EXPRESSCLUSTER® X SingleServerSafe 4.0 *for Windows*

Operation Guide

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2nd Edition

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Preface

Who Should Use This Guide

The *Operation Guide* is intended for system administrators who will operate and maintain an introduced system. It describes how to operate EXPRESSCLUSTER X SingleServerSafe. The guide consists of three sections: I to III.

How This Guide Is Organized

Section I WebManager Operation Reference

Chapter 1 "Functions of the WebManager": Describes how to use WebManager and provides related information.

Section II Command Reference

Chapter 2 "EXPRESSCLUSTER X SingleServerSafe command reference": Describes the usable commands in EXPRESSCLUSTER X SingleServerSafe.

Section III Release Notes

Chapter 3 "Notes and restrictions": Provides information on known problems and restrictions.
Chapter 4 "Error messages": Lists and describes error messages you might encounter when operating EXPRESSCLUSTER X SingleServerSafe.

Appendix

Appendix A "Index"

Terms Used in This Guide

EXPRESSCLUSTER X SingleServerSafe, which is described in this guide, uses windows and commands common to those of the clustering software EXPRESSCLUSTER X to ensure high compatibility with EXPRESSCLUSTER X in terms of operation and other aspects. Therefore, cluster-related terms are used in parts of the guide.
The terms used in this guide are defined below.

Term	Explanation
Cluster, cluster system	A single server system using EXPRESSCLUSTER X SingleServerSafe
Cluster shutdown, reboot	Shutdown or reboot of a system using EXPRESSCLUSTER X SingleServerSafe
Cluster resource	A resource used in EXPRESSCLUSTER X SingleServerSafe
Cluster object	A resource object used in EXPRESSCLUSTER X SingleServerSafe
Failover group	A group of group resources (such as applications and services) used in EXPRESSCLUSTER X SingleServerSafe

EXPRESSCLUSTER X SingleServerSafe Documentation Set

The EXPRESSCLUSTER X SingleServerSafe manuals consist of the four guides below. The title and purpose of each guide is described below:

EXPRESSCLUSTER X SingleServerSafe Installation Guide
This guide is intended for system engineers who intend to introduce a system using EXPRESSCLUSTER X SingleServerSafe and describes how to install EXPRESSCLUSTER X SingleServerSafe.

EXPRESSCLUSTER X SingleServerSafe Configuration Guide
This guide is intended for system engineers who intend to introduce a system using EXPRESSCLUSTER X SingleServerSafe and system administrators who will operate and maintain the introduced system. It describes how to set up EXPRESSCLUSTER X SingleServerSafe.

EXPRESSCLUSTER X SingleServerSafe Operation Guide
This guide is intended for system administrators who will operate and maintain an introduced system that uses EXPRESSCLUSTER X SingleServerSafe. It describes how to operate EXPRESSCLUSTER X SingleServerSafe.

EXPRESSCLUSTER X Integrated WebManager Administrator's Guide
This guide is intended for system administrators who manage a cluster system using EXPRESSCLUSTER with EXPRESSCLUSTER Integrated WebManager and for system engineers who are introducing the Integrated WebManager. Details about items required when introducing a cluster system are described in accordance with actual procedures.

Conventions

In this guide, **Note**, **Important**, and **Related Information** are used as follows:

Note:
Used when the information given is important, but not related to the data loss and damage to the system and machine.

Important:
Used when the information given is necessary to avoid the data loss and damage to the system and machine.

Related Information:
Used to describe the location of the information given at the reference destination.

The following conventions are used in this guide.

Convention	Usage	Example
Bold	Indicates graphical objects, such as fields, list boxes, menu selections, buttons, labels, icons, etc.	In **User Name**, type your name. On the **File** menu, click **Open Database**.
Angled bracket within the command line	Indicates that the value specified inside of the angled bracket can be omitted.	`clpstat -s[-h host_name]`
Monospace (`courier`)	Indicates path names, commands, system output (message, prompt, etc), directory, file names, functions and parameters.	`c:\Program files\EXPRESSCLUSTER`
Monospace bold (**`courier`**)	Indicates the value that a user actually enters from a command line.	Enter the following: **`clpcl -s -a`**
Monospace italic (*`courier`*)	Indicates that users should replace italicized part with values that they are actually working with.	`clpstat -s [-h host_name]`

Contacting NEC

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Section I WebManager Operation Reference

This section provides details about the WebManager functions. EXPRESSCLUSTER X SingleServerSafe uses windows common to those of the clustering software EXPRESSCLUSTER X to ensure high compatibility with EXPRESSCLUSTER X in terms of operation and other aspects. Because the information contained herein is specific to EXPRESSCLUSTER X SingleServerSafe, see the *Reference Guide* for EXPRESSCLUSTER X to obtain an overall understanding of the WebManager.
For details of Cluster WebUI which is the new management tool implemented in EXPRESSCLUSTER X 4.0, refer to the online manual of Cluster WebUI.

- Chapter 1 Functions of the WebManager

Chapter 1 Functions of the WebManager

This chapter describes the functions of the WebManager.

This chapter covers:

- Starting the WebManager…… 16
- Window of the WebManager…… 18
- Checking the status of each object in the tree view of WebManager …… 30
- Checking the status by the WebManager list view …… 39
- Checking alerts using the WebManager …… 48
- Manually stopping and starting the WebManager …… 50
- When you do not want to use the WebManager …… 50
- Setting limitations on the connection and operation …… 51

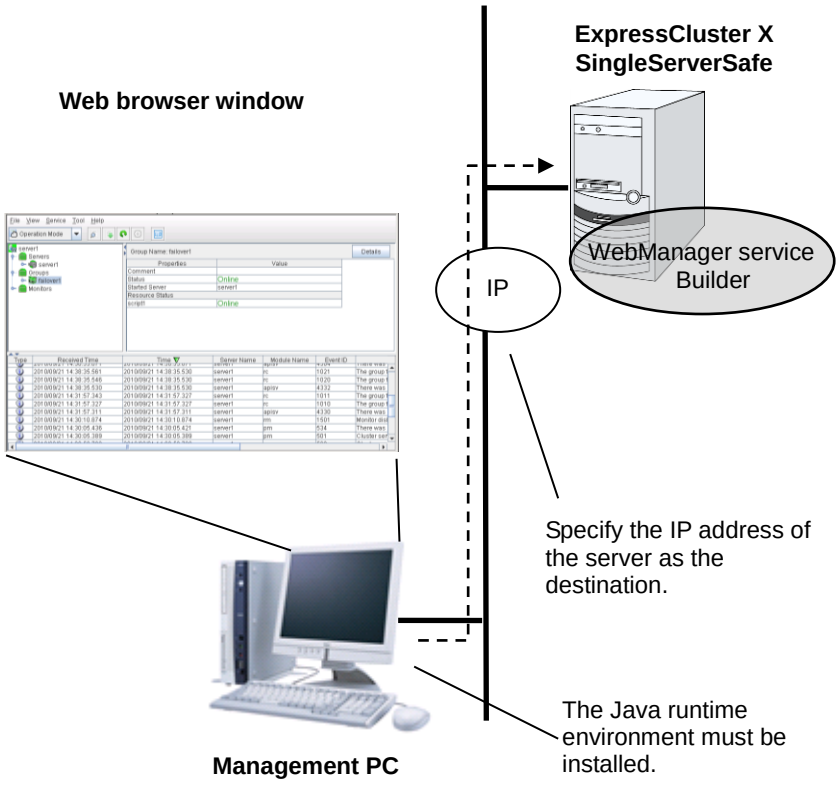
Starting the WebManager

Some of the windows and terms used to describe the WebManager in this chapter are the same as those for EXPRESSCLUSTER X WebManager. Therefore, cluster-related terms are used in parts of the chapter.

Read the guide, assuming that EXPRESSCLUSTER X SingleServerSafe is in a one-node cluster.

What is the WebManager?

The WebManager is a function for setting up EXPRESSCLUSTER, monitoring its status, starting and stopping servers and groups, and collecting operation logs through a Web browser. The overview of the WebManager is shown in the following figures.



The WebManager service on the EXPRESSCLUSTER X SingleServerSafe Server is set up to start up when the operating system starts up.

Starting the WebManager

The procedure for starting the WebManager is described below.

1. Start your Web browser.
2. Enter the IP address and port number of the server where EXPRESSCLUSTER X SingleServerSafe is installed in the browser address bar.

   http://192.168.0.1:29003/main.htm

   The port number for the WebManager specified at installation. (Default value: 29003)

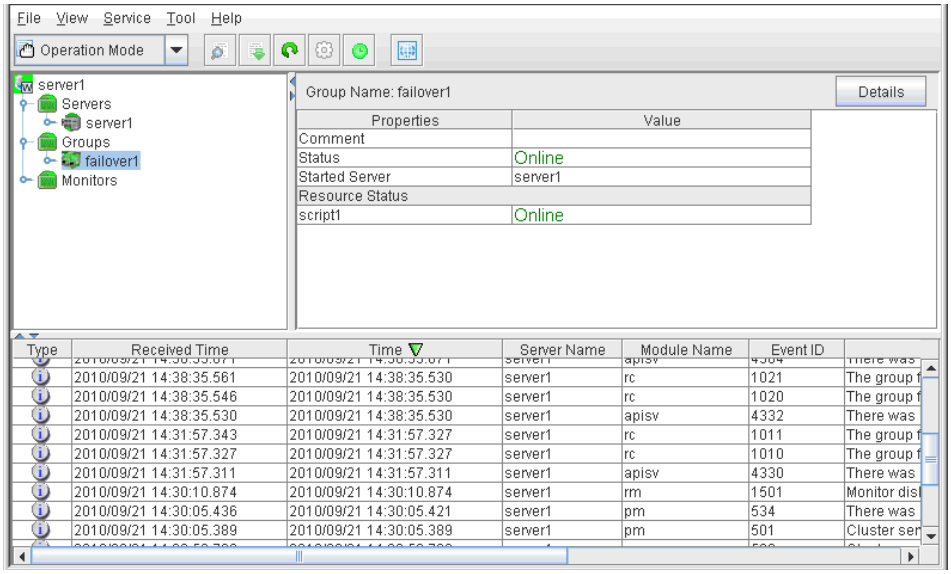
   It is the IP address of the server where EXPRESSCLUSTER X SingleServerSafe is installed. If the local server is used, **localhost** can be specified.

Note:

In Java Runtime Enviroment Version 9.0 or later, WebManager can be launched by using Java Web Start. When starting the Java WebManager, change “main.htm” of the URL above to “main.jnlp” and then enter the modified URL in the Address bar.

Example: http://10.0.0.1:29003/main.jnlp

3. The WebManager starts.



Related Information:

The Cluster WebManager supports encrypted communication (by using HTTPS). For details of encrypted communication, see *Configuration Guide*. Enter the following to perform encrypted communication.

https://192.168.0.1:29003/main.htm

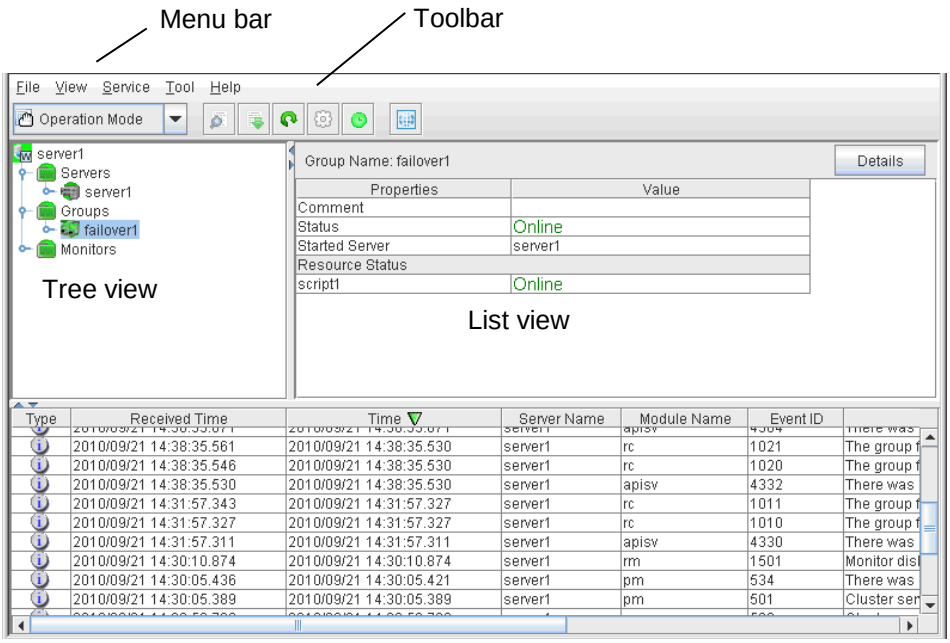
Window of the WebManager

This chapter provides information about the WebManager window.

Note:
For the language used on the WebManager screen, see "Cluster properties Info tab".

Main window of the WebManager window

The WebManager window consists of two bars and three views.



Menu bar

The menu bar has the five menus described below. The contents of these menus differ depending on the config mode and operation/reference mode. The menu items displayed in the operation/reference mode are described later in this chapter.

- **File** menu
- **View** menu
- **Service** menu
- **Tool** menu
- **Help** menu

Toolbar

If you click one of the six icons on the toolbar, you can perform the same operation as when selecting the corresponding item on the menu bar.

Icon/menu	Function	Refer to
Operation Mode	Changes the WebManager to the operation mode. This is the same as clicking **View** on the menu bar and then selecting **Operation Mode**.	"Changing the WebManager operation mode" (on page 21)
Config Mode	Changes the WebManager to the config mode (online version of the Builder). This is the same as clicking **View** on the menu bar and then selecting **Config Mode**.	"Changing the WebManager operation mode" (on page 21)
Reference Mode	Changes the WebManager to the reference mode. This is the same as clicking **View** on the menu bar and then selecting **Reference Mode**.	"Changing the WebManager operation mode" (on page 21)
Verification Mode	Changes the WebManager to the verification mode. This is the same as clicking **View** on the menu bar and then selecting **Verification mode**.	"Changing the WebManager operation mode" (on page 21)
	Searches for an alert. This is the same as clicking **Tool** on the menu bar and then selecting **Filter Alerts**.	"Searching for an alert by using the WebManager" (on page 22)
	Collects logs. This is the same as clicking **Tool** on the menu bar and then selecting **Collecting Cluster Logs**.	"Collecting logs by using the WebManager" (on page 23)
	Performs reloading. This is the same as clicking **Tool** on the menu bar and then selecting **Reload**.	"Updating the WebManager information" (on page 25)
	Displays options. This is the same as clicking **Tool** on the menu bar and then selecting **Option**.	"Changing the screen layout on the WebManager" (on page 26)
	Displays the time information. This is the same as clicking **Tool** on the menu bar and then selecting **TimeInfo** When the time information has been updated, the icon changes accordingly. The icon reverts to its original form when the time information dialog is displayed.	Checking the time information from the WebManager (on page 26)
	Displays Integrated WebManager. This is the same as clicking Tool **on the menu bar and then selecting** Integrated WebManager**.**	"Executing Integrated WebManager from the WebManager" (on page 28)

Tree view

The statuses of servers and group resources can be confirmed. For further information, see "Checking the status of each object in the tree view of WebManager" on page 30.

List view

The upper part of the view provides information on the server or other resource selected in the tree view. The lower part lists the start/stop statuses and comments of each server, group resource, and monitor resource. If you click the **Details** button located on the upper right of the view, further information will be displayed in a dialog box. For further information, see "Checking the status by the WebManager list view" on page 39.

Alert view

The operation status of EXPRESSCLUSTER X SingleServerSafe is indicated by a message. For further information, see "Checking alerts using the WebManager" on page 48.

Changing the WebManager operation mode

The WebManager has the following four operation modes.

- **Operation mode**
  This mode allows the user to see the status of and operate the server.
  Select **Operate Mode** on the **View** menu or click the operation mode icon ( ) on the toolbar to switch to the operation mode. However, if you used the reference mode password for login when starting the WebManager or connected to the WebManager from a client that is not allowed to perform operations, it is not possible to switch to the operation mode.

- **Reference Mode**
  This mode allows the user to see the cluster status, but not to operate the server.
  Select **Reference Mode** on the **View** menu or click the operation mode icon ( ) on the toolbar to switch to the reference mode.

- **Config Mode**
  This mode allows the user to set up the server and change the settings. The WebManager in the config mode is called Builder (online version). For details about operations in the config mode, see the *EXPRESSCLUSTER X SingleServerSafe Configuration Guide*.
  Select **Config Mode** on the **View** menu or click the operation mode icon ( ) on the toolbar to switch to the config mode. However, if you connected to the WebManager from a client that is not allowed to perform operations, it is not possible switch to the config mode.

- **Verification Mode**
  This mode allows the user to generate a simulated fault in specified monitor resources.
  Select **Verification mode** ( ) on the **View** menu or the toolbar to switch to the **Verification mode**. However, if you connected to the WebManager from a client that is not allowed to perform operations, it is not possible to switch to verification mode.
  If you switch from the verification mode to another mode, a dialog box asks if you want to cancel the simulated fault status of all the monitor resources. Select **Yes** to place all the monitor resources in the simulated fault status back in the normal monitored status. Select **No** to switch to another mode while keeping the monitor resources in the simulated fault status.

Note: When the pop-up window is displayed for **Operation Mode**, **Reference Mode**, or **Verification Mode** in the WebManager, and if switching to **Config Mode** is performed, the open pop-up window closes.

The operation performed on the pop-up window continues.

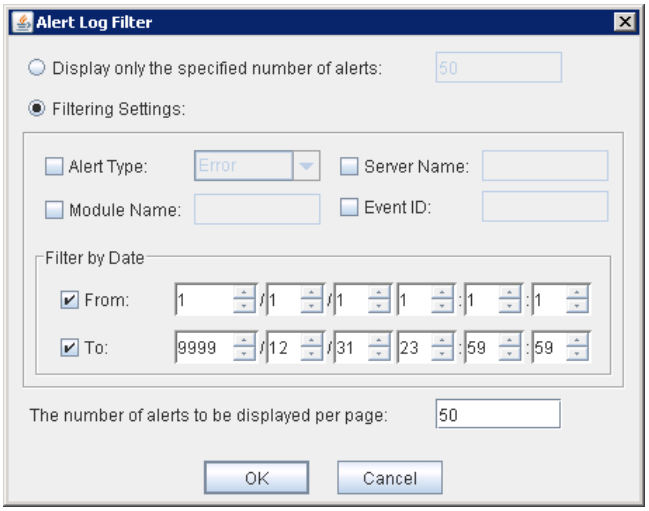
Searching for an alert by using the WebManager

You can search for an alert by using the WebManager. Searching in this method is useful to view only a specific type alert.

Note:

For information about alert logs, see "Checking alerts using the WebManager" on page 48.

To search for an alert, click **Filter Alerts** on the **Tool** menu or click the alert search icon ( ) on the toolbar. The window for specifying alert log search conditions is displayed.



To search only the specified number of past alert logs:

1. Select **Display only the specified number of alerts**.
2. Enter the number of past alert logs to search, and then click **OK**. Past alert logs are displayed as many as you have specified.

Note:

The maximum value to enter is the number specified for **Max Number to Save Alert Records**. To configure **Max Number to Save Alert Records**, right-click the cluster icon in the Builder, and then click **Properties** on the shortcut menu. In the properties dialog box, click the **Alert Log** tab.

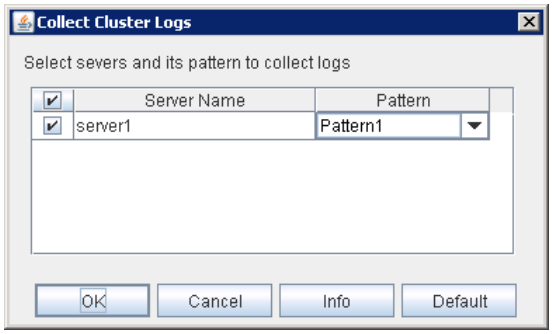
To search by specifying search conditions:

1. Click **Filtering Settings**.
2. Enter the search conditions in each field and start searching.
   - **Alert Type**: Select the type of alerts.
   - **Module Name**: Enter the module type.
     Server Name: Type in the name of a server whose alerts you want to see.
   - **Event ID**: Type in an event ID whose alerts you want to see.
     For event IDs, see Chapter 4 Error messages.
   - **From, To**: Select this to search by the time of the event occurrence. Enter the values in **From** and **To** field.

3. Enter the number of alerts to display on one page in **The number of alerts to be displayed per page**, and then click **OK**. Research results are displayed based on the time an alert occurred.
4. If the results of research are displayed on more than one page, move the page by clicking **Back**, **Next**, and **Jump** buttons.

Collecting logs by using the WebManager

Clicking **Collect Cluster Logs** on the **Tool** menu or clicking the **Collect Cluster Logs** icon ( ) on the toolbar opens the log collection dialog box.



Check box

Select the check boxes of the servers that have the logs you want to collect.

Pattern

Select the information to be collected. Specify one of Type 1 to Type 4 as the log collection pattern.

	Type 1	Type 2	Type 3	Type 4
(1) Default collection information	✓	✓	✓	-
(2) Event log	✓	✓	✓	✓
(3) Windows Error Report	✓	✓	✓	✓
(4) User dump	✓	✓	-	-
(5) Diagnosis program report	✓	✓	-	-
(6) Registry	✓	✓	✓	-
(7) Script	✓	✓	✓	-
(8) Logs of ESMPRO/AC and ESMPRO/UPSC	✓	✓	✓	-
(9) Logs of HA	-	✓	-	-

For detailed information of (1) to (9), see Collecting logs (clplogcc command) in Chapter 2 EXPRESSCLUSTER X SingleServerSafe command reference.

OK

Start log collection and displays the dialog box of log collection progress.

Cancel

Close this dialog box.

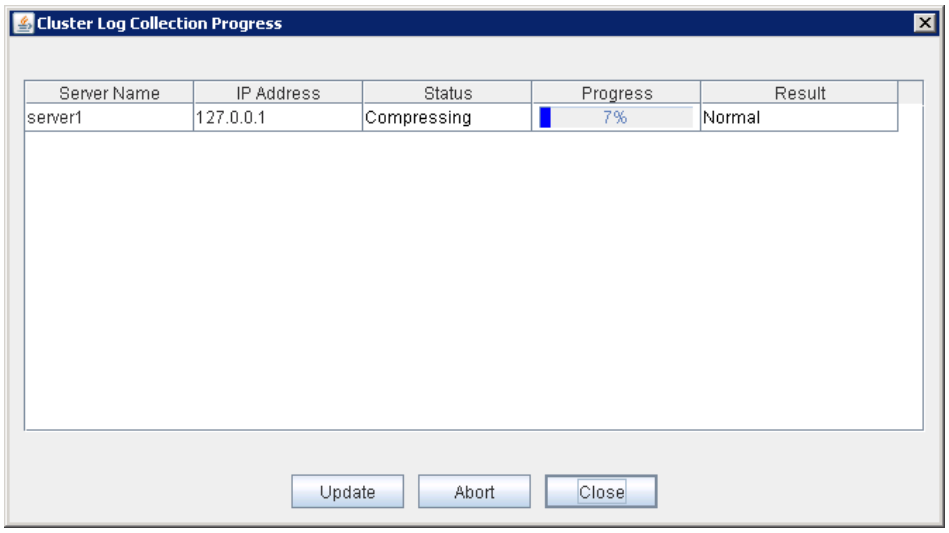
Info

Display the information for each pattern.

