

ExpressCluster[®] X Alert Service

1.0 *for Windows*

Administrator's Guide

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Second Edition



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First	09/08/2006	New manual
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Preface

Who Should Use This Guide

This guide is intended for system engineers who are installing ExpressCluster X Alert Service on a cluster system employing ExpressCluster and system administrators who are responsible for operation and maintenance of cluster systems. This guide provides detailed information on steps required in introducing a cluster system with ExpressCluster X Alert Service (hereafter the Alert Service).

How This Guide is Organized

Chapter 1	Alert Service overview An introduction to the Alert Service and how to register the product.
Chapter 2	Configuring report settings Provides detailed information on configuring the report settings for the Alert Service.
Chapter 3	Details on report email Provides information on how alerts are reported and how events are logged.
Chapter 4	Report icon functions Provides information on functions other than the mail reporting function of the Alert Service.
Appendix A	Glossary
Appendix B	Index

ExpressCluster X Documentation Set

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

Getting Started Guide

This guide is intended for all users. The guide covers topics such as product overview, system requirements, and known problems.

Installation and Configuration Guide

This guide is intended for system engineers and administrators who want to build, operate, and maintain a cluster system. Instructions for designing, installing, and configuring a cluster system with ExpressCluster are covered in this guide.

Reference Guide

This guide is intended for system administrators. The guide covers topics such as how to operate ExpressCluster, function of each module, maintenance-related information, and troubleshooting. The guide is supplement to the *Installation and Configuration Guide*.

Alert Service Administrator's Guide

This guide is intended for system administrators who install ExpressCluster X Alert Service, operate and maintain a cluster system. The guide provides instructions for installing a cluster system that uses ExpressCluster X Alert Service.

Conventions

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.	<code>clpstat -s[-h <i>host_name</i>]</code>
#	Prompt to indicate that a Linux user has logged on as root user.	<code>clpcl -s -a</code>
Monospace (courier)	Indicates path names, commands, system output (message, prompt, etc), directory, file names, functions and parameters.	<code>c:\Program files\CLUSTERPRO</code>
Monospace bold (courier)	Indicates the value that a user actually enters from a command line.	Enter the following: <code>clpcl -s -a</code>
<i>Monospace italic</i> (courier)	Indicates that users should replace italicized part with values that they are actually working with.	<code>clpstat -s [-h <i>host_name</i>]</code>

Contacting NEC

For the latest product information, visit our website below:

<http://www.ace.comp.nec.co.jp/CLUSTERPRO/global-link.html>

Chapter 1 Alert Service overview

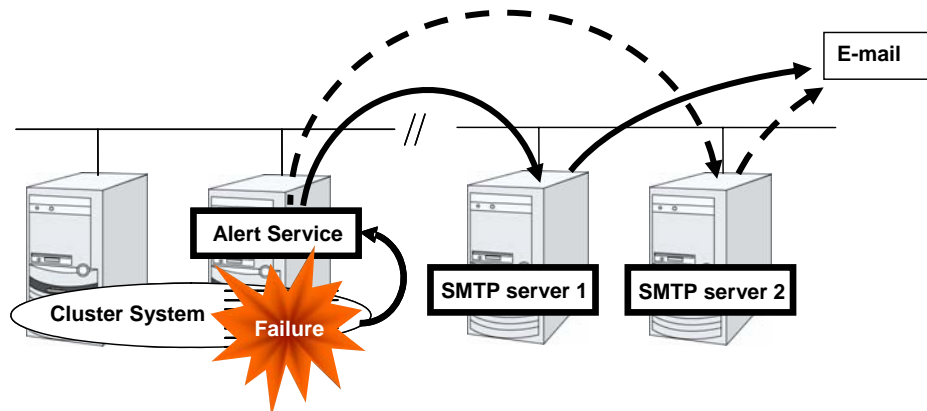
This chapter provides an overview of ExpressCluster X Alert Service.

This chapter covers:

- What is ExpressCluster X Alert Service?2
- Preparing to use the Alert Service3
- Registering the Alert Service license4
- Displaying the setup window.....5
- Verifying the settings5

What is ExpressCluster X Alert Service?

ExpressCluster X Alert Service (hereafter the Alert Service) is an optional product that provides functions to report failures found in ExpressCluster-installed cluster systems by sending e-mail via SMTP servers.



The Alert Service performs e-mail reports when:

- (1) a failover occurs
- (2) a server goes down
- (3) an error occurs on the group resource

The Alert Service allows you to:

- ◆ Receive information about failures while not physically located in the same place as the management PC. This is achieved via e-mail reporting function.
- ◆ Receive e-mail messages on your mobile phone.
- ◆ Specify two SMTP servers to send e-mail even if one server is down.

The task of the Alert Service is to send the first report of failure but not to examine or find the cause of failure. When a failure occurs, instead of using the Alert Service, try other methods, such as viewing ExpressCluster logs or Windows logs, to find out the cause of the error.

Preparing to use the Alert Service

Alert Service system requirements

Hardware	IA-32 server and x86-64 server
OS	The same as the ExpressCluster Server
ExpressCluster	ExpressCluster X 1.0 or later
Memory	1.0 MB or more

Note:

In addition to the requirements mentioned above, your environment should allow e-mail communication.

Steps to take before using the Alert Service

Software modules for the Alert Service are part of ExpressCluster. There is no separate install required for the Alert Service. Follow the steps below to start using the Alert Service:

Step 1 Check for the latest updates

Visit ExpressCluster webpage <http://www.ace.comp.nec.co.jp/CLUSTERPRO/global-link.html>, and check ExpressCluster updates. If there is any, obtain the latest one and apply it by following the instruction that comes with the update module.

Step 2 Register the Alert Service license

Follow the instructions listed below for registering the Alert Service license after installing the ExpressCluster Server. The instruction for registering the license is provided in the following topic, “Registering the Alert Service license” on page 4.

Step 3 Display the setup window

Click **Alert Service** on the **Start** menu to display the report setup window. For details on the report settings, see “Displaying the setup window” on page 5.

Step 4 Configure the settings

Configure the report settings. For details, see Chapter 2, “Configuring report settings.”

Step 5 Check the settings

After completing the settings, check if the setting confirmation mails are sent to the destination mail addresses.

* **Report Setup Window** is displayed automatically if you reboot the server after Step 2.

Registering the Alert Service license

After installing the ExpressCluster Server and checking its latest update, register the software license for the Alert Service. There are two ways to register the license; license file or license key.

