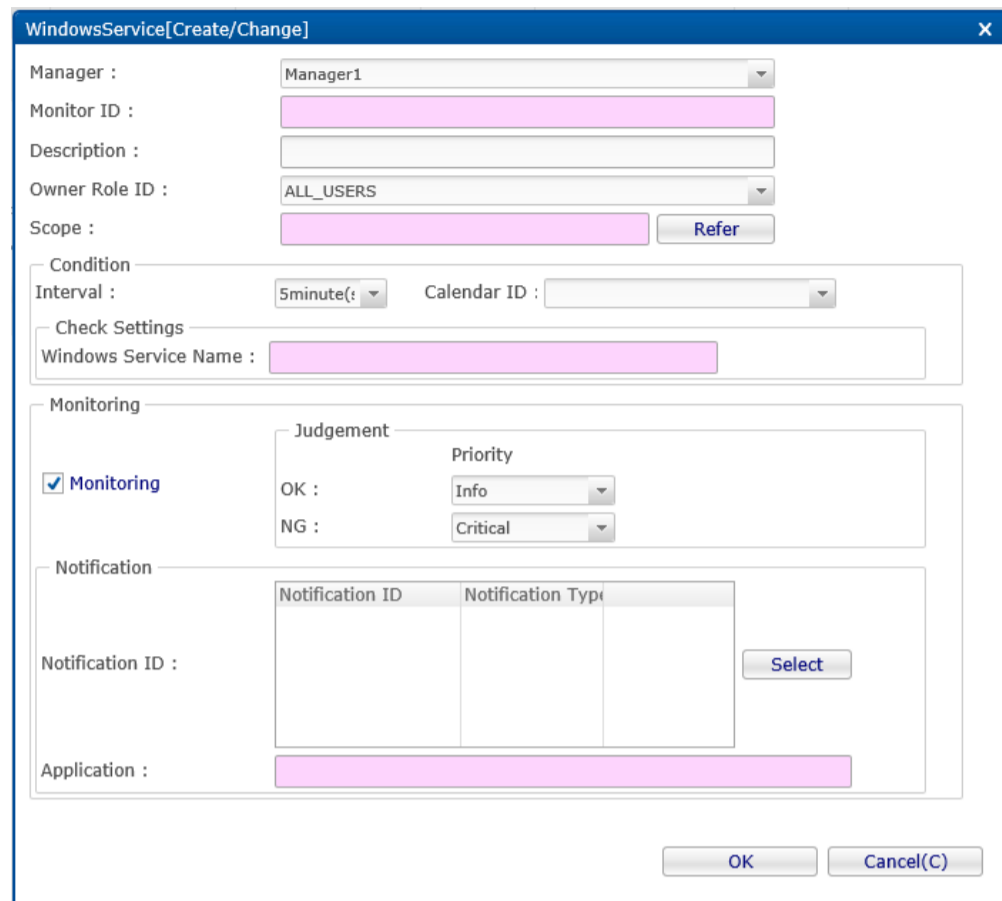


Figure 7-18 WindowsService[Create/Change] Dialog

Table 7-23 Configuration Items of Windows Service Monitor

Configuration item		Input type	Description
Manager		Select from list	Select a Hinemos Manager for which monitoring setting is set.
Monitor ID		Text	Enter an ID to identify which notification setting caused the notification.
Description		Text	Enter a description of the monitoring setting.
Owner Role ID		Select from list	Select an Owner Role ID for the monitoring setting.
Scope		Select from the scope tree	Select a scope subject for monitoring.
Condition	Interval	Select from list	Specify the monitoring interval.
	Calendar ID	Select from list	Select the calendar ID for the calendar to set up. Monitoring is enabled only during the period configured as working hours in the calendar
	Check Setup	Windows Service Name	Text Specify the Windows Service Name for the monitor target. Specified Windows Service Name This is an example of the "Service name" of the service dialog displayed in "Control Panel" - "Administrative Tools" - "Services". The service name is judged to completely agree.
Monitor	Monitor	Checkbox	When checked, the monitoring setting is enabled. If unchecked, the setting is disabled. The setting will be saved, but the monitoring process will not be executed.
	OK/NG	Priority	Select from list If the monitor result is judged to be OK/NG, the priority for notification of the monitor results is specified.
Notification	Notification ID	Select from list	Select a notification ID to be used as a notification method.
	Application	Text	Enter an application name to be displayed as the notification information.

- Method to obtain Windows Service Information

Windows Service Monitor uses WinRM and acquires the Windows Service Information shown in Table 7-18.

Table 7-24 Windows Service Information

Class name	Property	Description
Win32 Service	Name	Windows Service Name
Win32 Service	State	Status (Running or not)

- Windows Service Information Object

Run the wsman command and you can confirm the information for the object of the Windows Service Monitor. (If the WinRM protocol is set up in HTTP)

* To use this command, please install the wsmancli package in the server installed Hinemos Manager.

- Command for monitor (Acquire the Windows service list):

```
(root) # wsman -u [user name] -p [password] -y basic -h [IP Address] -P 5985 -d 6 \
enumerate http://schemas.microsoft.com/wbem/wsman/1/wmi/root/cimv2/Win32_Service
```

- Command for monitor (Set up the Windows service name):

```
(root) # wsman -u [user name] -p [password] -y basic -h [IP Address] -P 5985 -d 6 \
get http://schemas.microsoft.com/wbem/wsman/1/wmi/root/cimv2/Win32_Service?Name=[service name]
```

The Name property is compared to string specified in the "Windows Service Name" field and the target service is set up. Also, depending on whether the State property is "Running" or not, the status of the target service will be judged (OK/NG).

7.11 Windows Event Monitor

The Windows Event Monitor feature monitors the Windows Event Logs on monitoring targets and sends notification based on the specified conditions. The Windows Service Monitor feature belongs to the String monitoring category.

- Environmental requirements for using Windows Event Log

Table 7-25 Environmental requirements for using Windows Event Log

OS	.NET Framework	Windows PowerShell	Command
Windows Server 2008	3.5 or later	2.0, 3.0	Get-EventLog, Get-WinEvent* wevtutil.exe
Windows Server 2008 R2			
Windows 7			
Windows Server 2012		3.0, 4.0	
Windows 8			
Windows Server 2012 R2 Windows 8.1		4.0	

*Get-WinEvent runs in any of the following environments:

- Windows PowerShell 2.0 + .NET Framework 3.5
- Windows PowerShell 3.0 + .NET Framework 4/4.5

In addition, Windows PowerShell Script Execution Policy need to be set as "Unrestricted" or "RemoteSigned". Use Set-ExecutionPolicy cmdlet to change the user preference for the Windows PowerShell execution policy as follows.

```
> Set-ExecutionPolicy Unrestricted
```

- Get-EventLog : <http://technet.microsoft.com/en-us/library/hh849834.aspx>
- Get-WinEvent : <http://technet.microsoft.com/en-us/library/hh849682.aspx>

- Acquisition of Windows Event Log

Windows Event Monitor acquires Windows Event Log by the following commands.

- Get-WinEvent cmdlet (Windows PowerShell)
- Get-EventLog cmdlet (Windows PowerShell)
- wevtutil.exe command (Windows PowerShell)

Refer to Chapter 14, Hinemos Agent Configuration List, of the Administrator's Guide for more details.

Windows Event Monitor is set up in the Windows Event[Create/Change] dialog. Follow the following steps to open the Windows Event[Create/Change] dialog.

1. Click the "Create" button from the Monitor Setting[List] view.
2. Select Windows Event Monitor (String) from the Monitor Type dialog, and click the "Next" button.
3. The Windows Event[Create/Change] dialog shows up.

After these steps, follow the configuration instruction in [7.4 HTTP Monitor](#) section to proceed.

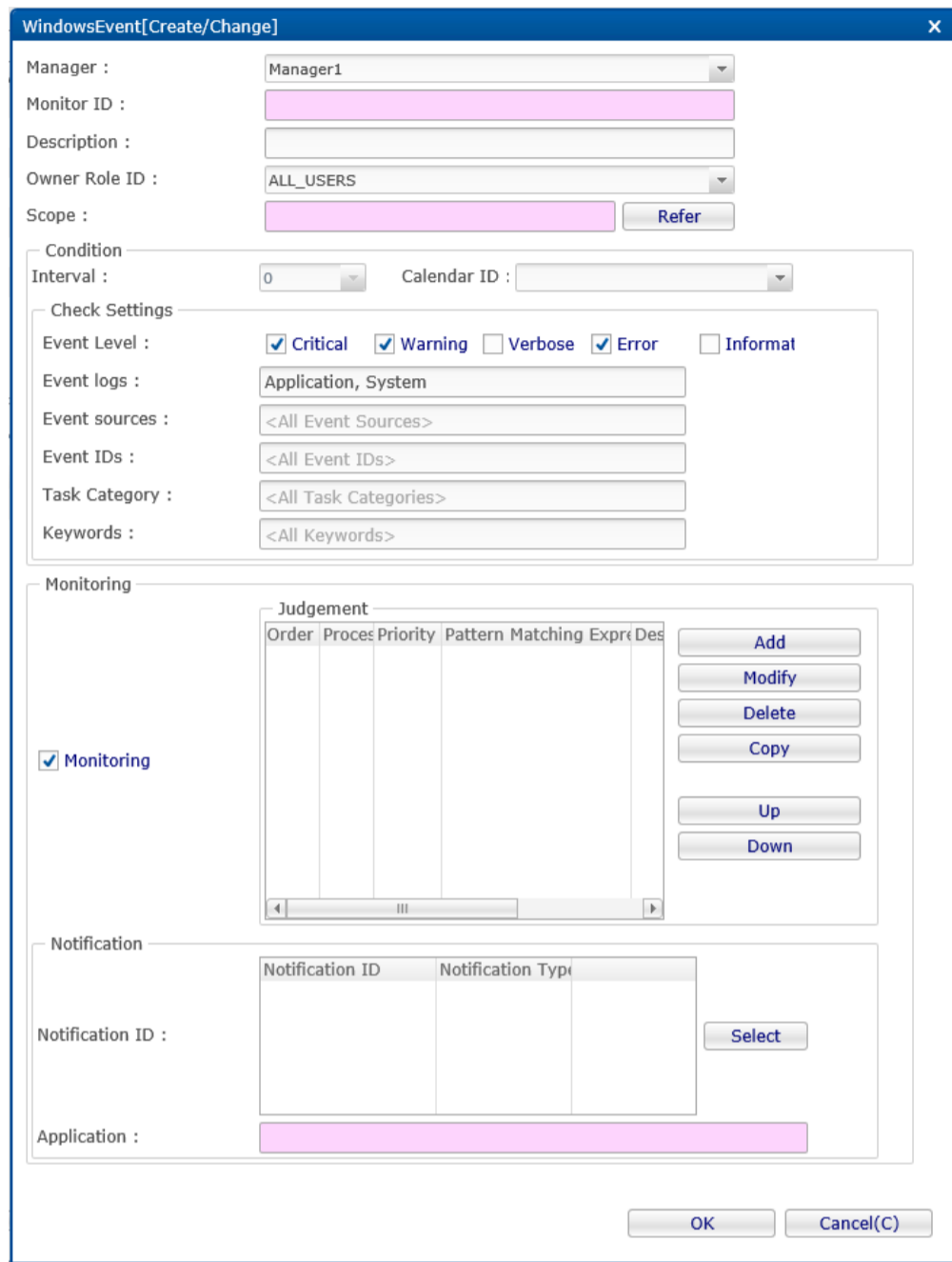


Figure 7-19 Windows Event[Create/Change] Dialog

Table 7-26 Configuration Items of Windows Event Monitor

Configuration item	Input type	Description
Manager	Select from list	Select a Hinemos Manager for which monitoring setting is set.
Monitor ID	Text	Enter an ID to identify which notification setting caused the notification.
Description	Text	Enter a description of the monitoring setting.
Owner Role ID	Select from list	Select an Owner Role ID for the monitoring setting.
Scope	Select from the scope tree	Select a scope subject for monitoring.

Condition	Interval		Select from list	This monitoring is performed during log acquisition so the monitor interval cannot be selected.
	Calendar ID		Select from list	Select the calendar setting assigned in the monitor setting. If selected, the monitor setting will operate in the time zone specified in the calendar operation time.
	Check Set up	Event Level	Checkbox	Select the Event Level to monitor. (Severe/Warning/Detail/Error/Information)
		Event Log	Text (Comma delimited)	Enter the event log name of the monitoring target.
		Event Source	Text (Comma delimited)	Enter the event source name of the monitoring target.
		Event ID	Text (Numeric/Comma delimited)	Enter the event ID of the monitoring target.
		Task Category (*1)	Text (Numeric/Comma delimited)	Enter the task category of the monitoring target.
Keyword (*2)	Text (String or Numeric/ Comma delimited)	Enter the keyword of the monitoring target.		
Monitor	Monitor		Checkbox	Check to perform monitoring by string matching.
	Judge	Order	Change the order with the "Up" button or the "Down button"	String matching is checked in ascending order of order numbers.
		Edit	Edit string matching with the "Add" button, the "Modify" or the the "Delete" button, or the "Copy" button	Edit the pattern matching expression to be used for string matching.
	Notification	Notification ID	Select from list	Select the notification setting assigned to the monitor setting.
		Application Application	Text Text	Enter an application name that is assigned as the notification information.

***1 If you intend to specify a task category, you have to specify a numeric value for the category of monitoring target.**

To confirm whether a value for task category is appropriate, see "Configuration check for Windows Event Monitor" described below.

***2 If you intend to specify a keyword, you have to enter a specific string or number for the keyword of monitoring target.**

The specific string for the keyword is shown as Table 7-27. Besides the string, the corresponding numeric values is also available to use. To confirm whether a value for keyword is appropriate, see "Configuration check for Windows Event Monitor" described below.

Table 7-27 Specific Keywords of Windows Event Monitor

Item	Keyword (String)	Keyword (Numeric)
Audit Failure	Audit Failure FailureAudit	4503599627370496
Audit Success	Audit Success SuccessAudit	9007199254740992
Classic	Classic	36028797018963968
Correlation Hint	Correlation Hint	18014398509481984
Response Time	Response Time	281474976710656

SQM	SQM	2251799813685248
WDI Context	WDI Context	562949953421312
WDI Diagnosis	WDI Diag	1125899906842624

- Configuration check for Windows Event Monitor

The setting values used for Windows Event Monitor are corresponding to those of Windows Event Viewer.

A Custom View is used to display the events monitored by Windows Event Monitor. To create a Custom View, open Event Viewer and then select "Create Custom View". Fill the settings on "Filter" tab. After that, you can click on "XML" tab and all the settings entered on "Filter" tab will be shown as XML query.

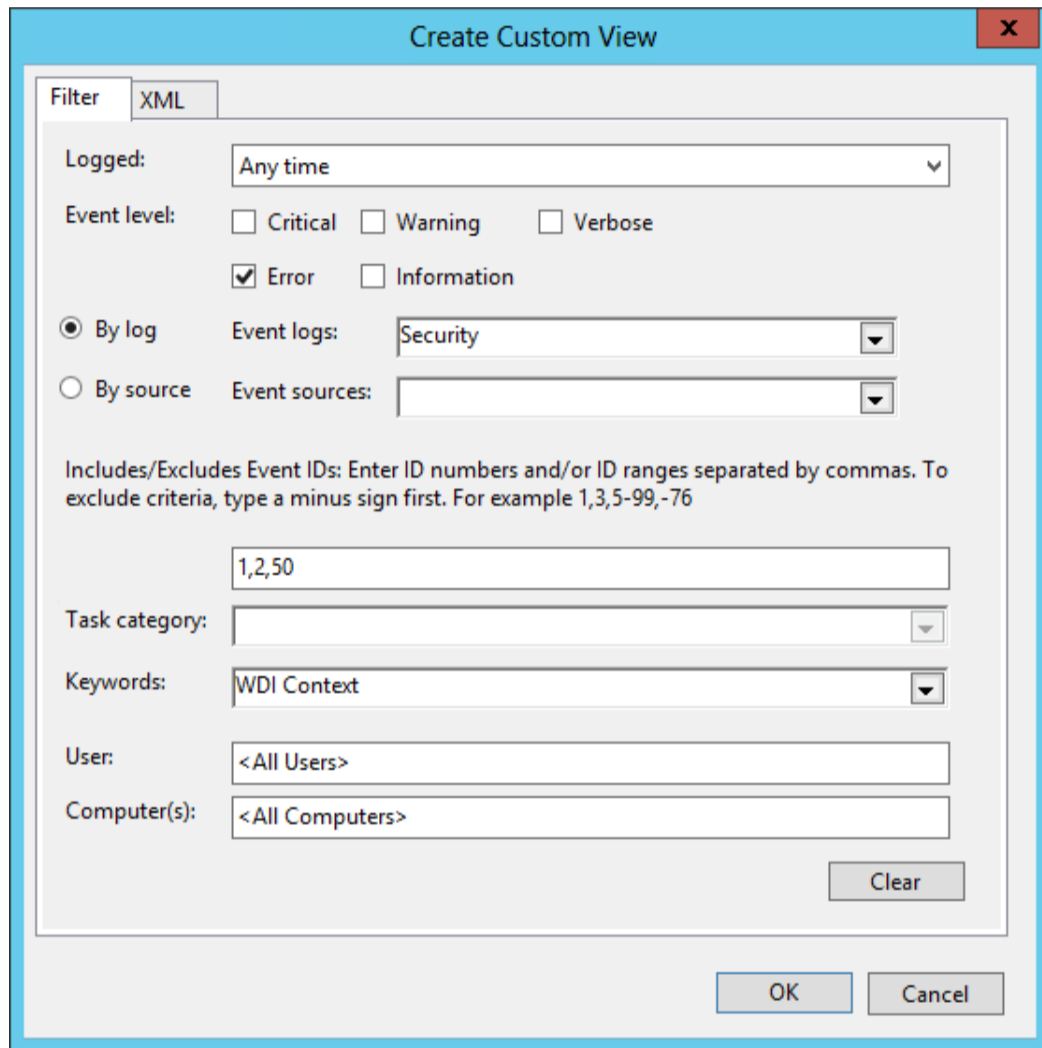


Figure 7-20 Filter Tab of Event Viewer

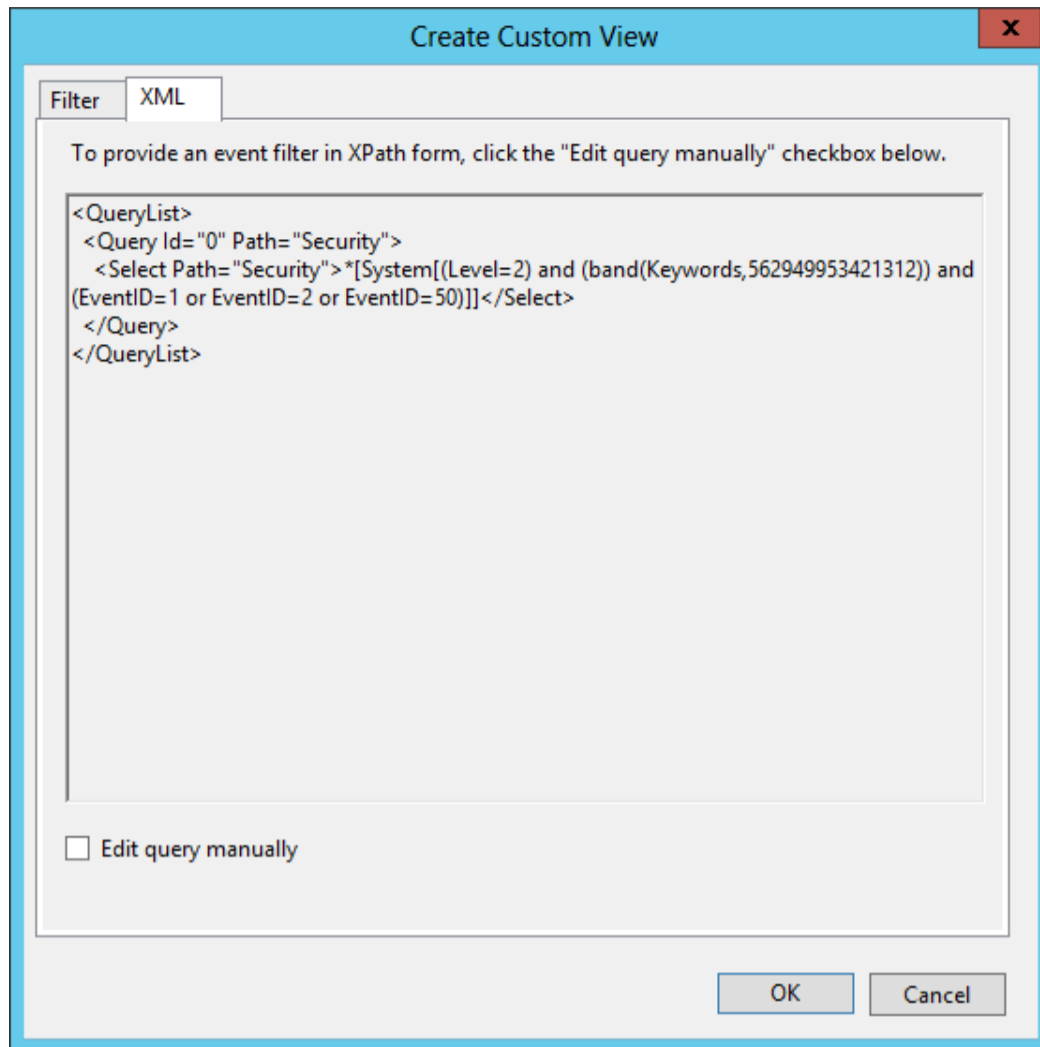


Figure 7-21 XML Tab of Event Viewer

From the example shown in Figure 7-20 and Figure 7-21, we can find out that the keyword "WDI Context" is corresponding to "562949953421312".

7.12 Service Port Monitor

The Service Port Monitor feature establishes a connection to the monitored node's port and monitors if the service is operating correctly on the monitored node. The Service Port Monitor feature belongs to the truth monitoring category.

The Service Port Monitor is set up from the Service Port[Create/Change] dialog. The Service Port[Create/Change] dialog is opened with the following process.

1. Click the "Create" button from the Monitor Setting[List] view.
2. Select Service Port Monitor (Numeric) from the Monitor Type dialog and click the "Next" button.
3. The Service Port[Create/Change] dialog opens.

Refer to the set up process in HTTP Monitor (Numeric) in [7.4 HTTP Monitor](#) for the configuration procedure from here.

Service Port[Create/Change] X

Manager :

Monitor ID :

Description :

Owner Role ID :

Scope :

Condition

Interval : Calendar ID :

Check Settings

TCP Connect Service Protocol

Port Number : Number of time Count

Interval : milli sec Time out : milli sec

Monitoring

Monitoring

Judgement

Info	Response Time (m: <input type="text" value="0"/> Over <input type="text" value="1000"/> Under
Warning	Response Time (m: <input type="text" value="1000"/> Over <input type="text" value="3000"/> Under
Critical	(Other than Info or Warning)

Notification

Notification ID	Notification Type	

Notification ID :

Application :

Collection

Collector Collected Item

Unit of Collec

Figure 7-22 Service Port[Create/Change] Dialog

Table 7-28 Configuration Items of Service Port Monitor

Configuration item		Input type	Description	
Manager		Select from list	Select a Hinemos Manager for which monitoring setting is set.	
Monitor ID		Text	Enter an ID to identify which notification setting generated by which monitor setting.	
Description		Text	Enter a description of the monitoring setting.	
Owner Role ID		Select from list	Select an Owner Role ID for the monitoring setting.	
Scope		Select from the scope tree	Select a scope subject for monitoring.	
Condition	Interval	Select from list	Specify the monitoring interval.	
	Calendar ID	Select from list	Select the calendar ID for the calendar to set up. Monitoring will be enabled only during the time when configured as working hours on the calendar.	
	Check setting	TCP Connect /Service Protocol		Select the protocol to monitor. (TCP/FTP/SMTP(S)/POP3(S)/IMAP(S)/NTP/DNS)
		Port Number	Text (Numeric)	Specify the port number to monitor.
		Number of time	Text (Numeric)	Specify the number of attempts to establish the connection when checked once.
		Interval	Text (Numeric)	Specify the interval between each attempt to establish the connection when checked once.
Time out(msec)	Text (numeric)	Specify the time-out for the connection establishment.		
Monitor	Monitor		Checkbox	When checked, monitoring is enabled. If unchecked and specified disable, the configuration is saved, but the monitoring process will not be executed.
	Judge Information/Warning	Minimum of Response time (msec)	Text (numeric)	Specify the minimum threshold of the response time. (To judge "More than" the lower limit)
		Maximum of Response time (msec)	Text (numeric)	Specify the maximum threshold of the response time. (To judge "Less than" the upper limit)
	Notification	Notification ID	Select from list	Select from the list the Notification ID that is the notification method used in the notification setting.
		Application	Text	Enter an application name to be displayed as the notification information.
Collection	Collection		Checkbox	Check to acquire the value of the monitor target.
	Collected Item Name		Text	Enter the display name for the collected value.
	Collected value units		Text	Enter the units for the collected value.

In Service Port Monitor, judgement of importance level will change according to the selected monitoring protocol of check setting.

- If "TCP Connect" is selected, the importance level is judged by the time used for establishing a connection.
- If "Service Protocol" is selected, the importance level is judged by the response time of each service protocol.

7.13 Custom Monitor

The Custom Monitor feature regularly runs a command specified by a user and monitors the result. The Custom monitor feature belongs to the Numeric monitoring category.

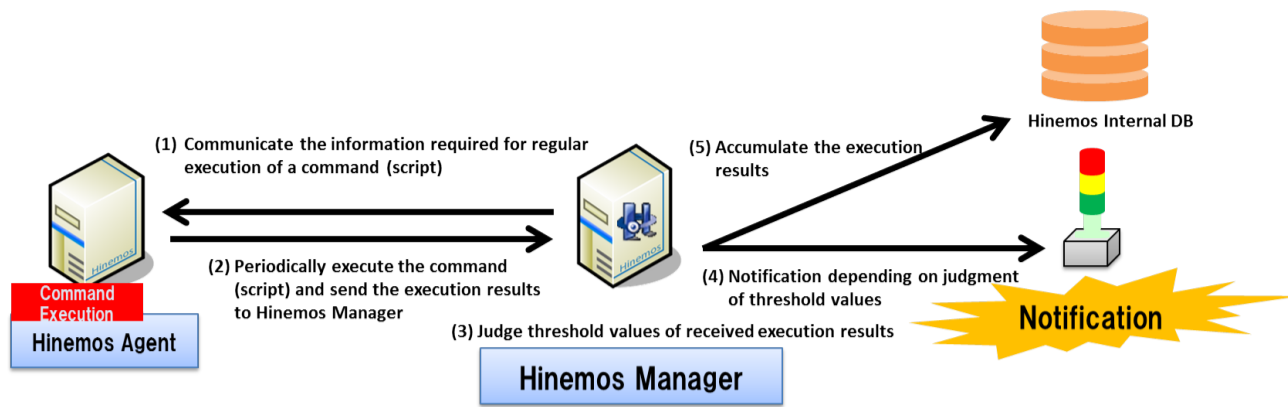


Figure 7-23 Custom Monitor Overview

Further, when using Custom Monitor, the Hinemos Agent must be operating on the target node. The following type of monitoring method is provided.

- Threshold monitoring of the numeric value output as the standard output by the command

An operation outline of the Custom Monitor feature is shown below.

1. Custom Monitor is set up from the Hinemos Client.
2. The set information is sent from the Hinemos Manager to the Hinemos Agent.
3. The Hinemos Agent runs the specified command for each monitor interval.
4. The Hinemos Agent classifies the command's execution results (standard output) Key, Value and sends the pair (Key, Value) to the Hinemos Manager.
5. The Hinemos Manager performs threshold judgement on the VALUE of the sent pair (Key, Value).

The standard output from the command that is the execution target must be in the following format.

```
KEY_1,VALUE_1
KEY_2,VALUE_2
KEY_3,VALUE_3
...
```

The KEY must be a string that cannot include half width commas (,) and line returns (MS932 for Windows agent and UTF-8 for other agents). The VALUE must be a 64-bit single-precision floating-point value (4.9e-324~1.7976931348623157e+308). Threshold value judgement is performed on the monitor target with that pair (KEY, VALUE) and notification is made of the monitor details of the notification information with the embedded format of the key.

Also, since multiple pairs can be included in the standard output of the command, output each pair as 1 line. (The code for a new line is CRLF for the Windows agent and LF for other agents)

Further, if the command execution time goes long and there is a timeout, and the pair is confirmed to not meet the above format, it will be judged that the value that is the monitor target could not be determined, and notified with priority "Unknown".

Custom Monitor is set up in the Custom Monitor [Create/Change] dialog. The Custom[Create/Change] dialog is opened with the following process.

1. Click the "Create" button from the Monitor Setting[List] view.
2. Select Custom Monitor (Numeric) from the Monitor Type dialog and click the "Next" button.
3. The Custom Monitor [Create/Change] dialog opens.

Registering Monitoring Setting

1. The Custom Monitor [Create/Change] dialog opens.
2. Set up the following items.
 - Manager Select a Hinemos manager for which monitoring setting is created. (Refer to [2.6 Multi-Manager Connection](#) for more information on the multiple manager connection.)
 - Monitor ID:

Enter the Monitor ID as text. The Monitor ID is used as an ID to identify which monitoring configuration generated the notification.

- Description:

Enter a description of the monitoring setting as text.

- Owner Role ID:

Select an Owner Role ID for the monitoring setting. Refer to [12 Account Feature](#) section for more details about Owner Role.

- Scope:

Enter the target scope. Click the "Refer" button on the right to display the Select Scope dialog. Select the target scope from the scope tree in the dialog.

3. Set up the monitoring conditions. Enter the following items.

- Interval:

Check the connection to the Hinemos Agent at the interval specified here.

- Calendar ID:

Select the calendar ID for the calendar you want to set up. Monitoring is enabled only during the period configured as working hours in the calendar (Refer to the section, [4 Calendar Feature](#) for more details on the calendar). If Calendar ID is not selected, the monitoring is enabled all day.

- Check Settings:

- Execute command(s) on selected node.

Specify the execution unit for the command. If you want to execute a command from a single Hinemos Agent and acquire the target scope information, specify it here. (Refer to Figure 7-24, "Command Execution Units" for details.)

- Effective User:

Specify the user to execute the command.

- Agent startup user:

User who started the Hinemos Agent, which is set as the destination of a job execution, becomes an Effective User.

- Specify a user:

You can also specify a user manually.

- Command:

Specify the command to execute.

- Timeout:

Specify the interval until timeout after command execution.

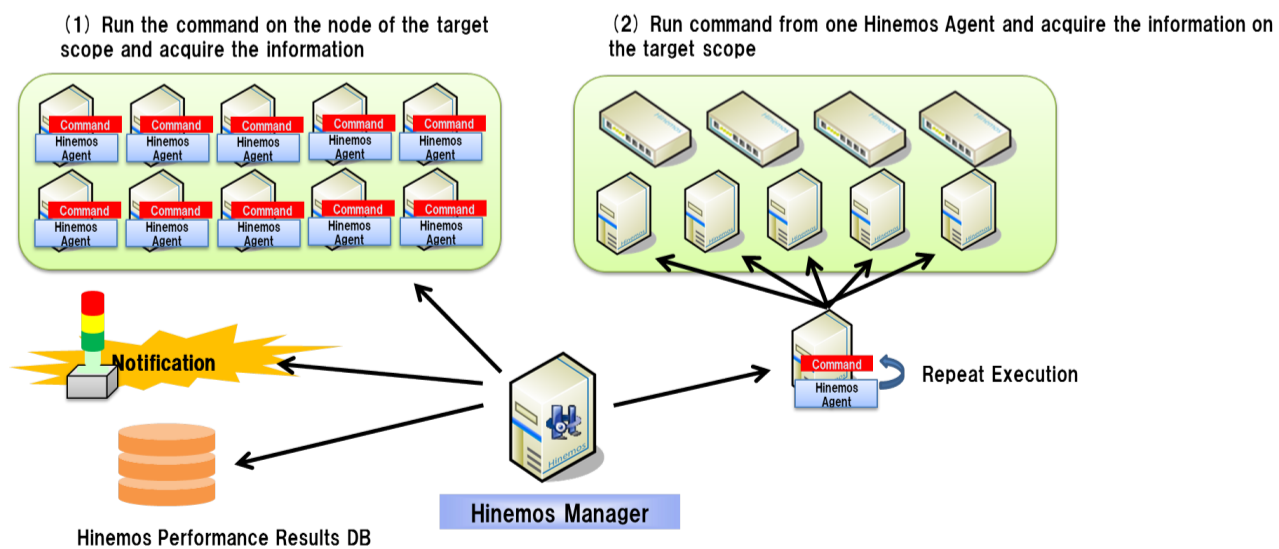


Figure 7-24 Command Execution Units

4. Define the priority for each monitor result. Enter the following items.

- Monitor:

Check this to perform threshold value judgement on the numeric value output as standard output by the command.

- Value:

Enter the threshold value for the numeric value output as standard output by the command.

If within the range of "Information", it is notified as "Information" priority.

If it is outside the range of "Information" and is in the range of "Warning", it is notified as "Warning" priority.

If it is not in the range of "Information" or "Warning", it is notified as "Critical" priority.

5. Configure the notification details. Enter the following items.

- Notification ID:

Select from the list the Notification ID that is the notification method used in the notification setting. (Refer to the section [6.3 Notification Feature](#) regarding notification settings) When you click the "Select" button on the right, the Notification[List] dialog is displayed. Select the notification method.

- Application:

Enter an application name in alphanumeric text. This is displayed as the notification information.

6. Enter the following items for the value of the collection for the monitor target.

- Collector:

Check this to collect and accumulate the numeric value output as standard output by the command. This is connected to the Performance feature and the accumulated response time can be displayed as a graph.

- Collected Item Name:

Enter the display name for the collected value. This display name is used by the Performance feature's graph, etc.

- Collection units:

Enter the units for the collected value. These units are used by the Performance feature's graph, etc.

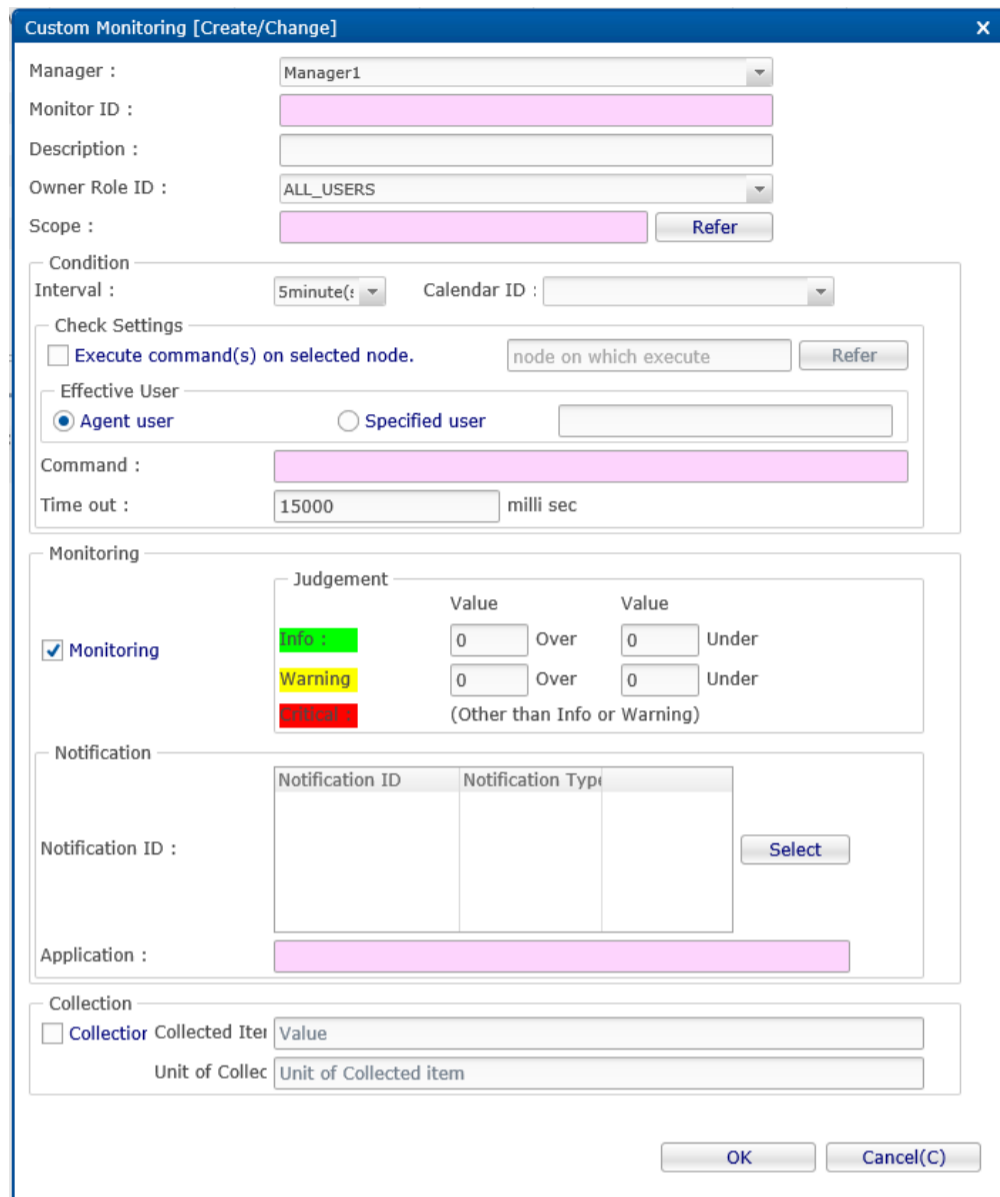


Figure 7-25 Custom Monitoring [Create/Change] Dialog

Changing the Monitor Setting

1. Select the object to change from the monitor setting list displayed in the Monitor Settings[List] dialog, then click the "Modify" button. The Custom Monitoring [Create/Change] dialog opens.
2. Edit the setting details, and then click the "OK" button. (Refer to "Registering Monitor Settings" in the previous chapter for the procedures for entering settings).

Deleting Monitor Settings

Select the object to delete from the monitor setting list displayed in the Monitor Settings[List] dialog, then click the "Delete" button.

Changing the Valid/Invalid Setting in the Monitor Settings

You can collectively change the valid/invalid settings in the monitor settings. Select the settings to change from the monitor setting list displayed in the Monitor Settings[List] dialog (multiple can be selected). Then click the "Valid" ("Invalid") button. A confirmation dialog is displayed. Click the "OK" button.

Table 7-29 Configuration Items of Custom Monitor

Configuration item	Input type	Description
Manager	Select from list	Select a Hinemos Manager for which monitoring setting is set.
Monitor ID	Text	Enter an ID to identify which notification setting generated the notification.
Description	Text	Enter a description of the monitoring setting.

Owner Role ID		Select from list	Select an Owner Role ID for the monitoring setting.	
Scope		Select from the scope tree	Select a scope subject for monitoring.	
Condition	Interval		Select from list	Specify the monitoring interval.
	Calendar ID		Select from list	Select the calendar ID for the calendar to set up. Monitoring is enabled only during the period configured as working hours in the calendar.
	Check Settings	Run the commands together on the specified node	Checkbox	Check to run the command on one Hinemos Agent.
			Select from the scope tree	Select the node with the Hinemos Agent installed. The command will be repeatedly executed for the number of nodes included in the target scope on that node. (When combined with the command with the node property embedded, the node information such as IP address can be specified in the command's argument, and can be used for monitoring with devices where the Hinemos Agent cannot be installed.)
		Execution user	Text	Enter the user name who will execute the command. (With the Windows agent, you cannot specify other than the Hinemos Agent's startup user)
		Command	Text	Specify the command to execute. (The node property can be embedded)
Timeout	Text (Numeric)	Enter the maximum execution interval for the command. The command will pause if it continues to run past this time.		
Monitor	Monitor		Checkbox	Check to perform monitoring by threshold value judgement.
	Judge Information / Warning	Greater than or equal to Acquired value	Text (numeric)	Enter the lower limit for the acquired value. (To judge "More than" the lower limit)
		Less than Acquired value	Text (numeric)	Specify the upper limit value for the acquired value. (To judge "Less than" the upper limit)
	Notification	Notification ID	Select from list	Select from the list the Notification ID that is the notification method used in the notification setting.
		Application	Text	Enter an application name to be displayed as the notification information.
Collection	Collection		Checkbox	Check to acquire the value of the monitor target.
	Collected Item Name		Text	Enter the display name that is the description for the collected value.
	Collected value units		Text	Enter the units for the collected value.

Table 7-30 Node Variables

String	Content to replace
#[FACILITY_ID]	Facility ID for each node included in the target scope
#[FACILITY_NAME]	Facility Name for each node included in the target scope
#[IP_ADDRESS_VERSION]	IP Address Version for each node included in the target scope
#[IP_ADDRESS]	IP Address (IPv4 or IPv6 according to the IP address version) for each node included in the target scope
#[IP_ADDRESS_V4]	IPv4 Address Version for each node included in the target scope
#[IP_ADDRESS_V6]	IPv6 Address Version for each node included in the target scope
#[NODE_NAME]	Node Name for each node included in the target scope

#[OS_NAME]	OS Name for each node included in the target scope
#[OS_RELEASE]	OS Release for each node included in the target scope
#[OS_VERSION]	OS Version for each node included in the target scope
#[CHARSET]	Character Set for each node included in the target scope
#[AGENT_AWAKE_PORT]	Port for instantly reflecting packet of each node included in target scope
#[JOB_MULTIPLICITY]	Job multiplicity of each node included in target scope
#[JOB_PRIORITY]	Job priority of each node included in target scope
#[SNMP_PORT]	SNMP Port Number for each node included in the target scope
#[SNMP_COMMUNITY]	SNMP Community Name for each node included in the target scope
#[SNMP_VERSION]	SNMP Version for each node included in the target scope
#[SNMP_TIMEOUT]	SNMP Timeout for each node included in the target scope
#[SNMP_TRIES]	SNMP retry count for each node included in the target scope
#[WBEM_PORT]	WBEM Port Number for each node included in the target scope
#[WBEM_PROTOCOL]	WBEM protocol for each node included in the target scope
#[WBEM_TIMEOUT]	WBEM Timeout for each node included in the target scope
#[WBEM_TRIES]	WBEM retry count for each node included in the target scope
#[WBEM_PASSWORD]	WBEM password for each node included in the target scope
#[IPMI_IP_ADDRESS]	IPMI IP Address for each node included in the target scope
#[IPMI_PORT]	IPMI Port Number for each node included in the target scope
#[IPMI_TIMEOUT]	IPMI Timeout for each node included in the target scope
#[IPMI_TRIES]	IPMI retry count for each node included in the target scope
#[IPMI_PROTOCOL]	IPMI protocol for each node included in the target scope
#[IPMI_LEVEL]	IPMI level for each node included in the target scope
#[IPMI_USER]	IPMI user for each node included in the target scope
#[IPMI_PASSWORD]	IPMI user password for each node included in the target scope
#[WINRM_USER]	WinRM user for each node included in the target scope
#[WINRM_PASSWORD]	WinRM user password for each node included in the target scope
#[WINRM_VERSION]	WinRM Version for each node included in the target scope
#[WINRM_PORT]	WinRM Port Number for each node included in the target scope
#[WINRM_PROTOCOL]	WinRM protocol for each node included in the target scope
#[WINRM_TIMEOUT]	WinRM Timeout for each node included in the target scope
#[WINRM_TRIES]	WinRM retry count for each node included in the target scope
#[SSH_PORT]	SSH Port Number for each node included in the target scope
#[SSH_PRIVATE_KEY_FILENAME]	SSHSSH secret key file path of each node included in target scope
#[SSH_PRIVATE_KEY_PASSPHRASE]	SSH secret key pass phrase of each node included in target scope
#[SSH_TIMEOUT]	SSH Timeout for each node included in the target scope
#[SSH_USER]	SSH user for each node included in the target scope
#[SSH_USER_PASSWORD]	SSH user password for each node included in the target scope
#[VM_NODE_TYPE]	Server virtualization node type for each node included in the target scope
#[VM_NAME]	Server virtualization virtual machine name for each node included in the target scope
#[VM_ID]	Server virtualization virtual machine ID for each node included in the target scope
#[VM_USER]	Server virtualization virtual machine user for each node included in the target scope

#[VM_PASSWORD]	Server virtualization virtual machine password for each node included in the target scope
#[VM_PROTOCOL]	Server virtualization virtual machine protocol for each node included in the target scope
#[VSWITCH_TYPE]	Network virtualization virtual switch type for each node included in the target scope
#[OF_DATAPATHID]	Network virtualization OpenFlow Datapath ID for each node included in the target scope
#[OF_CTRL_IP_ADDRESS]	Network virtualization OpenFlow Controller Address for each node included in the target scope
#[<NODE VARIABLES>]	Node Variable (the node variable name is specified in the <NODE_VARIABLES>) for each node included in the target scope

7.14 System Log Monitor

The System Log Monitor feature performs filtering of the monitored node's system log and notifies when the output log matches the specified matching condition. The System Log Monitor feature belongs to the String monitoring category.

Matching Process

In System Log Monitor, you can monitor logs in syslog format (RFC 3164) (total length of the packet must be less than 1024byte).

syslog message is composed of PRI section, HEADER section, and MSG section.

```
<PRI> HEADER MSG
```

Example)

```
<13>Mar 12 16:38:58 host01 root: error
```

PRI section:

The value calculated from the "Severity" and "Facility" is set up in PRI section.

Since syslog is standard, refer to RFC 3164 for the detailed calculation method.

HEADER section:

HEADER section is composed of "TIMESTAMP" and "HOSTNAME".

"TIMESTAMP" is configured in the "mm dd hh:mm:ss" format.

Configure the host name or the IP address for "HOSTNAME".

MSG section:

The section after the HEADER is the MSG section..

Typically, the MSG section begins with the additional information related to the process that generated the message, followed by the message itself.

The syslog source node is identified using the HOSTNAME section in the HEADER section. For example, if the HEADER section in the syslog message is "Feb 25 14:09:07 webserver", "webserver" is the HOSTNAME section. When a syslog message is sent from an external server, Hinemos scans the HOSTNAME part of the syslog message and the node properties "Node Name", "IP address" (IPv4 address or IPv6 address, whichever is enabled), and Host Name registered in the repository management feature in order and identifies the matching node as the send destination node. Further, when performing system log monitoring in a Windows 2003 (IPv6) environment, the computer name in that environment must be 15 characters or less.

Pattern matching is performed on the MSG section with the regular expression specified in the "Pattern Matching Expression".

The System Log Monitor is set up in the System Log [Create/Change] dialog. The System Log [Create/Change] dialog is opened with the following process.

1. Click the "Create" button from the Monitor Setting[List] view.
2. Select System Log Monitor (String) from the Monitor Type dialog and click the "Next" button.
3. The System Log [Create/Change] dialog opens.

Refer to the set up process in HTTP Monitor (String) in [7.4 HTTP Monitor](#) for the set up process from here.

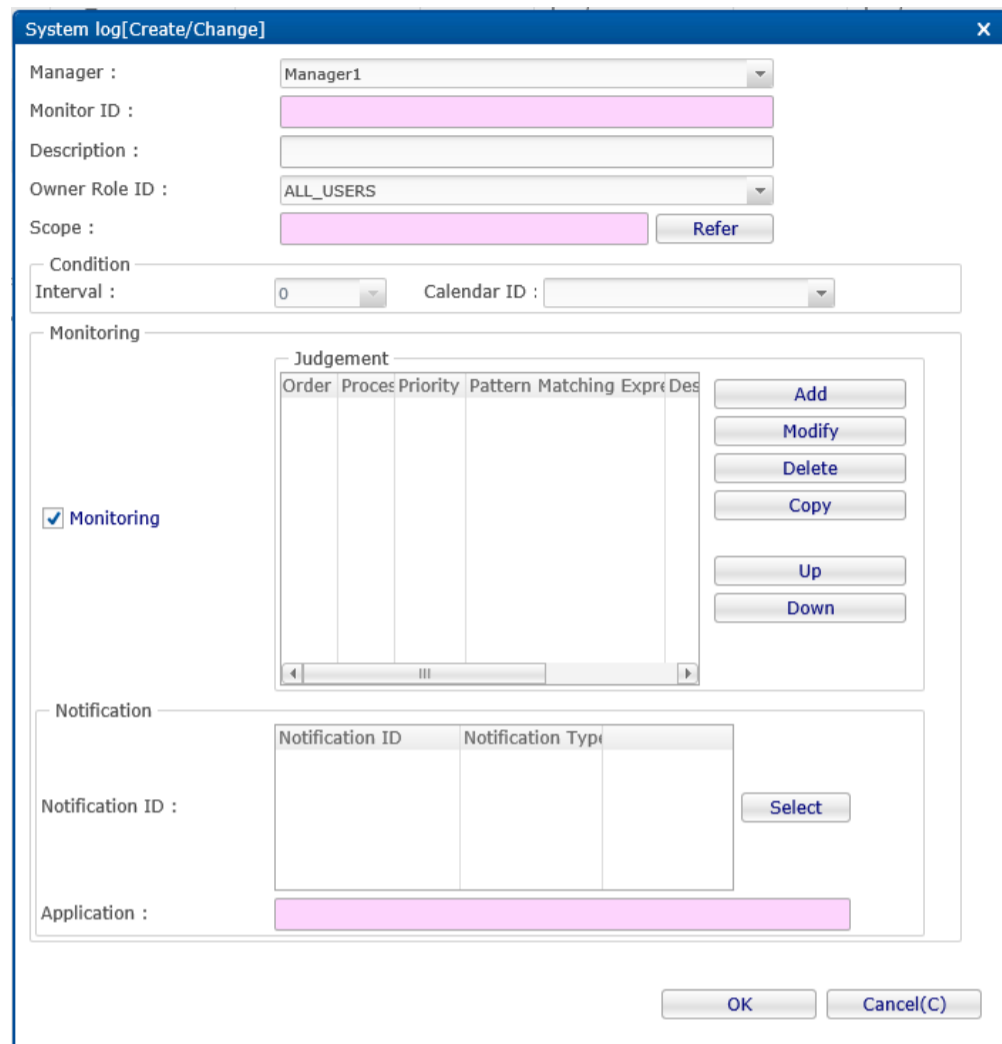


Figure 7-26 System Log [Create/Change] Dialog

Table 7-31 Configuration Items of System Log Monitor (String)

Configuration item		Input type	Description
Manager		Select from list	Select a Hinemos Manager for which monitoring setting is set.
Monitor ID		Text	Enter an ID to identify the monitor setting which output the notification information.
Description		Text	Enter a description of the monitoring setting.
Owner Role ID		Select from list	Select an Owner Role ID for the monitoring setting.
Scope		Select from the scope tree	Select a scope or node as object for monitoring.
Condition	Interval	Select from list	This monitoring is performed during log acquisition so the monitor interval cannot be selected.
	Calendar ID	Select from list	Select the calendar setting assigned in the monitor setting. If selected, the monitor setting will operate in the time zone specified in the calendar operation time.

Monitor	Monitor		Checkbox	Check to perform monitoring by string matching.
	Judge	Order	Change the order with the "Up" button or the "Down" button	String matching is checked in order from the one with the smallest order number.
		Edit	Edit string matching with the "Add" button, the "Modify" button, the "Delete" button, or the "Copy" button	Edit the pattern matching expression to be used for string matching.
	Notification	Notification ID	Select from list	Select the notification setting assigned to the monitor setting.
		Application	Text	Enter an application name that is assigned as the notification information.

7.15 Logfile Monitor

The Logfile Monitor feature is where file processing is performed on the log file output to a discretionary path by the monitored node, and provides notification if the output log file matches the specified matching conditions. The Logfile Monitor feature belongs to the String monitoring category.

Further, when using Logfile Monitor, the Hinemos Agent must be operating on the target node.

The Logfile Monitor is set up in the Log file[Create/Change] dialog. The Log file[Create/Change] dialog is opened with the following process.

1. Click the "Create" button from the Monitor Setting[List] view.
 2. Select Logfile Monitor (String) from the Monitor Type dialog and click the "Next" button.
- Refer to the set up process in HTTP Monitor (String) in [7.4 HTTP Monitor](#) for the set up process from here.

