EXPRESSCLUSTER X SingleServerSafe 4.3 for Windows Installation Guide

Release 3

NEC Corporation

Feb 25, 2022

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CHAPTER

ONE

PREFACE

1.1 Who Should Use This Guide

The *EXPRESSCLUSTER X SingleServerSafe for Windows Installation 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 install *EXPRESSCLUSTER X SingleServerSafe.*

1.2 How This Guide Is Organized

- 2. *About EXPRESSCLUSTER X SingleServerSafe*: Explains the functions and requirements of EXPRESSCLUSTER X SingleServerSafe.
- 3. *Installing EXPRESSCLUSTER X SingleServerSafe*: Describes how to install EXPRESSCLUSTER X SingleServerSafe.
- 4. *Updating, uninstalling, reinstalling or upgrading*: Describes how to upgrade EXPRESSCLUSTER X SingleServerSafe, uninstall and reinstall EXPRESSCLUSTER X SingleServerSafe, and upgrade to EXPRESSCLUSTER X.
- 5. *Latest version information*: Provides the latest information about EXPRESSCLUSTER X SingleServerSafe.
- 6. *Additional information*: Provides tips on installing EXPRESSCLUSTER X SingleServerSafe.
- 7. *Notes and Restrictions*: Provides notes and restrictions you need to know before starting the actual operation of EXPRESSCLUSTER X SingleServerSafe.
- 8. *Troubleshooting*: Describes problems you might experience when installing or setting up EXPRESSCLUSTER X SingleServerSafe and how to resolve them.

1.3 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 SingleServerSafe to ensure high compatibility with EXPRESSCLUSTER X SingleServerSafe 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.

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

1.4 EXPRESSCLUSTER X SingleServerSafe Documentation Set

The EXPRESSCLUSTER X SingleServerSafe manuals consists 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 SingleServerSafe Legacy Feature Guide

> This guide is intended for system engineers who want to introduce systems using EXPRESSCLUSTER X SingleServerSafe and describes EXPRESSCLUSTER X SingleServerSafe 4.0 WebManager and Builder.

1.5 Conventions

In this guide, **Note**, **Important**, **See also** 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.

See also:

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	Indicates path names, commands, system output (message, prompt, etc), directory, file names, functions and parameters.	`c:\Program files\EXPRESSCLUSTER`
bold	Indicates the value that a user actually enters from a command line.	Enter the following: **clpcl -s -a**
italic	Indicates that users should replace italicized part with values that they are actually working with.	`clpstat -s [-h host_name]`


In the figures of this guide, this icon represents EXPRESSCLUSTER X SingleServerSafe.

1.6 Contacting NEC

For the latest product information, visit our website below:

https://www.nec.com/global/prod/expresscluster/

CHAPTER

TWO

ABOUT EXPRESSCLUSTER X SINGLESERVERSAFE

This chapter describes the functions and requirements of EXPRESSCLUSTER X SingleServerSafe.

This chapter covers:

- 2.1. *What is EXPRESSCLUSTER X SingleServerSafe?*
- 2.2. *Checking system requirements for EXPRESSCLUSTER X SingleServerSafe*
- 2.3. *Preparing and verifying the server environment before installation*

2.1 What is EXPRESSCLUSTER X SingleServerSafe?

EXPRESSCLUSTER X SingleServerSafe is set up on a server. It monitors for application errors and hardware failures on the server and, upon detecting an error or failure, restarts the failed application or reboots the server so as to ensure greater server availability.

1. Occurrence of application failure

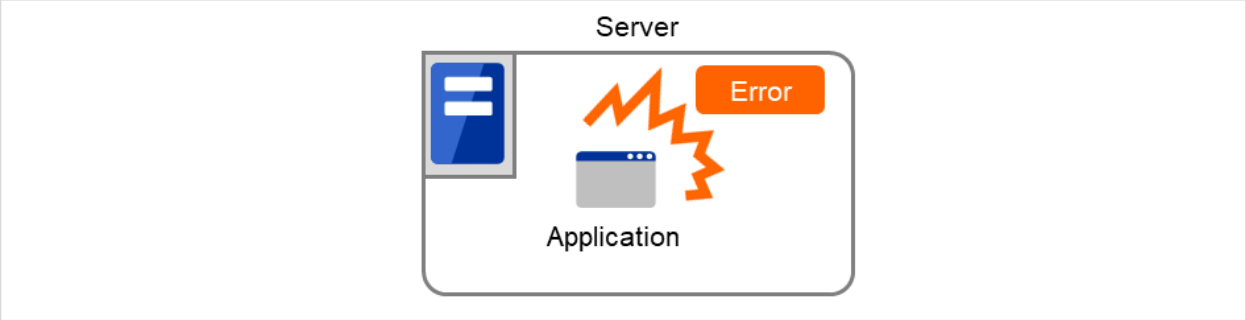


Fig. 2.1: Occurrence of failure

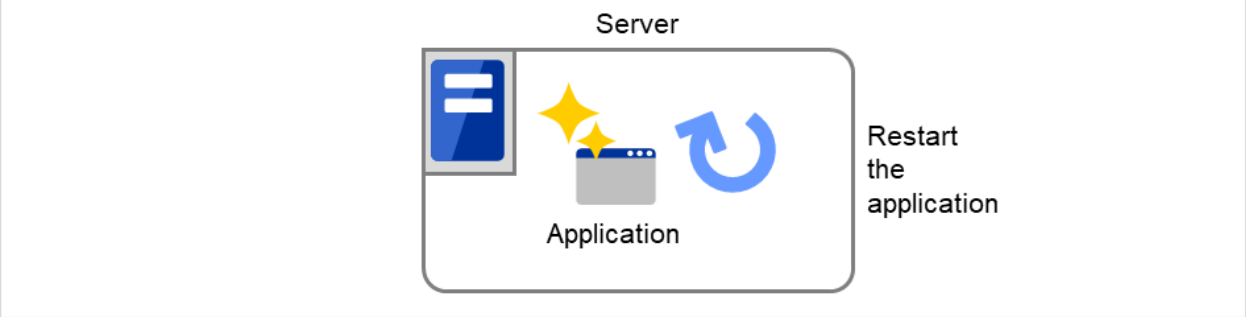


Fig. 2.2: Recovery from failure (Application restart)

2. Occurrence of hardware failure

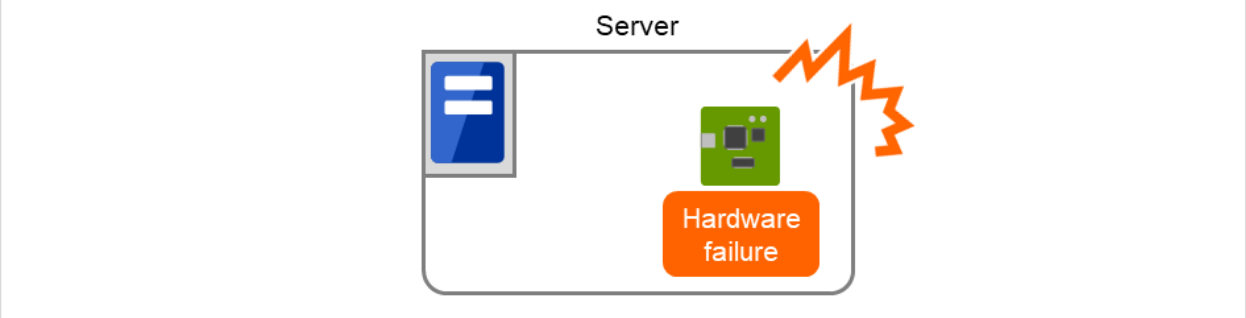


Fig. 2.3: Occurrence of failure

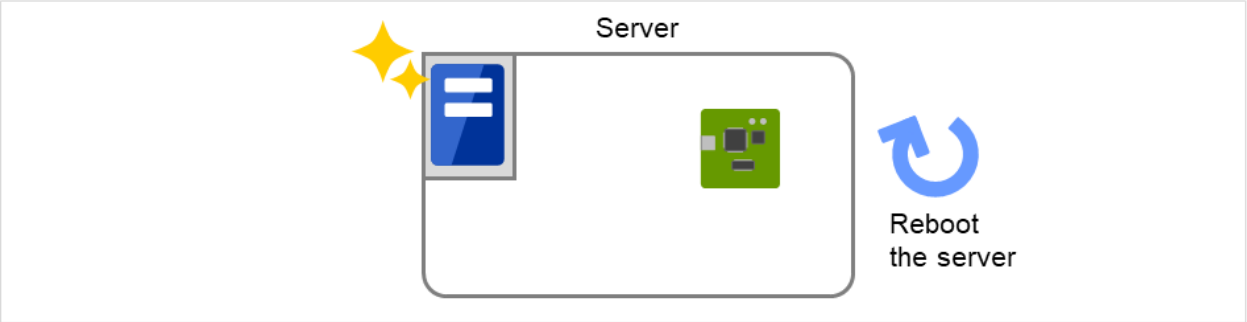


Fig. 2.4: Recovery from failure (Server restart)

2.1.1 EXPRESSCLUSTER X SingleServerSafe software configuration

EXPRESSCLUSTER X SingleServerSafe consists of following two software applications:

a) EXPRESSCLUSTER Server (Main module)
This is a main module of EXPRESSCLUSTER X SingleServerSafe. Install it on the server.

b) EXPRESSCLUSTER Cluster WebUI
This is a tool to create the configuration data of EXPRESSCLUSTER X SingleServerSafe and to manage EXPRESSCLUSTER X SingleServerSafe operations.
It uses a Web browser as a user interface.

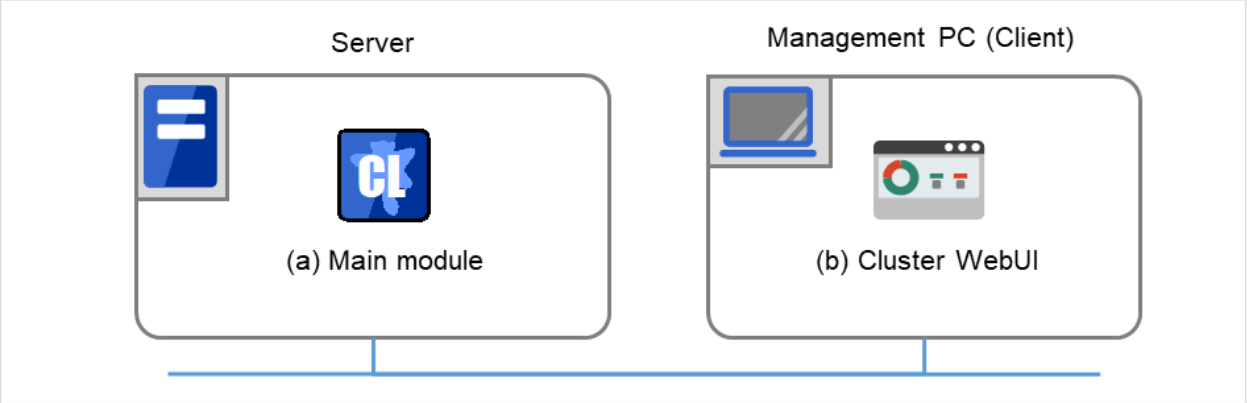


Fig. 2.5: Software configuration

2.2 Checking system requirements for EXPRESSCLUSTER X SingleServerSafe

Check the configuration and operation requirements below for each machine to be used.