Note:

Each server in a cluster must have a different Alert Service license key. If you register the same license key on multiple servers, a problem may occur.

Registering the license by specifying the license file

Registering the license with a single server in the cluster covers licensing for the entire cluster.

1. On the **Start** menu, click **Programs** and click **License Manager** of the ExpressCluster Server.
2. In the **License Manager** dialog box, click **Register**.
3. In the window to select a license method is displayed, select **Register with License File**.
4. In the **License File Specification** dialog box, select the license file to be registered and then click **Open**.
5. The message confirming registration of the license is displayed. Click **OK**.
6. Click **Finish** to close the license manager.

Registering the license by entering a license key

The following describes how to register the license by specifying the license, when you have the product version license.

Before you register the license, make sure that:

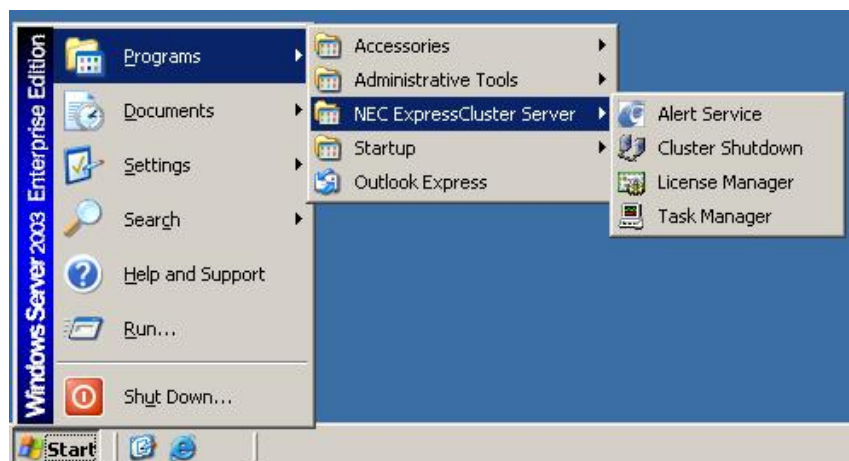
- ◆ The ExpressCluster Server has been installed and the license for the ExpressCluster Server has been registered.
- ◆ You have the license sheet you officially obtained from the sales agent. The values on license sheet need to be registered.

This completes the steps for license registration. Information on how to use the Alert Service is described in the following.

1. On the **Start** menu, click **Programs** and click **License Manager** of the **ExpressCluster Server**.
2. In the **License Manager** dialog box, click **Register**.
3. In the window to select a license method, select **Register with License Information**.
4. In the **Product selection** dialog box, select the information on the license to be registered, the product category and the product information, and click **Next**.
5. In the **License Key Entry** dialog box, enter the serial number and license key of the license sheet. Click **Next**.
6. Confirm what you have entered on the **License Registration Confirmation** dialog box. Click **Next**.
7. Make sure that the pop-up message, "The license was registered." is displayed. If the license registration fails, start again from the step 2.

Displaying the setup window

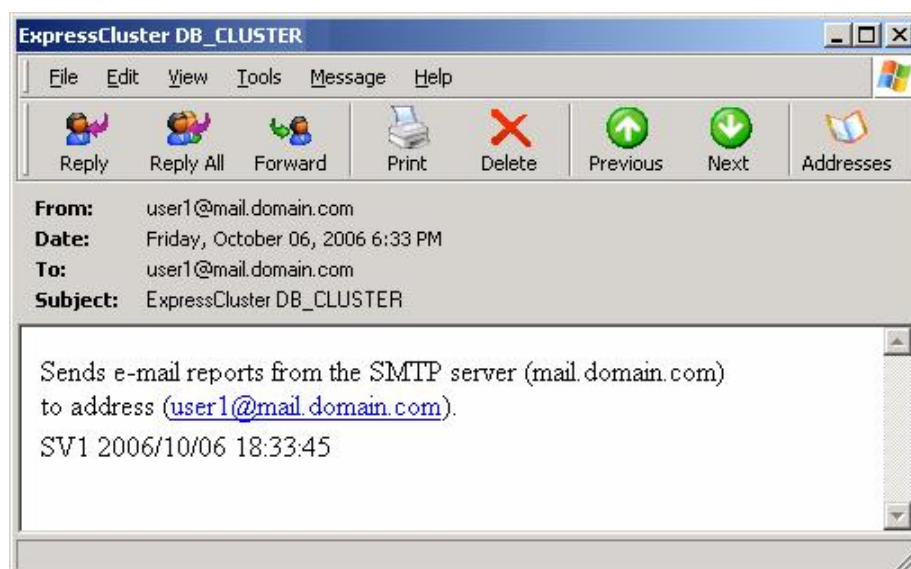
To display the **Report Setup Window**, click **Programs** on the **Start** menu, **NEC ExpressCluster Server** and then **Alert Service**.



Configure the settings for e-mail report on this window. For details on the report settings, see Chapter 2, “Configuring report settings.”

Verifying the settings

After you completed the settings described in Chapter 2, “Configuring report settings,” check if an e-mail with the information shown below can be received on the addresses you specified.



Chapter 2 Configuring report settings

This chapter provides information on settings of ExpressCluster X Alert Service.

This chapter covers:

- Report Setup Window 8
- Report Setup Window (Advanced) 11

Report Setup Window

The following describes details of each setting on the **Report Setup Window**.

Note:

- ◆ It is necessary to set values to the options described as (setting required).
When the setting values of options with (*) are changed, an e-mail notifying you of the setting change is sent. For information on sending e-mail by changing the settings, see “Other mail reports” on page 19.
- ◆ E-mails are not sent if the security and report settings are not configured properly. Errors in sending e-mail are recorded in the event log. For details on how to check event logs, see “Event logs of the Alert Service” on page 22.

The screenshot shows the 'Report Setup Window' dialog box. It has a title bar with a close button. The main area is divided into sections. The first section, 'Import/Export Setting Information', contains two buttons: 'Import Setting Information(I)' and 'Export Setting Information(E)'. The second section, 'E-mail Report Settings', contains three text input fields: 'SMTP Server(S)' with the value 'mail.domain.com', 'Send to:(A)' with a list containing 'user1@maildomain.com' and 'user2@maildomain.com', and 'Title(T)' with the value 'ExpressCluster'. Below these fields is an 'Advanced(D)' button. At the bottom of the dialog, there is a checked checkbox labeled 'Show the icon in the notification area(M)' and two buttons: 'OK' and 'Cancel'.