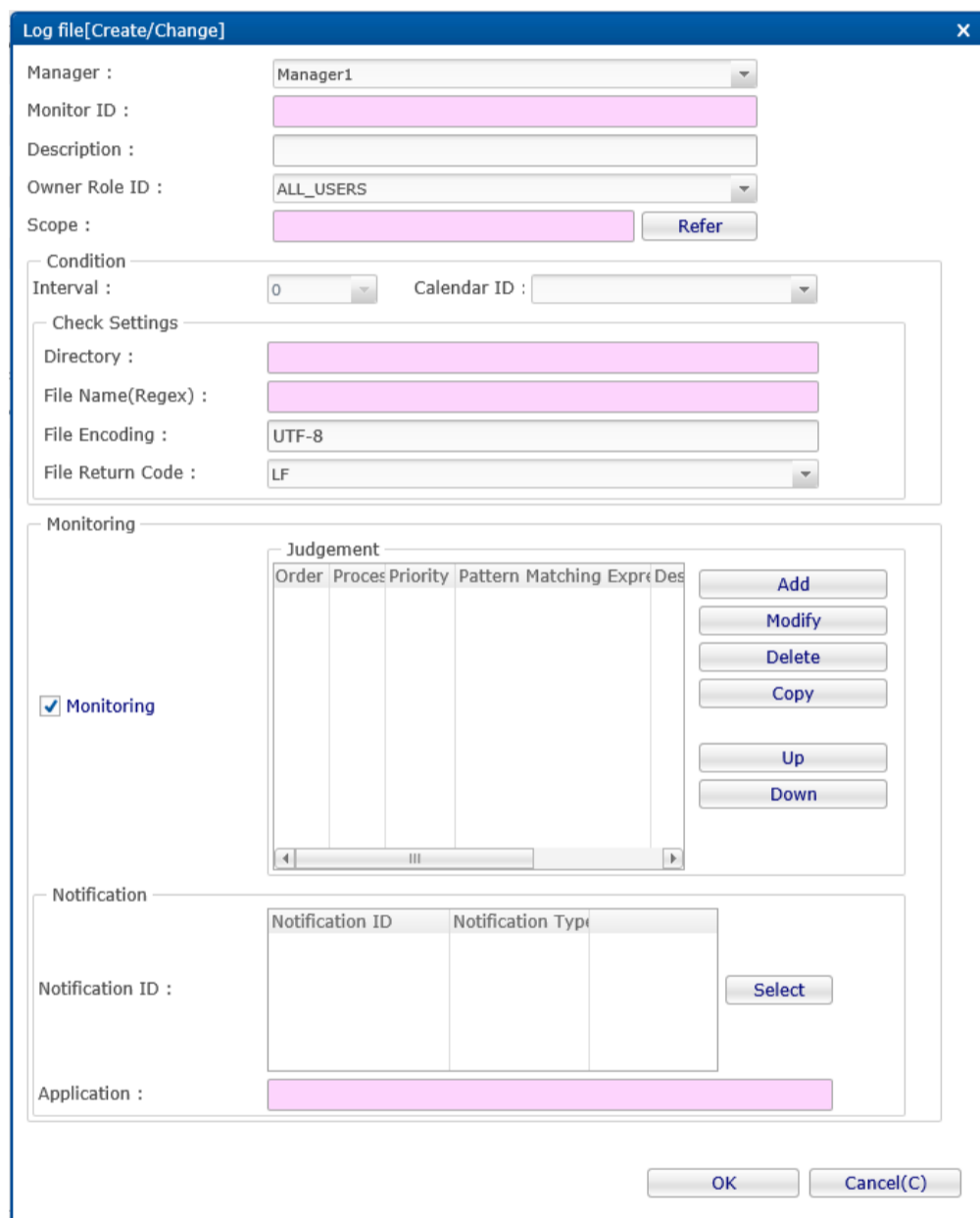


Figure 7-27 Log file [Create/Change] Dialog

Table 7-32 Configuration Items of Logfile Monitor (String)

Configuration item	Input type	Description
Manager	Select from list	Select a Hinemos Manager for which monitoring setting is set.
Monitor ID	Text	Enter an ID to identify the monitor setting which output the notification information.
Description	Text	Enter a description of the monitoring setting.

Owner Role ID		Select from list	Select an Owner Role ID for the monitoring setting.	
Scope		Select from the scope tree	Select a scope or node as object for monitoring.	
Condition	Interval		Select from list This monitor interval indicates the file check interval (*1) on Hinemos Agent, so it cannot be selected.	
	Calendar ID		Select from list Select the calendar setting assigned in the monitor setting. If selected, the monitor setting will operate in the time zone specified in the calendar operation time.	
	Check Settings	Directory	Text	Indicate the file path of the monitored log file.
		Filename (Regular Expression)	Text	Indicate the file name of the monitored log file. Enter the file name using regular expression. (*2)
		File Encoding	Text	Enter encoding of a file to be monitored.
File line feed code		Select from list	Select a line feed code for a log file to be monitored.	
Monitor	Monitor		Checkbox Check to perform monitoring by string matching.	
	Judge	Order	Change the order with the "Up" button or the "Down" button String matching is checked in order from the one with the smallest order number. When the corresponding pattern matching expression is found, follow the settings in "Process if matched" or "Do not process if matched", and notify the monitoring results. (Further matching with a string as the pattern matching expression will not be performed)	
		Edit	Edit string matching with the "Add" button, the "Modify" button, the "Delete" button, or the "Copy" button Edit the pattern matching expression to be used for string matching.	
	Notification	Notification ID	Select from list Select the notification setting assigned to the monitor setting.	
		Application	Text Enter an application name that is assigned as the notification information.	

*1 For more details of file check interval in Logfile Monitor, see Chapter 14, List of Hinemos Manager's Configuration Settings, of the Administrator's Guide.

*2 A regular expression can match multiple log files. However, note that the file number is limited. The default maximum number of monitoring file is 500.

Start position for reading a file

The start position for reading a file depends on whether the file exists at the time the monitor is set to be valid.

- Read from the end of the file

At the time the monitor setting becomes valid after the agent started (all existing settings are load and new settings are registered), if the target file exists, it will be read from the end.

- Read from the beginning of the file

At the time the monitor setting becomes valid after the agent started (all existing settings are load and new settings are registered), if the target file does not exist, it will be created (*) and read from the beginning.

* If the directory in the check setting of monitor configuration does not exist, both the directory and the target file will not be created. (For instance, if a log file is placed in a shared disk storage, all the directories and files will be switched when a failover occurred at the source of log output.)

7.16 Resource Monitor

Resource Monitor performs threshold judgement for the collected values acquired from the monitored node. The collected values are calculated based on the values acquired by polling using SNMP (default) or WBEM (WBEM is only for Linux). The resource monitor feature belongs to the Numeric monitoring category.

- When SNMP (default) is used

SNMP is the default for accumulation of the collected values in a Linux or Windows environment. The SNMP service must be set up on the monitored device. This is net-snmp for Linux and SNMP Service for Windows. Refer to 6.8, "Polling Protocol Settings" in the Administrator's Guide regarding the method for setting up the resource monitor device's SNMP service.

To connect to SNMP for the managed node, the SNMP port number, community name, version, time out and retry count must be set in the Repository registration information. Refer to [3.4 Creating/Modifying/Deleting a Node](#) for details.

- However, if the Windows managed node is SNMP version 1, disk I/O cannot be acquired. This occurs on the Windows due to the constraints of the SNMP Service extension module included in the Hinemos Agent for Windows. There is no other resource information that cannot be obtained because the collection item entered by default is SNMP version 1.

- If using WBEM

Part of the accumulation of collection values in a UNIX environment uses WBEM. Accumulation of the collection values is also possible in a Linux environment by changing the settings.

The CIM server must be set up on the monitored device. This is OpenPegasus for Linux. Refer to 6.8, "Polling Protocol Settings" in the Administrator's Guide regarding the method for setting up the resource monitor device's CIM server.

To connect to WBEM for the managed node, the WBEM user name, user password, port number, protocol, version, time out and retry count must be set in the Repository registration information. Refer to [3.4 Creating/Modifying/Deleting a Node](#) for details.

The Resource Monitor is set up in the Resource[Create/Change] dialog. The Resource[Create/Change] dialog is opened with the following process.

1. Click the "Create" button from the Monitor Setting[List] view.
2. Select Resource Monitor (Numeric) from the Monitor Type dialog and click the "Next" button.
3. The Resource[Create/Change] dialog opens.

Registering Monitoring Setting

Refer to the Process Monitor feature for the Resource Monitor setting process.

Table 7-33 Configuration Items of Resource Monitor

Configuration item	Input type	Description
Manager	Select from list	Select a Hinemos Manager for which monitoring setting is set.
Monitor ID	Text	Enter an ID to identify which notification setting generated the notification.
Description	Text	Enter a description of the monitoring setting.
Owner Role ID	Select from list	Select an Owner Role ID for the monitoring setting.
Scope	Select from the scope tree	Select a scope subject for monitoring.

Condition	Interval		Select from list	Specify the monitoring interval.
	Calendar ID		Select from list	Select the calendar ID for the calendar to set up. Monitoring will be enabled only during the time when configured as working hours on the calendar.
	Check Setting	Monitor Item	Select from list	Specify the collection value of the monitoring subject. When you specify a "Scope" for the monitored target, a list of the collection items that can be acquired in common for nodes included in that scope is displayed.
Collect all including specification data when collecting			<p>If there is a check</p> <p>For items with specifications, if "Collect" is valid, those specification items will also be collected. In this way, it can be virtualized along with the specification items when displayed as a graph by the Performance feature. There is no effect on the operation if this check "Monitor" is valid.</p> <p>If there is no check</p> <p>For items with specifications, if "Collect" is valid, the items will not be collected.</p>	
Monitor	Monitor		Checkbox	When checked, the monitoring setting is enabled. If unchecked, the setting is disabled. The setting will be saved, but the monitoring process will not be executed.
	Judge Information / Warning	Greater than or equal to Acquired value	Text (numeric)	Enter the lower limit for the acquired value. (To judge "More than" the lower limit)
		Less than Acquired value	Text (numeric)	Specify the upper limit value for the acquired value. (To judge "Less than" the upper limit)
Notification	Notification ID		Select from list	Select a notification ID to be used as a notification method.
	Application		Text	Enter an application name to be displayed as the notification information.
Collection	Collection		Checkbox	Check to acquire the value of the monitor target.
	Collected Item Name		Text	Enter the display name for the collected value.
	Collected value units		Text	Enter the units for the collected value.

- Specify the Monitor Items

The "Collection Items" that can be set in the "Monitor Items" differ depending on the scope set for the monitored target. When you set the "Scope" for the monitored target, the items that can be acquired in common for nodes included in that scope are displayed in a list. Refer to the chapter on the Performance feature for a list of collection value items that can be set.

The collection value items that can be set as monitored items largely have the following characteristics.

- Specification items

There are collection value items set as monitored items that have a parent and child relationship. In this case, the item specifications are displayed from parent to child. Specifications will be displayed with "()".

Refer to Table 7-3, List of Collection Values of the Specification Items and the Specification Items Included in the Collection Values for details on the specifications.

Example) "Packet count" specifications

Packet Count (received)

Packet Count (sent)

If "Collect along with Specification Data When Collecting" is checked, collect to match the specification items if "Collect" is valid for items with specifications. In this way, they can be virtualized along with the specification items when displayed as a graph by the Performance feature. There is no effect on the operation if this check "Monitor" is valid.

- Device Specific Items

The collection values for each device (CPU, Memory, Disc, NIC, File system) can be monitored. The device will be displayed with "[]".

Example) The following items are for disk device sda0, sda1.

Device specific disk I/O count [sda0]

Device specific disk I/O count [sda1]

[Devices that can be specified]

Devices that can be specified as monitored items are devices that exist in common in the node included the monitored target's "Scope". For example, the default device naming rules are different for Linux and Windows nodes, therefore, you cannot select device specific items in a scope that includes both.

You can distinguish whether or not a device is common in the "Display Name" for each device in the node properties. Therefore, for example, even if it is a device where the actual device name is different, editing the "Device Name" property enables it to be treated as the same device.

(Example)

```
- Scope S
  Node A
  Node B

- Node A
  NIC information
  Display Name: hoge
  Device Name: eth0

- Node B
  NIC information
  Display Name: hoge
  Device Name: eth2
```

With these settings, if Scope S is set, device specific collection value items can be selected in Resource Monitor for device [hoge].

[All Device Settings]

Only one collection value item can be specified for one setting in Resource Monitor. For scopes that include nodes that have multiple devices and nodes that have different devices, all of the devices can be monitored with one setting by specifying [ALL] devices.

(Example)

```
- Scope S
  Node A
  Node B

- Node A
  File System Information
  Display Name:/
  File System Information
  Display Name: /home

- Node B
  File System Information
  Display Name:/
  File System Information
  Display Name: /home
  File System Information
  Display Name:/var

- Collection Item
  |File System Usage [*ALL*]
```

If Scope S is specified in these type of settings, monitoring of the specified threshold value operates for all of the file system information registered in Node A and Node B Delete devices that do not need monitoring from the node properties.

Changing the Monitor Setting

Refer to the Process Monitor feature for the Resource Monitor setting change process.

1. Select the object to change from the monitor setting list displayed in the Monitor Settings[List] dialog, then click the "Modify" button. The Resource[Create/Change] dialog opens.
2. Edit the setting details, and then click the "OK" button. (Refer to "Adding Monitor Settings" in the previous chapter for the procedures for entering settings).

Deleting Monitor Settings

Select the object to delete from the monitor setting list displayed in the Monitor Settings[List] dialog, then click the "Delete" button.

Changing the Valid/Invalid Setting in the Monitor Settings

You can collectively change the valid/invalid settings in the monitor settings. Select the setting to change from the setting list (can select multiple). Then click the "Valid" ("Invalid") button. A confirmation dialog is displayed. Click the "OK" button.

7.17 JMX Monitor

JMX "Monitor" function monitors the value of the internal status of the Java application obtained through JMX connection. The JMX monitor feature belongs to the Numeric monitoring category.

JMX Monitor is setup in the JMX[Create/Change] dialog. The JMX[Create/Change] dialog is opened with the following process.

1. Click the "Create" button from the Monitor Setting[List] view.
2. Select JMX Monitor (Numeric) from the Monitor Type dialog and click the "Next" button.
3. The JMX[Create/Change] dialog opens.

Refer to the set up process in HTTP Monitor (Numeric) in [7.4 HTTP Monitor](#) for the configuration procedure from here.

Figure 7-28 JMX[Create/Change] Dialog

Table 7-34 Configuration Items of JMX Monitor

Configuration item		Input type	Description	
Manager		Select from list	Select a Hinemos manager for which monitoring setting is set.	
Monitor ID		Text	Enter an ID to identify which notification setting generated by which monitor setting.	
Description		Text	Enter a description of the monitoring setting.	
Owner Role ID		Select from list	Select an Owner Role ID for the monitoring setting.	
Scope		Select from the scope tree	Select a scope subject for monitoring.	
Condition	Interval	Select from list	Specify the monitoring interval.	
	Calendar ID	Select from list	Select the calendar ID for the calendar to set up. Monitoring will be enabled only during the time when configured as working hours on the calendar.	
	Check Settings	Monitor Item	Select from list	Specify the collection value of the monitoring subject.
		Port number	Text (value)	Specify the port number of JMX connection destination.
		User	Text	Specify a user ID used for JMX connection.
Password		Text	Specify a password used for JMX connection.	
Monitor	Monitor	Checkbox	When checked, monitoring is enabled. If unchecked, the setting is disabled, and although the setting is saved, the notification process will not be executed.	
	Judge Information / Warning	Greater than or equal to the acquired value	Text (numeric) Specify the lower limit for the acquired value. (To judge "More than" the lower limit)	
		Less than equal to the acquired value	Text (numeric) Specify the upper limit value for the acquired value. (To judge "Less than" the upper limit)	
	Notification	Notification ID	Select from list	Select from the list the Notification ID that is the notification method used in the notification setting.
Application		Text	Enter an application name to be displayed as the notification information.	
Collection	Collection	Checkbox	Check to acquire the value of the monitor target.	
	Collected Item Name	Text	Enter the display name for the collected value.	
	Collected value units	Text	Enter the units for the collected value.	

8 Performance Feature

8.1 Overview

The Performance feature provides features for displaying data collected through numeric monitoring with graphs and file output (download).

- Collection value graph display

The value acquired by numeric value monitoring is displayed as a graph. The display type can be converted to by node, by collection item or by device. The display period, time, days, weeks, months, etc. can be selected. The graph types can be specified as line graphs or stack area graphs and collected values can be viewed and analyzed from various angles.

- Collection Value Download

The numerical value of the monitoring target is output (downloaded) to a file. The download target can be specified by node and scope unit and the output is in CSV format by node.

8.2 Interface Composition

8.2.1 Default Interface

Interface Composition of the Performance feature is composed of the following views.

- Performance[List] view
- Performance[Graph] view

The Performance[Graph] view is not displayed with the initial screen display configuration. The Monitor ID specified in the Performance[List] view can be displayed by clicking the "Add Graph" button. Refer to the next section for more information.

8.2.2 Performance[List] View

From the Monitor Setting (numeric value monitoring) created in the Performance[List] view, the accumulation status of the value acquisition for the monitor setting where the collection of monitor results is enabled is shown.

The status of collection of each monitor setting is shown in the Run Status.

- Collection Running: "Collection" is enabled for numeric value monitoring.
- Stopped: Other than collecting

* If there is not even one collection value, the oldest date and latest date will be blank.

Manager	Run Status	Monitor ID	Plugin ID	Description	Facility Name	Interval	Oldest Collection Date	Latest Collection Date
Manager1	Collection Running	PING	MON_PNG_N		WEB-Server01	1minute(s)	Apr 9, 2015 2:28:25 PM	Apr 9, 2015 6:34:25 PM

Figure 8-1 Performance[List] View

Table 8-1 Toolbar

Icon	Button name	Description
	Add graph	A graph is displayed of the values collected by the specified monitor setting. The graph displays 1 monitor setting in 1 view.
	Download	The value collected with the monitor setting is output to a file.
	Update	The contents of the table are updated with the latest information.

	Filter	Performs filter setting for the performance list.
--	--------	---

8.2.3 Performance[Graph] View

View the collected values in a graph display. When you specify the monitor setting in the Performance[List] view and click the "Add Graph" button, a new Performance[Graph] view is displayed. The view name is Performance[Monitor ID].

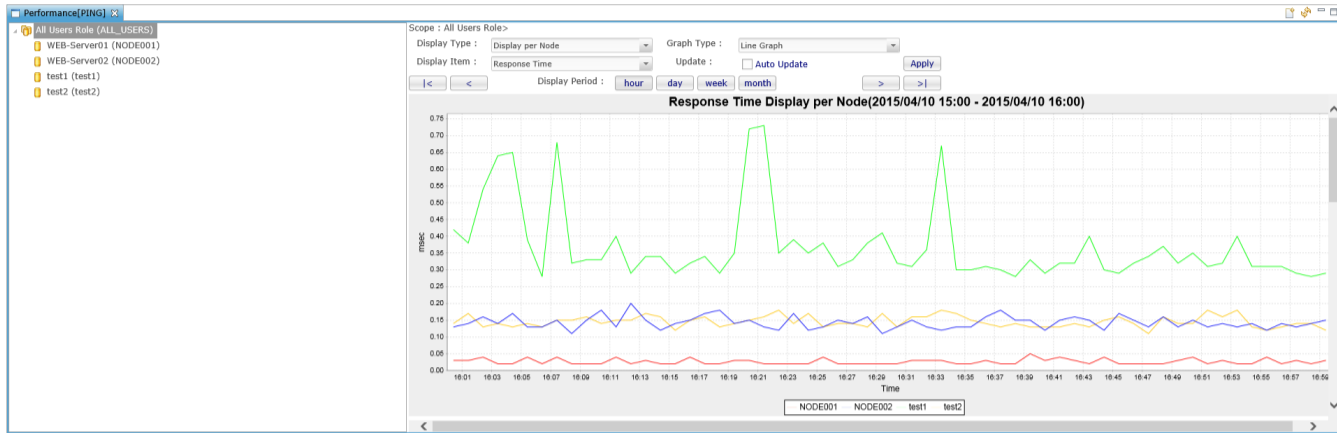


Figure 8-2 Performance[Graph] View

Table 8-2 Toolbar

Icon	Button name	Description
	Save graph	Download a displayed graph of the values collected setting.
	Update	Update the graph.

8.3 Collection Value Download

You can export the collected values in CSV format by following the procedures below.

For the specified Monitor ID, specify the node and scope included under the scope for that monitored target and download. The download file will be a CSV file compressed in a zip format.

1. Select the Monitor ID to export from the table in the Performance[List] view. Then click the "Download" button. The Performance[Export] dialog is displayed.

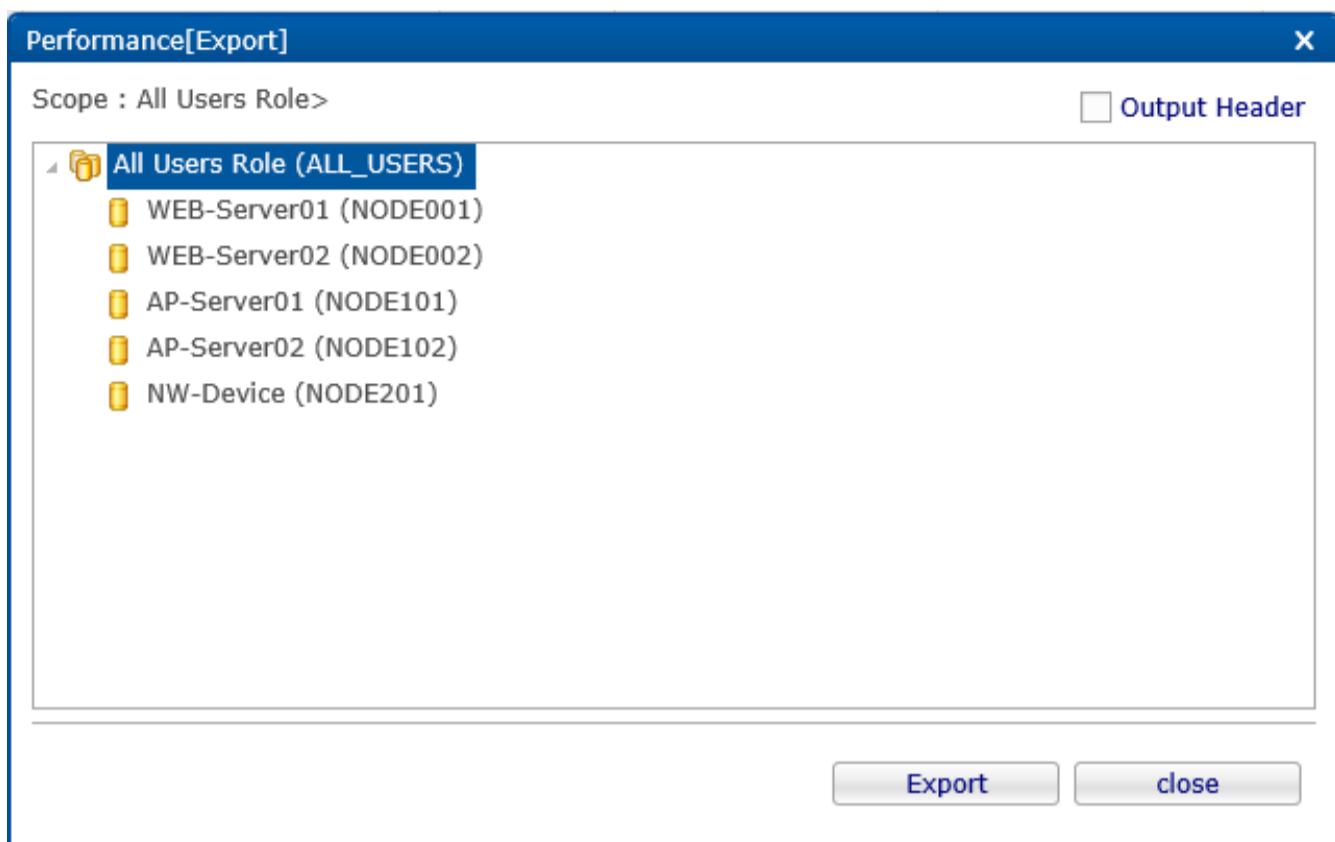


Figure 8-3 Performance[Export] Dialog

2. Select the scope or node targeted for download from the scope tree.
3. To attach a header to the CSV file and output, enter a check in the "Output Header" box. The information below is added to the top of the output file as a header.
 - Monitor ID
 - Facility ID
 - Oldest Date
 - Latest Date
 - Column name
4. Clicking "Export" button displays Save as dialog. Specify a storage location. Downloading will be started. Click the "Close" button to cancel the download. The name of the download file is as follows.
[Monitor ID]_[Facility ID specified in 2]_[Serial number].zip
The serial number is a 14 digit numeric value string starting from the download time (YYYYmmddMMHHSS).
After expanding the zip file, a data file of the collected data in CSV format is created for each node.
In the case of Web Client, downloading is performed by using the download function of the browser.

- Precautions

The download file is created and compressed by the Hinemos Manager server. For the Hinemos Client to download the file, the Hinemos Manager server must have sufficient free space to temporarily write the collected data in the following directory.

The location for temporary files on the Hinemos Manager server:

```
/opt/hinemos/var/export
```

A long time is required to download collection values that accumulated for a long time. In this case, in the "Preferences" dialog displayed by selecting "Client Settings" - "Preferences", change the Performance Download Waiting Time (minutes).

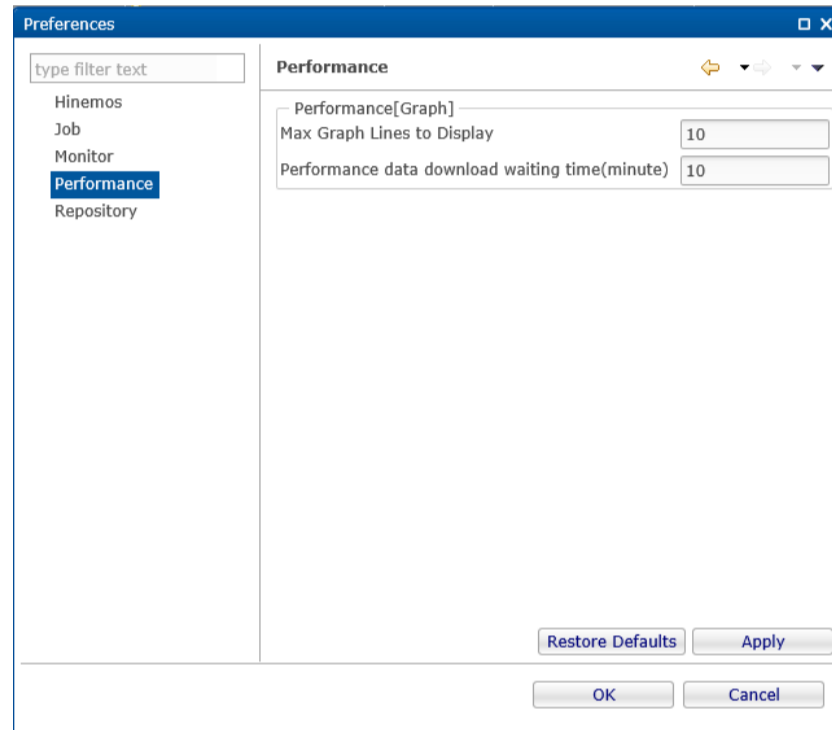


Figure 8-4 Change the Performance Download Waiting Time (minutes)

When you download collection values that have accumulated for a long time, it will place a large burden on the Hinemos Manager server, so be careful.

8.4 Collection Value Graph Display

You can display the collected values as a graph with the following procedures.

1. Select the Monitor ID to display as a graph from the table in the Performance[List] view, and click the "Add Graph" button. The Performance[Graph] view is displayed. The view name is Performance[Monitor ID].



Figure 8-5 Performance[Graph] View Display Example

The facility tree that is the root of the facility ID specified by the monitor settings is displayed in the left pane of the view. This facility tree displays the latest repository information when the "Add Graph" button is clicked.

The graph is displayed in the right plane.

2. Change the scope/node that is the monitor target of the graph

A graph is displayed of collected values for the scope and node specified in the left pane. If a scope is specified, a graph is displayed targeting all nodes under that scope. If a node is specified, a graph is displayed targeting just that node.

The node or scope that is specified in the left pane is reflected in the graph.

3. Changing the Content Displayed in the Graph

In the Performance[Graph] view you can specify and switch the display type, graph type and display items that is the content displayed in the graph. Clicking the "Apply" button will apply the action in the graph.

[Display Type]

You can select from the next 3 types of display items.

- Display per Node The graph is displayed by node.
- Display per Collecting Item There are collection items that have the classification of resource monitor only. You can display these items at the same time.

For example, if you specify CPU usage in the collection item, the CPU usage for each node, and the CPU usage subordinate items. are displayed.

Example) Items displayed by Display per Collecting Item

* Since these are subordinate items, they cannot be selected outside of CPU usage.

- CPU Usage
- CPU Usage(User)
- CPU Usage (System)
- CPU Usage (Nice Process)
- CPU Usage (IO Wait)
- Display per device: Resource monitor and custom monitor can collect the same collection item from multiple devices that have those items. You can display these items for each device at the same time.

For example, if disk I/O count [*ALL*] per disk is specified as a collection item, the items specified as display items are displayed for each disk.

Example) Items displayed by Display per device

- Disk I/O count per device

If scope is specified in the left pane, only "Display per Node" can be selected. If node is specified in the left pane then you can select all of the above display types.

[Graph Type]

- Line Graph: The graph is displayed as a line.
- Stack Area Graph: The graph is displayed as a stacked area.

[Display Item]

The collection items specified in the Monitor Setting are displayed as a list. Only Resource Monitor and Custom Monitor will have lists with multiple items.

4. Changing the Graph Display Period

In the Performance[Graph] view, you can switch the period to display with the buttons. Clicking the button will apply the action in the graph.

Table 8-3 Changing the Display Period

Button name	Description
hour	Makes 1 hour the display period. The graph's horizontal axis will have a range of N:00 - N:59. (*)
day	Makes 1 day the display period. The graph's horizontal axis will have a range of 0:00 - 23:59.
week	Makes one week the display period. The graph's horizontal axis will have a range of Sunday - Saturday.
month	Makes one month the display period. The graph's horizontal axis will have a range of 1st - last day of the month.

* The graph is not displayed if the collection interval is 60 minutes.

If you change the period, normally the time will be the left side of the time axis. If you widen the time period (such as changing from the "day" button to the "week" button), normally the period will change to include the time. If you narrow the time period (such as changing from the "week" button to the "day" button), normally the time will be fixed to the left axis.

5. Moving the Graph Display Period

In the Performance[Graph] view, you can move the period to display with the buttons. Clicking the button will apply the action in the graph.

Table 8-4 Moving the Display Period

Button name	Description
<	The display period moves to display the oldest collection time.
<	Moves to the prior display period. Example) If the graph is displaying 4/25, it would move to 4/24.
>	Moves to the next display period. Example) If the graph is displaying 4/25, it would move to 4/26.
>	The display period moves to display the latest collection time.

6. Auto Update of the Graph Display

If you check "Auto Update", the graph automatically updates the displayed monitor period of the Monitor Setting. If you do not want the graph to automatically update, remove the check from "Auto Update".

7. Precautions

The default Graph Max Display Lines displayable at the same time in the Performance[Graph] view is 10. To change this, in the "Preferences" dialog displayed by selecting "Client Settings" - "Preferences", change the Graph Max Display Lines.

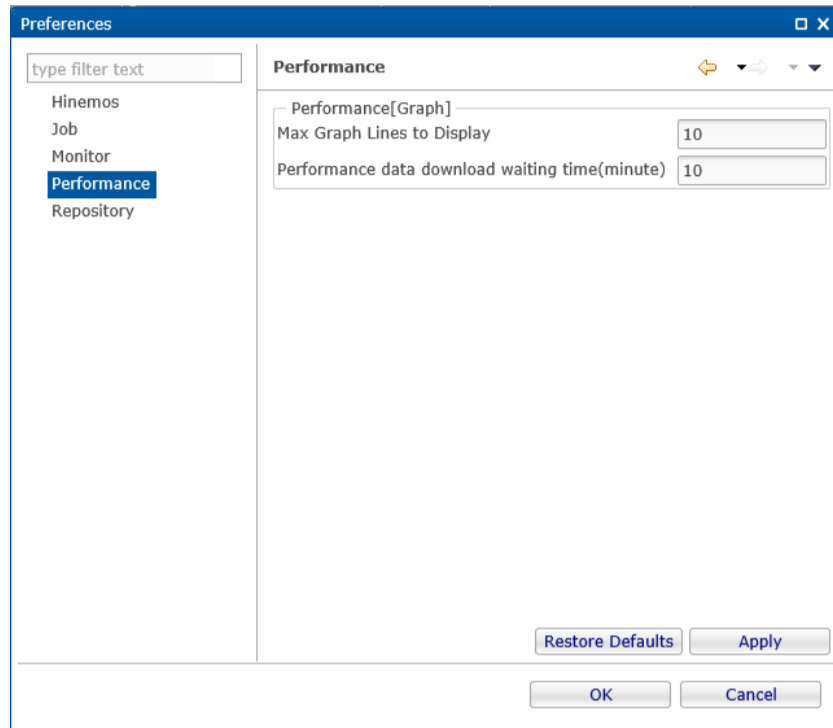


Figure 8-6 Changing the Graph Max Display Lines

However, an extreme amount of memory resources is consumed when the Graph Max Display Lines is large, so be careful when changing this. After changing Graph Max Display Lines, close the Performance[Graph] view and again press the "Add Graph" button to display.

9 Job Feature

9.1 Overview

Job feature executes scheduled processes in order.

Mainly, the following features are provided.

- Job by GUI

You can register/change/delete a job by screen operation.

Also, you can execute operations of the registered job listed below.

- Run a job
- Start a job
- If a job (JobNet) is composed of multiple jobs, start from any job
- Pause a JobNet
- Stop a job
- Resume a paused job

You can confirm the progress of running jobs and completed jobs from the screen.

- Detailed job control

You can perform detailed control of the job execution.

- Run a command with command line arguments
- Specify the Effective User for the job
- Serial execution of a job

You can specify whether or not to run a succeeding job based on the process result value (end status or end value) for the previous job. Multiple jobs can be specified to start when a single job ends.

- Specify the job run condition

A job can be run with Job (End Status), Job (End Value), time, or time after session started as the evaluation criterion for a wait rule. If time and time after session started is specified in the wait rule, the wait rule will be judged to have been met when the specified time has elapsed.

- Specify the Job Run Target

You can specify the job run target node by scope unit.

- You can execute the same job for all nodes in a scope.
- You can run (retry) on nodes that belong to the scope until start is successful for at least one node in the scope.

9.1.1 Starting the Hinemos Agent

The Hinemos Agent must be running on the target node to execute a job.

- Refer to the following manuals for more information.
- For Linux

Chapter 6.2.1, "Hinemos Agent Startup" in the Installation Manual

- For Windows

Chapter 5.2.1, "Hinemos Agent Startup" in the Installation Manual

9.1.2 Composition of a Job

In Hinemos, you can create a hierarchy structure in a job. A job hierarchy is composed of the following elements.

- Job unit

The Job unit is the top element of the job hierarchy. All JobNets and command jobs are configured as the elements of a job unit. When registering a job, it is necessary to first create a job unit.

- JobNet

JobNet is an element that lumps and operates JobNets and command jobs. Along with command jobs, JobNets can also be command combined. Thus, a JobNet is composed of multiple JobNets and command jobs. Multiple JobNets and jobs can be registered.

When a JobNet is executed, the command job (or the JobNet) registered in the lower hierarchy of that JobNet is executed. A JobNet ends when all command jobs (or JobNets) in the lower hierarchy finish execution.

- Command Job

A job is the smallest unit. Set up the command to run on a node.

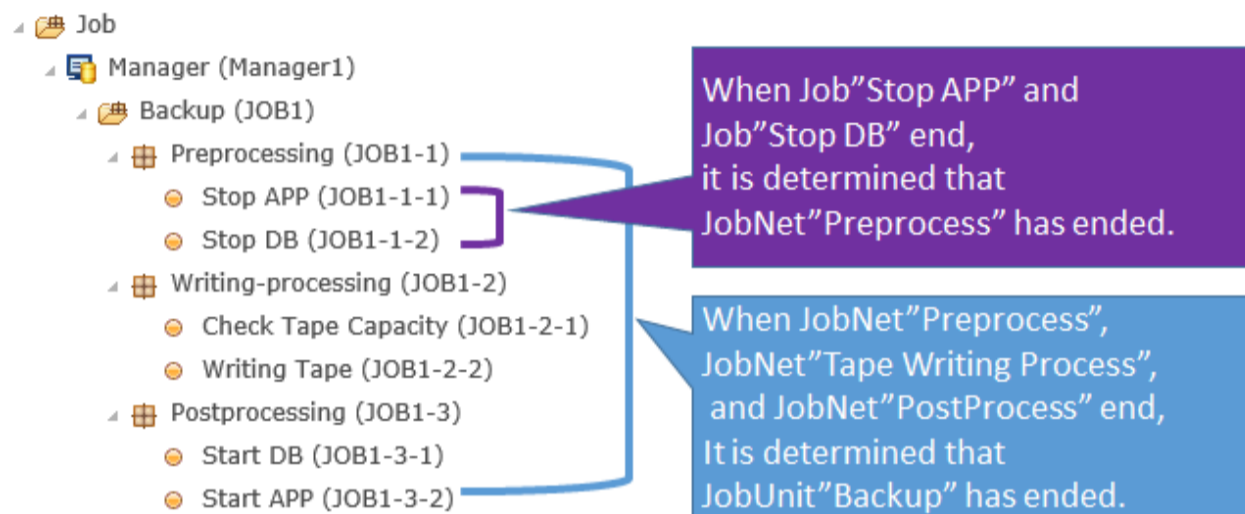


Figure 9-1 Determining Command Job, JobNet, and Job Unit

- Refer Job

Jobs that can be specified in the form of referring to another command job that belongs to the same Job Unit where the definitions are complete.

- File transfer job

This job runs the file transfer. For a file transfer job, configure the file transfer settings instead of the command settings. Similar to the configuration of a command job, you can configure the wait rule and the end value, and control it within the JobNet.

9.1.3 End Status and End Value

All job units, JobNets, and command jobs have an end status and end value when executed. There are three statuses as an end status: "Normal", "Warning", and "Error". The end value is determined by the end status. You can configure which end value applies to which end status.

The end status of a command job and a JobNet (or a job unit) will be different.

The end status of a command job is specified by the range of the return code when a command is executed. (For example, set "Normal" if the return code is 0. Set "Warning" if the return code is 1~9. Otherwise, set "Error"). The return code of the command must be between -2147483648 - +2147483647.

The end status of a JobNet is specified by the range of the end value of all command jobs (or JobNets) included in the JobNet. (However, command jobs that have wait rule specified are excluded from the end value evaluation. Since a command job specified as wait rule has a succeeding command job, the end value of the succeeding command job will be the target for evaluation Even if command jobs specified as wait rule continue, the end value of the last executed command job will be the target for the evaluation).

If the end value of all command jobs included in the JobNet (excluding those specified as wait rule) are within the range specified as "Normal" end status, then the end status is "Normal". If the end status of all command jobs are within the range specified as "Warning", then the end status is "Warning". If the end status of a command job does not meet the conditions of both "Normal" and "Warning", it is an "Error".

Example) Explanation of the end status using the example of JobNet "Preprocess" (JOB1-1) below.

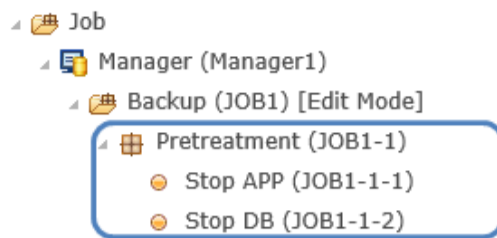


Figure 9-2 JobNet "Preprocess" (JOB1-1)

You must make the following settings, for example, when it is set as normal end in JobNet "Preprocess" (JOB1-1) when both Job"Stop APP" (JOB1-1-1) and Job"Stop DB" (JOB1-1-2) end normally.

- Configuring the End Value of JobNet "Preprocess" (JOB1-1):

	End Value	Range of End Value	
Normal :	<input type="text" value="0"/>	<input type="text" value="0"/>	- <input type="text" value="0"/>
Warning :	<input type="text" value="1"/>	<input type="text" value="2"/>	- <input type="text" value="10"/>
Error :	<input type="text" value="-1"/>	(Other than Normal or Warning)	

Figure 9-3 End Value of JobNet "Preprocess"

- Configuring the end value of Command Job"Stop APP" (JOB1-1-1):

	End Value	Range of End Value	
Normal :	<input type="text" value="0"/>	<input type="text" value="0"/>	- <input type="text" value="1"/>
Warning :	<input type="text" value="2"/>	<input type="text" value="2"/>	- <input type="text" value="98"/>
Error :	<input type="text" value="-1"/>	(Other than Normal or Warning)	

Figure 9-4 End Value of Command Job"Stop APP"

- Configuring the end value of Command Job"Stop DB" (JOB1-1-2):

	End Value	Range of End Value	
Normal :	<input type="text" value="1"/>	<input type="text" value="0"/>	- <input type="text" value="1"/>
Warning :	<input type="text" value="3"/>	<input type="text" value="2"/>	- <input type="text" value="98"/>
Error :	<input type="text" value="-1"/>	(Other than Normal or Warning)	

Figure 9-5 End Value of Command Job"Stop DB"

If the return code of the command is within the range 0-1, the command job has ended successfully. The end value of Command Job"Stop APP" is set to 0. Also, if the return code of the command is within the range 0-1, the command job has ended successfully. The end value of Command Job"Stop DB" is set to 1. Therefore, if Job"Stop APP" (end value 0) and Job"Stop DB" (end value 1) ended successfully, "JobNet[Preprocess]" is evaluated as a successful end because it is within the range 0~1 (set "Normal"). The end value of "JobNet[Preprocess]" itself is 0, with the end value set as success.

Next, consider the case when the result of Command Job"Stop APP" is "Warning" (if the return code of the command is 2-98), and Command Job"Stop DB" has successfully ended. In this case, the end value of Command Job"Stop APP" is 2, and the end value of Command Job"Stop DB" is 1. Since the end value of Command Job"Stop APP" (2) is not included within the range of the end value determined as "Normal" in "JobNet[Preprocess]", it is "Warning". Also, since the end value of Command Job"Stop DB" (1) is included within the range of the end value determined as "Normal" in "JobNet[Preprocess]", it is "Normal". In this case, the end value of "JobNet[Preprocess]" itself is 1, and the end value configured as "Warning".

9.1.4 Running a JobNet (job unit)

When a JobNet (or a job unit) is run, out of all command jobs/job units included in the JobNet the one without a configured wait rule is executed first (if there are multiple, they will be executed concurrently). A JobNet or job unit with a configured wait rule starts running when the condition is fulfilled.

When all command jobs/JobNets included in the JobNet are complete, the JobNet itself is complete.

9.1.5 Notification Feature of the Job Execution Time and End Time

During the start and end of a command job (or a JobNet or a job unit) run, you can notify the status using the notification feature. You can set the execution priority ("Info", "Warning", "Critical", "Unknown") for the start time or end time ("Normal", "Warning", "End") for a command job (or a JobNet or a job unit) in notification.

- You can set a job notification to a command job (or a JobNet or a job unit). However, this setting is not recommended. Apply a "Wait Rule" in the command job configuration to use the end value or end status of a job as a trigger to run another job. Refer to section [9.4.2 Creating/Modifying a JobNet](#) for the Wait Rule settings.

9.1.6 Job Variable

You can configure a job variable for each job unit.

By describing the command configuration (start command, stop command) of a command job as "#[job variable name]", you can replace these strings and run the job at the job run time.

The following two types for job variables exist.

- System job variable

Furthermore, the system job variable is of two types; system job variable (job) which is replaced per job and system job variable (node) which is replaced per node. For the variables and values available for system job variable (node), refer to Table 7-30 List of Node Properties. Note that the property of #[<NODE VARIABLES>] in Table 7-30 List of Node Properties cannot be used as system job variable (node).

Table 9-1 List of System Job Variables (Job)

Variable name	Trigger	Value transferred to the command job
FACILITY_ID	Notification of monitoring management feature	"Facility ID" of a scope or a node that generated the notification
PLUGIN_ID	Notification of monitoring management feature	"Plugin ID" of the monitoring feature
MONITOR_ID	Notification of monitoring management feature	"Monitor ID"
MESSAGE_ID	Notification of monitoring management feature	"Message ID"
APPLICATION	Notification of monitoring management feature	"Application"
PRIORITY	Notification of monitoring management feature	"Priority"(numeric)(Critical:0 Unknown:1 Warning:2 Info:3)
MESSAGE	Notification of monitoring management feature	"Message"
ORG_MESSAGE	Notification of monitoring management feature	"Original Messages"

DIRECTORY	Job execution	Directory Name to check when a job runs when there is a Job[FileCheck]
FILENAME	Job execution	File Name to check when a job runs when there is a Job[FileCheck]
START_DATE	Job execution	"Time" when a job is executed (Example:2009/04/13 18:30)
SESSION_ID	Job execution	"Session ID" during job execution (Example:20090413183000-000)
TRIGGER_TYPE	Job execution	"Trigger Type" of a job (Example:Schedule)
TRIGGER_INFO	Job execution	"Trigger Type" of a job (details are as follows) JobKick ID when the job's JobKick Type is Schedule/FileCheck. (Example:schedule001) If the trigger type is a manual execution, it is the "User Name" (Example:hinemos) If the trigger type is an interlocking monitoring, it is the "Monitor ID" (Example:PING001)

- User job variable

You can configure any string as a user job variable. The job unit is a unit in a valid range. When a user job variable is configured to a job unit, jobs assigned below the job unit can use the configured user job variable.

9.2 Interface Composition

9.2.1 Default Interface (Job Settings)

Job Setting perspective can be used to set, change, delete, and manually execute, and make setting related to job execution trigger.

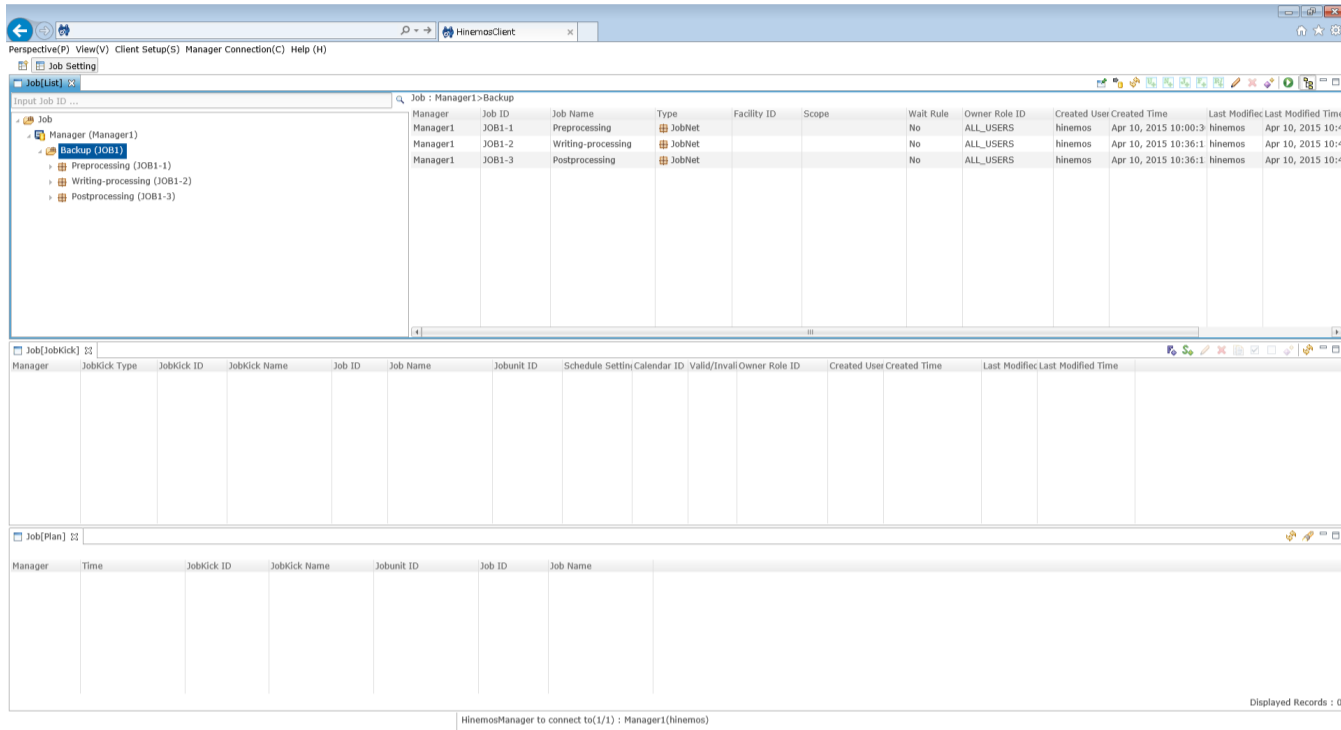


Figure 9-6 Default Interface of Job Settings

9.2.2 Job Setting[List] View

A list of Command Jobs, Refer Jobs, File Transfer Jobs, JobNets, and JobUnits is shown. In this view, you can create, change, delete, and manually run Command Jobs, Refer Jobs, File Transfer Jobs, JobNets, and JobUnits.

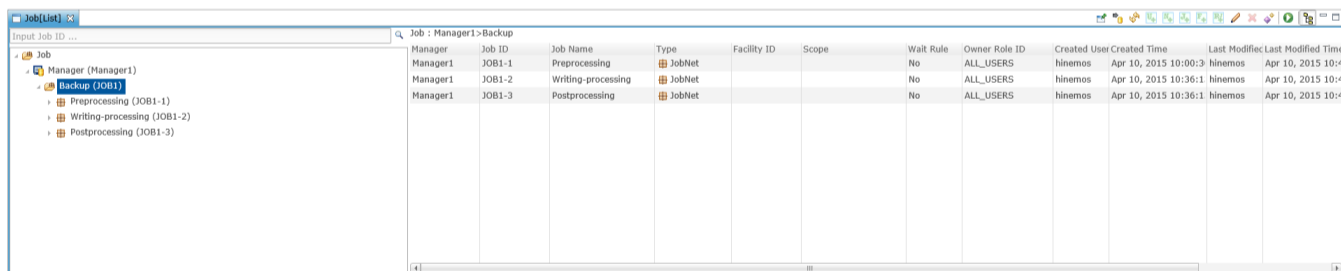


Figure 9-7 Job Setting[List] View

Table 9-2 Job Tree Icons

Icon	Description
	Display job units.
	Display JobNets.
	Display command jobs.
	Display file transfer jobs.

Table 9-3 Toolbar

Icon	Button name	Description
------	-------------	-------------

	Edit Mode	Status (Edit Mode) where the job tree information can be edited as JobUnit units.
	Register	Register information to the manager for the job tree edited on the client.
	Update	Clear information for the job tree edited on the client and reacquire it from the Manager.
	Create JobUnit	Create a new JobUnit.
	Create JobNet	Create a new JobNet.
	Create Command Job	Create a new Command Job.
	Create Refer Job	Create a new Refer Job.
	Create File-transfer Job	Create a new file transfer job.
	Change	Change the element (job unit, JobNet, command job, file transfer job) selected in the job tree.
	Delete	Delete the element (job unit, JobNet, command job, file transfer job) selected in the job tree.
	Object Privilege Settings	Configure object privilege for the JobUnit.
	Run	Immediately run the element (job unit, JobNet, command job, file transfer job) selected in the job tree.
	Show Scope Tree Pain	Select display/nondisplay of the job tree.

9.2.3 Job Setting[JobKick] View

Displays a list of the Job Triggers Also, you can create, modify, and delete Triggers. You can select Schedule Run and FileCheck (create, delete, and modify files to check) as Triggers. Refer to the section, 9.7.3 Running a Job Schedule for more details.

Manager	Jobkick Type	Jobkick ID	Jobkick Name	Job ID	Job Name	Jobunit ID	Schedule Setting/FileCheck Se	Calendar ID	Valid/Invali Owner	Role ID	Created User	Created Time	Last Modifiec	Last Modified Time
Manager1	FileCheck	FileCheck01	Error-FileCheck	JOB1-1	Preprocessing	JOB1	.*		Valid	ALL_USERS	hinemos	Apr 13, 2015 1:39:59	hinemos	Apr 13, 2015 1:40:13
Manager1	Schedule	Schedule01	Daily-Backup01	JOB1	Backup	JOB1	00min :start time60min :exec		Valid	ALL_USERS	hinemos	Apr 13, 2015 1:43:01	hinemos	Apr 13, 2015 1:43:01

Figure 9-8 Job Setting[JobKick] view

Table 9-4 Toolbar

Icon	Button name	Description
	Create FileCheck	Create the FileCheck Setting for the Job.
	Create Schedule	Create the Job Schedule Setting.
	Change	Change a Job Trigger.
	Delete	Delete a Job Trigger.
	Copy	Copy a Job Trigger.
	Valid	Enable the Job Trigger.
	Invalid	Disable the Job Trigger.
	Object Privilege Settings	Configure object privilege for the Job Trigger.
	Update	Update the Job Trigger.

9.2.4 Job Setting[Plan] View

Displays a list of the job schedules planned for execution based on the job schedule specifications created in the Job Setting[JobKick] view.

The default status for the Job Setting[Plan] view shows the most recent 100 run plans.

Manager	Time	JobKick ID	JobKick Name	Jobunit ID	Job ID	Job Name
Manager1	2015/04/13 14:00:00	Schedule01	Daily-Backup01	JOB1	JOB1	Backup
Manager1	2015/04/13 15:00:00	Schedule01	Daily-Backup01	JOB1	JOB1	Backup
Manager1	2015/04/13 16:00:00	Schedule01	Daily-Backup01	JOB1	JOB1	Backup
Manager1	2015/04/13 17:00:00	Schedule01	Daily-Backup01	JOB1	JOB1	Backup
Manager1	2015/04/13 18:00:00	Schedule01	Daily-Backup01	JOB1	JOB1	Backup
Manager1	2015/04/13 19:00:00	Schedule01	Daily-Backup01	JOB1	JOB1	Backup
Manager1	2015/04/13 20:00:00	Schedule01	Daily-Backup01	JOB1	JOB1	Backup
Manager1	2015/04/13 21:00:00	Schedule01	Daily-Backup01	JOB1	JOB1	Backup
Manager1	2015/04/13 22:00:00	Schedule01	Daily-Backup01	JOB1	JOB1	Backup

Figure 9-9 Job Setting[Plan] view

Table 9-5 Toolbar

Icon	Button name	Description
	Update	Updates the job schedule plan to the most recent.
	Filter	Filters the job schedule plans.