- EXPRESSCLUSTER X SingleServerSafe

Machine on which the EXPRESSCLUSTER X SingleServerSafe can be installed	PC that supports one of the following operating systems.
Supported operation systems	Windows Server 2012 Standard Windows Server 2012 Datacenter Windows Server 2012 R2 Standard Windows Server 2012 R2 Datacenter Windows Server 2016 Standard Windows Server 2016 Datacenter Windows Server, version 1709 Standard Windows Server, version 1709 Datacenter Windows Server, version 1803 Standard Windows Server, version 1803 Datacenter Windows Server, version 1809 Standard Windows Server, version 1809 Datacenter Windows Server 2019 Standard Windows Server 2019 Datacenter Windows Server, version 1903 Standard Windows Server, version 1903 Datacenter Windows Server, version 1909 Standard Windows Server, version 1909 Datacenter Windows Server, version 2004 Standard Windows Server, version 2004 Datacenter
Memory size	User mode: 256 MB[1] Kernel mode: 32MB
Disk Size	Initial size at installation: 100 MB During operation: 5.0 GB

- Cluster WebUI

[1] excepting for optional products.

Supported browsers	Internet Explorer 11 Internet Explorer 10 Firefox Google Chrome Microsoft Edge (Chromium)
Memory size	User mode 500 MB
Disk size	200 MB

Note:

When accessing Cluster WebUI with Internet Explorer 11, the Internet Explorer may stop with an error. In order to avoid it, please upgrade the Internet Explorer into KB4052978 or later.

Additionally, in order to apply KB4052978 or later to Windows 8.1/Windows Server 2012R2, apply KB2919355 in advance. For details, see the information released by Microsoft.

Note: No mobile devices, such as tablets and smartphones, are supported.

2.2.1 Operation environment for SNMP linkage functions

EXPRESSCLUSTER with SNMP Service of Windows is validated on following OS.

x86_64 version

OS	EXPRESSCLUSTER version	Remarks
Windows Server 2012	12.00 or later	
Windows Server 2012 R2	12.00 or later	
Windows Server 2016	12.00 or later	
Windows Server, version 1709	12.00 or later	

2.2.2 Operation environment for JVM monitor

The use of the JVM monitor requires a Java runtime environment.

Java(TM) Runtime Environment	Version 7.0 Update 6 (1.7.0_6) or later
Java(TM) Runtime Environment	Version 8.0 Update 11 (1.8.0_11) or later
Java(TM) Runtime Environment	Version 9.0 (9.0.1) or later
Java(TM) SE Development Kit	Version 11.0 (11.0.5) or later

The use of the JVM monitor load balancer linkage function (when using BIG-IP Local Traffic Manager) requires a Microsoft .NET Framework runtime environment.

- Microsoft .NET Framework 3.5 Service Pack 1

Installation procedure

If the server is not connectable to the Internet, prepare the OS installation medium. If connectable, the installation medium is not required.

Start **Server Manager,** and select **QUICK START** in the **Dashboard** window.

Select **2 Add roles and features** from the displayed menu to open the **Add Roles and Features Wizard**.

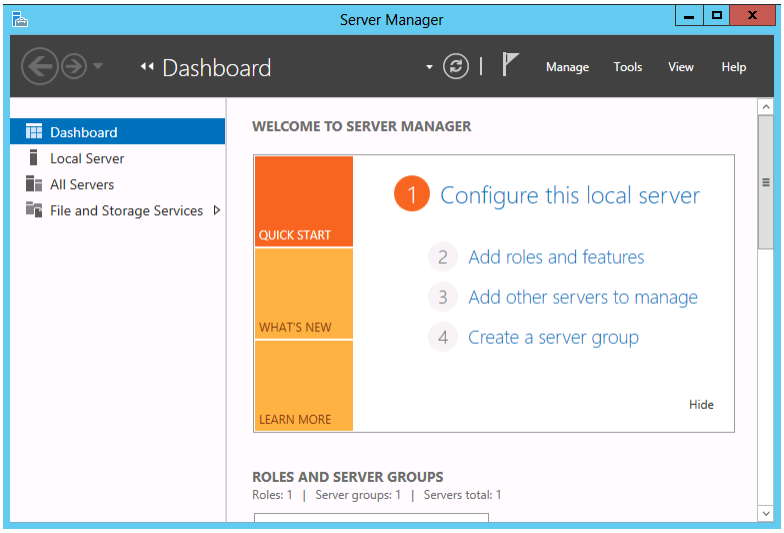


Fig. 2.6: Server Manager

If the **Before You Begin** window appears, click **Next**.

In the **Installation Type** window, select **Role-based or feature-based installation** and click **Next**.

In the **Select Server** window, check **Select server from server pool**, select the target server from the list, and then click **Next**.

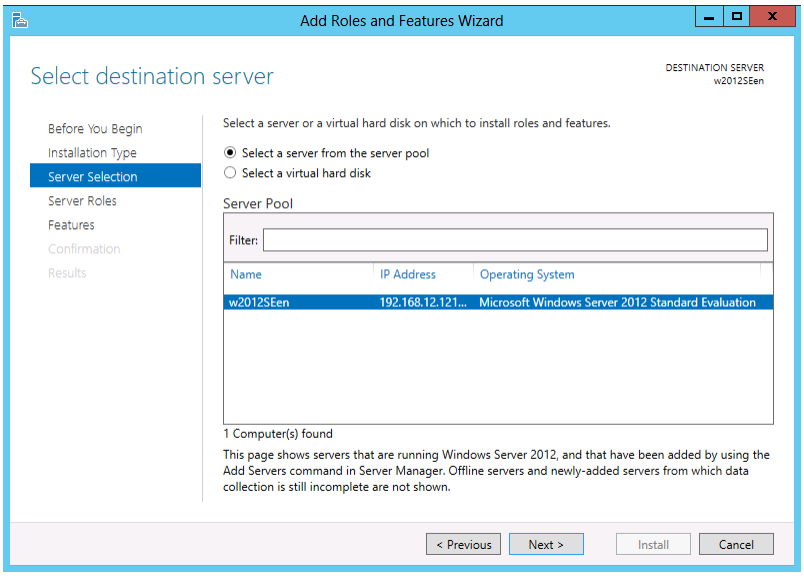


Fig. 2.7: Select Server

Click **Next** in the **Server Roles** window.
In the **Features** window, select **.Net Framework 3.5 Features** and click **Next**.

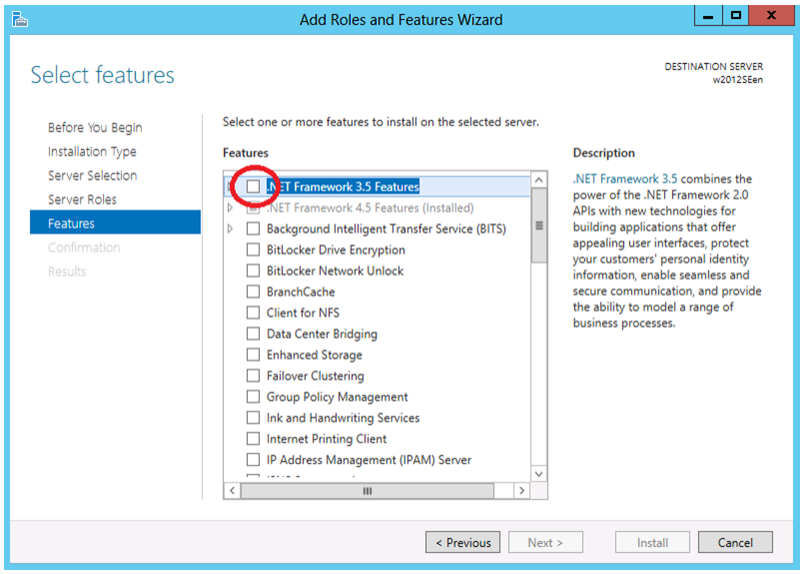


Fig. 2.8: Select Features

If the server is connected to the Internet, click **Install** in the **Confirm installation selections** window to install .Net Framework 3.5.
If the server is not connectable to the Internet, select **Specify an alternative source path** in the **Confirm installation selections** window.

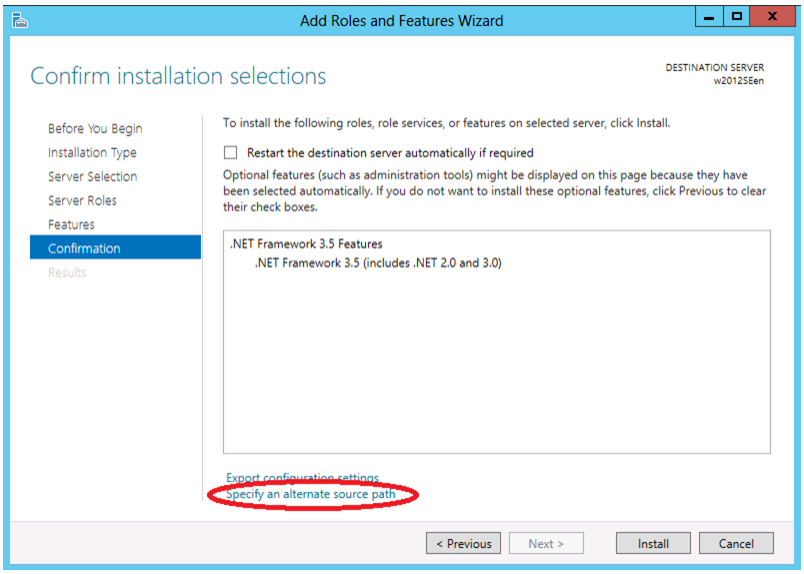


Fig. 2.9: Confirm Installation Options

Specify the path to the OS installation medium in the **Path** field while referring to the explanation displayed in the window, and then click **OK**. After this, click **Install** to install .Net Framework 3.5.