Default

Reset the selections of servers and collect patterns to default values.

When log collection starts, following dialog box appears.



Update

Update the dialog box of the log collection progress.

Abort

Abort the log collection.

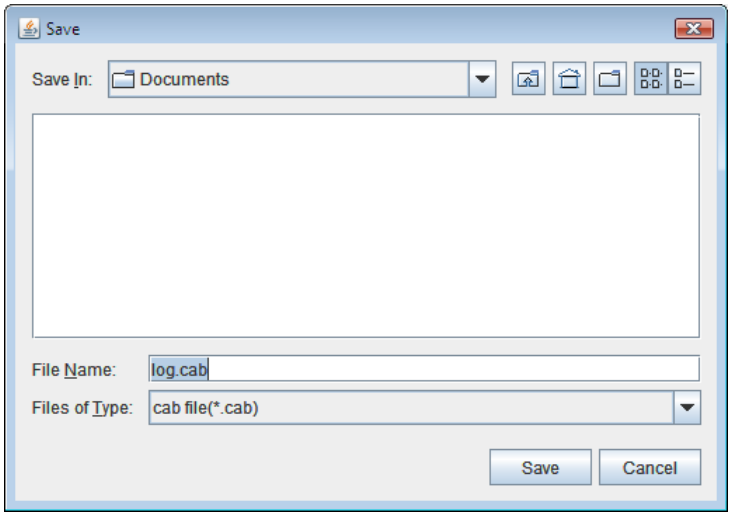
Close

Close the dialog box. But, log collection still continues.
At this time, the display of **Collect Logs** in title view has changed to **Progress**.
To display the log collection dialog box again, click **Progress** in **Tool** menu.

Collect Logs Results

Result	Explanation
Normal	Log collection succeeded.
Abort	Log collection was cancelled by user.
Invalid parameter	Internal error may have occurred.
Communication Error	Connecting error occurred.
Timeout:	Timeout occurred.
Busy	The server is busy.
Compression Error	Error occurred when compressing a file.
File I/O Error	File I/O failed.
Not Enough Free Space	No free space on the disk.
Unknown Error	Failure caused by other errors

When the log collection completes, the browser displays following dialog box that asks where you want to save the logs. Save the logs to any location.



(*: This image shows the case when using Internet Explorer 8.0.)

Note:

Please save logs in 10 minutes after above dialog box appeared. Or, you may not save logs correctly.

Note:

If other modal dialog box is displayed while collecting logs, the file saving dialog box for the log collection will not be displayed. To display the file saving dialog box, close the modal dialog box.

Note:

If the log file size exceeds 2GB, log collection may fail depending on the compression format. Adjust the log to be collected or change the log collection pattern.

Updating the WebManager information

Click **Reload** on the **Tool** menu or click the reload icon ( ) on the toolbar to update the information displayed in the WebManager.

Note:
If the client data update method of the WebManager is set to **Polling**, the information displayed on the WebManager is periodically updated and the latest status is not immediately displayed even if the status has changed. To display the latest information, click the **Reload** icon ( ) or **Reload** in the **Tool** menu after performing an operation.

To configure the automatic reload interval of the WebManager, Open **Cluster Properties** dialog - **WebManager** tab. Click **Tuning** button and configure the **Reload Interval**.

Some objects may be displayed in gray when communications to the connecting destination is disabled or EXPRESSCLUSTER X SingleServerSafe is not working at the access destination.

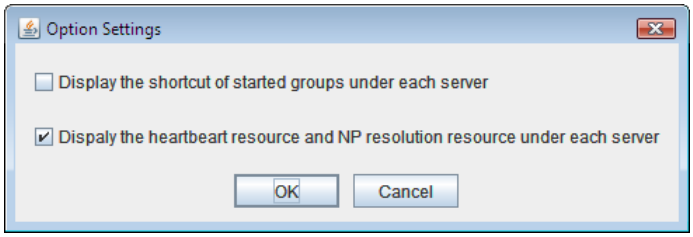
Changing the screen layout on the WebManager

The WebManager screen layout can be changed by clicking the buttons of the split bars that divide the screen or by dragging the bars. This is useful to display only a specific view.

The split bars divide the views in the WebManager.

On the bar, click to maximize the view. Click to minimize it.

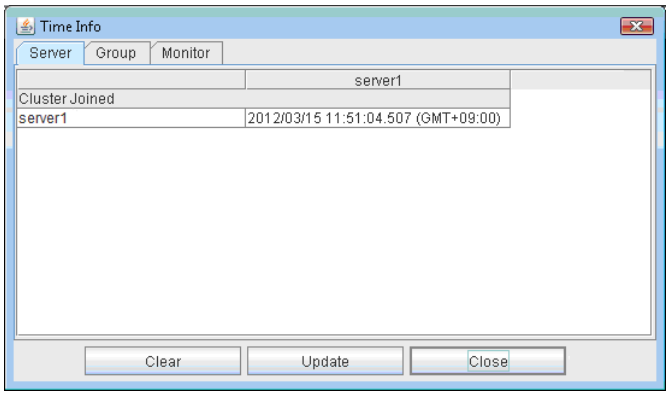
To change the display items on the tree view, click **Option** on the **Tool** menu or option icon ( ) on the tool bar.
The following dialog is displayed. Check items you want to display.



Checking the time information from the WebManager

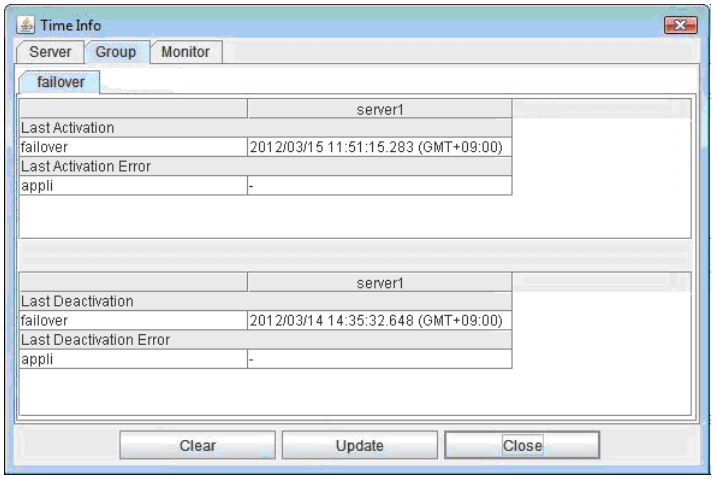
Check the time information from the WebManager by clicking **Time info** on the **Tool** menu or by clicking the time information icon ( ) on the toolbar.

Time information displayed on the Server tab



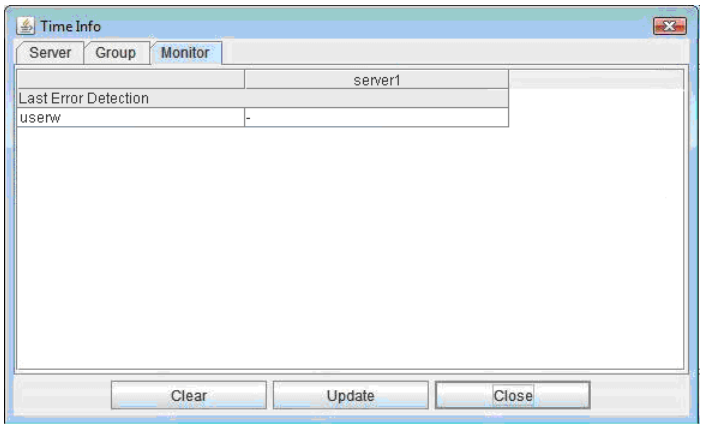
- Cluster joined
  Displays the most recent time at which each server joined the cluster.

Time information displayed on the Group tab



- Last activation
  Displays the time at which the failover group was last activated on each server.
- Last activation error
  Displays the time at which an activation failure of a group resource was last detected on each server.
- Last deactivation
  Displays the time at which the failover group was last deactivated on each server.
- Last deactivation error
  Displays the time at which a deactivation failure of a group resource was last detected on each server.

Time information displayed on the Monitor tab



- Last error detection
  Displays the time at which each monitor resource last transitioned from normal status to abnormal status on each server.

Note:
Message receive monitor resources isn't dealing.

Clear

Deletes the time information displayed on the current tab.

Update

Acquires the time information for all the tabs.

Close

Closes the time information dialog box.

Note:
If the Client Data Update Method of the WebManager is set to Polling, when clear button was pushed , Lighting up Time info on the Tool menu. But it's no problem as cluster..

Executing Integrated WebManager from the WebManager

To execute Integrated WebManager from the WebManager, click **Integrated WebManager** on the **Tool** menu or Integrated WebManager icon ( ) on the tool bar.

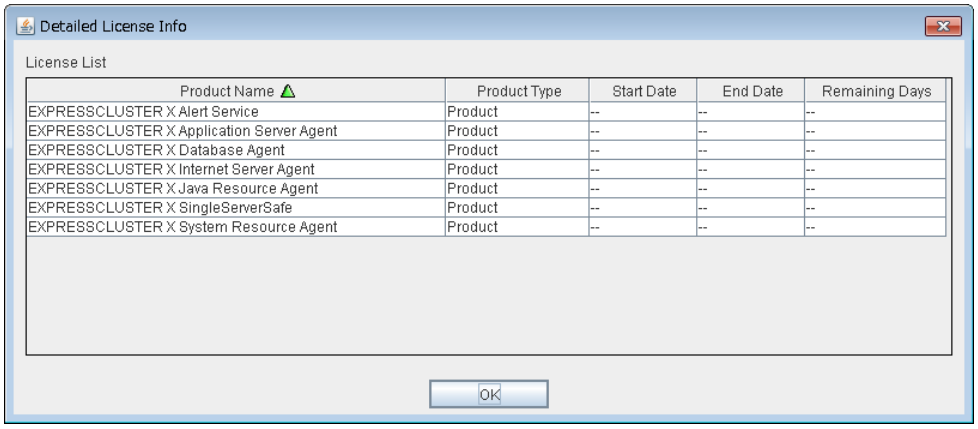
Operating services on the WebManager

To operate services on the WebManager, select the relevant items shown below from the service menu.

- **Suspend Cluster**
  Suspend EXPRESSCLUSTER Server service. This menu can be selected only when EXPRESSCLUSTER Server service is running.
- **Resume Cluster**
  Resume EXPRESSCLUSTER Server service. This menu can be selected only when EXPRESSCLUSTER Server service is suspended.
- **Start Cluster**
  Start EXPRESSCLUSTER Server service. This menu can be selected only when EXPRESSCLUSTER Server service is stopped.
- **Stop Cluster**
  Stop EXPRESSCLUSTER Server service. This menu can be selected only when EXPRESSCLUSTER Server service is running.
- **Restart Manager**
  Restart WebManager.

Confirming the license from the WebManager

To confirm the license from the WebManager, click **License Information** on the **Help** menu.



License List

Displays the licenses registered on the connection destination server.

You can change the display order by selecting a specific field name on the title bar of the list.

By default, the licenses are sorted in ascending order of **Product Name**.

Note:

In case of license which includes multiple licenses, all included licenses information are displayed.

OK button

Closes the **Detailed License Info** dialog box.

Checking the status of each object in the tree view of WebManager

You can visually check the status of each object in the WebManager window.

On the left pane of the window, a tree is displayed. Check the status by looking at each icon and object color. For meaning of each icon and object color, see Chapter 1, "Functions of the WebManager" in *Reference Guide* for EXPRESSCLUSTER X.

Note:

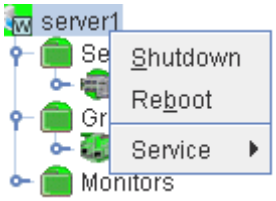
The tree configuration depends on the version of and optional products used with EXPRESSCLUSTER X SingleServerSafe.

Operations that can be executed from the WebManager

You can operate a cluster by right-clicking **Cluster**, **Individual server**, **Individual group**, or **Individual resource**.

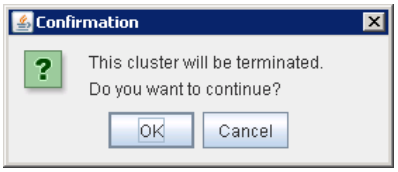
Cluster object

When you right-click a monitor resource object, the following shortcut menu is displayed.



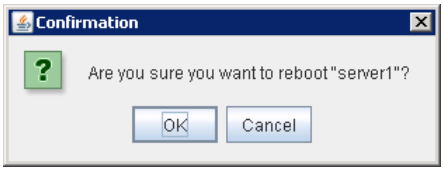
- **Shut down**

  Shut down the server. When you select this operation, the following dialog box is displayed for confirmation.



- **Reboot**

  Reboot the server. When you select this operation, the following dialog box is displayed for confirmation.

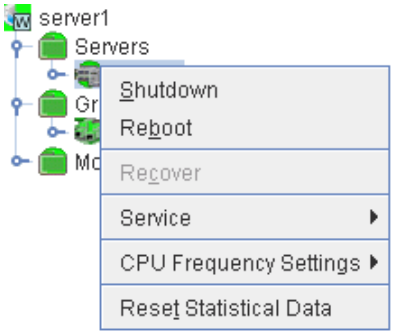


- **Service**

  If you select **Service**, the items **Suspend Cluster**, **Resume Cluster**, **Start Cluster**, **Stop Cluster** and **Restart Manager** are displayed on the shortcut menu.

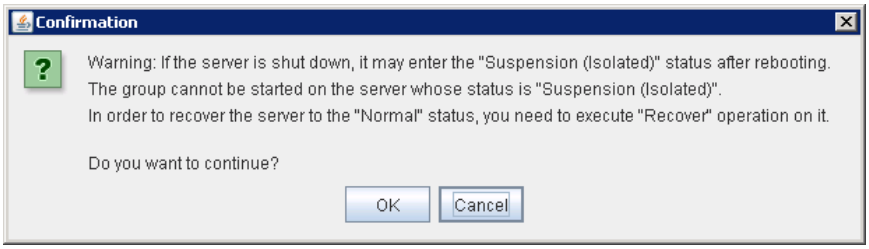
Server object

When you right-click a monitor resource object, the following shortcut menu is displayed.



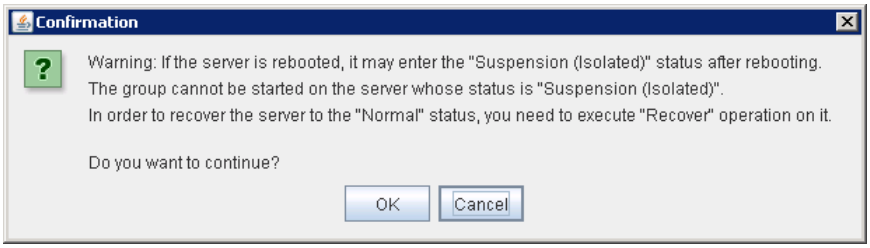
- **Shut down**

  Shut down the selected server. When you select this operation, the following dialog box is displayed for confirmation.



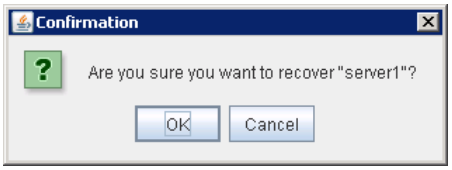
- **Reboot**

  Reboot the selected server. When you select this operation, the following dialog box is displayed for confirmation.



◆ **Recover**

Recover the selected server. When you select this operation, the following dialog box is displayed for confirmation.



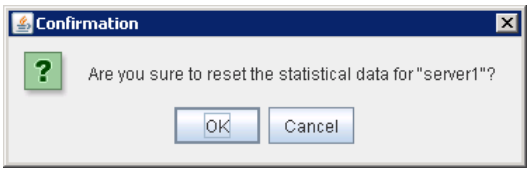
◆ **Service**

Start and stop the selected service. When you select **Stop**, the following dialog box is displayed for confirmation.

For SingleServerSafe, you can not select **Start**.

◆ **Reset Statistical Data**

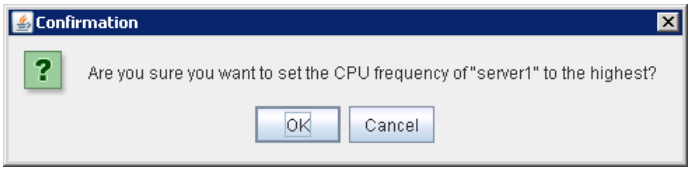
Reset the statistical data of selected server. When you select this operation, the following dialog box is displayed for confirmation.



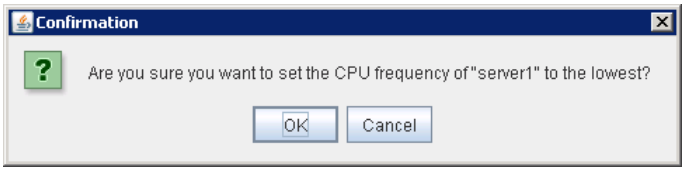
◆ **CPU Frequency Settings**

Change CPU frequency control setting for the selected server. This function can be used when **Use CPU Frequency Control** check box is selected in the **Extension** tab of **Cluster Properties**.

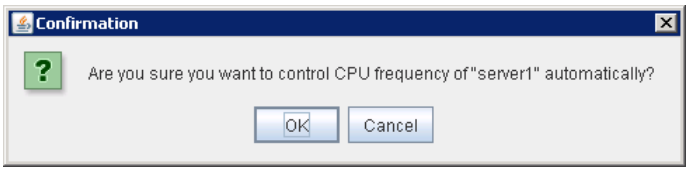
- **Highest Frequency**
  Set the CPU frequency to the highest (High performance).



- **Lowest Frequency**
  Set the CPU frequency to the lowest (Power saver).



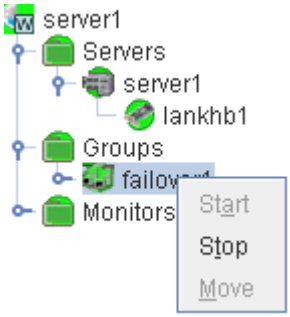
- **Auto**
  Set the CPU frequency controlled automatically depends on server or group status.



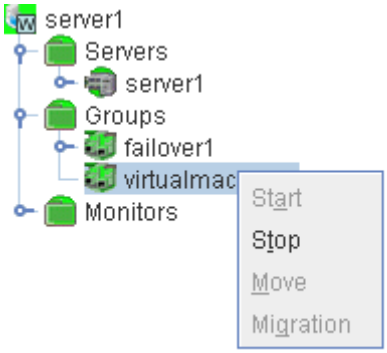
Group object

When you right-click a group object, the following shortcut menu is displayed.

Group type is **failover**.

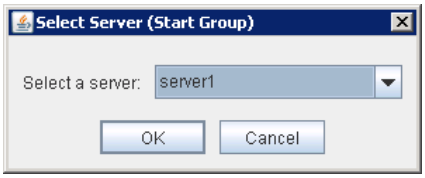


Group type is **virtualmachine**.



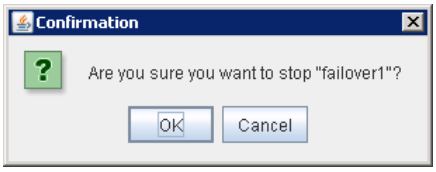
- **Start** (enabled only when the group is stopped)

  Start up the selected group. The dialog box for choosing a server on which to start up the selected group is displayed.



- **Stop** (enabled only when the group has been started up or when it has an error)

  Stop the selected group resource. When you select this operation, the following dialog box is displayed for confirmation.



- **Move** (enabled only when the group has been started up)

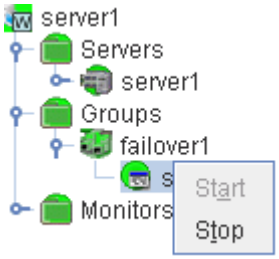
  Not used.

- **Migration** (Only selectable when group type is virtualmachine and it is running.)

  Not used.

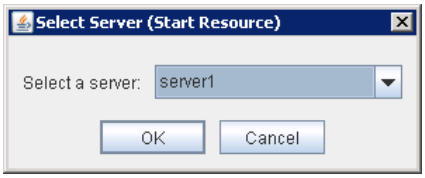
Group resource object

When you right-click a monitor resource object, the following shortcut menu is displayed.



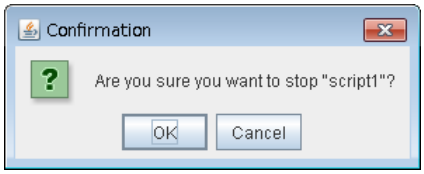
- **Start** (enabled only when the group resource is stopped)

  Start up the selected group resource. The dialog box for choosing a server on which to start up the selected group is displayed.



- **Stop** (enabled only when the group resource has been started up or when it has an error)

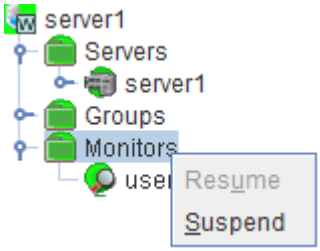
Stop the selected group resource. When you select this operation, the following dialog box is displayed for confirmation.



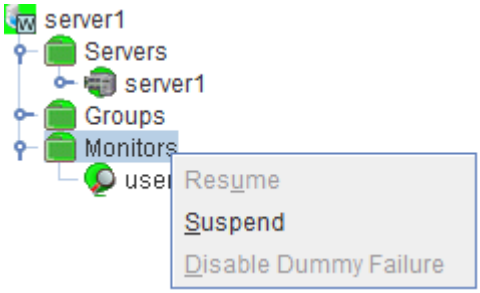
Monitor resource object

When you right-click a monitor resource object, the following shortcut menu is displayed.

When operation mode is selected

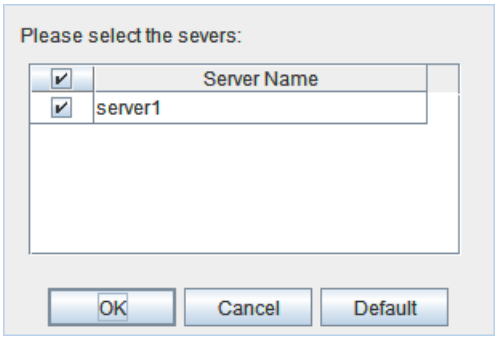


When verification mode is selected



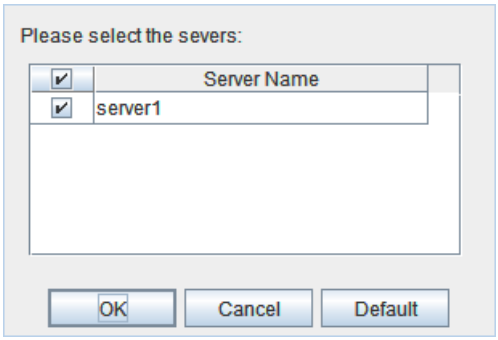
- **Resume** (enabled when the resources are stopped temporarily)

  Resumes all the currently configured monitor resources. This operation is not performed for those monitor resources for which the suspending/resuming of monitoring is not possible. A dialog box for selecting the server on which the monitor resources will be resumed is displayed.