9.2.5 Default Interface (Job History)

In the Job History perspective, you can confirm a history of the Jobs that have run, and resume or stop jobs.

The screenshot shows the Job History perspective with three main data tables:

- Job[History] Table:**

Manager	Run Status	End Status	End Val	Session ID	Job ID	Job Name	Jobunit ID	Type	Facility ID	Scope	Owner Role ID	Scheduled Start Time	Start/Rerun Time	End/Suspend Time	Session Tin	Trigger Type	Trigger
- Job[Job Detail] Table:**

Run Status	End Status	End Val	Job ID	Job Name	Jobunit ID	Type	Facility ID	Scope	Time	Start/Rerun Time	End/Suspend Time	Session Tin
- Job[Node Detail] / Job[File-transfer Job] Table:**

Run Status	Return	Facility ID	Facility Name	Start/Rerun Time	End/Suspend Time	Session Tin	Message

Figure 9-10 Default Interface of Job History

9.2.6 Job History[List] View

A history of the Command Jobs that have run, Refer Jobs, File Transfer Jobs, JobNets, and JobUnits is shown. In this view, you can display filtered histories, and resume or stop jobs displayed in the history. Refer to the section, 9.8 List of Job Execution History for more details.

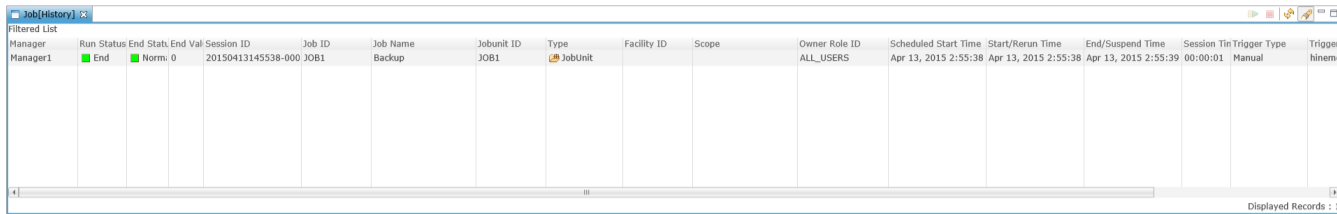


Figure 9-11 Job History[List] View

Table 9-6 Toolbar

Icon	Button name	Description
	Start	Start a job.
	Stop	Stop a job.
	Update	Update job histories.
	Filter	Filter the list of job histories.

9.2.7 Job History[Job Detail] View

The Job History[List] view displays the job hierarchy and the execution status of the selected Command Jobs, Refer Jobs, File Transfer Jobs, JobNets and JobUnits. Also, you can resume or stop command jobs, JobNets, and job units in this view. Refer to the section, [9.8 List of Job Execution History](#) for more details.

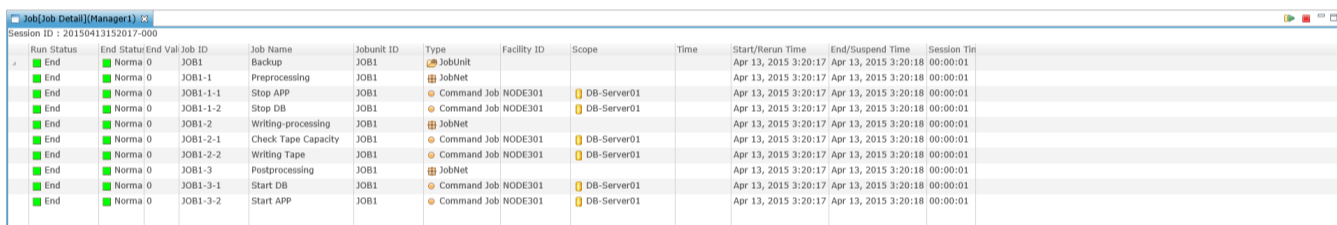


Figure 9-12 Job History[Job Detail] View

Table 9-7 Toolbar

Icon	Button name	Description
	Start	Start a job.
	Stop	Stop a job.

9.2.8 Job History[Node Details] View



Job History[Node Details] view displays the selected nodes that are running jobs and the execution status of each job. In this view, you can resume or stop jobs per node. Refer to the section, [9.8 List of Job Execution History](#) for more details.



Figure 9-13 Job History[Node Details] View

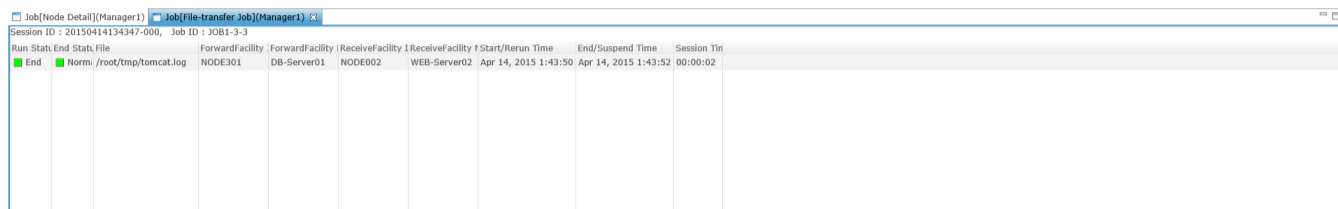
Table 9-8 Toolbar

Icon	Button name	Description

	Start	Start a job.
	Stop	Stop a job.

9.2.9 Job History[File-transfer Job] View

Job[File-transfer Job] view displays the run history of the file transfer job. Refer to the section, [9.12 File Transfer Job](#) for more details on the file transfer job.



Run Stat	End Stat	File	ForwardFacility	ForwardFacility	ReceiveFacility	ReceiveFacility	Start/Run Time	End/Suspend Time	Session Tin
End	Norm	/root/tmp/tomcat.log	NODE301	DB-Server01	NODE002	WEB-Server02	Apr 14, 2015 1:43:50	Apr 14, 2015 1:43:52	00:00:02

Figure 9-14 Job History[File-transfer Job] View

9.3 Prerequisites for Using this Feature

The following settings must be made beforehand to use the Job feature.

- The node targeted for job execution must be registered in repository feature, and must be assigned to one of the scopes
- The notification method must be configured and registered in the notification configuration of the common features when generating a notification to the Monitor Setting feature during job execution.
- The calendar must be registered in the calendar configuration of the common features beforehand when configuring the valid period of the job execution based on the calendar configuration.

9.4 Registering a job

9.4.1 Creating/Modifying a Job Unit

Edit Mode

You must switch to Edit Mode to Edit (create, modify or delete) JobUnits or Command Jobs or JobNets in the subordinate hierarchy. You can only inspect the settings of JobUnits that haven't switched to Edit Mode.

Switching to Edit Mode is done in JobUnit units. "[Edit Mode]" is shown at the end of the Job Name in the job tree in the Job[List] view for JobUnits that are in Edit Mode.

Switching to and releasing Edit Mode

1. Select the JobNet to switch from the job tree in the Job[List] view. Click the "Edit Mode" button at the top right of the Job[List] view.
2. Select the JobUnit for Edit Mode and click the "Edit Mode" button once again to release Edit Mode.

When you release Edit Mode, the status of the JobUnit returns to the status prior to switching to Edit Mode.

Further, switching to and releasing Edit Mode is not just for JobUnits; you can also select command jobs, etc. in the subordinate hierarchy and perform it as well. Even in that case, switching to Edit Mode is done by JobUnit units.

Important Points about Edit Mode

- If a different user wants to switch a JobUnit to Edit Mode, only one user can switch the JobUnit to Edit Mode. If another user wants to switch a JobUnit to Edit Mode and they click on the "Edit Mode" button, the following message will be displayed.

An Edit Lock on the JobUnit "(JobUnit ID)" has been obtained by another user ((User Name), (IP Address of the connecting)). Do you want to obtain an Edit Lock?

In that case, when you click the "Yes" button, the Edit Mode for the JobUnit that had been switched to Edit Mode by the other user will change from the other user to yourself.

- If the Job's settings differ from the manager
To switch the Job to Edit Mode, the settings for the JobUnit maintained by the Hinemos Client and the settings for the JobUnit registered with the Hinemos Manager must match.
If another user has changed the JobUnit settings and the setting information maintained by the Hinemos Client is different than that registered with the Hinemos Manager, the following message is displayed when the "Edit Mode" button is clicked.

The job tree is not the latest (Last Change Time: (Last change time for the JobUnit)).

In this case, to edit the JobUnit, you must click on the "Update" button at the top right of the Job[List] view and obtain the latest JobUnit setting information.

Creating a Job Unit

1. Select "(Manager Name)" under the "Job" located at the top of the job tree in the Job[List] view. While you are logging in two or more managers, select the manager name of Hinemos manager for which a job unit is to be created. Refer to [2.6 Multi-Manager Connection](#) for more information on the multiple manager connection.

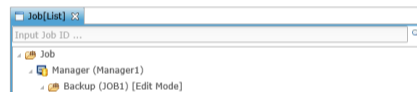
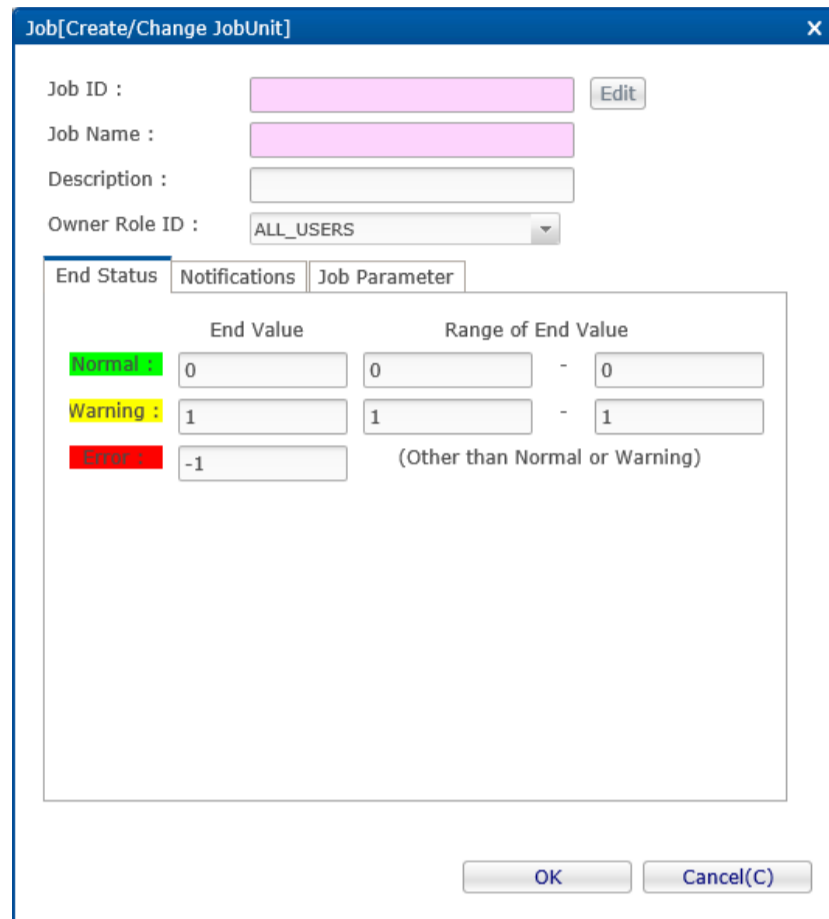


Figure 9-15 Selecting a Job Unit From the Job Tree

2. Click the "Create JobUnit" button in the Job[List] view. The Job[Create/Change JobUnit] dialog is displayed.
3. Configure "Job ID", "Job Name", and "Description". Always be sure to enter the "Job ID" and "Job Name", since both are mandatory fields. The "Job ID" of the job unit must be unique on the system.

4. To change the End Status from the default setting, select the "End Status" tab and make the change. The range of the end values for "Normal" and "Warning" cannot overlap (Refer to the section, [9.1.3 End Status and End Value](#) for more details relating to the end status and end value).



	End Value	Range of End Value	
Normal :	0	0	- 0
Warning :	1	1	- 1
Error :	-1	(Other than Normal or Warning)	

Figure 9-16 Job[Create/Change JobUnit] Dialog (End Status tab)

5. Configure "Notifications". Select the "Notifications" tab. Configure the following items. Note that notification is not made if a blank column is specified for the priority of the notification.
- Start:
Configure the notification that is generated during the start of a job unit.
 - Normal:
Configure the notification that is generated when the end status of a job unit is "Normal".
 - Warning:
Configure the notification that is generated when the end status of a job unit is "Warning".
 - Error:
Configure the notification that is generated when the end status of a job unit is "Error".

- Notification ID:

Select from the list the Notification ID that is the notification method used in the notification setting. (Refer to the section 6.3 Notification Feature regarding notification settings) When you click the "Select" button on the right, the Notification[List] dialog is displayed. Select the notification method.

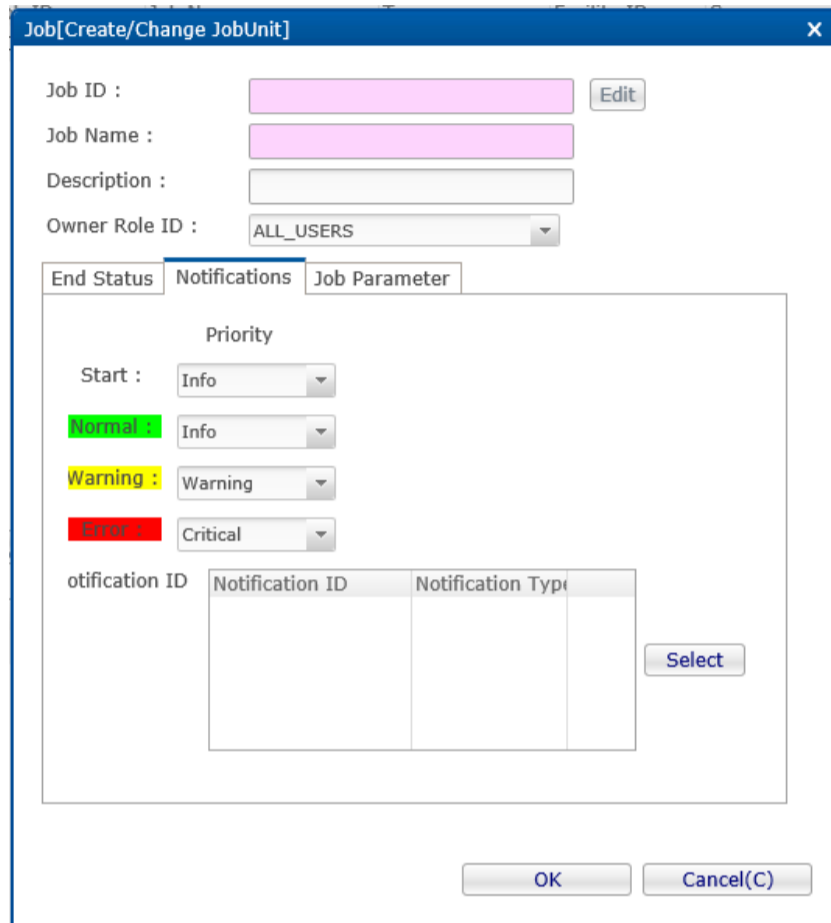


Figure 9-17 Job[Create/Change JobUnit] Dialog (Notifications tab)

6. Setup Job Parameter. Select the "Job Parameter" tab.

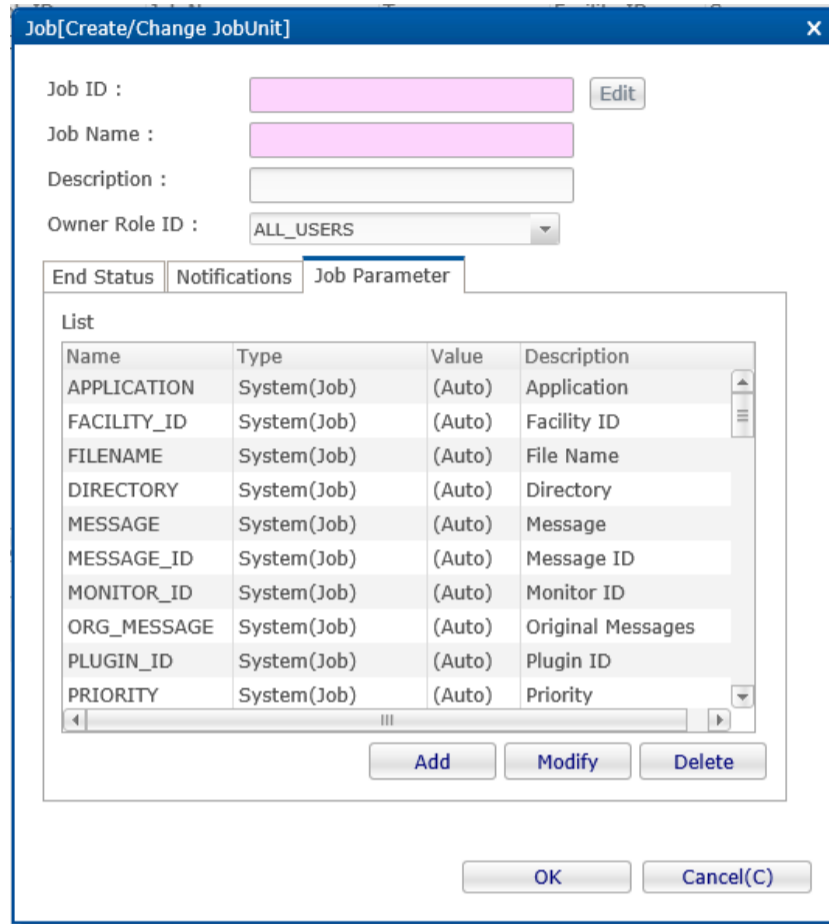


Figure 9-18 Job[Create/Change JobUnit] Dialog (Job Parameter tab)

Configure by the following procedures.

- Adding a job variable

When the "Add" button is clicked, the Job Parameter dialog is displayed.

Select either the system job variable or the user job variable as "Type", and then configure the following.

System job variable (Job)

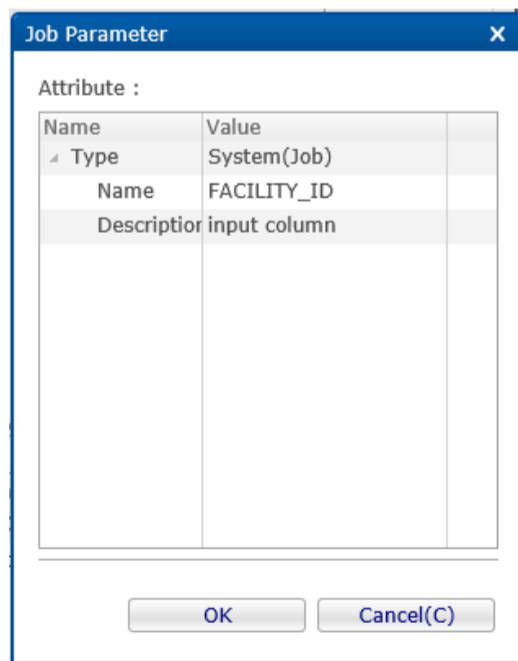


Figure 9-19 Job Count Dialog (When System (Job) is Selected as the Type)

- Name:
Select the system job variable (Job) to add from the list.
- Description:
Enter a description of the job variable.

User job variable (Node)

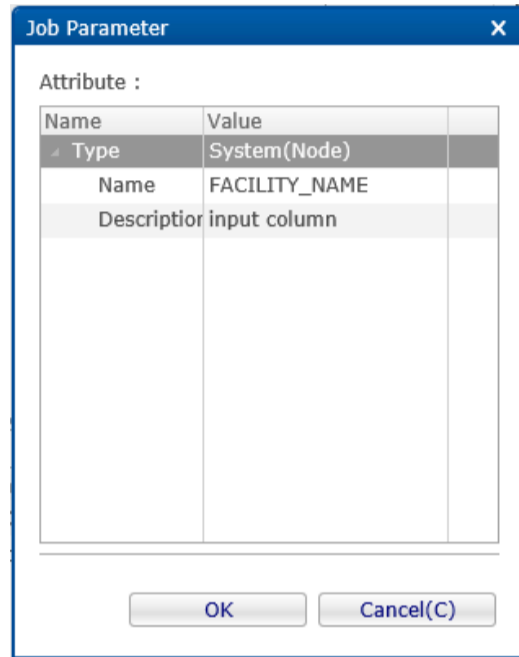


Figure 9-20 Job Count Dialog (When Node is Selected as the Type)

- Name:
Select the system job variable (Node) to add from the list.
- Description:
Enter a description of the job variable.

User job variable

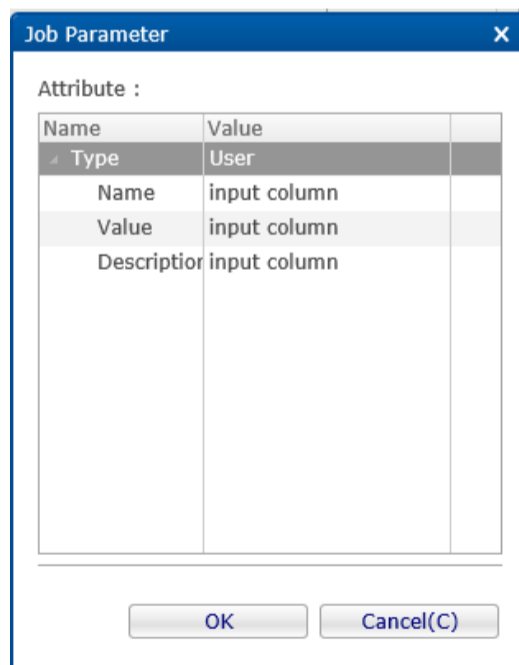


Figure 9-21 Job Count Dialog (When User is Selected as the Type)

- Name:
Enter a variable name. User job variable can be referred by #[variable name] at the command field of a job.
Only the characters "_" or "-" can be used as the text for the variable name.
- Value:
Enter a value assigned to the job variable.
- Description:
Enter a description of the job variable.
Click the "OK" button.

- Modifying a job variable

Select the job variable to change from the list, and then click the "Modify" button. The Job Parameter dialog is displayed. Change the contents, and then click the "OK" button.

- Deleting a job variable

Select the job variable to change from the list, and then click the "Delete" button.

7. Click the "OK" button. The Job[Create/Change JobNet] dialog closes. The newly created job unit is added to the job tree in the Job[List] view.

Note) The operations described above are made in the client. Information of the editing job tree is not reflected in the manager until the "Register" button is clicked and it has processed.

Modifying a Job Unit

- To change the JobUnit, the JobUnit must be in Edit Mode.

1. Select the job unit to change from the job tree in the Job[List] view.
2. Click on the "Modify" button in the Job[List] view. The Job[Create/Change JobUnit] dialog is displayed.
3. Modify the parameter of the job unit

In the case of a job unit not in the edit mode, Job [Create/Change Job Unit] dialog is opened as a read-only dialog. In this case, the job unit can be set in the edit mode by clicking the "Edit" button on the right of Job ID.

Copy a Job Unit

1. From the job tree in the Job[List] view, right click on the JobUnit to be copied and then click "Copy".
2. From the job tree in the Job[List] view, right click on the copy destination and then click "Paste".
3. From the job tree in the Job[List] view, select the JobUnit that was copied.
4. Click on the "Modify" button in the Job[List] view. The Job[Create/Change JobUnit] dialog is displayed.
5. Change the temporarily defined Job ID (Copy_Of_xxx) as necessary.

Even when you are logging in two or more managers, the job unit cannot be copied to a different manager.

9.4.2 Creating/Modifying a JobNet

Creating a JobNet

- To create a JobNet, the JobUnit that is the destination for creating the JobNet must be in Edit Mode.

1. From the job tree in the Job[List] view, select the JobUnit or JobNet that is to be the source for creating the JobNet.

2. Click on the "Create JobNet" button in the Job[List] view. The Job[Create/Change JobNet] dialog is displayed.

Figure 9-22 Job[Create/Change JobNet] Dialog

3. Configure "Job ID", "Job Name", and "Description". Always be sure to enter the "Job ID" and "Job Name", since both are mandatory fields. "Job ID" of the job unit must be unique within the same job unit.
4. Enter "Wait Rule". Select the "Wait Rule" tab. First, configure the "Object".

- Add a wait rule

You can specify the status when the preceding job ended (end status or end value), time, and time after session started as the wait rule. For example, by specifying the End condition of the preceding job as a wait rule, you can make a setting that executes the JobNet when the preceding job Ends with an error.

Click on the "Add" button located at the bottom of "Object List". The Wait Rule dialog is displayed.

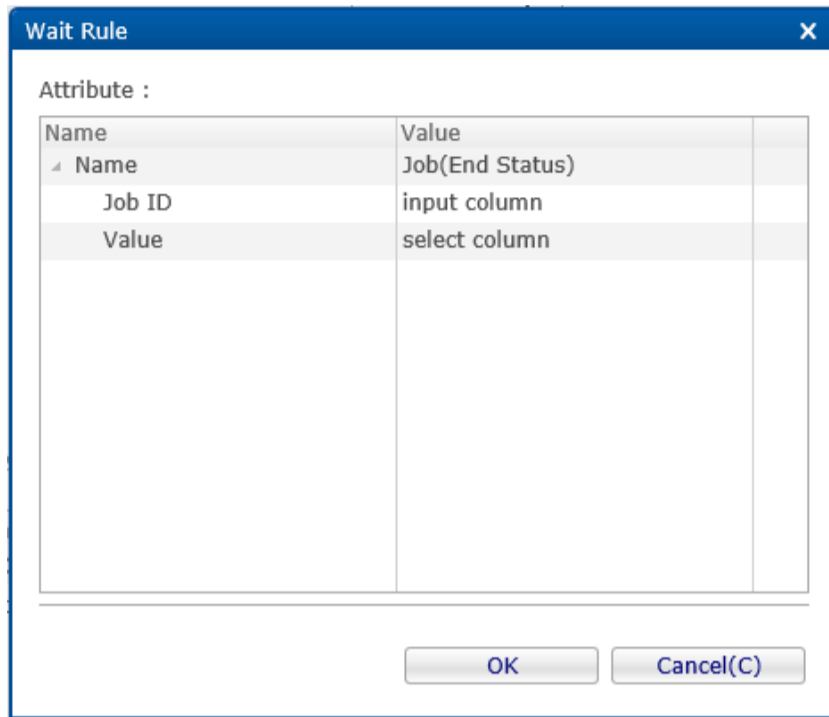


Figure 9-23 Wait Rule Dialog

When making the end status of the preceding job a wait rule:

- Click on the record value for the table property "Name". From the combo box, select "Job(End Status)".
- Configure the preceding job. a. Click on the record value for the table property "Name-Job ID". Then click on the button that appears on the far right of the field. The Select Job dialog is displayed. On the Select Job dialog, a desired job can be searched by using an ID. Refer to 9.5 Searching a job for details.

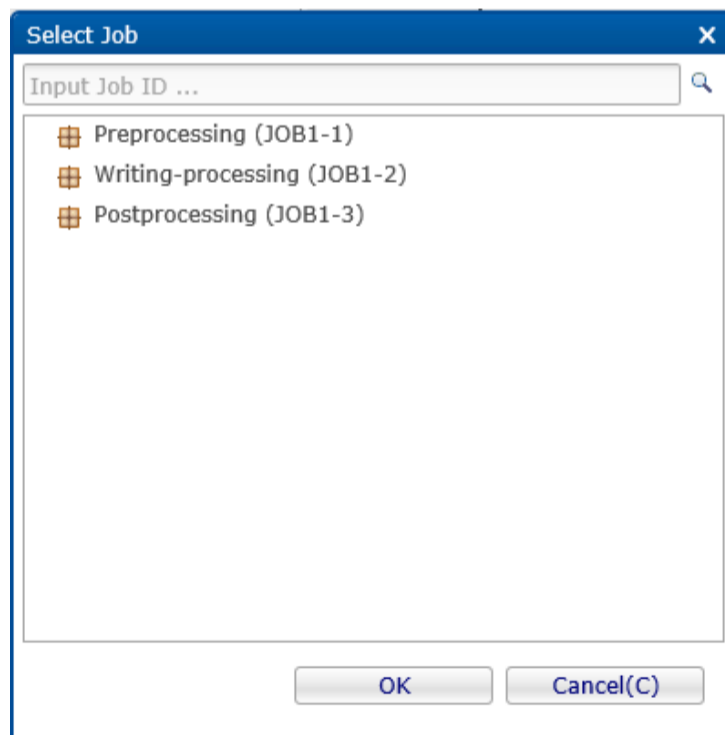


Figure 9-24 Select Job Dialog

- Select the preceding job from the scope tree, and then click the "OK" button. The Select Job dialog closes. "Job ID" will be added to the Wait Rule dialog.

- d. Select the End Status (Normal, Warning or Error). Click the value field of the "Value". A Combo box is displayed. Select the End Status (Normal, Warning or Error).

You can specify the final status as * (asterisk), in addition to Normal, Warning or Error. If set as *, regardless of the end status (Normal, Warning or Error) of the prior job specified as a Wait Rule, the Wait Rule will be judged to be met when the prior job status is "End".

An arbitrary end status can be set in the Wait Rule.

- e. Click the "OK" button. The Wait Rule dialog closes. The configured wait rule will be added to the "Object List" table.

When making the end value of the preceding job a wait rule:

- a. Click on the record value for the table property "Name". From the combo box, select "Job(End Value)".
- b. Configure the preceding job. a. Click on the record value for the table property "Name-Job ID". Then click on the button that appears on the far right of the field. The Select Job dialog is displayed.
- c. Select the preceding job from the scope tree, and then click the "OK" button. The Select Job dialog closes. "Job ID" will be added to the Wait Rule dialog.
- d. Click the value field for the record of the property "Value" in the table. Enter the End Value.
- e. Click the "OK" button. The Wait Rule dialog closes. The configured wait rule will be added to the "Object List" table.

When making time a wait rule:

- a. Click on the record value for the table property "Name". From the combo box, select "Time".
- b. Configure the time. Select the time to start the JobNet in the value field for the record of the property "Time" in the table. Enter hours and minutes in the "hh:mm:ss" format. The range of time that can be set as a Wait Rule is 00:00:00~48:00:00.

When making time after session started a wait rule:

- a. Click on the record value for the table property "Name". From the combo box, select "Time after Session started (Minutes)".
- b. Set the time after session started. Set the time elapsed after session started to execute the JobNet in the value field for the record of the property "Time" in the table. A job session is a unit used for running a job unit (or the JobNet). A job session is created each time job unit (or JobNet) is run. When a series of job units (or JobNets) end, the job session itself ends as well. (The history displayed in the Job[History] view is a job session unit).

- Changing a wait rule

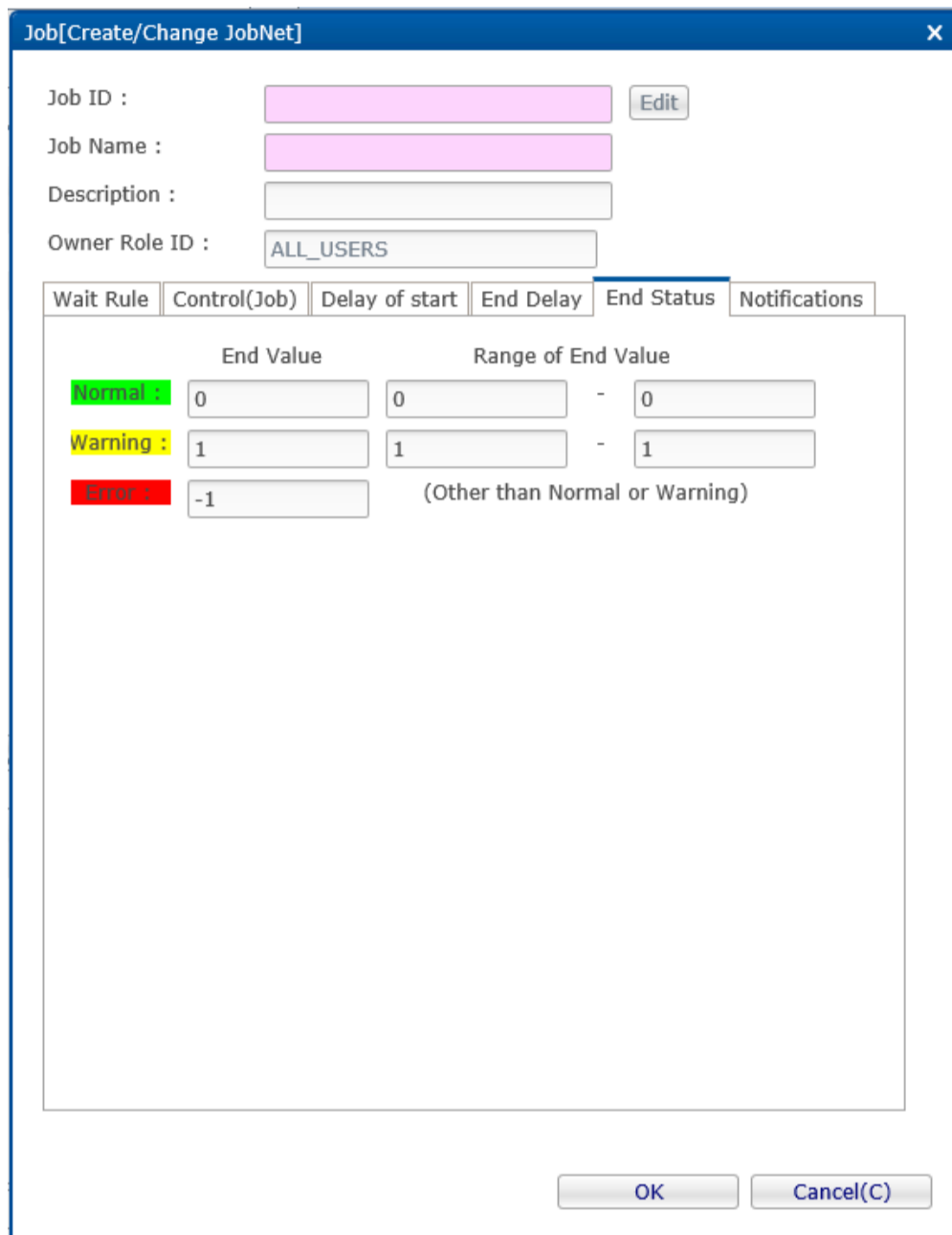
- a. Select the wait rule to change from the "Object List" table.
- b. Click on the "Modify" button located at the bottom of "Object List". The Wait Rule dialog is displayed. Change the parameter.
- c. Click the "OK" button. The Wait Rule dialog closes. Changes will be reflected. Click the "Cancel" button to cancel the modification.

- Deleting a wait rule

- a. Select the Wait Rule to delete from the "Object List" table, and then click the "Delete" button.

5. Configure "Condition between Objects". Select the "AND" or "OR" radio button. If "AND" is selected, the JobNet starts when all configured wait rules are met. If "OR" is selected, the JobNet starts when any one of the wait rule is met.
6. You can configure an operation to process when it is determined that all wait rules will not be met. Wait conditions are checked during the JobNet execution. JobNet execution can be configured to end when it is determined that all wait rules will not be met. Check the "End if condition unmatched." button to apply this operation, and then configure the End Status and End Value.

7. Next, set up the End Status. When changing the End Status from the default setting, select the "End Status" tab and make the change. The range of the end values for "Normal" and "Warning" cannot overlap (Refer to the section, [9.1.3 End Status and End Value](#) for more details relating to the end status and end value).



	End Value	Range of End Value	
Normal :	0	0	- 0
Warning :	1	1	- 1
Error :	-1	(Other than Normal or Warning)	

Figure 9-25 Job[Create/Change JobNet] Dialog (End Status Tab)

8. Configure "Notifications". Select the "Notifications" tab. Configure the following items. Note that notification is not made if a blank column is specified for the priority of the notification.
- Start:
Configure the notification that is generated during the start of a JobNet.
 - Normal:
Configure the notification that is generated when the end status of a JobNet is "Normal".
 - Warning:
Configure the notification that is generated when the end status of a JobNet is "Warning".
 - Error:
Configure the notification that is generated when the end status of a JobNet is "Error".

- Notification ID:

Select from the list the Notification ID that is the notification method used in the notification setting. (Refer to the section 6.3 Notification Feature regarding notification settings) When you click the "Select" button on the right, the Notification[List] dialog is displayed. Select the notification method.

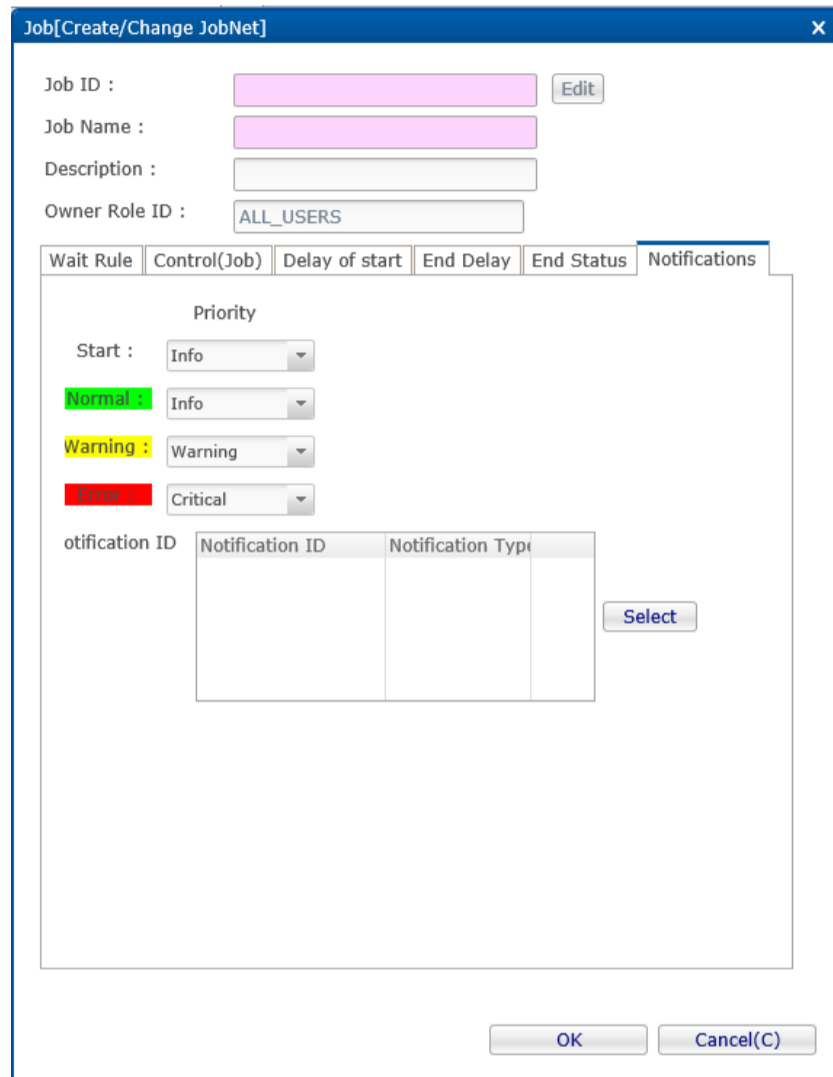


Figure 9-26 Job[Create/Change JobNet] Dialog (Notifications)

9. Click the "OK" button. The Job[Create/Change JobNet] dialog closes.

The newly created JobNet will be added to the job tree in the Job[List] view.

Note) The operations described above are made in the client. Information of the editing job tree is not reflected in the manager until the "Register" button is clicked and it has processed.

Modifying a JobNet

- To change a JobNet, the JobUnit to which the JobNet you want to change belongs must be in Edit Mode.
1. Select the JobNet to change from the job tree in the Job[List] view.
 2. Click on the "Modify" button in the Job[List] view. The Job[Create/Change JobNet] dialog is displayed.
 3. Modify the parameter of the JobNet.

Copy a JobNet

1. From the job tree in the Job[List] view, right click on the JobNet to be copied and then click "Copy".
2. From the job tree in the Job[List] view, right click on the copy destination and then click "Paste".
 - The JobUnit that is the paste destination must be in Edit Mode when you paste the copied JobNet.
3. From the job tree in the Job[List] view, select the JobNet that was copied.
4. Click on the "Modify" button in the Job[List] view. The Job[Create/Change JobNet] dialog is displayed.
5. Change the temporarily defined Job ID (Copy_Of_xxx) as necessary.

Even when you are logging in two or more managers, the JobNet cannot be copied to a different manager.

9.4.3 Items to Consider when Creating/Modifying a JobNet

Controlling a JobNet

You can control the execution of a JobNet with the following settings.

- Configure a calendar
- Suspend the execution status of a job in advance
- Skip the execution status of a job in advance

1. Select the "Control (Job)" tab in the Job[Create/Change JobNet] dialog.

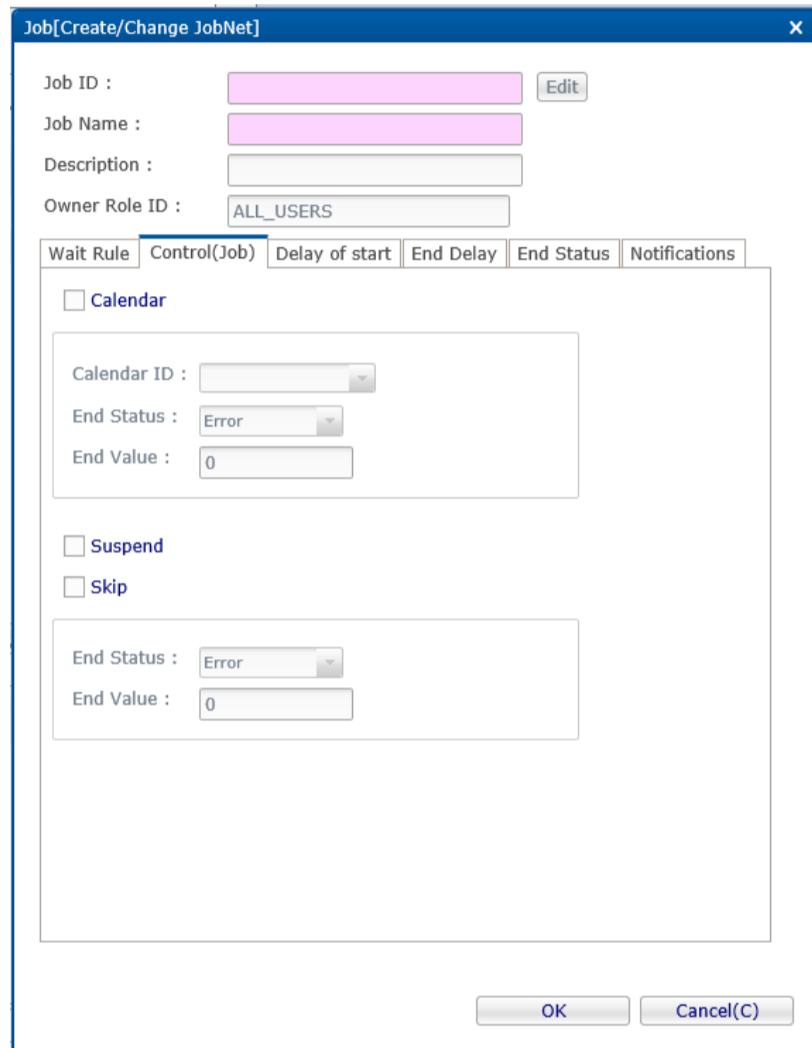


Figure 9-27 Job[Create/Change JobNet] Dialog (Control (Job) Tab)

2. If configuring a calendar, check on the "Calendar" check box. Select the calendar ID for the calendar you want to set up. When setting a calendar, it can only be run when the job session start time is within the operation period range of the specified calendar. (Refer to the section, [4 Calendar Feature](#) for more details on the calendar). When a JobNet can't be run due to calendar conditions, enter the setting value as the JobNet end value for the value in "End Value".
3. Check on the "Suspend" check box. Enter a check in the "Suspend" checkbox. Similarly, to advance skip a run status, enter a check in the "Skip" checkbox and enter the end value.

Delay of Start Monitoring

Check if the start of JobNet execution has been delayed. It is possible to configure control if it is delayed.

1. Select the "Delay of start" tab in the Job[Create/Change JobNet] dialog.

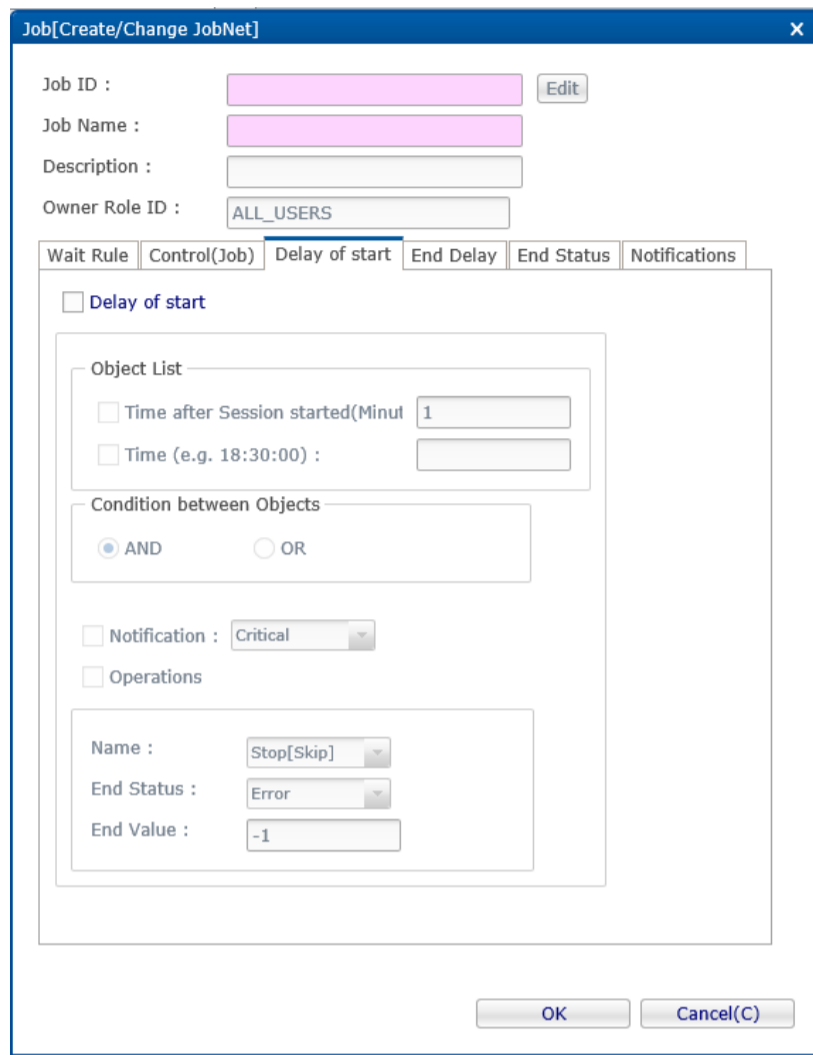


Figure 9-28 Job[Create/Change JobNet] Dialog (Delay of Start Tab)

2. Check on the "Delay of start" check box, and then set the following items.

- Object List:

- Time after Session started (Minutes)

Execute delayed monitoring by the time elapsed since the job session started.

When a currently set JobNet is run, if the time set as the delay time has elapsed since the job session started, it is judged to be delayed.

- Time

You can run delay monitoring by time. When a currently set JobNet is run, it is judged to be delayed when the specified time has elapsed.

If you do Delay of Start Monitoring by time, the delay will be determined using the same evaluation method as the Wait Rule time. Confirm the Wait Rule time evaluation method for details.

- Condition between Objects:

Set the Condition between Objects set for the Object List.

If "AND" is selected and the conditions of both the Time after Session started (Minutes) and Time are met, the JobNet execution is judged to be delayed.

If "OR" is selected, JobNet execution is judged as delayed when either one of the conditions are met.

- Notification:

To perform notification when the job Delay of start occurs, check the check box and select the priority of the notification.

Further, notification due to Delay of start does not affect the Priority above the "Notification ID" field in the "Notifications" tab, and the notification is made with the specified priority.

- Operations:

To run an operation for a job where a Delay of start occurred for that job, check the check box and select the operation to run.

The following two operations can be selected.

- Stop[Skip]

The run status of the JobNet is Skip. Enter the end value when the run status is Skip.

- Stop[Suspend]

The run status of the job is Suspend.

Note) When running a JobNet (Command Job), the settings for the wait rule, delayed monitoring (delayed start/delayed End), and control (calendar, suspend, skip) of the job net (command job) at the top are disabled when a JobNet (command job) is run.

When Running End Delay Monitoring

Check if the end of a JobNet has been delayed. You can configure the control if it is delayed.

1. Select the "End Delay" tab in the Job[Create/Change JobNet] dialog.

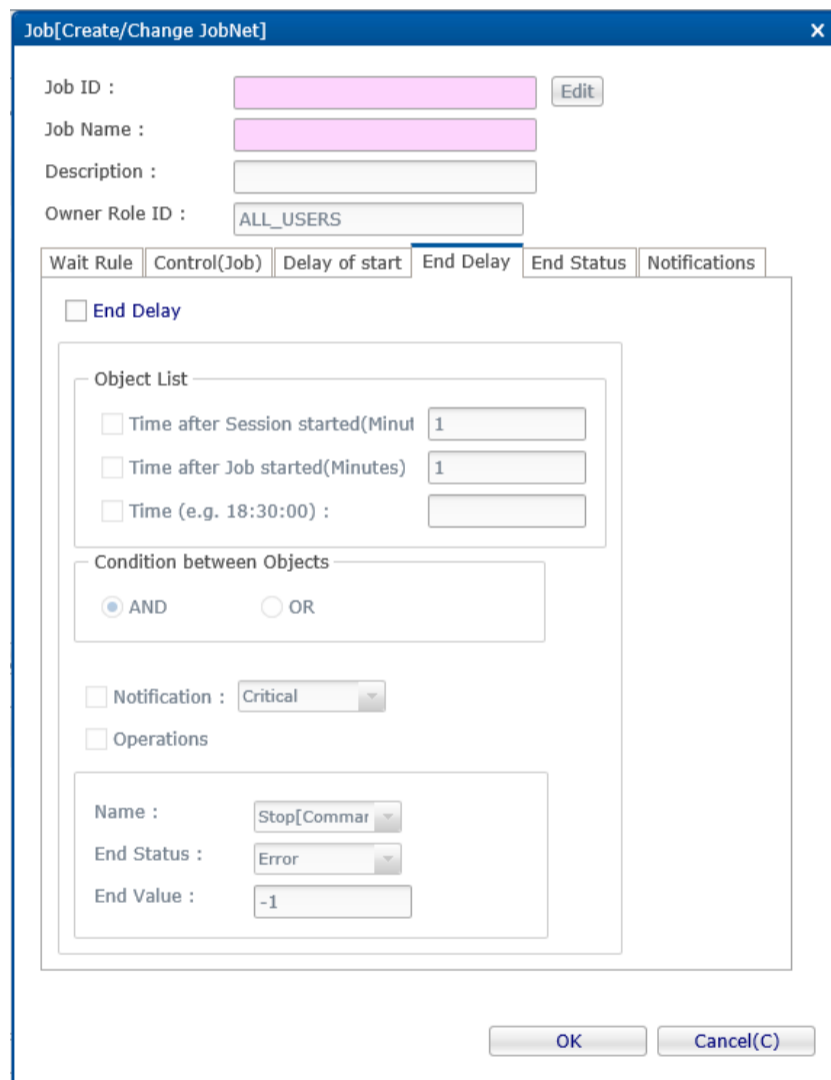


Figure 9-29 Job[Create/Change JobNet] Dialog (End Delay Tab)

2. Check on the "End Delay" check box, and then set the following items.

- Object List:

- Time after Session started (Minutes)

Execute delayed monitoring by the time elapsed since the job session started.

If the specified time has already passed since the start of the session and the JobNet being configured does not end, it is judged as a delay.

- Time after Job started(Minutes)

Execute delayed monitoring by the time elapsed since the job net started. Even if the specified time has already passed and the JobNet has not ended, it is evaluated as a delay.

- Time

You can run delay monitoring by time. If the configuring JobNet does not end after the specified time, and the JobNet being configured does not end, it is evaluated as a delay.

If you do End Delay Monitoring by time, the delay will be determined using the same evaluation method as the Wait Rule time. Confirm the Wait Rule time evaluation method for details.

- Condition between Objects:

Set the Condition between Objects set for the Object List.

If "AND" is selected, it is evaluated as job execution has been delayed when all three conditions, "Time after Session started(Minutes)", "Time after Job started(Minutes)", and "Time" are met.

If "OR" is selected, it is evaluated that the JobNet end has been delayed when either one of the condition are met.

- Notification:

When notification is performed when the job End Delay occurs, check the check box and select the priority of the notification.