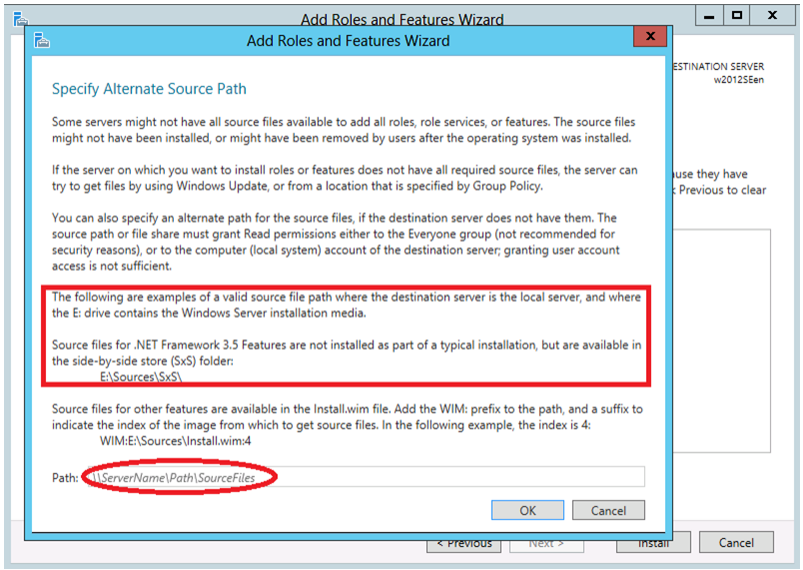


Fig. 2.10: Specify Alternative Source Path

The tables below list the load balancers that were verified for the linkage with the JVM monitor.

x86_64 version

Load balancer	EXPRESSCLUSTER version	Remarks
Express5800/LB400h or later	12.00 or later	
InterSec/LB400i or later	12.00 or later	
BIG-IP v11	12.00 or later	
CoyotePoint Equalizer	12.00 or later	

2.2.3 Operation environment for system monitor or function of collecting system resource information

The use of the System Resource Agent requires the Microsoft .NET Framework environment.
Microsoft .NET Framework 4.5 or later
Microsoft .NET Framework 4.5 Japanese Language Pack or later

Note: On the OS of Windows Server 2012 or later, NET Framework 4.5 version or later is pre-installed (The version of the pre-installed one varies depending on the OS).

2.3 Preparing and verifying the server environment before installation

After installing the hardware, verify the following:

- 2.3.1. *Verifying the network settings (Required)*
- 2.3.2. *Verifying the firewall settings (Required)*
- 2.3.3. *Turning off the power saving function (Required)*

2.3.1 Verifying the network settings (Required)

Check the network settings by using the ipconfig and ping commands.

- IP Address
- Host name

2.3.2 Verifying the firewall settings (Required)

By default, EXPRESSCLUSTER X SingleServerSafe uses the port numbers below. You can change these port numbers by using the Cluster WebUI. Do not access any of these port numbers from a program other than EXPRESSCLUSTER X SingleServerSafe. When setting up a firewall, set up EXPRESSCLUSTER X SingleServerSafe so that it can access the port numbers below.

- Internal processing in the local server

From		To		Remarks
Server	Automatic allocation	Server	29001/TCP	Internal communication
Server	Automatic allocation	Server	29002/TCP	Data transfer
Server	Automatic allocation	Server	29003/UDP	Alert synchronization
Server	Automatic allocation	Server	29008/TCP	Cluster information management
Server	Automatic allocation	Server	29010/TCP	Restful API internal communication
Server	29106/UDP	Server	29106/UDP	Heartbeat (kernel mode)

- From the client to the server

From		To		Remarks
Restful API client	Automatic allocation	Server	29009/TCP	http communication

- From the Cluster WebUI to the server

From		To		Remarks
Cluster WebUI	Automatic allocation	Server	29003/TCP	http communication

- Others

From		To		Remarks
Server	Automatic allocation	Server	Management port number set by the Cluster WebUI	JVM monitor
Server	Automatic allocation	Monitoring target	Connection port number set by the Cluster WebUI	JVM monitor
Server	Automatic allocation	Server	Management port number for Load Balancer Linkage set by the Cluster WebUI	JVM monitor
Server	Automatic allocation	BIG-IP LTM	Communication port number set by the Cluster WebUI	JVM monitor

Note: An available port number at the time is automatically assigned.

The automatic allocation range for the communication port number controlled by OS may overlap with the communication port number used by EXPRESSCLUSTER X SingleServerSafe.

If so, change the port number used by EXPRESSCLUSTER X SingleServerSafe or the automatic allocation range for the communication port number controlled by OS.

For details on how to check or change the automatic allocation range for the communication port number controlled by OS, refer to "Getting Started Guide" for EXPRESSCLUSTER X.

2.3.3 Turning off the power saving function (Required)

For EXPRESSCLUSTER X SingleServerSafe, the power saving function (for example, standby or hibernation) cannot be used with the OnNow, ACPI, or APM function. Do not use any power saving functions.

CHAPTER

THREE

INSTALLING EXPRESSCLUSTER X SINGLESERVERSAFE

This chapter describes how to install EXPRESSCLUSTER X SingleServerSafe. To install EXPRESSCLUSTER X SingleServerSafe, install the EXPRESSCLUSTER Server, which is the main module of EXPRESSCLUSTER SingleServerSafe.

This chapter covers:

- 3.1. *Installing the EXPRESSCLUSTER Server*

3.1 Installing the EXPRESSCLUSTER Server

Install the EXPRESSCLUSTER Server, which is the main module of EXPRESSCLUSTER X SingleServerSafe, on the server machine in the system.
License registration is required in installing the Server. Make sure to have the required license file or license sheet.

3.1.1 Installing EXPRESSCLUSTER X SingleServerSafe for the first time

To install EXPRESSCLUSTER X SingleServerSafe, follow the procedure below.

Note: To install EXPRESSCLUSTER X SingleServerSafe, use an account that has administrator privileges.

Note: Installing EXPRESSCLUSTER X SingleServerSafe disables the Windows media sense function that deactivates an IP address if a link failure occurs due to disconnecting the LAN cable or some other reason.

Note:

If the Windows SNMP Service has already been installed, the SNMP linkage function will be automatically set up when the EXPRESSCLUSTER Server is installed. If, however, the Windows SNMP Service has not yet been installed, the SNMP linkage function will not be set up.
When setting up the SNMP linkage function after installing the EXPRESSCLUSTER Server, refer to "3.1.3. *Setting up the SNMP linkage function manually*".

---

1. Insert the Installation CD-ROM to the CD-ROM drive.
2. Select **NEC EXPRESSCLUSTER® SingleServerSafe for Windows**.

   Note: If the menu screen does not open automatically, double-click menu.exe in the root folder of the CD-ROM.

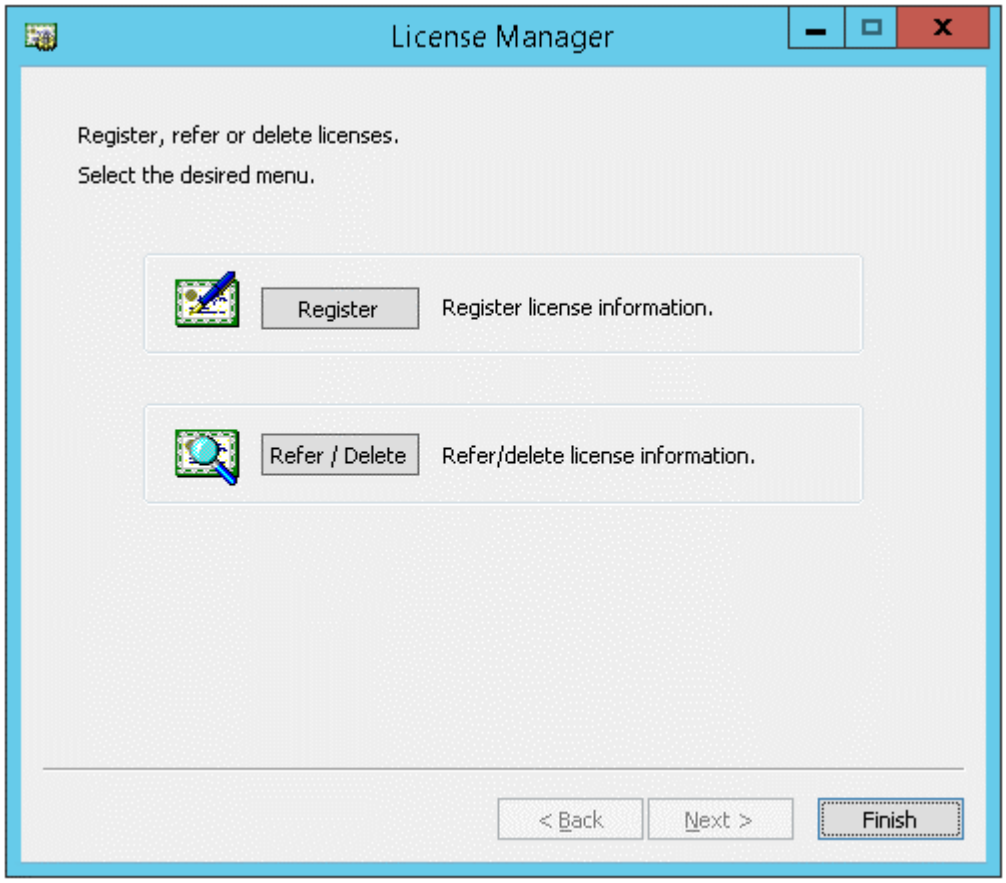
   ---

3. Select NEC EXPRESSCLUSTER® X SingleServerSafe 4.3 for Windows.
4. [Welcome to the InstallShield Wizard for NEC EXPRESSCLUSTER SingleServerSafe] is displayed. Click **Next**.
5. The **Choose Destination Location** dialog box is displayed. When changing the install destination, click **Browse** to select a directory. Click **Next**.
6. The **Ready to Install the Program** dialog box is displayed. Click **Install** to start the installation.
7. When the installation successfully finishes, the **Port Number** dialog box is displayed. Normally, click **Next** without changing the default setting.

   Note: The port number configured here needs to be configured again when creating the configuration data. For details on port number, refer to "Cluster properties" in "Other setting details" in the "Configuration Guide".