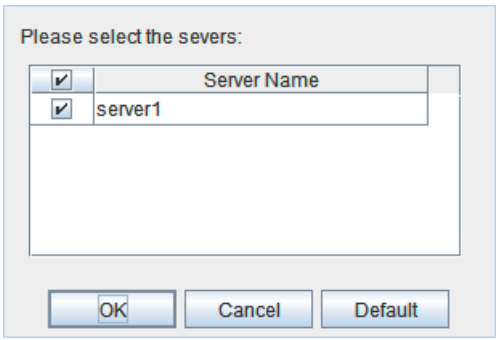
- **Suspend** (enabled when the resources are monitoring)

Suspends all the currently configured monitor resources. This operation is not performed for those monitor resources for which the suspending/resuming of monitoring is not possible. A dialog box for selecting the server on which the monitor resources will be stopped temporarily is displayed.



- **Stop Dummy Failure** (enabled only when dummy failure is started)

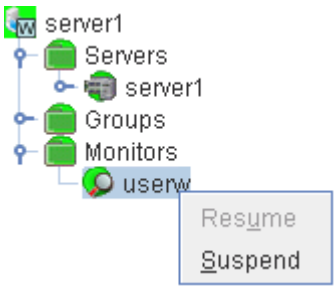
  Stops the dummy failure that has been set for all monitor resources. The following dialog box for selecting the server on which dummy failure in the monitor resources is to be stopped is displayed.



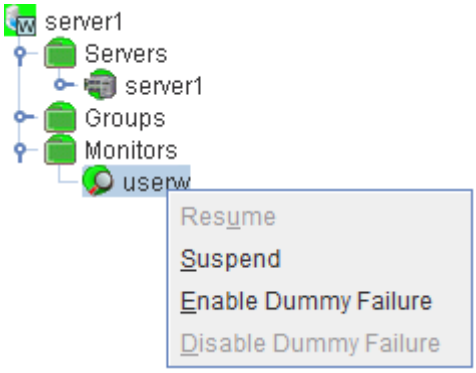
Individual monitor resource objects

When you right-click an individual monitor resource object, the following shortcut menu is displayed.

When operation mode is selected

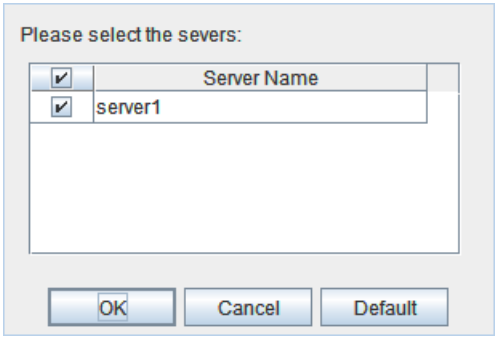


When verification mode is selected



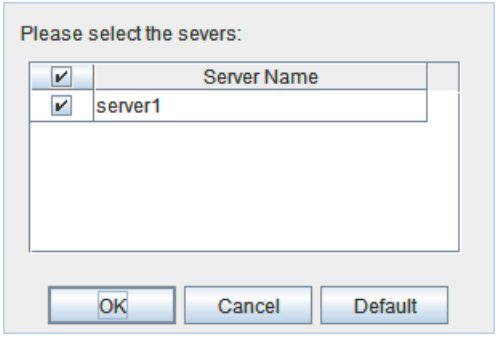
- Resume (enabled when the resource is stopped temporarily)

  Resumes a selected monitor resource. The dialog box for choosing the server on which the selected monitor resource is resumed.



- Suspend (enabled when the resource is monitoring)

  Resumes the selected monitor resource. The dialog box for choosing the server on which the selected monitor resource is stopped temporarily.



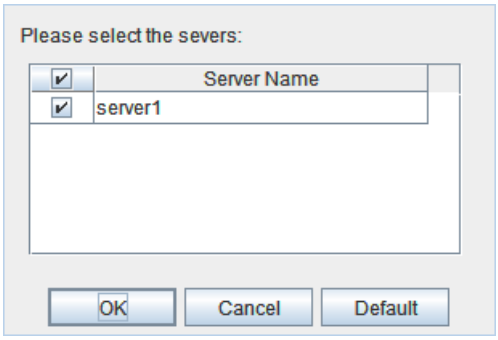
- Start Dummy Failure (enabled when verification mode is not executed)

  Generates a simulated fault in a selected monitor resource. A simulated fault can be generated only on a server on which **Resource Status on Each Server** of the relevant monitor resource is other than **Error** or **Dummy Failure**.

  Note, however, that the following monitor resources cannot be selected:

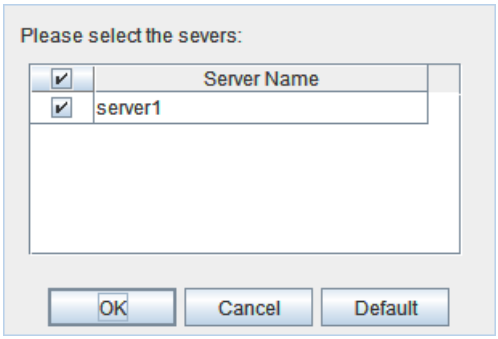
  - Message receive monitor resource
  - VM monitor resource

The following dialog box for selecting the server on which a dummy failure is generated for a selected monitor resource is displayed.



- Stop Dummy Failure (enabled when verification mode is executed)

  Stops the dummy failure generated in a selected monitor resource. The following dialog box for selecting the server on which the dummy failure is to be stopped for a selected monitor resource is displayed.

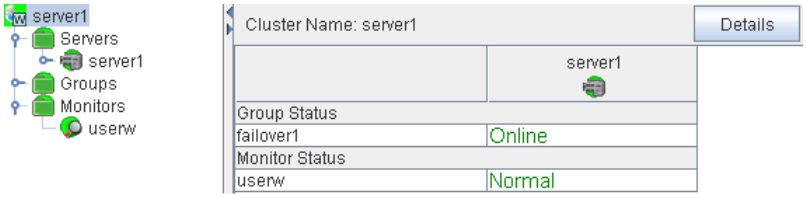


Checking the status by the WebManager list view

Details about the object selected in the WebManager tree view can be displayed in the list view.

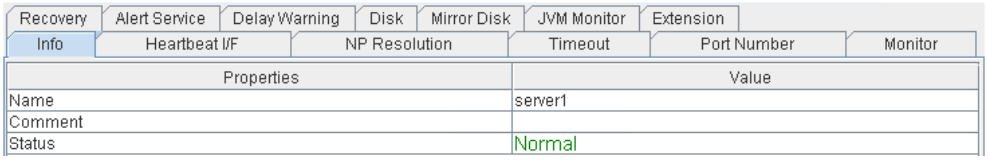
Displaying information by using the WebManager list view

1. Start the WebManager.
2. In this tree view, click the object icon for the whole. In the list view in the right pane of the window, **Name**, **Comment**, and **Status** are displayed.



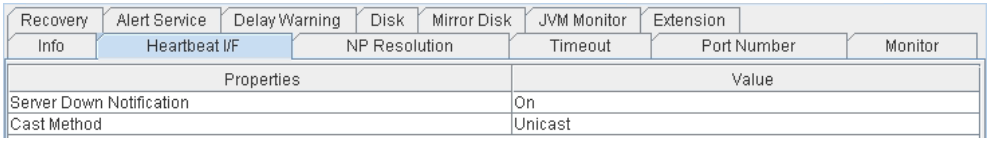
3. In the following dialog box, click the **Details** button to display the following information. A dialog box is displayed with the content shown below.

Info



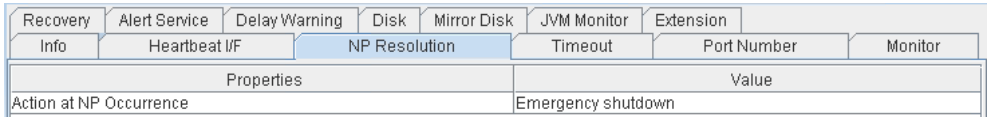
Name: Cluster name
Comment: Comment for the cluster
Status: Status of the cluster

Heartbeat I/F



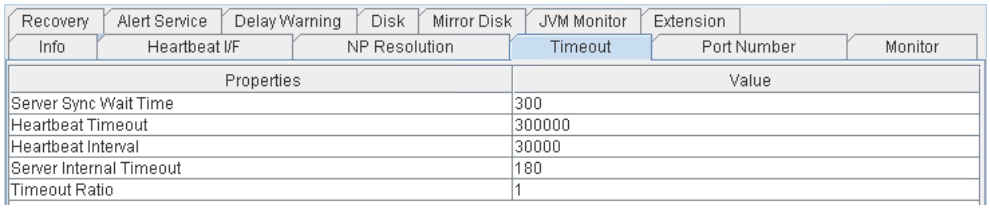
Server Down Notification: Not in use
Cast Method: This is the setting for the method to send a heartbeat (unicast/broadcast). When the IP address of the heartbeat I/F is IPv6, the broadcast cannot be used.

NP Resolution



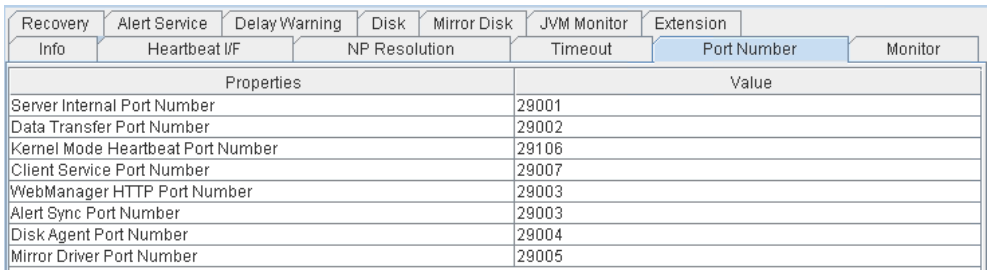
Action at NP Occurrence: Action to be taken when a network partition occurs

Timeout



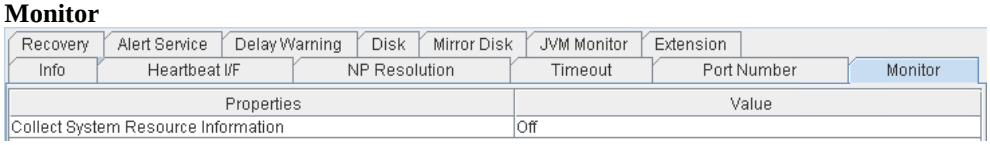
Server Sync Wait Time: Not in use
Heartbeat Timeout: Heartbeat timeout (in milliseconds)
Heartbeat Interval: The interval for sending heartbeats (milliseconds)
Server Internal Timeout: Internal communication timeout (in seconds)
Timeout Ratio: Current timeout ratio

Port Number



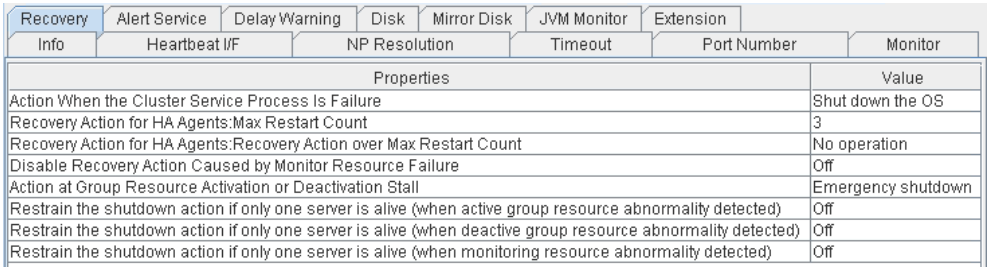
Server Internal Port Number: Port number for internal communication
Data Transfer Port Number: Port number for data transfer
Kernel Mode Heartbeat Port Number: Port number for kernel mode heartbeat
Client Service Port Number: Port number for client service
WebManager HTTP Port Number: Port number for WebManager
Alert Sync Port Number: Port number for alert synchronization
Disk Agent Port Number: Not in use
Mirror Driver Port Number: Not in use

Monitor



Collect System Resource Information: Whether or not to collect System Resource Information

Recovery



Properties	Value
Action When the Cluster Service Process Is Failure	Shut down the OS
Recovery Action for HA Agents:Max Restart Count	3
Recovery Action for HA Agents:Recovery Action over Max Restart Count	No operation
Disable Recovery Action Caused by Monitor Resource Failure	Off
Action at Group Resource Activation or Deactivation Stall	Emergency shutdown
Restrain the shutdown action if only one server is alive (when active group resource abnormality detected)	Off
Restrain the shutdown action if only one server is alive (when deactive group resource abnormality detected)	Off
Restrain the shutdown action if only one server is alive (when monitoring resource abnormality detected)	Off

Action When the Cluster Service Process Is Failure:

Action When the Cluster Service Process Is Failure
Action to be taken when a cluster service process fails

Recovery Action for HA Agents: Max Restart Count:

Maximum count to restart an HA process if the process fails

Recovery Action for HA Agents: Recovery Action over Max Restart Count:

Action to be taken when the HA process fails and the process cannot be restarted even after retrying restart of the process for the maximum number of retries

Disable Recovery Action Caused by Monitor Resource Failure:

Whether or not to disable the recovery action when the monitor resource fails

Action at Group Resource Activation or Deactivation Stall:

Action to be taken when group resource activation/ deactivation is stalled

Restrain the shutdown action if only one server is alive (when active group resource abnormality detected):

Whether to disable shutdown at activation failure in the case of the last one server

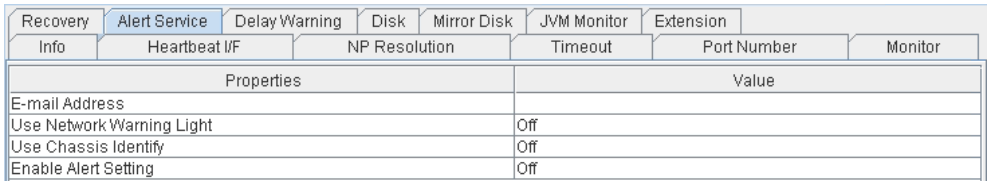
Restrain the shutdown action if only one server is alive (when deactive group resource abnormality detected):

Whether to disable shutdown at deactivation failure in the case of the last one server

Restrain the shutdown action if only one server is alive (when monitoring resource abnormality detected):

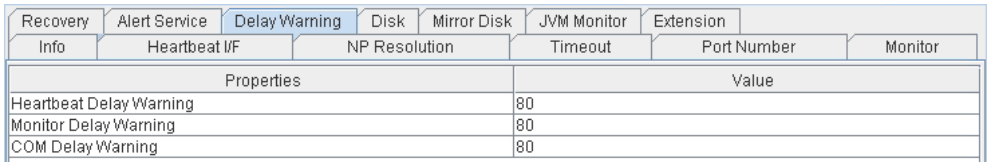
Whether to disable shutdown at monitoring failure in the case of the last one server

Alert Service



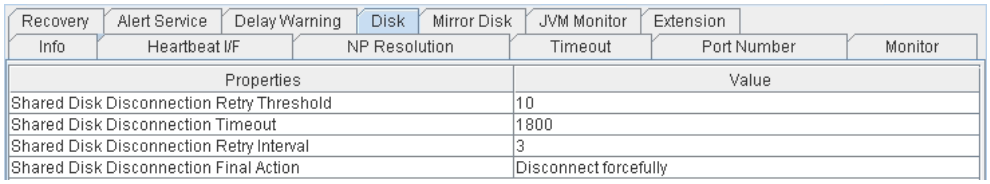
E-mail Address: Alert mail address
Use Network Warning Light: Not in use
Use Chassis Identify: Not in use
Enable Alert Setting: Whether or not to enable setting

Delay Warning



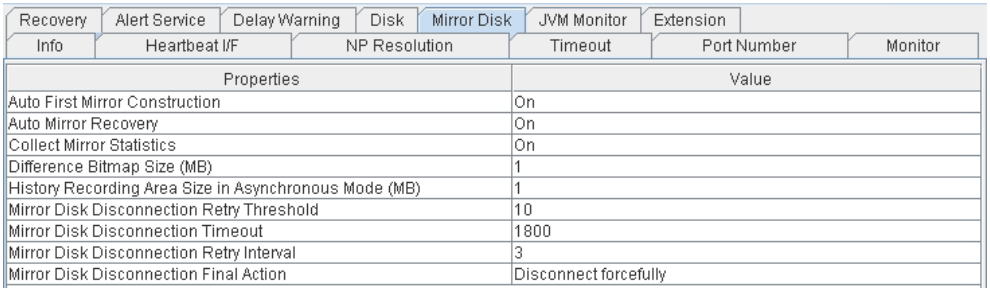
Heartbeat Delay Warning: Heartbeat delay warning (%)
Monitor Delay Warning: Monitor delay warning (%)
COM Delay Warning: Not in use

Disk



Shared Disk Disconnection Retry Threshold: Not in use
Shared Disk Disconnection Timeout: Not in use
Shared Disk Disconnection Retry Interval: Not in use
Shared Disk Disconnection Final Action: Not in use

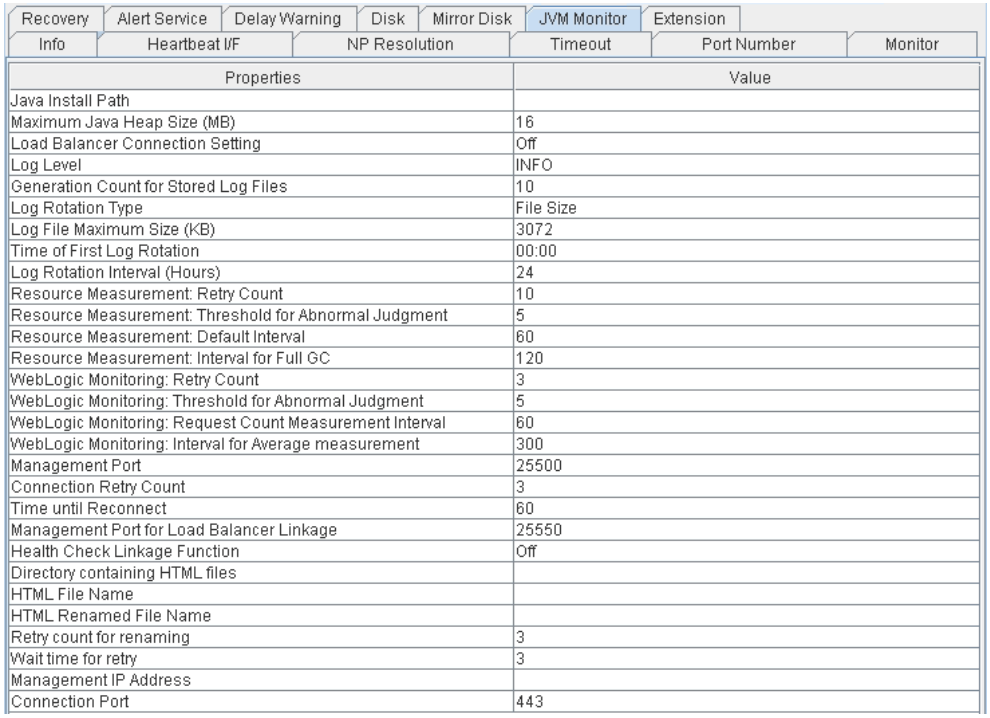
Mirror Disk



Properties	Value
Auto First Mirror Construction	On
Auto Mirror Recovery	On
Collect Mirror Statistics	On
Difference Bitmap Size (MB)	1
History Recording Area Size in Asynchronous Mode (MB)	1
Mirror Disk Disconnection Retry Threshold	10
Mirror Disk Disconnection Timeout	1800
Mirror Disk Disconnection Retry Interval	3
Mirror Disk Disconnection Final Action	Disconnect forcefully

Auto First Mirror Construction: Not in use
Auto Mirror Recovery: Not in use
Collect Mirror Statistics: Not in use
Mirror Disk Disconnection Retry Threshold: Not in use
Mirror Disk Disconnection Timeout: Not in use
Mirror Disk Disconnection Retry Interval: Not in use
Mirror Disk Disconnection Final Action: Not in use

JVM Monitor

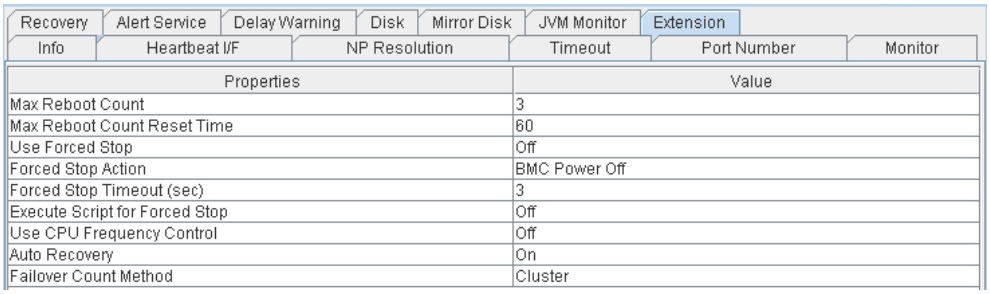


Properties	Value
Java Install Path	
Maximum Java Heap Size (MB)	16
Load Balancer Connection Setting	Off
Log Level	INFO
Generation Count for Stored Log Files	10
Log Rotation Type	File Size
Log File Maximum Size (KB)	3072
Time of First Log Rotation	00:00
Log Rotation Interval (Hours)	24
Resource Measurement: Retry Count	10
Resource Measurement: Threshold for Abnormal Judgment	5
Resource Measurement: Default Interval	60
Resource Measurement: Interval for Full GC	120
WebLogic Monitoring: Retry Count	3
WebLogic Monitoring: Threshold for Abnormal Judgment	5
WebLogic Monitoring: Request Count Measurement Interval	60
WebLogic Monitoring: Interval for Average measurement	300
Management Port	25500
Connection Retry Count	3
Time until Reconnect	60
Management Port for Load Balancer Linkage	25550
Health Check Linkage Function	Off
Directory containing HTML files	
HTML File Name	
HTML Renamed File Name	
Retry count for renaming	3
Wait time for retry	3
Management IP Address	
Connection Port	443

Java Installation Path:	Java installation path
Maximum Java Heap Size (MB):	Maximum Java heap size (MB)
Load Balancer Connection Setting:	Load balancer linkage settings
Log Level:	Log level
Generation Count for Stored Log Files:	Number of generations of log files to be stored
Log Rotation Type:	Log rotation type
Log File Maximum Size (KB):	Maximum log file size (KB)
Time of First Log Rotation:	Time of the first log rotation
Log Rotation Interval (Hours):	Log rotation interval (hours)
Resource Measurement: Retry Count:	Measurement retry count
Resource Measurement: Threshold for Abnormal Judgment:	Threshold for abnormal judgment
Resource Measurement: Default Interval:	Interval for memory and thread measurement (sec)
Resource Measurement: Interval for Full GC:	Interval for Full GC measurement (sec)
WebLogic Monitoring: Retry Count:	Measurement retry count
WebLogic Monitoring: Threshold for Abnormal Judgment:	Threshold for abnormal judgment
WebLogic Monitoring: Request Count Measurement Interval:	Interval for measuring the number of requests (sec)
WebLogic Monitoring: Interval for Average measurement:	Interval for measuring the average (sec)
Management Port:	Management port number
Connection Retry Count:	Connection retry count
Time until Reconnect:	Time to wait for reconnection (sec)
Management Port for Load Balancer Linkage:	Management port number for load balancer linkage
Health Check Linkage Function:	Whether or not to use the health check linkage function

Directory containing HTML files:	HTML storage directory
HTML File Name:	HTML file name
HTML Renamed File Name:	Renamed HTML file name
Retry Count for renaming:	Retry count if renaming fails
Wait time for retry:	Time to wait for a renaming retry (sec)
Management IP Address:	BIG-IP LTM management IP address
Connection Port:	Communication port number for BIG-IP LTM

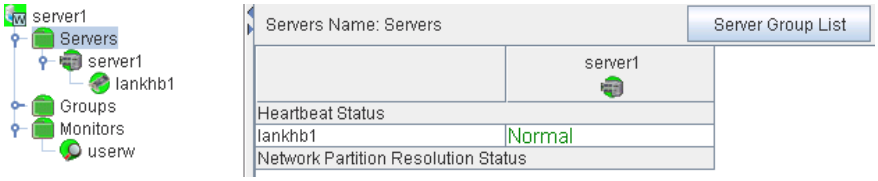
Extension



Max Reboot Count:	Maximum number of reboot
Max Reboot Count Reset Time:	Time to reset current number of reboot (in seconds)
Use Forced Stop:	Not in use
Forced Stop Action:	Not in use
Forced Stop Timeout (sec):	Not in use
Execute Script for Forced Stop:	Not in use
Use CPU Frequency Control:	Whether or not to use CPU frequency control function
Auto Recovery:	The setting whether a cluster server is automatically returned to the cluster after the server is rebooted as “Suspension (Isolated)” state.
Failover Count Method:	Not in use

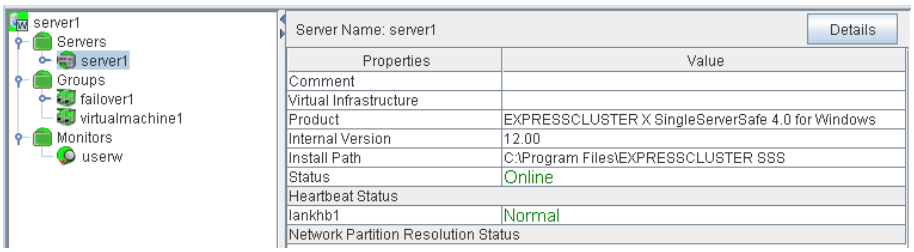
Checking the whole status of the server in the WebManager list view

1. Start the WebManager.
2. In the tree view, select **Servers** object icon . In the upper part of the list view in the right pane, the heartbeat status and network partition resolution status (not in use for EXPRESSCLUSTER X SingleServerSafe) list of each server are displayed.