SMTP Server (setting required) (*)

Enter the name of the SMTP server that sends report e-mail by FQDN name or IP address. Maximum of 63 bytes can be specified.

Example: mail.domain.com

Send to: (setting required) (*)

Enter the e-mail addresses to which you want to send report e-mail. Specify one address for each line. Maximum of 255 bytes, including line feed codes in the field, can be specified.

Example: user1@mail.domain.com
user2@mail.domain.com

Title (setting required)

Enter the title of the report e-mail. Including a cluster name in the title is recommended to be able to quickly identify which cluster the e-mail is related to.

Maximum of 127 bytes can be specified.

Show the icon in the notification area

Select the **Show the icon in the notification area** check box if you want to display the icon in the notification area.

For details on the icon, see Chapter 4, “Report icon functions.”

Export Settings

The report settings, including advanced settings can be saved to a file.

After configuring the settings on the **Report Setup Window** dialog box, click **Export Setting Information**. The **Save As** dialog box is displayed.

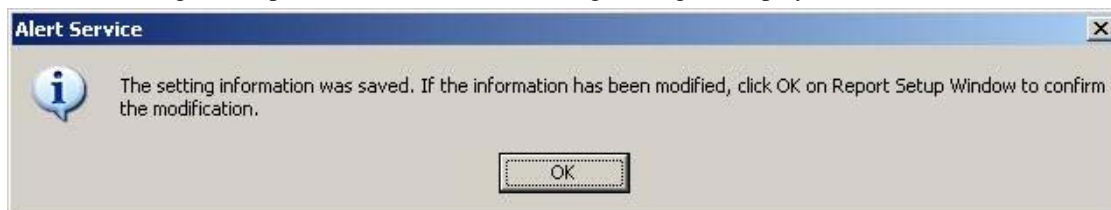


Specify the file to save the settings, and then click **Save**.

If there is any error on the setting values or any setting-required fields are blank, an error message is displayed when you click **Export Setting Information**. Modify the settings according to the message, and then save the settings again.

Note:

When the settings are exported to the file, the following message is displayed.



The settings to be saved are those displayed on the **Report Setup Window** dialog box. If you save the settings while making changes, the settings may differ from those with which the system is working.

Therefore, when you save the settings to the file, it is recommended to complete configuring the settings by clicking **OK** on the **Report Setup Window** dialog box first, check if the e-mail indicating the setting completion is sent, and then display the **Report Setup Window** dialog box again to save the settings.

Import Settings

To display the settings saved to the file, click **Import Setting Information**. The dialog box to select the file is displayed.



Select the file the settings were saved, then click **Open**. The values saved to the file are set to the report settings fields.

To change the settings, click **OK** on the **Report Setup Window** dialog box. To only check the settings, click **Cancel**. The settings are not changed.

Note:

It may take about 1 minute to import settings from the file or export them to the file.

Report Setup Window (Advanced)

Click Advanced on the Report Setup Window dialog box. The Report Setup Window (Advanced) dialog box is displayed.

From: (*)

Enter the sender address.

- ◆ When **Same as [Send to] Address** is selected

The address entered in **Send to:** on the **Report Setup Window** dialog box is set as a sender address. When multiple sender addresses are specified, the one on the top is used.

- ◆ When **Administrator's E-mail Address** is selected

Enter a sender address in the mail address field. Only one address can be entered.

Enter any existing e-mail address since this address sends error e-mail from SMTP servers. Maximum of 63 bytes can be specified.

By default, **Same as [Send to] Address** is selected. However, specify the administrator's address if possible since some SMTP servers check sender addresses.

Character Code (*)

Enter the character code of e-mail. By default, "iso-8859-1" is specified. Normally, do not change this value.

Encode the Title (*)

Specify if a character string entered in **Title** in the **Report Setup Window** dialog box is encoded or not when sending e-mail. By default, **No** is specified.

SMTP Port Number (setting required) (*)

Enter the port number of the SMTP server of the destination e-mail address. Normally, do not change the default value (25).

Range: 1 - 65535

Response Wait Time (setting required)

Enter the response wait time with the SMTP server of the destination e-mail address.

When a timeout occurs, the following information is displayed on the event viewer.

ID : 6

Description : A report cannot be sent because of the communication error (select [*error code*]).

Solution: specify a larger value again.

Range: 1 to 999

Default value: 60 seconds

SMTP Authentication (*)

Select this option when the SMTP authentication is set to the server specified in **SMTP Server** on the **Report Setup Window** dialog box. Enter **User Name** and **Password**.

The Alert Service supports LOGIN and CRAM-MD5 for authentication methods. When the SMTP server supports both LOGIN and CRAM-MD5, authentication is performed using CRAM-MD5.

By default, SMTP authentication is not selected (authentication is not performed).

User Name (*)

This option is valid only when **SMTP Authentication** is selected. Enter **User Name** used for logging into the SMTP server. **User Name** is case-sensitive. Maximum of 63 bytes can be specified.

Password (*)

This option is valid only when **SMTP Authentication** is selected. Enter **Password** of the user logging into the SMTP server. **Password** is case-sensitive. Maximum of 63 bytes can be specified.

Alternative SMTP Server Name (*)

The Alert Service sends e-mail to the alternative SMTP server when it cannot connect to the SMTP server (for example, when the SMTP server is down). E-mail is not sent to the alternative SMTP server when the authentication fails or a protocol error occurs.

Specify the alternative SMTP server by FQDN name or IP address. Maximum of 63 bytes can be specified.

Note:

The alternative SMTP server does not perform the SMTP authentication. Specify the SMTP server that does not require the SMTP authentication.

Automatic Monitoring Recovery Time (setting required)

Enter the recovery time to automatically restart the monitoring after it is stopped.

Range: 1 to 99

Default value: 12 hours

For details on suspending and resuming the monitoring, see “Suspend/Resume Monitoring” on page 28.

Send E-mail Messages for:

Select the options in this field to send e-mail in the following cases:

confirmation when the e-mail settings are changed

The Alert Service sends a confirmation e-mail immediately after the values set in the fields described with (*) in “Report Setup Window” on page 8 and “Report Setup Window (Advanced)” on page 11 are changed.

Select this option to check if the settings are changed properly.

Note:

Select this option when making settings for the first time, to check if the report settings are configured properly before the operation of the Alert Service is started. Click **OK** after entering the report setting items. A confirmation e-mail is sent if the settings are correct.

notification when monitoring is stopped or resumed

The Alert Service sends an e-mail for information when the monitoring is suspended or resumed. For details on suspending and resuming the monitoring, see “Suspend/Resume Monitoring” on page 28.

notification when operation is started successfully

The Alert Service sends a confirmation e-mail when a failover group is activated successfully.