   ---

8. **License Manager** is displayed. Click **Register** to register the license. For detailed information on the registration procedure, refer to "6.2.1. *Registering a license by specifying a license file*" in "6. *Additional information*" in this guide.



9. Click **Finish** to close the **License Manager** dialog box.
10. [InstallShield Wizard Complete] is displayed. Select [Yes, I want to restart my computer now.] and click **Finish** to restart the server. If you want to restart the server later, select [No, I will restart my computer later.] and click **Finish**.

3.1.2 Installing EXPRESSCLUSTER X SingleServerSafe in Silent Mode

In silent mode, the EXPRESSCLUSTER X SingleServerSafe is installed automatically without displaying any dialog box to prompt a user to response while the installer is running. This installation function is useful when the installation folder and installation options for all server machines are the same. This function not only eliminates the user's effort but also prevents wrong installation due to wrong specifications.

Install the EXPRESSCLUSTER X SingleServerSafe in all servers configuring the cluster by following the procedure below.

Note: To install EXPRESSCLUSTER X SingleServerSafe, use an account that has administrator privileges.

Note: Installing EXPRESSCLUSTER X SingleServerSafe disables the Windows media sense function that deactivates an IP address if a link failure occurs due to disconnecting the LAN cable or some other reason.

Note:

If the Windows SNMP Service has already been installed, the SNMP linkage function will be automatically set up when the EXPRESSCLUSTER Server is installed. If, however, the Windows SNMP Service has not yet been installed, the SNMP linkage function will not be set up.
When setting up the SNMP linkage function after installing the EXPRESSCLUSTER Server, refer to "3.1.3. *Setting up the SNMP linkage function manually*".

Preparation

If you want to change the installation folder (default: `C:\Program Files\EXPRESSCLUSTER SSS`), create a response file in advance following the procedure below.

1. Copy the response file from the installation CD-ROM to any accessible location in the server.
   Copy the following file in the installation CD-ROM.
   `Windows\4.3\common\server\x64\response\setup_sss_inst_en.iss`

2. Open the response file (setup_inst_jp.iss) with a text editor, and change the folder written in the szDir line into the above accessible location.

```
Count=4
Dlg1={8493CDB6-144B-4330-B945-1F2123FADD3A}-SdAskDestPath-0
Dlg2={8493CDB6-144B-4330-B945-1F2123FADD3A}-SdStartCopy2-0
Dlg3={8493CDB6-144B-4330-B945-1F2123FADD3A}-SdFinishReboot-0
[{8493CDB6-144B-4330-B945-1F2123FADD3A}-SdWelcome-0]
Result=1
[{8493CDB6-144B-4330-B945-1F2123FADD3A}-SdAskDestPath-0]
szDir=C:\Program Files\EXPRESSCLUSTER SSS
Result=1
```

Installation procedure

1. Execute the following command from the command prompt to start setup.

```
# "<Path of silent-install.bat>\silent-install.bat" <Path of response file>
```

* *<Path of silent-install.bat>*:
  `Windows\4.3\common\server\x64\silent-install.bat` in the installation CD-ROM
* When installing the EXPRESSCLUSTER X SingleServerSafe in the default directory (`C:\Program Files\EXPRESSCLUSTER SSS`), omit *<Path of response file>*.

2. Restart the server.
3. Execute the following command from the command prompt to register the license.

```
# "<Installation folder>\bin\clplcnsc.exe" -i <Path of license file>
```

3.1.3 Setting up the SNMP linkage function manually

Note: If you only use the SNMP trap transmission function, this procedure is not required.

To handle information acquisition requests on SNMP, the Windows SNMP Service must be installed separately and the SNMP linkage function must be registered separately.
If the Windows SNMP Service has already been installed, the SNMP linkage function will be automatically registered when the EXPRESSCLUSTER Server is installed. If, however, the Windows SNMP Service has not been installed, the SNMP linkage function will not be registered.
When the Windows SNMP Service has not been installed, follow the procedure below to manually register the SNMP linkage function.

Note: Use an Administrator account to perform the registration.

1. Install the Windows SNMP Service.
2. Stop the Windows SNMP Service.
3. Register the SNMP linkage function of EXPRESSCLUSTER with the Windows SNMP Service.

   3-1. Start the registry editor.
   3-2. Open the following key:

   ```
   HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\SNMP\Parameters\
   ↪ExtensionAgents
   ```

   3-3. Specify the following to create a string value in the opened key:

   Value name :mgtmib
   Value type :REG_SZ
   Value data :

   ```
   SOFTWARE\NEC\EXPRESSCLUSTER\SnmpAgent\mgtmib\CurrentVersion
   ```

   3-4. Exit the registry editor.

4. Start the Windows SNMP Service.

Note: Configure the settings required for SNMP communication on Windows SNMP Service.

CHAPTER

FOUR

UPDATING, UNINSTALLING, REINSTALLING OR UPGRADING

This chapter describes how to update to the latest version of EXPRESSCLUSTER X SingleServerSafe and uninstall or reinstall EXPRESSCLUSTER X SingleServerSafe. Also, this chapter describes how to upgrade EXPRESSCLUSTER X SingleServerSafe to EXPRESSCLUSTER X.

This chapter covers:

- 4.1. *Updating EXPRESSCLUSTER X SingleServerSafe*
- 4.2. *Uninstalling EXPRESSCLUSTER X SingleServerSafe*
- 4.3. *Reinstalling EXPRESSCLUSTER X SingleServerSafe*
- 4.4. *Upgrading to EXPRESSCLUSTER X*

4.1 Updating EXPRESSCLUSTER X SingleServerSafe

This section describes how to update from the old version of EXPRESSCLUSTER X SingleServerSafe to the latest version of it.

4.1.1 Updating from the old EXPRESSCLUSTER X SingleServerSafe version

Before starting the update, read the following notes.

- You can update from EXPRESSCLUSTER X SingleServerSafe 1.0, 2.0, 2.1, 3.0, 3.1, 3.2 or 3.3 for Windows to EXPRESSCLUSTER X SingleServerSafe 4.3 for Windows. Updating from other versions is not possible.
- To update from EXPRESSCLUSTER X SingleServerSafe 1.0, 2.0, 2.1, 3.0, 3.1, 3.2 or 3.3 for Windows to EXPRESSCLUSTER X SingleServerSafe 4.3 for Windows, you need the license of EXPRESSCLUSTER X SingleServerSafe 4.1 for Windows (including the licenses of optional products, if used).
- You cannot use the cluster configuration data that was created by using EXPRESSCLUSTER X higher than EXPRESSCLUSTER X in use.
- The cluster configuration data that was created by using EXPRESSCLUSTER X 1.0, 2.0, 2.1, 3.0, 3.1, 3.2, 3.3, 4.0, 4.1, 4.2 or 4.3 for Windows is available for EXPRESSCLUSTER X in use.
- EXPRESSCLUSTER X SingleServerSafe must be updated with the account having the Administrator's privilege.

The following procedure describes how to update from EXPRESSCLUSTER X SingleServerSafe 1.0, 2.0, 2.1, 3.0, 3.1, 3.2 or 3.3 for Windows to EXPRESSCLUSTER X SingleServerSafe 4.3 for Windows.

1. Make sure that the server and all the resources are in the normal status by using the WebManager or **clpstat** command.
2. Back up the configuration data.
3. Uninstall EXPRESSCLUSTER X SingleServerSafe from the server. For details about the uninstallation procedure, refer to " 4.2.1. *Uninstalling EXPRESSCLUSTER X SingleServerSafe*".
4. Install the EXPRESSCLUSTER X 4.3 SingleServerSafe on the server. For details about the installation procedure, refer to "3.1. *Installing the EXPRESSCLUSTER Server*" in "3. *Installing EXPRESSCLUSTER X SingleServerSafe*".
5. Access the below URL to start the WebManager.

   `http://actual IP address of an installed server :29003/main.htm`

   Change to Config Mode and import the cluster configuration file which was saved in the step 2.

6. Start the Cluster WebUI , start the cluster, and confirm that each resource starts normally.
7. Updating completes. Check that the server is operating normally by the clpstat command or Cluster WebUI.

4.2 Uninstalling EXPRESSCLUSTER X SingleServerSafe

4.2.1 Uninstalling EXPRESSCLUSTER X SingleServerSafe

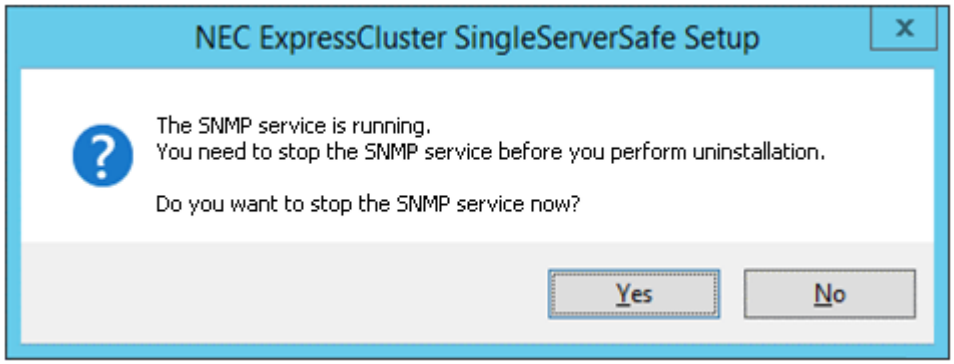
Note: You must log on as an Administrator to uninstall EXPRESSCLUSTER X SingleServerSafe.

To uninstall EXPRESSCLUSTER X SingleServerSafe, follow the procedure below.

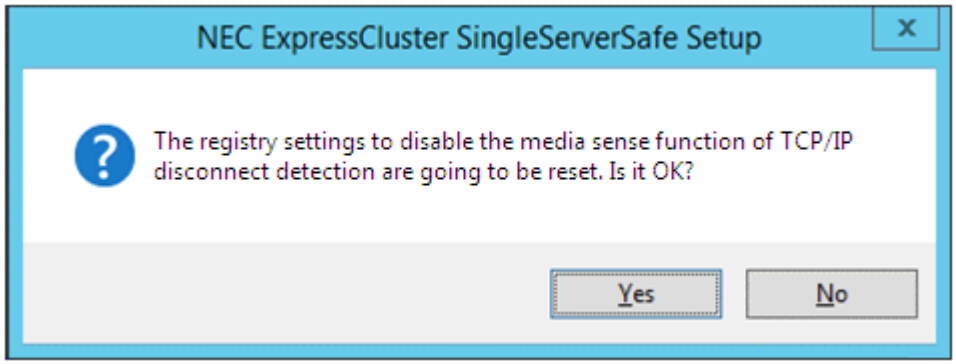
1. Change the service startup type to the manual startup.

```
clpsvcctrl.bat --disable -a
```

2. Reboot the server.
3. Click **Program and Features** in **Control Panel**.
4. Select NEC EXPRESSCLUSTER SingleServerSafe, and then click **Uninstall**.
5. Click **Yes** in the uninstallation confirmation dialog box. If you click No, uninstallation will be canceled.
6. If the SNMP service is started, the message to confirm to stop the SNMP service is displayed. Click Yes. If you click No, uninstallation will be canceled.