Checking the status of individual server in the WebManager list view

1. Start the WebManager.
2. If the object of a server is selected in the tree view, **Comment**, **Version, Product, Internal Version, Install Path** and **Status** of the server are displayed.



Comment: Comment for the server
Virtual Infrastructure: Virtual infrastructure name
Product: Product name
Internal Version: Internal version of EXPRESSCLUSTER X SingleServerSafe
Install Path: Install path of EXPRESSCLUSTER X SingleServerSafe
Status: Status of the server

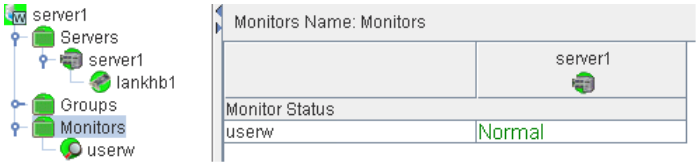
3. Click **Details** to display the following in the dialog box.

Properties	Value
Name	server1
Mirror Disk Connect IP Address	
Network Warning Light IP Address(Type)	
BMC IP Address	
CPU Frequency Status	-
No shutdown when double activation detected	Off

Name: Computer name
Mirror Disk Connect IP Address: Not in use
Network Warning Light IP Address(Type): Not in use
BMC IP Address: Not in use
CPU Frequency Status: Current status of CPU frequency
No shutdown when double activation detected: Not in use

Checking the status of the whole monitor in the WebManager list view

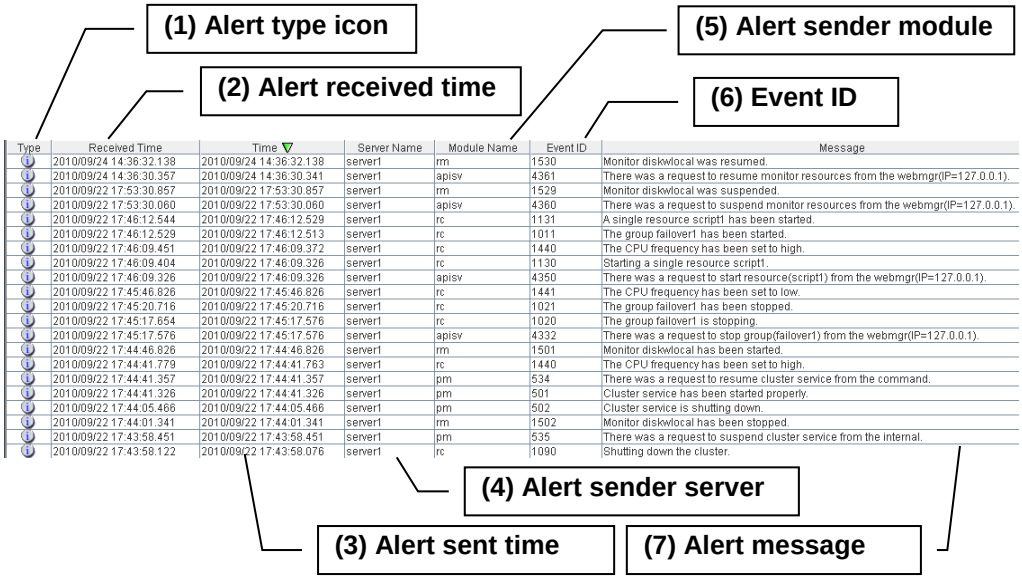
1. Start the WebManager.
2. If you select the object icon for the cluster in the tree view, **Monitor Name** and the server status list are displayed in the list view.



Checking alerts using the WebManager

You can view alerts in the bottom part of the WebManager.

Each field of the alert view is configured as follows.



Type	Received Time	Time	Server Name	Module Name	Event ID	Message
	2010/09/24 14:36:32.138	2010/09/24 14:36:32.138	server1	rm	1530	Monitor diskwlocal was resumed.
	2010/09/24 14:36:30.357	2010/09/24 14:36:30.341	server1	apisv	4361	There was a request to resume monitor resources from the webmgr(IP=127.0.0.1).
	2010/09/22 17:53:30.857	2010/09/22 17:53:30.857	server1	rm	1529	Monitor diskwlocal was suspended.
	2010/09/22 17:53:30.060	2010/09/22 17:53:30.060	server1	apisv	4360	There was a request to suspend monitor resources from the webmgr(IP=127.0.0.1).
	2010/09/22 17:46:12.544	2010/09/22 17:46:12.529	server1	rc	1131	A single resource script1 has been started.
	2010/09/22 17:46:12.529	2010/09/22 17:46:12.513	server1	rc	1011	The group failover1 has been started.
	2010/09/22 17:46:09.451	2010/09/22 17:46:09.372	server1	rc	1440	The CPU frequency has been set to high.
	2010/09/22 17:46:09.404	2010/09/22 17:46:09.326	server1	rc	1130	Starting a single resource script1.
	2010/09/22 17:46:09.326	2010/09/22 17:46:09.326	server1	apisv	4350	There was a request to start resource(script1) from the webmgr(IP=127.0.0.1).
	2010/09/22 17:45:46.826	2010/09/22 17:45:46.826	server1	rc	1441	The CPU frequency has been set to low.
	2010/09/22 17:45:20.716	2010/09/22 17:45:20.716	server1	rc	1021	The group failover1 has been stopped.
	2010/09/22 17:45:17.654	2010/09/22 17:45:17.576	server1	rc	1020	The group failover1 is stopping.
	2010/09/22 17:45:17.576	2010/09/22 17:45:17.576	server1	apisv	4332	There was a request to stop group(failover1) from the webmgr(IP=127.0.0.1).
	2010/09/22 17:44:46.826	2010/09/22 17:44:46.826	server1	rm	1501	Monitor diskwlocal has been started.
	2010/09/22 17:44:41.779	2010/09/22 17:44:41.763	server1	rc	1440	The CPU frequency has been set to high.
	2010/09/22 17:44:41.357	2010/09/22 17:44:41.357	server1	pm	534	There was a request to resume cluster service from the command.
	2010/09/22 17:44:41.326	2010/09/22 17:44:41.326	server1	pm	501	Cluster service has been started properly.
	2010/09/22 17:44:05.466	2010/09/22 17:44:05.466	server1	pm	502	Cluster service is shutting down.
	2010/09/22 17:44:01.341	2010/09/22 17:44:01.341	server1	rm	1502	Monitor diskwlocal has been stopped.
	2010/09/22 17:43:58.451	2010/09/22 17:43:58.451	server1	pm	535	There was a request to suspend cluster service from the internal.
	2010/09/22 17:43:58.122	2010/09/22 17:43:58.076	server1	rc	1090	Shutting down the cluster.

For the meanings of the individual alert messages, see Chapter 4 Error messages. For details about searching alert messages, see "Searching for an alert by using the WebManager" in this chapter.

Alert view fields

The meanings of each of the fields in the alert view of the WebManager are as follows.

(1) Alert type icon

Alert type	Meaning
	Informational message
	Warning message
	Error message

(2) Alert received time

The time the alert was received. The time on the server to which the WebManager connects is applied.

(3) Alert sent time

The time the alert was sent from a server. The time in the alert sender server is used.

(4) Alert sender server

The name of a server that sent the alert.

(5) Alert sender module

The name of a module that sent the alert.

(6) Event ID

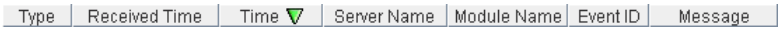
The event ID number set to each alert.

(7) Alert message

The alert messages.

Alert view operations

By clicking an item on the bar showing the name of each field, you can change the order of alerts.



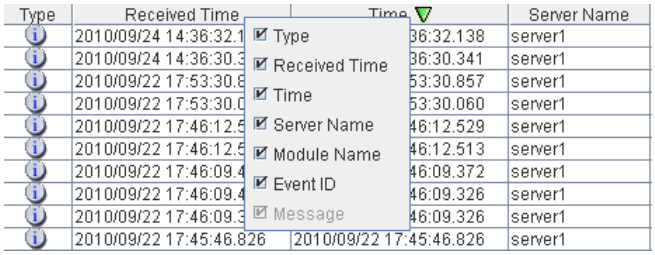
When you select an item, the ▲ or ▼ mark is displayed in the selected field.

Mark	Meaning
▲	Sorts alerts in the ascending order of the selected field.
▼	Sorts alerts in the descending order of the selected field.

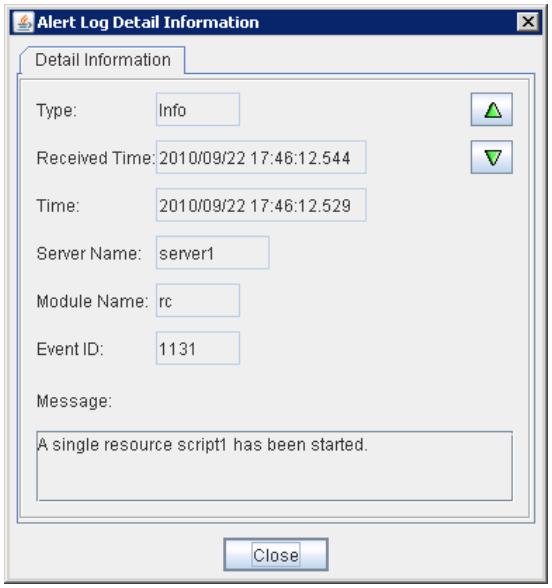
By default, alerts are displayed in the **Time** descending order.

By dragging a field name left or right, you can change the order in which the items are displayed.

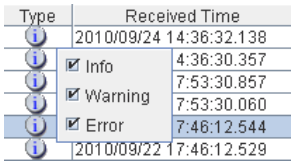
When you right-click this bar, the pop-up window below is displayed so you can select the items to display. All items are selected by default.



When you double-click the displayed alert, the following window is displayed where you can check the detail of the alert.



When you right-click the alert, the following pop-up window is displayed where you can select the type of the alert to be displayed. All items are selected by default.



Manually stopping and starting the WebManager

After EXPRESSCLUSTER X SingleServerSafe is installed, the WebManager on the servers is set up to start up or stop as the OS starts up or stops.

If you wish to stop and start the WebManager specifically, just stop or start **EXPRESSCLUSTER Manager** service from the Service Control Manager console of **Administrative Tools**.

When you do not want to use the WebManager

If you do not want to use the WebManager for some security reasons, change the settings of **Services** of **Administrative Tools** of your OS or that of the Builder not to start the WebManager.

When setting in **Services** of **Administrative Tools**, change the **Startup Type** of the **EXPRESSCLUSTER Manager** service to **Manual**.

In **Cluster Properties**, you can specify the settings for using the WebManager. For details about these settings, see "WebManager tab" in Chapter 5, "Other setting details" in the *EXPRESSCLUSTER X SingleServerSafe Configuration Guide*.

Setting limitations on the connection and operation of the WebManager

The limitation in connection and operation of the WebManager can be configured in **Cluster Properties** in the Builder. For details about these settings, see "WebManager tab" in Chapter 5, " Other setting details " in the *EXPRESSCLUSTER X SingleServerSafe Configuration Guide*.

Types of usage limitations

There are two ways to set usage limitations:

- Limiting the access by using client IP addresses
- Limiting the operation by using a password

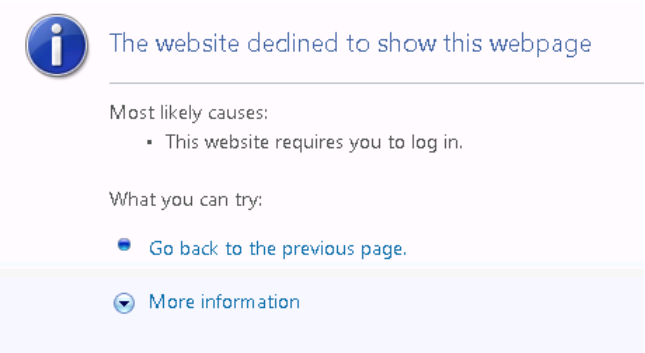
Limsiting the access by using client IP addresses

This function limits clients who can access the WebManager and operations on the WebManager by using client IP addresses.

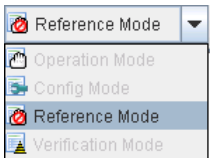
Add IP addresses to **IP Addresses of the Accessible Clients** on the **WebManager** tab in the **Cluster Properties** of the Builder.

When setting the limitation of the connection of the WebManager, if you attempt to access to the WebManager from the IP address that is not added to **IP Addresses of the Accessible Clients**, the following error messages are displayed.

Example: when using the Internet Explorer



When connecting to the WebManager from the client that is restricted operations for cluster, you can select only **Reference Mode.**



The following operations are disabled from the WebManager when operations are limited.

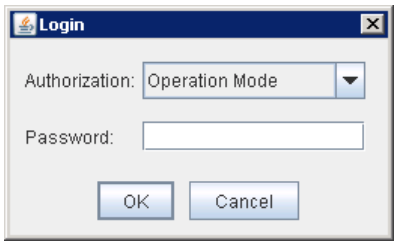
- Shutting down or shutting down and then rebooting servers
- Starting or stopping groups
- Switching to Operation Mode
- Switching to Config Mode
- Switching to Verification Mode

The limitation by using a password

This function limits viewing and operations on the WebManager by using a password.

To configure this limitation: in **Cluster Properties** of the Builder, click the **WebManager** tab, and then **Control connection by using password**.

Once password limitation of the WebManager is specified, the following authorization dialog box is displayed when trying to access the WebManager by setting a password.



You can log on to the WebManager by selecting **Operate Mode** or **Reference Only** in **Authorization** and entering a correct password.

- The authorization dialog box is not displayed when the password limitation is not configured (you can log on to the WebManager without authorization).
- You cannot log on to the WebManager if you enter a wrong password three consecutive times.

When you login with **Reference Only** selected for **Permission**, the WebManager is placed in reference mode. When you attempt to switch to operation mode, config mode, or verification mode in this status, the above authorization dialog is displayed, and you are requested to enter a password for **Operation Mode**.

Combination of the IP address and password

The operational limitations when using both IP addresses and passwords are the following:

	Password limitation		
Client IP address limitation	**Operable mode**	**Reference only**	**Unable to operate/view (authorization failed)**
Operable mode	Operable mode	Reference only	Unavailable
Reference only	Reference only*	Reference only	Unavailable
Cannot access	Cannot access	Cannot access	Cannot access

*Authorization cannot be selected.

Section II Command Reference

This section describes the commands available with EXPRESSCLUSTER X SingleServerSafe. EXPRESSCLUSTER X SingleServerSafe uses commands common to those of the clustering software EXPRESSCLUSTER X to ensure high compatibility with EXPRESSCLUSTER X in terms of operation and other aspects. Because the information contained herein is specific to EXPRESSCLUSTER X SingleServerSafe, see the *Reference Guide* for EXPRESSCLUSTER X to obtain an overall understanding of the commands.

- Chapter 2 EXPRESSCLUSTER X SingleServerSafe command reference

Chapter 2 EXPRESSCLUSTER X SingleServerSafe command reference

This chapter describes the commands available with EXPRESSCLUSTER X SingleServerSafe.
This chapter covers:

- Operating the cluster from the command line ····· 56
- EXPRESSCLUSTER commands ····· 56
- Displaying the status (clpstat command) ····· 58
- Operating the service (clpcl command) ····· 61
- Shutting down the server (clpstdn command) ····· 65
- Operating groups (clpgrp command) ····· 66
- Collecting logs (clplogcc command) ····· 69
- Applying and backing up configuration data (clpcfctrl command) ····· 74
- Adjusting time-out temporarily (clptoratio command) ····· 80
- Modifying the log level and size (clplogcf command) ····· 83
- Managing licenses (clplcnsc command) ····· 91
- Outputting messages (clplogcmd command) ····· 96
- Controlling monitor resources (clpmonctrl command) ····· 98
- Controlling group resources (clprsc command) ····· 102
- Controlling CPU frequency (clpcpufreq command) ····· 104
- Processing inter-cluster linkage (clptrnreq command) ····· 106
- Requesting processing to cluster servers (clprexec command) ····· 109
- Controlling reboot count (clpregctrl command) ····· 112
- Estimating the amount of resource usage (clpprer command) ····· 114
- Checking the process health (clphealthchk command) ····· 119
- Setting an action for OS shutdown initiated by other than cluster service (clpstdncnf command) ····· 121

Operating the cluster from the command line

EXPRESSCLUSTER X SingleServerSafe provides various commands for performing operations from the command prompt. These commands are useful in such cases as when you are setting up a cluster or cannot use the WebManager. You can perform a greater number of operations by using the command line than by using the WebManager.

Note:
If the monitor resource detects an error when you have specified a group resource (such as an application resource) as a recovery target in the settings for error detection by a monitor resource, do not perform the following control operations for any service or group by using a command or the WebManager during recovery (reactivation -> final action).

- Stopping or suspending a service
- Starting or stopping a group

If you perform the above-mentioned operations while recovery caused by detection of an error by a monitor resource is in progress, other group resources of the group with an error may not stop.

However, you can perform them when the final action is completed.

EXPRESSCLUSTER commands

Commands for construction		
Command	**Explanation**	**Page**
clpcfctrl.exe	Applies the configuration data created by the Builder to servers. Backs up the configuration data to be used by the Builder.	74
clplcnsc.exe	Manages the product or trial version license of this product.	91

Commands for showing status		
Command	**Explanation**	**Page**
clpstat.exe	Displays the status and configuration data of EXPRESSCLUSTER X SingleServerSafe.	58
clphealthchk.exe	Check the process health.	119
Commands for operation		
Command	**Explanation**	**Page**
clpcl.exe	Starts, stops, suspends, or resumes the service.	61
clpstdn.exe	Stops the service and shuts down a server.	65
clpgrp.exe	Starts and stops groups.	66
clptoratio.exe	Extends or displays the timeout values.	80
clpmonctrl.exe	Suspends or resumes monitor resources.	98
clprsc.exe	Suspends or resumes group resources.	102

clpcpufreq.exe	Controls CPU frequency.	104
clprexec.exe	Requests a server to execute a process.	106
clpregctrl.exe	Controls the reboot count limitation.	112
Commands for logs		
Command	**Explanation**	**Page**
clplogcc.exe	Collects logs and OS information.	69
clplogcf.exe	Changes and displays the log level and log output file size.	83
Commands for scripts		
Command	**Explanation**	**Page**
clplogcmd.exe	Write this command in the script resource script to output messages to any destination.	96

Important:

The installation directory contains executable files and script files that are not listed in this guide. Do not execute these files by using any program other than EXPRESSCLUSTER X SingleServerSafe. Any problems caused by not using EXPRESSCLUSTER will not be supported.

System monitor-related commands (when the System Resource Agent is used)		
Command	**Explanation**	**Page**
clpprer.exe	Estimates the future value from the tendency of the given resource use amount data.	114

Displaying the status (clpstat command)

clpstat: Displays the status and configuration data of EXPRESSCLUSTER X SingleServerSafe.

Command line:

```
clpstat -s [--long]
clpstat -g
clpstat -m
clpstat -i [--detail]
clpstat --cl [--detail]
clpstat --sv [--detail]
clpstat --grp [<grpname>] [--detail]
clpstat --rsc [<rscname>] [--detail]
clpstat --mon [<monname>] [--detail]
```

Description Displays the status and configuration data of EXPRESSCLUSTER X SingleServerSafe.

Option

-s	Displays the status.
None	
--long	Displays a name of the cluster name and resource name until the end.
-g	Displays groups.
-m	Displays the status of each monitor resource.
-i	Displays the overall configuration data.
--cl	Displays the configuration data.
--sv	Displays the server configuration information.
--grp [<*grpname*>]	Displays server group configuration information. By specifying the name of a server group, you can display only the information on the specified server group.
--rsc [<*rscname*>]	Displays group resource configuration information. By specifying the name of a group resource, you can display only the information on the specified group resource.
--mon [<*monname*>]	Displays monitor resource configuration information. By specifying the name of a monitor resource, you can display only the information on the specified monitor resource.
--detail	Displays more detailed information on the setting.

Return Value

0	Success
251	Double Activation
Other than the above	Failure

Remarks According to the combination of options, configuration information shows information in various forms.

Notes Run this command as a user with Administrator privileges .

The EXPRESSCLUSTER service must be activated on the server where you run this command.

When you run the clpstat command with the -s option or without any option, names such as a cluster or a resource will not be displayed halfway .

