EXPRESSCLUSTER® X SingleServerSafe

3.3 for Windows

Installation Guide



Revision History

Edition	Revised Date	Description
1st	02/09/2015	New manual
2nd	04/20/2015	Corresponds to the internal version 11.31.
3rd	01/29/2016	Corresponds to the internal version 11.32.
4th	10/03/2016	Corresponds to the internal version 11.33.
5th	04/10/2017	Corresponds to the internal version 11.34.
6th	10/02/2017	Corresponds to the internal version 11.35.

© Copyright NEC Corporation 2015. All rights reserved.

Disclaimer

Information in this document is subject to change without notice.

NEC Corporation is not liable for technical or editorial errors or omissions in the information in this document.

You are completely liable for all risks associated with installing or using the product as described in this manual to obtain expected results and the effects of such usage.

The information in this document is copyrighted by NEC Corporation. No part of this document may be reproduced or transmitted in any form by any means, electronic or mechanical, for any purpose, without the express written permission of NEC Corporation.

Trademark Information

EXPRESSCLUSTER[®] is a registered trademark of NEC Corporation.

Intel, Pentium and Xeon are registered trademarks or trademarks of Intel Corporation.

Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and other countries.

Oracle, Java and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.

WebOTX is a registered trademark of NEC Corporation.

Android is a trademark or registered trademark of Google, Inc.

F5, F5 Networks, BIG-IP, and iControl are trademarks or registered trademarks of F5 Networks, Inc. in the United States and other countries.

Equalizer SVF is a registered trademark of Coyote Point Systems, Inc.

Other product names and slogans written in this manual are trademarks or registered trademarks of their respective companies.

Table of Contents

Preface		vii
Who Should	l Use This Guide	vii
How This G	uide Is Organized	vii
Terms Used	in This Guide	viii
EXPRESSC	LUSTER X SingleServerSafe Documentation Set	ix
Convention	5	X
Contacting 1	NEC	xi
Chapter 1	About EXPRESSCLUSTER X SingleServerSafe	13
What is EX	PRESSCLUSTER X SingleServerSafe?	
EXPRESS	CLUSTER X SingleServerSafe software configuration	
Checking sy	stem requirements for EXPRESSCLUSTER X SingleServerSafe	
Operation e	environment for SNMP linkage functions	
Operation e	environment for JVM monitor	
Operation e	environment for system monitor or function of collecting system resource information	
Preparing a	nd verifying the server environment before installation	30
1. Verifying	g the network settings (Required)	
2. Verifying	g the firewall settings (Required)	
3. Turning	off the power saving function (Required)	
Chapter 2	Installing EXPRESSCLUSTER X SingleServerSafe	
Installing th	e EXPRESSCLUSTER Server	34
Installing E	XPRESSCLUSTER X SingleServerSafe for the first time	
Installing E	XPRESSCLUSTER X SingleServerSafe in Silent Mode	
Installing th	e offline version of the EXPRESSCLUSTER Builder	
Installing th	ne offline version of the EXPRESSCLUSTER Builder	
Starting the	Builder	44
Starting the	online version of the Builder	
Starting the	offline version of the Builder	
Setting up t	he SNMP linkage function manually	46
Chapter 3	Upgrading, uninstalling or reinstalling	47
Upgrading I	EXPRESSCLUSTER X SingleServerSafe	
Upgrading	from the old EXPRESSCLUSTER X SingleServerSafe version	
Uninstalling	EXPRESSCLUSTER X SingleServerSafe	
Uninstallin	g EXPRESSCLUSTER X SingleServerSafe	
Uninstallin	g the offline version of the EXPRESSCLUSTER Builder	
Reinstalling	EXPRESSCLUSTER X SingleServerSafe	55
Reinstalling	g the EXPRESSCLUSTER X SingleServerSafe	55
Upgrading t	0 EXPRESSCLUSTER X	56
Chapter 4	Latest version information	57
Latest version	D n	
Function up	grade information	59
Chanter 5	Additional information	65
EARKESSU	LUSIERA SIIIgleserversale services	00 27
Using the L	icense ivialiager	
Referencing	a needse by specifying a needse nie	
Switching	From the trial license to the product license.	
Chantor (Notes and Destrictions	
Chapter 6		
Information	about installing EXPRESSCLUSTER X SingleServerSafe	72

Folders and files in the location pointed to by the EXPRESSCLUSTER X SingleServerSafe installation path	72
File system	72
WebManager	72
EXPRESSCLUSTER Disk Agent Service	72
Updating EXPRESSCLUSTER X SingleServerSafe	73
Changes in the default values with update	73
Appendix	75
Appendix A Troubleshooting	77
Appendix B Index	70

Preface

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.

How This Guide Is Organized

Chapter 1	"About EXPRESSCLUSTER X SingleServerSafe": Explains the functions and requirements of		
	EXPRESSCLUSTER X SingleServerSafe.		
Chapter 2	"Installing EXPRESSCLUSTER X SingleServerSafe": Describes how to install		
	EXPRESSCLUSTER X SingleServerSafe.		
Chapter 3	"Upgrading, uninstalling or reinstalling": Describes how to upgrade EXPRESSCLUSTER X		
	SingleServerSafe, uninstall and reinstall EXPRESSCLUSTER X SingleServerSafe, and		
	upgrade to EXPRESSCLUSTER X.		
Chapter 4	"Latest version information": Provides the latest information about EXPRESSCLUSTER X		
	SingleServerSafe.		
Chapter 5	"Additional information": Provides tips on installing EXPRESSCLUSTER X		
	SingleServerSafe.		
Chapter 6	"Notes and Restrictions": Provides notes and restrictions you need to know before starting the		
	actual operation of EXPRESSCLUSTER X SingleServerSafe.		
Appendix			
rippenuix			
Appendix A	"Troubleshooting": Describes problems you might experience when installing or setting up		
	EXPRESSCLUSTER X SingleServerSafe and how to resolve them.		
Appendix B	"Index"		

Terms Used in This Guide

EXPRESSCLUSTER X SingleServerSafe, which is described in this guide, uses windows and commands common to those of the clustering software EXPRESSCLUSTER X 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.

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

EXPRESSCLUSTER X SingleServerSafe Documentation Set

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

EXPRESSCLUSTER X SingleServerSafe Installation Guide

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

EXPRESSCLUSTER X SingleServerSafe Configuration Guide

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

EXPRESSCLUSTER X SingleServerSafe Operation Guide

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

EXPRESSCLUSTER X Integrated WebManager Administrator's Guide

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

EXPRESSCLUSTER X WebManager Mobile Administrator's Guide

This guide is intended for system administrators who manage cluster systems using EXPRESSCLUSTER with EXPRESSCLUSTER WebManager Mobile and for system engineers who are installing the WebManager Mobile. In this guide, details on those items required for installing the cluster system using the WebManager Mobile are explained in accordance with the actual procedures.

Conventions

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

Note:

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

Important:

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

Related Information:

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

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

Contacting NEC

For the latest product information, visit our website below:

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

Chapter 1 About EXPRESSCLUSTER X SingleServerSafe

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

This chapter covers:

•	What is EXPRESSCLUSTER X SingleServerSafe?	14
•	Checking system requirements for EXPRESSCLUSTER X SingleServerSafe	16
•	Preparing and verifying the server environment before installation	30

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.



EXPRESSCLUSTER X SingleServerSafe software configuration

EXPRESSCLUSTER X SingleServerSafe consists of following three software applications:

EXPRESSCLUSTER Server

This is a main module of EXPRESSCLUSTER X SingleServerSafe. Install it on the server.

EXPRESSCLUSTER WebManager

This is a tool to manage EXPRESSCLUSTER X SingleServerSafe operations. It uses a Web browser as a user interface. The WebManager is incorporated into the EXPRESSCLUSTER Server and therefore does not have to be installed.

• EXPRESSCLUSTER Builder (Builder)

This is a tool for creating the configuration data of EXPRESSCLUSTER X SingleServerSafe. There are two versions. The online version Builder runs in the configuration mode of the WebManager, and the offline version Builder is installed individually in a management terminal. The online version Builder is incorporated in the WebManager. The Builder also uses a Web browser as a user interface the same way as the WebManager.



The EXPRESSCLUSTER X Builder and the WebManager are Java applets that run on Java VM. They can run on any machine in which the Java Runtime Environment (JRE) is installed. In other words, once you install the JRE on a server on which EXPRESSCLUSTER X SingleServerSafe is installed, you can use the Builder and WebManager on that server.