Notes

- ◆ If the report settings are not configured, **Report Setup Window** is displayed every time the server is started.
- ◆ Report e-mail messages are not sent when you cannot start the ExpressCluster Server.
- ◆ Report e-mail messages are not sent when all the ExpressCluster Servers go down at almost the same time.
- ◆ You cannot display **Report Setup Window** if the license is not registered.

Chapter 3 Details on report email

This chapter describes report e-mail, messages, and logs from the Alert Service.

This chapter covers:

• Report mail format	16
• Report mail	16
• Other mail reports	19
• Event logs of the Alert Service	22
• Log output for failures	24

Report mail format

In the report e-mail, the name of the server that sent the e-mail and the time when it was sent are displayed below the message body.

Title
Body Server name yyyy/mm/dd hh:mm:ss

Report mail

The Alert Service sends report e-mail when the following failures occur:

Failover

The following two types of e-mail messages are sent when the failover group fails over:

When a failover of the failover group is started

The e-mail below is sent from the server which the group is failed from to the destination server.



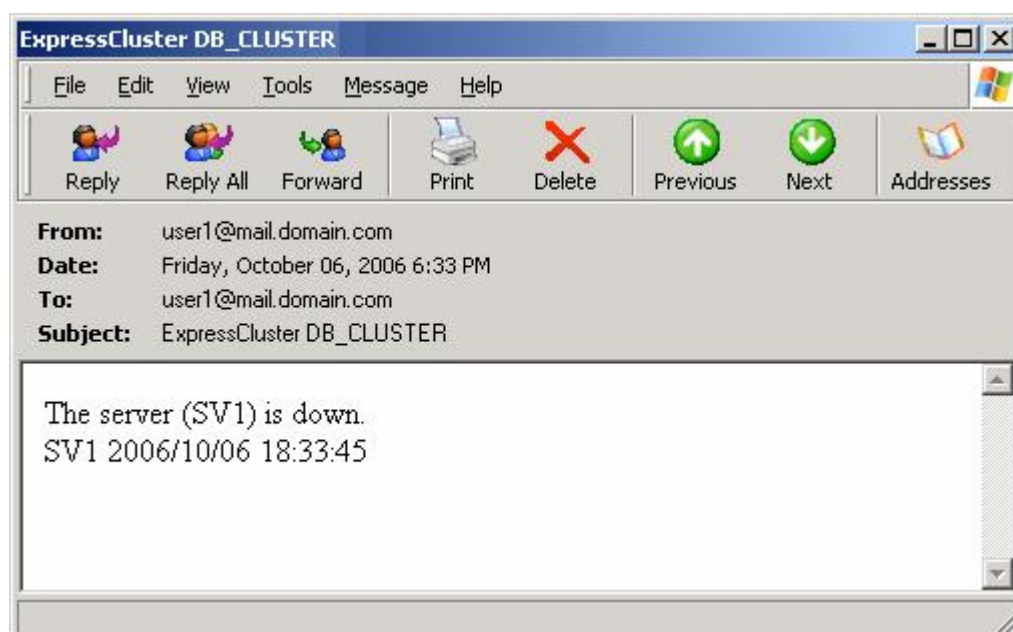
When the failover group is started successfully on the destination server

The e-mail below is sent from the destination server.

**Server failure**

The e-mail below is sent when any server in a cluster system went down.

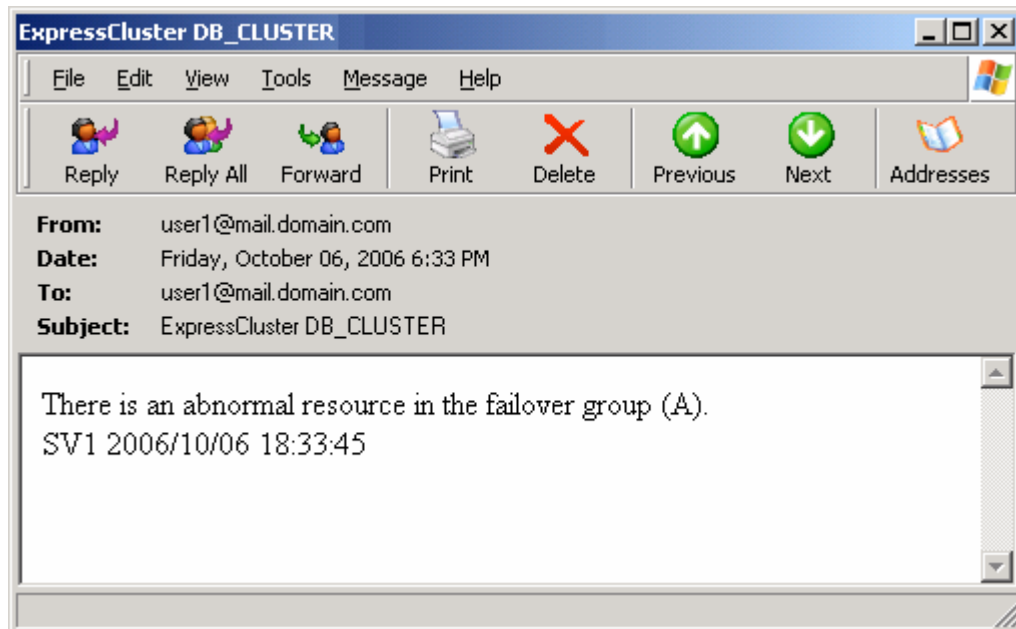
If more than one server has the licenses of Alert Service, e-mail messages are sent from multiple servers in the cluster that includes the server that went down.



When a server is disconnected, an e-mail is sent indicating that the server went down. The Alert Service cannot send this e-mail when the last server in the cluster is disconnected.

Resource failure

The e-mail below is sent from the server that started a group when activating a group resource failed at group startup.



Notes

- ◆ More than one report e-mail may be sent if the status of a cluster system changes by one failure.

Example:

A group failover was caused by the failed server, and then activating a group on the destination server failed because of a resource error.

In this case, the following e-mail messages are sent from the destination server of the group:

- The server (*server name*) is down.
- The failover group (*group name*) failed over from the server (*server name*) to the server (*server name*).
- There is an abnormal resource in the failover group (*failover group*).