- Operations:

To run an operation for a job where an End Delay occurred for a job, check the check box and select the operation to run.

The following three operations can be selected.

- Stop[Command]:

Execute the Stop command and the run status of the job is Command Stop.

- Stop[Pause]

The run status of the job is Pause.

- Stop[Status Specify]

After the Stop command is executed, the end status of JobNet is set to a specified status, and the run status ends.

Note) When running a JobNet (Command Job), the settings for the wait rule, delayed monitoring (delayed start/delayed End), and control (calendar, suspend, skip) of the job net (command job) at the top are disabled when a JobNet (command job) is run.

Wait Rules for Copy Operation Time

If a JobNet is copied,

the Wait Rules of that JobNet, and of some JobNets/Command Jobs subordinate to that JobNet which are controlled by "End Status" and "End Value", will be deleted.

- If the Wait Rule is "Time" or "Time after session started", all of the Wait Rules are copied.
- If the Wait Rule is "End Value" or "End Status", only the Wait Rules subordinate to the copied JobNet are copied.

Wait Rule Time Evaluation Method

If Time is selected as the Wait Rule, the range of time that can be set as the Wait Rule is 00:00:00~48:00:00. The Wait Rule evaluates conditions based on the following formula.
(The Wait Rule is judged to be met if the following formula is met.)

The job session start date + Wait Rule time <= the current date and time.

(Example 1) The job (Job2) operates when the Wait Rule is set as the end of the prior Job (Job1) and time (26:00:00).

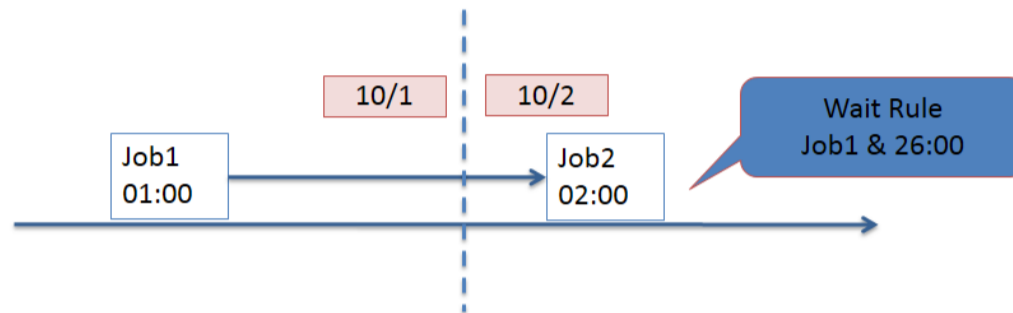


Figure 9-30 Operation Example (1) When Time Is Specified as the Wait Rule

(Example 2) When the Wait Rule is set as the end of the prior Job (Job1) and time (23:50:00), the Job (Job2) will operate if Job1 has not ended by 23:50:00.

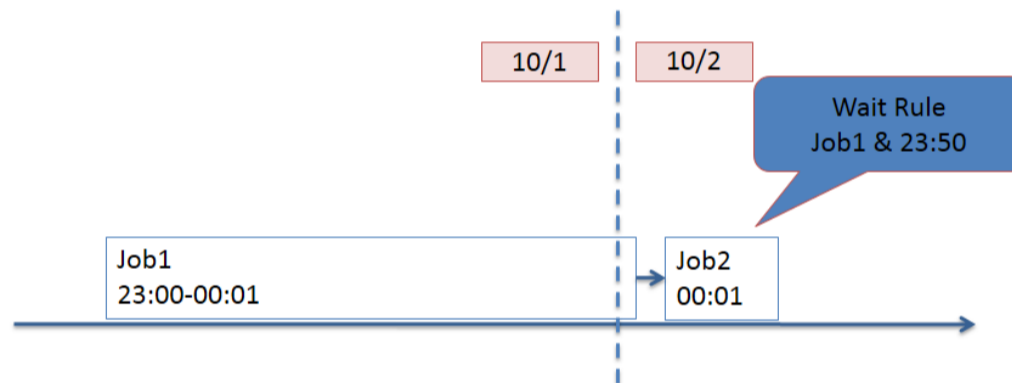


Figure 9-31 Operation Example (2) When Time Is Specified as the Wait Rule

9.4.4 Creating/Modifying a Command Job

A command job is the smallest unit that can be executed. A command that will be issued to the node during job execution must be configured. Configuration procedures of the end status and the wait rules are similar to the procedures for creating a job net.

Creating a Command Job

- To create a Command Job, the JobUnit that is the destination for creating the Command Job must be in Edit Mode.
1. From the job tree in the Job[List] view, select the new job to be added to a JobNet (or JobUnit).
 2. Click the "Create Job" button in the Command Job [List] view. The Job[Create/Change Command Job] dialog is displayed.
 3. Configure "Job ID", "Job Name", and "Description". Always be sure to enter the "Job ID" and "Job Name", since both are mandatory fields. The "Job ID" of the command job must be unique within the same job unit.
 4. Select the "Wait Rule" tab, and then configure the wait rule (Refer to 9.4.2 Creating/Modifying a JobNet for the Wait Rule entry method.)

5. Configure the command executed in the node during command job execution. Select the "Command" tab, and set the following items. (Refer to 9.13 Using Script with Job Execution if registering a script in the command field)

The screenshot shows a dialog box titled "Job[Create/Change Command Job]". At the top, there are fields for "Job ID", "Job Name", "Description", and "Owner Role ID" (set to "ALL_USERS"). Below these is a tabbed interface with tabs for "Wait Rule", "Control(Job)", "Control(Node)", "Command", "Delay of start", "End Delay", "End Status", and "Notifications". The "Command" tab is selected. Inside this tab, there are several sections: "Scope" with radio buttons for "Job Parameter : #[FACILITY_ID]" and "Fixed Value" (selected); "Scope Process" with radio buttons for "Run all nodes" (selected) and "Retry nodes one by one until the end status "; "Start Command" with a text input field; "Stop" with radio buttons for "Shutdown process" (selected) and "Stop Command"; and "Effective User" with radio buttons for "Agent user" (selected) and "Specified user". At the bottom right, there are "OK" and "Cancel(C)" buttons.

Figure 9-32 Job[Create/Change Command Job] Dialog (Command Tab)

- Scope:

- Job Parameter

The job selected in this setting is valid only for Job execution triggered by job notification. The scope (or the node) that issued the notification is the subject for command job execution.

Note) "FACILITY_ID" for the "Job Parameter" must be registered during job unit creation if configuring scope specification by the job variable.

- Fixed Value

In "Fixed Value" field, specify the scope (or the node) subject for command job execution.

Click the "Refer" button and the Select Scope dialog is displayed; Select the scope subject for command execution, and then click on the "OK" button.

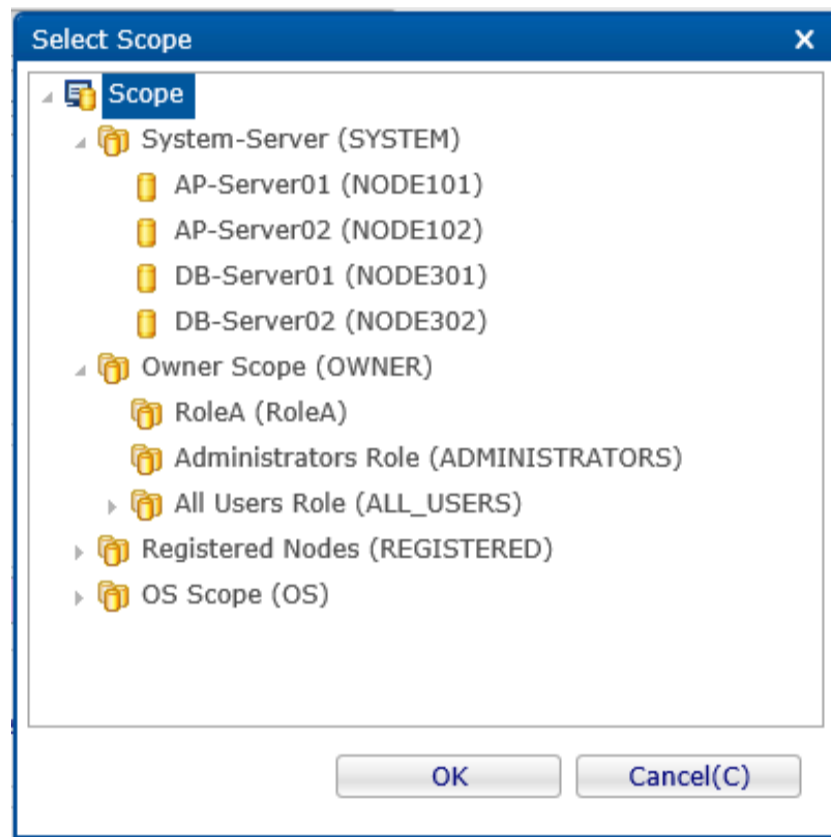


Figure 9-33 Select Scope Dialog

- Scope Process:

Select one from the following.

- Run all nodes

Process will be executed concurrently in all nodes.

- Retry nodes one by one until the end status 'Normal'

Command jobs will execute in order in the node included in the scope until one of the jobs has a normal end.

When a command job has a normal end in one of the nodes, operation will end for command jobs in that scope.

In this case, nodes that are execution targets for the job are evaluated and determined in the following order.

1. Node where the Hinemos Agent is operating
2. On the node with the highest "Job Priority" setting value (default is 16) out of the nodes registered with the Repository function.
3. Node Facility ID (ascending order)

• Start Command:

Enter a command issued to the node during command job execution.

- A wild card character cannot be used in the start command.
- Start command can contain the job variables. (Refer to the section [9.1.6 Job Variable](#) for more details on the job variables)
- Another Command Job execution result (return code) from the same job session can be included as a variable in the start command.

Variable description method

```
#[RETURN:jobId:facilityId]
```

• Stop:

Specify the process to run at the time of the job stop process.

- Shutdown process

This is selected when you want to issue a system call to end a process in the job process at the time of the command job stop process.

- Stop Command:

This is selected when you want to run a prescribed command at the time of the command job stop process.

If the stop command is selected, select the command to run at the time of the command job stop process.

- A wild card character cannot be used for the stop command.
- Stop command can contain the job variables.
- Another Command Job execution result (return code) from the same job session can be included as a variable in the stop command.

(The method for describing the variable when another Command Job execution result (return code) from the same job session is included in the start command is the same.)

• Effective User:

Enter the effective user of the command.

Be careful because the environment variable of each user (those configured by the specific file of the home directory) is not reflected.

Figure 9-34 Effective User

- Agent user

The user that started the Hinemos Agent that is the destination for command job execution becomes the Effective User.

- Specify the user:

Manually enter the Effective User.

Refer to [9.14 Operation of the Start Command](#) for important points about the Agent User and Effective User.

6. Select the "End Status" tab, and then configure the end status (Refer to [9.4.2 Creating/Modifying a JobNet](#) for the End Status entry method.)
7. Select the "Notifications" tab, and then configure the notification (Refer to [9.4.2 Creating/Modifying a JobNet](#) for the Notification setting method.)

8. Click the "OK" button. Job[Create/Change Command Job] dialog will be closed and the created command job will be added to the job tree of Job[List] view.

Click the "Cancel" button to cancel the job creation.

Note) The operations described above are made in the client. Information of the editing job tree is not reflected in the manager until the "Register" button is clicked and it has processed.

Modifying a Command Job

*To change a command job, the job unit to which the command job to be changed belongs must be set in the edit mode.

1. Select a job from the command job tree in the Job[List] view.
2. Click on the "Modify" button in the Job[List] view. The Job[Create/Change Job] dialog is displayed.
3. Modify the parameter of the Command Job.

In the case of a command job not in the edit mode, Job [Create/Change Command Job] dialog is opened as a read-only dialog. In this case, the job unit can be set in the edit mode by clicking the "Edit" button on the right of Job ID.

Copying a Command Job

1. From the job tree in the Job[List] view, right click on the command job to be copied and then click "Copy".
2. From the job tree in the Job[List] view, right click on the copy destination and then click "Paste".
3. From the job tree in the Job[List] view, select the Command Job that was copied.
4. Click on the "Modify" button in the Job[List] view. The Job[Create/Change Job] dialog is displayed.
5. Change the temporarily defined Job ID (Copy_Of_xxx) as necessary.

Even when you are logging in two or more managers, the command job cannot be copied to a different manager.

9.4.5 Items to Consider When Creating/Modifying a Command Job

Controlling a Command Job

You can control the execution of a command job by setting of Control(Job) tab. Refer to [9.4.2 Creating/Modifying a JobNet](#) for the setting method.

- Configure a calendar
- Suspend the execution status of a command job in advance
- Skip the execution status of a command job in advance

In addition, an operation in node units can be controlled by the following setting when a command job is executed.

- Specify the operation when the number of job executions on the same node exceeds the prescribed multiplicity.
- End a command job when it can't connect to the Agent that is the job execution destination
- Repeat until the job ends successfully.

1. Select the "Control(Node)" tab in the Job[Create/Change Command Job] dialog.

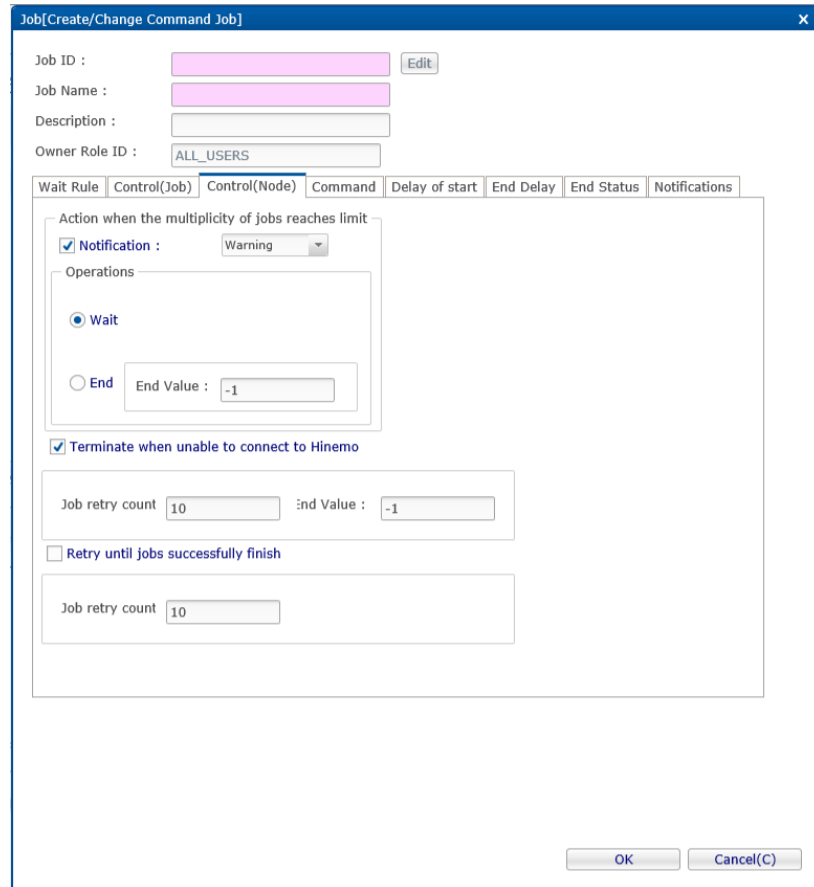


Figure 9-35 Job[Create/Change Command Job] Dialog. ("Control(Node)" tab)

2. When the number of job executions on the same node exceeds the prescribed multiplicity, specify the operation by setting the following items.

- Notify when the multiplicity of jobs reaches limit:

When the number of job executions exceeds the multiplicity on the same node and the message "Exceeded the upper limit for simultaneous execution multiplicity." is notified in the Job History[Node Details] view, enter a check and select the priority for notification.

- Behavior when notifying when the multiplicity of jobs reaches limit:

If the number of jobs running on the same node exceeds the prescribed multiplicity, select the behavior of new jobs attempting to run from the following.

- Wait

Have execution of command jobs wait till the number of jobs running on the target node drops below the prescribed multiplicity.

- End

Abort running command jobs attempting to run on the target node and end. Also, specify the end value for command jobs where job execution is aborted.

3. If you want to end a command job when it can't connect to the Agent that is the job execution destination when the job runs, enter a check in the "Terminate when unable to connect to Hinemos Agent" checkbox. If you enter a check in "Terminate when unable to connect to Hinemos Agent", set the following as well.

- Number of retries:

Specifies the number of times it will attempt to connect to the agent.

- End Value

Specifies the End Value if the command job ends being unable to connect to the agent.

4. To repeat job execution until a job is successfully ended, enter a check in "Retry until jobs successfully finish". If you enter a check in "Retry until jobs successfully finish", set the following as well.

- Number of retries:

Set the number of times to execute a command on a node until execution successfully ends. If execution does not end successfully even after it has been repeated the specified number of times, it ends in the end status of the last execution.

Delay of Start Monitoring

Check if the start of command job execution has been delayed. If it is delayed, you can configure the control (Refer to [9.4.2 Creating/Modifying a JobNet](#) for the setting method.)

End Delay monitoring

Check if the end of a command job has been delayed. If it is delayed, you can configure the control. (Refer to [9.4.2 Creating/Modifying a JobNet](#) for the setting method.)

Multiplicity of Running Jobs

The number of command jobs running simultaneously on the same node can be controlled. The number of command jobs that can run on the same node (multiplicity of running jobs) is specified for each node in the Repository[Node View].

By default, the value for "Job Multiplicity" is 16. (Refer to [3.4.2 Modifying a Node](#) for the process to change the node information.)

Action when Registering a Job

Command Job, job unit, and JobNet creation and modification are performed with an editing operation on the client. Information of the editing job tree is not reflected in the manager until the "Register" button is clicked on and processed. By creating a "Registration", the edited JobUnit (and JobNets subordinate to the JobUnit, Command Jobs, File Transfer Jobs and Refer Jobs) information is reflected as a batch in the Manager.

To register a job, click on the "Register" button in the Job[List] view.

- To clear the modified contents on the client
click the "Update" button. The modified information is canceled, and the job tree registered in the manager will return.
Similarly, if you click the "Edit" button when the "Registration" is not created, Edit Mode is released and the job tree can return to the state prior to editing.

Wait Rules for Copy Operation Time

If a command job is copied, the same command job's Wait Rules will be partially deleted unless the Wait Rule is controlled by "time" and "time after session started". This is different from copying a JobNet. For information about copying a JobNet, please refer to [9.4.3 Items to Consider when Creating/Modifying a JobNet](#).

- If the Wait Rule is "Time" or "Time after session started",
all of the Wait Rules are copied.
- If the Wait Rule is "End Value" or "End Status",
all of the Wait Rules are deleted.

9.5 Searching a job

Job[List] view can search a job by using a job ID. Enter a job ID to the text box "Input Job ID..." and click "Search" button. Jobs partially matching the specified ID will be sequentially executed from the top, starting from a job for which a job tree is selected (if not selected, the "job" at the highest position of the job tree).

If a job partially matching the specified job ID, message "Search object cannot be found" is displayed and the "job" at the highest position of the job tree is selected.

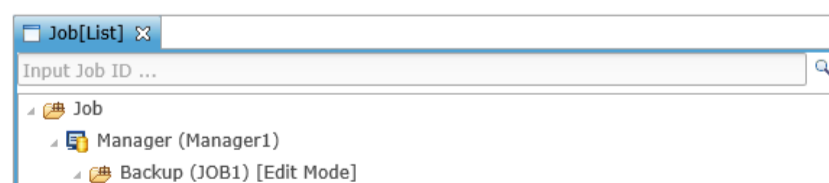


Figure 9-36 Job Searching from Job Tree

9.6 Deleting a Job

- To delete a Job, the JobUnit to which the JobNet you want to delete belongs must be in Edit Mode.
- 1. Select the command job to be deleted (File Transfer Job, Refer Job, JobNet, JobUnit) from the job tree in the Job[List] view.
- 2. Click the "Delete" button in the Job[List] view.

When a JobNet (job unit) is deleted, command jobs, file transfer jobs and JobNets included in the deleted job net (job unit) are also deleted.

When a job subject to delete is specified as the wait rule in the other job, review the wait rule because the configuration will remain.

- Important point The job setting content has a job session ID assigned and a copy saved at the job run start time, so even if you change the setting content, the changed content won't be applied to jobs that are already started because a job is run based on that information.

9.7 Executing/Starting/Stopping a job

9.7.1 Job Status/Operation

According to the current execution status, the status of job unit, JobNet, and command job is classified into two types: "Status during session execution", and "Status when session stopped".

- [Status during session execution]
 - Waiting: Status when the job unit has started and the session information is created
 - Running: Status when the command execution is notified to the agent
 - Suspended: Status when the command execution is pending
 - Skip: Status when skip of the command execution is ready and waiting
 - Pause: Status when the command execution is paused
 - Stopping: Status when the stop command is executed, until the end notification is returned from the agent
 - Command Stop: Status when the stop command is executed, and the end notification is returned from the agent
- [Status when session is stopped]
 - End: Status when the end notification of command execution is returned.
 - Changed: Status when the end value is set at the Stop[Change Status].

Status changing operations executed for the JobNet/job in the Job[Job Detail] view and the node in the Job[Node Details] view are listed below.

Table 9-10 Operations Executed on the JobNet, Command Job and Node

Operation	JobNet	Command Job	Node	Description
Stop[Suspend]	○	○	●	Change from [Stop] status to [Suspend] status.
Start[Cancel Suspend]	○	○	●	Cancel [Suspend] status.
Stop[Skip]	○	○	●	Change from [Stop] status to [Skip] status.
Start[Cancel Skip]	○	○	●	Cancel [Skip] status.
Stop[Pause]	○	○	●	Change from [Running] status to [Pause] status.
Start[Cancel Pause]	○	○	●	Cancel [Pause] status.
Stop[Command]	○	○	○	Run the stop command.

Start[Start]	○	○	○	Immediately start a job per JobNet/job/node.
Stop[Change Status]	○	○	○	Change the end value of the startup failure.
Stop[Force]	○	○	○	Kill when the status does not change.

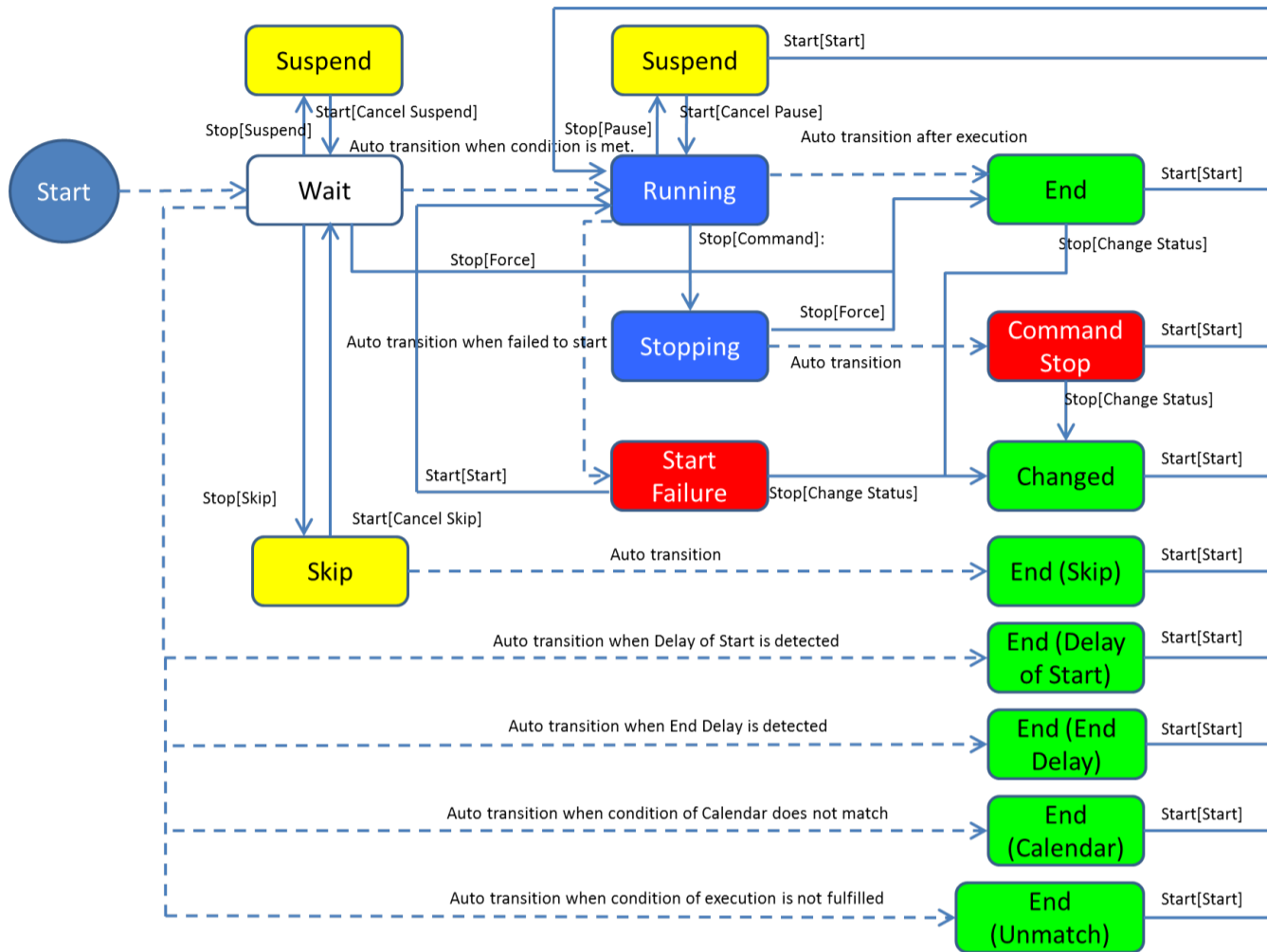


Figure 9-37 Status Transition Diagram

9.7.2 Running a Job

Select the job to run from the job tree in the Job[List] view or from the table of job lists. Click the "Run" button. Clicking "Run" button displays a confirmation dialog on which setting for test run can be made.

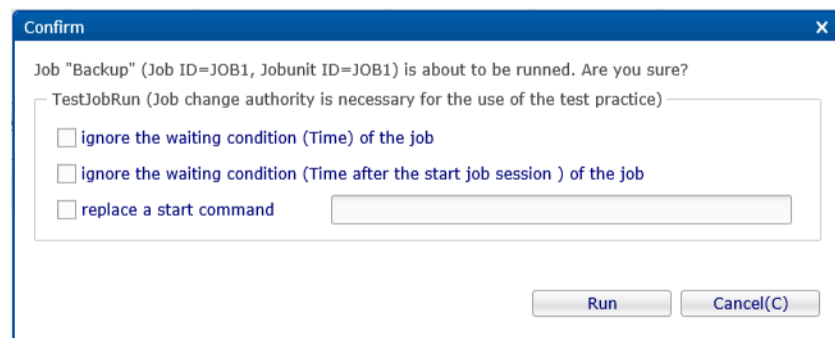


Figure 9-38 Confirm Dialog

When each check box of test run is checked, the operation of a job can be changed only when the check box is checked and without changing the set information of the job registered to Hinemos manager. So it can easily check whether the set job runs as expected.

The operation is as follows when each check box is checked:

- ignore the waiting condition (Time) of the job

A job will be immediately executed if all the waiting conditions set for the job, except "Time", are satisfied.

- ignore the waiting condition (Time after the start job session) of the job

A job will be immediately executed if all the waiting conditions set for the job, except "Time after session started", are satisfied.

- replace a start command

The start command of a command job can be replaced by another command. Entering a check to this check box enables the input field on the left. Input a command to be replaced.

Click the "Run" button on the Confirm dialog. The job will run.

Note) The job will not be run when "Run" is operated before the "Register" operation. Information about the editing job tree is registered in the manager when the registration process is complete. You can run a job once it is registered in the manager.

9.7.3 Running a Job Schedule

Set (Scheduling) the currently registered Command Job (JobNet, JobUnit) to run at a prescribed time. The scheduled job will be run on the configured date and time (when the calendar is applied to the Schedule Setting, the scheduled job will run only when the job session start time is within the range of the configured operating period of the specified calendar).

1. Click the "Create Schedule" button in the Job[JobKick] view. The Job[Create/Change Schedule] dialog is displayed.

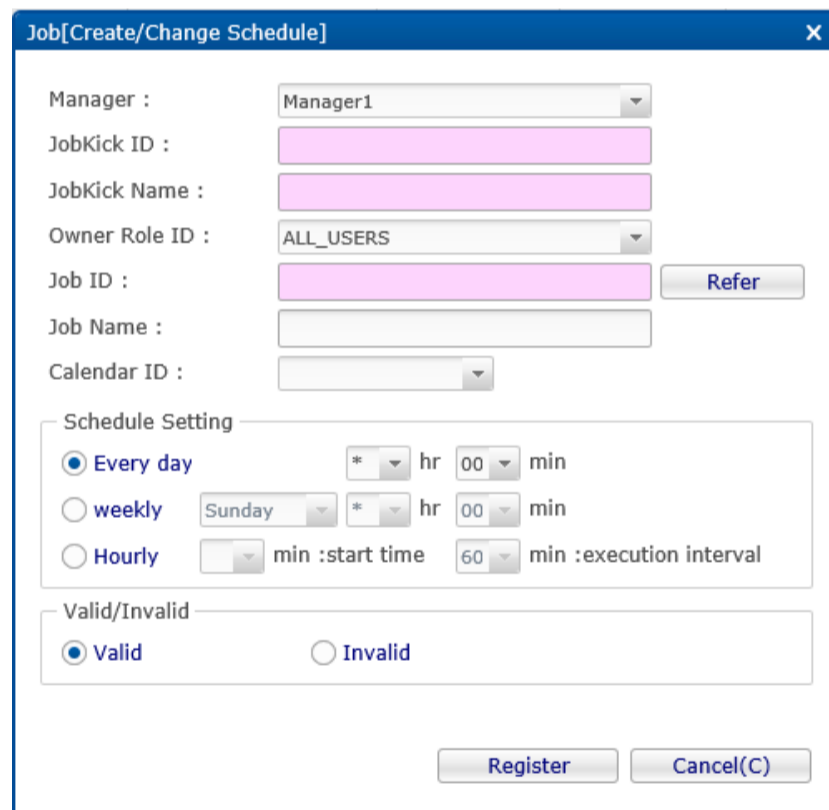


Figure 9-39 Job[Create/Change Schedule] Dialog

2. Enter the JobKick ID and the JobKick Name. Always be sure to enter both the "JobKick ID" and the "JobKick Name", since both are mandatory fields. The "JobKick ID" must be unique on the system.
3. Configure the Job ID (or JobNet or JobUnit) for the schedule run target command job. Always be sure to enter the Job ID, since it is a mandatory field. Click the "Refer" button located on the side of the "Job ID:". The Select Job dialog is displayed.

Select the schedule run target job from the job tree, and then click on the "OK" button. You can search a job with Job ID (refer to "Searching a job" for details).

Job ID and Job Name are configured.

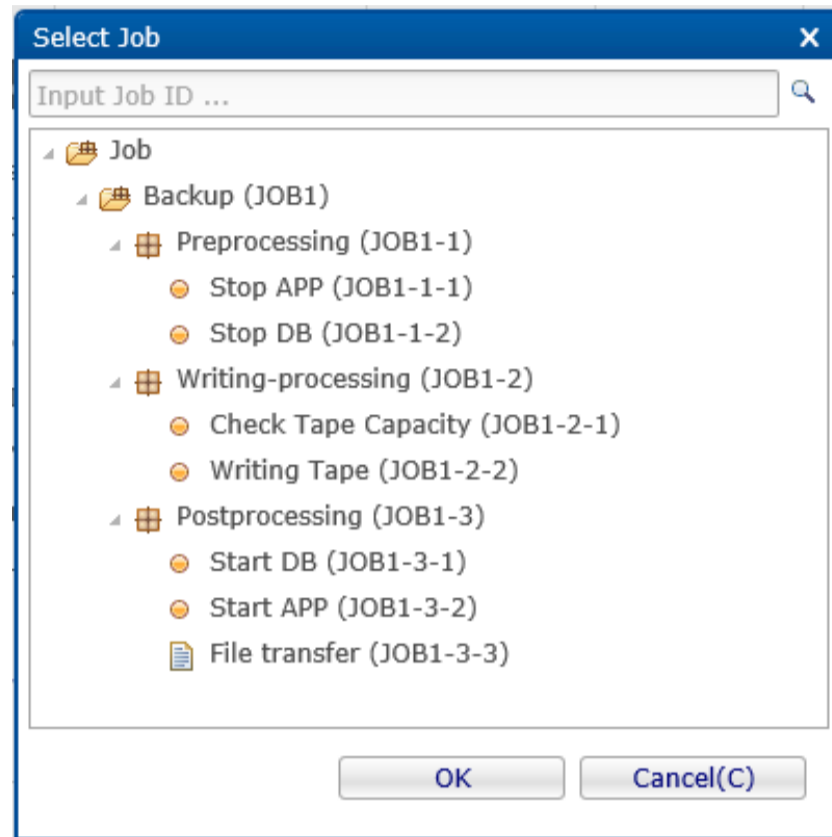


Figure 9-40 Select Job Dialog

4. Configure the calendar. Select the calendar ID for the calendar you want to set up. (Refer to the section, [4 Calendar Feature](#) for more details on the calendar).
5. Configure the schedule. Schedule setting can be configured with the following three methods.
 - Every day
Configure so that the job is executed every day at the specified time. Select the "Hour", and "minute(s)" from the combo boxes.
If there is an * (asterisk) for the "Hour", and a specific time is set for "Minutes", then the job run is scheduled every day at the specified time.
 - Weekdays
Schedule job execution by specified day of the week. Select "Weekday", "Hour", and "minute(s)" from each combo box.
If there is an * (asterisk) for the "Hour", and a specific time is set for "Minutes", then the job run is scheduled every hour at the prescribed time (Minutes) on the set day of the week.
 - Hourly
Job execution is scheduled to repeat hourly at the prescribed minutes. Select the "min :start time" and "min : execution interval" values from each combo box. Set the minutes to start running each hour from the "min : start time" combo box to schedule running of repeat jobs. Set the minutes for the execution interval from the "min :execution interval" combo box to schedule running of repeat jobs.
6. Configure whether to enable the configured schedule. Select the "Valid" or "Invalid" radio button. When "Invalid" is selected, the schedule configuration is saved, but the schedule run target job is not executed.
7. Click the "Register" button. The Job[Create/Change Schedule] dialog is closed. The Successful dialog is displayed.
8. Click the "OK" button. The created schedule is added to the schedule list table in the Job[JobKick] view.
Note) The system date of the Hinemos Manager Server OS becomes the standard for schedule execution.

9.7.4 Run FileCheck for the Job

Set the currently registered Command Job (JobNet, JobUnit) to run at the FileCheck opportunity. The job set as a FileCheck execution Trigger runs when there is an opportunity to check, delete or change the check target file.

1. Click the "Create FileCheck" button in the Job[JobKick] view. The Job[Create/Change FileCheck] dialog is displayed.

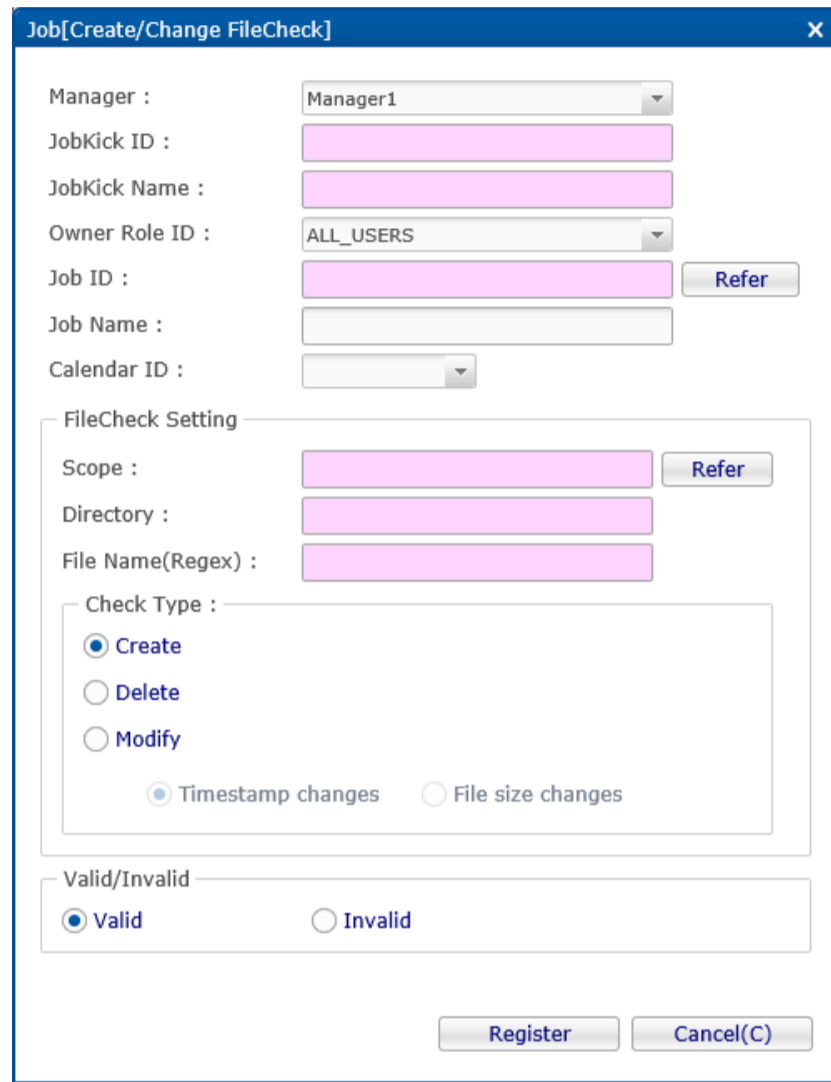


Figure 9-41 Job[Create/Change FileCheck] Dialog

2. Enter the JobKick ID and the JobKick Name. Always be sure to enter both the "JobKick ID" and the "JobKick Name", since both are mandatory fields.

The "JobKick ID" must be unique on the system.

3. The command job that is run at the FileCheck (check the creating, deleting and editing of the check target file) opportunity,

(or the JobNet or JobUnit) has its Job ID set.

Always be sure to enter the Job ID, since it is a mandatory field.

Click the "Refer" button located on the side of the "Job ID:". The Select Job dialog is displayed.

Select the Job to run at the FileCheck opportunity from the job tree, and then click the "OK" button. Job ID and Job Name are configured.

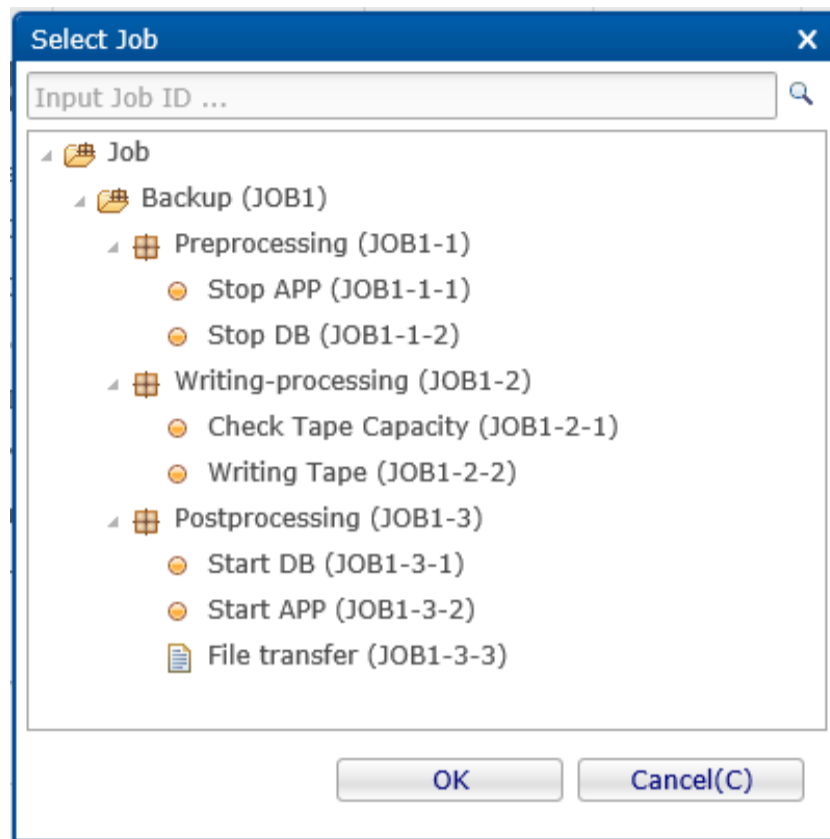


Figure 9-42 Select Job Dialog

4. Configure the calendar. Select the calendar ID for the calendar you want to set up. (Refer to the section, [4 Calendar Feature](#) for more details on the calendar).
5. Configure the FileCheck Setting.

- Scope:

Configure the run target scope for FileCheck. Run FileCheck for all nodes included in the specified scope.

Click the "Refer" button located on the side of the "Scope". The "Select Scope" dialog is displayed. Select the target scope for FileCheck from the scope tree, and then click the "OK" button.

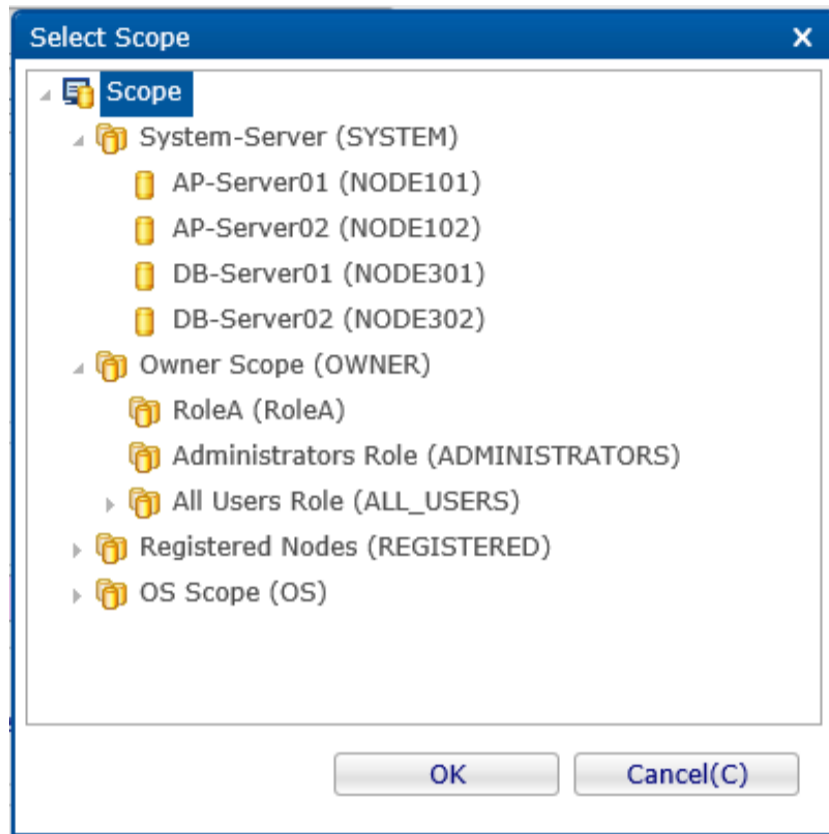


Figure 9-43 Select Scope Dialog

- Directory

Configure the run target directory for FileCheck.

- File Name:

Configure the run target File Name for FileCheck.

Regex can be used for the File Name. (Refer to <http://docs.oracle.com/javase/jp/7/api/java/util/regex/Pattern.html> regarding Regex)

- Check Type:

Select the FileCheck type. Create, Modify and Delete can be selected as the FileCheck type.

- Create

Checks whether the check target file is created.

- Delete(D)

Checks whether the check target file is deleted.

- Modify(M)

Checks whether the check target file is changed. Select the method to check whether it has changed from the following.

- Timestamp changes

- File size changes

6. Configure whether to enable the configured FileCheck settings. Select the "Valid" or "Invalid" radio button.

When "Invalid" is selected, the FileCheck Setting will be saved, but the FileCheck will not be run.

7. Click the "Register" button. The Job[Create/Change FileCheck] dialog closes. The Successful dialog is displayed.

8. Click the "OK" button. The created schedule is added to the schedule list table in the Job[Schedule] view.

FileCheck Run Interval

The default FileCheck Run Interval is 10 seconds.

To change the FileCheck Run Interval, in the Hinemos Agent setting file, change the following parameter.

- /opt/hinemos_agent/conf/Agent.properties

```
## interval [msec] between file checking
job.filecheck.interval=10000
```

Trigger Assignment Frequency by FileCheck

- Check Type: "Modify(M)" operation

The job will run at the FileCheck opportunity with the latest update as long as updates continue to be detected at each FileCheck opportunity.

Example) If the FileCheck interval is 10 seconds and a file update is detected as follows

- Update → Update → Update → Update → No Update

In this case, the job will run at the timing of Update → No Update.

- Check Type: "Create" operation

There is a check whether a file is created at each FileCheck opportunity, and when it detects that a file is created,

the job will run at the FileCheck opportunity.

Example) If the FileCheck interval is 10 seconds and file creation and file update is detected as follows

- No File → File → Update → Update → No Update

In this case, the job will run at the timing of No File → File.

9.7.5 Operational Differences by the Method of Job Execution

"Wait Rule", "Control", "End Delay", and "End Status" configurations are enabled when they are executed from the above JobNet or the job unit.

Operations are described using the structure below.

```
JobUnit1
- JobNet1
  - Command Job1
  - Command Job2 (wait condition = time 12:00).
  - Command Job3 (wait condition = time 18:00).
```

When "JobUnit1" or "JobNet1" is executed by clicking the "Run" button or because of a scheduled run, the wait rule identified in "Command Job2" and "Command Job3" is enabled, and the corresponding command job is executed when the specified time has passed.

However, if "Command Job2" or "Command Job3" is selected and executed, the wait rule is disabled, and the corresponding command job is executed immediately.

9.7.6 Stopping a Job

The running command job (JobNet, job unit) can be stopped. When a job is stopped, you can rerun the stopped job.

1. Select the job to be stopped from the list of job execution histories in the Job History[List] view.

2. Click on the "Stop" button in the Job History[List] view. Job[Stop] dialog opens.

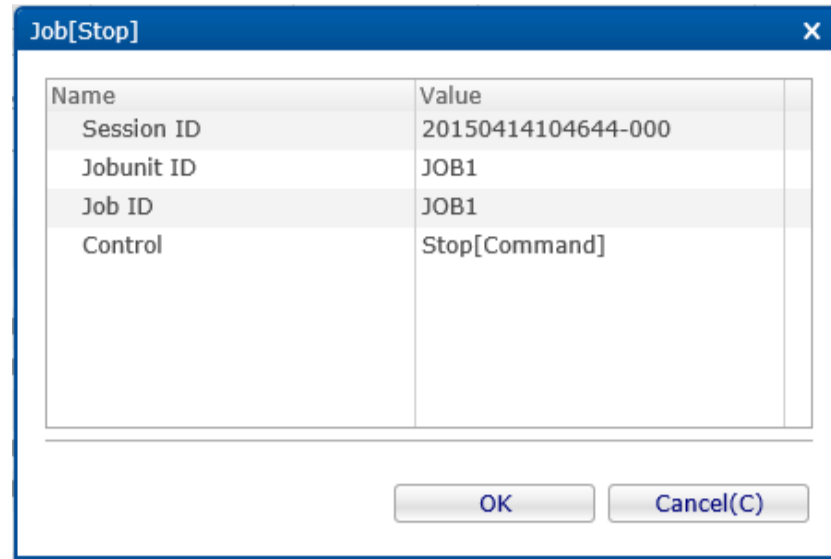


Figure 9-44 Job[Stop] Dialog

3. Select "Stop[Command]" in the "Control" field.
4. Click the "OK" button. The Job[Stop] dialog closes. The configured stop command is executed, and the job is stopped immediately.

Note) If a Stop[Command] is run for a JobNet, the Stop[Command] specified in the Job[Create/Change Command Job] "Command" tab is run for the subordinate running command job or JobNet.

Click the "Cancel" button to cancel the job stoppage.

9.7.7 Pausing a JobNet

Running JobNets (job unit) can be paused. When a JobNet (job unit) is paused, you can rerun it or cancel the pause.

Pausing a JobNet

1. Select the JobNet to be paused from the list of job execution histories in the Job History[List] view.
2. Click on the "Stop" button in the Job History[List] view. Job[Stop] dialog opens.
3. Select "Stop[Pause]" in the "Control" field.
4. Click the "OK" button. The Job[Stop] dialog closes. Wait for the command job included in the currently running JobNet to end, and then the JobNet will be paused.

Click the "Cancel" button to cancel the JobNet pause.

Pausing a JobNet at a job detail level

Select the JobNet to be pause from the list of job execution histories in the Job History[Job Detail] view. Click on the "Stop" button. The procedure hereafter is similar to the procedure to pause the JobNet.

9.7.8 Resuming JobNet

Paused JobNets (job units) can be resumed.

Resuming JobNets

1. Select the paused JobNet to be resumed from the list of job execution histories in the Job History[List] view.

- Click the "Start" button in the Job History[List] view. The Job[Start] dialog opens.

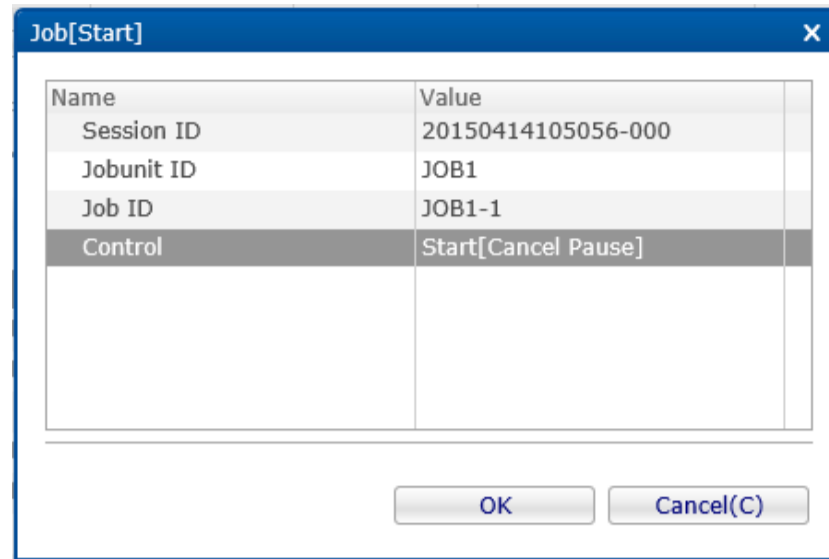


Figure 9-45 Job[Start] Dialog

- Select Start[Cancel Pause] in Control.
- Click the "OK" button. The Job [Start] dialog closes. Wait for the command job included in the currently paused JobNets to end, and then the JobNet will be rerun.

Resuming a command job in a detailed level

Select the paused JobNet to be resumed from the list of job execution histories in the Job History[Job Detail] view. Click the "Start" button. The following process, is the same as the procedure to restart the JobNet.

9.8 List of Job Execution History

Job history is displayed in the following three views by changing the display level.

- Job History[List] view
Manually executed jobs, scheduled executions, and interlocking monitoring executions are displayed in the Job[History] view.
- Job[Job Detail] view
Details of a job selected in the Job History[List] view are displayed in the Job[Job Detail] view. The Job unit, JobNet, and Command Job that comprise the job are displayed at the element level. You can confirm to which job the process has progressed.
- Job History[Node Details] view
The node level status of a command job selected in the job execution history list of the Job History[List] view is displayed.

To determine the trigger of a job

The "Trigger Type" and "Trigger Info" in the Job History[List] view is displayed in the following format.

- When Job is triggered by Schedule
Trigger Type: Schedule
Trigger Info: JobKick Name (JobKick ID)
- When Job is triggered by Filecheck
Trigger Type: Filecheck
Trigger Info: JobKick Name (JobKick ID)
- When Job is triggered by Monitoring Result (Job Notification)
Trigger Type: Monitor
Trigger Info: Monitor ID (Plugin ID)

- When Job is triggered manually
 Trigger Type: Manual
 Trigger Info: Manual Hinemos User Name

To refine the displaying job histories

Click the "Filter" button in the Job History[List] view. The Job[Filter Histories] dialog is displayed. Configure the refiner.

Leave blank for items not used as the refiner.