Checking system requirements for EXPRESSCLUSTER X SingleServerSafe

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

EXPRESSCLUSTER X Server		
Machine on which the WebManager can be installed	PC that supports one of the following operating systems.	
Supported operation systems	IA-32 version Microsoft Windows Server® 2003, Standard Edition Service Pack 2 Microsoft Windows Server® 2003 R2, Standard Edition Service Pack 2 Microsoft Windows Server® 2003 R2, Enterprise Edition Service Pack 2 Microsoft Windows Server® 2008 Standard Service Pack 1 Microsoft Windows Server® 2008 Enterprise Service Pack 1 Microsoft Windows Server® 2008 Enterprise Service Pack 2 Microsoft Windows Server® 2008 Enterprise Service Pack 2 Microsoft Windows Server® 2008 Enterprise Service Pack 2 Microsoft Windows Server® 2003, Standard Service Pack 2 x86_64 version Microsoft Windows Server® 2003, Standard Edition Service Pack 2 Microsoft Windows Server® 2003, Enterprise Edition Service Pack 2 Microsoft Windows Server® 2003 R2, Standard Edition Service Pack 2 Microsoft Windows Server® 2003 R2, Enterprise Edition Service Pack 2 Microsoft Windows Server® 2003 R2, Enterprise Edition Service Pack 2 Microsoft Windows Server® 2008 Enterprise Service Pack 1 Microsoft Windows Server® 2008 Enterprise Service Pack 1 Microsoft Windows Server® 2008 Enterprise Service Pack 2 Microsoft Windows Server® 2008 R2 Enterprise Service Pack 2 Microsoft Windows Server® 2008 R2 Enterprise Microsoft Windows Server® 2008 R2 Enterprise Microsoft Windows Server® 2008 R2 Enterprise Service Pack 1 Microsoft Windows Server® 2008 R2 Enterprise Service Pack 1 Microsoft Windows Server® 2008 R2 Enterprise Service Pack 1 Microsoft Windows Server® 2008 R2 Datacenter Microsoft Windows Server® 2008 R2 Datacenter Microsoft Windows Server® 2012 Standard Microsoft Windows Server® 2012 Standard Microsoft Windows Server® 2012 R2 Datacenter Microsoft Windows Server® 2016 Standard Microsoft Windows Server® 2016 Standard Microsoft Windows Server® 2016 Datacenter	
Memory size	IA-32 version User mode: 192 MB (*1) Kernel mode: 32MB	
	User mode: 256 MB (*1) Kernel mode: 32MB	
Disk Size	IA-32 version Initial size at installation: 34 MB Maximum size during operation: 1290 MB	
	x86_64 version Initial size at installation: 41 MB Maximum size during operation: 1300 MB	

(*1) excepting for optional products.

WebManager, Builder (online version)		
Machine on which the WebManager can be installed	PC that supports one of the following operating systems.	
Supported operating systems	Microsoft Windows® XP Service Pack 2 (Only for IA32) Microsoft Windows® XP Service Pack 3 (Only for IA32) Microsoft Windows Vista® Service Pack 2 (Only for IA32) Microsoft Windows® 7 Microsoft Windows® 7 Microsoft Windows® 8 Microsoft Windows® 8.1 Microsoft Windows® 8.1 Microsoft Windows® 10 Microsoft Windows Server® 2003 Service Pack 1 Microsoft Windows Server® 2003 Service Pack 2 Microsoft Windows Server® 2003 R2 Microsoft Windows Server® 2003 R2 Microsoft Windows Server® 2008 R2 Microsoft Windows Server® 2008 Service Pack 2 Microsoft Windows Server® 2008 Service Pack 2 Microsoft Windows Server® 2008 R2 Service Pack 2 Microsoft Windows Server® 2008 R2 Microsoft Windows Server® 2008 R2 Microsoft Windows Server® 2012 R2 Microsoft Windows Server® 2016	
Supported browsers	Browsers supporting Java 2 Microsoft Windows® XP Service Pack 2 (Only for IA32) Microsoft Windows® XP Service Pack 3 (Only for IA32) : Internet Explorer 6 Service Pack 2 or later Microsoft Windows Vista® Service Pack 1 (Only for IA32) : Internet Explorer 7 Microsoft Windows® 7 Service Pack 1 : Internet Explorer 7 Internet Explorer 8 Internet Explorer 9 Internet Explorer 10 Internet Explorer 10 Internet Explorer 10 Firefox 40.0.3 Microsoft Windows® 8 : Internet Explorer 10 Firefox 15 Microsoft Windows® 8.1 : Internet Explorer 11 Firefox 47.0 Firefox 47.0 Firefox 49.0.2 Microsoft Windows® 10 : Internet Explorer 11 Firefox 41.0 Firefox 46.0 Firefox 50.1.0 Microsoft Windows Server® 2003 Service Pack 1 Microsoft Windows Server® 2003 Service Pack 2 : Internet Explorer 6 Service Pack 1 or later Windows Server® 2008 Service Pack 1 Microsoft Windows Server® 2008 Service Pack 1 Microsoft Windows Server® 2008 Service Pack 1 Microsoft Windows Server® 2008 Service Pack 2 : Internet Explorer 7 Internet Explorer 7 Internet Explorer 9 Internet Explorer 11	

Note:

To use the Builder on x86_64 machines, it is necessary to use a 32-bit browser. For the latest information about the supported browsers, visit our website below: http://www.nec.com/global/prod/expresscluster/

Note:

To connect use the Builder on x86_64 machines, it is necessary to use a 32-bit Java Runtime Environment.

Note:

When you access to http://<IP_address>:29003 using Internet Explorer 9, you should add the IP address to Local intranet site.

Builder (offline version)		
Machine on which the WebManager can be installed	PC that supports one of the following operating systems.	
Supported operating systems	Microsoft Windows® XP Service Pack 2 (Only for IA32) Microsoft Windows® XP Service Pack 3 (Only for IA32) Microsoft Windows Vista® Service Pack 1 (Only for IA32) Microsoft Windows® 7 Microsoft Windows® 7 Microsoft Windows® 7 Service Pack 2 (Only for IA32) Microsoft Windows® 8 Microsoft Windows® 8.1 Microsoft Windows® 8.1 Microsoft Windows® 10 Microsoft Windows Server® 2003 Service Pack 1 Microsoft Windows Server® 2003 Service Pack 2 Microsoft Windows Server® 2003 R2 Microsoft Windows Server® 2003 R2 Microsoft Windows Server® 2008 Service Pack 2 Microsoft Windows Server® 2008 Service Pack 2 Microsoft Windows Server® 2008 Service Pack 1 Microsoft Windows Server® 2008 Service Pack 1 Microsoft Windows Server® 2008 R2 Microsoft Windows Server® 2008 R2 Microsoft Windows Server® 2012 R2 Microsoft Windows Server® 2012 R2 Microsoft Windows Server® 2016	
Supported browsers	Browsers supporting Java 2 Microsoft Windows® XP Service Pack 2 (Only for IA32) Microsoft Windows® XP Service Pack 3 (Only for IA32) : Internet Explorer 6 Service Pack 2 (Only for IA32) Microsoft Windows Vista® Service Pack 1 (Only for IA32) Microsoft Windows Vista® Service Pack 2 (Only for IA32) Microsoft Windows Vista® Service Pack 1 (Only for IA32) : Internet Explorer 7 Microsoft Windows® 7 Service Pack 1 : Internet Explorer 7 Internet Explorer 8 Internet Explorer 9 Internet Explorer 10 Internet Explorer 10 Firefox 40.0.3 Microsoft Windows® 8 : Internet Explorer 10 Firefox 15 Microsoft Windows® 8.1 : Internet Explorer 11 Firefox 47.0 Firefox 47.0 Firefox 41.0 Firefox 50.1.0 Microsoft Windows Server® 2003 Service Pack 1 Microsoft Windows Server® 2003 Service Pack 2 : Internet Explorer 6 Service Pack 1 or later Microsoft Windows Server® 2008 Service Pack 1 Microsoft Windows Server® 2008 Service Pack 2 : Internet Explorer 7 Internet Explorer 7 Mic	