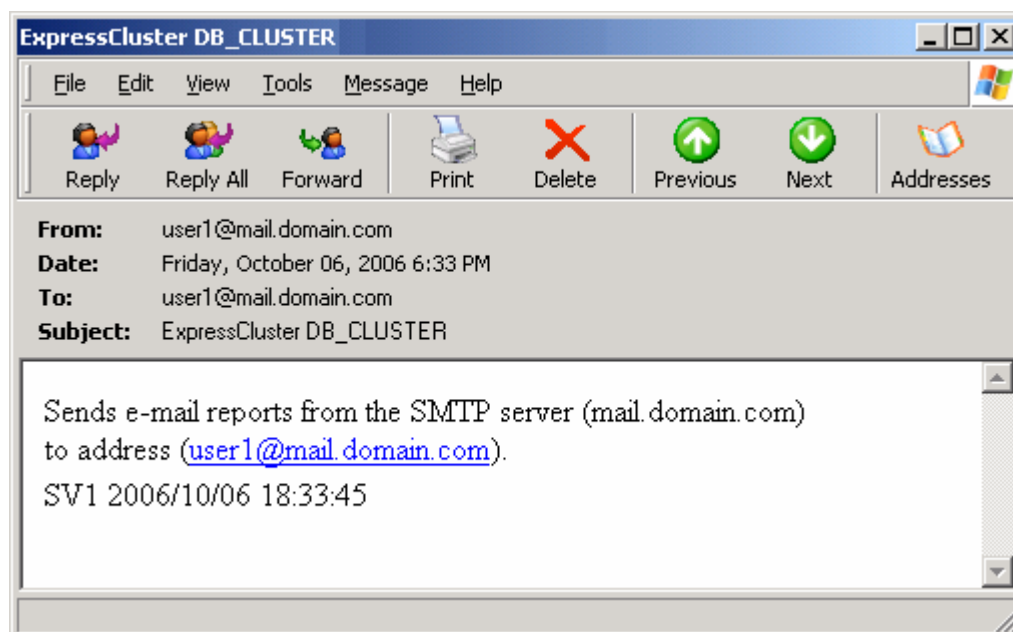
Other mail reports

The Alert Service sends report e-mail in situations described in the following section, in addition to when failures occur. In the **Report Setup Window (Advanced)** dialog box, specify the option if you want to send e-mail.

For details on the settings, see “Send E-mail Messages for:” on page 13.

When settings are changed

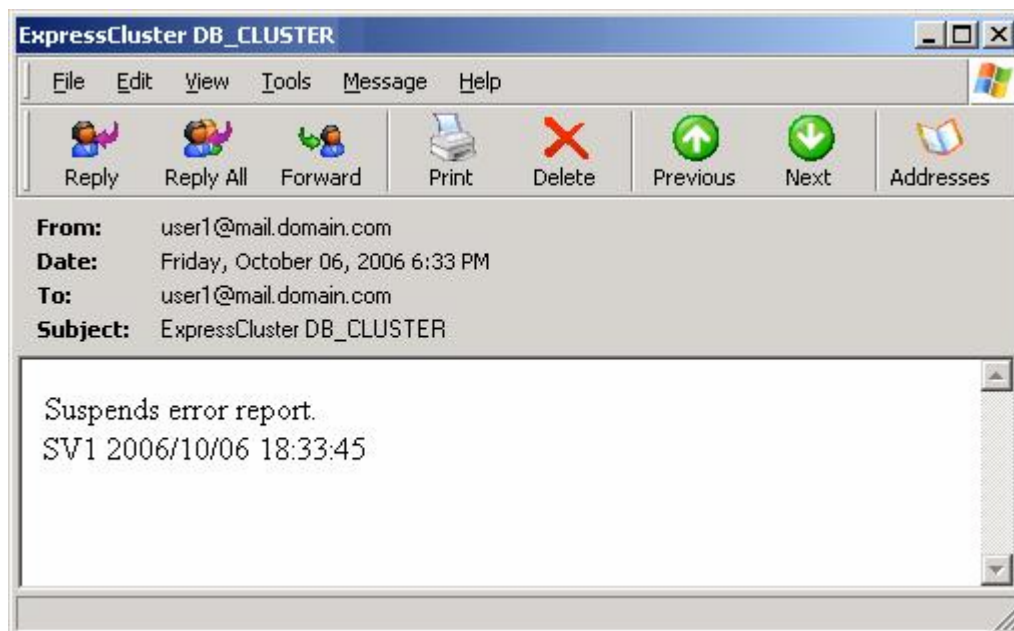
Report e-mail is sent when the report settings described with (*) on “Report Setup Window” on page 8 and “Report Setup Window (Advanced)” on page 11 are changed. You can check if the settings are changed properly by the e-mail.



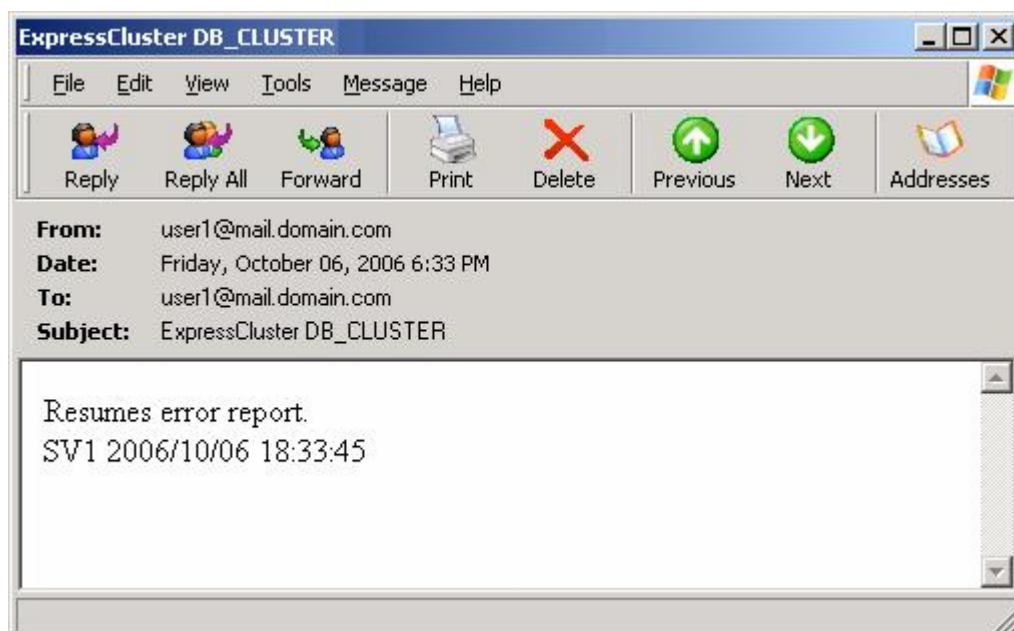
When the monitoring is suspended/resumed

Report e-mail indicating the monitoring is suspended or resumed are sent to the destination address.

