NEC

Installation Guide (Linux)

Express5800 Series

NEC ESMPRO Manager Ver. 6

Chapter 1   Introduction

Chapter 2   Installation

Chapter 3   Uninstallation

Chapter 4   Appendix

Contents

Notations Used in This Document

Notations used in the text

In addition to safety-related symbols urging caution, 3 other types of notations are used in this document. These notations have the following meanings.

Important	Indicates critical items that must be followed when operating software.
Note	Indicates items that must be confirmed when operating software.
Tips	Indicates information that is helpful to keep in mind.

Abbreviations of Operating Systems

Windows Operating Systems (OS) are referred to as follows.

Notations in this document	Official names of Windows
Windows Server 2012 R2	Windows Server 2012 R2 Standard
	Windows Server 2012 R2 Datacenter
Windows Server 2012	Windows Server 2012 Standard
	Windows Server 2012 Datacenter
Windows Server 2008 R2	Windows Server 2008 R2 Standard
	Windows Server 2008 R2 Enterprise
	Windows Server 2008 R2 Datacenter
Windows Server 2008	Windows Server 2008 Standard
	Windows Server 2008 Enterprise
	Windows Server 2008 Datacenter
	Windows Server 2008 Foundation
	Windows Server 2008 Standard 32-bit
	Windows Server 2008 Enterprise 32-bit
	Windows Server 2008 Datacenter 32-bit
Windows 8.1	Windows 8.1 Pro 64-bit Edition
	Windows 8.1 Pro 32-bit Edition
	Windows 8.1 Enterprise 64-bit Edition
	Windows 8.1 Enterprise 32-bit Edition
Windows 8	Windows 8 Pro 64-bit Edition
	Windows 8 Pro 32-bit Edition
	Windows 8 Enterprise 64-bit Edition
	Windows 8 Enterprise 32-bit Edition
Windows 7	Windows 7 Professional 64-bit Edition
	Windows 7 Professional 32-bit Edition
	Windows 7 Ultimate 64-bit Edition
	Windows 7 Ultimate 32-bit Edition
	Windows 7 Enterprise 64-bit Edition
	Windows 7 Enterprise 32-bit Edition
Windows Vista	Windows Vista Business 64-bit Edition
	Windows Vista Business 32-bit Edition
	Windows Vista Enterprise 64-bit Edition
	Windows Vista Enterprise 32-bit Edition
	Windows Vista Ultimate 64-bit Edition
	Windows Vista Ultimate 32-bit Edition

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* /opt/nec/es_manager/wbserver/webapps/axis2 /WEB-INF/lib
* /opt/nec/es_manager/wbserver/webapps/esmpro/WEB-INF/lib

If the external libraries require to include their source code with this product, see the folder below.
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Apache Log4J	Copyright©The Apache Software Foundation
Apache Neethi	Copyright©The Apache Software Foundation
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Apache Tomcat	Copyright©The Apache Software Foundation
Apache Woden	Copyright©The Apache Software Foundation
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NEC ESMPRO Manager Ver. 6

1

General Description

This chapter explains NEC ESMPRO Manager.

1. Introduction

2. **About Downloading Latest NEC ESMPRO**

Describes about Downloading Latest NEC ESMPRO.

3. System Requirements

Describes about the need environment of NEC ESMPRO Manager.

1. Introduction

Read this document so as to gain an adequate understanding of the contents.

The contents in this document are intended for users who fully understand features and operations of OS related to this utility.

If you want to know operations of OS, or if there is any unclear point, see the online help of each OS.

NEC ESMPRO Manager is a software designed for reducing operational management costs by remotely managing servers.

NEC ESMPRO Manager has the following features.

Note	Some models of managed servers may not support all functions. See "Managed Server" at "System Requirements".

- **Rebuilding even if OS on the managed server has failed.**

  Even if OS on the managed server is inoperable (in the state of OS's stall, BIOS Power On Self Test (POST), or DC OFF), NEC ESMPRO Manager allows you to collect the managed server's hardware information and control the power supply.