	Microsoft Windows Server® 2008 R2 Service Pack 1 : Internet Explorer 8 Internet Explorer 9 Internet Explorer 11 Firefox 41.0 Microsoft Windows Server® 2012 : Internet Explorer 10 Firefox 15 Microsoft Windows Server® 2012 R2 : Internet Explorer 11 Firefox 41.0 Microsoft Windows Server® 2016 : Internet Explorer 11 Firefox 48.0 Firefox 50.1.0			
Java Runtime Environment	Java Runtime Environment is required for the Builder. Java [™] Runtime Environment Version 6.0 Update 21 (1.6.0_21) or later. Version 7 Update 2 (1.7.0_2) or later. Version 8 Update 5 (1.8.0_5) or later.			
Memory size	User mode: 32 MB			
Disk size (excluding the size required for the Java runtime environment)	5 MB			
Supported version	Builder version	EXPRESSCLUSTER Server internal version		
	3.1.0-1	11.10		
	3.1.1-1	11.11		
	3.1.3-1	11.13		
	3.1.4-1	11.14		
	3 1 5-1	11.15		
	3.1.0-1	11.16		
	3.1.7-1	11.17		
	318-1	11.18		
		11.19		
	3.1.10-1	11.1a		
	3.2.0-1	11.20		
		11.21		
	3.2.1-1	11.22		
		11.23		
	3.3.0-1	11.30		
	3.3.1-1	11.31		
	3.3.2-1	11.32		
	3.3.3-1	11.33		
	3.3.4-1	11.34		
	3.3.5-1	11.35		

Note:

To use the Builder on x86_64 machines, it is necessary to use a 32-bit browser. For the latest information about the supported browsers, visit our website below: http://www.nec.com/global/prod/expresscluster/

Note:

To connect use the Builder on x86_64 machines, it is necessary to use a 32-bit Java Runtime Environment.

Note:

The offline Builder 3.1.8-1 or earlier does not work on Java Runtime Environment Version 7 Update 25.

Note:

The offline Builder does not work on Java Runtime Environment Version 7 Update 45.

Note:

When you access to http://<IP_address>:29003 using Internet Explorer 9, you should add the IP address to Local intranet site.

Operation environment for SNMP linkage functions

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

IA32 version

OS	EXPRESSCLUS TER version	Remarks
Microsoft Windows Server 2003 Service Pack 2	11.10 or later	
Microsoft Windows Server 2003 R2 Service Pack 2	11.10 or later	
Microsoft Windows Server 2008 Service Pack 2	11.10 or later	

x86_64 version

os	EXPRESSCLUS TER version	Remarks
Microsoft Windows Server 2003 x64 Edition Service Pack 2	11.10 or later	
Microsoft Windows Server 2003 x64 Edition R2 Service Pack 2	11.10 or later	
Microsoft Windows Server 2008 Service Pack 2	11.10 or later	
Microsoft Windows Server 2008 R2 Service Pack 1	11.10 or later	
Microsoft Windows Server 2012	11.17 or later	

Note:

SNMP information acquisition using IPv6 is available on Microsoft Windows Server 2008 or later.

Operation environment for JVM monitor

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

Java[™] Runtime Environment Version6.0 Update 21 (1.6.0_21) or later

Java[™] Runtime Environment Version7.0 (1.7.0_6) or later

JavaTM Runtime Environment Version 8.0 Update 11 (1.8.0_11) or later

JavaTM Runtime Environment Version 9.0 (1.9.0) 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

The tables below list the load balancers that were verified for the linkage with the JVM monitor. IA32 version

Load balancer	EXPRESSCLUST ER version	Remarks
Express5800/LB400h or later	11.10 or later	
InterSec/LB400i or later	11.10 or later	
InterSecVM/LB V1.0 or later * When Rel1.0 or later is applied	11.10 or later	
BIG-IP v11	11.13 or later	
MIRACLE LoadBalancer	11.13 or later	
CoyotePoint Equalizer	11.13 or later	

x86_64 version

Load balancer	EXPRESSCLUST ER version	Remarks
Express5800/LB400h or later	11.10 or later	

InterSec/LB400i or later	11.10 or later	
InterSecVM/LB V1.0 or later * When Rel1.0 or later is applied	11.10 or later	
BIG-IP v11	11.13 or later	
MIRACLE LoadBalancer	11.13 or later	
CoyotePoint Equalizer	11.13 or later	

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 3.5 Service Pack 1

Note:

The version of Microsoft .NET Framework must be 3.5.

Installation procedure under Windows Server 2008 R2

From the Start menu, select Administrative Tools and then Server Manager.

The Server Manager window appears. From the Operation (A) menu, select Add Features.



Figure 1: Server Manager window

The Add Features Wizard appears. Select the .Net Framework 3.5.1 Features checkbox, and then follow the instructions that appear in the window to perform installation.

Add Features Wizard		×
Select Features		
Features Confirmation Progress Results	Select one or more features to install on this server. Eestures: Performance of the service (BITS) BitLocker Drive Encryption B	ion: <u>1.NET Framework 3.5.1</u> s the power of the .NET rk 2.0 APIs with new gies for building applications rappealing user interfaces, our customers' personal information, enable seamless re communication, and the ability to model a range of processes.
	< <u>Previous</u> <u>N</u> ext >	Install Cancel

Figure 2: Add Features Wizard

You can check whether .Net Framework 3.5 has been installed by using the **Remove Features** Wizard.

In the Server Manager window, select Remove Features from the Operation (A) menu. The window shown below appears.

If you can select the **.Net Framework 3.5.1 Features** checkbox, .Net Framework 3.5 has been installed.



Figure 3: Remove Features Wizard

To install the System Resource Agent under Windows Server 2008 R2, you must first apply the following patch provided by Microsoft:

Patch number: KB981314

Download the patch from the following URL, and then apply it:

http://support.microsoft.com/kb/981314/

Installation procedure under Windows Server 2012

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.



Figure 4: 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**.

a	Add Roles and Features Wizard
Select destination	DN SERVER w20125Een
Before You Begin Installation Type Server Selection	Select a server or a virtual hard disk on which to install roles and features. Select a server from the server pool Select a virtual hard disk
Server Roles Features Confirmation Results	Server Pool Filter: Name IP Address Operating System
	w2012SEen 192.168.12.121 Microsoft Windows Server 2012 Standard Evaluation
	1 Computer(s) found This page shows servers that are running Windows Server 2012, and that have been added by using the Add Servers command in Server Manager. Offline servers and newly-added servers from which data collection is still incomplete are not shown.
	< Previous Next > Install Cancel

Figure 5: Select Server

Click Next in the Server Roles window.

In the Features window, select .Net Framework 3.5 Features and click Next.

a	Add Roles and Features Wizard	
Select features		DESTINATION SERVER w2012SEen
Before You Begin Installation Type Server Selection Server Roles Features Confirmation Results	Select one or more features to install on the selected server. Features IIII F framework 3.5 Features ANET Framework 4.5 Features (Installed) Background Intelligent Transfer Service (BITS) BitLocker Drive Encryption BitLocker Network Unlock BranchCache Client for NFS Data Center Bridging Fhanced Storage Failover Clustering Group Policy Management Ink and Handwriting Services Internet Printing Client	Description .NET Framework 3.5 combines the power of the .NET Framework 2.0 APIs with new technologies for building applications that offer appealing user interfaces, protect your customers' personal identity information, enable seamless and secure communication, and provide the ability to model a range of business processes.
	< Previous Next :	> Install Cancel

Figure 6: 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.

b	Add Roles and Features Wizard	_ D X			
Confirm installati	ion selections	DESTINATION SERVER w2012SEen			
Before You Begin	Before You Begin To install the following roles, role services, or features on selected server, click Install.				
Installation Type	Restart the destination server automatically if required				
Server Selection Server Roles	Server Selection Optional features (such as administration tools) might be displayed on this page because they have been selected automatically. If you do not want to install these optional features, click Previous to clear their check boxes				
Features					
Confirmation Results	.NET Framework 3.5 Features .NET Framework 3.5 (includes .NET 2.0 and 3.0)				
< Previous Next > Install Cancel					

Figure 7: 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.