When the monitoring is suspended

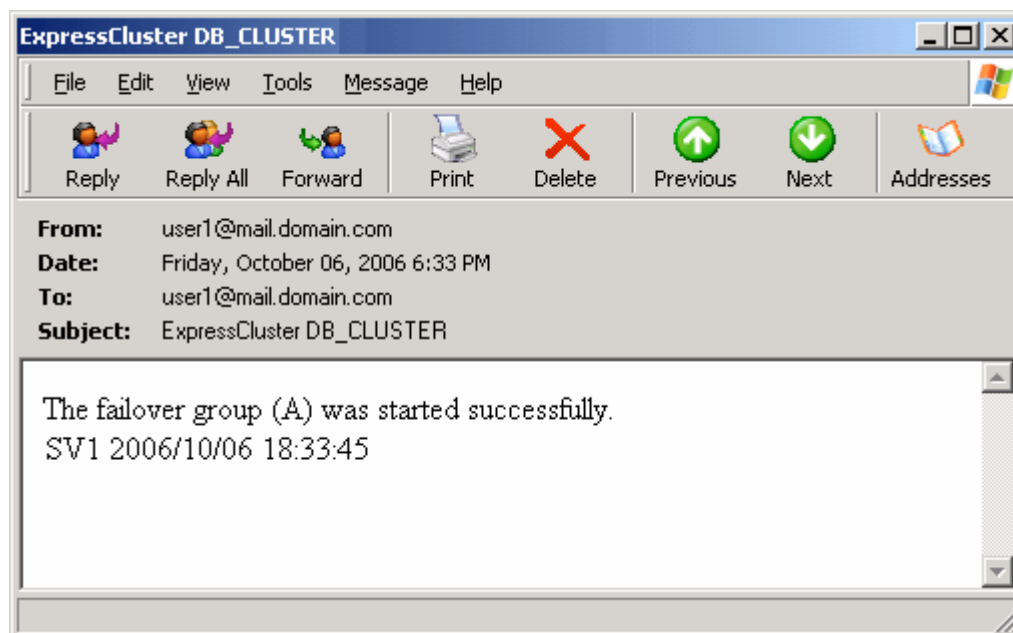


When the monitoring is resumed



When the failover group started successfully

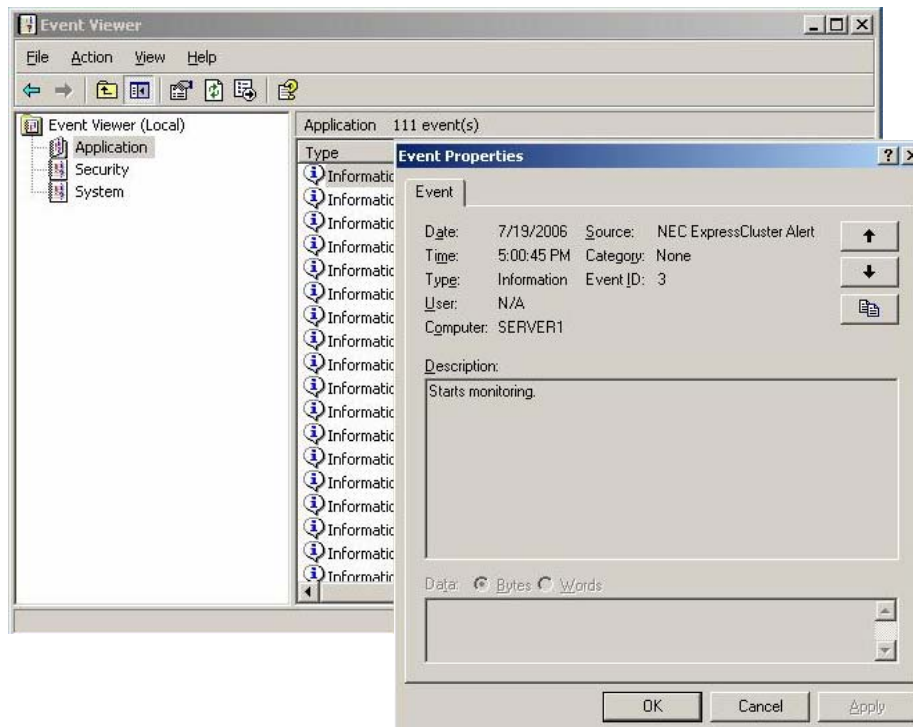
Report e-mail indicating that the failover group started successfully are sent.



Event logs of the Alert Service

Report operations are displayed on **Event Viewer**.

Report operation events are displayed as application events, and those source names as “ExpressCluster Alert.”



Messages of successful operations

ID	Message	Description	Solution
1 Info	The service is started and preparing for monitoring.	“ExpressCluster Alert” service has started up and has been preparing for monitoring.	-
3 Info	Starts monitoring.	The Alert Service has started monitoring.	This message is displayed when monitoring is started, or restarted by clicking Suspend/Resume monitoring .
2 Info	The service was terminated.	“ExpressCluster Alert” service has stopped.	This message is displayed when the service of the Alert Service is stopped. Normally, do not stop “ExpressCluster Alert” service manually.
4 Info	Suspends monitoring.	The Alert Service has suspended monitoring.	This message is displayed when monitoring is suspended by clicking Suspend/Resume monitoring .
5 Info	An e-mail report was sent. \\n Message [%s]	The report mail with the message %s was sent successfully.	-