7. A message is displayed asking whether to return the media sense function (TCP/IP disconnection detection) to the state it was in before installing the EXPRESSCLUSTER Server. Click **Yes** to return to the state it was in before installing the EXPRESSCLUSTER Server. If you click **No**, the EXPRESSCLUSTER Server will be uninstalled with the media sense function disabled.



8. **NEC ExpressCluster SingleSeverSafe Setup** is displayed. Click **Finish**.
9. The confirmation message whether to restart the computer is displayed. Select **Yes, I want to restart my computer** or **No, I will restart my computer later.** And click **Finish**. Uninstallation of the EXPRESSCLUSTER Server is completed.

Note:

If you uninstall EXPRESSCLUSTER with CPU frequency changed by using CPU Frequency Control of EXPRESSCLUSTER, the CPU frequency does not return to the state before changing. In this case, return the CPU frequency to the defined value by the following way.

Select **Balanced** in **Power Options** -> **Choose or customize a power plan** in **Control Panel**.

4.3 Reinstalling EXPRESSCLUSTER X SingleServerSafe

4.3.1 Reinstalling the EXPRESSCLUSTER X SingleServerSafe

To reinstall the EXPRESSCLUSTER X SingleServerSafe, prepare the configuration data created using the Cluster WebUI (or the latest data if you changed the configuration).

After changing the configuration, make sure to save the latest configuration data. In addition to saving it to the Cluster WebUI after creation, you can back up the configuration data by using the clpcfctrl command. For details, see "Applying and backing up configuration data (clpcfctrl command)" in "EXPRESSCLUSTER X SingleServerSafe command reference" in the "EXPRESSCLUSTER X SingleServerSafe Operation Guide".

For details, see "Applying and backing up configuration data (clpcfctrl command)" -> "Backing up configuration data (clpcfctrl --pull)" in "EXPRESSCLUSTER X SingleServerSafe command reference" in the "EXPRESSCLUSTER X SingleServerSafe Operation Guide".

To reinstall the EXPRESSCLUSTER X SingleServerSafe, follow the procedures below:

1. Back up the configuration data.
2. Uninstall the EXPRESSCLUSTER X SingleServerSafe.
   If reinstalling the OS, it is not necessary to uninstall the EXPRESSCLUSTER X SingleServerSafe. However, when reinstalling in the folder in which the EXPRESSCLUSTER X SingleServerSafe was formerly installed, the files in the installation folder must be deleted.
3. Shut down the OS when uninstalling the EXPRESSCLUSTER X SingleServerSafe is completed.
4. Install the EXPRESSCLUSTER X SingleServerSafe and register the license as necessary. Shut down the OS when installing EXPRESSCLUSTER X SingleServerSafe completed.
5. Apply the configuration data to the server.
   To apply the configuration data, load the backup data by using the Cluster WebUI, and then upload it. For details, see "Applying configuration data" in "Creating configuration data" in the "EXPRESSCLUSTER X SingleServerSafe Configuration Guide".

4.4 Upgrading to EXPRESSCLUSTER X

When upgrading EXPRESSCLUSTER X SingleServerSafe to EXPRESSCLUSTER X, you can migrate the configuration data created using the Cluster WebUI (or the latest data if you changed the configuration).

In this case, save the latest configuration data before starting the upgrade. In addition to saving it to the Cluster WebUI after creation, you can back up the configuration data by using the clpcfctrl command. For details, see "Applying and backing up configuration data (clpcfctrl command)" in "EXPRESSCLUSTER X SingleServerSafe command reference" in the "EXPRESSCLUSTER X SingleServerSafe Operation Guide".

To upgrade EXPRESSCLUSTER X SingleServerSafe to EXPRESSCLUSTER X, follow the procedure below.

1. Back up the configuration data.
2. Uninstall EXPRESSCLUSTER X SingleServerSafe from the server for which to perform the upgrade. For details about the uninstallation procedure, see "4.2.1. *Uninstalling EXPRESSCLUSTER X SingleServerSafe*".
3. Shut down the OS when uninstalling the EXPRESSCLUSTER X SingleServerSafe is completed.
4. Install EXPRESSCLUSTER X, and set up its environment. You can use the backup configuration data for this process. For details about how to set up EXPRESSCLUSTER X, see the EXPRESSCLUSTER X manual.

Note:

For EXPRESSCLUSTER X, register the following licenses:

- EXPRESSCLUSTER X SingleServerSafe (two-CPU license)
- EXPRESSCLUSTER X SingleServerSafe upgrade license

These licenses can be used for EXPRESSCLUSTER X (two-CPU license).

CHAPTER

FIVE

LATEST VERSION INFORMATION

The latest information on the upgraded and improved functions is described in details.

This chapter covers:

- 5.1. *EXPRESSCLUSTER X SingleServerSafe version and corresponding manual edition*
- 5.2. *New features and improvements*
- 5.3. *Corrected information*

5.1 EXPRESSCLUSTER X SingleServerSafe version and corresponding manual edition

This guide assumes the version of EXPRESSCLUSTER X SingleServerSafe below for its descriptions. Note the version of EXPRESSCLUSTER X SingleServerSafe and corresponding manual edition.

EXPRESSCLUSTER X SingleServerSafe Internal Version	Manual	Edition	Remarks
12.32	Installation Guide	3rd Edition	
	Configuration Guide	2nd Edition	
	Operation Guide	3rd Edition	
	Legacy Feature Guide	2nd Edition	

5.2 New features and improvements

The following features and improvements have been released.

No.	Internal Version	Contents
1	12.00	Management GUI has been upgraded to Cluster WebUI.
2	12.00	HTTPS is supported for Cluster WebUI and WebManager.
3	12.00	The fixed term license is released.
4	12.00	Windows Server, version 1709 is supported.
5	12.00	SQL Server monitor resource supports SQL Server 2017.
6	12.00	Oracle monitor resource supports Oracle Database 12c R2.
7	12.00	PostgreSQL monitor resource supports PowerGres on Windows 9.6.
8	12.00	WebOTX monitor resource supports WebOTX V10.1.
9	12.00	JVM monitor resource supports Apache Tomcat 9.0.
10	12.00	JVM monitor resource supports WebOTX V10.1.
11	12.00	The following monitor targets have been added to JVM monitor resource. • CodeHeap non-nmethods • CodeHeap profiled nmethods • CodeHeap non-profiled nmethods • Compressed Class Space
12	12.00	The clpstdncnf command to edit cluster termination behavior when OS shutdown initiated by other than cluster has been added.
13	12.00	Monitoring behavior to detect error or timeout has been improved.
14	12.00	The function to execute a script before or after group resource activation or deactivation has been added.
15	12.00	Internal communication has been improved to save TCP port usage.
16	12.00	The list of files for log collection has been revised.
17	12.01	When HTTPS is unavailable in WebManager due to inadequate settings, a message is sent to event and alert logs.
18	12.10	Windows Server, version 1803 is supported.
19	12.10	Windows Server, version 1809 is supported.
20	12.10	Windows Server 2019 is supported.
21	12.10	Oracle monitor resource supports Oracle Database 18c.
22	12.10	Oracle monitor resource supports Oracle Database 19c.
23	12.10	PostgreSQL monitor resource supports PostgreSQL 11.
24	12.10	PostgreSQL monitor resource supports PowerGres V11.
25	12.10	Cluster WebUI supports cluster construction and reconfiguration.
26	12.10	The number of settings has been increased that can apply a changed cluster configuration without the suspension of business.
27	12.10	The Process resource monitor resource has been added to integrate the process resource monitor functions of the System monitor resource.
28	12.10	A function has been added to save as cluster statistical information the operation statuses of failover groups, group resources and monitor resources.
29	12.10	The restriction of not re-executing scripts has been released in the custom monitor resource where a target script whose Monitor Type is Asynchronous is finished and a monitor error occurs.

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Table 5.2 – continued from previous page

No.	Internal Version	Contents
30	12.10	A setting has been added to wait for stopping the custom monitor resource before stopping group resources when the cluster is stopped.
31	12.10	A function has been added to not execute a recovery with the start scripts of the script resources.
32	12.10	"mail" is supported as a destination to which notifications are output by the Alert Service with the clplogcmd command.
33	12.10	SSL and TLS 1.0 are disabled for HTTPS connections to the WebManager server.
34	12.11	Legibility and operability of Cluster WebUI have been improved.
35	12.12	Cluster WebUI supports OpenSSL 1.1.1.
36	12.20	A RESTful API has been added which allows the operation and status collection of the cluster.
37	12.20	The process of collecting cluster information has been improved in Cluster WebUI and commands.
38	12.20	A function has been added for checking cluster configuration data.
39	12.20	A function has been added for disabling the automatic group start and the restoration during the activation/deactivation failure of a group resource.
40	12.20	The license management command has allowed reconstructing a fixed-term license in deleting a cluster node.
41	12.20	OS user accounts have allowed logging in to Cluster WebUI.
42	12.20	The following application and scripts can now be executed as the user registered on the **Account** tab of **Cluster Properties**. • Application executed on application resources • Scripts executed on script resources • Scripts executed on custom monitor resources • Scripts before or after the group resource activation or deactivation • Scripts before the final actions of the group resources • Recovery action scripts for monitor resources • Forced stop scripts
43	12.20	A function to prevent the log collection command from collecting event logs has been added.
44	12.20	The log file can now be collected even when it exceeds 2GB.
45	12.20	A log collection pattern of system statistics has been added.
46	12.20	The conditions for setting a wait for stopping a group have been expanded.
47	12.20	A function has been added to Cluster WebUI for displaying estimated time to start/stop a group.
48	12.20	For Cluster WebUI and the clpstat command, the display in the state of a stopped/suspended cluster has been improved.
49	12.20	Commands have been added for displaying estimated time to start/stop a group and time the monitor resource takes for monitoring.
50	12.20	A function to collect the system resource statistics information has been added.
51	12.20	The default value for retry count at activation failure of the service resource was changed from 0 to 1 .
52	12.20	HTTP monitor resources support BASIC authentication.
53	12.20	DB2 monitor resources support DB2 v11.5.
54	12.20	SQL Server monitor resources support SQL Server 2019.