Ŀ,	Add Roles and Features Wizard		-		x
	🚡 Add Roles and Features Wizard				
	Specify Alternate Source Path	ESTIN	ATION w2	I SERV 012SE	ER en
	Some servers might not have all source files available to add all roles, role services, or features. The source files might not have been installed, or might have been removed by users after the operating system was installed.				
	If the server on which you want to install roles or features does not have all required source files, the server can try to get files by using Windows Update, or from a location that is specified by Group Policy.	iuse f c Prev	they l vious	have to cle	ar
	You can also specify an alternate path for the source files, if the destination server does not have them. The source path or file share must grant Read permissions either to the Everyone group (not recommended for security reasons), or to the computer (local system) account of the destination server; granting user account access is not sufficient.				
	The following are examples of a valid source file path where the destination server is the local server, and where the E: drive contains the Windows Server installation media.				
	Source files for .NET Framework 3.5 Features are not installed as part of a typical installation, but are available in the side-by-side store (SxS) folder: E:\Sources\SxS\				
	Source files for other features are available in the Install.wim file. Add the WIM: prefix to the path, and a suffix to indicate the index of the image from which to get source files. In the following example, the index is 4: WIM:E\Sources\Install.wim:4				
	Path: IlServerName\Path\SourceFiles				
Н	OK Cancel				_
	< Previous INEXT > Instal		C	ancel	

Figure 8: Specify Alternative Source Path

Preparing and verifying the server environment before installation

After installing the hardware, verify the following:

- 1. Verification of the network settings (Required)
- **2.** Verification of the firewall settings (Required)
- **3.** Power saving function OFF (Required)

1. Verifying the network settings (Required)

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

- IP Address
- Host name

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 Builder. 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			То		Remarks		
Server	Automatic allocation	\rightarrow	Server	29001/TCP	Internal communication		
Server	Automatic allocation	\rightarrow	Server	29002/TCP	Data transfer		
Server	Automatic allocation	\rightarrow	Server	29003/UDP	Alert synchronization		
Server	29106/UDP	\rightarrow	Server	29106/UDP	Heartbeat (kernel mode)		

From the WebManager to the server					
From			То		Remarks
WebManager	Automatic allocation	\rightarrow	Server	29003/TCP	http communication

From the server connected to the Integrated WebManager to the target server					
From			То		Remarks
Server connected to the Integrated WebManager	Automatic allocation	\rightarrow	Server	29003/TCP	http communication
Server to be managed by the Integrated WebManager	29003	\rightarrow	Client	29010/UDP	UDP communication

Others					
From			То		Remarks
Server	Automatic allocation	\rightarrow	Server	Management port number set by the Builder	JVM monitor
Server	Automatic allocation	\rightarrow	Monito ring target	Connection port number set by the Builder	JVM monitor
Server	Automatic allocation	\rightarrow	Server	Management port number for Load Balancer Linkage set by the Builder	JVM monitor
Server	Automatic allocation	\rightarrow	Server	Communicati on port number set by the Builder	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.

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. Make sure to turn off the power saving function by following the procedures below:

1. Click Control Panel, and select Power Options.

2.	Click the Power Schemes tab, and then do the following:				
	Select Always On under Power schemes.				
	In Settings for Always On power scheme, specify Never to Turn off monitor and Turn				
	off hard disks.				
	Specify Never to System standby.				
	Note:				
	Nothing needs to be specified if there is no option to specify for Turn off monitor , Turn				
	off hard disks, and System standby.				

- **3.** Click the **Hibernation** tab, and then do the following: In **Hibernation**, clear the **Enable hibernation** check box.
- 4. Click OK and check if the status does not become OnNow.

Chapter 2 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. If you have a separate machine for setting up SingleServerSafe, install the Builder on that machine.

This chapter covers:

•	Installing the EXPRESSCLUSTER Server	34
•	Installing the offline version of the EXPRESSCLUSTER Builder	42
•	Starting the Builder	44

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.

Installing EXPRESSCLUSTER X SingleServerSafe for the first time

To install EXPRESSCLUSTER X SingleServerSafe, follow the procedure below.

Note 1:

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

Note 2:

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 3:

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 "Setting up the SNMP linkage function manually".

- **1.** Insert the Installation CD-ROM to the CD-ROM drive.
- **2.** The menu screen for installation is displayed.



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[®] SingleServerSafe for Windows.

Note:

If you click the **Exit** button without selecting either, the menu screen is closed.

4. Select NEC EXPRESSCLUSTER® X SingleServerSafe 3.3 for Windows.



Note:

If you click the **Exit** button without selecting either, the previous menu screen is displayed.

5. [Welcome to the InstallShield Wizard for NEC EXPRESSCLUSTER SingleServerSafe] is displayed. Click **Next**.



6. The **Choose Destination Location** dialog box is displayed. When changing the install destination, click **Browse** to select a directory. Click **Next**.

Choose Destination Location			
Select folder where setup will install files.			
Setup will install NEC ExpressCluster SingleSer	verSafe in the	following folde	r.
To install to this folder, click Next. To install to another folder.	a different folde	er, click Brows	e and select
Destination Folder			
Destination Folder C:\Program Files\EXPRESSCLUSTER SSS			Biowse
Destination Folder C:\Program Files\EXPRESSCLUSTER SSS allShield			Biowse

7. The **Ready to Install the Program** dialog box is displayed. Click **Install** to start the installation.

NEC ExpressCluster SingleServerSafe Setup	×
Ready to Install the Program The wizard is ready to begin installation.	
Click Install to begin the installation.	
If you want to review or change any of your ins the wizard.	stallation settings, click Back. Click Cancel to exit
InstallShield	
	< Back Install Cancel

8. When the installation successfully finishes, the **Port Number** dialog box is displayed. Normally, click **Next** without changing the default setting.

Port Number	
Spe Use	cify the port number for communication. default number under normal conditions.
	TCP WebManager HTTP Port 29003
lf the You	e same port number is already used, specify an unused one. can change the settings after the setup is completed.
	Back

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 Chapter 6 "Other setting details" in the *Configuration Guide*.
9. License Manager is displayed. Click Register.



10. Click **Register with License Information** to register the license.

License Registration	×
Register a license.	
Register a license in the following	g ways.
Register with License I	nformation
Register a license by en want to register.	itering information of the product you
Register with Licen	ise File
Register a license by se want to register.	lecting a license file of the product you
	<u> </u>

11. Based on the license sheet, select appropriate items for **OS information**, **Product/Trial** and **Product Name**, and then click **Next**.

elect OS information, product version and product name, nd then click [Next].	
OS information Product/Trial Product version	
Product information	
Product Name	License 🔺
EXPRESSCLUSTER X 3.3 for Windows	Cluster
EXPRESSCLUSTER X SingleServerSafe 3.3 for Windows	Cluster
EXPRESSCLUSTER X SingleServerSafe for Windows upgrade license	Cluster
EXPRESSCLUSTER X Replicator DR 3.3 for Windows	Node li
EXPRESSCLUSTER X Replicator DR 3.3 for Windows upgrade license	Node li-
EXPRESSCLUSTER X Replicator 3.3 for Windows	Node li
EXPRESSCLUSTER X Database Agent 3.3 for Windows	Node li
EXPRESSCLUSTER X Internet Server Agent 3.3 for Windows	Node li 🖕
• · · · · · · · · · · · · · · · · · · ·	

12. Based on the license sheet, enter the license unit and number of licenses, and click Next.

🗱 License Unit Selection
Select a license unit and click [Next].
When you select [Node Unit], enter the number of nodes.
C Node Unit Number of Node Licenses :
CPU Unit Number of CPU Licenses : 2
< <u>Back</u> <u>Next</u> Cancel

13. Based on the license sheet, enter the serial number and license key, and then click Next.

🌃 License Key En	try			_ 🗆 🗙
Enter a serial n and then click [1	umber and a license key, Vext].			
Serial No.	:			
License Key	:	-		
		< <u>B</u> ack	<u>N</u> ext >	Cancel
		<u> </u>	Next >	Cancel

14. When the License Registration Confirmation dialog box is displayed, check its content, and then click Next. A confirmation message is displayed.



15. The initial **License Manager** dialog box is displayed again, as in step 9. Register the licenses of optional products in the same way. After registering all the required licenses, click **Finish** to close the **License Manager** dialog box.

16. [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**.



Note: By default, No, I will restart my computer later is selected.

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 1:

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

Note 2:

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 3:

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 "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.