Messages due to setting errors

ID	Message	Description	Solution
6 Error	An e-mail report could not be sent because the destination SMTP server name (%s) is incorrect. \n Message [%s]	Name resolution of the SMTP server name failed.	The specified name of the SMTP server to which report e-mail is sent may be incorrect, or the specified SMTP server may be down. Check the e-mail settings.
6 Error	An e-mail report could not be sent due to a communication error (connect[10060]). \n Message [%s]	A timeout occurred when connecting to the SMTP server. The error code is the value of WSAGetLast Error.	The IP address specified to the name of the SMTP server to which report e-mail is sent may be incorrect. Check the e-mail settings.
6 Error	An e-mail report could not be sent due to a communication error (connect[10061]). \n Message [%s]	A connection was rejected by the SMTP server. The error code is the value of WSAGetLast Error.	The port number of the SMTP server may be incorrect. Check the e-mail settings.
6 Error	An e-mail report could not be sent due to a communication error (select[10060]). \n Message [%s]	A timeout occurred while waiting for a response from the SMTP service. The error code is the value of WSAGetLast Error.	The value specified to Response wait time on the Report Setup Window (Advanced) dialog box may be too small. Check the value.
6 Error	An e-mail report could not be sent due to an SMTP protocol error (553 Invalid Sender Address). \n Message [%s]	The sender address is invalid.	The specified sender address is inappropriate. Specify an appropriate sender address. Depending on the security of the SMTP server to which report e-mail is sent, specifying a specific address is required.
6 Error	An e-mail report could not be sent due to an SMTP protocol error (550 Cannot speak with you). \n Message [%s]	The SMTP server does not send a requested mail.	Specifying the user authentication for the SMTP server is required. Set the user authentication information.
6 Error	An e-mail report could not be sent because the SMTP authentication user name (xx) is incorrect. \n Message [%s]	The SMTP server cannot recognize the authenticated user.	The specified user name or password on the Report Setup Window (Advanced) dialog box may be incorrect. Check the settings.
7 Error	An e-mail report is not sent due to a license error.	The license is not registered.	The license of a product version or a trial version may not be registered. Or the trial version license may be expired. Check ExpressCluster License Manager.

Messages when an error is detected in the mail sending process

ID	Message	Description	Solution
6 Error	An e-mail report could not be sent due to a communication error (connect[<i>error code</i>]). \n Message [%s]	An error occurred when connecting to the SMTP server. The error code is the value of WSAGetLast Error.	Take actions according to the error code.
6 Error	An e-mail report could not be sent due to a communication error (send[<i>error code</i>]). \n Message [%s]	An error was detected when sending data to the SMTP service. The error code is the value of WSAGetLast Error.	Take actions according to the error code.
6 Error	An e-mail report could not be sent due to a communication error (select[<i>error code</i>]). \n Message [%s]	An error was detected while waiting for a response from the SMTP service. The error code is the value of WSAGetLast Error.	Take actions according to the error code.
6 Error	An e-mail report could not be sent due to a communication error (recv[<i>error code</i>]). \n Message [%s]	An error was detected when receiving data from the SMTP service. The error code is the value of WSAGetLast Error.	Take actions according to the error code.
6 Error	An e-mail report could not be sent due to an SMTP protocol error (<i>SMTP reply code reply message</i>). \n Message [%s]	Response from the SMTP server is abnormal.	Take actions according to the reply code or the reply message from the SMTP server.

Messages due to system errors

ID	Message	Description	Solution
6 Error	An e-mail report could not be sent due to a communication error (socket[<i>error code</i>]). \n Message [%s]	Creating a socket failed. The error code is the value of WSAGetLast Error.	Take actions according to the error code.
7 Error	An error occurred during initialization.	An error occurred while initializing monitoring.	Windows may be unstable. Restart Windows.

Log output for failures

Logs that report failures of the Alert Service are located in the same folder where the error logs of the ExpressCluster Server are saved. The Alert Service logs are collected the same way as ExpressCluster:

When you use the WebManager to collect logs:

Click **Collect Logs** in the title view of the WebManager. For details, see “Collecting logs by using the WebManager” in Chapter 1, “Functions of the WebManager” in *Reference Guide*.

Chapter 4 Report icon functions

This chapter describes functions and operation methods of the icon displayed when Show the icon in the notification area on the Report Setup Window dialog box is selected.

This chapter covers:

- Displaying the server status 26
- Operations from the pop-up menu 28

Displaying the server status

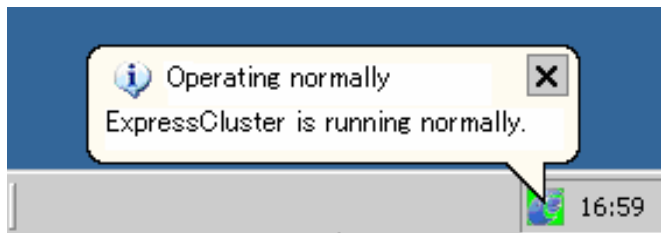
The icon indicates the status of the server by changing its color or blinking.










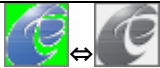













ToolTip is displayed by placing the pointer on the icon.



When the status of the server is changed, the balloon help is displayed.



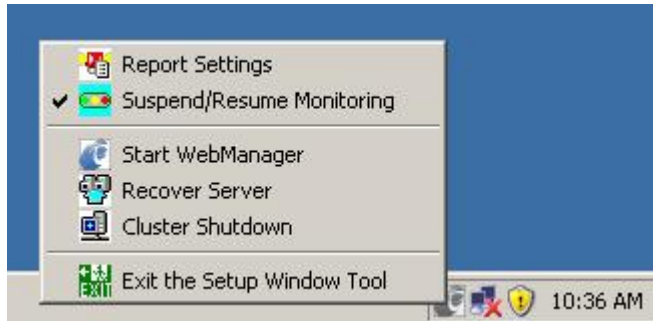
The list below explains the icons, symbols and titles displayed on balloon helps.

Icon	Symbol/Title displayed on balloon help	Description displayed on balloon help
	ExpressCluster(*)	None
	 Service is stopped	The ExpressCluster Server service is stopped.
	 Service is starting	The ExpressCluster Server service is starting.
	 Service is terminating	The ExpressCluster Server service is about to terminate.
	 ExpressCluster is starting	ExpressCluster is starting up. Wait until all nodes are started.
	 Operating normally	ExpressCluster is running normally.
	 Abnormal resource	Check the resource marked as abnormal on the WebManager.
	 Isolated	Recover the server to the cluster.
	 Stopped	ExpressCluster is stopped.
	 Cluster suspended	The cluster is being suspended.
	 Cluster resumed	The cluster is being resumed.

(*) Before starting ExpressCluster, the icon with the ToolTip “ExpressCluster” may be displayed for a certain period of time.

Operations from the pop-up menu

To display the pop-up menu, right-click the icon in the notification area.





Report Settings

Click **Report Settings** from the pop-up menu to display the **Report Setup Window** dialog box.

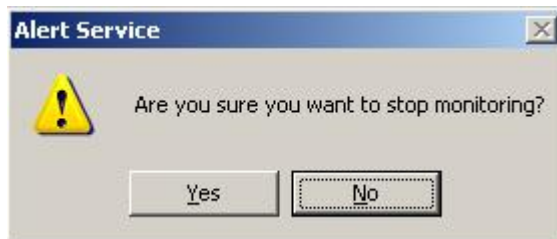
For details of settings in **Report Setup Window**, see Chapter 2, “Configuring report settings.”