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Table 5.2 – continued from previous page

No.	Internal Version	Contents
55	12.22	RESTful API now supports new values for group resource status information.
56	12.22	PostgreSQL monitor resource supports PostgreSQL 12.
57	12.30	Windows Server, version 2004 is supported.
58	12.30	RESTful APIs now allow adjusting/seeing the timeout extension rate for monitor resources and heartbeats.
59	12.30	RESTful APIs enhanced the functionality equivalent to the clprexec command.
60	12.30	RESTful APIs now allow setting the permission (for operation/reference) for each user group/IP address.
61	12.30	Improved Cluster WebUI to display only resource types compatible with the system environment in adding a resource.
62	12.30	Added a function to Cluster WebUI for automatically acquiring AWS-relevant resource settings.
63	12.30	Changed the cluster action in response to the expiration of a fixed-term license.
64	12.30	Added a function for outputting a message to the event and alert logs in response to a server restarted within the heartbeat timeout period.
65	12.30	Added a function for preventing group resources from being automatically started in starting the failover group.
66	12.30	Increased the default value of the internal communication timeout for the clpgrp/clprsc/clpdown/clpstdn/clpcl command.
67	12.30	Added a function to the alert service for sending messages to Amazon SNS.
68	12.30	Added a function for sending metrics (i.e. data on the monitoring process time taken by the monitor resource) to Amazon CloudWatch.
69	12.30	The service restart settings now include the recovery settings of the EXPRESSCLUSTER Event service and those of the EXPRESSCLUSTER Old API service.
70	12.30	Added a function for outputting the Cluster WebUI operation log to the server.
71	12.30	Added support for tackling XML External Entity (XXE) attacks.
72	12.30	Added a function for acquiring a memory dump in response to a detected monitoring timeout.
73	12.30	Cluster WebUI now allows checking the details of alert logs (e.g. measures).
74	12.30	The config mode of Cluster WebUI now allows seeing the group resource list from [Group Properties].
75	12.30	The config mode of Cluster WebUI now allows seeing the monitor resource list from [Monitor Common Properties].
76	12.30	Cluster WebUI now supports Microsoft Edge (Chromium-based).
77	12.30	Improved Cluster WebUI to include messages as a target for the advanced filtering of alert logs.
78	12.30	Improved the message in response to a failure detected during the process of starting a group targeted for monitoring at activation.
79	12.30	Improved Cluster WebUI for the layout of operation icons in the [Status] screen.
80	12.30	Cluster WebUI now maintains user-customized settings in [Dashboard], even through a restart of the browser.
81	12.30	HTTP monitor resources now support GET-request monitoring.
82	12.30	Added REST API as a monitoring method of Weblogic monitor resources.
83	12.30	WebOTX monitor resources now support WebOTX V10.3.
84	12.30	JVM monitor resources now support WebOTX V10.3.
85	12.20	Weblogic monitor resources now support Oracle WebLogic Server 14c (14.1.1).

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Table 5.2 – continued from previous page

No.	Internal Version	Contents
86	12.20	JVM monitor resources now support Oracle WebLogic Server 14c (14.1.1).
87	12.30	JVM monitor resources now support Java 11.

5.3 Corrected information

Modification has been performed on the following minor versions.

Critical level:

L

Operation may stop. Data destruction or mirror inconsistency may occur.
Setup may not be executable.

M

Operation stop should be planned for recovery.
The system may stop if duplicated with another fault.

S

A matter of displaying messages.
Recovery can be made without stopping the system.

No.	Version in which the problem has been solved / Version in which the problem occurred	Phenomenon	Level	Occurrence condition/ Occurrence frequency
1	12.01 / 12.00	Two fixed-term licenses of the same product may be enabled.	S	This problem occurs on rare occasions if the following two operations are performed simultaneously. - An unused license in stock is automatically enabled when the license expires. - A new license is registered by the command for registering a license.
2	12.01 / 12.00	A monitoring timeout of the monitor resource may not be detected.	M	This problem occurs depending on the timing, when the time required for monitoring exceeds the setting value for timeout.
3	12.01 / 12.00	When an error is detected in ODBC monitoring, it is erroneously judged to be normal.	M	This problem occurs when there is a monitor error in OCBC monitoring.

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Table 5.3 – continued from previous page

No.	Version in which the problem has been solved / Version in which the problem occurred	Phenomenon	Level	Occurrence condition/ Occurrence frequency
4	12.01 / 12.00	When using the JVM monitor resources, memory leak may occur in the Java VM to be monitored.	M	This problem may occur under the following condition: - [Monitor the number of Active Threads] on [Thread] tab in [Tuning] properties on [Monitor (special)] tab is set to on.
5	12.01 / 12.00	Memory leak may occur In Java process of JVM monitor resources.	M	If all the following conditions are met, this problem may occur: - All the settings in the [Tuning] properties on the [Monitor (special)] tab are set to OFF. - More than one JVM monitor resource are created.
6	12.01 / 12.00	The JVM statistics log (jramemory.stat) is output, even if the following parameters are set to OFF in JVM monitor resources. - [Monitor (special)] tab - [Tuning] properties - [Memory] tab - [Memory Heap Memory Rate] - [Memory (special)] tab - [Tuning] properties - [Memory] tab - [Monitor Non-Heap Memory Rate]	S	If all the following conditions are met, this problem inevitably occurs: - [Oracle Java (usage monitoring)] is selected for [JVM type] on the [Monitor (special)] tab. - [Monitor Heap Memory Rate] on the [Memory] tab in the [Tuning] properties on the [Monitor (special)] tab is set to OFF. - [Monitor Non-Heap Memory Rate] on the [Memory] tab in the [Tuning] properties on the [Monitor (special)] tab is set to OFF.
7	12.01 / 12.00	The load balancer linkage function and BIG-IP linkage function do not run in JVM monitor resources.	M	Never fail to occur.

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Table 5.3 – continued from previous page

No.	Version in which the problem has been solved / Version in which the problem occurred	Phenomenon	Level	Occurrence condition/ Occurrence frequency
8	12.01 / 12.00	In the application using compatibility with EXPRESSCLUSTER Ver8.0 or earlier, some of cluster events cannot be properly collected.	M	This problem occurs when cluster events are monitored using compatible API.
9	12.10 / 12.00	When the WebOTX monitor resource monitors WebOTX V10.1, a monitor error occurs.	S	This problem inevitably occurs.
10	12.10 / 12.00	The JVM monitor resource keeps its monitor status warning.	S	This problem occurs on rare occasions depending on the timing when the monitoring starts.
11	12.10 / 12.00	In SQL Server monitoring, SQL statements remaining in the DB cache may adversely affect the performance.	S	This problem occurs when the monitor level is Level 2.
12	12.10 / 12.00	In ODBC monitoring, a timeout occurs in 15 seconds.	S	This problem occurs when the monitoring takes 15 seconds or more.
13	12.10 / 12.00	In ODBC monitoring, no warning is issued but a monitor error occurs in such a case as invalidly naming a monitor user.	S	This problem occurs when a flaw exists in the configuration of the monitoring parameter.
14	12.10 / 12.00	For listener monitoring in Oracle monitoring, a tnsping error does not lead to a monitor error.	S	This problem occurs when a tnsping error occurs in listener monitoring.

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Table 5.3 – continued from previous page

No.	Version in which the problem has been solved / Version in which the problem occurred	Phenomenon	Level	Occurrence condition/ Occurrence frequency
15	12.10 / 12.00	A timeout in SQL Server monitoring causes the alert log to display the message of a function sequence error.	S	This problem occurs when a monitor timeout occurs.
16	12.10 / 12.00	Database monitoring may not output an error message to the alert log.	S	This problem occurs when some errors do not output their messages.
17	12.10 / 12.00	In the custom monitor resource, detecting a timeout does not issue an error but issues a warning.	M	This problem inevitably occurs when a timeout is detected in the custom monitor resource.
18	12.10 / 12.00	In the service monitor resource, failing to obtain a handle to a target service does not issue an error but issues a warning.	S	This problem inevitably occurs when obtaining a handle to a target service fails in the service monitor resource.
19	12.10 / 12.00	Suspending a cluster may time out.	S	This problem occurs on rare occasions when the cluster is suspended during its resume.
20	12.10 / 12.00	The clpstat command displays an inappropriate status of a server being processed for returning to the cluster.	S	This problem occurs when the clpstat -g command is executed between the start and the end of the process for returning to the cluster.
21	12.10 / 12.00	The clpstat command displays an inappropriate status of a cluster being processed for stopping.	S	This problem occurs when the clpstat command is executed between the start and the end of the process for stopping the cluster.

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Table 5.3 – continued from previous page

No.	Version in which the problem has been solved / Version in which the problem occurred	Phenomenon	Level	Occurrence condition/ Occurrence frequency
22	12.10 /12.00	Although a group resource is still being processed for stopping, its status may be shown as stopped.	M	This problem occurs when either of the following is performed for a group resource whose process for stopping has failed: - Start-up - Stop
23	12.10 /12.00	Failing to stop a group resource does not trigger the specified final operation, but may cause an emergency shutdown to be executed.	M	This problem occurs when the final action caused by a deactivation error in the group resource is specified as Stop the cluster service and reboot OS.
24	12.10 / 12.00	Setting a time-out ratio with the clptoratio command does not work for the custom monitor resource.	S	This problem inevitably occurs.
25	12.11 / 12.10	Switching operation to Config Mode fails in Cluster WebUI.	S	This problem occurs when accessing Cluster WebUI via HTTPS with a specific web browser.
26	12.12 / 12.10	The process of activating the application resource may fail.	S	This problem occurs when all of the followings are set on the application resource. • Non-resident is specified to **Resident Type**. • An execution user is specified. • A **Normal Return Value** is specified.