When the OS is x86_64, copy the following file in the installation CD-ROM. Windows\3.3\common\server\x64\response\setup sss inst en.iss

When the OS is x86, copy the following file in the installation CD-ROM. Windows\3.3\common\server\x86\response\setup_sss_inst_en.iss

2. Open the response file (setup_sss_inst_en.iss) by using a text editor and change the folder indicated by (*).

```
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>: When the OS is x86_64, Windows\3.3\common\server\x64\silent-install.bat in the installation CD-ROM

When the OS is x86, windows\3.3\common\server\x86\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. Execute the following command from the command prompt to register the license.

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

3. Restart the server.

Installing the offline version of the EXPRESSCLUSTER Builder

It is not necessary to install the offline version of the EXPRESSCLUSTER Builder on the server on which EXPRESSCLUSTER X SingleServerSafe is installed. If you will create or modify the configuration data of EXPRESSCLUSTER X SingleServerSafe by using a machine that cannot access EXPRESSCLUSTER X SingleServerSafe through a Web browser, you need to install the offline version of the EXPRESSCLUSTER Builder on that machine.

Installing the offline version of the EXPRESSCLUSTER Builder

Follow the procedures below to install the offline version of the EXPRESSCLUSTER Builder.

Note:

Install the EXPRESSCLUSTER Builder with the administrator privilege.

- **1.** Insert the Installation CD-ROM to the CD-ROM drive.
- **2.** The menu screen for installation is displayed.



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[®] SingleServerSafe for Windows.



EXPRESSCLUSTER X SingleServerSafe 3.3 for Windows Installation Guide

4. Select NEC EXPRESSCLUSTER[®] SingleServerSafe Accessories.



5. Select NEC EXPRESSCLUSTER[®] SingleServerSafe Builder.

NEC ExpressClus	ter Setup Menu
	NEC ExpressCluster
I NEC	EVDDESSCI USTED SincisSamanSafe Dulidan
NEC 1	LAPRESSULUSTER Singleserversuje Bulluer
	Exit
	Copyright (C) NEC Corporation 2015

6. Select where to install in the Cluster Builder self-extracting dialog and click Decompress.

Cluster Builder self-extracting dialog	×
Enter Install Folder(1): C:\Program Files (x86)\	Browse(<u>R</u>)
Decompress[3] Cancel(ESC)	

7. Click **OK** in the ZIP Self Decompression dialog box. Installation is completed.



Starting the Builder

The online version of the Builder runs on a machine (including the local server) capable of connecting to the server that uses EXPRESSCLUSTER X SingleServerSafe over the network. The Builder started without a network connection is called the offline version of the Builder. While what you see and specify on the screen are the same for both versions, the way you start the Builder and how the settings are applied differ.

The procedure for each version is described below.

Starting the online version of the Builder

To start the online version of the EXPRESSCLUSTER Builder, follow the procedure below.

1. Start the WebManager. Start your browser, and then enter the IP address and port number of the server where EXPRESSCLUSTER X SingleServerSafe is installed in the Address bar.

http://192.168.0.1:29003/

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

Specify the IP address of the server on which EXPRESSCLUSTER X SingleServerSafe is installed. For the local server, the IP address may be localhost.

Note:

You cannot start the WebManager unless you restart the server after installing EXPRESSCLUSTER X SingleServerSafe. Be sure to restart the server. **Note:**

Starting the WebManager requires the JRE. Do not forget to install the JRE.

2. Select Config Mode from the View menu or click the 🔄 button on the toolbar to change to the configuration mode (online version of the Builder).

🖉 Cluster Manager - Windows Internet	Explorer	
	💌 🗟 🍫 🗙 📴 Bing	P •
🚖 Favorites 🛛 👍 🙋 Cluster Manager 🧯	Suggested Sites 🔻 🙋 Web Slice Gallery 👻	
🏉 Cluster Manager	🚹 🔻 🗟 👻 🖃 🜧 👻 Page 🕶 Safe	ty 🕶 Tools 👻 🕜 🕶
<u>File View Edit H</u> elp		
🕞 Config Mode 💌 🚭 🖪	%	
to Server1 ↑ Servers Groups Monitors	Name Severs Groups Monitors	
Type Received Time	Time 👽 Server Name Module Name Event ID	
0 2010/09/30 20:07:18.148	2010/09/30 20:07:18.133 server1 rm 1501 Monitor c	liskwlocal has be 🔺
2010/09/30 20:07:13.648	2010/09/30 20:07:13.648 server1 nm 1 The serv	er server1 has be
2010/09/30 20:06:39.742	jzunu/ua/su zu:ub:sa.b33 jserver1 jpm 501 Clusteris	ervice has been
Done	💦 🙀 Local intranet Protected Mode: Off	• • 100% •

EXPRESSCLUSTER X SingleServerSafe 3.3 for Windows Installation Guide

Starting the offline version of the Builder

To start the offline version of the EXPRESSCLUSTER Builder, follow the procedure below.

- **1.** Double-click the HTML file "clptrek.htm", which is for Builder window display and is in the installation folder.
- **2.** Start Web browser that EXPRESSCLUSTER Builder supports.
- **3.** If a security warning is displayed, click information bar and allow the blocked content.

🖉 Cluster Builder - Windows Internet Explorer	_ 🗆 ×
🔄 😔 🗸 🔀 C:\Program Files (x86)\CLUSTERPRO SSS\dpbuilder-w\dptrek.htm 🛛 🚽 🛠 🔽 Bing	P -
🖕 Favorites 🛛 🙀 🙋 Cluster Manager 🖉 Suggested Sites 🔹 🖉 Web Slice Gallery 🔹	
🔡 🔻 🍎 Cluster Manager 🖉 Cluster Builder 🗙 🏠 🔹 🖾 🖛 🗴 Bage 🔹 Safety 🗸 Tools	s • 🕜 •
To help protect your security, Internet Explorer has restricted this webpage from running scripts or ActiveX controls that could access your computer. Click here for options	r X
🕐 Done 💦 👘 Computer Protected Mode: Off 🛛 🖓 🗸 100	0% * //,

Note:

Starting the Builder requires the JRE. Do not forget to install the JRE.

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 3 Upgrading, uninstalling or reinstalling

This chapter describes how to upgrade 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:

•	Upgrading EXPRESSCLUSTER X SingleServerSafe	48
•	Uninstalling EXPRESSCLUSTER X SingleServerSafe	51
•	Reinstalling EXPRESSCLUSTER X SingleServerSafe	55
•	Upgrading to EXPRESSCLUSTER X	56

Upgrading EXPRESSCLUSTER X SingleServerSafe

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

Upgrading from the old EXPRESSCLUSTER X SingleServerSafe version

Before starting the upgrade, read the following notes.

- ♦ You can upgrade from EXPRESSCLUSTER X SingleServerSafe 1.0, 2.0, or 2.1 for Windows to EXPRESSCLUSTER X SingleServerSafe 3.3 for Windows. Upgrading from other versions is not possible.
- ♦ To upgrade from EXPRESSCLUSTER X SingleServerSafe 1.0, 2.0, or 2.1 for Windows to EXPRESSCLUSTER X SingleServerSafe 3.3 for Windows, you need the license of EXPRESSCLUSTER X SingleServerSafe 3.3 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 or 3.3 for Windows is available for EXPRESSCLUSTER X in use.

The following procedure describes how to upgrade from EXPRESSCLUSTER X SingleServerSafe 1.0, 2.0, or 2.1 for Windows to EXPRESSCLUSTERe X SingleServerSafe 3.3 for Windows.

Note:

To upgrade, use an account that has administrator privileges.

- **1.** Make sure that the server and all the resources are in the normal status by using the WebManager or **clpstat** command.
- 2. If there is an active failover group on the server, stop the group by using the WebManager.

Services (Local)	🔕 Services (Local)				
	Application Information	Name A	Description	Status	Startup Type
		QDesktop Window Manager Session Mana	Provides D	Started	Automatic
	Start the service	QDHCP Client	Registers a	Started	Automatic
		Diagnostic Policy Service	The Diagno	Started	Automatic (D
	Description:	🆏 Diagnostic Service Host	The Diagno		Manual
	Facilitates the running of interactive	🖏 Diagnostic System Host	The Diagno		Manual
	applications with additional administrative	🏟 Disk Defragmenter	Provides Di		Manual
	users will be unable to launch applications	Distributed Link Tracking Client	Maintains li	Started	Automatic
	with the additional administrative	Distributed Transaction Coordinator	Coordinate	Started	Automatic (D
	privileges they may require to perform	DNS Client	The DNS Cl	Started	Automatic
	desired user tasks.	Concusting Ello Suctors (EES)	Drovidoc th		Manual
		EXPRESSCLUSTER		Started	Automatic
		EXPRESSCLUSTER Disk Agent			Disabled
		EXPRESSCLUSTER Event		Started	Automatic
		EXPRESSCLUSTER Manager		Started	Automatic
		EXPRESSCLUSTER Old API Support		Started	Automatic
		EXPRESSCLUSTER Server		Started	Automatic
		EXPRESSCLUSTER SingleServerSafe		Started	Automatic
		EXPRESSCLUSTER Transaction		Started	Automatic
		EXPRESSCLUSTER Web Alert		Started	Automatic
		Extensible Authentication Protocol	The Extens		Manual
	1	Runction Discovery Provider Host	The FDPH		Manual
	1	Runction Discovery Resource Publication	Publishes t		Manual
		👸 Curum Dallary Chamb	The second	Chambred	Automatic

3. Set Startup Type to Manual for the EXPRESSCLUSTER X SingleServerSafe services.

Note:

The **Startup Type** of the EXPRESSCLUSTER Disk Agent Service must be **Disable**. Do not change it.

- **4.** Restart the server by shutting down the cluster using the WebManager or by specifying the relevant command.
- **5.** After the system restarts, stop the SNMP service. (This only applies when the SNMP service exists and is running.)