- **Operation while viewing the managed server′s screen.**

  While key-in and mouse operations are enabled, the managed server's screen can be viewed on the remote browser at any time during POST just after the managed server is turned ON and even after Windows or Linux has been booted.

Note	After Windows or Linux starts up, login to EXPRESSSCOPE Engine series, key input and mouse operation are possible from remote KVM.

- **Operation of more than one managed server at a time.**

  By specifying a group, you can provide power control or change a setting for managed servers through a single operation.

- **Specification of remote operation time.**

  The managed server can be turned OFF or information can be collected at pre-specified time, so NEC ESMPRO Manager is available for nighttime batch processing.

- **Easy operation through the Internet.**

  The managed server can be operated with a web browser. If you use Internet's standard Secure Socket Layer (SSL) for NEC ESMPRO Manager, you enable secure remote operation from an external network.

- **Update of firmware and software on the managed server. (NEC ExpressUpdate)**

  NEC ExpressUpdate is the function that manages versions of modules like firmware and software on the managed server and that updates the modules.

  NEC ExpressUpdate can download the update packages automatically for the managed server, and install them without stopping the system.

𝟤. About Download of Latest NEC ESMPRO

See the following URL for NEC ESMPRO information. You can download the latest version of NEC ESMPRO from URL.

http://www.58support.nec.co.jp/global/download/index.html

3. System Requirements

NEC ESMPRO Manager requires the following hardware and software:

3.1 PC for Management

Important	About product license NEC ESMPRO Manager can be used on a single OS per license.

• Hardware

- Machine   A computer on which OS supported by NEC ESMPRO Manager can be installed

- CPU   Core2 Duo 1.80GHz or higher, or equivalent compatible processor is recommended.

- Memory   Memory required for running OS plus 1GB or more (2GB or more is recommended.)

- Free hard disk space   400MB or more

• Software

- OS   Red Hat Enterprise Linux Server 5.X (5.5 and later)
Red Hat Enterprise Linux Server 5.X (5.5 and later) (x64)
Red Hat Enterprise Linux Server 6.X
Red Hat Enterprise Linux Server 6.X (x64)
Red Hat Enterprise Linux Server 7.0 (x64)
VMware ESXi 5 (Guest OS)
Windows Hyper-V (Guest OS)

- Web client   Internet Explorer 10.0 / 11.0

                            Firefox ESR 24 (Windows / Linux)

Important	• If you use NEC ESMPRO Manager from a browser, install JRE 7 or later. On a point of the security, the latest version is recommended. If JRE is not installed, some pages are not displayed correctly. • Java Applet and Java scripts must be executable. Please set the web browser to play animation in web pages. • 1024 by 768 pixels or more are recommended as a screen area in display properties. • The browser must be latest status such as applying a patch. If the status is not updated such as preinstalled, some pages may not be displayed correctly.

Number of managed servers   Addition of server licenses permits a single NEC ESMPRO Manager to manage a maximum of 1000 servers.

3.2 Managed server

A server to be managed by NEC ESMPRO Manager is as follows:

- Baseboard Management Controller (BMC)

  About the managed server integrated BMC, see "Appendix D Managed Components Summary" in " NEC ESMPRO Manager Ver.6 Setup Guide".

Note	The required environment varies depending on the connection type with the managed server. See "Chapter1 3.3 Requirements for Connection between PC for Management and Managed Server".

- NEC ESMPRO ServerAgentService

  If you use WS-Management monitoring function, the following software is need on managed server. (No matter if BMC is integrated or not.)

  - NEC ESMPRO ServerAgentService (Ver. 1.0 or later)

- NEC ExpressUpdate Agent or EXPRESSSCOPE Engine 3

  If you use NEC ExpressUpdate function that manages versions of modules like firmware and software, the following software or firmware is required on the managed server.