Suspend/Resume Monitoring

Click **Suspend/Resume Monitoring** from the pop-up menu to suspend or resume the monitoring.

When monitoring is performed, a check mark and  are displayed beside the menu icon. When suspended,  is displayed.

To suspend the monitoring while being performed, click **Suspend/Resume Monitoring**. The following message is displayed.



To resume the monitoring while being suspended, click **Suspend/Resume Monitoring**. In this case, a confirmation message is not displayed.

The status of monitoring being suspended is not changed by the server shutdown.

The monitoring is restarted automatically when the time specified to **Automatic Monitoring Recovery Time** in the **Report Setup Window (Advanced)** dialog box passes after being suspended.

For information on **Automatic Monitoring Recovery Time**, see “Automatic Monitoring Recovery Time (setting required)” on page 13.

Start WebManager

To start the WebManager, click **Start WebManager**.

To use this function, configure the settings for JAVA and IE to display the WebManager. For how to configure the settings for Java, see Chapter 5, “Creating the cluster configuration data” in the *Installation and Configuration Guide*.

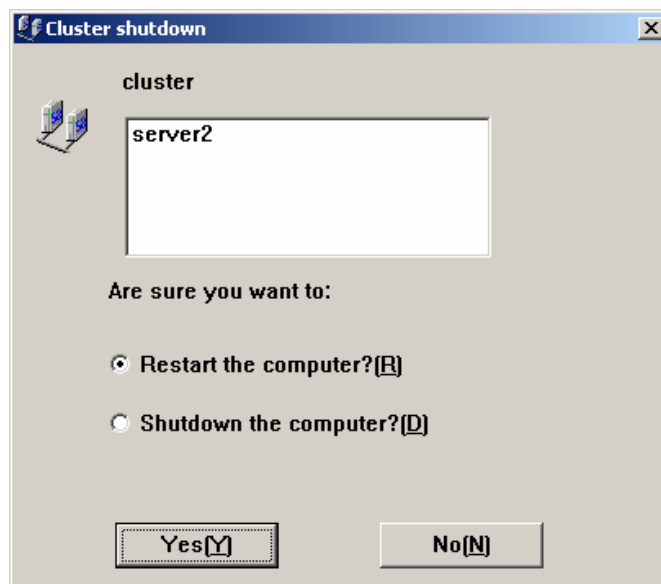
Recover Server

Click **Recover Server** to recover the server.

If recovering the server failed, perform operations on the WebManager.

Cluster Shutdown

Click **Cluster Shutdown** to display the **Cluster Shutdown** window.



Exit the Setup Window Tool

Click **Exit the Setup Window Tool** to terminate the setting tool. The icon disappears when the setup window is closed.

Terminating the setup window tool does not terminate the e-mail report function.

Notes

- ◆ When the **Report Setup Window** dialog box is already displayed, **Report Settings**, **Suspend/Resume Monitoring** and **Exit the Setup Window Tool** menus are unavailable.
- ◆ When the license has not been registered, the **Suspend/Resume Monitoring** menu is unavailable.
- ◆ When the settings are not configured for Java or IE for displaying the WebManager, or when floating IP address for managing the WebManager is not activated, the WebManager cannot be displayed.
- ◆ The message below is displayed if you select the **Recover Server** menu when the “ExpressCluster Server” service is not activated or when the server is operated normally as a cluster.



- ◆ The message below is displayed if you select the **Cluster Shutdown** menu when the “ExpressCluster Server” service is not activated or when the server is not operating as a cluster.



Appendix A Glossary

Cluster partition	A partition on a mirror disk. Used for managing mirror disks. (Related term: Disk heartbeat partition)
Interconnect	A dedicated communication path for server-to-server communication in a cluster. (Related terms: Private LAN, Public LAN)
Virtual IP address¹	IP address used to configure a remote cluster.
Management client	Any machine that uses the WebManager to access and manage a cluster system.
Startup attribute	A failover group attribute that determines whether a failover group should be started up automatically or manually when a cluster is started.
Shared disk	A disk that multiple servers can access.
Shared disk type cluster	A cluster system that uses one or more shared disks.
Switchable partition	A disk partition connected to multiple computers and is switchable among computers. (Related terms: Disk heartbeat partition)
Cluster system	Multiple computers are connected via a LAN (or other network) and behave as if it were a single system.
Cluster shutdown	To shut down an entire cluster system (all servers that configure a cluster system).
Active server	A server that is running for an application set. (Related term: Standby server)
Secondary server	A destination server where a failover group fails over to during normal operations. (Related term: Primary server)
Standby server	A server that is not an active server. (Related term: Active server)
Disk heartbeat partition	A partition used for heartbeat communication in a shared disk type cluster.
Data partition	A local disk that can be used as a shared disk for switchable partition. Data partition for mirror disks. (Related term: Cluster partition)

¹ This applies only for Windows version.

Network partition	All heartbeat is lost and the network between servers is partitioned. (Related terms: Interconnect, Heartbeat)
Node	A server that is part of a cluster in a cluster system. In networking terminology, it refers to devices, including computers and routers, that can transmit, receive, or process signals.
Heartbeat	Signals that servers in a cluster send to each other to detect a failure in a cluster. (Related terms: Interconnect, Network partition)
Public LAN	A communication channel between clients and servers. (Related terms: Interconnect, Private LAN)
Failover	The process of a standby server taking over the group of resources that the active server previously was handling due to error detection.
Failback	A process of returning an application back to an active server after an application fails over to another server.
Failover group	A group of cluster resources and attributes required to execute an application.
Moving failover group	Moving an application from an active server to a standby server by a user.
Failover policy	A priority list of servers that a group can fail over to.
Private LAN	LAN in which only servers configured in a clustered system are connected. (Related terms: Interconnect, Public LAN)
Primary (server)	A server that is the main server for a failover group. (Related term: Secondary server)
Floating IP address	Clients can transparently switch one server from another when a failover occurs. Any unassigned IP address that has the same network address that a cluster server belongs to can be used as a floating address.
Master server	The server displayed on top of the Master Server in Cluster Properties in the Builder.
Mirror connect	LAN used for data mirroring in a data mirror type cluster. Mirror connect can be used with primary interconnect.
Mirror disk type cluster	A cluster system that does not use a shared disk. Local disks of the servers are mirrored.

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