- **6.** Start the EXPRESSCLUSTER Server installer by following steps 1 to 4 of Chapter 2, "Installing EXPRESSCLUSTER X SingleServerSafe for the first time". Select **Next** to start the upgrade.



7. After file replacement, License Manager is started. Register the required licenses.

8. After the licenses are registered, [Upgrade Complete] is displayed. [InstallShield Wizard Complete] is displayed. Select [No, I will restart my computer later.] and click **Finish**.



9. Set Startup type of the following services to Automatic.



Note:

The **Startup Type** of the EXPRESSCLUSTER Disk Agent service must be **Disable**. Do not change it.

When upgrading from X 1.0, EXPRESSCLUSTER Alert service is removed, because the EXPRESSCLUSTER Alert function is provided as general execution file (*.exe) for X 3.3

- **10.** Restart the server.
- **11.** Upgrading completes. Confirm that the internal version is "11.30" or later by using WebManager or clpstat command.

Uninstalling EXPRESSCLUSTER X SingleServerSafe

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.** Select **Service** in **Administrative Tool** in OS, and set following service **Startup Type** to Manual.
 - EXPRESSCLUSTER
 - EXPRESSCLUSTER Event
 - EXPRESSCLUSTER Manager
 - EXPRESSCLUSTER Old API Support
 - EXPRESSCLUSTER Server
 - EXPRESSCLUSTER SingleServerSafe
 - EXPRESSCLUSTER Transaction
 - EXPRESSCLUSTER Web Alert
- 2. Reboot the server.
- **3.** When using the EXPRESSCLUSTER X Alert service, click the EXPRESSCLUSTER reporting icon in the task tray.
- **4.** For Windows Server 2003 environment, click **Add or Remove Programs** in **Control Panel**. For Windows Server 2008 environment, click **Program and Features** in **Control Panel**.

Programs and Features			_ 🗆 🗙
🕞 🕞 🗢 🖾 🔹 Control Panel 👻 A	All Control Panel Items 🝷 Programs and Features	👻 🚱 🛛 Search Progra	ams and Features
Control Panel Home	Uninstall or change a program		
View installed updates	To uninstall a program, select it from the li	st and then click Uninstall, Change, or F	Repair.
🛞 Turn Windows features on or off			
-	Organize 👻		8= - 🔞
	Name A	▼ Publisher	▼ Install ▼ Size ▼
	i≝ Jave(TN) C ⊥pdate 21 ₩ Maximudi un 64	Orazie Sali a rókału Ciercia IIII.	0/22/2010 97.0 MB
	Vec ExpressCluster SingleServerSafe	NEC	2/10/2011
	4		
	Correctly installed programs	Tabal size: 07.0 MD	
	3 programs installed	TOUAL SIZE: 97.0 MD	
	······		

5. Select NEC EXPRESSCLUSTER SingleServerSafe, and then click Uninstall.



6. Click **Yes** in the uninstallation confirmation dialog box. If you click No, uninstallation will be canceled.

NEC Expre	ssCluster SingleServerSafe Setup 🛛 🕅
Do you really want to uninstall the program?	
	<u>Y</u> es

7. 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.

The SNMP service is running. You need to stop the SNMP service before you perform uninstallation.
Do you want to stop the SNMP service now?
Yes No

8. 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.

NEC Expre	essEluster SingleServerSafe Setup	×
?	The registry settings to disable the media sense function of TCP/IP disconnect detection are going to be reset. Is it OK?	
	<u>⊻es</u> <u>N</u> o	

9. [InstallShield Wizard Complete] is displayed. Click **Finish**.



10. 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.

Windows Server 2003:

Execute the following command at a command prompt.

powercfg /X "always on" /processor-throttle-ac none

The character string to be specified with /X option is the name selected in the current setting of **Power Options** -> **Power Schemes** in **Control Panel**.

Windows Server 2008, Windows Server 2012: Select **Balanced** in **Power Options** -> **Select a power plan** in **Control Panel**.

Uninstalling the offline version of the EXPRESSCLUSTER Builder

To uninstall the EXPRESSCLUSTER X Builder, follow the procedures below:

- 1. Exit from all Web browsers (confirm that the JavaVM icon is no longer in the task tray).
- **2.** Delete the EXPRESSCLUSTER X Builder installation folder from Windows Explorer. The default installation folder is "C:\Program Files\EXPRESSCLUSTER SSS".

Reinstalling EXPRESSCLUSTER X SingleServerSafe

Reinstalling the EXPRESSCLUSTER X SingleServerSafe

To reinstall the EXPRESSCLUSTER X SingleServerSafe, prepare the configuration data created using the Builder (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 Builder after creation, you can back up the configuration data by using the clpcfctrl command. For details, see "Backing up configuration data" in Chapter 2, "EXPRESSCLUSTER X SingleServerSafe command reference" in the *EXPRESSCLUSTER X SingleServerSafe 3.3 for Windows 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 Builder, and then upload it. For details, see "Applying configuration data" in Chapter 2, "Creating configuration data" in the *EXPRESSCLUSTER X SingleServerSafe 3.3 for Windows Configuration Guide*.

Upgrading to EXPRESSCLUSTER X

When upgrading EXPRESSCLUSTER X SingleServerSafe to EXPRESSCLUSTER X, you can migrate the configuration data created using the Builder (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 Builder after creation, you can back up the configuration data by using the clpcfctrl command. For details, see "Backing up configuration data" in Chapter 2, "EXPRESSCLUSTER X SingleServerSafe command reference" in the *EXPRESSCLUSTER X SingleServerSafe 3.3 for Windows 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 "Uninstalling EXPRESSCLUSTER X SingleServerSafe" in this guide.
- **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 4 Latest version information

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

This chapter covers:

•	Latest version	58
•	Function upgrade information	59

Latest version

As of October 2017, the latest internal version of EXPRESSCLUSTER X SingleServerSafe 3.3 for Windows is 11.35.

For the latest information, please refer to the latest manual on EXPRESSCLUSTER website.

Check the internal version of EXPRESSCLUSTER X SingleServerSafe by using the WebManager. You can display the internal version of a server by selecting the icon for the server in the tree view of the WebManager.

If the internal version is 11.34 or earlier, you can update it to 11.35 by applying the update CPRO-XW430-25E. For the update application procedure and the failure information that is modified by the update, refer to the update procedure.

Function upgrade information

Upgrade has been performed on the following minor versions.

Number	Version	Upgraded section	
1	11.00	It is now possible to operate both the WebManager and Builder from the same browser window.	
2	11.00	A function has been implemented to check set IP address when uploading configuration data.	
3	11.00	clprexec command has been implemented which notifies failure from other servers or monitoring tools other than EXPRESSCLUSTER X SingleServerSafe to the cluster servers and message receive monitor resource has been implemented which runs recovery action to notified failure.	
4	11.00	User mode process dump of Oracle monitor process can now be acquired when monitor process timed out.	
5	11.00	Detailed information about an Oracle database can now be acquired when Oracle monitor resource detected any error.	
6	11.00	The Hyper-V guest OS can now be treated as a resource.	
7	11.00	The termination code of an activated application executed by the application resource and a batch file executed by the script resource can now be identified by the existence of abnormity and then used to trigger for recovery operation.	
8	11.02	Different values can now be specified for Normal Return Value of the start and stop script of the script resources.	
9	11.02	The options to display and reset the recovery operation count have been added to the clpmonctrl command.	
10	11.10	The number of group and resource has been doubled.	
11	11.10	Waiting for startup or stopping a failover group has been enabled.	
12	11.10	A function whereby the WebManager and the clpmonctrl command can be used to trigger a Dummy Failure for a monitor resource has been implemented.	
13	11.10	WebManager that can be connected from an Android terminal has been implemented.	
14	11.10	The MIB of EXPRESSCLUSTER X SingleServerSafe has been defined.	
15	11.10	An SNMP trap transmission function has been added.	
16	11.10	Information acquisition requests on SNMP are now supported.	
17	11.10	A function has been implemented to execute a specified script to recover a monitor resource. In addition, script execution has been enabled prior to reactivation or failover.	
18	11.10	A function has been implemented to disable recovery action caused by monitor resource error.	

19	11.10	Database monitoring functions have been enhanced.	
20	11.10	Some environment variables have been added for use in scripts.	
21	11.10	Script setting has been simplified by the use of script templates.	
22	11.10	The display of the configuration mode screen has been corrected for the 800*600 screen size.	
23	11.10	Logs can be downloaded even if the browser is set to block popups.	
24	11.10	Functions for which licenses have not been installed are no longer displayed during setup.	