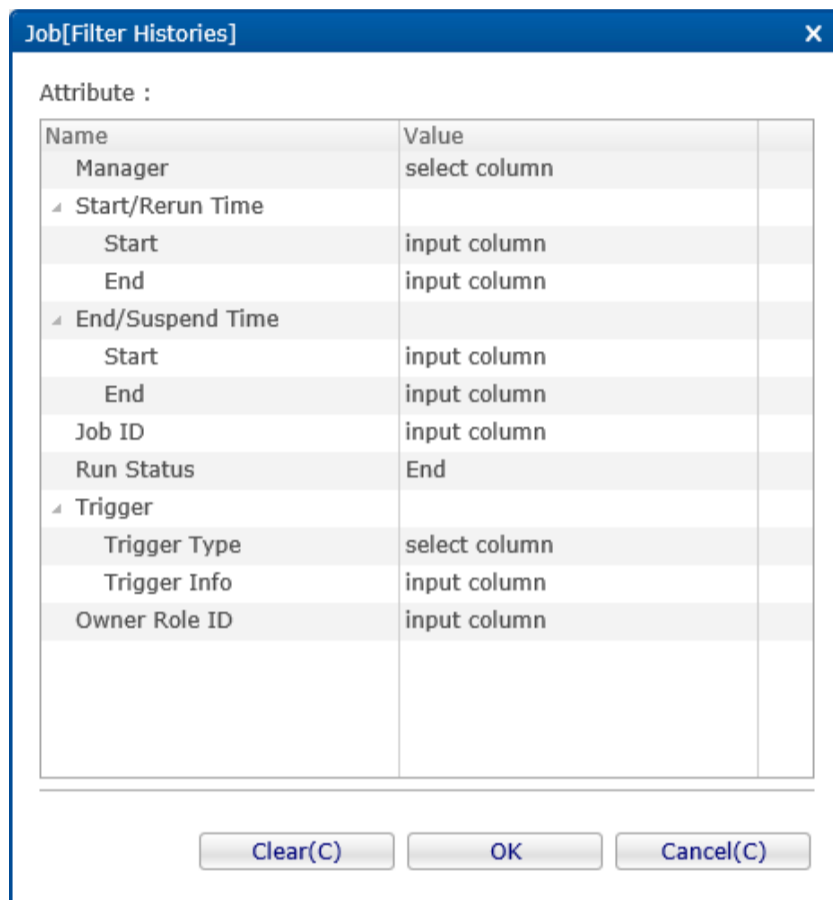


Figure 9-46 Job[Filter Histories]

To confirm the standard output and standard error output of the command job execution results

In the Job History[Node Details] view, the standard output and standard error output of the command job execution results are displayed.

```
[(Time of having store the message in internal DB)] stdout=(standard output), stderr=(standard error output)
```

To check run time of completed jobs

The run time of a job whose execution status ends at each level is displayed as the run time of Job History[List] view, Job History[Job Detail] view, and Job History[Node Details] view.

9.9 Job Plan List View

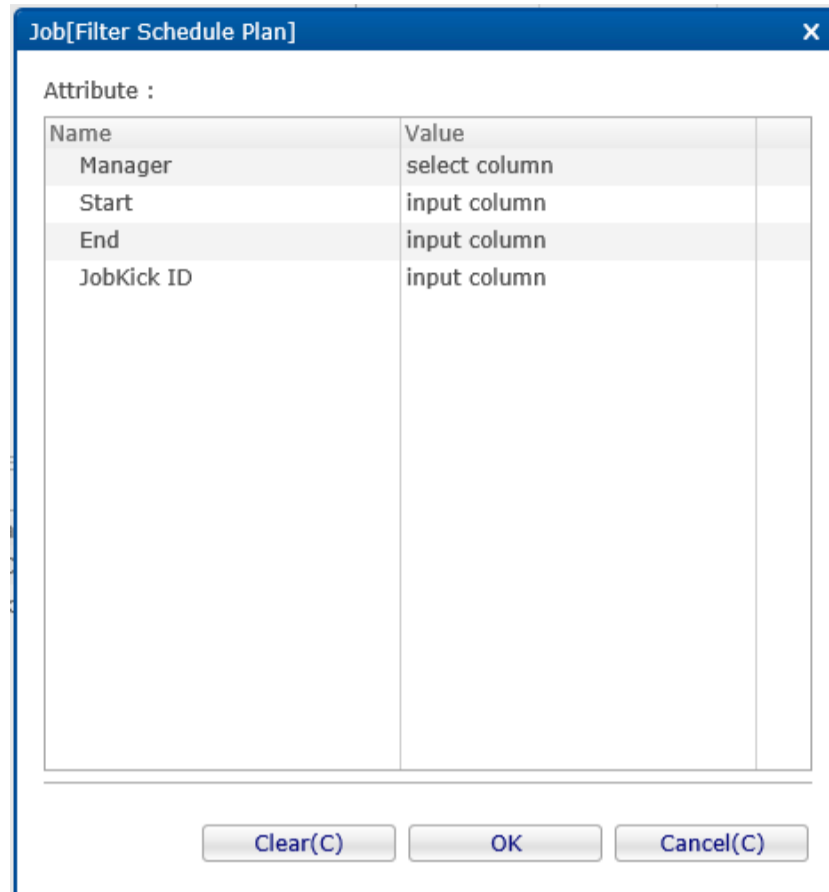
The schedule for planned executions is displayed in the Job[Plan] view.

By default, the most recent 100 Job execution plans are displayed. Refer to [9.10 Changing Job Screen Update Interval and History Display Limit](#) for the method for changing the Job execution plan count that is displayed.

9.9.1 Plan Filter

By using the "Filter" button, you can display only the plans that meet a condition.

1. Click the "Filter" button in the Job[Plan] view. The Job[Filter Schedule Plan] dialog is displayed.



Name	Value
Manager	select column
Start	input column
End	input column
JobKick ID	input column

Figure 9-47 Job[Filter Schedule Plan]

2. Configure the filter condition. Leave the field blank when an item is not included in the conditions. (Please click on the "Clear" button to change the filtering conditions back to the default conditions).
 - Manager:

Make "Hinemos Manager" a filtering condition. The Hinemos Manager of the manager name selected from the list will serve as a filtering condition. (For details on the multiple manager connection, refer to [2.6 Multi-Manager Connection](#))
 - Start, End Make "Time" a filtering condition. Future plans can be displayed by specifying a time in the future. Also, you can display past plans by specifying a past time. The Time dialog can be opened by clicking the button next to the input field. Please select the time in the dialog. Select the date and time from the combo box.
 - Include, Exclude Make JobKick ID a filtering condition. Multiple JobKick IDs can be used as conditions by delimiting them with commas.
3. Click the "OK" button. The Job[Filter Schedule Plan] dialog closes and only the plans that meet the specified conditions are displayed in the Job[Plan] view.
4. The filter process can be released by once again clicking on the "Filter" button in the Job[Plan] view.

9.10 Changing Job Screen Update Interval and History Display Limit

The screen information is updated regularly by obtaining manager information from the client at regular intervals. The restriction on the displayed update interval and the history can be changed by the following procedures.

1. Select [Client Setup] - [Setup] from the menu bar. The Preferences dialog is displayed.

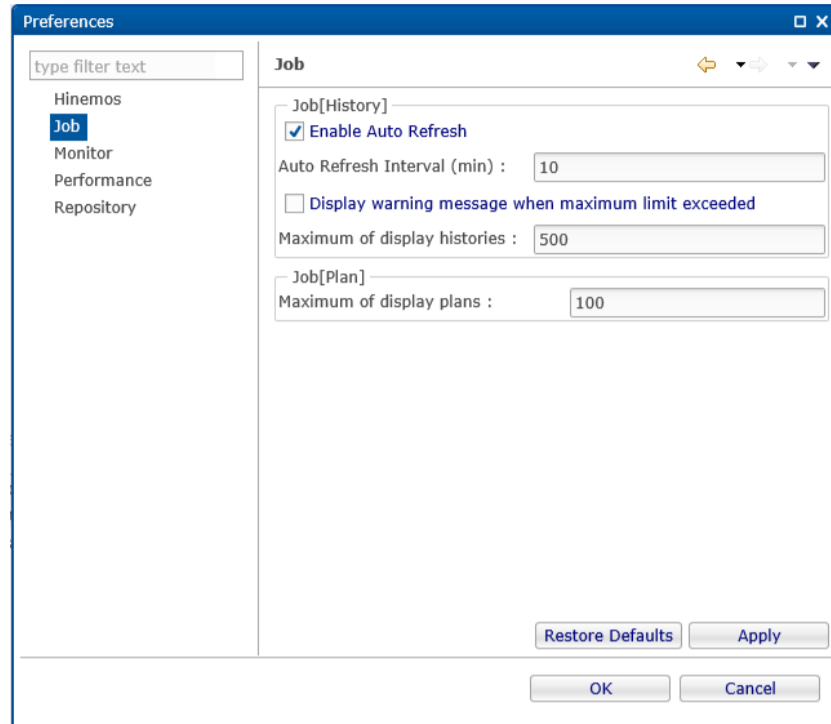


Figure 9-48 Preferences Dialog

2. Select Hinemos - Job in the tree pane on the left side.
3. The following configurations can be made for the Job History[List] view.
 - Enable Auto Refresh:
The contents of the view will be updated at the specified auto refresh interval when this check box is checked. If unchecked, the contents will not be updated unless the "Update" button is clicked.
 - Auto Refresh Interval (min):
If auto refresh is enabled, specify the update interval in minutes (from 1 to 32767 can be set).
 - Display messages when the upper bound is exceeded:
Output message if this check box is checked and if the accumulated number of events exceeds the specified number of displayed events. If unchecked, message is not output even if the history count exceeds the display history count.
 - Number of display histories:
Specify the history cases to display at one time (from 1 to 32767 can be set).
4. The following configurations can be made for the Job[Plan] view.
 - Number of display plans
Specify the number of Job plans that are displayed at one time. (Can be specified from 1 to 32767).

9.11 Refer Job

A Refer Job is a job that can be set with the form where it refers to another command job (or File Transfer Job) with completed definitions in the same JobUnit.

A Refer Job can only be defined as a Wait Rule or refer command job, and you can register it and run it based on the setting information (setting information set in the various Control, Command, Delay of Start, End Delay, Multiplicity, End Status and Notifications tabs) for the refer destination job. for the refer destination command job.

Configuration procedures for the Wait Rule settings are the same as the procedures for creating a Command Job.

Create Refer Job

To create a Refer Job, the JobUnit that is the destination for creating the Refer Job must be in Edit Mode.

1. From the job tree in the Job[List] view, select the new Refer Job to be added to a JobNet (or JobUnit).

2. Click the "Create Refer Job" button in the Job[List] view. The Job[Create/Change Refer Job] dialog is displayed.
3. Configure Job ID, Job Name, and Description. Always be sure to enter the "Job ID" and "Job Name", since both are mandatory fields. The "Job ID" of the Refer Job must be unique within that job unit.
4. Select the "Wait Rule" tab, and then configure the Wait Rule (Refer to [9.4.2 Creating/Modifying a JobNet](#) for the Wait Rule entry method.)
5. Configure the refer settings. Select the "Refer" tab.

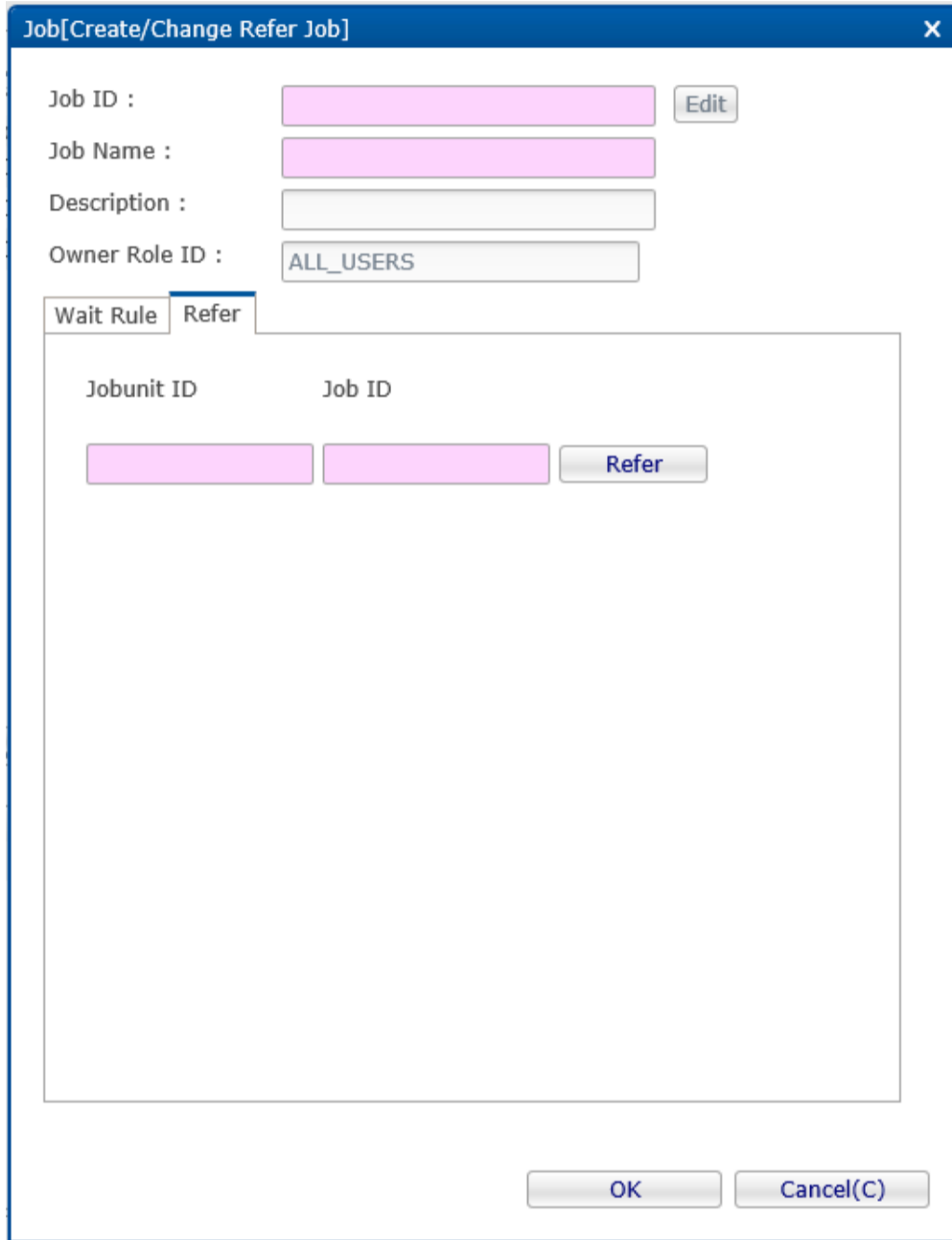


Figure 9-49 Job[Create/Change Refer Job] Dialog (Refer Tab)

6. Configure the command job to refer. Click on the "Refer" button and the Select Job dialog is displayed. Select the command job to refer from the scope tree, and then click the "OK" button.

7. **Click the "OK" button. The Job[Create/Change Refer Job] dialog closes.**

The newly created job is added to the job tree in the Job[List] view.

Copying Refer Job

Refer to section [9.4.4 Creating/Modifying a Command Job](#) for how to copy a refer job. If the refer job is copied to a different job unit, the content of the refer tab will be cleared. Set again a job to be referred to.

9.12 File Transfer Job

The File Transfer Job is for transferring files. The specified command is run when a normal job is run, but file transfer is run for the specified scope (or node) for file transfer jobs.

You can transfer to multiple nodes from a single node.

The configuration procedures for the End Status and Wait Rules are similar to the procedures for creating a Command Job.

Note) SSH setup is required to execute the File Transfer Job. For how to perform a setup, refer to Chapter 7.3, Enabling a File Transfer Job in the Administrator's Guide.

Creating File Transfer Job

- To create a File Transfer Job, the JobUnit that is the destination for creating the File Transfer Job must be in Edit Mode.
1. From the job tree in the Job[List] view, select the new File Transfer Job to add to a JobNet (or JobUnit).
 2. Click on the "Create File-transfer Job" button in the Job[List] view. The Job[Create/Change File-transfer Job] dialog is displayed.
 3. Configure "Job ID", "Job Name", and "Description". Always be sure to enter the "Job ID" and "Job Name", since both are mandatory fields. "Job ID" of the file transferring job must be unique within the same job unit.
 4. Select the "Wait Rule" tab, and then configure the wait rule (Refer to 9.4.2 Creating/Modifying a JobNet for the Wait Rule entry method.)
 5. Configure "File Transfer". Select the "File Transfer" tab.

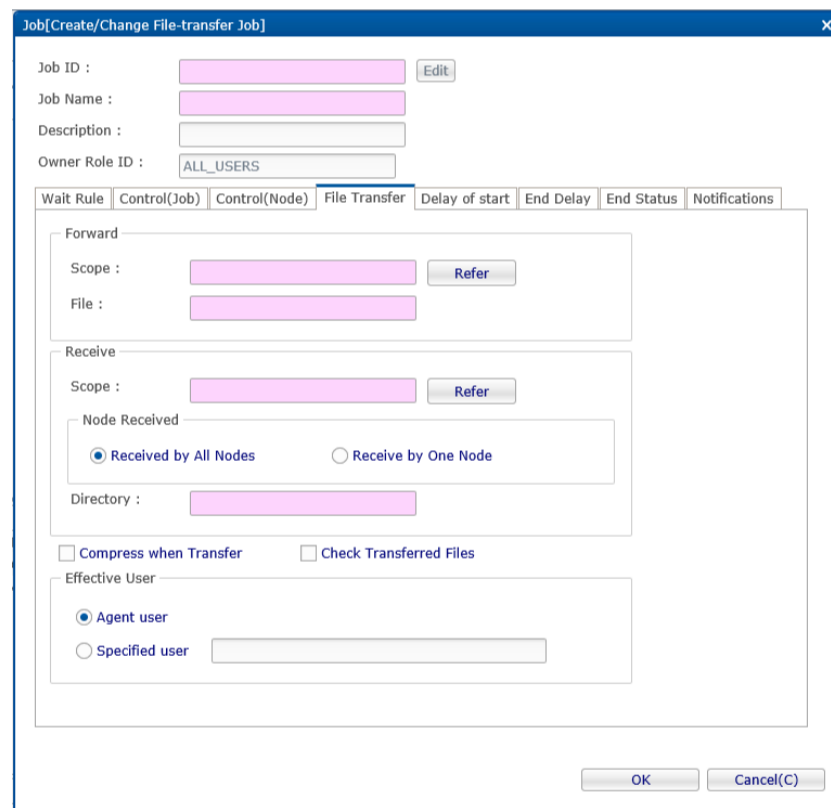


Figure 9-50 Job[Create/Change File-transfer Job] Dialog (File Transfer Tab)

6. Configure the source. Enter the following settings.

- Scope:

Click the "Refer" button and the Select Scope dialog is displayed; Select the source node, and then click the "Register" button (you cannot select "Scope", which is the root node of the job tree).

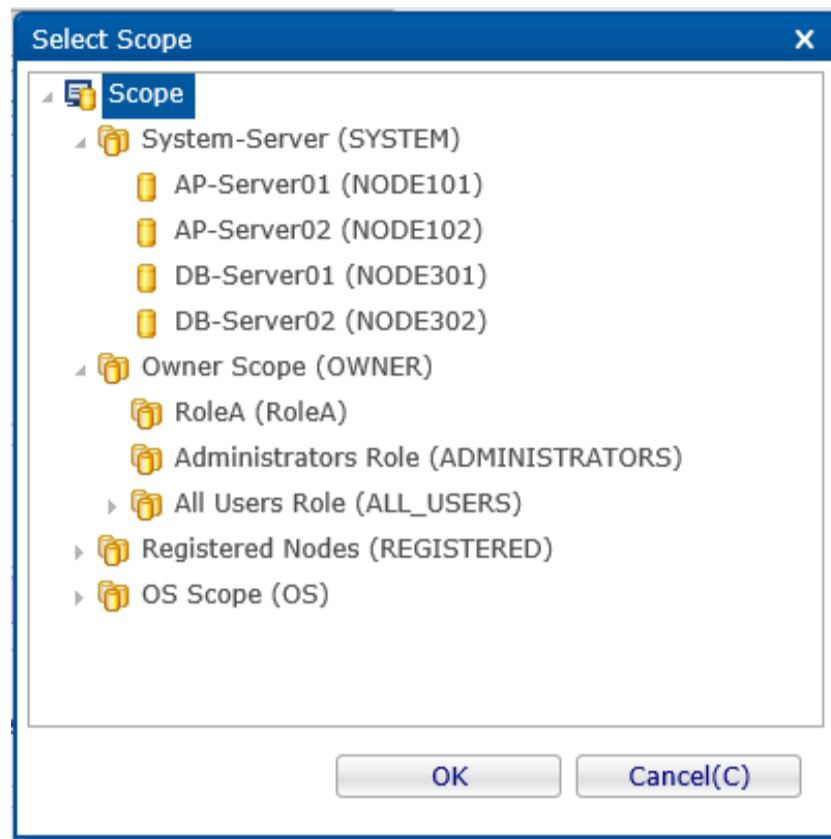


Figure 9-51 Select Scope Dialog

- File:

Enter the subject file. You can specify a wild card character in the file name.

The directory can also be specified. In that case, all files included in that directory will be transferred.

Note) You cannot transfer the system file (for Linux, it is the file starting with a dot (.)).

7. Configure the recipient. Enter the following settings.

- Scope:

Click the "Refer" button and the Select Scope dialog is displayed; Select the destination scope, and then click on the "OK" button.

- Processing method:

- Received by All Nodes

If a scope is configured in the recipient, execute file transfer to all nodes included in that scope.

- Received by One Node

If a scope is configured in the recipient, and if file transfer succeeds in one of the node included in that scope, then the file will not be transferred to other nodes.

8. Configure the transferring method. Check on the check box to enable the following configuration.

- Compress at the time of Transfer

Transfer compressed file during file transfer. It will be extracted after the file transfer.

- Check Transferred Files

Check the integrity of the source file and the destination file. If there is no match, then the End state is "Error".

9. Configure "Effective User". Enter the effective user of the file transfer command (the owner of the transferred file is the user specified by the effective user).

10. Select the "End Status" tab, and then configure the end status (Refer to [9.4.2 Creating/Modifying a JobNet](#) for the End Status entry method.)

11. Select the "Notifications" tab, and then configure the notification (Refer to [9.4.2 Creating/Modifying a JobNet](#) for the Notification setting method.)
12. Click the "OK" button. The Job[Create/Change File-transfer Job] dialog closes. The newly created job is added to the job tree in the Job[List] view.

Note) The operations described above are made in the client. Information of the editing job tree is not reflected in the manager until the "Register" button is clicked and it has processed.

If configuring control in more details

The following settings are possible (Refer to [9.4.4 Creating/Modifying a Command Job](#) for the setting method.)

- Configure a calendar
- Make the execution status of a job as hold, in advance
- Skip the execution status of a job in advance
- Specify the operation when the number of job executions on the same node exceeds the prescribed multiplicity.
- End a command job when it can't connect to the Agent that is the job execution destination
- Repeat until the job ends successfully.

When Running Delayed Start Monitoring

Check if the start of job execution has been delayed. If it is delayed, you can configure the control (Refer to [9.4.2 Creating/Modifying a JobNet](#) for the setting method.)

When Running End Delay Monitoring

Check if the end of a job has been delayed. If it is delayed, you can configure the control. (Refer to [9.4.2 Creating/Modifying a JobNet](#) for the setting method.)

Modifying File Transfer Job

- To change File Transfer Job, the File Transfer Job to which the JobUnit you want to change belongs must be in Edit Mode.
1. Select the file transferring job to change from the job tree in the Job[List] view.
 2. Click on the "Modify" button in the Job[List] view. The Job[Create/Change File-transfer Job] dialog is displayed.
 3. Change the parameter of the "File Transfer Job"

If the file transfer job not in the edit mode, Job[Create/Change File Transfer Job] dialog will be opened as a read-only dialog. In this case, the job unit to which the file transfer job belongs can be set in the edit mode by clicking the "Edit" button on the right of the job ID.

End value of the File Transfer Job

The end value of the File Transfer Job is the value shown in Table 9-10 End Value of the File Transfer Job.

Table 9-10 End Value of the File Transfer Job

Status	End value	End status(default)
No source file	-1	Warning
Have source file Transferring process ends successfully	0	Normal
Have source file Transferring process ends with an error	9	Error

9.13 Using Script with Job Execution

You can specify scripts for "Start Command" and "Stop Command" during command job registration. The following are notes when using scripts.

1. Current directory

- For the Windows Agent
The current directory is "C:\WINDOWS\system32".
- For the Linux Agent (default install)
The current directory is "/opt/hinemos_agent/var/log".

During script creation, it is recommended that the script is not dependent on the current directory (all directories that move to the directory at the beginning of the script startup must be described in absolute paths).

2. Standard output and standard error

Script must release the standard output and the standard error when it ends. The command job will not be in end status when the standard output and the standard error is not released.

- **Example:** pg_ctl (Start command of PostgreSQL)

In this case, pg_ctl does not release the standard output or the standard error after the startup. Therefore, by making the standard output and the standard error as /dev/null, the command job will be in end status.

```
/usr/local/sbin/pg_ctl -w start > /dev/null 2>&1
```

Even if the standard output and the standard error is released, the command job will not be in end status when command executed inside the script is not releasing standard output and standard error.

3. Condition to end job by the completion of the parent shell (not waiting for the child shell to complete the process)

If a (background) process holds the standard output and the standard error in the shell script (command which was started as a command job), that control will not return to the Hinemos Agent, and the command job will remain as the running status. Perform any of the following (switching the output destination) for the section that handles the standard output and the standard error of the parent output.

- Output the standard output and the standard error in the /dev/null (discard all output data)
- Output the standard output and the standard error contents in a log file
Redirection of the output destination will differ by the environment where the bash/csh is executed. Make configurations according to the environment.
- For csh / tcsh :command >& [log file path or /dev/null]
- For sh / bash :command > [log file path or /dev/null] 2>&1

Command Job sample (sleep.sh)

The following section shows a command job sample (sleep.sh). When sleep.sh exists in the home directory of the user name "job", execute

```
/home/job/sleep.sh start 10
```

When it is executed, "sleep" is executed for 10 seconds, and returns 0 (successful End). Also, if /home/job/sleep.sh stop 5 is executed, the running sleep.sh process is killed. After the process is killed, "sleep" is executed for 5 seconds, then returns 0 (successful End).

```
#####
###                               ###
###           sleep.sh           ###
###                               ###
#####

#!/bin/sh
#####
# Parameter
#####
# Work name
gyomu="Sleep"
# Work program
prg_home="/home/job"
prg_name="${prg_home}/${gyomu}"
```

```

# PID file
prg_pid="${prg_home}/${gyomu}.pid"
# Log file
log="${prg_home}/${gyomu}.log"

#####
# Argument
#####
# $1 ${action} # start/stop specification
# $2 ${sleep} # sleep time
action=$1
sleep=$2

#####
# Process
#####
start() {
    cd ${prg_home}
    echo "Starting : ${gyomu}" >> ${log}
    echo "${action}" >> ${log}
    echo "${sleep}" >> ${log}

    if [ -f ${prg_pid} ]; then
        echo "${gyomu} is already running" >> ${log}
        exit 1
    fi

    touch ${prg_pid}
    rval=$?
    if [ $rval != 0 ]; then
        echo "failed to create the status file" >> ${log}
        exit 1
    fi

    # At this time, obtain pid and write in the pid file.
    echo "$$" >> ${prg_pid}
    sleep ${sleep}
    rval=$?
    if [ $rval != 0 ]; then
        echo "${gyomu} program ended with an error ret=${rval}" >> ${log}
        rm -f ${prg_pid}
        rval2=$?
        if [ ${rval2} != 0 ]; then
            echo "failed to delete the status file" >> ${log}
            exit ${rval2}
        fi
        exit ${rval}
    fi

    echo "${gyomu} program ended successfully" >> ${log}
    rm -f ${prg_pid}
    rval2=$?
    if [ ${rval2} != 0 ]; then
        echo "failed to delete the status file" >> ${log}
        exit ${rval2}
    fi
    return ${rval}
}

stop() {
    echo "Stopping : ${gyomu}" >> ${log}
    kill `cat ${prg_pid}`
    rval=$?
    if [ ${rval} != 0 ]; then
        echo "${gyomu} failed to end the program" >> ${log}
    fi
}

```

```

        exit ${rval}
    fi
sleep ${sleep}
rval=$?
if [ ${rval} != 0 ]; then
    echo "${gyomu} failed to end the program" >> ${log}
    exit ${rval}
fi

echo "${gyomu} program paused successfully" >> ${log}
rm -f ${prg_pid}
rval2=$?
if [ ${rval2} != 0 ]; then
    echo "failed to delete the status file" >> ${log}
    exit ${rval2}
fi
return ${rval}
}

case ${action} in
start)
    start
    ;;
stop)
    stop
    ;;
*)
    echo "argument to specify the operation is wrong." >> ${log}
    exit 1
esac

exit $?
# End of file.

```

9.14 Operation of the Start Command

Operation of the "Start Command" during command job registration differs by the running OS platform and the "Effective User". The agent acts to send a command like that shown below to each platform.

- Windows platform
 - If the agent starting the user = Effective User : {Start Command}
 - If the agent starting the user ≠ Effective User : execution error
 - Linux platform
 - If the agent starting the user = Effective User : sh -c {Start Command}
 - If the agent starting the user ≠ Effective User : sudo -u {Effective User} sh -c {Start Command} (* The agent's effective user must have the sudo permission. Comment out the corresponding section of the following configuration file.)
- sudoers configuration : /etc/sudoers

Before the edition:
Defaults requiretty

After the edition:
Defaults requiretty

Identification of the OS platform is performed automatically by the agent. Refer to Chapter 7.1, Start Command Action Change in the Administrator's Guide regarding how to modify the settings.

Start Command for the Windows Platform

With Hinemos 4.1 or later, the specifications for the command passed to the OS have changed.

- Hinemos 4.0 or prior
 - CMD /C {Start Command}
- Hinemos 4.1 or later
 - {Start Command}

Therefore, some of the commands created in versions prior to Hinemos 4.0 will not operate in Hinemos 5.0. (i.e.: If just the script file name for some of the scripts such as VB script, etc. are to be a Start Command. In this case, in order to have the same Start Command operation as in versions prior to Hinemos 4.0:

Use CMD /C {Start Command entered in Hinemos 4.0}

10 Infrastructure Feature

10.1 Overview

This feature can execute processes necessary for the infrastructure management to two or more nodes by one operation.

You can access this feature using a graphical interface. You can perform batch processing of all nodes registered in a scope by specifying that scope.

The following processes can be run by scope.

- Command Execution
- File Distribution

In addition, it is possible to check if processing is necessary before execution of the processing and to perform the processing only to the necessary node.

10.1.1 Structure

This feature consists of the following elements:

- Infrastructure management setups

Set a scope, etc., for management of the infrastructure. Infrastructure management setup consists of plural Infrastructure Management Modules. Infrastructure management is realized by sequentially executing the Infrastructure Management Modules.

- Infrastructure Management Module

Specific processing for infrastructure management. The following Infrastructure Management Modules are available:

- File Transfer Module

This module distributes from Hinemos manager to each node the rpm file and setting file necessary for infrastructure management. The content of the files can be changed or the content to be changed can be checked before the files are distributed. Refer to Figure 10-1 for the image during the operation of a File Transfer Module.

- Command Module

This module executes commands (such as rpm and service) necessary for infrastructure management. It can be checked before execution whether execution of the command is necessary. Refer to Figure 10-2 for the image during the operation of a Command Module.

- Infra file

This file is distributed by a File Transfer Module. It is registered in advance to Hinemos Manager before distributed.

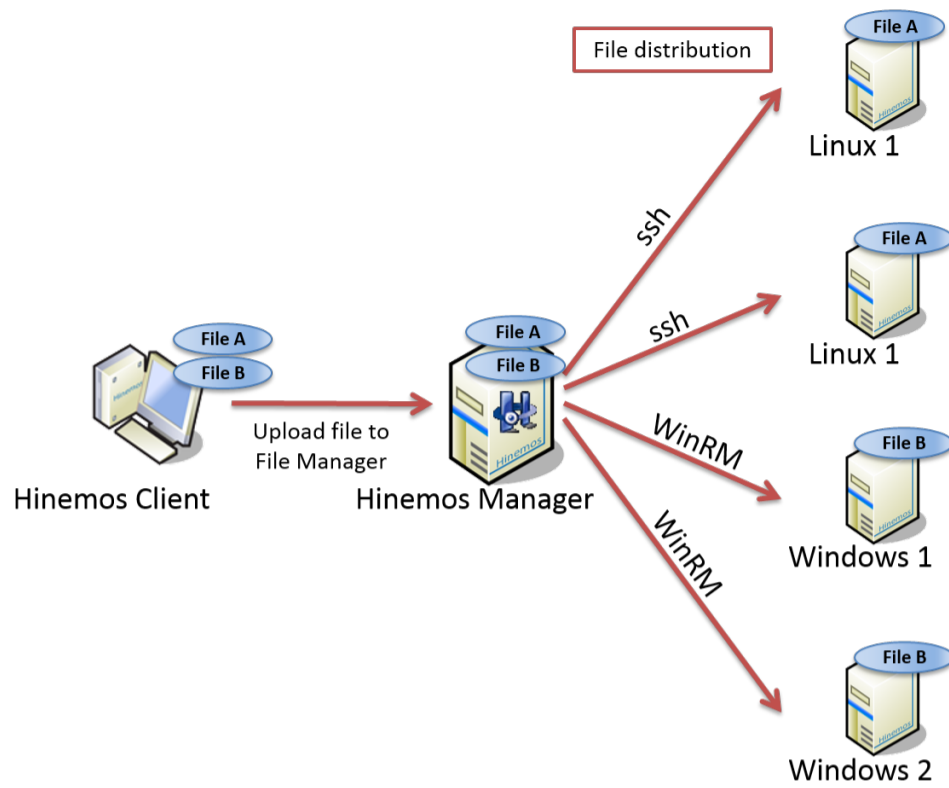


Figure 10-1 Example of File Distribution

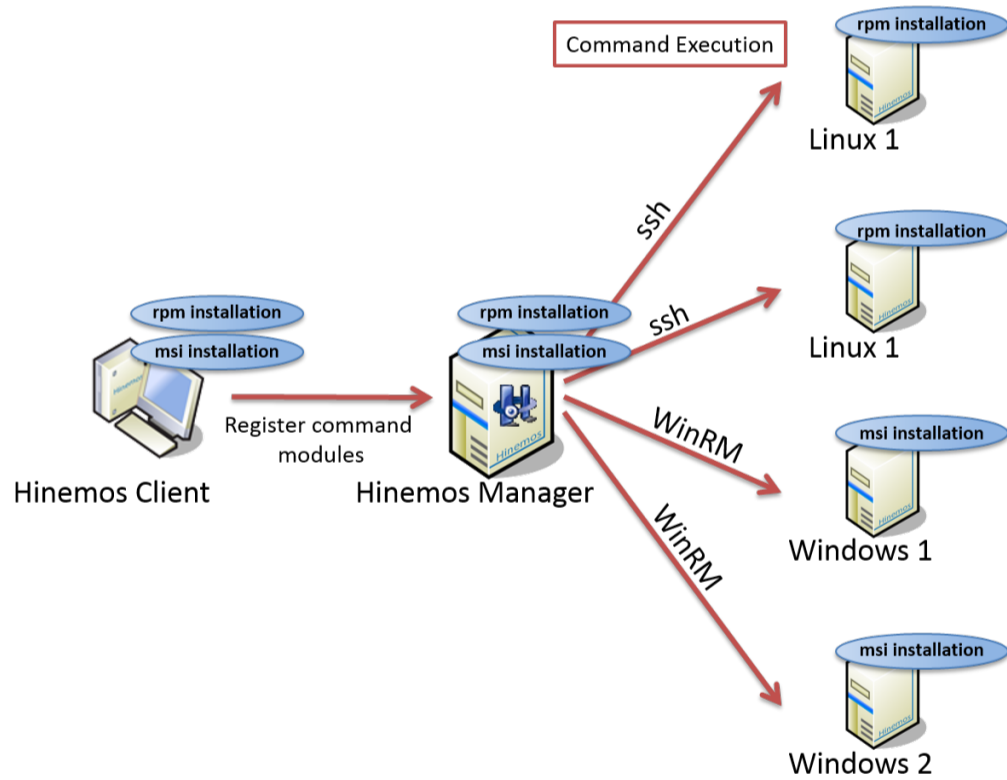


Figure 10-2 Example of Command Execution

10.2 Interface Composition

10.2.1 Default Interface

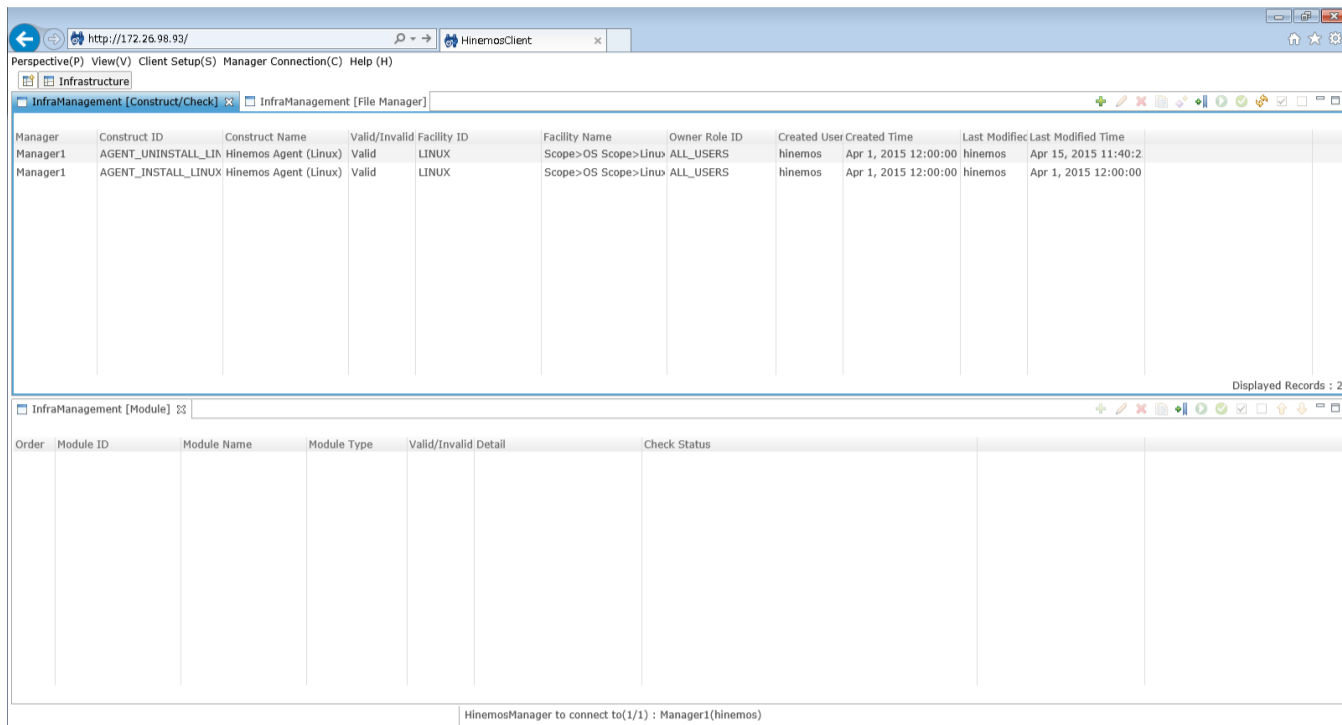


Figure 10-3 Default Interface of Infrastructure Management

10.2.2 Infra Management[Construct/Check] View

This view is for edit and execution of infra management settings running the infrastructure management feature.

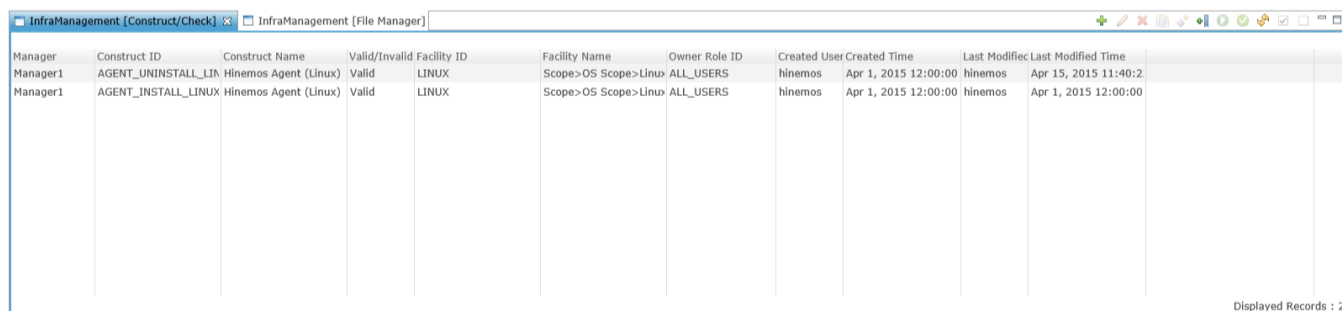






Figure 10-4 Infra Management[Construct/Check] View

Table 10-1 Toolbar

Icon	Button name	Description
	Create	Create new infrastructure management setup.
	Change	Change selected infrastructure management setup.
	Delete	Delete selected infrastructure management setup.
	Copy	Copy selected infrastructure management setup.
	Object privilege setting	Set an object privilege for infrastructure management setup.
	Use authentication information of node property	Use the set value of node property (SSH/WinRM) to connect node property when infrastructure management setup is executed.
	Run	Execute selected infrastructure management setup.

	Check	Check selected infrastructure management setup.
	Update	Update information on the table.
	Valid	Enable the selected infrastructure management setup.
	Invalid	Disable the selected infrastructure management setup.

10.2.3 InfraManagement[Module] View

This view is used to edit or execute each module constituting infrastructure management setup.

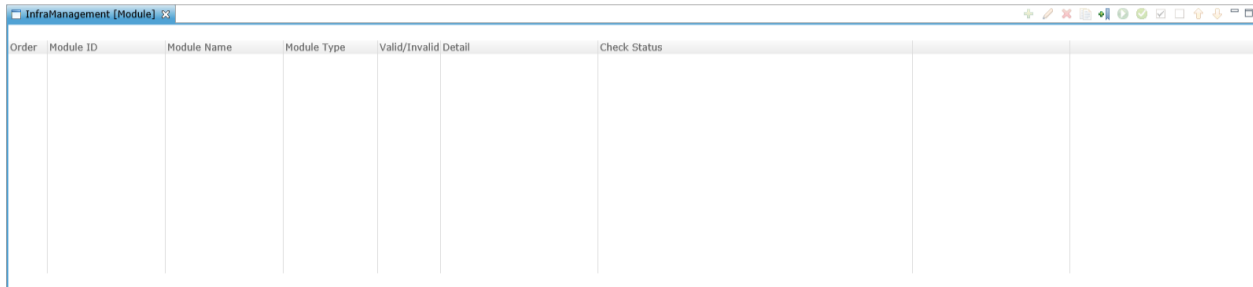














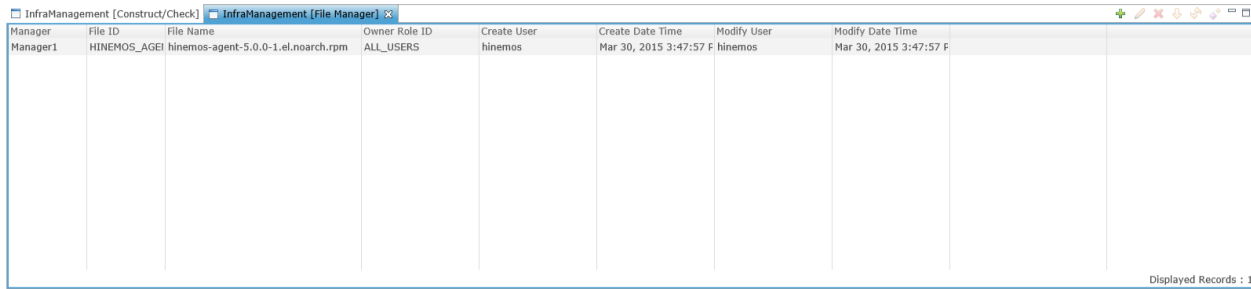
Figure 10-5 InfraManagement[Module] View

Table 10-2 Toolbar

Icon	Button name	Description
	Create	Create new infrastructure management module.
	Change	Change selected infrastructure management module.
	Delete	Delete selected infrastructure management module.
	Copy	Copy selected infrastructure management module.
	Valid	Enable the selected infrastructure management module.
	Invalid	Disable the selected infrastructure management module.
	Up	Move up one the order of the selected infrastructure management module.
	Down	Move down one the order of the selected infrastructure management module.
	Use authentication information of node property	Use the set value of node property (SSH/WinRM) to connect node property when infrastructure management setup is executed.
	Execution	Execute the selected infrastructure management module.
	Check	Check selected infrastructure management module.
	Check status	Display the check status of each node.

10.2.4 InfraManagement[File Manager] View







This view manages an Infra file to be distributed by a file distribution module.



Manager	File ID	File Name	Owner Role ID	Create User	Create Date Time	Modify User	Modify Date Time
Manager1	HINEMOS_AGEI	hinemos-agent-5.0.0-1.el.noarch.rpm	ALL_USERS	hinemos	Mar 30, 2015 3:47:57 F	hinemos	Mar 30, 2015 3:47:57 F

Figure 10-6 InfraManagement[File Manager] View

Table 10-3 Toolbar

Icon	Button name	Description
	Create	Create a new file settings.
	Change	Change the selected file settings.
	Delete	Delete the selected file settings.
	Download	Download the selected file settings.
	Update	Update information on the table.
	Object Privilege Settings	Assign object privilege to file.

10.3 Prerequisites for Using this Feature

The following configuration must be made beforehand to use the Infrastructure Management feature.

- Node that is subject to operation must be registered in the repository feature and assigned to any of the scopes
- Hinemos Manager must be able to log in a node to be managed and execute commands by using SSH or WinRM.
- Environmental requirements for Infrastructure Management feature

Table 10-4 Environmental Requirements for Infrastructure Management

OS	SSH	Windows PowerShell	WinRM
Red Hat Enterprise Linux 7, 6, 5 Oracle Linux 7,6,5 CentOS 7, 6, 5	○	—	—
Windows Server 2008	—	2.0, 3.0	1.1
Windows Server 2008 R2 Windows 7	—	2.0, 3.0	2.0
Windows Server 2012 Windows 8	—	3.0, 4.0	3.0
Windows Server 2012 R2 Windows 8.1	—	4.0	3.0

For the method of setting of PowerShell, refer to [7.11 Windows Event Monitor](#) . Refer to 6.6, "Windows Service Monitor" in the Administrator's Guide regarding the method for setting up WinRM.

10.4 Creating/Modifying/Deleting Infrastructure Management Setting

10.4.1 Creating an Infrastructure Management Setting

The Infrastructure Management is set up in the Infrastructure Management[Create/Change] dialog. The Infrastructure Management[Create/Change] dialog is opened with the following process.

1. Click the "Create" button from the Infrastructure Management[Construct/Check] view. The Infrastructure Management[Create/Change] dialog is displayed.

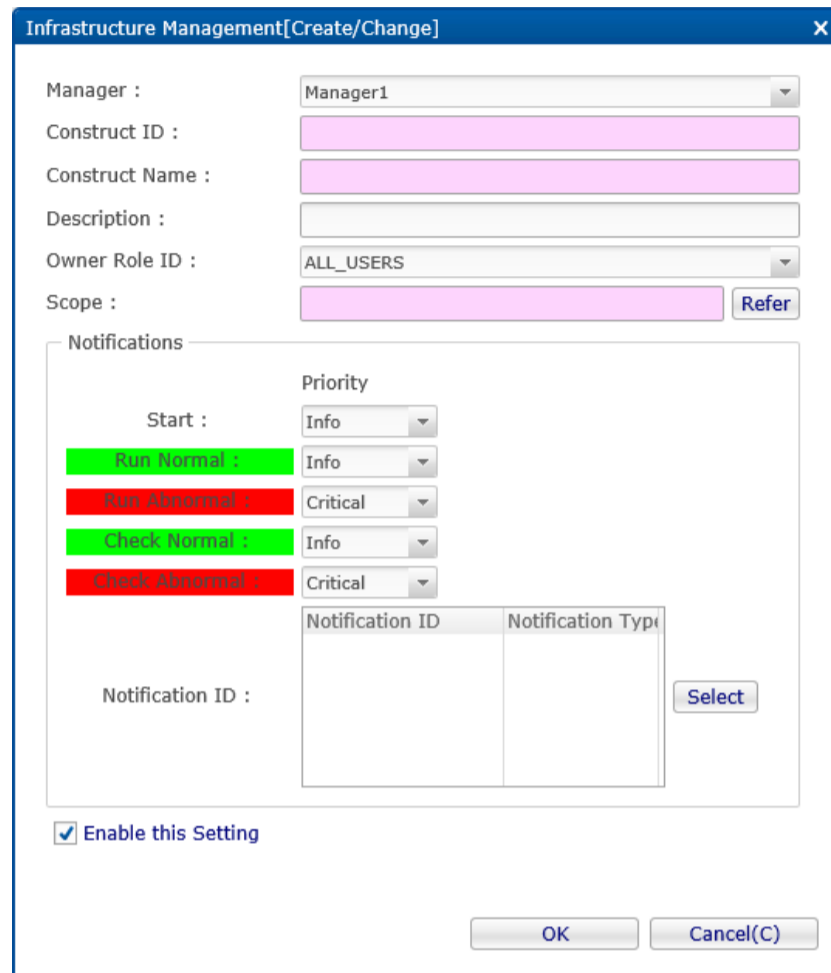


Figure 10-7 Infrastructure Management[Create/Change] Dialog

2. Set up the following items.
 - Manager:

Select a Hinemos Manager for which infrastructure management setting is created. (Refer to [2.6 Multi-Manager Connection](#) for more information on the multiple manager connection.)
 - Construct ID:

Enter text of Construct ID that uniquely identifies infrastructure management setup.
 - Construct Name:

Enter a construct name of infrastructure management setup in alphanumeric text.
 - Description:

Enter a description of the infrastructure management setting as text.
 - Owner Role ID:

Select an Owner Role ID for the infrastructure management setting. (Refer to [12 Account Feature](#) section for more details about Owner Role.)
 - Scope:

Enter the target scope for the infrastructure management setting.. Click the "Refer" button on the right to display the Select Scope dialog. Select the target scope from the scope tree in the dialog.
3. Enter the following items for the notification. Note that notification is not made if a blank column is specified for the priority of the notification.
 - Start:

Select the priority of notification that is made at the start of infrastructure management setup.
 - Run Normal:

Select the priority of notification that is made when infrastructure management setup successfully ends.

- Run Abnormal:
Select the priority of notification that is made when infrastructure management setup abnormally ends.
 - Check Normal:
Select the priority of notification that is made when checking infrastructure management ends successfully.
 - Check Abnormal:
Select the priority of notification that is made when checking infrastructure management ends abnormally.
 - Notification ID
Select from the list the Notification ID that is the notification method used in the notification setting. (Refer to the section [6.3 Notification Feature](#) regarding notification settings). When you click the "Select" button on the right, the Notification[List] dialog is displayed. Select the notification method.
4. Specify whether to enable this setting. Set it with the checkbox below.
 - Enabling this Setting:
When checked, the setting is enabled. If not checked, i.e., if disabled, Each infrastructure management module is neither executed nor checked, even if the infrastructure management setup is executed or checked, and an operation to the target node is not performed.
 5. Click the "OK" button. Infrastructure Management[Create/Change] dialog will close and the created infrastructure setting will be added to Infrastructure Management[Construct/Check] view.

10.4.2 Modifying an Infrastructure Management Setting

The infrastructure management settings can be changed by the following procedures.

1. Select the subject to be changed from the setting list, and then click the "Modify" button. The Infrastructure Management[Create/Change] dialog opens.
2. Edit the setting details, and then click the "OK" button. (Refer to [10.4.1 Creating an Infrastructure Management Setting](#) for the procedures for entering settings).

10.4.3 Deleting an Infrastructure Management Setting

Select the object to delete from the setting list, and then click the "Delete" button.

10.5 Creating/Modifying/Deleting a Infrastructure Management Module

10.5.1 Creating a Infrastructure Management Module

Creating a Command Module

A command module can be created using the following procedure.

1. Select from Infrastructure Management[Construct/Check] view the infrastructure management setup for which an infrastructure management module is to be created.
The infrastructure management module already added to the selected infrastructure management setup will be displayed on Infrastructure Management[Module] view.

2. Click the "Create" button on the Infrastructure Management[Module] view. The Module Type dialog is displayed.

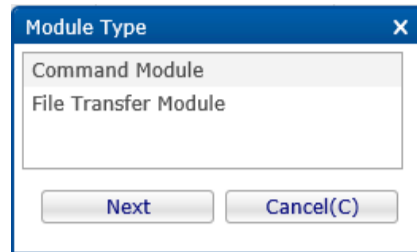


Figure 10-8 Module Type Dialog

3. Select the Command Module, then click the "Next" button. The Infrastructure Management[Create/Change File Execution Module] dialog is displayed.