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Table 5.3 – continued from previous page

No.	Version in which the problem has been solved / Version in which the problem occurred	Phenomenon	Level	Occurrence condition/ Occurrence frequency
27	12.20 / 12.00 to 12.12	Executing the clpstat command may display the following error message: Could not connect to the server. Internal error.Check if memory or OS resources are sufficient.	S	This problem rarely occurs when running the clpstat command comes immediately after starting up the cluster.
28	12.20 / 12.00 to 12.12	Applying configuration data may request the user to take an unnecessary step of restarting the WebManager server.	S	This problem occurs when the following two different modifications were simultaneously made: a modification requiring a shutdown and restart of the cluster and a modification requiring a restart of the WebManager server.
29	12.20 / 12.00 to 12.12	Applying configuration data may request the user to take an unnecessary step of suspending/resuming.	S	This problem may occur when the properties of an automatically registered monitor resource are referenced.
30	12.20 / 12.00 to 12.12	The EXPRESSCLUSTER Web Alert service may abend.	S	This problem occurs very rarely regardless of conditions.
31	12.20 / 12.00 to 12.12	The handles kept by wmiprvse.exe (the process of Windows OS) increase.	S	This problem occurs when WMI (Windows Management Instrumentation) is executed.
32	12.20 / 12.00 to 12.12	Even if deactivating a group or resource fails, the user may receive a notification that the deactivation has succeeded.	S	This problem may occur during an emergency shutdown.

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Table 5.3 – continued from previous page

No.	Version in which the problem has been solved / Version in which the problem occurred	Phenomenon	Level	Occurrence condition/ Occurrence frequency
33	12.20 / 12.00 to 12.12	Recovery action scripts for the message receive monitor resource may fail to be executed.	S	This problem occurs when user application is specified through the following: Path to cscript script file
34	12.20 / 12.10 to 12.12	Installation may fail.	S	This problem occurs when a folder other than the Program Files folder is specified for the installation folder.
35	12.20 / 12.00 to 12.12	Deactivation may fail even after the service stops because the service resource is deactivated.	S	This problem may occur in specific services such as Oracle.
36	12.22 / 12.20	Checking OS startup time may display an invalid result in the cluster configuration data checking function.	S	This problem occasionally occurs by a combination of the OS startup time and heartbeat timeout.
37	12.22 / 12.20	The startup type of EXPRESSCLUSTER SingleServerSafe service cannot be change by using the clpsvcctrl command.	S	This problem inevitably occurs.
38	12.22 / 12.00 to 12.21	Some minor problems in Cluster WebUI.	S	These problems occur when using Cluster WebUI.
39	12.30 / 11.20 to 12.22	For Windows Server 2012 R2 or later, the environment variable CLP_OSNAME is set with data equivalent to that for Windows Server 2012.	S	This problem always occurs.
40	12.30 / 12.20 to 12.22	The EXPRESSCLUSTER Information Base service may abend.	S	This problem very rarely occurs with a shortage of the OS resource.

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Table 5.3 – continued from previous page

No.	Version in which the problem has been solved / Version in which the problem occurred	Phenomenon	Level	Occurrence condition/ Occurrence frequency
41	12.30 / 12.10 to 12.22	An unnecessary packet is sent to an interconnect for which an unused server is set.	S	This problem always occurs when an unused server is set for an interconnect.
42	12.30 / 12.20 to 12.22	Cluster WebUI does not allow moving to the config mode.	S	This problem occurs when a password is set by the OS authentication method and the setting is applied with only a group without the operation right.
43	12.30 / 12.20 to 12.22	In the [Status] screen of Cluster WebUI, the [Start server service] button is disabled.	S	This problem occurs with a stop of the service of a server that is connected with Cluster WebUI.
44	12.30 / 12.10 to 12.22	For the config mode of Cluster WebUI, when a dependent resource is removed from the [Dependency] tab of [Resource Properties], the display may become wrong.	S	This problem occurs when a dependent resource is removed.
45	12.30 / 12.10 to 12.22	Cluster WebUI does not allow saving a script file (edited in adding a group resource and a monitor resource) through the right path.	S	This problem occurs in the following case: The user edits a script file in the screen for adding a group resource and a monitor resource, returns to the previous screen, and then changes the names of the added resources.
46	12.30 / 12.10 to 12.22	Cluster WebUI does not allow clicking the [Browse] button of [Target Resource] in [Monitor Timing], in the [Monitor(common)] tab of [Monitor Resource Properties].	S	This problem occurs when the user opens [Monitor Resource Properties] of a monitor resource in which [Monitor Timing] was changed from [Always] to [Active] and then registered.

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Table 5.3 – continued from previous page

No.	Version in which the problem has been solved / Version in which the problem occurred	Phenomenon	Level	Occurrence condition/ Occurrence frequency
47	12.30 / 12.10 to 12.22	In the config mode of Cluster WebUI, an untimely message appears reading that the current cluster configuration will be discarded.	S	This problem occurs when the user executes any of the following with the configuration data unchanged, and then clicks the button to import or acquire the setting: - Exporting the setting - Canceling the application of the setting - Checking the cluster configuration data
48	12.30 / 11.30 to 12.22	A WebSphere monitor resource may fail in monitoring.	M	This problem occurs with any of the following: - The length of the WebSphere installation path is 1022 bytes or more. - The length of the user name is 246 bytes or more. - The length of the password is 245 bytes or more. - The length of the profile name is 242 bytes or more. - The length of the following is 976 bytes or more: the path to serverStatus.bat + the server name + the user name + the password + the profile name.

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Table 5.3 – continued from previous page

No.	Version in which the problem has been solved / Version in which the problem occurred	Phenomenon	Level	Occurrence condition/ Occurrence frequency
49	12.30 / 11.30 to 12.22	A WebLogic monitor resource may fail in monitoring.	M	This problem occurs with any of the following: - The length of the WebLogic installation path is 236 bytes or more. - The length of the following is 1016 bytes or more: the path to the PING command for checking the status of the WebLogic Server.
50	12.30 / 11.30 to 12.22	Performing the final recovery of an application monitor resource causes a failover-failure message to be recorded in the alert log.	S	This problem occurs when the recovery of the monitor resource is not changed.
51	12.30 / 11.30 to 12.22	Performing the final recovery of a service monitor resource causes a failover-failure message to be recorded in the alert log.	S	This problem occurs when the recovery of the monitor resource is not changed.
52	12.30 / 12.20 to 12.22	The clprexec command may fail to request a status change for a message receive monitor resource.	S	This problem occurs if the --clear option is specified in the clprexec command.
53	12.32 / 9.00 to 12.30	Executing the clplogcf command may cause the level or size of the target log to be set to zero.	S	This problem occurs when the user specifies either a log level or a log size (but not both) in the clplogcf command.
54	12.32 / 9.00 to 12.30	Log collection may fail.	S	This problem occurs very rarely during log collection.
55	12.32 / 11.00 to 12.30	Cluster WebUI does not display the config mode screen.	S	This problem occurs very rarely in an attempt to open the config mode screen of Cluster WebUI.
56	12.32 / 11.00 to 12.30	The EXPRESSCLUSTER Manager service may abend.	S	This problem occurs very rarely in an attempt to open the config mode screen of Cluster WebUI.

Continued on next page

Table 5.3 – continued from previous page

No.	Version in which the problem has been solved / Version in which the problem occurred	Phenomenon	Level	Occurrence condition/ Occurrence frequency
57	12.32 / 12.10 to 12.30	In the config mode of Cluster WebUI, an error occurs with a click of the [File Name] item in the [Monitor(special)] tab of a disk RW monitor resource.	S	This problem always occurs with a click.
58	12.32 / 11.00 to 12.30	The system enables the failure simulation button of a user space monitor resource which does not support the verification mode of Cluster WebUI.	S	This problem occurs when the user switches Cluster WebUI to the verification mode.

CHAPTER

SIX

ADDITIONAL INFORMATION

This chapter provides tips on installing EXPRESSCLUSTER X SingleServerSafe.

This chapter covers:

- 6.1. *EXPRESSCLUSTER X SingleServerSafe services*
- 6.2. *Using the License Manager*

6.1 EXPRESSCLUSTER X SingleServerSafe services

EXPRESSCLUSTER X SingleServerSafe consists of the system services listed below.

System Service Name	Explanation
EXPRESSCLUSTER	EXPRESSCLUSTER
EXPRESSCLUSTER Disk Agent	Not used for EXPRESSCLUSTER X SingleServerSafe
EXPRESSCLUSTER API	EXPRESSCLUSTER Restfl API control
EXPRESSCLUSTER Event	Event log output
EXPRESSCLUSTER Information Base	Cluster information management
EXPRESSCLUSTER Java Resource Agent	Java Resource Agent
EXPRESSCLUSTER Manager	WebManager Server
EXPRESSCLUSTER Old API Support	Compatible API process
EXPRESSCLUSTER X Server	EXPRESSCLUSTER Server
EXPRESSCLUSTER SingleServerSafe	SingleServerSafe process
EXPRESSCLUSTER System Resource Agent	System Resource Agent
EXPRESSCLUSTER Transaction	Communication process
EXPRESSCLUSTER Web Alert	Alert synchronization

6.2 Using the License Manager

The **Start** menu contains the menu for EXPRESSCLUSTER SingleServerSafe. You can start the License Manager from this menu.

6.2.1 Registering a license by specifying a license file

When using a trial license, obtain a license file instead of a license sheet. The following procedure describes how to register a license by specifying a license file.

Note: To register a license, use an account that has administrator privileges.

---

1. On the **Start** menu, click **License Manager of NEC EXPRESSCLUSTER SingleServerSafe**.
2. The **License Manager** dialog box is displayed. Click **Register**.
3. A dialog box is displayed for selecting the license registration method. Click **Register with License File**.
4. The **License File Specification** dialog box is displayed. 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.

6.2.2 Referencing or deleting a registered license

The following procedure describes how to refer to and delete the registered license.

1. On the **Start** menu, click **License Manager** of **NEC EXPRESSCLUSTER SingleServerSafe**.
2. The **License Manager** dialog box is displayed. Click **Refer/Delete**.
3. The registered licenses are listed.
4. Select the license to delete and click **Delete**.
5. The confirmation message to delete the license is displayed. Click OK.

6.2.3 Switching from the trial license to the product license

When registering the official license to a server running with the trial license, you can add the official license without deleting the trial license. When you list the registered licenses, both the official and trial licenses are shown, but there is no problem.

CHAPTER

SEVEN

NOTES AND RESTRICTIONS

This chapter provides information on known problems and how to troubleshoot the problems.

This chapter covers:

- 7.1. *Before installing EXPRESSCLUSTER X SingleServerSafe*
- 7.2. *Version up EXPRESSCLUSTER X SingleServerSafe*

7.1 Before installing EXPRESSCLUSTER X SingleServerSafe

Consideration after installing an operating system, when configuring OS and disks are described in this section.

7.1.1 File system

Use NTFS as the file system for the partition on which to install the OS.

7.1.2 Mail reporting

The mail reporting function is not supported by STARTTLS and SSL.