25	11.10	The number of monitor resources that are automatically registered has been increased.	
26	11.10	The default command timeout value for the clprexec command has been changed from 30 seconds to 180 seconds.	
27	11.10	Process name monitor resource (psw) has been added.	
28	11.10	JVM monitor resource (jraw) has been added.	
29	11.10	System monitor resource (sraw) has been added.	
30	11.10	A function has been added to acquire a list of the services, when configuring service resources, that are installed on the cluster server.	
31	11.11	The conditions to wait for the group stop can now be specified. (Cluster stop, server stop)	
32	11.11	The view of the recovery action control function popup window that is displayed at the end of the Cluster Generation Wizard is improved.	
33	11.11	The number of disks of which size is to be monitored by System Resource Agent has been changed from 10 to 26.	
34	11.13	A function for displaying time information has been added to WebManager.	
35	11.13	A function for automatically starting or resuming the cluster after reflecting the configuration data has been added.	
36	11.13	A function has been added to prevent a Web browser from being terminated or reloaded when the configuration data is edited in WebManager Config Mode.	
37	11.13	WebManager can now set and display physical machines and virtual machines separately.	
38	11.13	The setting that assumes that a disk full detection is not an error has been added to the disk RW monitor resource.	
39	11.13	A function for monitoring the number of processes has been added to the process name monitor resource.	
40	11.13	The Oracle monitor resource has been improved so that a specific error (ORA-1033) which occurs when Oracle is being started is regarded as the normal state.	

41	11.14	WebManager now supports Java SE Runtime Environment 7.	
42	11.15	Windows Server 2012 is now supported.	
43	11.15	The license information list can be now viewed from WebManager.	
44	11.15	The shortcut icon for WebManager is now created on the desktop when EXPRESSCLUSTER X SingleServerSafe is installed.	
45	11.15	The Websphere monitor resource now supports WebSphere 8.0.	
46	11.15	The load balancer link function for the JVM monitor resource now supports BIG-IP LTM.	
47	11.15	The JVM monitor resource now supports WebOTX ESB 8.5, MasterScope/NEC Storage SVF for PDF 9.1, MasterScope/NEC Storage Report Director Enterprise 9.1, and MasterScope/NEC Storage Universal Connect/X 9.1.	
48	11.15	A mode to monitor disk monitor resources by using write through has been added.	
49	11.15	A command that can be used for capacity planning (clpprer) has been added. This command can estimate future values based on time-series data indicating system resource usage.	
50	11.15	A function to collect system resource information that can be used to easily determine the cause of a failure resulting from a shortage of system resources has been added.	
51	11.15	The restriction that the OS authentication setting could not be specified for Oracle monitor resources in the UAC environment of Windows Server 2008 or later has been lifted.	
52	11.17	PostgreSQL monitor now supports PostgreSQL9.2.	
53	11.17	The SNMP linkage function now supports Windows Server 2012.	
54	11.18	A log collection type is added. (By default, logs are not now collected for the Java Resource Agent or the System Resource Agent.)	
55	11.18	The type of action in the event of a group resource activation/deactivation stall can now be selected.	
56	11.18	The Websphere monitor resource now supports WebSphere 8.5.	
57	11.1a	The offline Builder now supports Java Runtime Environment Version 7 Update 25.	
58	11.1a	The WebOTX monitor resource now supports WebOTX V9.1.	
59	11.1a	The JVM monitor resource now supports WebOTX V9.1.	
60	11.1a	WebLogic monitor resource can now monitor the managed server.	
61	11.1a	A retry function has been added when the group resource management process failed to access registry while listing resources at the time of a start it.	
62	11.20	Windows Server 2012 R2 is now supported.	

63	11.21	The NIC Link Up/Down monitor resources now support Windows Server 2012's NIC teaming feature.	
64	11.21	The WebOTX monitor resource now supports WebOTX V9.2.	
65	11.21	The JVM monitor resource now supports WebOTX V9.2.	
66	11.21	The JVM monitor resource can now execute commands based on the error cause upon the detection of an error.	
67	11.21	The JVM monitor resource is now able to specify options for starting Java VM.	
68	11.21	The function to forcibly terminate the application when the application resource is deactive or when the custom monitor resource is stopped has been added.	
69	11.21	The WebLogic monitor resource is now able to specify options transferring to the WebLogic. WLST command to be used to monitor WebLogic	
70	11.21	Theapito option used to specify a timeout value has been added to the clpgrp command.	
71	11.21	Theapito option used to specify a timeout value has been added to the clprsc command.	
72	11.21	Theapito option used to specify a timeout value has been added to the clpcl command.	
73	11.21	The function to check whether the command is duplicatedly started has been added to the clpstat command.	
74	11.21	The offline version of Builder now supports Java Runtime Environment Version 7 Update 40 and Java Runtime Environment Version 7 Update 51.	
75	11.21	The WebManager and Builder now support Java Runtime Environment Version 7 Update 51.	
76	11.21	The user-space monitor resource (userw) has been added.	
77	11.21	The items to be collected at log collection (Windows firewall setting, security event log, and task scheduler setting) have been enhanced.	
78	11.21	For SQL Server monitoring, library path choices have been added to the [Monitor (special)] tab.	
79	11.30	The JVM monitor resource now supports Java 8.	
80	11.30	The JVM monitor resource now supports an environment in which G1 GC is specified as the GC method of the monitoring target Java VM.	
81	11.30	An end path can now be executed in the "resident" mode of an application resource.	
82	11.30	A function has been added that waits for a specified time before the activation or deactivation of a service resource is completed.	
83	11.30	A function has been added that prevents the retry processing from being executed if a monitor timeout occurs for a monitor resource.	
84	11.30	A function has been added that prevents the recovery action from being executed if a monitor timeout occurs for a monitor resource.	

EXPRESSCLUSTER X SingleServerSafe 3.3 for Windows Installation Guide

85	11.30	Improvements have been made in the items to be collected as logs (text format event log, route print result, clpstatlocal result, and local server cluster status).	
86	11.30	The license information is now acquired automatically when the online version Builder is started.	
87	11.30	PostgreSQL monitor now supports PostgreSQL9.4.	
89	11.31	The processing to avoid coexistence problem with anti-virus software (delay of EXPRESSCLUSTER X SingleServerSafe operation) has been added.	
90	11.30	The PostgreSQL monitor resource now supports PowerGres on Windows 9.4.	
91	11.32	The Tuxedo monitor resource now supports Oracle Tuxedo 12c (12.1.3).	
92	11.32	The WebOTX monitor resource now supports WebOTX V9.3.	
93	11.32	The JVM monitor resource now supports the following: - WebOTX V9.3 - Apache Tomcat 8.0 - WebSAM SVF for PDF 9.2 - WebSAM Report Director Enterprise 9.2 - WebSAM Universal Connect/X 9.2	
94	11.32	The default time to wait for network initialization completion has been changed from 0 minutes to three minutes.	
95	11.32	The function to check the health of the EXPRESSCLUSTER X SingleServerSafe processes has been added.	
96	11.32	The vulnerability when an invalid request was issued to WebManager has been fixed.	
97	11.32	Level 2 monitoring (monitoring by update/select) for the following resources has been improved: - Oracle monitor - PostgreSQL monitor - SQL Server monitor - ODBC monitor - DB2 monitor	
98	11.32	The cluster setting information that can be displayed by using the clpstat command has been expanded.	
99	11.33	Windows Server 2016 is now supported.	
100	11.33	PostgreSQL monitor resource now supports PostgreSQL 9.5.	
101	11.33	SQL Server monitor resource now supports SQL Server 2016.	
102	11.33	Weblogic monitor resource now supports Oracle WebLogic Server 12c R2 (12.2.1).	
103	11.33	JVM monitor resource now supports Oracle WebLogic Server 12c R2 (12.2.1).	
104	11.33	The default value for the Add command option of Weblogic monitor resource has been changed from "-Dwlst.offline.log=disable" to "-Dwlst.offline.log=disable -Duser.language=en_US".	
105	11.33	The clplogcc command now supports a function for specifying the type of the event log to be collected.	

Chapter 4 Latest version information

106	11.33	Weblogic monitor resource and WebOTX monitor resource have been enhanced to support the port number ranging from 1 to 65535.
107	11.34	Secure Boot of Windows Server 2016 is now supported.
108	11.34	The PostgreSQL monitor resource now supports PostgreSQL 9.6.
109	11.34	The DB2 monitor resource now supports DB2 v11.1.