Example of Execution Examples of information displayed after running these commands are provided in the next section.

Error Messages

Message	Cause/Solution
Log in as administrator.	Log in as a user with Administrator privileges.
Invalid configuration file. Create valid cluster configuration data by using the Builder.	Create valid cluster configuration data by using the Builder.
Invalid option.	Specify a valid option.
Could not connect to the server. Check if the cluster service is active	Check if the EXPRESSCLUSTER service is operating.
Invalid server status.	Check if the EXPRESSCLUSTER service is operating.
Server is not active. Check if the cluster service is active.	Check if the EXPRESSCLUSTER service is operating.
Invalid server name. Specify a valid server name in the cluster.	Specify the valid server name in the cluster.
Invalid heartbeat resource name. Specify a valid heartbeat resource name in the cluster.	Specify the valid heart beat resource name in the cluster.
Invalid network partition resource name. Specify a valid network partition resource name in the cluster.	Specify the valid network partition resolution resource name in the cluster.
Invalid group name. Specify a valid group name in the cluster.	Specify the valid name of a group in the cluster.
Invalid group resource name. Specify a valid group resource name in the cluster.	Specify the valid name of a group resource in the cluster.
Invalid monitor resource name. Specify a valid monitor resource name in the cluster.	Specify the valid name of a monitor resource in the cluster.
Connection was lost. Check if there is a server where the cluster service is stopped in the cluster.	Check if there is any server on which the EXPRESSCLUSTER service has stopped in the cluster.
Invalid parameter.	An invalid value may be specified to command argument.

Message	Cause/Solution
Internal communication timeout has occurred in the cluster server. If it occurs frequently, set a longer timeout.	A time-out occurred in the EXPRESSCLUSTER internal communication. If time-out keeps occurring, set the internal communication time-out longer.
Internal error. Check if memory or OS resources are sufficient.	Check if the memory or OS resource is sufficient.
The cluster is not created.	Create and apply the cluster configuration data.
Could not connect to the server. Internal error. Check if memory or OS resources are sufficient.	Check to see if the memory or OS resource is sufficient.
Cluster is stopped. Check if the cluster daemon is active.	Check if the cluster daemon is activated.
Cluster is suspended. To display the cluster status, use --local option.	Cluster is suspended. To display the cluster status, use --local option.

Operating the service (clpcl command)

clpcl Operates the EXPRESSCLUSTER service.

Command line:

```
clpcl -s
clpcl -t [-w <timeout>] [--apito <timeout>]
clpcl -r [-w <timeout>] [--apito <timeout>]
clpcl --return [--apito <timeout>]
clpcl --suspend [--force] [-w <timeout>] [--apito <timeout>]
clpcl --resume
```

Description This command starts, stops, restarts, suspends, or resumes the EXPRESSCLUSTER service.

Option

-s	Starts the EXPRESSCLUSTER service.
-t	Stops the EXPRESSCLUSTER service.
-r	Restarts the EXPRESSCLUSTER service.
--return	Returns the EXPRESSCLUSTER service.
--suspend	Suspends the EXPRESSCLUSTER service.
--resume	Resumes the EXPRESSCLUSTER service.
-w <*timeout*>	When --t, --r, or --suspend option is used, specify the wait time in seconds that the clpcl command waits for the EXPRESSCLUSTER service to be completely stopped or suspended. When *timeout* is not specified, it waits for unlimited time. When "0" is specified for *timeout*, the command does not wait at all. When the -w option is not specified (default), the command waits for twice the heartbeat timeout time (in seconds).
--force	When used with the --suspend option, this option forcefully suspends the service regardless of the server status.
--apito *timeout*	Specify the time in seconds to wait for the EXPRESSCLUSTER service to be stopped, restarted, or suspended (internal communication timeout). A value between 1 to 9999 can be specified. When the `--apito` option is not specified, the command waits according to the value set for the internal communication timeout in the cluster property.

Return Value

0	Success
Other than 0	Failure

Remarks

When this command is executed with the -s or --resume option specified, it returns control when processing starts on the target server.

When this command is executed with the -t or --suspend option specified, it returns control after waiting for the processing to complete.

When this command is executed with the -r option specified, it returns control when the EXPRESSCLUSTER daemon restarts on the target server after stopping once.

Run the clpstat command to display the started or resumed status of the EXPRESSCLUSTER daemon.

Notes

This command must be executed by a user with the administrator privilege.

This command cannot be executed while a group is being started or stopped.

Before you suspend the EXPRESSCLUSTER service, the service must be running.

Before you resume the EXPRESSCLUSTER service, use the clpstat command to make sure that the service is not running.

◆ Suspend and Resume

When you want to update the configuration data or EXPRESSCLUSTER X SingleServerSafe, you can stop the EXPRESSCLUSTER service while continuing the operation. This status is called the *suspended status*. Returning from the suspended status to normal status is called "resume."

The suspend and resume operations request processing of the server. The EXPRESSCLUSTER service must be active when you execute a suspend operation.

The following functions stop when the cluster is suspended because the EXPRESSCLUSTER service stops while active resources stay active.

- All monitor resources stop.
- You cannot perform operations on groups or group resources (start/stop).
- You cannot display or change the status by using the WebManager or clpstat command.
- The following commands are disabled:
  - clpstat
  - clpcl options other than --resume
  - clpstdn
  - clpgrp
  - clptoratio
  - clpmonctrl

Error Messages

Message	Cause/Solution
Log in as administrator.	Log in as a user with Administrator privileges.
Invalid configuration file. Create valid cluster configuration data by using the Builder.	Create valid cluster configuration data using the Builder.
Invalid option.	Specify a valid option
Performed stop processing to the stopped cluster service.	The stopping process has been executed to the stopped EXPRESSCLUSTER service.
Performed startup processing to the active cluster service.	The startup process has been executed to the activated EXPRESSCLUSTER service.
Command timeout.	The command timed out.
Failed to return the server. Check the status of failed server.	Failed to return the server. Check the status of the failed server.
Could not connect to the server. Check if the cluster service is active.	Check if the EXPRESSCLUSTER service is activated.
Failed to obtain the list of nodes. Specify a valid server name in the cluster.	Specify the valid name of a server in the cluster.
Failed to obtain the service name.	Failed to obtain the service name.
Failed to operate the service.	Failed to operate the service.
Resumed the cluster service that is not suspended.	Resumed the EXPRESSCLUSTER service that is not suspended.
invalid server status.	Check if the EXPRESSCLUSTER service is activated.
Server is busy. Check if this command is already run.	This command may be run already. Check it.
Server is not active. Check if the cluster service is active.	Check if the EXPRESSCLUSTER service is activated.
There is one or more servers of which cluster service is active. If you want to perform resume, check if there is any server whose cluster service is active in the cluster.	When you execute the command to resume, check if there is no server in the cluster on which the EXPRESSCLUSTER service is activated.
All servers must be activated. When suspending the server, the cluster service need to be active on all servers in the cluster.	When you execute the command to suspend, the EXPRESSCLUSTER service must be activated in all servers in the cluster.
Resume the server because there is one or more suspended servers in the cluster.	Execute the command to resume because some server(s) in the cluster is suspended.
Invalid server name. Specify a valid server name in the cluster.	Specify the valid name of a server in the cluster.
Connection was lost. Check if there is a server where the cluster service is stopped in the cluster.	Check if there is any server on which the EXPRESSCLUSTER service has stopped in the cluster.
invalid parameter.	The value specified as a command parameter may be invalid.

Message	Cause/Solution
Internal communication timeout has occurred in the cluster server. If it occurs frequently, set the longer timeout.	A timeout occurred in the EXPRESSCLUSTER internal communication. If time-out keeps occurring, set the internal communication time-out longer.
Processing failed on some servers. Check the status of failed servers.	If stopping process is executed to all servers, there is one or more servers on which the stopping process has failed. Check the status of the server(s) on which the stopping process has failed.
Internal error. Check if memory or OS resources are sufficient.	Check if the memory or OS resource is sufficient.

Shutting down the server (clpstdn command)

clpstdn — Shuts down the server.

Command line:

```
clpstdn [-r]
```

Description This command stops the EXPRESSCLUSTER service of the server and shuts down all servers.

Option		
	None	Servers are shut down.
	-r	Shuts down and then reboots servers.

Return Value		
	0	Success
	Other than 0	Failure

Remarks This command returns control when the group stop processing is completed.

Notes This command must be executed by a user with the administrator privilege.

This command cannot be executed while a group is being started or stopped.

Error Message See “Operating the service (clpcl command)” on page 61.

Operating groups (clpgrp command)

clpgrp

Operates groups.

Command line:

```
clpgrp -s [<grpname>] [--apito timeout]
clpgrp -t [<grpname>] [--apito timeout]
```

Description Starts and stops groups.

Option

-s [<*grpname*>]	When you specify the name of a group for *grpnam*, only the specified group starts up. If no group name is specified, all groups start up.
-t [<*grpname*>]	When you specify the name of a group for *grpnam*, only the specified group stops. If no group name is specified, all groups stop.
--apito *timeout*	Specify the time in seconds to wait for groups to be started, stopped(internal communication timeout). A value between 1 to 9999 can be specified. When the `--apito` option is not specified, the command waits according to the value set for the internal communication timeout in the cluster property.

Return Value

0	Success
Other than 0	Failure

Notes This command must be executed by a user with the administrator privilege.

The EXPRESSCLUSTER service must be running.

Error message

Message	Cause/Solution
Log in as administrator.	Log in as a user with Administrator privileges.
Invalid configuration data. Create valid cluster configuration data by using the Builder.	Create valid cluster configuration data using the Builder
Invalid option.	Specify a valid option
Could not connect to the server. Check if the cluster service is active.	Check if the EXPRESSCLUSTER service is operating.
Invalid server status. Check if the cluster service is active.	Check if the EXPRESSCLUSTER service is operating.
Server is not active. Check if the cluster	Check if the EXPRESSCLUSTER

Message	Cause/Solution
service is active.	service is operating.
Invalid server name. Specify a valid server name in the cluster.	Specify the valid server name in the cluster.
Connection was lost. Check if there is a server where the cluster service is stopped in the cluster.	Check if there is any server on which the EXPRESSCLUSTER service has stopped in the cluster.
Invalid parameter.	The value specified as a command parameter may be invalid.
Internal communication timeout has occurred in the cluster server. If it occurs frequently, set a longer timeout.	A time-out occurred in the EXPRESSCLUSTER internal communication. If time-out keeps occurring, set the internal communication time-out longer.
Invalid server. Specify a server that can run and stop the group, or a server that can be a target when you move the group.	Server that starts and stops the group or to which the group is moved is invalid. Specify a valid server.
Could not start the group. Try it again after the other server is started, or after the Wait Synchronization time is timed out.	Start up the group after waiting for the remote server to start up, or after waiting for the timeout of the start-up wait time.
No operable group exists in the server.	Check if there is any group that is operable in the server which requested the process.
The group has already been started on the local server.	Check the status of the group by using the WebManager or the clpstat command.
The group has already been started on the other server. To start/stop the group on the local server, use -f option.	Check the status of the group by using the WebManager or the clpstat command. If you want to start up or stop a group which was started in a remote server from the local server, move the group or run the command with the `-f` option.
The group has already been stopped.	Check the status of the group by using the WebManager or the clpstat command.
Failed to start one or more resources. Check the status of group.	Check the status of group by using the WebManager or the clpstat command.
Failed to stop one or more resources. Check the status of group.	Check the status of group by using the WebManager or the clpstat command.
The group is busy. Try again later.	The group is now being started or stopped. Wait for a while and try again.
An error occurred on one or more groups. Check the status of group.	Check the status of the group by using the WebManager or the clpstat command.
Invalid group name. Specify a valid group name in the cluster.	Specify the valid name of a group in the cluster.
Server is isolated.	The server has been suspended. The server is rebooted after it went down.
Some invalid status. Check the status of	The status is invalid. Check the status of

Message	Cause/Solution
cluster.	the cluster.
Log in as administrator.	Check if the memory or OS resource is sufficient.
Failed to migrate the group.	If the `-l` option is used, check whether the type of the specified group is “virtualmachine”.
The specified group cannot be migrated.	Check the status of the group.
The specified group is not vm group.	Check if the type of the group is set to the virtual machine.
Migration resource does not exist.	Check if the virtual machine resource exists in the group.
Migration resource is not online.	Check if the virtual machine resource has already started.
Server is not in a condition to start group. Critical monitor error is detected.	Check the status of each server.
There is no appropriate destination for the group. Critical monitor error is detected.	Check the status of each server.

Collecting logs (clplogcc command)

clplogcc Collects logs.

Command line:

```
clplogcc [-t collect_type] [-o path] [--local] [--evt event_type …]
```

Description Collects logs and OS information.

Option

None	Logs are collected.
-t *collect_type*	Specifies a log collection pattern. When this option is omitted, a log collection pattern will be type 1.
-o *path*	Specifies the output destination of collector files. When this option is omitted, logs are output under `tmp` of the installation path.
--local	Collects logs on the local server without going through the data transfer server.
--evt event_type	Specifies the type of the event log to be collected. When this option is skipped, application logs, system logs and security logs will be collected. This option is enabled only when [--local] option is specified. For details, see "Specifying a event log type to collect (--evt option)".

Return Value

0	Success
Other than 0	Failure

Remarks Because log files are compressed in the cab format, decompress them by using an appropriate application.

Notes This command must be executed by a user with the administrator privilege.

Execution Result For this command, the following processes are displayed:

Steps in Process	Explanation
Preparing	Initializing
Connecting	Connecting to the server
Compressing	Compressing log files
Transmitting	Sending log files
Disconnecting	Disconnecting from the server
Completion	Finished collecting logs

The following results (server status) are displayed:

Result (server status)	Explanation
Normal	Completed successfully
Canceled	Canceled by the user
Invalid Parameters	Parameters are invalid
Compression Error	There was an error while compressing files.
Communication Error	There was a communication error.
Timeout	Timeout occurred.
Busy	The server is busy.
No Free Space	No free space on the disk.
File I/O Error	There was a file I/O error.
Unknown Error	Failure caused by other errors

Error message

Message	Cause/Solution
Log in as administrator.	Log in as a user with Administrator privileges.
Invalid option.	Specify a valid option.
Collect type must be specified 'type1' or 'type2' or 'type3'. Incorrect collection type is specified.	Invalid collection type is specified.
Specifiable number of servers are the max number of servers that can constitute a cluster.	The number of servers you can specify is within the maximum number of servers for cluster configuration.
Failed to obtain properties.	Failed to obtain the properties.
Failed to obtain the list of nodes. Specify a valid server name in the cluster.	Specify the valid name of a server in the cluster.
Invalid server name. Specify a valid server name in the cluster.	Specify the invalid server name in the cluster.
Failed to collect log.	Failed to collect logs.
Server is busy. Check if this command is already run.	This command may be run already. Check it.
Internal error. Check if memory or OS resources are sufficient.	Check if the memory or OS resource is sufficient.

Collecting logs by specifying a type (-t option)

To collect only the specified types of logs, run the clplogcc command with the -t option.

Specify a type from 1 thorough 4 for the log collection.

	Type1	Type 2	Type 3	Type 4
(1) Default collection information	y	y	y	n
(2) Event log	y	y	y	y
(3) Windows Error Report	y	y	y	y
(4) User dump	y	y	n	n

(5) Diagnostics report	y	y	n	n
(6) Registry	y	y	y	n
(7) Scripts	y	y	y	n
(8) Logs of ESMPRO/AC and ESMPRO/UPSC	y	y	y	n
(9) Logs of HA	n	y	n	n

(y: yes, n: no)

Run this command from the command line as follows.

Example: When collecting logs using type 2

```
# clplogcc -t type2
```

When no option is specified, a log type will be type 1.

- Information to be collected by default
  - Logs of each module in the EXPRESSCLUSTER Server
  - Attribute information on each module (dir) in the EXPRESSCLUSTER Server
    - In `bin`
    - In `alert\bin`, In `webmgr\bin`
    - In `%SystemRoot%\system32\drivers`
  - EXPRESSCLUSTER X SingleServerSafe version information
  - OS information
  - Update log
  - License Information
  - Configuration file
  - Policy file
  - Shared memory dump
  - Local node status of EXPRESSCLUSTER (clpstat --local execution result)
  - Host name and domain name information (hostname execution result)
  - Network information (netstat execution result)
  - IP routing table information (route print execution result)
  - Process existing status (tasklist execution result)
  - ipconfig (ipconfig execution result)
  - Shared configuration of files (net share execution result)
  - Session information (net session execution result)
  - Windows firewall settings (netsh execution result)
  - SNP (Scalable Networking Pack) setting (netsh execution result)
  - Task schedule settings (schtasks execution result)
- Event log
  - Application log (`AppEvent.Evt, Application.evtx, Application.txt`)
  - System log (`SysEvent.Evt, System.evtx, System.txt`)
  - Security log (`SecEvent.Evt, Security.evtx, Security.txt`)
- Windows Error Report
  - `***.wer`
- User dump
  - `***.*dmp`
- Diagnostics report
  - The result of running `msinfo32.exe`
- Registry
  - Registry information of the EXPRESSCLUSTER Server
    - `HKLM\SOFTWARE\NEC\EXPRESSCLUSTER\Alert`
    - `HKLM\SOFTWARE\NEC\EXPRESSCLUSTER\MirrorList`
    - `HKLM\SOFTWARE\NEC\EXPRESSCLUSTER\RC`

    - HKLM\SOFTWARE\NEC\EXPRESSCLUSTER\VCOM
    - Registry information of diskfltr
  - Registry information of OS
    - HKLM\SYSTEM\CurrentControlSet\Services\Disk
    - HKLM\SYSTEM\CurrentControlSet\Control\Session Manager\DOS Devices
    - HKLM\SYSTEM\MountedDevices
    - HKLM\SYSTEM\CurrentControlSet\Enum\SCSI
    - HKLM\SYSTEM\CurrentControlSet\Enum\STORAGE
    - HKLM\SYSTEM\CurrentControlSet\Services\symc8xx
    - HKLM\SYSTEM\CurrentControlSet\Control\FileSystem

- Scripts

  Start/stop script for a group that was created with the Builder.

  If you specify a user-defined script, it is not included in the log collection information. It must be collected separately.

- ESMPRO/AC and ESMPRO/UPSC logs

  Files collected by running the `acupslog.exe` command

- HA logs
  - System resource information
  - JVM monitor log
  - System monitor log

Output paths of log files (-o option)

- Log file is named and be saved as *server_name*-`log.cab`.
- Because log files are compressed in the cab format, decompress them by using an appropriate application.

If not specifying -o option

Logs are output in `tmp` of installation path.

When the -o option is specified:

If you run the command as follows, logs are located in the specified `c:\tmp directory`.

```
# clplogcc -o C:\tmp
```

Specifying a event log type to collect (--evt option)

You can specify the type of the event log included in the information obtained at the log collection.

Specify one or more text strings that represent event log types as shown in the following table after [--evt] option.

Event log type	Character string to specify
Application log	app

System log	sys
Security log	sec

Example) Collecting the system log and the security log

```
# clplogcc --local --evt sys sec
```

- This option is enabled only when the [--local] option is specified.

Collecting information on emergency OS shutdown

The OS resource information is collected when the EXPRESSCLUSTER service fails due to termination by an internal status error or a similar problem.

Information to be collected is as follows:

- Server information
  - Some module logs in EXPRESSCLUSTER servers
- Information created by running a command
  - Host name and domain name information (hostname execution result)
  - Network information (netstat execution result)
  - Process existing status (tasklist execution result)
  - ipconfig (ipconfig execution result)
  - Shared configuration of files (net share execution result)
  - Session information (net session execution result)

These are collected by default in the log collection. You do not need to collect them separately.

Applying and backing up configuration data (clpcfctrl command)

Applying configuration data (clpcfctrl --push)

clpcfctrl --push Applies the configuration data to servers.

Command line:

```
clpcfctrl --push [-w] [-x <path>] [-p <portnumber>] [--nocheck]
```

Description Applies the configuration data created by the Builder to servers.

Option	--push	Specify this option when applying the data. This option cannot be omitted.
	-x	Specify this option to apply the configuration data in the specified directory.
	-w	Indicates that SJIS encoding is used for the configuration data file. In general, it is not necessary to specify this option
	-p	Specifies the number of the port used to transfer data. When this option is omitted, the default value is used. In general, it is not necessary to specify this option.
	--nocheck	Omits the check on the operation necessary to apply changes.

Return Value	0	Success
	Other than 0	Failure

Notes

Run this command as a user with Administrator privileges.

When the configuration data is applied, the current configuration data is compared with the configuration data to be applied.

If there is any change in the configuration data, the following message output. After operating the service or group by following the instructions in the message, execute the command again.

Message	Solution
Please stop EXPRESSCLUSTER Server.	Stop the server.
Please suspend EXPRESSCLUSTER Server.	Suspend the server.
Please stop the following groups.	Stop the group for which the setting has been changed.
Reboot of a cluster is necessary to reflect setting.	Shut down and reboot the cluster to apply the change of settings.
To apply the changes you made, restart the EXPRESSCLUSTER Web Alert service.	Restart the Web Alert service to apply the change of settings.
To apply the changes you made, restart the EXPRESSCLUSTER Manager service.	Restart the EXPRESSCLUSTER Manager service to apply the change of settings.
Start of a cluster is necessary to reflect setting.	This is the message displayed at the initial cluster configuration. Start the cluster.

The --nocheck option is used only for special purposes including a maintenance procedure. Do not use the --nocheck option for normal operations.

Error Message

Message	Cause/Solution
Log in as administrator.	Log in as a user with Administrator privileges.
This command is already run.	This command has already been run.
invalid option.	This option is invalid. Check the option.
Invalid mode. Check if -push or -pull option is specified.	Check if `--push` is specified.
Invalid host name. Server specified by -h option is not included in the configuration	The server specified with `-h` is not included in configuration data. Check if the specified server name or IP address is correct.
Failed to initialize the xml library. Check if memory or OS resources are sufficient.	Check if the memory or OS resources are sufficient.
Failed to load the configuration file. Check if memory or OS resources are sufficient.	
Failed to change the configuration	

Message	Cause/Solution
file. Check if memory or OS resources are sufficient.	
Failed to load the all.pol file. Reinstall the RPM cluster.	Reinstall the EXPRESSCLUSTER Server.
Failed to load the cfctrl.pol file. Reinstall the RPM cluster.	Reinstall the EXPRESSCLUSTER Server.
Failed to get the install path. Reinstall the RPM cluster.	Reinstall the EXPRESSCLUSTER Server.
Failed to initialize the trncl library. Check if memory or OS resources are sufficient.	Check if the memory or OS resources are sufficient.
Failed to connect to trnsv. Check if the other server is active.	Accessing the server has failed. Check if the other server has been started up.
Failed to get the list of node. Check if the server specified by -c is a member of the cluster.	Check if the server specified by -c is a cluster member.
File delivery failed. Failed to deliver the configuration data. Check if the other server is active and run the command again.	Delivering configuration data has failed. Check if other server(s) has been started. Run the command again after the server has started up.
Multi file delivery failed. Failed to deliver the configuration data. Check if the other server is active and run the command again.	Delivering configuration data has failed. Check if other server(s) has been started. Run the command again after the server has started up.
Failed to deliver the configuration data. Check if the other server is active and run the command again.	Delivering configuration data has failed. Check if other server(s) has been started. Run the command again after the server has started up.
Failed to upload the configuration file. Check if the other server is active and run the command again.	Delivering configuration data has failed. Check if other server(s) has been started
Canceled to deliver the configuration file since it failed to connect to one or more server. If you want to deliver the configuration file to servers that can be connected, run the command again with "-force" option.	Canceled the delivery of the configuration data. There are some servers that failed to connect. If you want to deliver the configuration data only to the server that can be connected, run the command again by using the `--force` option.
The directory "work" is not found. Reinstall the RPM.	Reinstall the EXPRESSCLUSTER Server.
Failed to make a working directory.	Check if the memory or OS resources are sufficient.
The directory does not exist.	
This is not a directory.	
The source file does not exist.	
The source file is a directory.	
The source directory does not exist.	