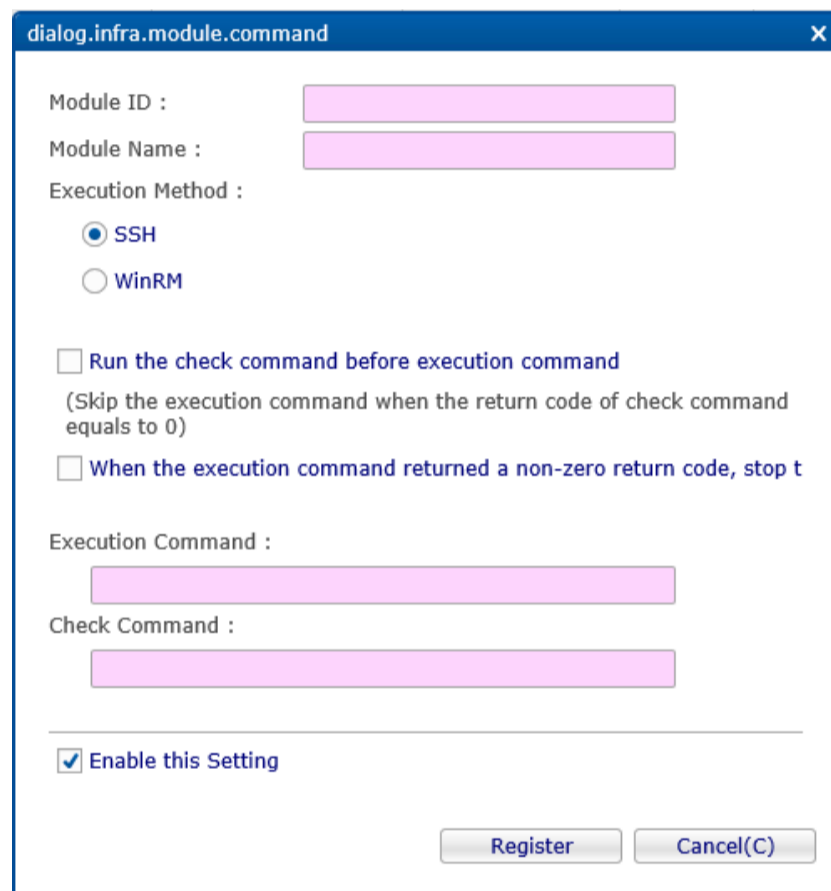


Figure 10-9 Infrastructure Management[Create/Change File Execution Module] Dialog

4. Configure the following items.
 - Module ID:
Enter text of an ID to uniquely identify an infrastructure management module.
 - Module Name:
Enter a module name of infrastructure management module in alphanumeric text.
 - Execution Method:
Select a protocol when connecting a node to execute a command.
 - SSH
Select this if the node is Linux.
 - WinRM
Select this if the node is Windows.

- Run the check command before execution command

Check this to execute a check command before executing an execution command when executing an infrastructure management module.

If checked, the execution command is executed only if the return code of the check command is other than 0.

The execution command will not be executed if the return code of the check command is 0. If not checked, the execution command is always executed.

- When the execution command returned a non-zero return code, stop the following Module

Check this to not execute the subsequent infrastructure management modules if the return code of an execution code is other than 0 when infrastructure management setup is executed.

If checked, the infrastructure management modules are sequentially executed only when "Check with check command before execution" is checked and the execution command is not executed.

If not checked, the next infrastructure management module is executed regardless of the execution result of the execution command.

- Execution Command:

Enter a command to be executed when an infrastructure management module is executed.

- Check Command:

Enter a command executed at the time of check of the infrastructure management module.

- Enabling this Setting

When checked, the setting is enabled. If not checked, i.e., if disabled, this module will be neither executed nor checked when infrastructure management setup is executed or checked, and execution or checking of the next module will be skipped.

5. Click the "Register" button. The Infrastructure Management[Create/Change File Execution Module] dialog will close. The command module is added to the Infrastructure Management[Module] view.

Creating File Transfer Module

A command module can be created using the following procedure.

1. Select on Infrastructure management[Construction/Check] view the infrastructure management setup for which an infrastructure management module is to be created.

The infrastructure management module already added to the selected infrastructure management setup will be displayed on the Infrastructure Management[Module] view.

2. Click the "Create" button on the Infrastructure Management[Module] view. The Module Type dialog is displayed.

3. Select the File Transfer Module and click the "Next" button. The Infrastructure Management[Create/Change File Transfer Module] dialog is displayed.

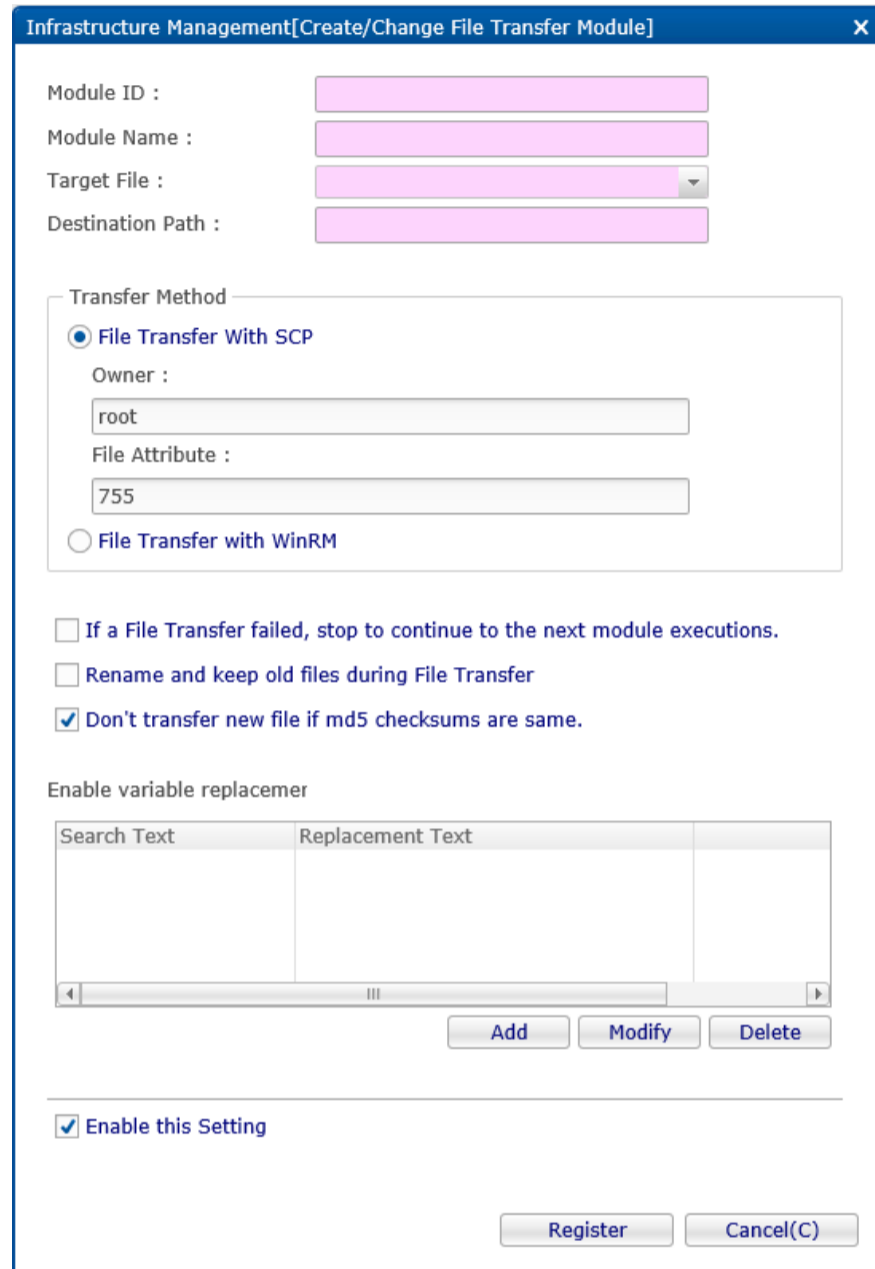


Figure 10-10 Infrastructure Management[Create/Change File Transfer Module] Dialog

4. Configure the following items.

- Module ID:
Enter text of an ID to uniquely identify an infrastructure management module.
- Module Name:
Enter a module name of infrastructure management module in alphanumeric text.
- Transferring Method:
Select a protocol when connecting a node to transfer a file.
 - File Transfer with SCP
Select this if the node is Linux.
 - Owner:
Enter the user name of the OS that is the owner of the transferred file.
 - File Attribute:
Enter the permissions of the transferred file.
 - File Transfer with WinRM
Select this if the node is Windows.

- If a File Transfer failed, stop to continue to the next module execution.

Check this if a location file cannot be located on a location path if the subsequent infrastructure modules are not to be executed when infrastructure management setup is executed.

If checked, the next infrastructure management module is executed only when file location has been successful or when "Don't transfer new file if md5 checksums are same" is checked and the file has not been retransferred.

If not checked, the next infrastructure management module will be executed regardless whether file location has been successful or not.

- Rename and keep old files during File Transfer

If checked, a backup file at the distribution destination is obtained and then the file is located when a file of the same name already exists at the distribution destination.

(The name of the backed up file will be "(Original file name). YYYYMMDDhhmmss".)

If not checked, a file already existing will be overwritten.

- Don't transfer new file if md5 checksums are same.

If checked, a backup file at the distribution destination is obtained and then the file is located when a file of the same name already exists at the distribution destination.

If the MD5s match, the file will not be transferred.

Note that MD5 after the variables in a file are replaced is used for the file to be transferred.

- Variable replacement:

Set a replacing string if the content of a file is changed before the file is transferred when the file transfer module is executed.

- Addition of replacement text settings

1. Click on the "Add" button. A replacement text dialog will be displayed.

2. Configure the following items, then click the "OK" button.

- Search Text:

Enter a replacing text. The character string which matches completely will be replaced with the replacement string.

- Replacement Text:

Enter a string to be replaced. Node property can be used as a replacement text. Refer to Table 7-30, Node Properties List, regarding node properties.

- Changing replacement text

Select replacing string setting displayed on "Enable variable replacement" and to be changed and click "Change" button. Edit the input item on the replacement string dialog and click "OK" button. (For the content to be set for each input item, refer to Addition of replacement text settings.)

- Delete of replacement text settings

Select replacing string setting displayed on "Enable variable replacement" and to be changed then click the "Delete" button.

- Enabling this Setting

When checked, the setting is enabled. If unchecked, the setting is disabled, and although the setting is saved, the infrastructure management module will not be executed.

5. Click the "Register" button. The Infrastructure Management[Create/Change File Transfer Module] dialog will close, and the file transfer module is added to Infrastructure Management[Module] view.

10.5.2 Modifying a Infrastructure Management Module

The infrastructure management module can be changed by the following procedures.

1. Select the subject to be changed from the setting list, and then click the "Modify" button. The Infrastructure Management[Create/Change File Execution Module] dialog or the Infrastructure Management[Create/Change File Transfer Module] dialog will open.

2. Edit the setting details, and then click the "OK" button. (Refer to [10.5.1 Creating a Infrastructure Management Module](#) for the procedures for entering settings)

10.5.3 Deleting a Infrastructure Management Module

Select the object to delete from the setting list, and then click the "Delete" button.

10.5.4 Changing the order of infrastructure management module

When infrastructure management setup is executed, the infrastructure management modules are sequentially executed starting from the module having the youngest number.

Select the subject to change from the configuration list, and click "Up" or "Down" button. The order can be changed.

10.6 Creating/Modifying/Deleting an Infra File

10.6.1 Creating an Infra File

The infra file to be transferred with the file transfer module is set up in the Infra file[Create/Change] dialog. The Infra file[Create/Change] dialog can be opened with the following operations.

1. Click the "Create" button in the Infrastructure Management[File Manager] view. The Infra file[Create/Change] dialog will be displayed.

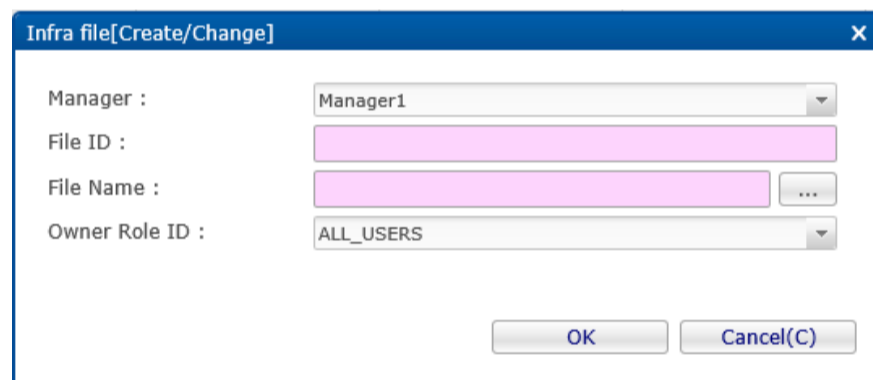


Figure 10-11 Infra file[Create/Change] Dialog

2. Set up the following items.

- Manager:

Select the Hinemos Manager for which Infra file is created. (For details on the multiple manager connection, refer to [2.6 Multi-Manager Connection](#))

- File ID:

Enter text of ID that uniquely identifies an Infra file.

- File Name:

Select a file to be distributed by a file transfer module. Click the "..." button on the right of the file name. A dialog for selecting a file will be displayed. Select a file to be registered.

- Owner Role ID:

Select an Owner Role ID for the infra file. (Refer to [12 Account Feature](#) section for more details about Owner Role.)

3. Click the "OK" button. Infrastructure Management[Create/Change] dialog will close and the created infra file will be added to Infrastructure Management[File Manager] view.

Notes on using Web client

With a Web client, select a file by clicking the "..." button on the right of a file name. The file will be uploaded to the Web client service. Progress (in %) is displayed on the "..." while the file is being uploaded to the Web client service.

If "OK" button is pressed before this display of progress is over and "." is displayed again, message "Uploading a file" is displayed and the file cannot be registered. If this happens, close the message, wait for a while, and then click "OK" button again.

10.6.2 Modifying an Infra File

You can change the infra file with the procedure below.

1. Select the subject to be changed from the setting list, and then click the "Modify" button. The Infra file[Create/Change] dialog will open.
2. Edit the setting details, and then click the "OK" button. (Refer to [10.6.1 Creating an Infra File](#) for the procedures for entering settings).

10.6.3 Deleting an Infra File

Select the object to delete from the setting list, and then click the "Delete" button.

10.6.4 Downloading an Infra File

You can download the infra file registered in the Hinemos Manager by following the procedure below.

1. Select the infra file to be downloaded from the setting list, then click the "download" button.
2. With a Rich Client, a dialog for specifying a saving destination will be displayed. Specify a saving destination. In the case of a Web Client, downloading by the browser function will be started.

10.7 Execution of Infrastructure Management

10.7.1 Running an Infrastructure Management Setting

You can execute the infrastructure management setting with the procedure below

1. Select the infrastructure management setting to run from the setting list in the Infrastructure Management[Construct/Check] view, and click the "Run" button.
2. A confirmation dialog will be displayed. To execute infrastructure management setup, click "Run" button.
 - Execute all modules without displaying the confirmation dialog.

If this check box is checked and enabled, the infrastructure management modules will be sequentially executed without displaying the execution result of each infrastructure management execution module.

If enabled, the result of execution of each module will be displayed.
3. The Infrastructure Management[Login] dialog will be displayed for each node. Enter information necessary for authenticating connection and click "OK".

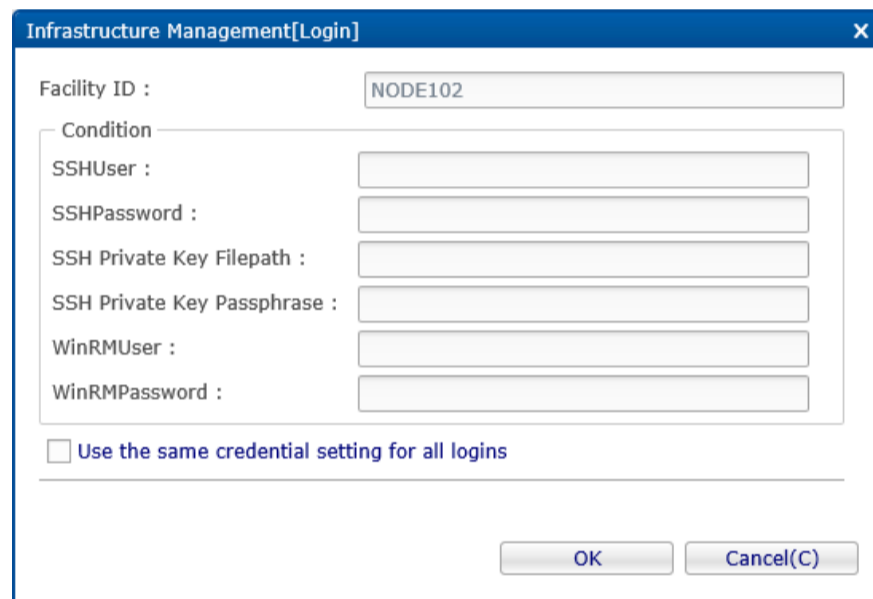


Figure 10-12 Infrastructure Management[Login] Dialog

- Facility ID:
The facility ID of the node to be connected will be displayed. Check for which node authentication information must be entered. (This item cannot be edited.)

- Condition

- SSHUser:

- Input a user name when connecting with SSH

- SSHPassword:

- Input a password when connecting with SSH

- SSH Private Key Filepath :

- Enter a file path to the secret key to be used for connection through public key authentication by SSH.

- SSH Private Key Passphrase :

- Enter a pass phrase to the secret key to be used for connection through public key authentication by SSH.

- WinRMUser:

- Input a user name when connecting with WinRM

- WinRMPasswd :

- Input a password when connecting with WinRM

The protocol (SSH or WinRM) specified when an infrastructure management module was set will be used for connection. Use the protocol specified in Infrastructure Management Module settings. If SSH is specified and if "SSH secret key file path" is entered, login by using the "SSH secret key file path" and "SSH secret key pass phrase". Otherwise, use "SSH user" and "SSH password" for logging in.

- Use the same credential setting for all logins

If the same information can be used for all the nodes included in a scope for logging in, checking and enabling this check box connects the other nodes by using the authentication information entered as a condition. If the login information differs from one node to another, disabling this check box displays Infrastructure Management [Login] dialog for each node. Enter the login information of each node.

4. If "Execute all modules without displaying the confirmation dialog" is disabled when the infrastructure management modules have been sequentially executed, or if execution of an infrastructure management has failed, a result dialog will be displayed for each infrastructure management module.

Click "Next" button. The next infrastructure management module will be executed. Clicking "Pause" button can suspends execution of infrastructure management setup.

For the content displayed on the result dialog, refer to [10.7.3 Running an Infrastructure Management Module](#) .

5. When setup and execution of infrastructure management is over, message "Execution completed" is displayed.

When using information of node property

When infrastructure management setup is executed, information set for node property can be used instead of entering login information of each node to Infrastructure Management[Login] dialog.

To use information set for node property, click "Use authentication information of node property" on Infrastructure Management[Construct/Check] view. Click this button. "Use authentication information of node property" will be pressed and use of node property will be enabled. When use of node property is enabled, Infrastructure Management[Login] dialog is not displayed. Instead, login is executed by using "SSH – User name", "SSH – User password", "SSH – SSH secret key file path", "SSH –SSH secret key pass phrase", "WinRM – User name" and "WinRM – User password" set for the node property is used for logging in when each node is connected.

Click "Use authentication information of node property" button again. The status in which the button is pressed will be cleared and use of the node property will be disabled.

10.7.2 Performing Check on an Infrastructure Management Setting

Infrastructure management setup can be checked by following the procedures bellow.

1. Select the infrastructure management setting to run from the setting list in the Infrastructure Management[Construct/Check] view, and click the "OK" button.

2. A confirmation dialog will be displayed. To execute infrastructure management setup, click "Run" button.
 - Execute all modules without displaying the confirmation dialog.

If this check box is checked and enabled, the infrastructure management modules will be sequentially executed without displaying the check result of each infrastructure management execution module.

If enabled, the result of check of each module will be displayed.
3. The Infrastructure management[Login] dialog will be displayed for each node. Enter information necessary for authenticating connection and click "OK". (For the contents to be entered and usage of Node Property, refer to [10.7.1 Running an Infrastructure Management Setting](#))
4. If "Execute all modules without displaying the confirmation dialog" is disabled when the infrastructure management modules have been sequentially executed, or if execution of an infrastructure management has failed, a confirmation dialog will be displayed for each infrastructure management module.

Click the "Next" button. The next infrastructure management module check will be executed. Click the "Pause" button to pause the check of infrastructure management settings.

For the content displayed on the result dialog, refer to [10.7.4 Performing Check on an Infrastructure Management Module](#) .
5. When the check of infrastructure management settings is over, the message "The check is completed." will be displayed.

For the "Check status" column in Infrastructure Management[Module] view, the facility ID which displays NG or OK is updated according to the check result of each infrastructure management module.
6. After the execution of check, select the infrastructure management module settings and click the "Check status" in Infrastructure Management[Module] view to display Check Status dialog and to confirm the nodes of OK or NG.

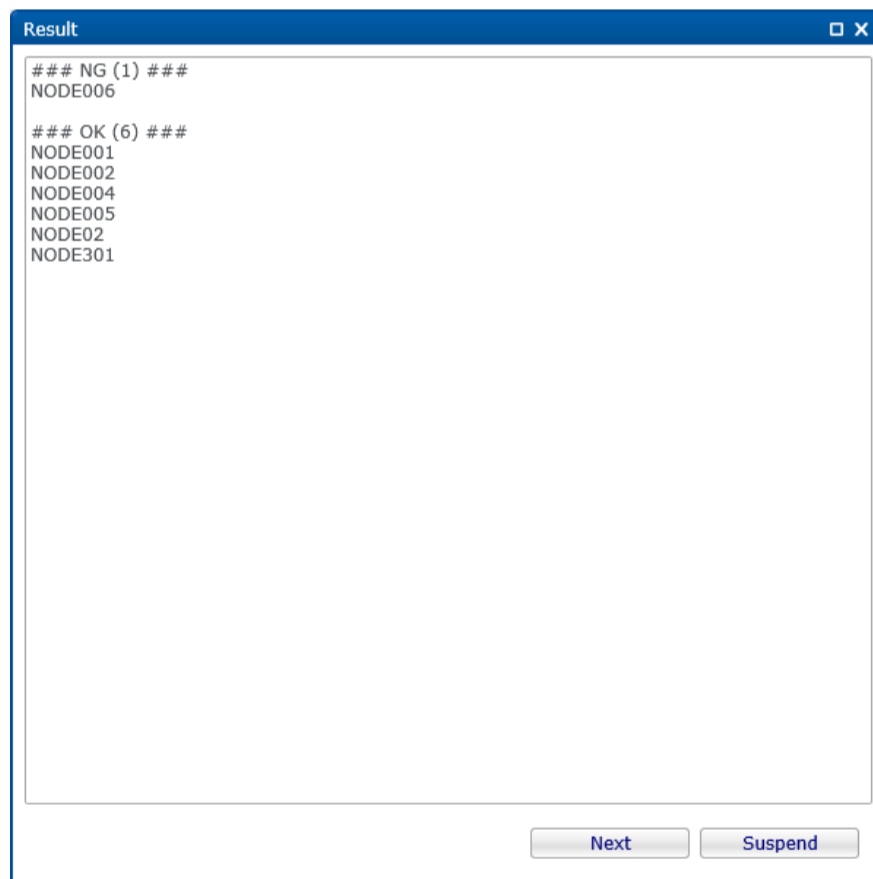


Figure 10-13 Check Result Dialog

10.7.3 Running an Infrastructure Management Module

The infrastructure management module in infrastructure management settings can be executed separately by the following procedure.

1. Select the infrastructure management settings from the setting list of Infrastructure Management[Construct/Check] view. The infrastructure management module in infrastructure management settings will be displayed in the Infrastructure Management[Module] view.

2. Select the infrastructure management module to be executed from the list of Infrastructure Management[Module] view. and click the "Run" button.
3. A confirmation dialog will be displayed. To execute infrastructure management module, click "Run" button.
 - Execute all modules without displaying the confirmation dialog.
If this check box is checked and enabled, the infrastructure management modules will not display the result.
If enabled, the result of execution of module will be displayed.
4. The Infrastructure management[Login] dialog will be displayed for each node. Enter information necessary for authenticating connection and click "OK". When enable the "Use authentication information of node property" button in the Infrastructure Management[Module] view, the information of node property can be used. For the details on each entry items and usage of node property, refer to [10.7.1 Running an Infrastructure Management Setting](#) .
5. When the infrastructure management module is executed and disable "Execute all modules without displaying the confirmation dialog", or when the execution of infrastructure management module failed, the Infrastructure Management Module[Result] dialog is displayed. Click the "Nest" or "Pause" button and the dialog will close.

The following content is shown in the Result dialog display as below.

- Command module
 - When "Check with check command before execution" is checked and the return code of check command is 0,
the return code, standard output, and standard error output of the check command are displayed for each nodes.
 - When "Check with check command before execution" is checked and the return code of check command is not 0, or when "Check with check command before execution" is invalid,
the return code, standard output, and standard error output of the run command are displayed for each nodes.
 - File Transfer Module
 - When "Don't transfer new file if md5 checksums are same" is valid and the md5 checksums are same,
the message "Md5s are same" is displayed.
 - When "Don't transfer new file if md5 checksums are same" is valid and the md5 checksums are same, or when "Don't transfer new file if md5 checksums are same" is invalid,
the return code during file transfer is displayed.
6. When the execution of infrastructure management module has completed, the message "Execution completed" is displayed.

10.7.4 Performing Check on an Infrastructure Management Module

The infrastructure management module in infrastructure management settings can be checked separately by the following procedure.

1. Select the infrastructure management settings from the setting list of Infrastructure Management[Construct/Check] view. The infrastructure management module in infrastructure management settings will displayed in the Infrastructure Management[Module] view.
2. Select the infrastructure management module to be executed from the list of Infrastructure Management[Module] view. and click the "OK" button.
3. The confirmation dialog is displayed. If you want to run checking the infrastructure management module, click the "Run" button.
 - Execute all modules without displaying the confirmation dialog.
When check the checkbox, the check results after the check of infrastructure management module will be not displayed.
When not checked, the check results after the check of infrastructure management module will be displayed.

4. Infrastructure management[Login] dialog will be displayed for each node. Enter information necessary for authenticating connection and click "OK". When enable the "Use authentication information of node property" button in the Infrastructure Management[Module] view, the information of node property can be used. For the details on each entry items and usage of node property, refer to [10.7.1 Running an Infrastructure Management Setting](#) .
5. When the infrastructure management module is executed and disable "Execute all modules without displaying the confirmation dialog", the Infrastructure Management Module[Result] dialog is displayed. Click the "Next" or "Pause" button and the dialog will close.
 - Command module
The return code, standard output, and standard error output of check command will be displayed.
 - File Transfer Module
The differences (MD5 and contents) between the files in the target node and the files to be transferred by Hinemos Manager is displayed for each nodes in the Difference dialog.
If multi byte characters are included in the displayed file contents, character code of the file can be selected from the "character set."
When the Difference dialog closes, MD5 of files and file size are displayed in the Result dialog.
6. When the execution of infrastructure management module has completed, the message "The check is completed." will be displayed.
For the "Check status" column in Infrastructure Management[Module] view, the facility ID which displays NG or OK is updated according to the check result of each infrastructure management module.
7. After the execution of check, select the infrastructure management module settings and click the "Check status" in Infrastructure Management[Module] view to display Check Status dialog and to confirm the nodes of OK or NG.

10.8 Installing Hinemos Agent with Infrastructure Management

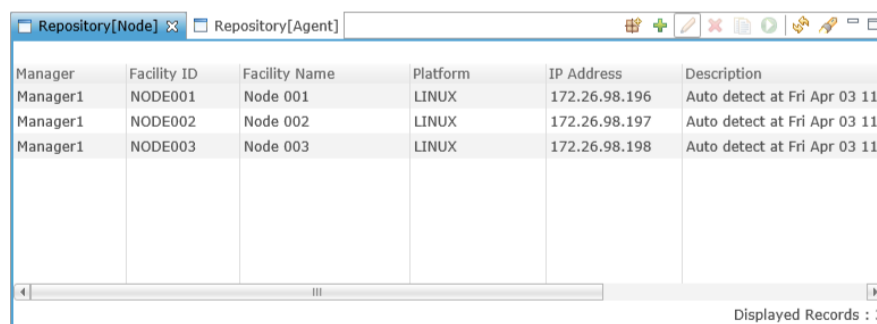
In this section, usage of Infrastructure Management feature is explained with installation of Hinemos Agent as an example.

10.8.1 Installing a Linux Agent

You can install Hinemos Agent to Linux by following the procedure below.

1. Node registration of target machine

Register the machine to be installed Hinemos Agent into the repository as a node.



Manager	Facility ID	Facility Name	Platform	IP Address	Description
Manager1	NODE001	Node 001	LINUX	172.26.98.196	Auto detect at Fri Apr 03 11:
Manager1	NODE002	Node 002	LINUX	172.26.98.197	Auto detect at Fri Apr 03 11:
Manager1	NODE003	Node 003	LINUX	172.26.98.198	Auto detect at Fri Apr 03 11:

Displayed Records : 3

Figure 10-14 Node Registration of Target Machine

2. Change of Infrastructure Management Settings

Change the infrastructure management settings to install Hinemos Agent on Linux using the Infrastructure Management[Construct/Check] view as necessary.

The scope is set as "OS Scope > Linux" by default. Notification is not set. Configure these parameter as needed.

Notification ID	Notification Type

Figure 10-15 Create Infrastructure Management Settings

3. Change of Infrastructure Management Module (execution of installation) Settings

Change the infrastructure management module to execute installer in Infrastructure Management[Module] view. "IP address of Manager" must be changed from the default setting.

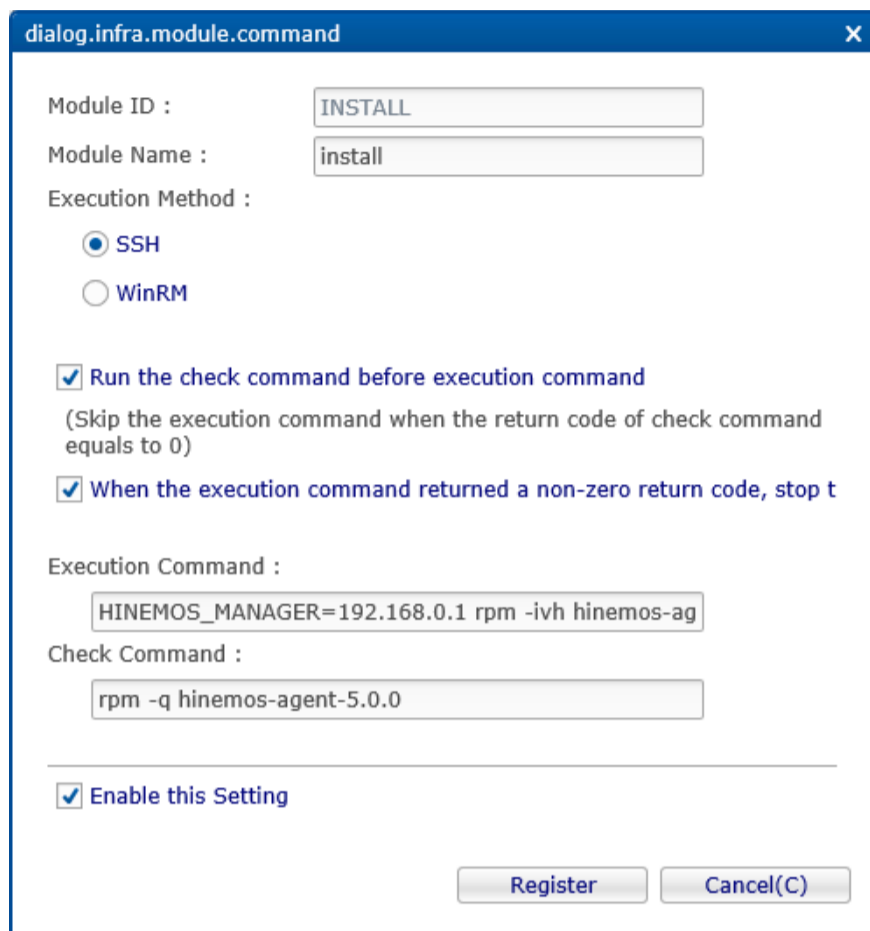


Figure 10-16 Create Infrastructure Management Module (execution of installation)

Specify the Hinemos Manager IP address to run command, and execute install the Hinemos Agent.

```
HINEMOS_MANAGER=192.168.0.1 rpm -ivh hinemos-agent-5.0.0-1.el.noarch.rpm
```

4. Running an Infrastructure Management Setting (Login Information Entry)

Select the infrastructure management setting in Infrastructure Management[Construct/Check] view, and press the Run button. Then, enter the login information of each node. When "Use authentication information of node property" in Infrastructure Management[Construct/Check] view is selected, the entry of login information can be omitted.

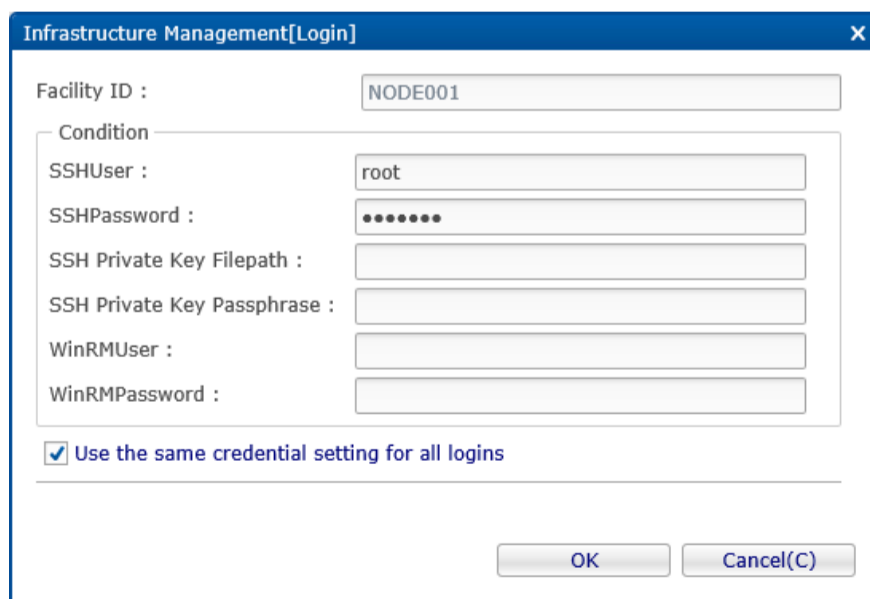


Figure 10-17 Running an Infrastructure Management Setting (Login Information Entry)

5. Running an Infrastructure Management Setting (Result Confirmation)

Confirm by clicking "Next" button of installer distribution, execution of installer, and service start-up in sequence.

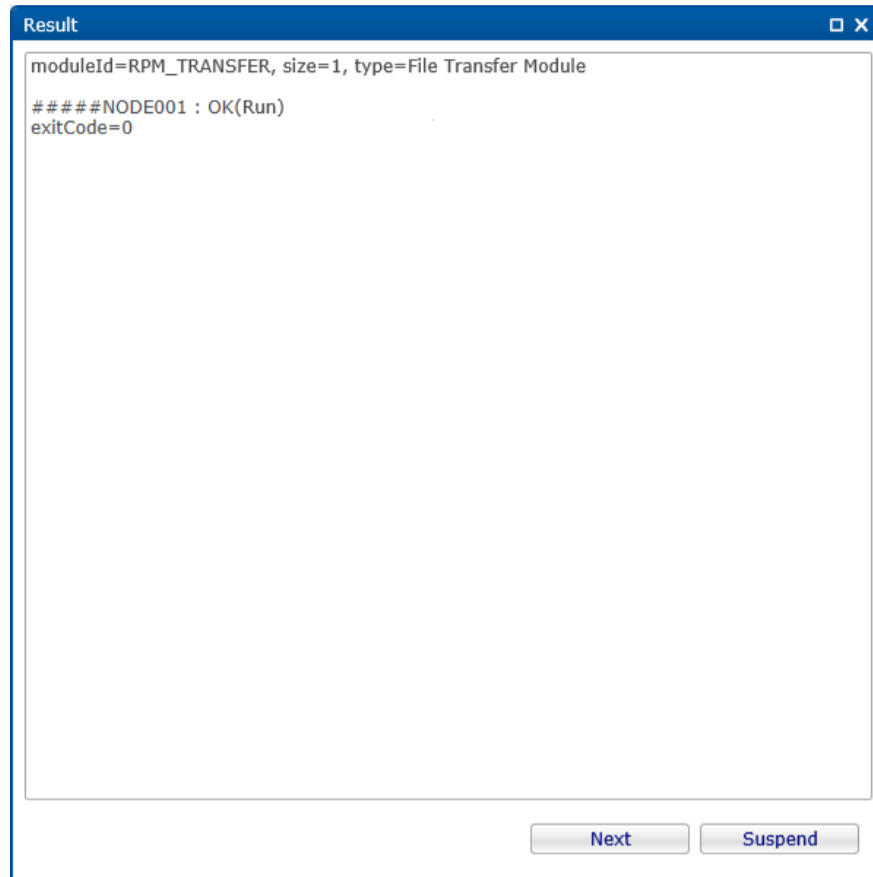


Figure 10-18 Running an Infrastructure Management Setting (Result Confirmation)

6. Synchronization Confirmation of Hinemos Agent

Confirm the created node in the node list in Ripository[Agent] view.

Manager	Facility ID	Facility Name	Startup Time	Last Login Time	Job Multiplicity	Update
Manager1	NODE001	Node 001	Apr 9, 2015 2:17:42 F	May 18, 2015 1:09:31	run=0,wait=0	Done
Manager1	NODE002	Node 002	Apr 9, 2015 2:17:42 F	May 18, 2015 1:09:31	run=0,wait=0	Done
Manager1	NODE003	Node 003	Apr 9, 2015 2:17:42 F	May 18, 2015 1:09:31	run=0,wait=0	Done

Displayed Records : 3

Figure 10-19 Synchronization Confirmation of Hinemos Agent

10.8.2 Installing a Windows Agent

You can install Hinemos Agent on Windows by following the procedure below. If using the infrastructure management feature for Windows, you must login the managed node from Hinemos Manager with WinRM and execute commands.

Refer to 6.6, "Windows Service Monitor" in the Administrator's Guide regarding the method for setting up WinRM.

1. Node registration of target machine

Register the machine to be installed Hinemos Agent into the repository as a node.

Manager	Facility ID	Facility Name	Platform	IP Address	Description	Owner Role ID
Manager1	NODE001	Node 001	LINUX	172.26.98.152	Auto detect at Fri Apr 03 11:38:	ALL_USERS
Manager1	NODE002	Node 002	LINUX	172.26.98.153	Auto detect at Fri Apr 03 11:38:	ALL_USERS
Manager1	NODE003	Node 003	LINUX	172.26.98.154	Auto detect at Fri Apr 03 11:38:	ALL_USERS

Displayed Records : 3

Figure 10-20 Node Registration of Target Machine

2. File upload to Hinemos Manager

When the Create button in Infrastructure Management[File Manager] view is pressed, the installer for Windows Agent to be transferred by the infrastructure management feature will be uploaded to the Hinemos Manager. For the installer type, refer to the Installation Manual.

Infra file[Create/Change]

Manager :

File ID :

File Name : ...

Owner Role ID :

OK Cancel(C)

Figure 10-21 File Upload to Hinemos Manager

3. Create of Infrastructure Management

When the Create button in Infrastructure Management[Construct/Check] view is pressed, the infrastructure management settings will be created for installation of Hinemos Agent on Windows.

Notification ID	Notification Type

Figure 10-22 Create Infrastructure Management Settings

4. Create of Infrastructure Management Module (Installer Distribution)

Create the infrastructure management module (file distribution module) to distribute the installer from Infrastructure Management[Module] view.

Specify the file uploaded to Hinemos Manager as the distribution file. For a location path, you can set an arbitrary path.

Infrastructure Management[Create/Change File Transfer Module]

Module ID : TRANSFER

Module Name : transfer file

Target File : HINEMOS_AGENT_WIN_64

Destination Path : C:\

Transfer Method

File Transfer With SCP

Owner :

File Attribute :

File Transfer with WinRM

If a File Transfer failed, stop to continue to the next module executions.

Rename and keep old files during File Transfer

Don't transfer new file if md5 checksums are same.

Enable variable replacemer

Search Text	Replacement Text

Add Modify Delete

Enable this Setting

Register Cancel(C)

Figure 10-23 Create of Infrastructure Management Module (Installer Distribution)

5. Create of Infrastructure Management Module (Installer Distribution)

Create the infrastructure management module to execute installer distributed from the Infrastructure Management[Module] view.

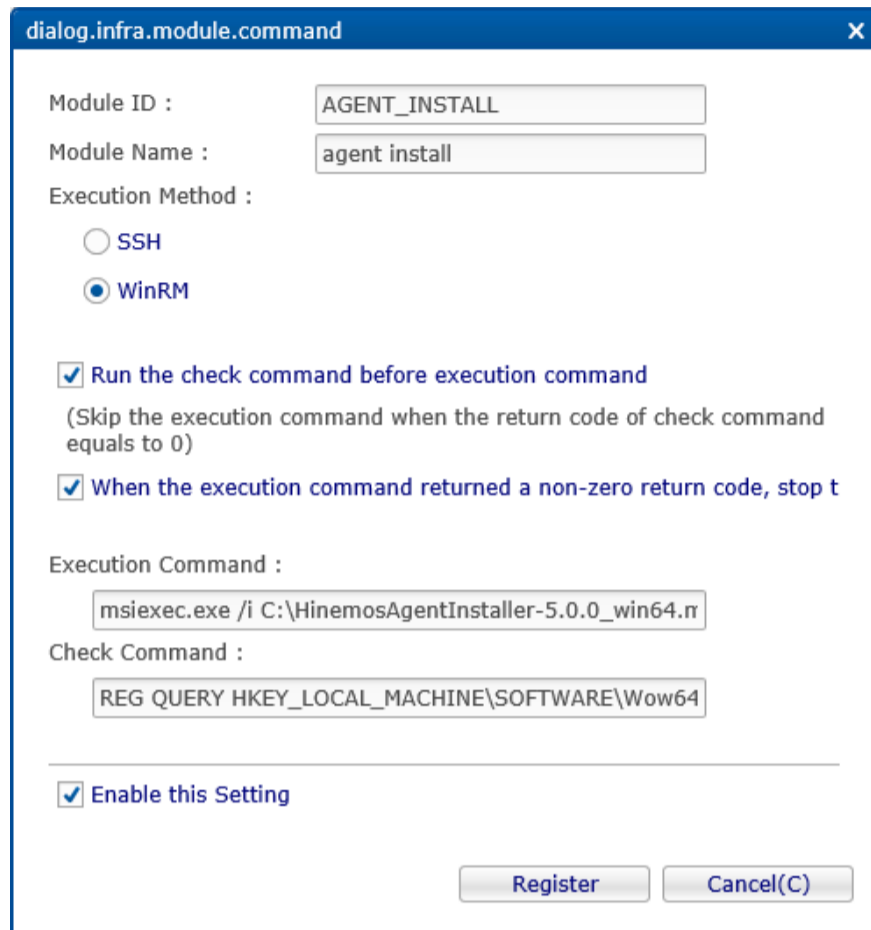


Figure 10-24 Create Infrastructure Management Module (execution of installation)

Specify the Hinemos Manager IP address to run command, and then install the Hinemos Agent.

```
msiexec.exe /i C:\HinemosAgentInstaller-5.0.0_win64.msi HINEMOS_MANAGER=192.168.0.1
```

Check command differs depending on OS. When the OS is 32-bit, confirm the Hinemos Agent installation by the command below.

The return code will be 0 if the Hinemos Agent is installed, otherwise, the return code will be other than 0.

```
REG QUERY HKEY_LOCAL_MACHINE\SOFTWARE\HinemosAgent
```

When the OS is 64-bit, confirm if Hinemos Agent is installed properly by the command below.

```
REG QUERY HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\HinemosAgent
```

6. Create of Infrastructure Management Module (Service Registration)

Create the Infrastructure Management Module (command module) to register the installed Hinemos Agent Service in the Infrastructure Management[Module] view.

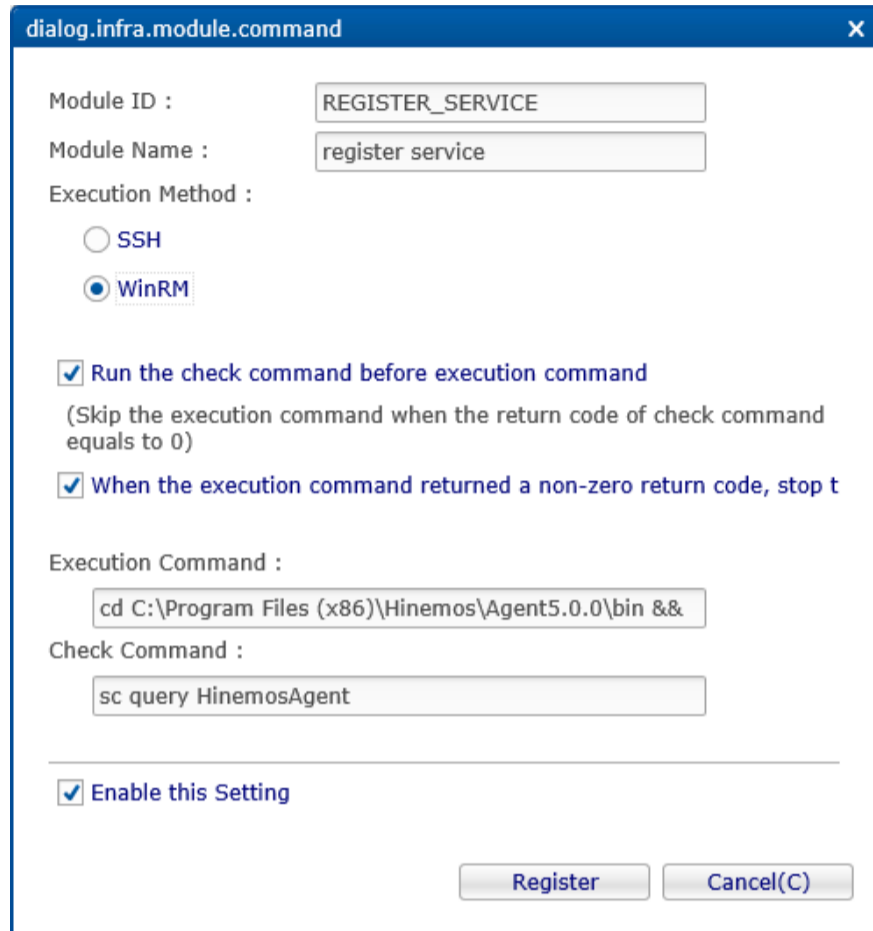


Figure 10-25 Create of Infrastructure Management Module (Service Registration)

When the OS is 32-bit, specify the run command below and register the service.

```
cd C:\Program Files\Hinemos\Agent5.0.0\bin && echo | registAgentService.bat
```

When the OS is 64-bit, specify the run command below and register the service.

```
cd C:\Program Files (x86)\Hinemos\Agent5.0.0\bin && echo | registAgentService.bat
```

To check if the Hinemos Agent has been installed, specify the check command as below.

The return code of the command will be 0 if the Hinemos Agent is registered, otherwise, the return code will be other than 0.

```
sc query HinemosAgent
```

7. Create Infrastructure Management Module (Service Start-up)

Create the Infrastructure Management Module (command module) to start up the installed Hinemos Agent Service in the Infrastructure Management[Module] view.

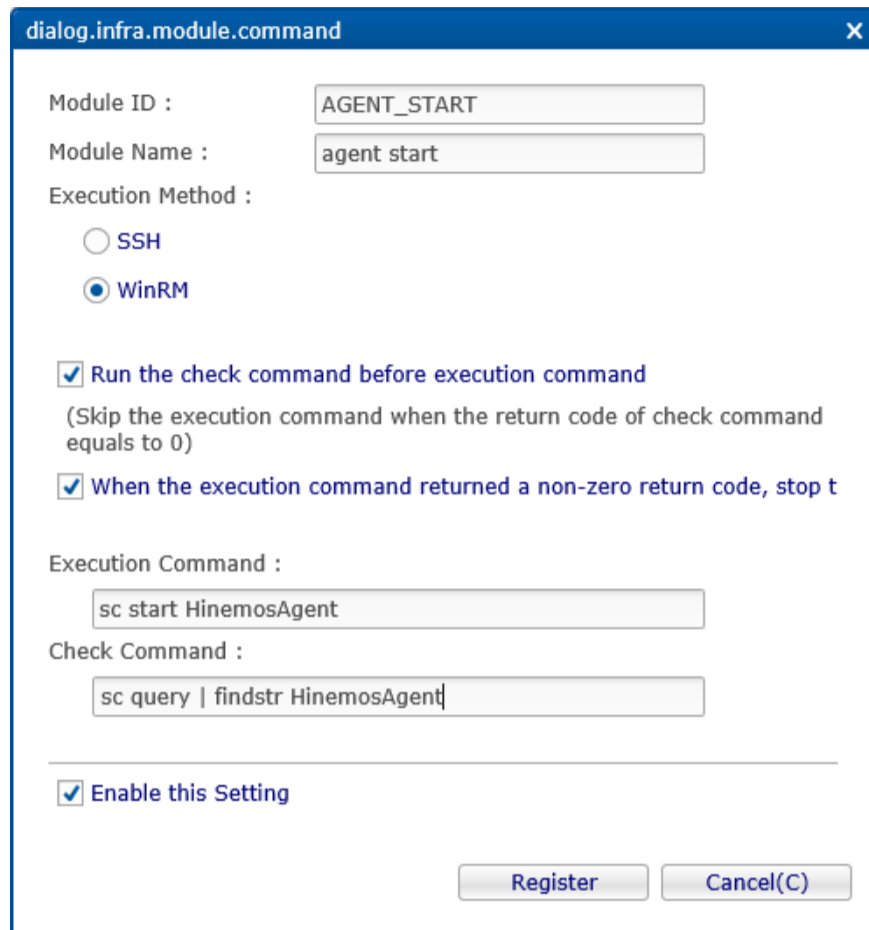


Figure 10-26 Create Infrastructure Management Module (Service Start-up)

Specify the run command to execute service start-up.

```
sc start HinemosAgent
```

To check if the Hinemos Agent has been started up, specify the check command as below.

The return code will be 0 if the Hinemos Agent is started, otherwise, the return code will be other than 0.

```
sc query | findstr HinemosAgent
```

8. Running an Infrastructure Management Setting (Login)

Select the infrastructure management setting in Infrastructure Management[Construct/Check] view, and press the Run button. Then, enter the login information of each node. When "Use authentication information of node property" in Infrastructure Management[Construct/Check] view is selected, the entry of login information can be omitted.

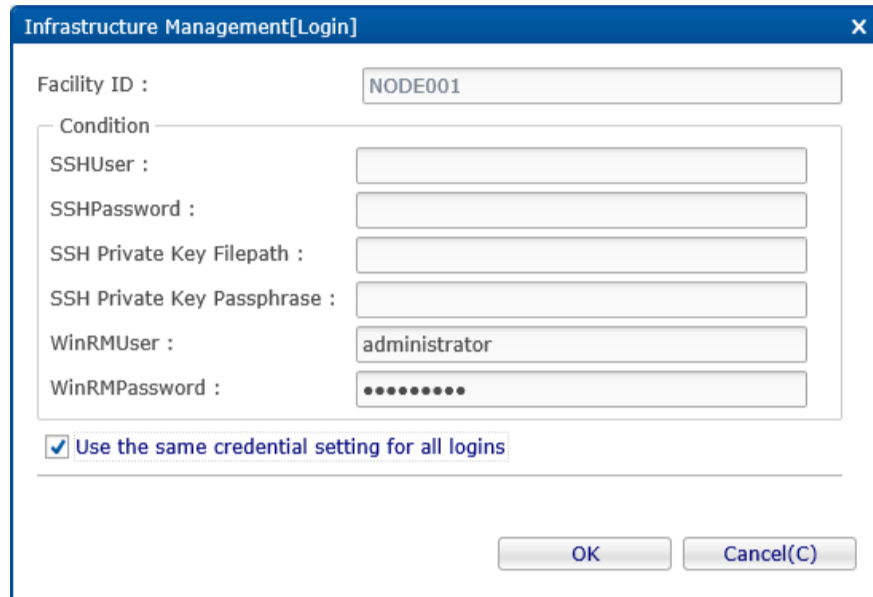


Figure 10-27 Running an Infrastructure Management Setting (Login)

9. Running an Infrastructure Management Setting (Result Confirmation)

Confirm by clicking "Next" of installer distribution, execution of installer, and service registration in sequence.