7.2 Version up EXPRESSCLUSTER X SingleServerSafe

This section describes notes on version up EXPRESSCLUSTER X SingleServerSafe after starting cluster operation.

7.2.1 Changed functions

The following describes the functions changed for each of the versions:

Internal Version 12.00

- Management tool
  The default management tool has been changed to Cluster WebUI. If you want to use the conventional WebManager as the management tool, specify

  ```
  http://management IP address of management group or actual IP␣
  ↪address:port number of the server in which EXPRESSCLUSTER Server␣
  ↪is installed/main.htm
  ```

  in the address bar of a web browser.

Internal Version 12.10

- Configuration tool
  The default configuration tool has been changed to Cluster WebUI, which allows you to manage and configure clusters with Cluster WebUI.
- Cluster statistical information collection function
  By default, the cluster statistical information collection function saves statistics information files under the installation path. To avoid saving the files for such reasons as insufficient disk capacity, disable the cluster statistical information collection function. For more information on settings for this function, refer to "Other setting details" in the "EXPRESSCLUSTER X SingleServerSafe Configuration Guide".
- System monitor resource
  The **System Resource Agent process settings** part of the system monitor resource has been separated to become a new monitor resource. Therefore, the conventional monitor settings of the **System Resource Agent process settings** are no longer valid. To continue the conventional monitoring, configure it by registering a new process resource monitor resource after upgrading EXPRESSCLUSTER. For more information on monitor settings for Process resource monitor resources, refer to "Setting up Process resource monitor resources" - "Monitor resource details" in the "EXPRESSCLUSTER X SingleServerSafe Configuration Guide".

Internal Version 12.30

- Weblogic monitor resource
  REST API has been added as a new monitoring method. From this version, REST API is the default value for the monitoring method. At the version upgrade, reconfigure the monitoring method.
  The default value of the password has been changed. If you use weblogic that is the previous default value, reset the password default value.

7.2.2 Removed Functions

The following describes the functions removed for each of the versions:

Internal Version 12.00

- WebManager Mobile
- OfficeScan CL monitor resource
- OfficeScan SV monitor resource
- OracleAS monitor resource

7.2.3 Removed Parameters

The following tables show the parameters configurable with Cluster WebUI but removed for each of the versions:

Internal Version 12.00

Cluster

Parameters	Default
Cluster Properties	
WebManager Tab	
• Enable WebManager Mobile Connection	Off
WebManager Mobile Password	
• Password for Operation	-
• Password for Reference	-

JVM monitor resource

Parameters	Default
JVM Monitor Resource Properties	
Monitor (special) Tab	
Memory Tab (when Oracle Java is selected for JVM type)	
• Monitor Virtual Memory Usage	2048 MB
Memory Tab (when Oracle Java(usage monitoring) is selected for JVM Type)	
• Monitor Virtual Memory Usage	2048 MB

User mode monitor resource

Parameters	Default
User mode Monitor Resource Properties	
Monitor (special) Tab	
• Use Heartbeat Interval/Timeout	On

Internal Version 12.10

Cluster

Parameters	Default
Cluster Properties	
WebManager Tab	
WebManager Tuning Properties	
Behavior Tab	
• Max. Number of Alert Records on the Viewer	300
• Client Data Update Method	Real Time

7.2.4 Changed Default Values

The following tables show the parameters which are configurable with Cluster WebUI but whose defaults have been changed for each of the versions:

- To continue using a "Default value before update" after the upgrade, change the corresponding "Default value after update" to the desired one.
- Any setting other than a "Default value before update" is inherited to the upgraded version and therefore does not need to be restored.

Internal Version 12.00

Cluster

Parameters	Default value before update	Default value after update	Remarks
Cluster Properties			
JVM monitor Tab			
• Maximum Java Heap Size	7 MB	16 MB	

Application monitor resource

Parameters	Default value before update	Default value after update	Remarks
Application Monitor Resource Properties			
Monitor (common) Tab			
• Wait Time to Start Monitoring	0 sec	3 sec	
• Do Not Retry at Timeout Occurrence	Off	On	
• Do not Execute Recovery Action at Timeout Occurrence	Off	On	

NIC Link Up/Down monitor resource

Parameters	Default value before update	Default value after update	Remarks
NIC Link Up/Down Monitor Resource Properties			
Monitor (common) Tab			
• Timeout	60 sec	180 sec	

Continued on next page

Table 7.7 – continued from previous page

Parameters	Default value before update	Default value after update	Remarks
• Do Not Retry at Timeout Occurrence	Off	On	
• Do not Execute Recovery Action at Timeout Occurrence	Off	On	

Service monitor resource

Parameters	Default value before update	Default value after update	Remarks
Service Monitor Resource Properties			
Monitor (common) Tab			
• Wait Time to Start Monitoring	0 sec	3 sec	
• Do Not Retry at Timeout Occurrence	Off	On	
• Do not Execute Recovery Action at Timeout Occurrence	Off	On	

Custom monitor resource

Parameters	Default value before update	Default value after update	Remarks
Custom Monitor Resource Properties			
Monitor (common) Tab			
• Wait Time to Start Monitoring	0 sec	3 sec	

Process Name monitor resource

Parameters	Default value before update	Default value after update	Remarks
Process Name Monitor Properties			
Monitor (common) Tab			
• Wait Time to Start Monitoring	0 sec	3 sec	
• Do Not Retry at Timeout Occurrence	Off	On	
• Do not Execute Recovery Action at Timeout Occurrence	Off	On	

SQL Server monitor resource

Parameters	Default value before update	Default value after update	Remarks
SQL Server Monitor Resource Properties			
Monitor (special) Tab			
• ODBC Driver Name	SQL Native Client	ODBC Driver 13 for SQL Server	

Weblogic monitor resource

Parameters	Default value before update	Default value after update	Remarks
Weblogic Monitor Resource Properties			
Monitor (special) Tab			
• Install Path	C:\bea\weblogic92	C:\Oracle\Middleware\Oracle_Home\wlserver	

JVM monitor resource

Parameters	Default value before update	Default value after update	Remarks
JVM Monitor Resource Properties			
Monitor (common) Tab			
• Timeout	120 sec	180 sec	

Internal Version 12.10

Script resource

Parameters	Default value before update	Default value after update	Remarks
Script Resource Properties			
Details Tab			
Script Resource Tuning Properties			
Parameter Tab			
• Allow to Interact with Desktop	On	Off	The settings cannot be changed for the internal version 12.00 or earlier. The settings can be changed for 12.10 or later.

Internal Version 12.20

Service resource

Parameters	Default value before update	Default value after update	Remarks
Service Resource Properties			
Recovery Operation tab			
• Retry Count	0 times	1 time	

7.2.5 Moved Parameters

The following table shows the parameters which are configurable with Cluster WebUI but whose controls have been moved for each of the versions:

Internal Version 12.00

Before the change	After the change
[Cluster Properties] - [Recovery Tab] - [Max Reboot Count]	[Cluster Properties] - [Extension Tab] - [Max Reboot Count]
[Cluster Properties] - [Recovery Tab] - [Max Reboot Count Reset Time]	[Cluster Properties] - [Extension Tab] - [Max Reboot Count Reset Time]
[Cluster Properties] - [Recovery Tab] - [Use Forced Stop]	[Cluster Properties] - [Extension Tab] - [Use Forced Stop]
[Cluster Properties] - [Recovery Tab] - [Forced Stop Action]	[Cluster Properties] - [Extension Tab] - [Forced Stop Action]
[Cluster Properties] - [Recovery Tab] - [Forced Stop Timeout]	[Cluster Properties] - [Extension Tab] - [Forced Stop Timeout]
[Cluster Properties] - [Recovery Tab] - [Virtual Machine Forced Stop Setting]	[Cluster Properties] - [Extension Tab] - [Virtual Machine Forced Stop Setting]
[Cluster Properties] - [Recovery Tab] - [Execute Script for Forced Stop]	[Cluster Properties] - [Extension Tab] - [Execute Script for Forced Stop]
[Cluster Properties] - [Power Saving Tab] - [Use CPU Frequency Control]	[Cluster Properties] - [Extension Tab] - [Use CPU Frequency Control]
[Cluster Properties] - [Auto Recovery Tab] - [Auto Return]	[Cluster Properties] - [Extension Tab] - [Auto Return]
[Cluster Properties]-[Recovery Tab]-[Disable Recovery Action Caused by Monitor Resource Error]	[Cluster Properties]-[Extension Tab]-[Disable cluster operation]-[Recovery Action when Monitor Resource Failure Detected]

CHAPTER

EIGHT

TROUBLESHOOTING

When installing EXPRESSCLUSTER X SingleServerSafe

Behavior and Message	Cause	Solution
Setup has failed. Error code : %x %x: error code	Refer to the given error code.	Refer to the action for the error code.
Less than 9.0 has been installed. After uninstalling, reinstall it again.	The old version of the EXPRESSCLUSTER has been installed.	Uninstall the old version of the EXPRESSCLUSTER and install the current version.
Failed to set up (%d) Error code : %x Please reboot the system, and then try again. %d: Internal code %x: Error code	Refer to the explanation of the given error code.	Refer to the action for the given error code.

Licensing

Behavior and Message	Cause	Solution
When the cluster was shut down and rebooted after distribution of the configuration data created by the Cluster WebUI to the server, the following message was displayed on the alert log, and the cluster stopped. "The license is not registered. (Product name:%1)" %1:Product name	The cluster has been shut down and rebooted without its license being registered.	Register the license from the server.
When the cluster was shut down and rebooted after distribution of the configuration data created by the Cluster WebUI to the server, the following message appeared on the alert log, but the cluster is working properly. "The number of licenses is insufficient. The number of insufficient licenses is %1. (Product name:%2)" %1: The number of licenses in short of supply %2: Product name	Licenses are insufficient.	Obtain a license and register it.
While the cluster was operated on the trial license, the following message is displayed and the cluster stopped. "The trial license has expired in %1. (Product name:%2)" %1: Trial end date %2: Product name	The license has already expired.	Ask your sales agent for extension of the trial version license, or obtain and register the product version license.
While the cluster was operated on the fixed term license, the following message appeared. "The fixed term license has expired in %1. (Product name:%2) " %1: Fixed term end date %2: Product name	The license has already expired.	Obtain the license for the product version from the vendor, and then register the license.

CHAPTER

NINE

LEGAL NOTICE

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CHAPTER

TEN

REVISION HISTORY

Edition	Revised Date	Description
1st	Apr 09, 2021	New manual
2nd	Oct 15, 2021	Corrected typographical errors.
3rd	Feb 25, 2022	Corrected typographical errors.