Message	Cause/Solution
The source file is not a directory.	
Failed to change the character code set (EUC to SJIS).	
Failed to change the character code set (SJIS to EUC).	
Failed to allocate memory.	Check if the memory or OS resources are sufficient.
Failed to change the directory.	
Failed to make a directory.	
Failed to remove the directory.	
Failed to remove the file.	
Failed to open the file.	
Failed to read the file.	
Failed to copy the file.	
Failed to create the mutex.	
Internal error. Check if memory or OS resources are sufficient.	
Failed to check server property. Check if the server name or ip addresses are correct by builder.	Check if the server name and the IP address of the configuration information are correctly set.
Please stop the following resources.	Stop the resource of which the configuration has been changed.

Backing up configuration data (clpcfctrl --pull)

clpcfctrl --pull Backs up the configuration data.

Command line:

```
clpcfctrl --pull [-w] [-x <path>] [-p <portnumber>]
```

Description Backs up the configuration data to be used by the Builder.

Option

--pull	Specify this option when performing backup. This option cannot be omitted.
-x	Specify this option when backing up configuration data in the specified directory.
-w	Save the configuration data with character encoding, SJIS.
-p	Specifies the number of the port used to transfer data. When this option is omitted, the default value is used. In general, it is not necessary to specify this option.

Return Value

0	Success
Other than 0	Failure

Notes Run this command as a user with Administrator privileges.

Error Message

Message	Cause/Solution
Log in as administrator.	Log on as a user with Administrator privileges.
This command is already run.	This command has already been run.
invalid option.	The option is invalid. Check the option.
Invalid mode. Check if -push or -pull option is specified.	Check if `--pull` is specified.
Failed to initialize the xml library. Check if memory or OS resources are sufficient.	Check if the memory or OS resources are sufficient.
Failed to load the configuration file. Check if memory or OS resources are sufficient.	
Failed to change the configuration file. Check if memory or OS resources are sufficient.	

Message	Cause/Solution
Failed to load the all.pol file. Reinstall the cluster.	Reinstall the EXPRESSCLUSTER Server.
Failed to load the cfctrl.pol file. Reinstall the cluster.	Reinstall the EXPRESSCLUSTER Server.
Failed to get the install path. Reinstall the cluster.	Reinstall the EXPRESSCLUSTER Server.
Failed to initialize the trncl library. Check if memory or OS resources are sufficient	Check if the memory or OS resources are sufficient.
Failed to connect to trnsv. Check if the other server is active.	Accessing the server has failed. Check if other server(s) has been started.
The directory "work" is not found. Reinstall the cluster.	Reinstall the EXPRESSCLUSTER Server.
Failed to make a working directory.	Check if the memory or OS resources are sufficient.
The directory does not exist.	
This is not a directory.	
The source file does not exist.	
The source file is a directory.	
The source directory does not exist.	
The source file is not a directory.	
Failed to change the character code set (EUC to SJIS).	
Failed to change the character code set (SJIS to EUC).	
Failed to allocate memory.	Check if the memory or OS resources are sufficient.
Failed to change the directory.	
Failed to make a directory.	
Failed to remove the directory.	
Failed to remove the file.	
Failed to open the file.	
Failed to read he file.	
Failed to write the file.	
Failed to copy the file.	
Failed to create the mutex.	
Internal error. Check if memory or OS resources are sufficient.	

Adjusting time-out temporarily (clptoratio command)

clptoratio — Extends or displays the current timeout ratio.

Command line:

```
clptoratio  -r <ratio> -t <time>
clptoratio  -i
clptoratio  -s
```

Description

Temporarily extends the following timeout values:

- Monitor resource
- Alert synchronous service
- WebManager service

The current timeout ratio is displayed.

Option

-r *ratio*	Specifies the timeout ratio. Use 1 or larger integer. The maximum timeout ratio is 10,000. If you specify "1," you can restore the original ratio as when using the -i option.
-t *time*	Specifies the extension period. You can specify minutes for m, hours for h, and days for d. The maximum period of time is 30 days. Example: 2m, 3h, 4d
-i	Sets back the modified timeout ratio.
-s	Refers to the current timeout ratio.

Return Value

0	Success
Other than 0	Failure

Remarks

When the server is shut down, the timeout ratio you specified becomes ineffective.

With the -s option, you can only refer to the current timeout ratio. You cannot see other information such as remaining time of extended period.

You can see the original timeout value by using the status display command.

Monitor resource timeout# clpstat --mon *monitor_resource_name* --detail

Notes

This command must be executed by a user with the administrator privilege.

The EXPRESSCLUSTER service must be running when you execute this command.

When you set the timeout ratio, make sure to specify the extension period. However, if you set "1" for the timeout ratio, you cannot specify the extension period.

You cannot specify a combination such as "2m3h," for the extension period.

Examples

Example 1: Doubling the timeout ratio for three days

```
# clptoratio -r 2 -t 3d
```

Example 2: Setting back the timeout ratio to original

```
# clptoratio -i
```

Example 3: Referring to the current timeout ratio

```
# clptoratio -s
present toratio : 2
```

The current timeout ratio is set to 2.

Error Message

Message	Cause/Solution
Log in as administrator.	Log on as a user with Administrator privileges.
Invalid configuration file. Create valid cluster configuration data by using the Builder.	Create valid cluster configuration data by using the Builder.
invalid option.	Specify a valid option.
Specify a number in a valid range**.**	Specify a number within a valid range.
Specify a correct number.	Specify a valid number.
Scale factor must be specified by integer value of 1 or more.	Specify 1 or larger integer for ratio.
Specify scale factor in a range less than the maximum scale factor.	Specify a ratio that is not larger than the maximum ratio.
Set the correct extension period. ex) 2m, 3h, 4d	Set a valid extension period.
Set the extension period in a range less than the maximum extension period.	Set the extension period which does not exceed the maximum extension period.
Could not connect to the server. Check if the cluster service is active.	Check that the EXPRESSCLUSTER service is operating.
Server is not active. Check if the cluster service is active.	Check that the EXPRESSCLUSTER service is operating.
Connection was lost. Check if there is a server where the cluster service is stopped in the cluster.	Check if there is any server in the cluster that the EXPRESSCLUSTER service stopped.

Invalid parameter.	The value specified as the command parameter may be invalid.
Internal communication timeout has occurred in the cluster server. If it occurs frequently, set a longer timeout.	A time-out occurred in the EXPRESSCLUSTER internal communication. If time-out keeps occurring, set the internal communication time-out longer.
Processing failed on some servers. Check the status of failed servers.	There is a server in which the processing has failed. Check the statuses of servers in the cluster. Run the command with all servers in the cluster activated.
Internal error. Check if memory or OS resources are sufficient.	Check if the memory or OS resources are sufficient.

Modifying the log level and size (clplogcf command)

clplogcf — Modifies and displays log level and log output file size.

Command line:

```
clplogcf -t <type> -l <level> -s <size>
```

Description Modifies the settings of the log level and log output file size. Displays the currently specified values.

Option	-t	Specifies a module type whose settings will be changed. If both -l and -s are omitted, the information set to the specified module will be displayed. See the list of "Types that can be specified to the -t option" for types which can be specified.
	-l	Specifies a log level. You can specify one of the following for a log level. 1, 2, 4, 8, 16, 32 You can see more detailed information as the log level increases.
	-s	Specifies the size of a file for log output. The unit is byte.
	None	Displays the entire configuration information currently set.

Return Value	0	Success
	Other than 0	Failure

Remarks Each type of log output by EXPRESSCLUSTER X SingleServerSafe uses two log files. Therefore, it is necessary to have twice the disk space specified by -s.

Notes Run this command as a user with Administrator privileges.

To run this command, the EXPRESSCLUSTER Event service must be started.

Rebooting the server restores the settings to their pre-change values.

Examples

Example 1: Modifying the pm log level

```
# clplogcf -t pm -l 8
```

Example 2: Seeing the pm log level and log file size

```
# clplogcf -t pm
  TYPE, LEVEL, SIZE
  pm, 8, 1000000
```

Example 3: Displaying the values currently configured

```
# clplogcf
  TYPE, LEVEL, SIZE
  trnsv, 4, 1000000
  xml, 4, 1000000
  logcf, 4, 1000000
```

Error Message

Message	Cause/Solution
Log in as administrator.	Log on as a user with Administrator privileges.
invalid option.	The option is invalid. Check the option.
Failed to change configuration. Check if the event service is running.	clpevent may not have been started.
invalid level	The specified level is invalid.
invalid size	The specified size is invalid.
Failed to initialize the xml library. Check if memory or OS resources are sufficient.	Check if the memory or OS resources are sufficient.
Failed to print current configuration. Check if the event service is running.	clpevent may not be started yet.

Types that can be specified for the `-t` option (`y=yes, n=no`)

Type	Module	Description
alert	clpaltinsert.exe	Alert
apicl	clpapicl.dll	API client library
apicl_rc	clpapicl.dll	API client library
apisv	clpapisv.dll	API server
appli	clpappli.dll	Application resource
appliw	clpappliw.dll	Application monitor resource
armdrive	armdrive.exe	Drive letter setting command
bwctrl	clpbwctrl.exe	Cluster activation synchronization wait processing control command
cfctrl	clpcfctrl.exe	Cluster generation, cluster information and backup command
cl	clpcl.exe	Cluster startup and stop command
clpdnld	clpdnld.exe	Downloader

Type	Module	Description
clpgetsvcstat	clptrnsv.exe	Transaction server
clpshmstat	clpshmstat.dll	Node status management library
clsv	clpclsv.dll	Client server
commcl	clpcommcl.dll	Common communication client library
cpufreq	clpcpufreq.exe	CPU frequency control command
diskperf	clpdiskperf.dll	Disk performance log library
diskutil	clpdiskutil.dll	Mirror disk/disk shared library
diskw	clpdiskw.dll	Disk RW monitor resource
down	clpdown.exe	Server shutdown command
event	clpevent.dll	Event log
exping	clpexpng.dll	PING execution management
genw	genw.dll	Custom monitor resource
grp	clpgrp.exe	Group startup, stop, move, and migration command
hblog	clplanhb.dll	Kernel-mode LAN heartbeat resource
healthchk	clphealthchk.exe	Process health check command
ipw	clpipw.dll	IP monitor resource
lankhb	clplanhb.dll	Kernel-mode LAN heartbeat resource
lcns	clplcns.dll	License library
ledctrl	clpledctrl.exe	Chassis identify control command
logc	clplogcc.exe	Log collection library
logcc	clplogcc.exe	Collect logs command
logcf	clplogcf.exe	Log level and size modification command
logcmd	clplogcmd.exe	Alert producing command
mail	clpmail.exe	Mail Notification
monctrl	clpmonctrl.exe	Monitor resource control command
mgmtagt	clpmgtmib.dll	Library for SNMP Service
miiw	clpmiiw.dll	NIC Link Up/Down monitor resource
monctrl	clpmonctrl.exe	Monitor resource control command
mrw	clpmrw.dll	Message receive monitor resource
mtw	clpmtw.dll	Multi target monitor resource
nm	clpnm.exe	Node map management
oldapi	clpoldapi.exe	Compatible API
oldapi_cnf	clpoldapi.exe	Compatible API
oldapi_evt	clpoldapi.exe	Compatible API
oldapi_if	clpoldapi.exe	Compatible API
oldapi_sts	clpoldapi.exe	Compatible API
pm	clppm	Process management
pmsvc	clppmsvc.exe	Process management

Type	Module	Description
psw	clppsw.dll	Process name monitor resource
ptun	clpptun.dll	Parameter tuning
ptunlib	clpptun.dll	Parameter tuning
rc	clprc.exe	Group and group resource management
rc_ex	clprc.exe	Group and group resource management
regctrl	clpregctrl.exe	Reboot count control command
resdllc	clpresdllc.dll	Resource control library
rm	clprm.dll	Monitor management
script	clpscript.dll	Script resource
scrpc	clpscrpc.exe	Script
scrpl	clpscrpl.ece	Script
sem	clpsem.dll	Semaphore library
service	clpservice.dll	Service resource
servicew	clpservicew.dll	Service monitor resource
shmcm	clpshmcm.dll	Shared memory library
shmevt	clpshmevt.dll	Event library
shmnm	clpshmnm.dll	Shared memory library
shmrm	clpshmrm.dll	Shared memory library
snmpmgr	clpsnmpmgr.dll	SNMP trap reception library
starup	clpstartup.exe	Startup
stat	clpstat.exe	Status display command
stdn	clpstdn.exe	Cluster shutdown command
toratio	clptoratio.exe	Time-out ratio modification command
trncl	clptrncl.dll	Transaction library
trap	claptrap.exe	SNMP trap command
trnreq	clptrnreq.exe	Inter-cluster processing request command
rexec	clprexec.exe	External monitoring link processing request command
trnsv	clptrnsv.exe	Transaction server
userw	clpuserw.dll	User space monitor resource
webalert	clpaltd.exe	Alert synchronization
webmgr	clpwebmc.exe	WebManager
xml	xlpxml.dll	XML library
vm	clpvm.dll	VM resource
vmw	clpvmw.dll	VM monitor resource
vmctrl	clpvmctrl.dll	VMCtrl library

Default log levels and log file sizes

Type	Level	Size (byte)
alert	4	1000000
apicl	4	5000000
apicl_rc	4	5000000
apisv	4	5000000
appli	4	1000000
appliw	4	1000000
armdrive	4	1000000
bwctrl	4	1000000
cfctrl	4	1000000
cl	4	1000000
clpdnld	4	1000000
clpgetsvcstat	4	1000000
clpshmstat	4	1000000
clsv	4	1000000
commcl	4	80000000
cpufreq	4	1000000
diskperf	8	2000000
diskutil	4	1000000
diskw	4	1000000
down	4	1000000
event	4	1000000
exping	4	1000000
genw	4	1000000
grp	4	1000000
hblog	4	1000000
healthchk	4	1000000
ipw	4	1000000
lankhb	4	1000000
lcns	4	1000000
logc	4	1000000
logcc	4	1000000
logcf	4	1000000
logcmd	4	1000000
mail	4	1000000
mgmtagt	4	1000000
miiw	4	1000000
monctrl	4	1000000

Type	Level	Size (byte)
mrw	4	1000000
mtw	4	1000000
nm	4	2000000
oldapi	4	1000000
oldapi_cnf	4	1000000
oldapi_evt	4	1000000
oldapi_if	4	1000000
oldapi_sts	4	1000000
pm	4	1000000
pmsvc	4	2000000
psw	4	1000000
ptun	4	1000000
ptunlib	4	1000000
rc	4	5000000
rc_ex	4	5000000
regctrl	4	1000000
resdllc	4	2000000
rm	4	5000000
script	4	1000000
scrpc	4	1000000
scrpl	4	1000000
sem	4	1000000
service	4	1000000
servicew	4	1000000
shmcm	4	1000000
shmevt	4	1000000
shmnm	4	1000000
shmrm	4	1000000
snmpmgr	4	1000000
startup	4	1000000
stat	4	1000000
stdn	4	1000000
toratio	4	1000000
trap	4	1000000
trncl	4	2000000
trnsv	4	2000000
trnreq	4	1000000
userw	4	1000000
rexec	4	1000000

Type	Level	Size (byte)
webalert	4	1000000
webmgr	4	1000000
xml	4	1000000
vm	4	1000000
vmw	4	1000000
vmctrl	4	1000000
	Total	191000000 * 2

Monitoring Agent Types that can be specified for the `-t` option

Type	Module	Description
db2w	clp_db2w.dll	DB2 Monitor (Database Agent)
ftpw	clp_ftpw.dll	FTP Monitor (Internet Server Agent)
httpw	clp_httpw.dll	HTTP Monitor (Internet Server Agent)
imap4w	clp_imap4w.dll	IMAP4 Monitor (Internet Server Agent)
jra	clpjrasvc.exe	JVM Monitor (Java Resource Agent)
jraw	clpjraw.dll	JVM Monitor (Java Resource Agent)
odbcw	clp_odbcw.dll	ODBC Monitor (Database Agent)
oraclew	clp_oraclew.dll	Oracle Monitor (Database Agent)
otxw	clp_otxw.dll	WebOTX Monitor (Application Server Agent)
pop3w	clp_pop3w.dll	POP3 Monitor (Internet Server Agent)
psqlw	clp_psqlw.dll	PostgreSQL Monitor (Database Agent)
smtpw	clp_smtpw.dll	SMTP Monitor (Internet Server Agent)
sqlserverw	clp_sqlserverw.dll	SQL Server Monitor (Database Agent)
sra	clpsraserviceproc.exe	System Monitor (System Resource Agent)
sraw	clpsraw.dll	System Monitor (System Resource Agent)
tuxw	clp_tuxw.dll	Tuxedo Monitor (Application Server Agent)
wasw	clp_wasw.dll	Websphere Monitor (Application Server Agent)
wlsw	clp_wlsw.dll	Weblogic Monitor (Application Server Agent)

Monitoring Agent Default Values of Log Level/Log File Size

Type	Level	Size (byte)
db2w	4	1000000
ftpw	4	1000000
httpw	4	1000000
imap4w	4	1000000
jra	4	1000000
jraw	4	1000000

Type	Level	Size (byte)
odbcw	4	1000000
oraclew	4	1000000
otxw	4	1000000
pop3w	4	1000000
psqlw	4	1000000
smtpw	4	1000000
sqlserverw	4	1000000
sra	8	1000000
sraw	4	1000000
tuxw	4	1000000
wasw	4	1000000
wlsw	4	1000000
	Total	18000000 * 2

Managing licenses (clplcnsc command)

clplcnsc — the clplcnsc command manages licenses.

Command line:

```
clplcnsc -i [licensefile…]
clplcnsc -l [-a]
clplcnsc -d serialno [-q]
clplcnsc -d -t [-q]
clplcnsc -d -a [-q]
```

Description This command registers, refers to and remove the licenses of the product version and trial version of this product.

Option

-i [*licensefile…*] When a license file is specified, license information is acquired from the file for registration. You can specify multiple licenses. If nothing is specified, you need to enter license information interactively.

-l [-a] References the registered license.

The name of displayed items are as follows.

Item	Explanation
Serial No	Serial number (product version only)
User name	User name (trial version only)
Key	License key
The number of license	The number of license
Start date	Start date of valid period *1 *2
End date	End date of valid period *1 *2
Status	Status of the license

Status	Explanation
valid	valid
invalid	invalid
unknown	unknown
inactive	Before valid period *1*2
expired	After valid period *1*2

*1 Displayed in the case of the fixed term license

*2 Displayed in the case of the license of trial version

When -a option not specifed, the license status of “invalid”, “unknown” and “expired” are not displayed.

		When specifying -a option, all the licenses are displayed regardless of the license status.
	-d *serialno*	Deletes the license with the specified serial number.
	-d -t	Deletes all the registered licenses of the trial version.
	-d -a	Deletes all the registered licenses.
	-q	Deletes licenses without displaying a warning message. This is used with -d option.

Return Value

0	Normal termination
1	Cancel
3	Initialization error
5	Invalid option
8	Other internal error

Example of a command entry:

Registering the license interactively

```
# clplcnsc -i
```

for registration

Product Version/Product Version (Fixed Term)

Select a product division.

```
Selection of License Version
 1. Product Version
 2. Trial Version
 e. Exit
Select License Version. [1, 2, or e
   (default:1)] ...
```

Enter a serial number.

```
Enter serial number [ Ex. XXXXXXXX000000] ...
```

Enter a license key.

```
Enter license key
[ Ex. XXXXXXXX-XXXXXXXX-XXXXXXXX-XXXXXXXX] ...
```

Trial Version

Select a product division.

```
Selection of License Version
 1. Product Version
 2. Trial Version
 e. Exit
Select License Version. [1, 2, or e
   (default:1)] ...
```

Enter a user name.

```
Enter user name [ 1 to 63byte ] .
```

Enter a license key.

```
Enter license key
[Ex. XXXXX-XXXXXXXX-XXXXXXXX-XXXXXXXX]…
```

Specify a license file

```
# clplcnsc -i c:\tmp\licensefile
```

for referring to the license

```
# clplcnsc -l
```

1. Product version

```
< EXPRESSCLUSTER X SingleServerSafe <PRODUCT> >
Seq... 1
 Key..... A1234567-B1234567-C1234567-D1234567
 The number of license... 2
 Status... valid
```

2. Product version (fixed term)

```
< EXPRESSCLUSTER X SingleServerSafe <PRODUCT> >
Seq... 1
    Serial No..... AAAAAAAA000001
    Key..... A1234567-B1234567-C1234567-D1234567
    Start date..... 2018/01/01
    End date..... 2018/01/31
    Status..... valid
Seq... 2
    Serial No..... AAAAAAAA000002
    Key..... E1234567-F1234567-G1234567-H1234567
    Status..... inactive
```

3. Trial version

```
< EXPRESSCLUSTER X SingleServerSafe <TRIAL> >
Seq... 1
 Key..... A1234567-B1234567-C1234567-D1234567
 User name... NEC
Start date..... 2018/01/01
End date..... 2018/02/28
 Status..... valid
```

for deleting the license

```
# clplcnsc -d AAAAAAAA000001 -q
```

for deleting the license

```
# clplcnsc -d -t -q
```

for deleting the license

```
# clplcnsc -d -a
```

Deletion confirmation

```
Are you sure to remove the license?
[y/n] ...
```

Notes

Run this command as the Administrator user.

Furthermore, when you use -d option and -a option together, all the trial version licenses and product version licenses will be deleted. To delete only the trial license, also specify the -t option. If the licenses including the product license have been deleted, register the product license again.

When you refer to a license which includes multiple licenses, all included licenses information are displayed.