110	11.34	The WebOTX monitor resource now supports WebOTX V9.4.
111	11.34	The WebSphere monitor resource now supports the following: - WebSphere Application Server 8.5.5 - WebSphere Application Server 9.0
112	11.34	The JVM monitor resource now supports the following applications: - Apache Tomcat 8.5 - WebOTX V9.4
113	11.34	The default value of The maximum number of open files has been updated over 1440 times of the system monitor resource is has been changed from on to off.
114	11.34	The action performed when a monitor timeout occurs has been improved.
115	11.34	The Wait Time to Start Monitoring parameter now can be set for a user space monitor resource.
116	11.35	Oracle monitor resource now supports Oracle Database 12c Release2 (12.2).
117	11.35	The WebOTX monitor resource now supports WebOTX V9.5.
118	11.35	The JVM monitor resource now supports the following applications: - WebOTX V9.5
119	11.35	The JVM monitor resource now supports Java 9.
120	11.35	The default value of Ping Timeout of the IP monitor resource has been changed from one second to five seconds.
121	11.35	Silent installation is now supported.
122	11.35	The command to register the license is now supported.
123	11.35	The time required to complete startup/stop of a script resource has been shortened.
124	11.35	The operation to stop a resource has been added to the final actions to be taken upon detection of a monitor resource error.

Chapter 5 Additional information

This chapter provides tips on installing EXPRESSCLUSTER X SingleServerSafe.

This chapter covers:

•	EXPRESSCLUSTER X SingleServerSafe services	66
•	Using the License Manager ·····	67

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 Event	Event log output	
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	

Using the License Manager

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

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 **Programs** and then **License Manager of NEC EXPRESSCLUSTER SingleServerSafe**.



2. The License Manager dialog box is displayed. Click Register.

🖥 License M	anager		
Register, Select the	refer or delete licenses. desired menu.		
	Register	Register license information.	
	Refer / Delete	Refer/delete license information.	
		< Back Next >	Finish

3. A dialog box is displayed for selecting the license registration method. Click **Register with** License File.

Register with License Information
Register a license by entering information of the product you want to register.
Register with License File
Register a license by selecting a license file of the product you want to register.

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**.

" Look in: 🌗	System32		
Name 🔺		 ■ Date modified ▼	Туре 🔺
0409		7/14/2009 2:41 PM	File folde
🔒 Advanced	Installers	7/14/2009 12:20	File folde
鷆 ar-SA		7/14/2009 12:20	File folde
鷆 BestPracti	tes	7/14/2009 2:37 PM	File folde
ル bg-BG		7/14/2009 12:20	File folde
鷆 Boot		7/14/2009 2:41 PM	File folde 🗸
آ			•
ile <u>n</u> ame:			<u>O</u> pen
iles of type:	All files (*.*)	•	Cancel
	🗌 Open as read-only		

5. The message confirming registration of the license is displayed. Click **OK**.



6. Click **Finish** to close the license manager.

For the license registration to take effect, shut down the server by using the shutdown command of your OS and reboot it.

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 **Programs** and then **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.

License Manager	×
Do you want to delete the license (61AE9682-**********************-F2556847)	?
OK Cance	,

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 6 Notes and Restrictions

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

This chapter covers:

•	Information about installing EXPRESSCLUSTER X SingleServerSafe	72
•	Updating EXPRESSCLUSTER X SingleServerSafe	73

Information about installing EXPRESSCLUSTER X SingleServerSafe

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

Folders and files in the location pointed to by the EXPRESSCLUSTER X SingleServerSafe installation path

The folders and files in the location pointed to by the EXPRESSCLUSTER X SingleServerSafe installation path must not be handled (edited, created, added, or deleted) by using any application or tool other than EXPRESSCLUSTER X SingleServerSafe.

Any effect on the operation of a folder or file caused by using an application or tool other than EXPRESSCLUSTER X SingleServerSafe will be outside the scope of NEC technical support.

File system

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

WebManager

After updating EXPRESSCLUSTER X SingleServerSafe, close the Web browser, clear the Java cache, and then open the browser again.

EXPRESSCLUSTER Disk Agent Service

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

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

Changes in the default values with update

The default values will be changed for some parameters after updating EXPRESSCLUSTER X SingleServerSafe.

- The default value of the following parameters will be changed after updating EXPRESSCLUSTER X SingleServerSafe from the previous version to the target version or later.
- ◆ If you want to keep using the "Default value before update", you have to change these parameters to this value after updating EXPRESSCLUSTER X SingleServerSafe.
- ◆ If you have changed the parameters from "Default value before update", the setting values of these parameters will not be changed. Therefore you do not have to change these parameters.

Parameter	Target Version	Default value before update	Default value after update
[Cluster Properties] – [Timeout] – [Network initialization complete wait time]	11.32	0 minutes	3 minutes
[Weblogic monitor resource] - [Add command option]	11.33	-Dwlst.offline.log=disable	-Dwlst.offline.log=disable -Duser.language=en_US
[System Monitor Resource Properties] - [Monitoring condition of running process] - [The maximum number of open files has been updated over 1440 times]	11.34	On	Off
[IP monitor resource] - [Monitor (special)] tab - [Ping Timeout]	11.35	1000 milliseconds	5000 milliseconds

Appendix

- Appendix A Troubleshooting Appendix B Index •
- •

Appendix A Troubleshooting

When installing EXPRESSCLUSTER X SingleServerSafe

Behavior and Message	Cause	Solution
Setup has failed.	Refer to the given error code.	Refer to the action for the error code.
Error code : %x		
%x: 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	Refer to the explanation of the given error code.	Refer to the action for the given error code.
Please reboot the system, and then try again.		
%d: Internal code %x: Error code		

Troubleshooting for licensing

Behavior and Message	Cause	Solution
When the cluster was shut down and rebooted after distribution of the configuration data created by the Builder to all servers, the following message was displayed on the WebManager's alert view, and the cluster stopped.	The cluster has been shut down and rebooted without its license being registered.	Register the license from the server.
"The license is not registered. Product name:%1"		
%1:Product name		
When the cluster was shut down and rebooted after distribution of the configuration data created by the Builder to all servers, the following message appeared on WebManager's alert view, but the cluster is working properly.	Licenses are insufficient.	Obtain a license and register it.
"The license is insufficient. The number of registered licenses is %1. There are %2 too few licenses. Product name: %3"		
%1: Number of registered licenses %2: Number of licenses still needed %3: Product name		
While the cluster was operated on the trial license, the following message is displayed and the cluster stopped.	The license has already expired.	Ask your sales agent for extension of the trial version license, or obtain and register the product version license.
"The license of trial expired by %1, %2 and %3. Product name:(%4)"		
%1: Trial end year %2: Trial end month %3: Trial end day %4: Product name		

Appendix B Index

Ε

environment variable, 72 EXPRESSCLUSTER SingleServerSafe, 13, 14 EXPRESSCLUSTER X SingleServerSafe, 13 EXPRESSCLUSTER X SingleServerSafe services, 66

F

File system, 72 Function upgrade information, 59

I

Index, 79 Installing the EXPRESSCLUSTER Server, 34 Installing the offline version of the EXPRESSCLUSTER Builder, 42

J

JVM monitor, 23

L

Latest version, 58

R

Referencing or deleting a registered license, 69 Registering a license by specifying a license file, 67 Reinstallation, 55 Reinstalling the EXPRESSCLUSTER X SingleServerSafe, 55

S

Setting after hardware configuration, 30 Setting up the SNMP linkage function manually, 46 Software configuration, 15 Starting the Builder, 44 Switching from the trial license to the product license, 70 System requirements, 16

Т

Troubleshooting, 77 Turning off the power saving function, 32

U

Uninstallation, 51 Uninstalling the offline version of the EXPRESSCLUSTER Builder, 54 Upgrading, 56 Upgrading the EXPRESSCLUSTER X SingleServerSafe, 48

۷

Verifying the firewall settings, 30 Verifying the network settings, 30

W

WebManager, 72