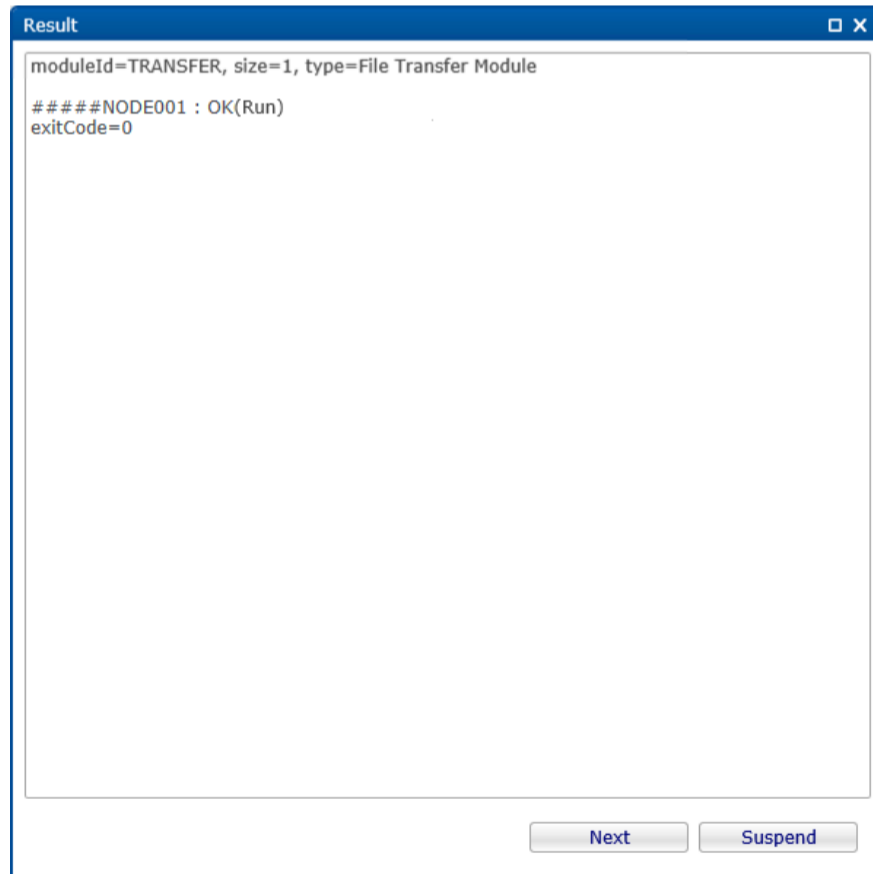


Figure 10-28 Running an Infrastructure Management Setting (Result Confirmation)

10. Synchronization Confirmation of Hinemos Agent

Confirm the created node in the node list in Ripository[Agent] view.

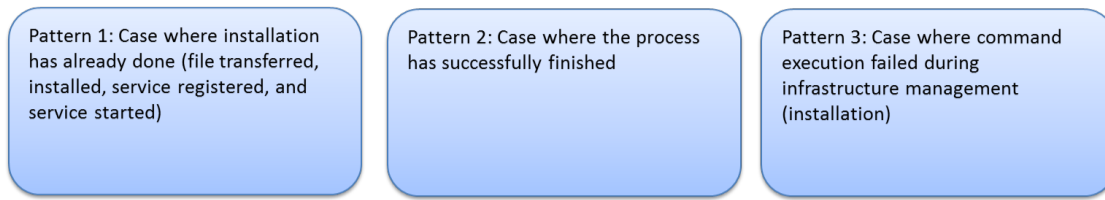
Manager	Facility ID	Facility Name	Startup Time	Last Login Time	Job Multiplicity	Update
Manager1	NODE001	Node 001	Apr 9, 2015 2:17:42 F	May 18, 2015 1:09:31	run=0,wait=0	Done
Manager1	NODE002	Node 002	Apr 9, 2015 2:17:42 F	May 18, 2015 1:09:31	run=0,wait=0	Done
Manager1	NODE003	Node 003	Apr 9, 2015 2:17:42 F	May 18, 2015 1:09:31	run=0,wait=0	Done

Figure 10-29 Synchronization Confirmation of Hinemos Agent

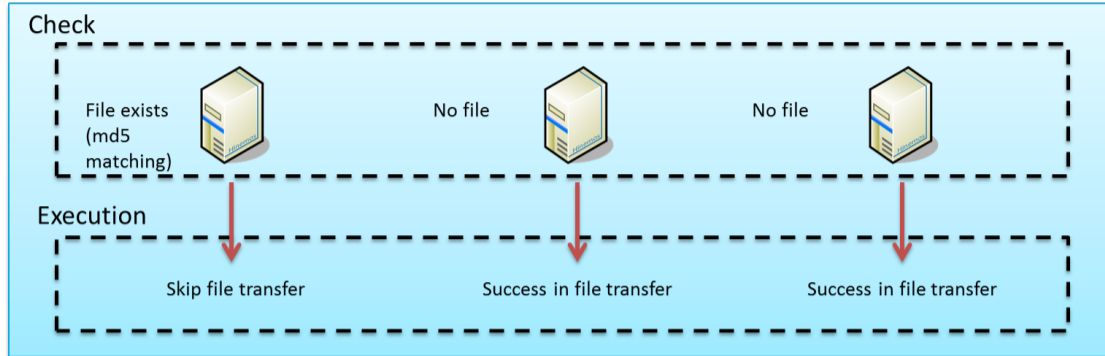
10.8.3 Running Processes of Infrastructure Management

The status transition of Hinemos Agent installation is shown here to express the installation procedure of Hinemos Agent to Windows, on the condition that the procedures 1 to 7 of 10.8.2 Installing a Windows Agent is already set.

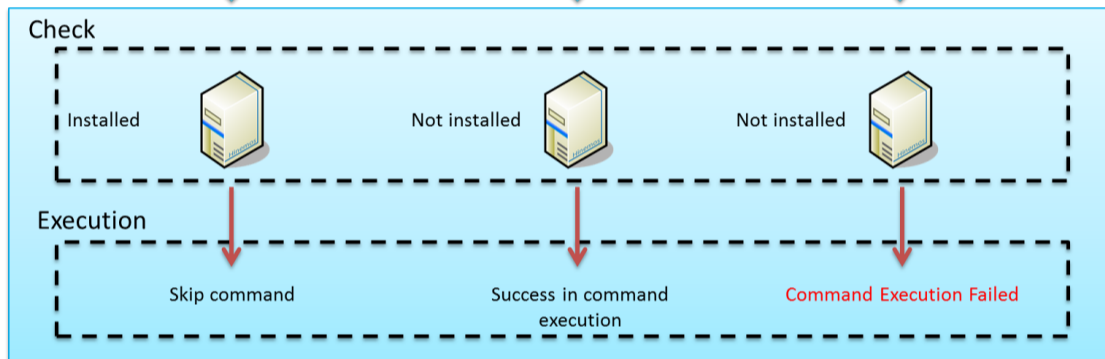
In the three pattern in Figure 10-30, all the infrastructure management settings are the same. ("Check with check command before execution" is checked and "When the execution command returned a non-zero return code, stop the following Module" is checked.) The difference between the example and the real configuration is the status of target machine and the command result.



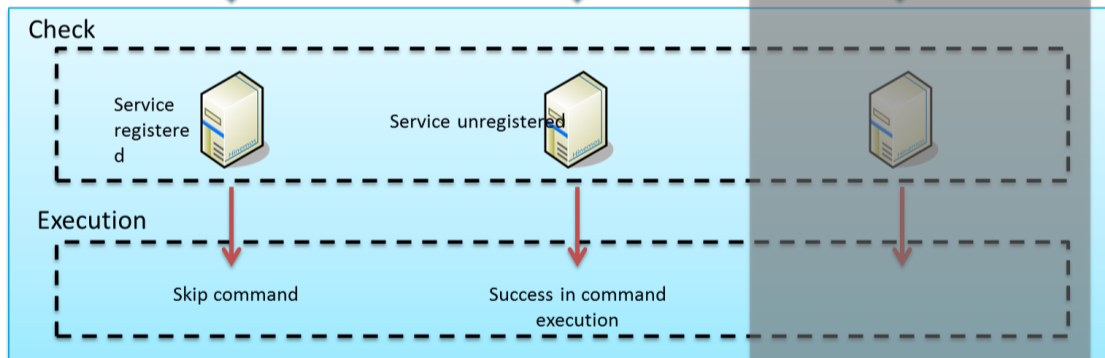
File Transfer Module



Command Module (Installation)



Command Module (Service Registration)



Command Module (Service Start)

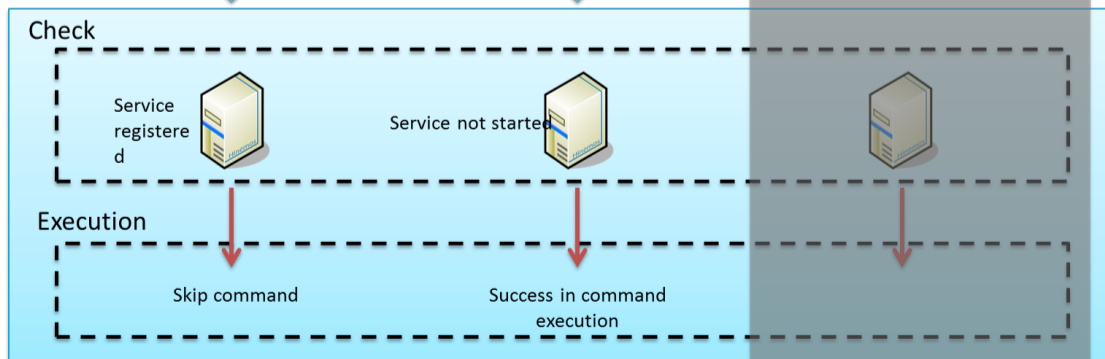


Figure 10-30 Running Process of Infrastructure Management

11 Maintenance Feature

11.1 Overview

This feature is used in the administration of Hinemos itself, and is necessary for the operation of Hinemos. This feature is used when changing the Hinemos property, settings for Hinemos Manager operation, and when deleting historical data stored in Hinemos's internal database.

11.2 Interface Composition

11.2.1 Default Interface

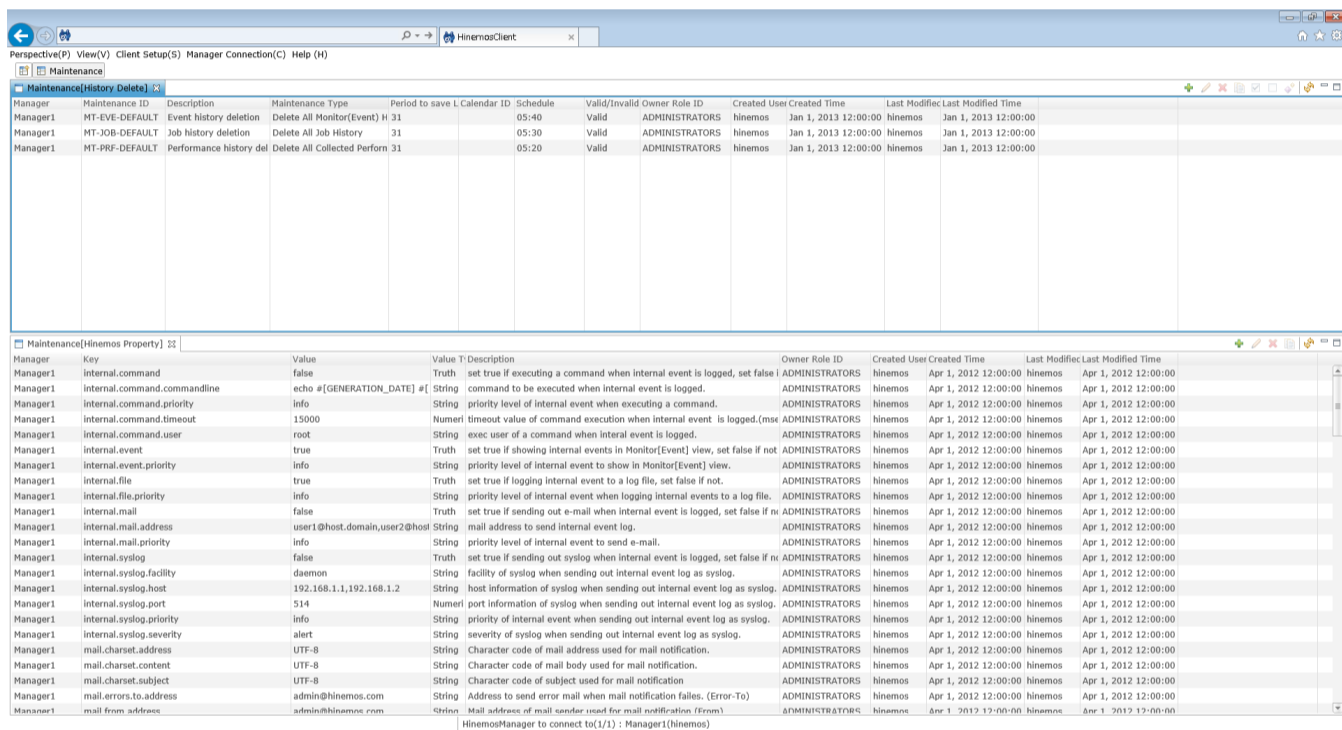


Figure 11-1 Default Interface of Maintenance Feature

11.2.2 Maintenance[History Delete] View

This view displays a list of registered history delete settings. History data delete settings can be registered and deleted and operations related to history data delete settings can be performed in this view.

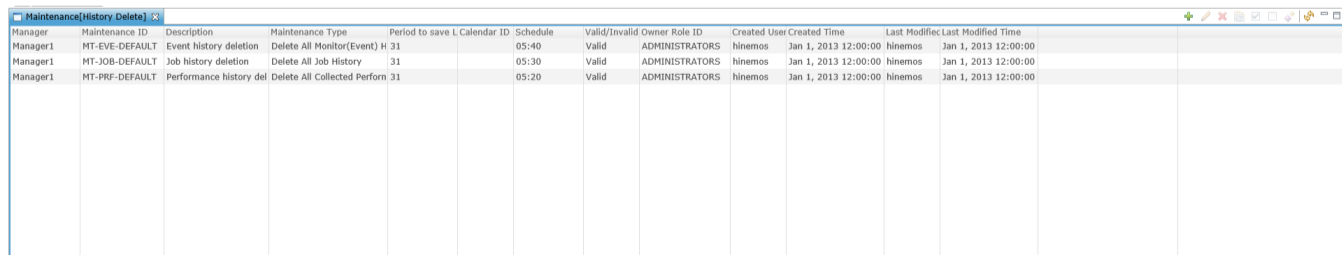









Figure 11-2 Maintenance[History Delete] View

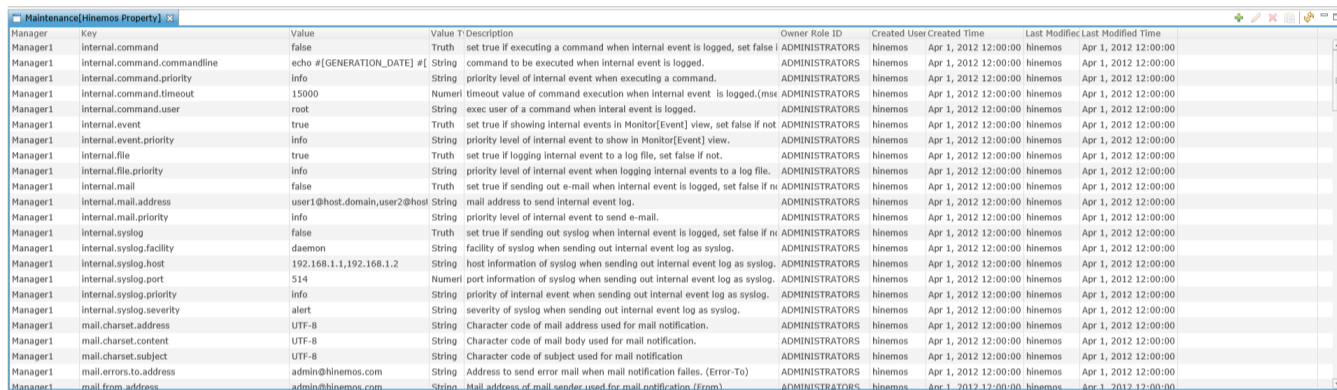
Table 11-1 Toolbar

Icon	Button name	Description
------	-------------	-------------

	Create	Create the Delete History Settings.
	Change	Change the Delete History Settings.
	Delete	Delete the Delete History Settings.
	Copy	Copy the Delete History Settings.
	Valid	Enable the Delete History Settings. Multiple Delete History Settings can be selected and collectively enabled.
	Invalid	Disable the Delete History Settings. Multiple Delete History Settings can be selected and collectively disabled.
	Update	The content of the Maintenance[History Delete] view is updated.

11.2.3 Maintenance [Hinemos Property] View






The Maintenance [Hinemos Property] view displays a list of registered properties. Operations related to Hinemos Manager settings, such as registration and delete of Hinemos Property, can be performed in this view.



Manager	Key	Value	Value T/Description	Owner Role ID	Created User	Created Time	Last Modified	Last Modified Time
Manager1	internal.command	false	Truth set true if executing a command when internal event is logged, set false if not.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.command.commandline	echo %[GENERATION_DATE] %	String command to be executed when internal event is logged.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.command.priority	info	String priority level of internal event when executing a command.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.command.timeout	15000	Numerical timeout value of command execution when internal event is logged.(msec)	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.command.user	root	String exec user of a command when internal event is logged.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.event	true	Truth set true if showing internal events in Monitor[Event] view, set false if not.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.event.priority	info	String priority level of internal event to show in Monitor[Event] view.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.file	true	Truth set true if logging internal event to a log file, set false if not.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.file.priority	info	String priority level of internal event when logging internal events to a log file.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.mail	false	Truth set true if sending out e-mail when internal event is logged, set false if not.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.mail.address	user1@host.domain,user2@host	String mail address to send internal event log.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.mail.priority	info	String priority level of internal event to send e-mail.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.syslog	false	Truth set true if sending out syslog when internal event is logged, set false if not.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.syslog.facility	daemon	String facility of syslog when sending out internal event log as syslog.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.syslog.host	192.168.1.1,192.168.1.2	String host information of syslog when sending out internal event log as syslog.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.syslog.port	514	Numerical port information of syslog when sending out internal event log as syslog.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.syslog.priority	info	String priority of internal event when sending out internal event log as syslog.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.syslog.severity	alert	String severity of syslog when sending out internal event log as syslog.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	mail.charset.address	UTF-8	String Character code of mail address used for mail notification.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	mail.charset.content	UTF-8	String Character code of mail body used for mail notification.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	mail.charset.subject	UTF-8	String Character code of subject used for mail notification.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	mail.errors.to.address	admin@hinemos.com	String Address to send error mail when mail notification fails. (Error-To)	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	mail.from.address	admin@hinemos.com	String Mail address of mail sender used for mail notification.(From)	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00

Figure 11-3 Maintenance [Hinemos Property] View

Table 11-2 Toolbar

Icon	Button name	Description
	Create	Create Hinemos property.
	Change	Change Hinemos property.
	Delete	Delete Hinemos property.
	Copy	Copy Hinemos property.
	Update	Update contents of Maintenance[Hinemos property] view.

11.3 History Data Delete Feature

11.3.1 Feature Summary

The History Data Delete feature periodically deletes the history stored in the Hinemos DB. When history data delete is run, the delete process run date used as a standard to delete the history data older than the retention date.

The following 4 histories are subject to deletion.

- Monitor (Event) history ... Information displayed in the Monitor[Event] view
- Job history ... Information displayed in the Job[History] view
- Performance Results... Information displayed in the Performance[List] view

11.3.2 Registering History Data Delete Settings

You can register the history data delete settings using the procedure below.

1. Click the "Create" button in the Maintenance[History Delete] view.

Manager	Maintenance ID	Description	Maintenance Type	Period to save Log	Calendar ID	Schedule	Valid/Invalid	Owner Role ID	Created User	Created Time	Last Modified	Last Modified Time
Manager1	MT-EVE-DEFAULT	Event history deletion	Delete All Monitor(Event)	31		05:40	Valid	ADMINISTRATORS	hinemos	Jan 1, 2013 12:00:00	hinemos	Jan 1, 2013 12:00:00
Manager1	MT-JOB-DEFAULT	Job history deletion	Delete All Job History	31		05:30	Valid	ADMINISTRATORS	hinemos	Jan 1, 2013 12:00:00	hinemos	Jan 1, 2013 12:00:00
Manager1	MT-PRF-DEFAULT	Performance history deletion	Delete All Collected Perform	31		05:20	Valid	ADMINISTRATORS	hinemos	Jan 1, 2013 12:00:00	hinemos	Jan 1, 2013 12:00:00

Figure 11-4 Maintenance[History Delete] View

2. The History Delete[Create/Change] dialog will be displayed.

Figure 11-5 History Delete[Create/Change] Dialog

3. Configure the following items.

- Manager:
Select a Hinemos Manager for which history data delete setting is created. (Refer to [2.6 Multi-Manager Connection](#) for more information on the multiple manager connection.)
- Maintenance ID:
The history data delete settings are specified in a list. Enter the Maintenance ID text.
- Description:
Enter a description of the history data delete settings as alphanumeric text.
- Owner Role ID:
Select an Owner Role ID for the history data delete setting. (Refer to [12 Account Feature](#) section for more details about Owner Role.)

4. Specify the process to run using the history data delete settings.

- Maintenance Type:

Select the process content from the list below.

Table 11-3 Maintenance Type

Maintenance Type	Process contents
Delete All Monitor(Event) History	Delete event history
Delete Confirmed Monitor(Event) History	Delete "Confirmed" event history
Delete All Job History	Delete job history
Delete Job History	Delete job history with "End"/"Changed" execution status
Delete All Collected Performance Data	Delete all collected performance data
Delete Running Performance Data	Delete performance data that is "Collection Running"

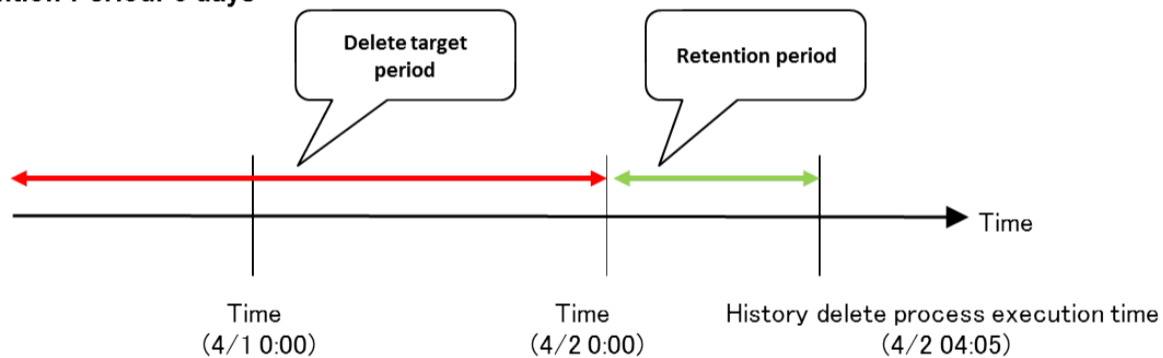
- Retention Period:

You can configure a retention period (a period not subject to deletion) when deleting the history. The retention period is set in 1 day units.

This setting uses the time the history data delete process is run as a base and deletes the history data that was output at a time outside the retention period.

Further, if the retention period is "0", all history data prior to 0:00:00 of the day the history data delete process is run is deleted.

Retention Period: 0 days



Retention Period: 0 days

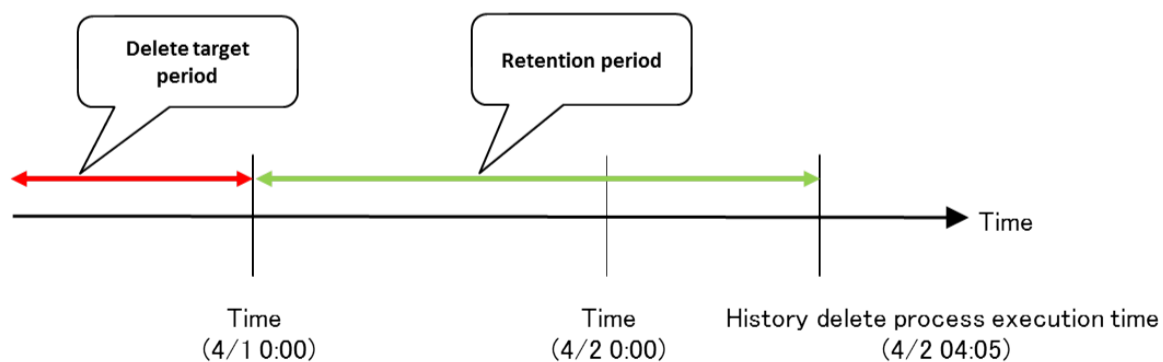


Figure 11-6 Retention Period

- Calendar ID:

Select the calendar ID for the calendar you want to set up. The history data delete setting will be enabled only during the period configured as working hours on the calendar (Refer to the section, [4 Calendar Feature](#) for more details on the calendar). If Calendar ID is not selected, the filter configuration is enabled throughout the day.

5. Configure the schedule.

Schedule configuration can be configured with the following two methods.

- Specify "Time"

The history data delete process is run on the specified date and time. Select "Month", "Day", "Hour", and "minute(s)" from each combo box.

- Specify "Weekday"

The history data delete process execution is scheduled for weekdays. Select "Weekday", "Hour", and "minute(s)" from each combo box.

6. Configure the notification details.

- Notification ID:

Select from the list the Notification ID that is the notification method used in the notification setting. (Refer to the section [6.3 Notification Feature](#) regarding notification settings) When you click the "Select" button on the right, the Notification[List] dialog is displayed. Select the notification method.

- Application:

Enter an application name in alphanumeric text. This is displayed as the notification information.

7. Specify whether to enable this setting. Set it with the check box below.

- Enabling this Setting:

When checked, the setting is enabled. If unchecked, and it is specified as disabled, the setting is saved, but the history data delete process will not run.

11.3.3 Changing History Data Delete Settings

You can change the history data delete settings with the procedure below.

1. Select the subject to change from the configuration list, and then click the "Modify" button. The History Data Delete Settings[Create/Modify] dialog opens.
2. Edit the setting details, and then click the "OK" button. (Refer to the section, [11.3.2 Registering History Data Delete Settings](#) for the procedures for entering settings)

11.3.4 Deleting the History Data Delete Settings

Select the object to delete from the setting list, and then click the "Delete" button.

11.4 Hinemos Property Setting Feature

11.4.1 Overview

This feature provides features for registering, modifying, and deleting Hinemos property, settings related to the operations of Hinemos. Hinemos property can be referred, registered, changed, and deleted by only the users assigned the Hinemos system administrator role (ADMINISTRATORS).

Three types of Hinemos property are as below:

- String
- Numeric
- Truth

Refer to 13 "List of Hinemos Manager's Configuration Settings" in the Administrator's Guide for the list of Hinemos properties that can be set.

In order to make the new configuration take effect, restart of Hinemos Manager is required only when the description of the property shows [Hinemos Manager must be restarted].

11.4.2 Registering a Hinemos Property

The Hinemos property can be registered by the following the procedures.

1. Click the "Create" button in the Maintenance[Hinemos Property] view.

Manager	Key	Value	Value Type	Description	Owner Role ID	Created User	Created Time	Last Modified	Last Modified Time
Manager1	internal.command	false	Truth	set true if executing a command when internal event is logged, set false if not.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.command.commandline	echo #[GENERATION_DATE] #	String	command to be executed when internal event is logged.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.command.priority	info	String	priority level of internal event when executing a command.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.command.timeout	15000	Numeri	timeout value of command execution when internal event is logged.(mse	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.command.user	root	String	exec user of a command when internal event is logged.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.event	true	Truth	set true if showing internal events in Monitor[Event] view, set false if not.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.event.priority	info	String	priority level of internal event to show in Monitor[Event] view.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.file	true	Truth	set true if logging internal event to a log file, set false if not.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.file.priority	info	String	priority level of internal event when logging internal events to a log file.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.mail	false	Truth	set true if sending out e-mail when internal event is logged, set false if not.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.mail.address	user1@host.domain,user2@host	String	mail address to send internal event log.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.mail.priority	info	String	priority level of internal event to send e-mail.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.syslog	false	Truth	set true if sending out syslog when internal event is logged, set false if not.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.syslog.facility	daemon	String	facility of syslog when sending out internal event log as syslog.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.syslog.host	192.168.1.1,192.168.1.2	String	host information of syslog when sending out internal event log as syslog.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.syslog.port	514	Numeri	port information of syslog when sending out internal event log as syslog.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.syslog.priority	info	String	priority of internal event when sending out internal event log as syslog.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	internal.syslog.severity	alert	String	severity of syslog when sending out internal event log as syslog.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	mail.charset.address	UTF-8	String	Character code of mail address used for mail notification.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	mail.charset.content	UTF-8	String	Character code of mail body used for mail notification.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	mail.charset.subject	UTF-8	String	Character code of subject used for mail notification.	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	mail.errors.to.address	admin@hinemos.com	String	Address to send error mail when mail notification fails. (Error-To)	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00
Manager1	mail.from.address	admin@hinemos.com	String	Mail address of mail sender used for mail notification. (From)	ADMINISTRATORS	hinemos	Apr 1, 2012 12:00:00	hinemos	Apr 1, 2012 12:00:00

Figure 11-7 Maintenance[Hinemos Property] View

2. The Hinemos Property Type dialog will appear.

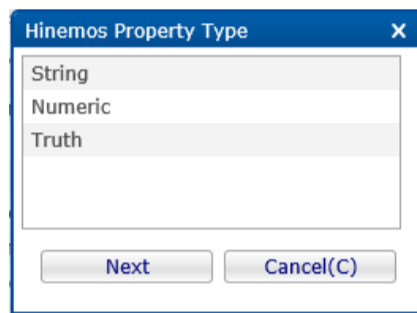


Figure 11-8 Hinemos Property Type Dialog

3. Select the type and click the "Next" button. The Hinemos Property[Create/Change] dialog will appear.

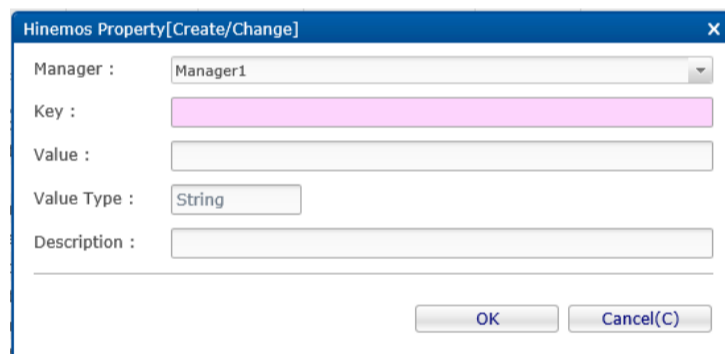


Figure 11-9 Hinemos Property[Create/Change] Dialog

4. Set up the following items.

- Manager:

Which Hinemos Manager for the Hinemos property is set is specified. (Refer to [2.6 Multi-Manager Connection](#) for more information on the multiple manager connection.)

- Key:

Enter alphanumeric text as a parameter name of Hinemos property.

- Value:

Input value of Hinemos property. (enter alphanumeric text when the value type is Numeric or String, and select from the list when the value type is Truth.)

- Value type:

Value type of Hinemos property type selected in Hinemos Property Type dialog is displayed.

- Description:

Enter a description of the Hinemos property as text.

11.4.3 Modifying a Hinemos Property

The Hinemos property can be changed by the following the procedures.

1. Select the subject to be changed from the setting list, and then click the "Modify" button. Hinemos Property[Create/Change] dialog will open.
2. Edit the setting details, and then click the "OK" button. (refer to [11.4.2 Registering a Hinemos Property](#) for the procedures for entering settings).

11.4.4 Deleting a Hinemos Property

Select the object to delete from the setting list, and then click the "Delete" button.

12 Account Feature

12.1 Overview

The User and Role Management, and the Access Permission Management Feature are offered in the Account Feature.

12.2 User and Role Management

With Hinemos, a user must be registered in advance to operate Hinemos. Also, the registered users are grouped by role and access permission is controlled by group unit. These groups are called Roles.

12.2.1 User Management

With Hinemos, you can control logins to Hinemos by group unit. Also, access permissions are managed flexibly by assigning roles to the users.

Refer to [12.3 Access Permission Management](#) regarding managing access permissions.

Users (1) and (2) exist under Users.

1. System User A system user is a user registered in advance in Hinemos. The following users exist.

Table 12-1 List of System Users

User Name	Description	Assigned Role
hinemos	Hinemos Super User Must be assigned to a system role and cannot be released	Hinemos Administrator Role All users Role Hinemos internal Role

2. General User A general user is a user registered to use Hinemos. Register in the Account Feature.

12.2.2 Role Management

With Hinemos, registered users are divided into groups and access permissions are controlled by group unit. These groups are called Roles.

Roles (1) and (2) exist under Roles.

1. System Role A system role is a role registered in advance in Hinemos. The following roles exist.

Table 12-2 List of System Roles

Role Name	Initial Setting System Privileges	Whether System Privilege can be changed	Whether Assigned Users can be changed	Description
Hinemos Administrator role (ADMINISTRATORS)	All	No	Yes	Role that can operate all of the settings without conditions The settings that can be changed by this role are just for the users assigned to this role
All users role (ALL_USERS)	All	Yes	No	Role assigned to all Hinemos users Automatically assigned when a user is created
Hinemos internal role (INTERNAL)	All	Yes	No	Role to refer to INTERNAL events

2. General Role A general role is a role registered to Hinemos users. Register in the Account Feature.

Role specific scope

A role specific scope is a scope that is created automatically when the role is created. The role name and scope name are created under the "Owner specific scope" when the role is created. This scope is used when creating a node. The node registered to the owner role and the scope with the same name that is specified when the node is created is automatically assigned.

12.3 Access Permission Management

12.3.1 Privilege Types and Roles

With Hinemos, access can be flexibly controlled by specifying the System Privileges and Object Privileges for each group. The various privileges are described in the next section.

12.3.2 Management by System Privileges

System Privileges manage the Access Permissions for the features of the Repository feature and the Job feature. The four types of system privileges are "Create", "Change", "Refer" and "Run".

- Create... Create configuration information.
- Change... Change or delete configuration information.
- Refer... Refer configuration information.
- Run... Run an operation.

The operations that are controlled by each system privilege for each feature are as follows.

Table 12-3 List of System Privileges

Feature	Privilege	Description
Repository	Create	Can create a node or scope
	Change	Can change or delete a node or scope Assigns/releases a node to a scope Can set the Object Privilege to a scope
	Refer	Can refer a node or scope
	Run	Restarts or updates an agent
Account	Create	Can create a user or role
	Change	Can change or delete a user or role Assigns/releases System Privileges to a role Assigns/releases a user to a scope
	Refer	Can refer a user or role
Monitor results	Change	Deletes the status from the Monitor[Status] view Can change the status of the confirmation flag for the event from the Monitor[Event] view Can edit the comments for the monitor results in the Monitor[Event] view
	Refer	Can refer monitor results
Monitor Setting	Create	Can create the various monitor settings (Ping Monitor or System Log Monitor, etc.)
	Change	Can change or delete the various monitor settings Can change the validity of the various monitor settings Can set the Object Privileges for the various monitor settings
	Refer	Can refer the various monitor settings

Job	Create and change	Can register a JobUnit, JobNet or Job Can change or delete a JobUnit, JobNet or Job
	Create	Can create a FileCheck or Schedule
	Change	Can change or delete a FileCheck or Schedule Can set the Object Privileges for a JobUnit Can set the Object Privileges for a FileCheck or Schedule
	Refer	Can refer a JobUnit, JobNet or Job Can refer the execution history of a JobUnit, JobNet or Job Can refer a FileCheck or Schedule
	Run	Can immediately run a JobUnit, JobNet or Job Can operate from the job execution history
Information	Refer	Can refer performance information
Infrastructure Management	Create	Can create Infrastructure Management settings, Infrastructure Management module, and Infra file.
	Change	Can change or delete Infrastructure Management settings, Infrastructure Management module, and Infra file.
	Refer	Can refer Infrastructure Management settings, Infrastructure Management module, and Infra file. Can download the Infra file
	Run	Can run a Infrastructure Management setting and Infrastructure Management module
Calendar	Create	Can create a calendar or calendar pattern
	Change	Can change or delete a calendar or calendar pattern Can set the Object Privileges for a calendar or calendar pattern
	Refer	Can refer a calendar or calendar pattern
Notification	Create	Can create various notifications or mail templates
	Create	Can create or delete various notifications or mail templates Can change the validity of various notifications Can set the Object Privileges for various notifications or mail templates
	Refer	Can refer various notifications or mail templates
Maintenance	Create	Can create settings for deleting the information history
	Change	Can change or delete settings for deleting the information history
	Refer	Can refer settings for deleting the information history

12.3.3 Management by the Owner Role

The owner role manages the settings for the Access Permissions for the scope and JobUnit and the various monitor settings. You can control referring and updating from users assigned to other roles by specifying the role as "Owner" when creating the scope and JobUnit and the various monitor settings. Further, the user assigned to the role specified as the owner role can perform all operations for the corresponding settings. Specify the system role "All Users Role (ALL_USERS)" if you want all users to be able to operate.

The settings that can be specified for the owner role are as follows.

Table 12-4 List of Settings Specified for Owner

Feature	Settings that can be specified
Repository	Node Scope
Account	—
Monitor results	(Inherits the monitor setting owner)
Monitor Setting	All types of monitor settings

Job	JobUnit (the JobNet and Job inherit the owner role of the JobUnit) FileCheck Job schedule
Performance	(Inherits the monitor setting owner)
Infrastructure Management	Infrastructure management settings Add the Infra file
Calendar	Calendar Calendar Pattern
Notification	All types of notification settings Mail template
Maintenance	Settings for deleting information history

You can perform the following Access Permissions by specifying the owner role.

Example 1) Access Permissions for a scope

If the RoleA role is specified as the owner role for SystemA scope then users assigned to RoleA can Refer and Change, but other users can't Refer.

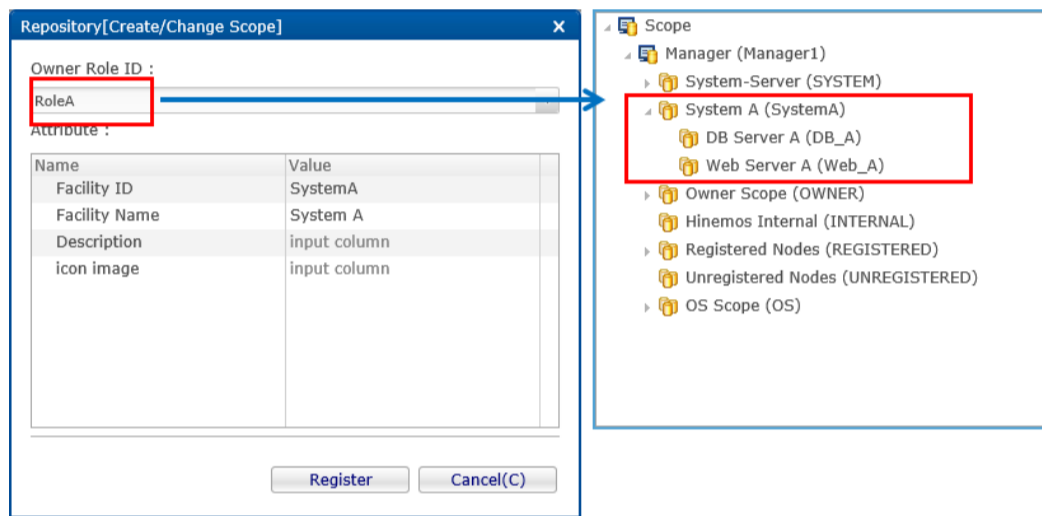


Figure 12-1 Specify an Owner Role for a Scope

By specifying in this manner, you can limit the Refer range of the scope to users assigned to a particular role. (The System Role "All Users Role" (ALL_USERS) is specified as the owner role for the Common scope in the middle of the figure.)

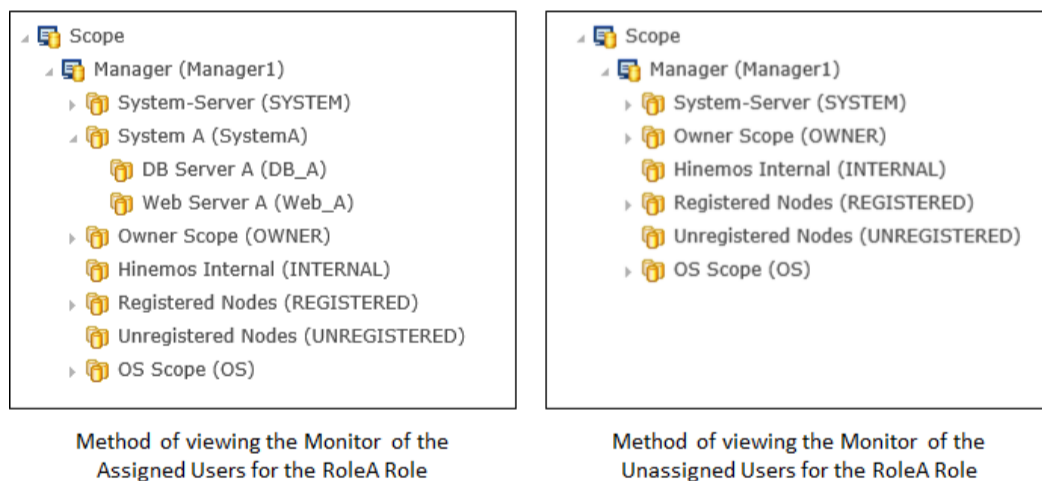


Figure 12-2 Method of Viewing Scopes for Each Role

Example 2) Access Permissions for a Monitor Setting

If the RoleA role is specified as the owner role for Monitor Setting MonitorPingA then users assigned to RoleA can Refer and Change, but other users can't Refer.

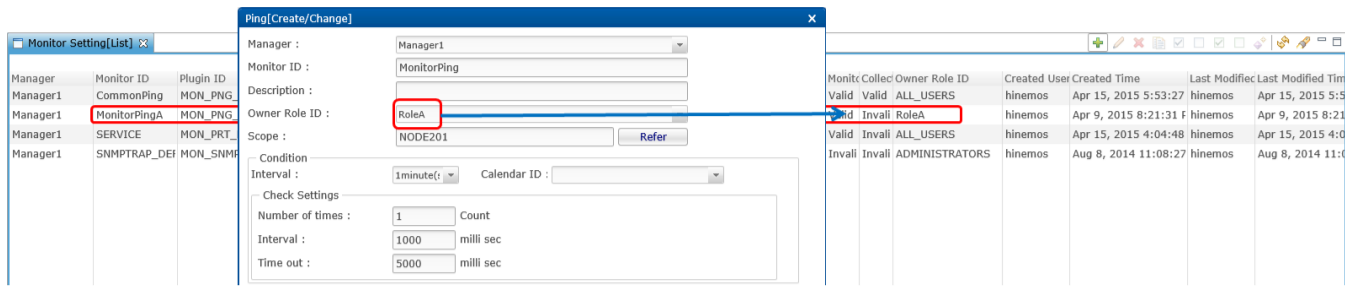
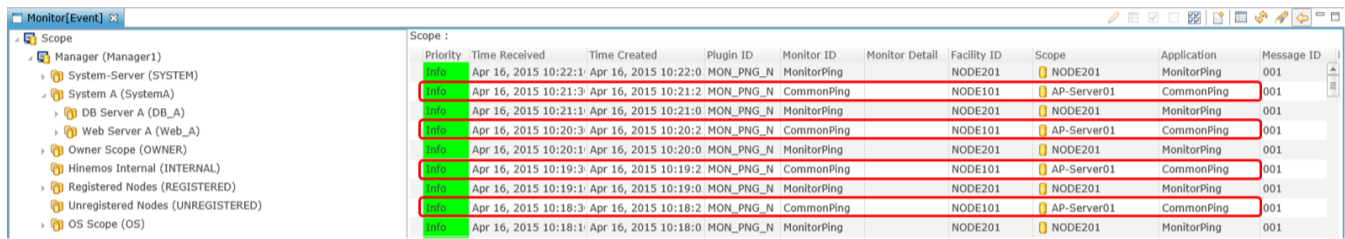
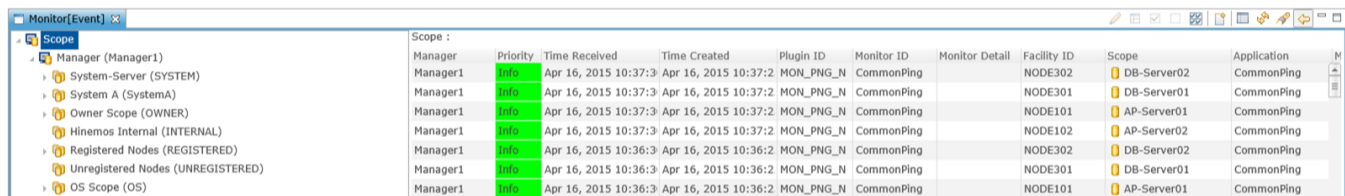


Figure 12-3 Specify an Owner Role for a Monitor Setting

Also, the monitor results (Status Notification, Event Notification, Job Notification results) for MonitorPing will inherit the same owner role as the Monitor Setting, so you can also limit the Refer range of the monitor results to users assigned to a particular role. (The System Role "All Users Role" (ALL_USERS) is specified as the owner role for the Monitor Setting CommonPing in the middle of the figure.)



Method of Viewing the Monitor of the Assigned Users for the RoleA Role



Method of Viewing the Monitor of the Unassigned Users for the RoleA Role

Figure 12-4 Method of Viewing Monitor Results for Each Role

Example 3) Access Permissions for a JobUnit

If the RoleA role is specified as the owner role for SystemAJob JobUnit then only the users assigned to RoleA can Refer, Change and Run, but other users can't Refer. Further, Access Permissions for Job settings can only be done for JobUnit units.

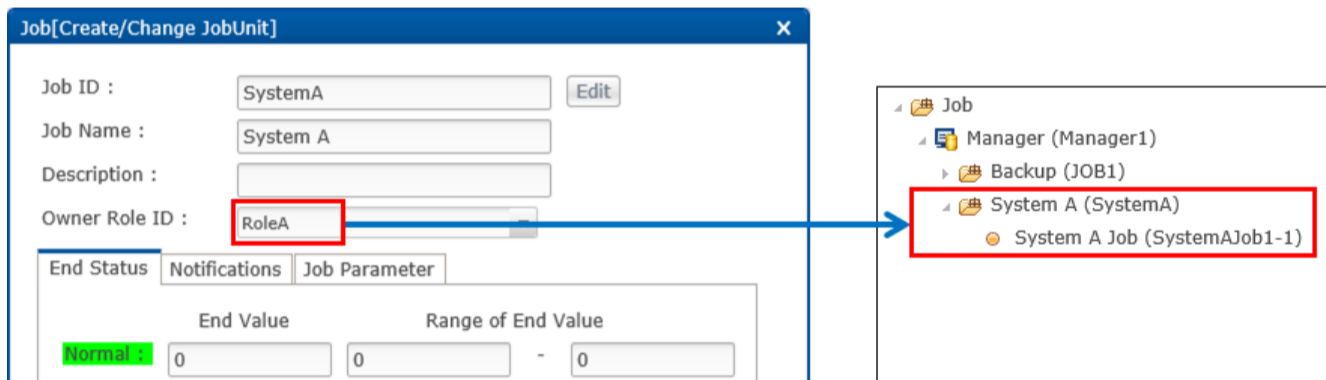


Figure 12-5 Specify an Owner Role for a JobUnit

Also, the run history for the SystemAJob JobUnit inherits the same owner role as the JobUnit, so you can also limit the Refer range of the job run history to users assigned to a particular role. (The System Role "All Users Role" (ALL_USERS) is specified as the owner role for the Common JobUnit in the middle of the figure.)

Manager	Run Status	End Status	End Val	Session ID	Job ID	Job Name	Jobunit ID	Type	Facility ID	Scope	Owner Role ID	Scheduled Start Time	Start/Rerun Time	End/Su
Manager1	End	Norm: 0		20150416121228-000	SystemA	System A	SystemA	JobUnit			RoleA	Apr 16, 2015 12:12:2	Apr 16, 2015 12:12:2	Apr 16,
Manager1	End	Norm: 0		20150416121014-000	JOB1	Backup	JOB1	JobUnit			ALL_USERS	Apr 16, 2015 12:10:1	Apr 16, 2015 12:10:1	Apr 16,
Manager1	End	Norm: 0		20150416120959-000	SystemA	System A	SystemA	JobUnit			RoleA	Apr 16, 2015 12:09:5	Apr 16, 2015 12:09:5	Apr 16,
Manager1	End	Norm: 0		20150416120838-000	JOB1	Backup	JOB1	JobUnit			ALL_USERS	Apr 16, 2015 12:08:3	Apr 16, 2015 12:08:3	Apr 16,
Manager1	End	Norm: 0		20150416120504-000	SystemA	System A	SystemA	JobUnit			RoleA	Apr 16, 2015 12:05:0	Apr 16, 2015 12:05:0	Apr 16,
Manager1	End	Norm: 0		20150416120436-000	JOB1	Backup	JOB1	JobUnit			ALL_USERS	Apr 16, 2015 12:04:3	Apr 16, 2015 12:04:3	Apr 16,
Manager1	End	Norm: 0		20150416120432-000	SystemA	System A	SystemA	JobUnit			RoleA	Apr 16, 2015 12:04:3	Apr 16, 2015 12:04:3	Apr 16,
Manager1	End	Norm: 0		20150416120000-000	JOB1	Backup	JOB1	JobUnit			ALL_USERS	Apr 16, 2015 12:00:0	Apr 16, 2015 12:00:0	Apr 16,

Method of Viewing the Job History of the Assigned Users for the RoleA Role

Manager	Run Status	End Status	End Val	Session ID	Job ID	Job Name	Jobunit ID	Type	Facility ID	Scope	Owner Role ID	Scheduled Start Time	Start/Rerun Time	End/Su
Manager1	End	Norm: 0		20150416121014-000	JOB1	Backup	JOB1	JobUnit			ALL_USERS	Apr 16, 2015 12:10:1	Apr 16, 2015 12:10:1	Apr 16,
Manager1	End	Norm: 0		20150416120838-000	JOB1	Backup	JOB1	JobUnit			ALL_USERS	Apr 16, 2015 12:08:3	Apr 16, 2015 12:08:3	Apr 16,
Manager1	End	Norm: 0		20150416120436-000	JOB1	Backup	JOB1	JobUnit			ALL_USERS	Apr 16, 2015 12:04:3	Apr 16, 2015 12:04:3	Apr 16,
Manager1	End	Norm: 0		20150416120000-000	JOB1	Backup	JOB1	JobUnit			ALL_USERS	Apr 16, 2015 12:00:0	Apr 16, 2015 12:00:0	Apr 16,

Method of Viewing the Job History of the Unassigned Users for the RoleA Role

Figure 12-6 Method of Viewing Job Run History for Each Role

12.3.4 Managing by Object Privileges

The Object Privileges manage the Access Permissions for the settings in the scope and JobUnit and the various monitor settings. You can specify Access Permissions for roles other than owner roles described in the prior item. "Change", "Refer" and "Run" are the three types of settings that can be specified for the settings (excluding nodes) for owner roles for Object Privileges.

- Change... Change or delete configuration information.
- Refer... Refer configuration information.
- Run... Run an operation.

The Object Privileges that can be specified are as follows.

Table 12-5 List of Object Privileges

Feature	Object Privileges	Privileges	Description
Repository	Node	—	(Cannot set)
	Scope	Change	Can change or delete the scope settings Assigns/releases a node of a scope Can set the Object Privilege of a scope
		Refer	Can Refer the scope tree contained under the corresponding scope
Account	—	—	—
Monitor results	Monitor results (Inherits the Object Settings of the Monitor Setting)	Change	Deletes the status from the Monitor[Status] view Can change the status of the confirmation flag for the event from the Monitor[Event] view Can edit the comments for the monitor results in the Monitor[Event] view
		Refer	Can refer monitor results
Monitor Setting	Monitor Setting	Change	Can change or delete the monitor settings Can change the validity of the monitor settings Can set the Object Privileges for the monitor settings
		Refer	Can refer monitor settings

Job	JobUnit	Change	Can update or delete a JobUnit, JobNet or Job Can set the Object Privileges for a JobUnit
		Refer	Can refer a JobUnit, JobNet or Job Can refer the execution history of a JobUnit, JobNet or Job
		Run	Can immediately run a JobUnit, JobNet or Job Can operate from the job execution history
	FileCheck Schedule	Change	Can change or delete a FileCheck or Schedule Can set the Object Privileges for a FileCheck or Schedule
Refer		Can refer a FileCheck or Schedule	
Performance	Performance information (Inheritance the Object Privileges of the Monitor Setting)	Refer	Can refer performance information
Infrastructure Management	Management settings	Create	Can create Infrastructure Management settings. Can set an object privilege for Infrastructure Management settings.
		Refer	Can refer Infrastructure Management settings and Infrastructure Management module
		Run	Can run Infrastructure Management settings and Infrastructure Management module
	Infra file	Change	Can change or delete Infra file. Can set an object privilege for Infra file.
Refer		Can refer Infra file. Can download Infra file.	
Calendar	Calendar Calendar Pattern	Change	Can change or delete a calendar or calendar pattern Can set the Object Privileges for a calendar or calendar pattern
		Refer	Can refer a calendar or calendar pattern
Notification	Notification setting Mail template	Change	Can change or delete various notifications or mail templates Can change the validity of the notification settings Can set the Object Privileges for notification settings or mail templates
		Refer	Can refer notification settings or mail templates
Maintenance	Settings for deleting the information history	Change	Can change or delete settings for deleting the information history Can set an object privilege for settings for deleting the information history
		Refer	Can refer settings for deleting the information history

You can perform access control for roles other than the owner role by setting the Object Privileges as follows. Further, refer to [12.8 Object Privilege Setting](#) for the method of setting Object Privileges.

Example 1) Access Permission when you only want to Refer subordinate to a particular scope.

When there is a scope structure (the owner role is all of RoleA roles) for WebA scope and DB_A scope under the SystemA scope, only users who belong to RoleA role can Refer and Change. At this time, if you want to Refer to the RoleWeb role to manage the Web server only under the WebA scope, set the "Refer" Object Privileges of the RoleWeb role for the WebA scope.