Error Message

Message	Cause/Solution
Processed license num (success : %d error : %d).	The number of processed licenses (success:%d error:%d) If error is not 0, check if the license information is correct.
Command succeeded.	The command ran successfully.
Command failed.	The command did not run successfully.
Log in as administrator.	Log on as the Administrator user.
Invalid cluster configuration data. Check it by using the Builder.	The cluster configuration data is invalid. Check the cluster configuration data by using the Builder.
Initialization error. Check if memory or OS resources are sufficient.	Check to see if the memory or OS resource is sufficient.
The command is already run.	The command is already running.
The license is not registered.	The license has not been registered yet.
Could not open the license file. Check if the license file exists on the specified path.	Input/Output cannot be done to the license file. Check to see if the license file exists in the specified path.
Could not read the license file. Check if the license file exists on the specified path.	
The field format of the license file is invalid. The license file may be corrupted. Check the destination from where the file is sent.	The field format of the license file is invalid. The license file may be corrupted. Check it with the file sender.
The cluster configuration data may be invalid or not registered.	The cluster configuration data may be invalid or not registered. Check the configuration data.
Failed to terminate the library. Check if memory or OS resources are sufficient.	Check to see if the memory or OS resource is sufficient.
Failed to register the license. Check if the entered license information is correct.	Check to see if the entered license information is correct.
Failed to open the license. Check if the entered license information is correct.	
Failed to remove the license.	License deletion failed. Parameter error may have occurred or resources (memory or OS) may not be sufficient.
Internal error. Check if memory or OS resources are sufficient.	Check to see if the memory or OS resource is sufficient.

Outputting messages (clplogcmd command)

clplogcmd Registers the specified text into alert.

Command line:

```
clplogcmd -m message [-i ID] [-l level]
```

Note:

It is not necessary to run this command during normal setup or operation. You need to write the command in the script resource script.

Description

Write this command in the script resource script to output messages to any destination.

Messages are produced in the following format:

```
[ID] message
```

Option

-m *message*	Specifies text to output for *message*. This option cannot be omitted. The maximum size of *message* is 498 bytes. You may use alphabets, numbers, and symbols.
-i ID	Specify message ID. This parameter can be omitted. The default value 1 is set for the ID when the parameter is omitted.
-l level	Level of alert to output. Select a level of alert output from ERR, WARN, or INFO. The icon on the alert view of the WebManager is determined according to the level you select here. This parameter can be omitted. The default value INFO is set to level when the parameter is omitted. For details, see "Checking alerts using the WebManager" in Chapter 1, "Functions of the WebManager."

Return Value

0	Success
Other than 0	Failure

Notes

This command must be executed by a user with the administrator privilege.

The specification of the -i option is different from that of the Linux version. In the Windows version, the event ID displayed in an alert cannot be changed.

Examples of command execution

Example 1: When specifying only message

When the following is written in the script resource script, the text is output to the alert.

```
clplogcmd -m test1
```

The following alert is displayed on the alert view of the WebManager:

Type	Received Time	Time	Server Name	Module Name	Event ID	Message
	2012/10/01 03:04:17.378	2012/10/01 03:04:17.347	server1	logcmd	3601	[1] test1

Example 2: When specifying message, message ID, and level:

When the following is written in the script resource script, the text is output to the alert.

```
clplogcmd -m test2 -i 100 -l ERR
```

The following alert is displayed on the alert view of the WebManager:

Type	Received Time	Time	Server Name	Module Name	Event ID	Message
	2012/10/01 03:08:24.675	2012/10/01 03:08:24.675	server1	logcmd	3601	[100] test2

*** Notes on using symbols in text:**

The symbols below must be enclosed in double quotes (“ ”):

& | < >
(For example, if you specify "&" in the message, & is output.)

The symbols below must have a backslash \ at the beginning:

\
(For example, if you specify \\ in the message, \ is output.)

- When there is a space in text, it must be placed in enclosed in double quotes (“ ”).

Controlling monitor resources (clpmonctrl command)

clpmonctrl Controls the monitor resources.

Command line:

```
clpmonctrl -s [-m resource name ...] [-w wait time]
clpmonctrl -r [-m resource name ...] [-w wait time]
clpmonctrl -c [-m resource name ...]
clpmonctrl -v [-m resource name ...]
clpmonctrl -e -m resource name
clpmonctrl -n [-m resource name]
```

Description Suspends or resumes monitor resources.

Option

-s, --suspend	Suspends monitoring
-r, --resume	Resumes monitoring
-c, --clear	Initializes the recovery operation count.
-v, --view	Displays the recovery operation count.
-e, --error	Enables dummy failure. Be sure to specify a monitor resource name with the -m option.
-n, --normal	Disables dummy failure. When a monitor resource name is specified with the -m option, the function is disabled only for the resource. When the -m option is omitted, the function is disabled for all monitor resources.
-m, --monitor	Specifies one or more monitor resources to be controlled. This option can be omitted. All monitor resources are controlled when the option is omitted.
-w, --wait	Waits for control monitoring on a monitor resource basis. (in seconds) This option can be omitted. The default value 5 is set when the option is omitted.

Return Value

0	Completed successfully.
1	Privilege for execution is invalid.
2	The option is invalid.
3	Initialization error
4	The configuration data is invalid.
5	Monitor resource is not registered.
6	The specified monitor resource is invalid.
10	EXPRESSCLUSTER is not running.
11	The EXPRESSCLUSTER service is suspended
90	Monitoring control wait timeout
128	Duplicated activation
255	Other internal error

Remarks

If you attempt to suspend a monitor resource that is already suspended or attempt to resume one that is already resumed, this command terminates successfully without changing the status of the monitor resource.

Notes

Run this command as a user with the administrator privilege.

Check the status of monitor resource by using the status display command or WebManager.

Before you run this command, use the clpstat command or WebManager to verify that the status of monitor resources is in either “Online” or “Suspend.”

In the case of a monitor resource of which monitor timing is “Active”, if a target resource stops temporarily in the active status, and then the target resource or the group which the target resource belongs to is activated, the monitor resource which has been stopped temporarily cannot detect an error. This is because the monitor resource does not start monitoring.

The following are examples of the case described above:

1. Stops an application monitor that is monitoring application resource temporarily.
2. Reactivate the application resource or the group that the application resource belongs to.

This reactivation procedure applies both manual and automatic when a monitor resource detects an error and reactivates an application by the recovery operation.

If you execute clpmonctrl command with the `-v` option, “FinalAction Count” is script execution count before final action for following setting.

- The **Execute Script before Final Action** check box is selected.
- **Final Action** is **No operation**.

Error Messages

Message	Causes/Solution
Command succeeded.	The command ran successfully.
You are not authorized to run the command. Log in as Administrator.	You are not authorized to run this command. Log in as a user with Administrator privileges.
Initialization error. Check if memory or OS resources are sufficient.	Check if the memory or OS resource is sufficient.
Invalid cluster configuration data. Check it by using the Builder.	The cluster configuration data is invalid. Check the cluster configuration data by using the Builder.
Monitor resource is not registered.	The monitor resource is not registered.
Specified monitor resource is not registered. Check the cluster configuration information by using the Builder.	The specified monitor resource is not registered. Check the cluster configuration data by using the Builder.
The cluster has been stopped. Check the active status of the cluster service by using the command such as ps command.	The cluster has been stopped. Check the activation status of the EXPRESSCLUSTER service by using the ps command.
The cluster has been suspended. The cluster service has been suspended. Check activation status of the cluster service by using a command such as the ps command.	The EXPRESSCLUSTER service has been suspended. Check the activation status of the EXPRESSCLUSTER service by using a command such as ps command.
Waiting for synchronization of the cluster. The cluster is waiting for synchronization. Wait for a while and try again.	Synchronization of the cluster is awaited. Try again after synchronization of the cluster is completed.
Monitor %1 was unregistered, ignored. The specified monitor resources %1is not registered, but continues processing. Check the cluster configuration data by using the Builder. %1: monitor resource name	There is an unregistered monitor resource in the specified monitor resources, but it is ignored and the process is continued Check the cluster configuration data by using the Builder. %1: Monitor resource name
The command is already executed. Check the execution state by using the "ps" command or some other command.	The command has already been run. Check the status by using the ps command.
Internal error. Check if memory or OS resources are sufficient.	Check if the memory or OS resource is sufficient.

Monitor resource types that can be specified for the `-m` option

Type	Suspending/Resume	Reset Recovery Count	Dummy Failure Possibility
appliw	O	O	O
diskw	O	O	O
ipw	O	O	O
miiw	O	O	O
mtw	O	O	O
servicew	O	O	O
genw	O	O	O

Type	Suspending/Resume	Reset Recovery Count	Dummy Failure Possibility
vmw	O	O	×
mrw	O	O	×
db2w	O	O	O
ftpw	O	O	O
httpw	O	O	O
imap4w	O	O	O
odbcw	O	O	O
oraclew	O	O	O
pop3w	O	O	O
psqlw	O	O	O
smtpw	O	O	O
sqlserverw	O	O	O
tuxw	O	O	O
wasw	O	O	O
wlsw	O	O	O
otxw	O	O	O
jraw	O	O	O
sraw	O	O	O
userw	O	O	O
psw	O	O	O

Controlling group resources (clprsc command)

clprsc Controls group resources

Command line:

```
clprsc -s resource_name [-f] [--apito timeout]
clprsc -t resource_name [-f] [--apito timeout]
```

Description This command starts and stops group resources.

Option

-s	Starts group resources.
-t	Stops group resources.
-f	When the group resource is running, all group resources that the specified group resource depends start up. When the group resource is not running, all group resources that the specified group resource depends stop.
--apito *timeout*	Specify the time in seconds to wait for group resources to be started or stopped (internal communication timeout). A value between 1 to 9999 can be specified. When the `--apito` option is not specified, the command waits according to the value set for the internal communication timeout in the cluster property.

Return Value

0	Completed successfully.
Other than 0	Terminated due to a failure.

Notes This command must be executed by a user with the administrator privilege.

Check the status of the group resources by using the status display command or the WebManager.

Error Messages

Message	Causes/Solution
Log in as Administrator.	Run this command as a user with Administrator privileges.
Invalid cluster configuration data. Check it by using the Builder.	The cluster construction information is not correct. Check the cluster construction information by Builder.
Invalid option.	Specify a correct option.
Could not connect server. Check if the cluster service is active.	Check if the EXPRESSCLUSTER is activated.
Invalid server status. Check if the cluster service is active.	Check if the EXPRESSCLUSTER is activated.

Message	Causes/Solution
Server is not active. Check if the cluster service is active.	Check if the EXPRESSCLUSTER is activated.
Invalid server name. Specify a valid server name in the cluster.	Specify a correct server name in the cluster.
Connection was lost. Check if there is a server where the cluster service is stopped in the cluster.	Check if there is any server with EXPRESSCLUSTER service stopped in the cluster.
Internal communication timeout has occurred in the cluster server. If it occurs frequently, set the longer timeout.	Timeout has occurred in internal communication in the EXPRESSCLUSTER. Set the internal communication timeout longer if this error occurs frequently.
The group resource is busy. Try again later.	Because the group resource is in the process of starting or stopping, wait for a while and try again.
An error occurred on group resource. Check the status of group resource.	Check the group resource status by using the WebManager or the `clpstat` command.
Could not start the group resource. Try it again after the other server is started, or after the Wait Synchronization time is timed out.	Wait till the other server starts or the wait time times out, then start the group resources.
No operable group resource exists in the server.	Check there is a processable group resource on the specified server.
The group resource has already been started on the local server.	Check the group resource status by using the WebManager or `clpstat` command.
The group resource has already been started on the other server. To start the group resource on the local server, stop the group resource.	Check the group resource status by using the WebManager or `clpstat` command. Stop the group to start the group resources on the local server.
The group resource has already been stopped.	Check the group resource status by using the WebManager or `clpstat` command.
Failed to start group resource. Check the status of group resource.	Check the group resource status by using the WebManager or `clpstat` command.
Failed to stop resource. Check the status of group resource.	Check the group resource status by using the WebManager or `clpstat` command.
Depending resource is not offline. Check the status of resource.	Because the status of the depended group resource is not offline, the group resource cannot be stopped. Stop the depended group resource or specify the `-f` option.
Depending resource is not online. Check the status of resource.	Because the status of the depended group is not online, the group resource cannot be started. Start the depended group resource or specify the `-f` option.
Invalid group resource name. Specify a valid group resource name in the cluster.	The group resource is not registered.
Server is isolated.	The server is suspended. (Rebooting after down)
Internal error. Check if memory or OS resources are sufficient.	Not enough memory space or OS resource. Check if there is enough space.
Server is not in a condition to start resource. Critical monitor error is detected.	Check the status of the server.

Controlling CPU frequency (clpcpufreq command)

clpcpufreq Controls CPU frequency.

Command line:

```
clpcpufreq --high
clpcpufreq --low
clpcpufreq -i
clpcpufreq -s
```

Description This command enables or disables power-saving mode by CPU frequency control.

Option

--high	Sets the highest CPU frequency.
--low	Sets the lowest CPU frequency to switch to the power-saving mode.
-i	Passes the CPU frequency control to EXPRESSCLUSTER X SingleServerSafe.
-s	Displays the current CPU frequency level. high The CPU frequency is at its highest. low The CPU frequency has been decreased because the CPU is in the power-saving mode.

Return Value

0	Completed successfully.
Other than 0	Terminated due to a failure.

Remarks If the **Use CPU Frequency Control** check box is not selected in the **Extension** tab settings in **Cluster Properties**, this command results in an error.

Notes This command must be executed by a user with the administrator privilege.

When you use CPU frequency control, it is required that frequency is changeable in the BIOS settings, and that the CPU supports frequency control by Windows OS power management function.

Error Messages

Message	Cause/Solution
Log in as Administrator.	Log in as a user with Administrator privileges.

Message	Cause/Solution
This command is already run.	This command has already been run.
Invalid option.	This option is invalid. Check the option.
Invalid mode. Check if --high or --low or -i or -s option is specified.	Check if either of the `--high`, `--low`, `-I` or `-s` option is specified.
Failed to initialize the xml library. Check if memory or OS resources are sufficient.	Check to see if the memory or OS resource is sufficient.
Failed to change CPU frequency settings.	Check the BIOS settings and the OS settings. Check if the cluster is started. Check if the setting is configured so that CPU frequency control is used.
Failed to acquire CPU frequency settings.	Check the BIOS settings and the OS settings. Check if the cluster is started. Check if the setting is configured so that CPU frequency control is used.
Failed to create the mutex.	Check if the memory or OS resource is sufficient.
Internal error. Check if memory or OS resources are sufficient.	Check if the memory or OS resource is sufficient.

Processing inter-cluster linkage (clptrnreq command)

clptrnreq The `clptrnreq` command requests a server to execute a process.

Command line:

`clptrnreq -t request_code -h IP [-r resource_name] [-s script_file] [-w timeout]`

Description The command issues the request to execute specified process to the server in another cluster.

Option

`-t request_code`	Specifies the request code of the process to be executed. The following request codes can be specified: `GRP_FAILOVER` Group failover `EXEC_SCRIPT` Execute script
`-h IP`	Specifies the server to issue the request to execute the process with IP address. You can specify more than one server by separating by commas. The maximum number of IP addresses you can specify is 32. When you specify group failover for request code, specify the IP addresses of all the servers in the cluster.
`-r resource_name`	Specifies the resource name which belongs to the target group for the request for process when `GRP_FAILOVER` is specified for request code. If `GRP_FAILOVER` is specified, `-r` cannot be omitted.
-s *script_file*	Specifies the file name (within 30 characters) of the script to be executed (e.g. batch file or executable file) when `EXEC_SCRIPT` is specified for request code. The script needs to be created in the work\trnreq folder in the folder where EXPRESSCLUSTER is installed in each server specified with `-h`. If `EXEC_SCRIPT` is specified, `-s` cannot be omitted.
-w *timeout*	Specifies the timeout value of the command by the second. The minimum value is 5 seconds. If the `-w` option is not specified, it waits for 30 seconds.

Return Value

0	Completed successfully.
Other than 0	Terminated due to a failure.

Notes

This command must be executed by a user with the administrator privilege.

It is required that EXPRESSCLUSTER for Windows of internal version 10.02 or later, or EXPRESSCLUSTER for Linux of internal version 2.0.2_1 or later is set up in the server which executes this command and the server with the IP address specified by -h.

Examples

Example 1: When performing a failover on the group having the appli1 resource of another cluster

```
# clptrnreq -t GRP_FAILOVER -h 10.0.0.1,10.0.0.2 -r
 appli1
GRP_FAILOVER 10.0.0.1: Success
GRP_FAILOVER 10.0.0.2: Success
```

Example 2: When executing the scrpit1.bat script by the server with IP address 10.0.0.1

```
# clptrnreq -t EXEC_SCRIPT -h 10.0.0.1 -s
 script1.bat
EXEC_SCRIPT 10.0.0.1: Success
```

Error messages

Message	Cause/solution
Log in as Administrator.	Log in as a user with Administrator privileges.
Invalid option.	The command line option is invalid. Specify the correct option.
All servers are busy. Check if this command is already run.	This command may be run already. Check it.
Internal error. Check if memory or OS resources are sufficient.	Check if the memory or OS resource is sufficient.
Command timeout	The cause may be heavy load on OS and so on. Check this.
Failed to obtain the list of nodes. Specify a valid server name in the cluster.	Failed to obtain the list of nodes. Specify a valid IP address.
Could not connect to all data transfer server. Check if the server has started up.	Could not connect to all IP addresses specified. Check the IP addresses and the status of the target server.
Could not connect to the data transfer server. Check if the server has started up.	Could not connect to the IP address specified. Check the IP address and the status of the target server.
GRP_FAILOVER *IP*: Group that specified resource (*resource_name*) belongs to is offline.	Failover process is not performed because the group to which the specified resource belongs is not started on the target server.
EXEC_SCRIPT *IP*: Specified script (*script_file*) does not exist.	The script does not exist on the specified server. Check it.
EXEC_SCRIPT *IP*: Specified script (*script_file*) is not executable.	The specified script could not be executed. Check that execution is permitted.
request_code IP : This server is not permitted to execute clptrnreq.	The server that executed the command does not have permission. Check that the server is registered to the connection restriction IP list of WebManager.
request_code IP : *REQEST_TYPE failed in execute.*	The execution processing of the request type failed. (Either of a present request type Failover or Script is specified.)

Requesting processing to cluster servers (clprexec command)

clprexec

Issues a processing execution request to another server on which EXPRESSCLUSTER is installed.

Command line:

```
clprexec --script script_file -h IP [-p port_number] [-w timeout] [-o logfile_path]
clprexec --notice [mrw_name] -h IP [-k category[.keyword]] [-p port_number] [-w timeout] [-o logfile_path]
clprexec --clear [mrw_name] -h IP [-k category[.keyword]] [-p port_number] [-w timeout] [-o logfile_path]
```

Description

This command is an expansion of the existing clptrnreq command and has additional functions such as issuing a processing request (error message) from the external monitor to the EXPRESSCLUSTER server.

Option

--script *script_name*	Requests script execution. For *script_name*, specify the file name of the script to execute (such as a shell script or executable file). The script must be created in the work/trnreq folder, which is in the folder where EXPRESSCLUSTER is installed, on each server specified using -h.
--notice	Sends an error message to the EXPRESSCLUSTER server. Specify a message reception monitor resource name for *mrw_name*. When not specifying the monitor resource name, specify the monitor type and monitor target of the message reception monitor resource by using the -k option.
--clear	Requests changing the status of the message reception monitor resource from "Abnormal" to "Normal." Specify a message reception monitor resource name for *mrw_name*. When not specifying the monitor resource name, specify the monitor type and monitor target of the message reception monitor resource by using the -k option.
-h *IP Address*	Specify the IP addresses of EXPRESSCLUSTER servers that receive the processing request. Up to 32 IP addresses can be specified by separating them with commas. * If this option is omitted, the processing request is issued to the local server.
-k *category*[.*keyword*]	For *category*, specify the category specified for the message receive monitor when the --notice or --clear option is specified. To specify the keyword of the message receive monitor

		resource, specify them by separating them with period after *category*.
	-p *port_number*	Specify the port number. For *port_number*, specify the data transfer port number specified for the server that receives the processing request. The default value, 29002, is used if this option is omitted.
	-o *logfile_path*	For *logfile_path*, specify the file path along which the detailed log of this command is output. The file contains the log of one command execution. * If this option is not specified on a server where EXPRESSCLUSTER is not installed, the log is always output to the standard output.
	-w *timeout*	Specify the command timeout time. The default, 180 seconds, is used if this option is not specified. A value from 5 to 999 can be specified.

Return Value

0	Completed successfully.
Other than 0	Terminated due to a failure.

Notes

When issuing error messages by using the clprexec command, the message reception monitor resources for which executing an action when an error occurs is specified in EXPRESSCLUSTER server must be registered and started.

The command version is output to the standard output when the command is executed.

The command checks whether the character string specified for the --script option includes "\", "/" or ".." because a relative path must not be specified.(This is because a relative path cannot be specified.)

The server that has the IP address specified for the -h option must satisfy the following conditions:
= EXPRESSCLUSTER X3.0 or later must be installed.
= EXPRESSCLUSTER must be running.
= mrw must be set up and running.

When using the **Limiting the access by using client IP addresses** function, add the IP address of the device in which the **clprexec** command is executed to the **IP Addresses of the Accessible Clients** list.

For details of the **Limiting the access by using client IP addresses** function, see "Setting limitations on the connection and operation of the WebManager" in Chapter 1, "Functions of the WebManager" in this guide.

Examples

Example 1: This example shows how to issue a request to execute the script (script1.bat) on EXPRESSCLUSTER server 1 (10.0.0.1):

```
# clprexec --script script1.bat -h 10.0.0.1
```

Example 2: This example shows how to issue an error message to EXPRESSCLUSTER server 1 (10.0.0.1):

* mrw1 set, *category*: earthquake, *keyword*: scale3

This example shows how to specify a message reception monitor resource name:

```
# clprexec --notice mrw1 -h 10.0.0.1 -w 30 -o
 /tmp/clprexec/clprexec.log
```

- This example shows how to specify the category and keyword specified for the message reception monitor resource:

```
# clprexec --notice -h 10.0.0.1 -k earthquake.scale3 -w
 30 -o /tmp/clprexec/clprexec.log
```

Example 3: This example shows how to issue a request to change the monitor status of mrw1 to EXPRESSCLUSTER server 1 (10.0.0.1):

* mrw1 set, *category*: earthquake, *keyword*: scale3

- This example shows how to specify a message reception monitor resource name:

```
# clprexec --clear mrw1 -h 10.0.0.1
```

- This example shows how to specify the category and keyword specified for the message reception monitor resource:

```
# clprexec --clear -h 10.0.0.1 -k earthquake.scale3
```

Error Messages

Message	Cause/solution
Success	-
Invalid option.	Check the command argument.
Could not connect to the data transfer servers. Check if the servers have started up.	Check whether the specified IP address is correct and whether the server that has the IP address is running.
Could not connect to all data transfer server.	Check whether the specified IP address is correct and whether the server that has the IP address is running.
Command timeout.	Check whether the processing is complete on the server that has the specified IP address.
All servers are busy. Check if this command is already run.	This command might already be running.
Group(%s) is offline.	Check the processing result on the server that received the request.
Group that specified resource(%s) belongs to is offline.	Check the group status.
Specified script(%s) does not exist.	Check if the specified script exist.
Specified resource(%s) is not exist.	Check the resource name or monitor resource name.
Specified resource(Category:%s, Keyword:%s) is not exist.	Check the resource name or monitor resource name.
Specified group(%s) does not exist.	Check the group name.
This server is not permitted to execute clprexec.	Check whether the IP address of the server that executes the command is registered in the list of client IP addresses that are not allowed to connect to the WebManager.
%s failed in execute.	Check the status of the EXPRESSCLUSTER server that received the request.

Controlling reboot count (clpregctrl command)

clpregctrl Controls reboot count limitation.

Command line:

```
clpregctrl --get
clpregctrl -g
clpregctrl --clear -t type -r registry
clpregctrl -c -t type -r registry
```

Description Displays or initializes the reboot count on a server.

Option

	-g, --get	Displays reboot count information.
	-c, --clear	Initializes reboot count.
	-t ***type***	Specifies the type to initialize the reboot count. The type that can be specified is *rc* or *rm*
	-r ***registry***	Specifies the registry name. The registry name that can be specified is *haltcount*.

Return Value

	0	Completed successfully.
	1	Privilege for execution is invalid.
	2	Duplicated activation
	3	The option is invalid.
	4	The configuration data is invalid.
	10 to 17	Internal error
	20 to 22	Obtaining reboot count information has failed.
	90	Allocating memory has failed.

Notes This command must be executed by a user with the administrator privilege.

Examples Display of reboot count information

```
# clpregctrl -g

  ****************************
   -------------------------
    type     : rc
    registry  : haltcount
    comment : halt count
    kind     : int
    value    : 0
    default   : 0

   -------------------------
    type     : rm
    registry  : haltcount
    comment : halt count
    kind     : int
    value    : 3
    default   : 0

  ****************************
  success.(code:0)
#
```

The reboot count is initialized in the following examples.

Example 1: When initializing the count of reboots caused by a group resource error:

```
# clpregctrl -c -t rc -r haltcount
  success.(code:0)
#
```

Example 2: When initializing the count of reboots caused by a monitor resource error:

```
# clpregctrl -c -t rm -r haltcount
  success.(code:0)
#
```

Error Messages

Message	Cause/solution
Command succeeded.	The command ran successfully.
Log in as Administrator.	You are not authorized to run this command. Run this command as a user with Administrator privileges.
The command is already executed.	The command is already running.
Invalid option.	Specify a valid option.
Internal error. Check if memory or OS resources are sufficient.	Not enough memory space or OS resource.

Estimating the amount of resource usage (clpprer command)

clpprer

Estimates the future value from changes in the resource usage amount written to the input file and outputs the result to a file. It can also be used to check the result of threshold judgment for estimated data.

Command line:

```
clpprer -i <inputfile> -o <outputfile> [-p <number>] [-t <number
    > [-l]]
```

Description Estimates the future value from the tendency of the given resource use amount data.

Option

-i <*inputfile*>	The clpprer command specifies the resource data for which a future value is to be obtained.
-o <*outputfile*>	Specifies the name of the file to which the estimate result is output.
-p <*number*>	Specifies the number of estimate data items. If omitted, 30 items of estimate data are obtained.
-t <*number*>	Specifies the threshold to be compared with the estimate data.
-l	Valid only when the threshold is set with the -t option.Judges the status to be an error when the data value is less than the threshold.

Return Value

0	Normal end without threshold judgment
1	Error occurrence
2	As a result of threshold judgment, the input data is determined to have exceeded the threshold.
3	As a result of threshold judgment, the estimate data is determined to have exceeded the threshold.
4	As a result of threshold judgment, the data is determined to have not exceeded the threshold.
5	If the number of data items to be analyzed is less than the recommended number of data items to be analyzed (120), the input data is determined to have exceeded the threshold as a result of threshold judgment.
6	If the number of data items to be analyzed is less than the recommended number of data items to be analyzed (120), the estimate data is determined to have exceeded the threshold as a result of threshold judgment.
7	If the number of data items to be analyzed is less than the recommended number of data items to be analyzed (120), the data is determined to have not

exceeded the threshold as a result of threshold judgment.

Notes

This command can be used only when the license for the system monitor resource (System Resource Agent) is registered. (If the license is registered, you do not need to configure system monitor resources for the cluster configuration.)

The maximum number of input data items of the resource data file specified with the -i option is 500. A certain number of input data items are required to estimate the amount of resource usage. However, if the number of input data items is large, it takes a considerable amount of time to perform the analysis. So, it is recommended that the number of input data items be restricted to about 120. Moreover, the maximum number of output data items that can be specified in option -p is 500.

If the time data for the input file is not arranged in ascending order, the estimate will not be appropriate. In the input file, therefore, set the time data arranged in ascending order.

Input file

The input file format is explained below. You need to have an input file, written in the following format, for the resource usage amount for which you want to estimate a result.

The input file format is CSV. One piece of data is coded in the form of *date and time, numeric value*.

Moreover, the data and time format is YYYY/MM/DD hh:mm:ss.

File example

```
2012/06/14 10:00:00,10.0
2012/06/14 10:01:00,10.5
2012/06/14 10:02:00,11.0
```

Examples

The estimation of the future value is explained using a simple example.

When an error is detected in the input data:

If the latest value of the input data exceeds the threshold, an error is assumed and a return value of 2 is returned. If the number of input data items is less than the recommended value (=120), a return value of 5 is returned.

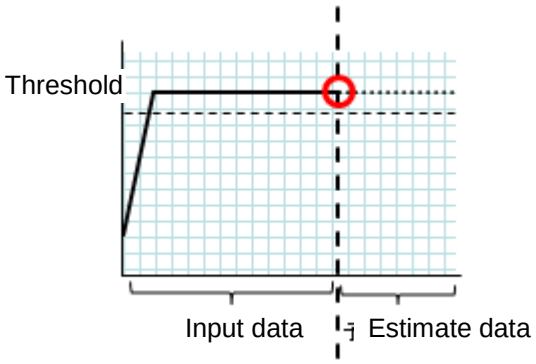


Figure: Error detection in the input data

When an error is detected in the estimate data:

If the estimate data exceeds the threshold, an error is assumed and a return value of 3 is returned. If the number of input data items is less than the recommended value (=120), a return value of 6 is returned.

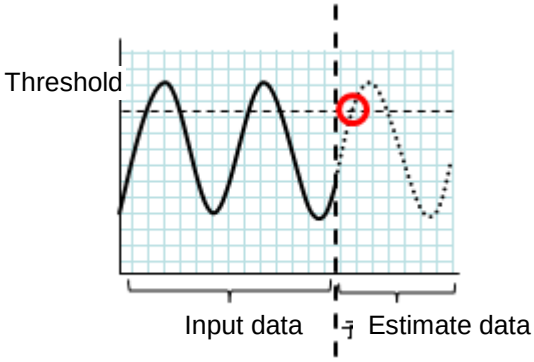


Figure: Error detection in the estimate data

When no threshold error is detected:

If neither the input data nor the estimate data exceeds the threshold, a return value of 4 is returned. If the number of input data items is less than the recommended value (=120), a return value of 7 is returned.

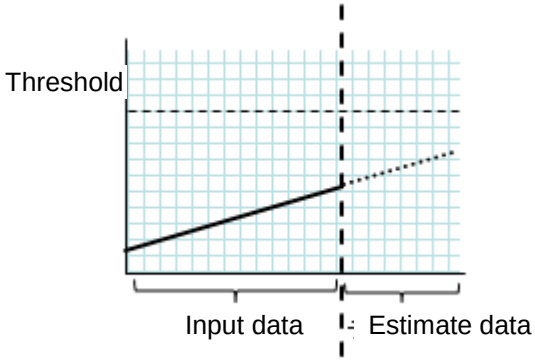


Figure: When no threshold error is detected

When the -l option is used:

If the -l option is used, an error is assumed when the data is less than the threshold.

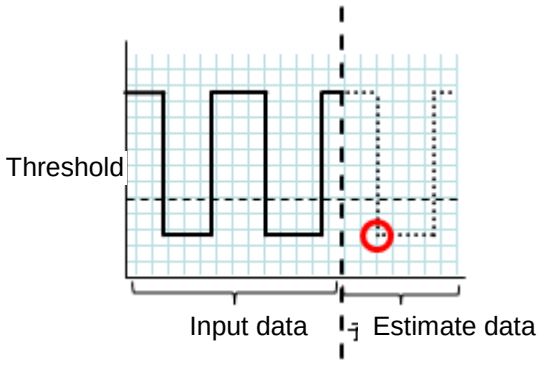


Figure: Use of the -l option

Examples

If you use a file written in the specified format and run the clpprer command, you can output the estimate result to a file and check it.

```
nput file test.csv
 2012/06/14 10:00:00,10.0
 2012/06/14 10:01:00,10.5
 2012/06/14 10:02:00,11.0
```

```
# clpprer -i test.csv -o result.csv
```

Output result result.csv

```
 2012/06/14 10:03:00,11.5
 2012/06/14 10:04:00,12.0
 2012/06/14 10:05:00,12.5
 2012/06/14 10:06:00,13.0
 2012/06/14 10:07:00,13.5
     :
```

If you set a threshold for option, you can check the result of threshold judgment for estimate data at the command prompt.

```
# clpprer -i test.csv -o result.csv -t 12.5
```

Execution result

```
Detect over threshold. datetime = 2012/06/14
10:06:00, data = 13.00, threshold = 12.5
```

Error Messages

Message	Causes/Solution
Normal state.	As a result of threshold judgment, no data exceeding the threshold is detected.
Detect over threshold. datetime = %s, data = %s, threshold = %s	As a result of threshold judgment, data exceeding the threshold is detected.
Detect under threshold. datetime = %s, data = %s, threshold = %s	As a result of threshold judgment with the `-l` option, data less than the threshold is detected.
License is nothing.	The license for the valid System Resource Agent is not registered. Check to see the license.
Inputfile is none.	The specified input data file does not exist.
Inputfile length error.	The path for the specified input data file is too long. Specify no more than 1023 bytes.
Output directory does not exist.	The directory specified with the output file does not exist. Check whether the specified directory exists.
Outputfile length error.	The path for the specified output file is too long. Specify no more than 1023 bytes.
Invalid number of -p.	The value specified in the `-p` option is invalid.
Invalid number of -t.	The value specified in the `-t` option is invalid.
Not analyze under threshold(not set -t) .	The `-t` option is not specified. When using the -I option, also specify the `-t` option.
File open error [%s]. errno = %s	The file failed to open. The amount of memory or OS resources may be insufficient. Check for any insufficiency.
Inputfile is invalid. cols = %s	The number of input data items is not correct. Set the number of input data items to 2 or more.
Inputfile is invalid. rows = %s	The input data format is incorrect. One line needs to be divided into two rows.
Invalid date format. [expected YYYY/MM/DD HH:MM:SS]	The date of the input data is not of the correct format. Check to see the data.
Invalid date format. Not sorted in ascending order.	Input data is not arranged in ascending order of date and time. Check the data.
File read error.	An invalid value is set in the input data. Check the data.
Too large number of data [%s]. Max number of data is %s.	The number of input data items exceeds the maximum value (500). Reduce the number of data items.
Input number of data is smaller than recommendable number.	The number of input data items is less than the recommended number of data items to be analyzed (120). * Data is analyzed even if the recommended number of data items to be analyzed is small.
Internal error.	An internal error has occurred.

Checking the process health (clphealthchk command)

clphealthchk Checks the process health.

Command line.

```
clphealthchk [ -t pm | -t rc | -t rm | -t nm | -h]
```

Note: This command must be run on the server whose process health is to be checked because this command checks the process health of a single server.

Description This command checks the process health of a single server.

Option	None	Checks the health of all of pm, rc, rm, and nm.
	-t pm	Checks the health of pm.
	-t rc	Checks the health of rc.
	-t rm	Checks the health of rm.
	-t nm	Checks the health of nm.
	-h	Displays the usage.

Return Value	0	Normal termination.
	1	Privilege for execution is invalid.
	2	Duplicated activation.
	3	Initialization error.
	4	The option is invalid.
	10	The process stall monitoring function has not been enabled.
	11	The cluster is not activated (waiting for the cluster to start or the cluster has been stopped.)
	12	The cluster daemon is suspended.
	100	There is a process whose health information has not been updated within a certain period. If the -t option is specified, the health information of the specified process is not updated within a certain period.
	255	Other internal error.

Examples

Example 1: When the processes are healthy

```
# clphealthchk
pm OK
rc OK
rm OK
nm OK
```

Example 2: When clprc is stalled

```
# clphealthchk
pm OK
rc NG
rm OK
nm OK

# clphealthchk -t rc
rc NG
```

Example 3: When the cluster has been stopped

```
# clphealthchk
The cluster has been stopped
```

Remarks If the cluster has been stopped or suspended, the process is also stopped.

Notes Run this command as a user with Administrator privileges.

Error Messages

Message	Cause/Solution
Log in as Administrator.	Log in as a user with Administrator privileges.
Initialization error. Check if memory or OS resources are sufficient.	Check to see if the memory or OS resource is sufficient.
Invalid option.	Specify a valid option.
The function of process stall monitor is disabled.	The process stall monitoring function has not been enabled.
The cluster has been stopped.	The cluster has been stopped.
The cluster has been suspended.	The cluster has been suspended.
This command is already run.	The command has already been started.
Internal error. Check if memory or OS resources are sufficient.	Check to see if the memory or OS resource is sufficient.

Setting an action for OS shutdown initiated by other than cluster service (clpstdncnf command)

clpstdncnf — Sets an action for OS shutdown initiated by other than cluster service..

Command line.

```
clpstdncnf -e [time]
clpstdncnf -d
clpstdncnf -v
```

Description This command sets an action for OS shutdown initiated by other than cluster service.

Option

`-e [time]`	Waits for cluster services to be stopped when OS shutdown is initiated by other than cluster service. You can specify a timeout value in minutes (A value between 1 to 1440 can be specified). It is necessary to specify the timeout value at first execution. From the second execution on, if you don't specify the timeout value, the current value is used.
`-d`	Does not wait for cluster services to be stopped when OS shutdown is initiated by other than cluster service.
`-v`	shows the current setting.

Return Value

0	Success
Other than 0	Failure

Notes Run this command as a user with Administrator privileges.

In case of a virtual environment, such as cloud environment, when OS shutdown is initiated from the virtual infrastructure, power-off may be executed depending on the virtual infrastructure.

Example of command execution **Example 1:** Waits for cluster service to be stopped (timeout = 30 minutes)

```
# clpstdncnf -e 30
Command succeeded.
# clpstdncnf -v
Mode   : wait
Timeout: 30 min
```

Example 2: Does not wait for cluster service to be stopped

```
# clpstdncnf -d
Command succeeded.
# clpstdncnf -v
Mode   : no wait
Timeout: 30 min
```

Section III Release Notes

This section describes the restrictions on EXPRESSCLUSTER X SingleServerSafe, as well as the known problems and how to prevent them.

- Chapter 3 Notes and restrictions
- Chapter 4 Error messages

Chapter 3 Notes and restrictions

This chapter provides cautions on using EXPRESSCLUSTER X SingleServerSafe, as well as the known problems and how to prevent them.

This chapter covers:

- After the system is put into operation ····· 126
- WebManager ····· 129

After the system is put into operation

This section provides notes on situations you might encounter after starting to operate EXPRESSCLUSTER.

Restrictions during recovery operation

Do not perform the following operations by using the WebManager or command line while recovery processing is changing (reactivation → last operation), if a group resource (an application resource, service resource, or other resource) is specified as a recovery target and when a monitor resource detects an error.

- Stopping/suspending the cluster
- Starting or stopping a group

If you perform the above-mentioned operations while recovery caused by detection of an error by a monitor resource is in progress, other group resources of the group with an error may not stop.

However, you can perform them when the final action is completed.

Executable format files and script files not described in the command reference

The installation directory contains executable files and script files that are not described in Chapter 3, "EXPRESSCLUSTER command reference" in the Reference Guide. Do not execute these files by using any program other than EXPRESSCLUSTER X SingleServerSafe.

Any problems caused by not using EXPRESSCLUSTER will not be supported.

EXPRESSCLUSTER Disk Agent service

The EXPRESSCLUSTER Disk Agent service is not used for EXPRESSCLUSTER X SingleServerSafe. Do not start this service.

Issues with User Account Control (UAC) in Windows Server 2012 or later environment

In Windows Server 2012 or later or later environment, User Account Control (UAC) is enabled by default. When UAC is enabled, there are following issues.

Monitor Resource

Following resource has issues with UAC.

Oracle Monitor Resource

For the Oracle monitor resource, if you select **OS Authentication** for **Authentication Method** and then set any user other than those in the Administrators group as the monitor user, the Oracle monitoring processing will fail.

When you set **OS Authentication** in **Authentication Method**, the user to be set in **Monitor User** must belong to the Administrators group.

Screen display of application resource / script resource

Because the processes started from the application resource or script resource of EXPRESSCLUSTER are executed in session 0, when you start a process having GUI, the **Interactive services dialog detection** pop-up menu is displayed. Unless you select **Show me the message**, GUI is not displayed.

Environment in which the network interface card (NIC) is duplicated

In an environment in which the NIC is duplicated, NIC initialization at OS startup may take some time. If the cluster starts before the NIC is initialized, the starting of the kernel mode LAN heartbeat resource (lankhb) may fail. In such cases, the kernel mode LAN heartbeat resource cannot be restored to its normal status even if NIC initialization is completed. To restore the kernel mode LAN heartbeat resource, you must first suspend the cluster and then resume it.

In that environment, we recommend to delay startup of the cluster by following setting or command.

Network Initialization Complete Wait Time Setting
: You can configure this setting in [Timeout] tab of [Cluster Properties]. This setting will be enabled on all cluster servers. If NIC initialization is completed within timeout, the cluster service starts up.

ARMDELAY command (armdelay.exe)
: You must execute this command on each cluster server. The cluster service starts up after the time that you set with the command from OS startup.

For more details of above setting and command, please refer to the *Reference Guide*.

EXPRESSCLUSTER service login account

The EXPRESSCLUSTER service login account is set in **Local System Account**. If this account setting is changed, EXPRESSCLUSTER might not properly operate as a cluster.

Monitoring the EXPRESSCLUSTER resident process

The EXPRESSCLUSTER resident process can be monitored by using software monitoring processes. However, recovery actions such as restarting a process when the process abnormally terminated must not be executed.

JVM monitor resources

When restarting the monitoring-target Java VM, you must first suspend JVM monitor resources or stop the cluster.

When changing the JVM monitor resource settings, you must suspend and resume the cluster.

JVM monitor resources do not support a delay warning for monitor resources.

System monitor resources

To change a setting, the cluster must be suspended.

System monitor resources do not support a delay warning for monitor resources.

If the date or time setting on the OS is changed while a system monitor resource is operating, that system monitor resource may fail to operate normally.
If you have changed the date or time setting on the OS, suspend and then resume the cluster.

Up to 26 disks that can be monitored by the disk resource monitor function at the same time.

Display of the Interactive services dialog detection pop-up menu

To allow the **Interactive services dialog detection** pop-up menu to be displayed by setting the **Allow to Interact with Desktop** of the application resource or script resource the "Interactive Service Detection" service must have been started.

The startup of the "Interactive Service Detection" service with its default settings is invalid. Follow the procedure below to validate the service.

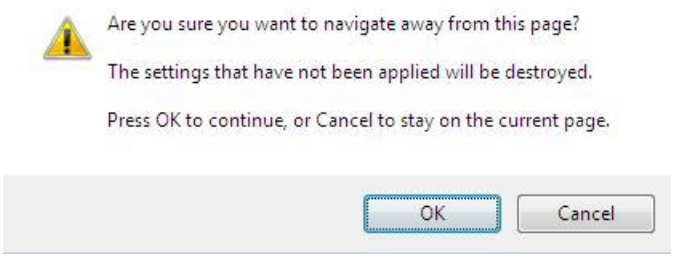
Reference site :

http://msdn.microsoft.com/en-us/library/windows/desktop/ms683502(v=vs.85).aspx

→ Using an Interactive Service

WebManager

- Information displayed by the WebManager does not always reflect the latest status. To acquire the latest information, click the **Reload** icon on the toolbar or **Reload** in the **Tool** menu.
- If a server fails while the WebManager is acquiring information, the information acquisition fails, which may result in the failure to show some objects.
  Wait for the next automatic update, or click the **Reload** icon on the toolbar or **Reload** in the **Tool** menu to reacquire the latest information.
- Logs cannot be collected from multiple WebManagers simultaneously.
- If you work on the WebManager when no connectivity is established, it may take a while to regain control.
- If you move the cursor out of the browser while the mouse pointer is a wristwatch or hourglass, the pointer might change back to an arrow.
- If a proxy server is used, configure the proxy server so that the port number of the WebManager can be relayed.
- When a reverse proxy server is used, the WebManager does not run normally.
- When you update EXPRESSCLUSTER X SingleServerSafe, close the browser. Next, clear the Java cache, and then restart the browser.
- If the client PC to connect to WebManager uses Java™ Runtime Environment Version 8.0 Update 162 or later, and cannot be connected to the Internet, it may take time to start WebManager. This can be avoided by setting Execute Certificate Revocation Check to Not Check on Detailed Settings on the Java Control Panel. For details of how to set it, check the Java website.
- Closing the Web browser (by clicking **Exit** from the menu), the dialog box to confirm to save is displayed.



When you continue to edit, click the **Cancel** button.

Note:

This dialog box is not displayed if JavaScript is disabled.

Chapter 4 Error messages

This chapter provides information on error messages you might encounter when operating EXPRESSCLUSTER X SingleServerSafe.

This chapter covers:

- Messages reported by event log and alert····· 132

Messages reported by event log and alert

The messages that are output to event logs and alerts are the same as those of EXPRESSCLUSTER X. For details of these messages, see the Reference Guide for EXPRESSCLUSTER X.

The messages specific to EXPRESSCLUSTER X SingleServerSafe are as follows.

Module Type	Event Type	Event ID	Message	Explanation	Solution	Alert	Eventlog	Userlog
sss	Error	20004	Failed to get the system drive letter.	The system drive letter could not be acquired.	The system may not be able to operate properly.			√
sss	Error	20005	Failed to get the server name.	The server name could not be acquired.	The system may not be able to operate properly.			√
sss	Info	20006	The server name has been updated.	The server name has been updated.	–	√		√
sss	Error	20007	Failed to update the configuration file.	The configuration file could not be updated.	Check the configuration data.	√		√
sss	Info	20008	The configuration file has been updated.	The configuration file has been updated.	–			√
sss	Error	20009	The content of the configuration file is invalid.	The content of the configuration file is invalid.	Check the configuration data.			√
sss	Error	20010	Failed to start %1 service.	The %1 service could not be started.	The system may not be able to operate properly.	√		√
sss	Info	20012	%1 service has been started.	The %1 service has been started.	–			√

Module Type	Event Type	Event ID	Message	Explanation	Solution	Alert	Eventlog	Userlog
sss	Info	20013	%1 service has been stopped.	The %1 service has been stopped.	–			√
sss	Info	20014	The redundant module of the LAN board has been started.	The redundant module of the LAN board has been started.	Memory or OS resources may not be sufficient. Check them.			√
sss	Error	20015	Failed to start the redundant module of the LAN board.	The redundant module of the LAN board could not be started.	–	√		√
ncctl	Error	20101	An error was detected in LAN board %1.	An error was detected in LAN board %1.	Check whether the settings of the standby LAN board are correct.	√		√
ncctl	caution	20102	Changing LAN board %1 to LAN board %2.	LAN board %1 will now be switched to LAN board %2.	–	√		√
ncctl	Error	20103	The operation of LAN board %1 failed.	The operation of LAN board %1 failed.	–	√		√

Appendix

- Appendix A Index

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