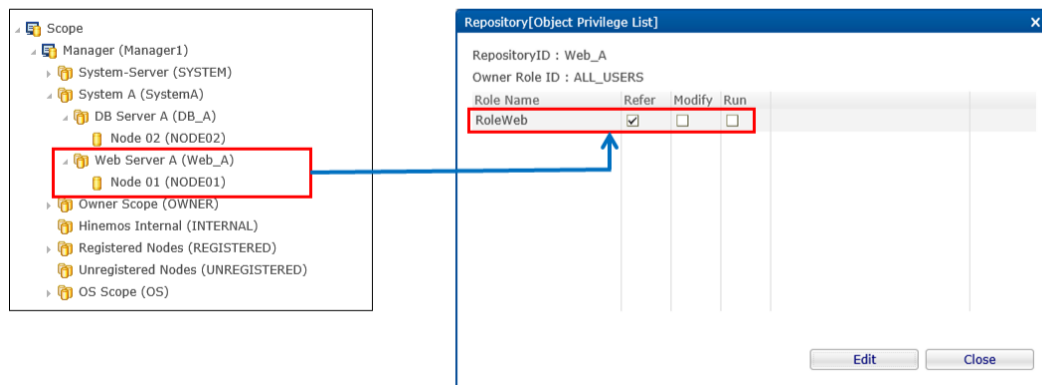
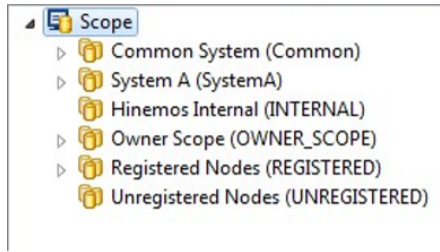
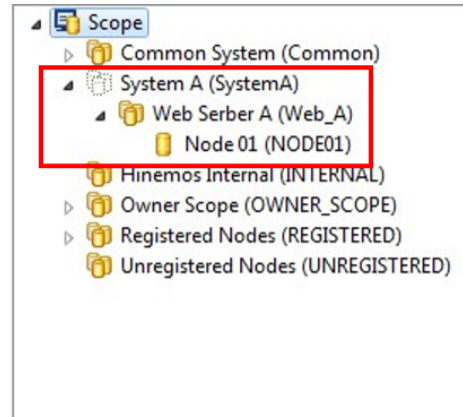


Figure 12-7 Setting "Refer" Object Privileges for a Particular Scope

You can Refer to just things under a particular scope (WebA scope) and not the entire SystemA scope by performing settings in this manner.



Method of Viewing the Monitor of the Assigned Users for the RoleWeb Role (Before the Object Privilege Settings)



Method of Viewing the Monitor of the Assigned Users for the RoleWeb Role (Following the Object Privilege Settings)

Figure 12-8 Method of Viewing the Scope of the Assigned Users for the RoleWeb Role

Further, scopes such as SystemA shown with a dotted line, like in the above figure, can be specified at the time of various monitor settings or job settings.

Example 2) Access Permissions for common settings (Repository, Notification, Calendar) referred to when registering monitor settings.

If the RoleA role is specified as the owner role for Monitor Setting MonitorPing then the owner role is RoleA and only common settings can be selected when setting. If you want to select common settings when setting MontiorPing, where a role other than RoleA is the owner role, set the "Refer" Object Privileges of the RoleA role for the target common settings.

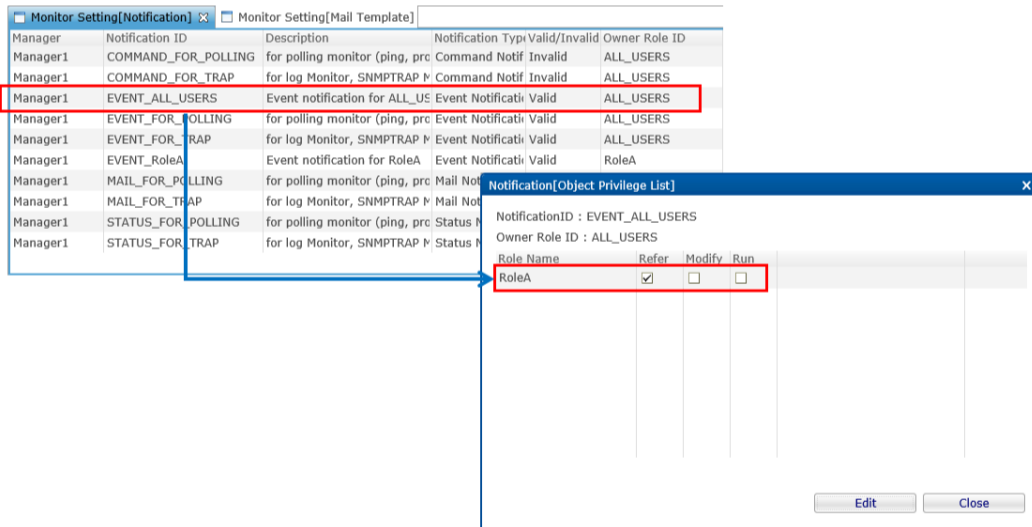
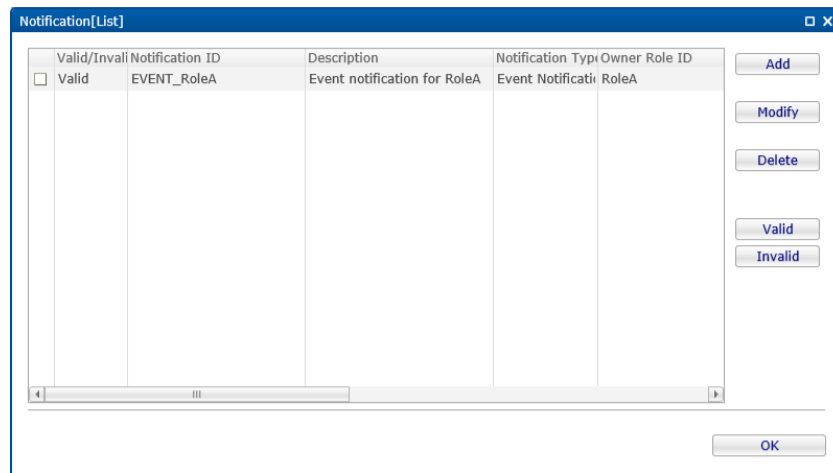
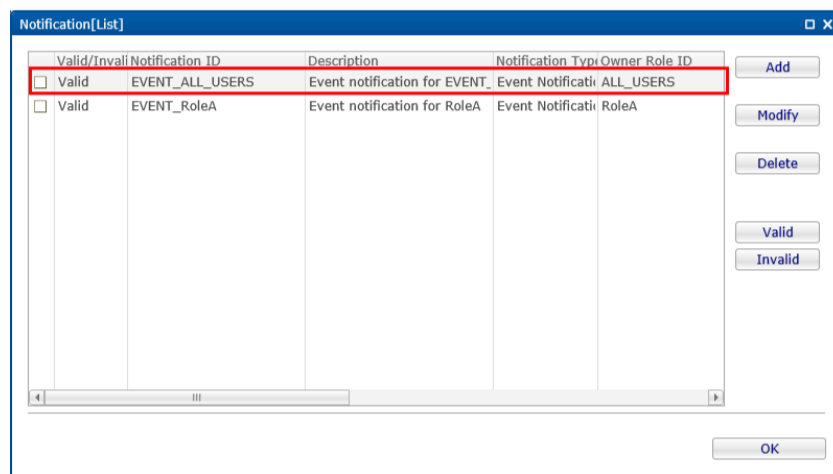


Figure 12-9 Setting "Refer" Object Privileges for the Notification Settings

With these settings, you can refer to common settings of a different owner role when setting MonitorPing.



Notification Settings for MonitorPingA
(Before the Object Privilege Settings)



Notification Settings for MonitorPingA
(After the Object Privilege Settings)

Figure 12-10 Method to View the Notification Settings Following the Object Privilege Settings

Object Privilege settings of Built-in Scope

Right after installing Hinemos Manager, Owner Role and Object Privilege settings of Built-in Scopes are as listed below.

Table 12-6 Object Privilege of Built-in Scope

Built-in Scope Name	Owner Role Name	Role with Object Privilege
Owner Scope (OWNER)	Hinemos Administrators Role (ADMINISTRATORS)	All Users Role (ALL_USERS)
Hinemos Internal (INTERNAL)	Hinemos Internal (INTERNAL)	All Users Role (ALL_USERS)
Registered Nodes (REGISTERED)	Hinemos Administrators Role (ADMINISTRATORS)	All Users Role (ALL_USERS)
Unregistered Nodes (UNREGISTERED)	Hinemos Administrators Role (ADMINISTRATORS)	All Users Role (ALL_USERS)
OS SCOPE (OS)	Hinemos Administrators Role (ADMINISTRATORS)	All Users Role (ALL_USERS)

Right after installing Hinemos Manager, in order to make all node accessible without considering the belonging role, All the Built-in Scope is set with an Object Privilege of All Users Role.

Because of this, in order to use "Role" to restrict READ-Privileges of scopes, remove object privileges of built-in scopes, especially Owner scope, OS scope, and Registered Nodes scope.

12.4 Interface Composition

12.4.1 Default Interface

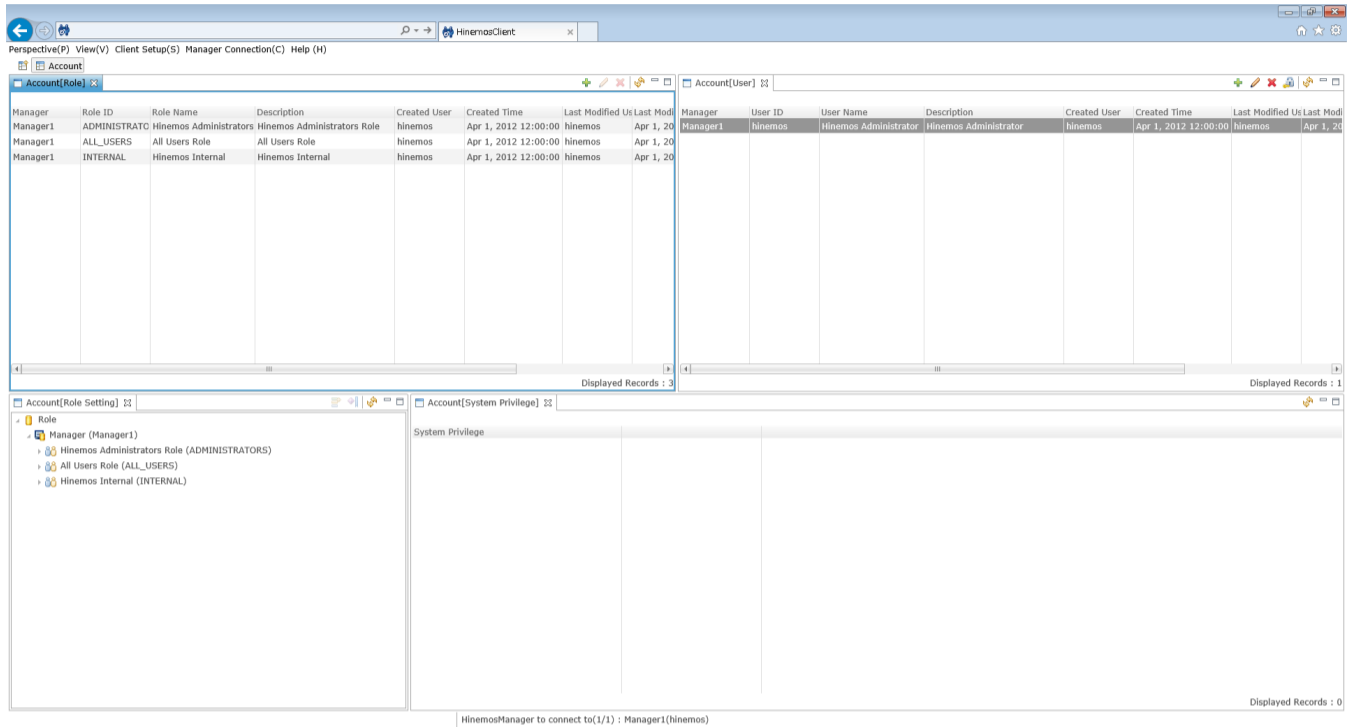


Figure 12-11 Default Interface of Account Feature

12.4.2 Account[User] View

This is the view to manage Hinemos users. The view displays a list of users. If there is no permission for "Account - READ" then only the user login information will be displayed. Users can be created/deleted and configuration information can be changed.

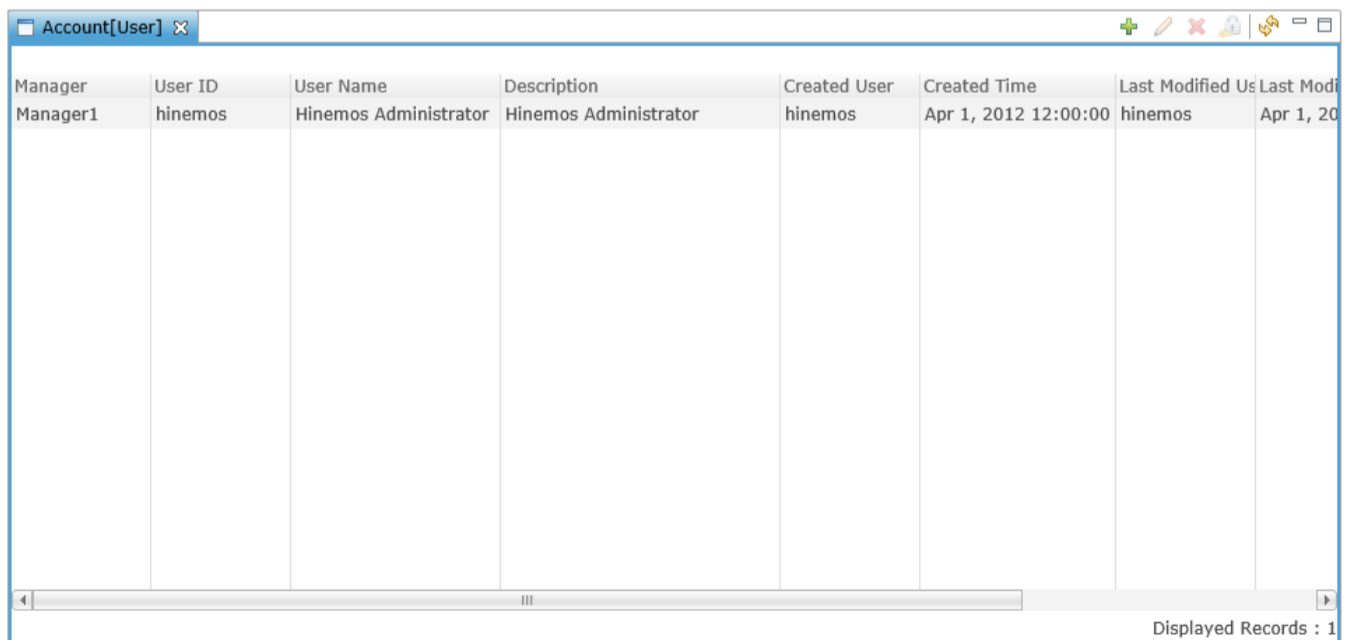







Figure 12-12 Account[User] View

Table 12-7 Toolbar

Icon	Button name	Description
------	-------------	-------------

	Create	Create user information.
	Modify	Modify user information.
	Delete	Delete user information.
	Change Password	Change user password.
	Update	Update the contents of the Account[User] view.

12.4.3 Account[Role] View

This is the view to manage roles. The view displays a list of roles. Roles can be created/deleted and configuration information can be changed.

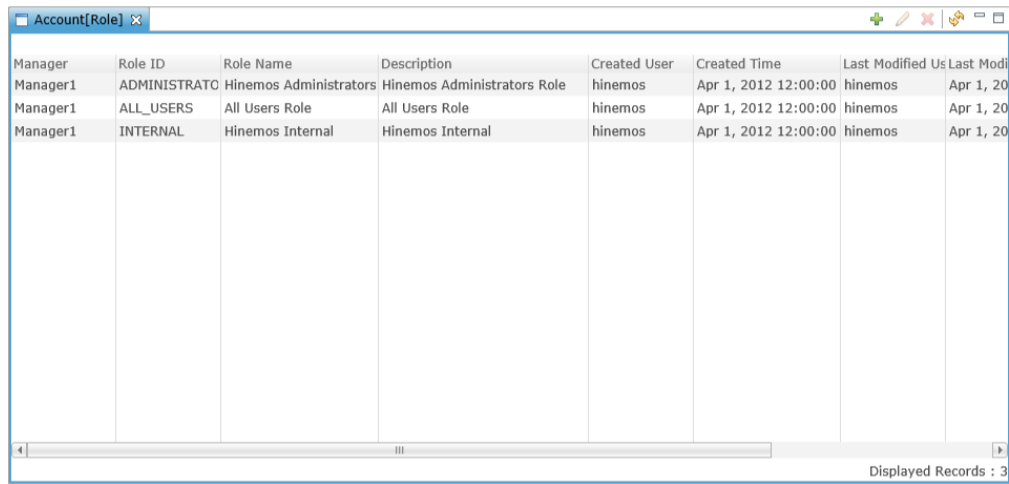






Figure 12-13 Account[Role] View

Table 12-8 Toolbar

Icon	Button name	Description
	Create	Create role information.
	Modify	Modify role information.
	Delete	Delete role information.
	Update	Update the contents of the Account[Role] view.

12.4.4 Account[Role Settings] View

This is the view to manage the user information and System Privilege information for the roles. The roles and users who are assigned to the roles are shown in a tree structure. System Privileges can be allocated/released from roles and users can be assigned/released.

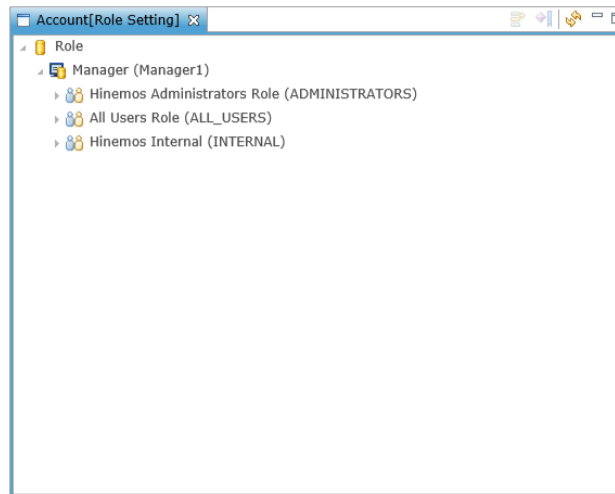


Figure 12-14 Account[Role Settings] View

Table 12-9 Toolbar

Icon	Button name	Description
	User assignment settings	Change the user information assigned to a role.
	System Privilege settings	Change the System Privilege information allocated to a role.
	Update	Update the contents of the Account[Role Settings] view.

12.4.5 Account[System Privilege] View

This is the view to confirm the System Privileges allotted to roles and users. This displays the System Privileges allocated to the roles and users selected in the Account[Role Settings] view. This displays the applied details of the information for all roles that are assigned when displaying the information related to a user.

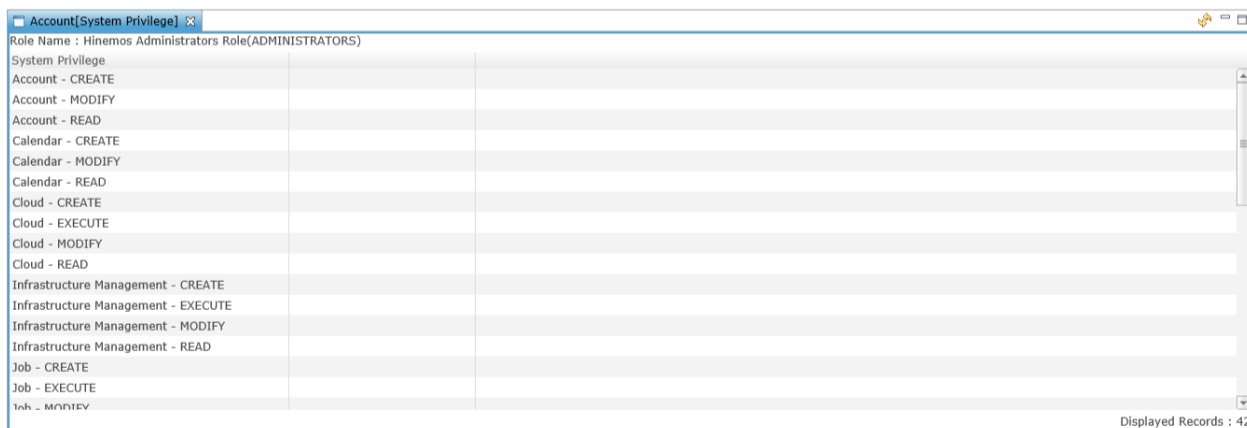


Figure 12-15 Account[System Privilege] View

Table 12-10 Toolbar

Icon	Button name	Description
	Update	Update the contents of the Account[System Privileges] view.

12.5 User Setting

12.5.1 Registering an User

Users with "Account - CREATE" privileges can create users. Create a user with the procedure below.

1. Click the "Create" button in the Account[User] view. This opens the Account[Create/Change User] dialog.

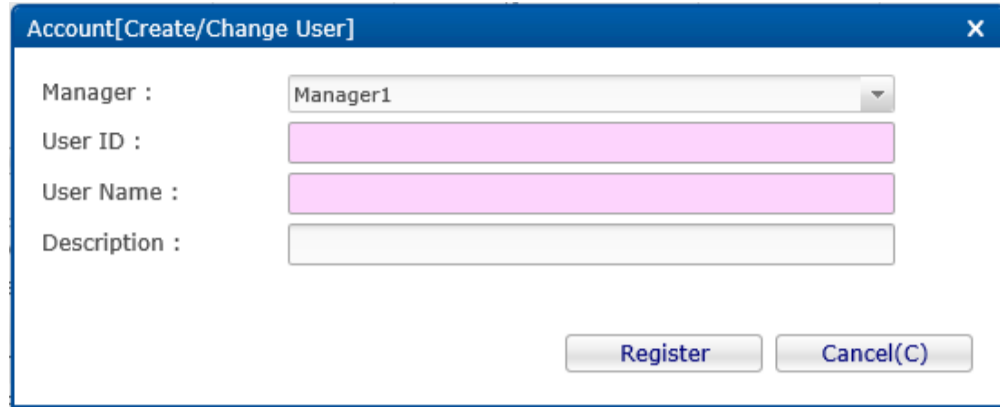


Figure 12-16 Account[Create/Change Calendar] Dialog

2. Enter the attribute information. User ID and User Name are required attribute information and must be entered. (Specify them with up to 64 single byte alphanumeric characters or symbols "-", "_". Multi byte characters are not permitted.) In addition, make the user ID unique on the system. You cannot register duplicate user IDs.
3. Click the "Register" button. Password set up is required for the created user to login. The password setup is done with Change Password.

12.5.2 Changing Password

Users with "Account - WRITE" permission can change passwords. Also, login users can change their own passwords. Login users who change their own password will be automatically logged out. Re-login with the changed password. Password can be changed with the procedures below.

1. Select the user to change from the user list table in Account[User] view and then click the "Change Password" button. This opens the Account[Change User Password] dialog.

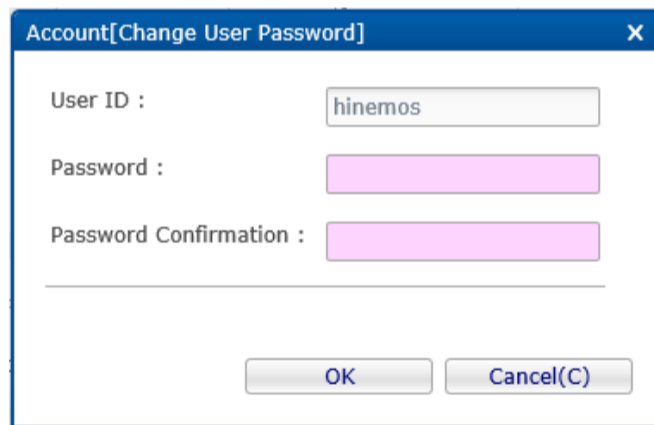


Figure 12-17 Account[Change User Password] Dialog

2. Enter a password in the Password field. (Up to 64 characters can be specified. Multi byte characters are not permitted.)
3. Re-enter the password in the Password Confirmation field.
4. Click the "OK" button.

12.5.3 Modifying User Information

Users with "Account - WRITE" permission can change user information. Also, login users can change their own user information.

User information can be changed with the procedure below.

1. Select the user to change from the user list table in Account[User] view and then click the "Modify" button. This opens the Account[Create/Change User] dialog.
2. Edit the attribute information.

3. Click the "Modify" button.

12.5.4 Deleting a User

Users with "Account - WRITE" permission can delete users. Further, login users cannot delete themselves.

Delete a user by following the procedures below.

1. Select the user to delete from the user list table in Account[User] view and then click the "Delete" button. A confirmation dialog opens.
2. Click the "OK" button.

12.6 Role Setting

12.6.1 Registering a Role

Users with "Account - CREATE" permission can create roles. Create a user with the procedure below.

1. Click the "Create" button in the Account[Role] view. This opens the Account[Create/Change Role] dialog.



Figure 12-18 Account[Create/Change Role] Dialog

2. Enter the attribute information. Role ID and Role Name are required attribute information and must be entered. (Specify them with up to 64 single byte alphanumeric characters or symbols "-", "_". Multi byte characters are not permitted.) In addition, make the Role ID unique on the system. Also you can't register duplicate Node, Scope or Facility IDs.
3. Click the "Register" button. Specify the assigned users for the created role and assign System Privileges in the Account[Role Settings] view.

12.6.2 Modifying Role Information

Users with "Account - WRITE" permission can change role information.

Role information can be changed with the procedure below.

1. Select the role to change from the role list table in Account[Role] view and then click the "Modify" button. This opens the Account[Create/Change Role] dialog.
2. Edit the attribute information.
3. Click the "Modify" button.

12.6.3 Deleting a Role

Roles with "Account - WRITE" permission can delete roles. Further, roles that have assigned users and roles specified as owner roles can't be deleted.

Delete roles by following the procedure below.

1. Select the role to delete from the role list table in Account[Role] view and then click the "Delete" button. A confirmation dialog opens.

2. Click the "OK" button.

12.6.4 User Assign Settings

Users with "Account - WRITE" permission can delete user assign settings.

Specify users assigned to a role with the following procedure.

1. Select the role you want to assign users to from the role tree in the Account[Role Settings] view. Then click the "User Assign Settings" button. This opens the Account[User Assign Settings] dialog.

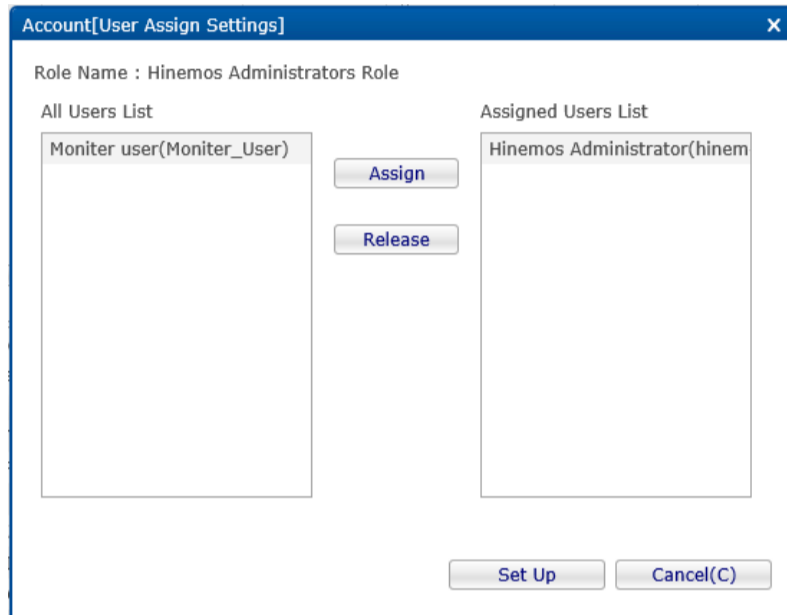


Figure 12-19 Account[User Assign Settings] Dialog

2. Select the user to be assigned from the All Users List and click the "Assign" button. Or, select the user to be assigned from the Assigned Users List and click the "Assign" button.
3. Click the "Set Up" button to confirm the users that have been assigned in the Assigned Users List.

12.6.5 System Privileges Settings

Users with "Account - WRITE" permission can set up System Privileges.

System Privileges are assigned to Roles with the following procedure.

1. Select the role you want to set System Privileges for from the role tree in the Account[Role Settings] view. Then click the "System Privilege" button. This opens the Account[System Privilege Settings] dialog.

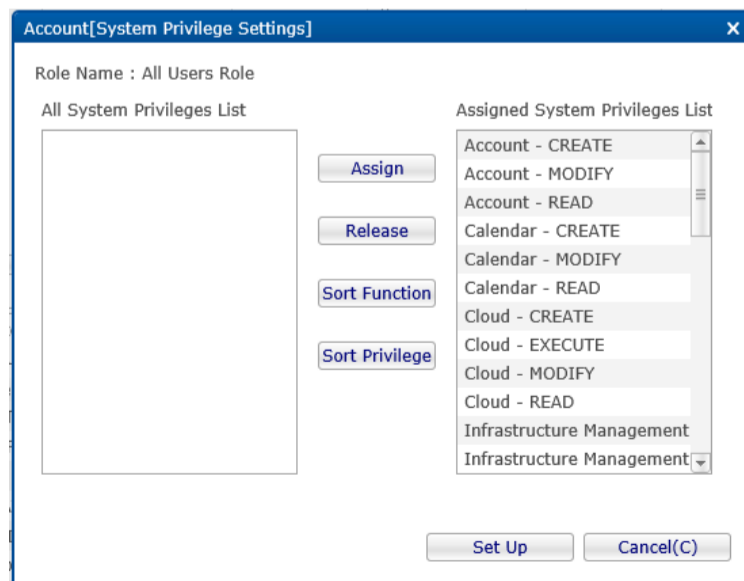


Figure 12-20 Account[System Privilege Settings] Dialog

2. Select the System Privilege you want to assign from the All System Privileges List and click the "Assign" button. Also, you can select the System Privileges you want to release from the All System Privileges List and click the "Release" button.
3. Click the "Set Up" button to confirm all of the System Privileges that are assigned in the Assigned System Privileges List.

12.7 Owner Role Setting

The Owner role is set up when a Scope, JobUnit or Monitor Setting, etc. is registered. The owner role can't be changed once it is registered. Roles that can be specified as owner roles become roles that are assigned to the login user. (All roles can be specified if the login user is assigned the "Hinemos administrator role (ADMINISTRATORS)")

Refer to Table 12-4 List of Settings Specified for Owner regarding settings specified for the owner role.

12.8 Object Privilege Setting

Set object settings to allow for existing Scope or JobUnit or various monitor settings to operate for roles other than the owner role. The following conditions must be met to set up Object Privileges.

- They are assigned to the owner role of the corresponding setting
- They are assigned to a role where Object Privilege "Change" is valid for the corresponding setting

Refer to Table 12-5 List of Object Privileges regarding the settings that are possible for Object Privileges.

12.8.1 Registering an Object Privilege Setting

An example of the procedure for setting Object Privileges when setting Object Privileges in Monitor Settings is shown below.

1. Select the Monitor Setting where you want to set the Object Privileges from the Monitor Setting List table in the Monitor Setting[List] view. Then click the "Object Privilege Setting" button. The Monitor Setting[Object Privilege List] dialog opens.

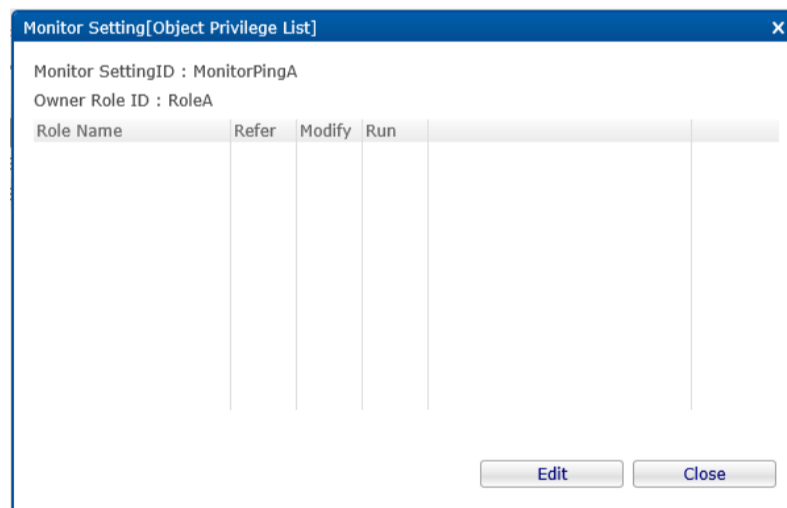


Figure 12-21 Monitor Setting[Object Privilege List] Dialog

Any Object Privileges that are already set up will be shown in this list.

2. Click the "Edit" button. The Monitor Setting[Object Privilege Setting] dialog opens.

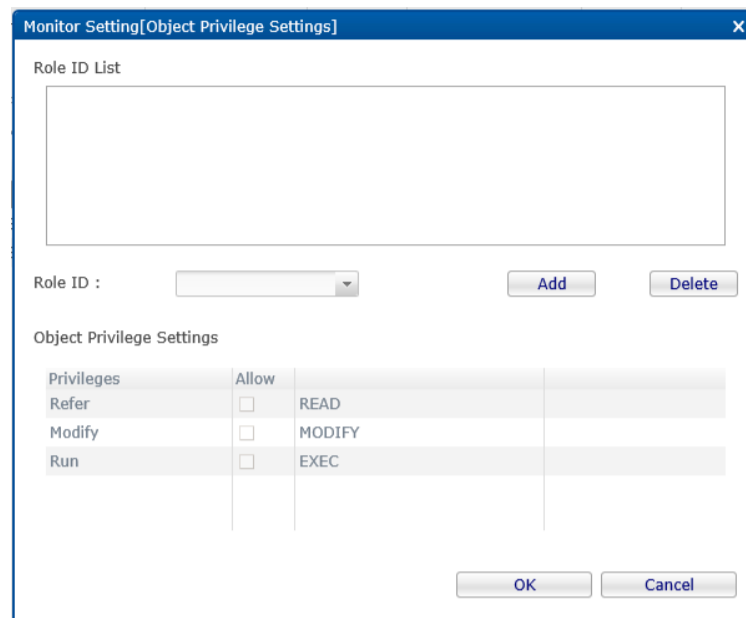


Figure 12-22 Monitor Setting[Object Privilege List] Dialog

3. Set up the following items.

- Role ID List

Roles with any Object Privileges set up will be shown in this list.

- Role ID:

Select the role you would like to add the Object Privilege to from the pull down menu. Click the "Add" button. The Role ID selected in the "Role ID List" is added. Further, roles that can be selected are roles that are assigned to the login user. (If the login user is assigned the "Hinemos administrator role (ADMINISTRATORS)", then all roles except for owner role for the corresponding setting can be selected.)

- Object Privilege Setting

Select the role from the Role ID List and set up the Object Privilege. Further, "Refer" privilege is specified by default, but this can be removed. Also, you may be able to configure privileges (such as "Run" privileges for the monitor feature) that are irrelevant for that feature, but their operation will have no effect.

4. Click the "OK" button. The Object Privilege settings are registered. The Monitor Setting[Object Privilege Setting] dialog closes, and the set details are displayed in the Monitor Setting[Object Privilege List] dialog.

5. Click the "Close" button.

12.8.2 Modifying an Object Privilege Setting

An example of the procedure for modifying Object Privileges when modifying Object Privileges registered in Monitor Settings is shown below. You can't modify the corresponding Object Privilege if integrity can't be maintained when changing the Object Privilege.

1. Select the Monitor Setting where you want to modify the Object Privilege from the Monitor Setting List table in the Monitor Setting[List] view. Then click the "Object Privilege Setting" button. The Monitor Setting[Object Privilege List] dialog opens.
2. Click the "Edit" button. The Monitor Setting[Object Privilege Setting] dialog opens.
3. Edit the details of the setting, then click the "OK" button (refer to [12.8.1 Registering an Object Privilege Setting](#) for the entry method).
4. Click the "Close" button.

12.8.3 Deleting an Object Privilege Setting

An example of the procedure for deleting Object Privileges when deleting Object Privileges registered in Monitor Settings is shown below. You can't delete the corresponding Object Privilege if integrity can't be maintained when deleting the Object Privilege.

1. Select the Monitor Setting where you want to delete the Object Privilege from the Monitor Setting List table in the Monitor Setting[List] view. Then click the "Object Privilege Setting" button. The Monitor Setting[Object Privilege List] dialog opens.
2. Click the "Edit" button. The Monitor Setting[Object Privilege Setting] dialog opens.
3. Select the role to delete in the Role ID List, then click "Delete" button.
4. Click the "OK" button.
5. Click the "Close" button.

12.8.4 Modifying Multiple Object Privilege Settings

You can collectively set Object Privileges for multiple settings if they are the same kind of settings. However, use caution if there are already settings because it is set to overwrite the existing Object Privilege settings if you perform the settings with this process.

An example of the procedure for collectively setting Object Privileges when collectively setting Object Privileges for multiple Monitor Settings is shown below.

1. Select multiple Monitor Settings where you want to set the Object Privilege from the Monitor Setting List table in the Monitor Setting[List] view. Then click the "Object Privilege Setting" button. The Monitor Setting[Object Privilege Setting] dialog opens.
2. Configure the contents you want to register, then click the "OK" button (Refer to [12.8.1 Registering an Object Privilege Setting](#) for the entry method).
3. A confirmation dialog is displayed. Click the "OK" button.

13 Precautions

13.1 Behaviour of Job Schedule With its Planned Execution Time passed while Java Process was Stopped

Please be aware that Job schedules which were supposed to be executed, but did not because of java process stoppage, will behave as written below.

Also, when restoring database from backups, this operation will cause a time difference in between time informations stored in the database and the java process uptime.

This will cause Job schedules to act in a same way as if java process was stopped for a certain amount of time.

- When scheduled execution time of Job schedule is within threshold (time to judge scheduled job execution as failure. default:1hour) from java process start up.

Scheduled Job will be executed immediately after the start up of java process completes.

Example) If a schedule which executes a Job every day at 10:00 AM, is set. (Figure 13-1)

If java process was stopped from Sunday night to Monday 10:30 AM, and java process was started on Monday 10:30 AM, scheduled job which were supposed to be executed at Monday 10:00 AM, will be executed immediately after the start up of java process.

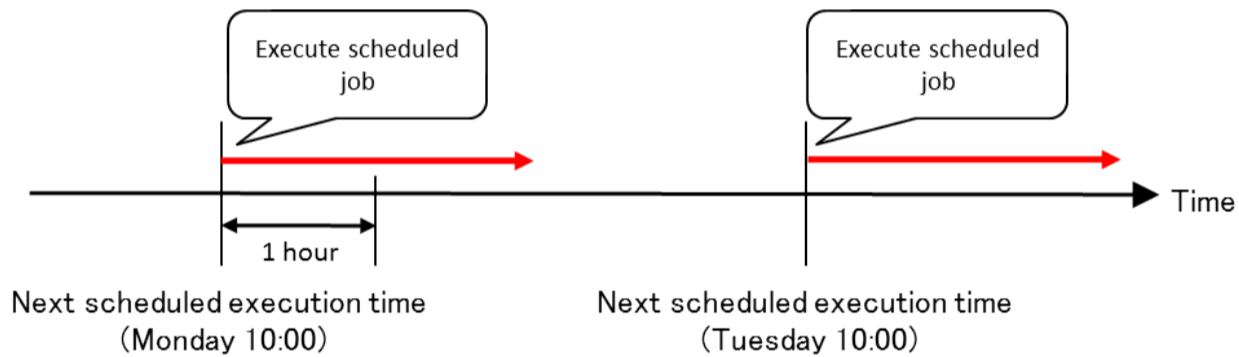


Figure 13-1 Example of Job Schedule

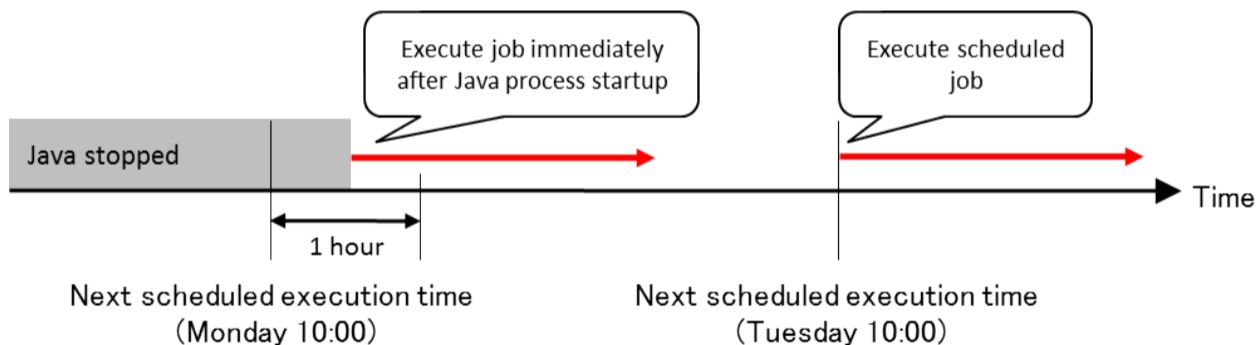


Figure 13-2 When java process was started within threshold time to judge scheduled job execution as failure

- When scheduled execution time of Job schedule is above threshold (time to judge scheduled job execution as failure. default:1hour) from java process start up.

Execution of scheduled Job will not occur, and will be executed in next scheduled time.

Example) If a schedule which executes a Job every day at 10:00 AM, is set. (Figure 13-1)

If java process was stopped from Sunday night to Monday 11:30 AM, and java process was started on Monday 11:30 AM, scheduled job which were supposed to be executed at Monday 10:00 AM, will not be executed on Monday, and will wait until next scheduled timing (Tuesday 10:00 AM). (Figure 13-3)

In this case, when Job schedule was executed on Sunday 10:00 AM, next scheduled time (Monday 10:00 AM) will be set in the database. Because execution timing(Monday 10:00 AM) has passed while java process was stopped, and java process was started in 11:30 AM which is past the threshold time of one hour, this scheduled Job execution will be skipped at this timing and the next scheduled time (Tuesday 10:00) will be set in the database.

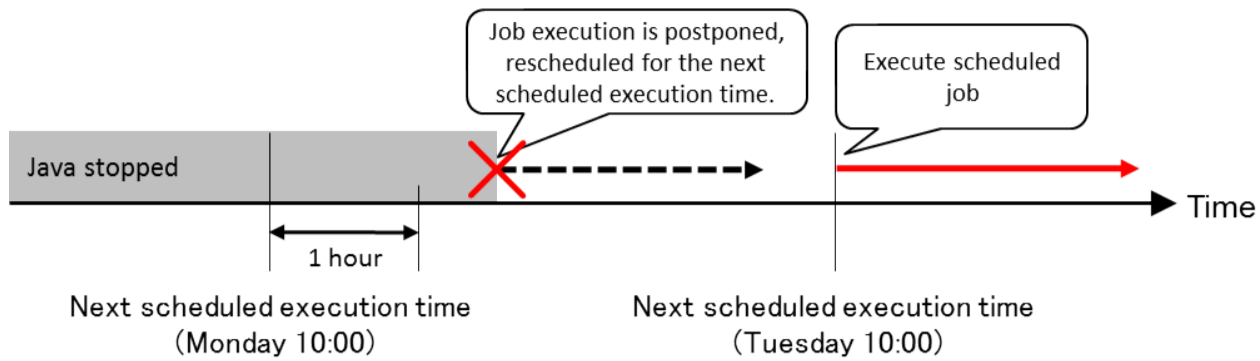


Figure 13-3 Behaviour of Job Schedule when java process was started after the threshold time.

In order to change the threshold time (time to judge scheduled job execution as failure), please refer to Administrator's Guide "7.2 Configuring the Job Schedule Control when Restarting Hinemos Manager".

13.2 Changing System Time on Hinemos Manager Server

When changing the OS Clock of Hinemos Manager Server, please execute scheduler reset script. For more detail, please refer to Administrator's Guide "3.1.10 Scheduler Adjustment after changing the OS clock settings"

When scheduler reset script is not executed, Hinemos Manager will act as follows.

When the "OS system time" of the manager node is changed from time T2 to the past time T1 (T1 < T2), the monitor management features and jobs scheduled between T1 and T2 will not start.

Hinemos controls the startup of the monitor management features and scheduled jobs based on the "OS system time" of the manager node. Each monitoring configuration, scheduled job, and system schedule of the Hinemos Manager has its own "next scheduled execution time". When the "OS system time" reaches the "next scheduled execution time", the monitoring or job runs.

For example, assume that monitoring configuration A has a monitoring interval of 10 minutes, and it is executed on 4/25 at 10:00am. In this case, the "next scheduled execution time" for monitoring configuration A is on 4/25 at 10:10am. If the "OS system time" is changed to 3/25 at 9:00pm, monitoring configuration A does not execute between the periods of 3/25 at 9:00am to 4/25 at 10:10am.

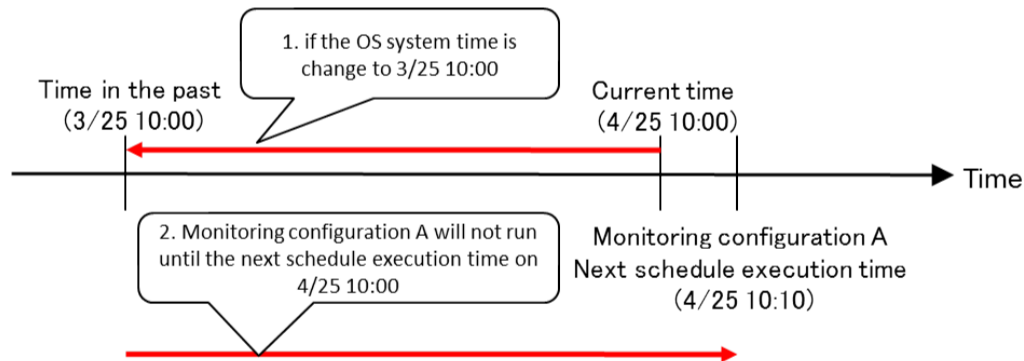


Figure 13-4 Operation when the "OS system time" is Returned to the Past

The Hinemos Manager does not operate again until it is 4/25 at 10:00am.

13.3 Restrictions on Character Code

The OS character code for the Hinemos Manager must be UTF-8.

The following character codes are standard for the Hinemos Agent.

- Linux: UTF-8
- Windows: MS932 (sjis)

The following restrictions apply if another character code is used.

1. System Log Monitor limits

When a Japanese log is output to the syslog of the monitor target, detection will fail if Japanese is used for pattern matching of the system log monitoring. The original message will be corrupt when a language other than Japanese is used for the pattern matching.

2. Monitor Logfile limits

When a Japanese log is output to the log file of the monitor target, detection fails if Japanese is used for pattern matching of the system log monitoring. You can use a language other than Japanese for a pattern matching expression, but the original message will be corrupt when displayed. Character code can be set for each monitor settings, so please select the character code of the files.

3. Job feature limits

The execution results of a job may be corrupt.

You can avoid 3 by changing the configuration of the Hinemos Agent. Refer to Chapter 4.4, "Configuring OS Locale and Character Encoding" in the Administrator's Guide for details.

13.4 Restrictions on Windows Agent

The following section describes the restrictions on the Windows Agent.

13.4.1 Job Feature Limitations

1. File transfer is not available.

The SSH protocol is used for file transfer in the job feature. You can use the file transfer feature in the Linux Agent by using the SSH daemon (openssh) on the source of the file, and by executing the command on the SSH client (openssh) at the destination of the file.

However, the file transfer feature is not available on the Windows Agent because the ssh daemon and the SSH client are not provided by the Windows OS (default).

2. The effective user of the job must be the same as the service startup user.

Make sure that the effective user and the service startup user set in the Job Register dialog of the Job feature are the same. The following log will be output if they are not the same.

```
The execution user of the command and agent's user are different.  
execUser=[Effective User name], agentUser=[Service startup user name]
```

Effective user and service startup user (Agent user) can be set the same by selecting "Agent user" in Job[Create/Change Job] dialog. By doing this, Job can be executed without considering the startup user (Agent user) of every managed target.

3. The case where the service startup user is changed to the user of other than Local System

When the service startup user is changed to the user of other than Local System, the user name and the password are required to change. Therefore, when changing the password of the OS user account, please do not forget to change the password of the service startup user.

13.4.2 Monitor Setting Feature Limitations

1. Load average cannot be acquired.

Load average cannot be retrieved due to restrictions in resource monitoring. However, the performance value is obtained by using the UCD-MIB(1.3.6.1.4.1.2021) of SNMP. Specifically, the following items cannot be retrieved.

- 1 minute load averages
- 5 minutes load averages
- 15 minutes load averages

Use SNMP monitoring to monitor the load average of Windows. The 1 minute load average (in %) can be obtained from the "HOST-RESOURCE-MIB". Please specify "hrProcessorLoad (OID : 1.3.6.1.2.1.25.3.3.1.2.1)" in the SNMP Monitor feature.

2. Restart the SNMP Service required when the logical drive increases.

The SNMP Service must be restarted when the logical drive increases due to removable disk connection etc.

13.4.3 Logfile Monitor Limitations

When performing Logfile Monitor on a Windows environment, by default you can't rename or delete a log file. Therefore, the rotation method of the file will be limited.

The "copytruncate" method and "mv" method used for the "logrotate" in Linux are explained in the example.

1. "copytruncate" method

The "copytruncate" method creates a copy of the subject log file, and then truncates the original file. The Hinemos Agent for Windows environment is compatible with this method.

2. "mv" method

The "mv" method moves (renames) the subject log file, and then creates a new original log file. The default Hinemos Agent for Windows environment is not compatible with this method because the subject log will be moved (renamed). ("log4j" used in Java application uses the "mv" method during the rotation scheme.) Add the following to the Hinemos Agent settings file (Agent.properties) and restart the Hinemos Agent to support the mv format.

For Windows Agent, the additional setting is not required because this setting has already set during installation.

```
monitor.logfile.random.access.file=windows
```

13.5 Configuring Arguments of Process Monitoring with Net-SNMP

The length of the string returned as the parameter (argument) may be restricted depending on the version of Net-SNMP.

- Example of a restricted string length
net-snmp-5.3.1-24.el5_2.1 : 128 characters

If the information exceeds the maximum character count, the end characters is truncated to meet the maximum character count.

Therefore, when setting the Process Monitor for processes where the arguments are extremely long, the first part of the argument must be fixed.

13.6 Behavior of Resource Monitoring When the Repository Information has Changed

Resource monitoring feature is paused when the contents of the resource monitoring has changed. When the IP address of the managed node in the repository information has changed, the resource monitoring for the corresponding node is temporarily stopped.

Resource Monitor calculates Monitor items (CPU usage, etc) that require the difference in the results of two polls. Therefore, the monitor results can't be acquired right after the update. As the start of polling is synchronized (0 seconds for each minute), acquisition of monitoring results requires a time twice the monitoring interval.

13.7 Multi-Client Access

- Browsing from the Hinemos Client

You can connect and operate the same/different user accounts from multiple Hinemos Clients. However, as the number of client connections increases, reference inquiries to the Hinemos Manager will increase as well.

When multiple Hinemos Clients are connected, it is recommended that you reduce the inquiries to the Hinemos Manager by making the refresh interval for each client longer.

- Changing the configuration from the Hinemos Client

You can change the configuration from multiple Hinemos Clients. However, there are no exclusive control features for Monitoring Settings. Therefore, it is recommended that a single Hinemos Client be used to carry out the configuration changes. For Job feature, you can use "edit mode" to gain exclusive control over job settings.

13.8 Handling Whitespaces in "start command" and "stop command"

When setting a command including whitespace character for "start command" and "stop command" of Job feature, command must be quoted with double quote (").

Example 1) When designating (C:\Program Files (x86)\hoge.bat) command for

"start command" and "stop command" of Job

```
"C:\Program Files (x86)\hoge.bat"
```

Also, when there are whitespace characters in both the command and its argument, each of them must be separately quoted with double quote (").

Example 2) When designating (C:\Program Files (x86)\hoge.bat -cp C:\test a b c) command for

"start command" and "stop command" of Job

```
"C:\Program Files (x86)\hoge.bat" -cp C:\test "a b c"
```

13.9 Behaviour of Jobs While Hinemos Agent is stopped

Hinemos Manager sends Job execution order to Hinemos Agent on Job execution time. When Hinemos Manager tries to send Job execution order, but cannot connect to Hinemos Agent properly, Hinemos Manager retries connecting, in interval of 60 sec, for designated number of times. (Default number of times to order: 10)

When this retrying fails, End Status of Job will shift from "Running" to "Error".

The number of times and end value to retry command execution ordering can be changed from Job[Create/Change Job] dialog

For more detail, please refer [9.4.4 Creating/Modifying a Command Job](#) .

14 ChangeLog

ChangeLog

Version	Date	Details
1st Edition	06/01/2015	First release
2nd Edition	09/18/2015	Second release

Hinemos ver.5.0 User Manual

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