  - NEC ExpressUpdate Agent

  - EXPRESSSCOPE Engine 3

- RAID system

  If you manage RAID system using Universal RAID Utility on the managed server, the following software is required on the managed server.

  - Universal RAID Utility Windows Edition (Ver4.0 or later)

  - Universal RAID Utility Linux ／ VMware ESX Edition (Ver4.0 or later)

- vPro

  About the managed server based on vPro, see "Appendix D Managed Components Summary" in "N EC ESMPRO Manager Ver.6 Setup Guide".

Note	• You cannot use the monitoring function by the SNMP even if you install NEC ESMPRO Agent. • If Windows Firewall is enabled, communication will be interrupted. See Appendix "Chapter4 2 Port numbers / Protocols" and open the required ports. • NEC ESMPRO Manager and a managed server needs to be the same OS language.

3.3 Requirements for connection between PC for Management and managed server

Provide an environment in accordance with the connection type to be used.

- **LAN connection**
    - **TCP/IP network**

Note	• Do not use a cross cable to connect PC for Management and managed server. • If you use the managed server integrated BMC, LAN port that BMC uses depends on the type of BMC. Some BMC uses standard LAN port. Other BMC uses a Management LAN Port. There are 2 types of managed servers on that BMC uses standard LAN port to connect with NEC ESMPRO Manager: one type is permitted to use only LAN1 port, and the other type is permitted to use both LAN1 and LAN2 ports. See "Appendix D Managed Servers Summary" in "NEC ESMPRO Manager Ver.6 Setup Guide".

- **Modem connection** (Only available for BMC connection)
    - **Phone line**
    - **Modem**

    Use a modem that supports the following functions:

Baud rate	:	19.2Kbps
Data bits	:	8bit
Parity	:	None
Stop bits	:	1bit
Flow control	:	Hardware (CTS/RTS)

Note	• Use the modem recommended for NEC Express 5800 series on the managed server. • Connect the modem to the serial port 2 on the managed server.

- **Other Information**

    When BMC send alert to PC for Management via modem, it is necessary the following:

    Dial-up router or PPP server

- **Direct connection** (Only available for BMC connection)
    - **RS-232C cross cable**

    The serial port for direct connection on ESMPRO server. NEC ESMPRO Manager must be set following on OS.

Bits per speed	: Be set a same value with a value of BMC configuration on a managed server. The default value of BMC configuration is 19.2Kbps.
Data bits	: 8bit
Parity	: None
Stop bits	: 1bit
Flow control	: Hardware (CTS/RTS)

Important	• Do not use an interlink cable. • Connect RS-232C cross cable to serial port 2 on the managed server. • Some models of managed servers do not permit use of any RS-232C cross cable other than the specified one. See Maintenance Guide provided with the server.

3.4 Notes on managed servers and network devices

This section explains particular notes on managed servers and network devices.

- **Use of network switch / router**

  If the managed server installed BMC that uses a standard LAN port or loaded Advanced Remote Management Card, and there is network switch / router between PC for Management and the managed servers, set the network switch / router to receive Gratuitous ARP. See each document of the switch / router about how to set it.

  If Gratuitous ARP cannot be received, managed server that is power-off status is not connected.

- **Use of a layer-2 / layer-3 switching hub**

  Set "Disable" for Spanning Tree Protocol (STP) function of the switching hub or STP of the port to which a managed server is connected.

  Set "Enable" for the auto-negotiation function of the port to which a managed server is connected.

- **Use of DHCP**

  In case that BMC on the managed server uses a standard LAN port, communication between NEC ESMPRO Manager and System BIOS or BMC is not compatible with a DHCP environment.

  Be sure to use a fixed IP address with NEC ESMPRO server in which NEC ESMPRO Manager is to be installed.

  To use a managed server in a DHCP environment, start DianaScope Agent or NEC ESMPRO Agent Extension.

- **Setting of Teaming for standard LAN with OS (providing redundancy or multiplexing with multiple network adapters) on the managed server installed BMC that uses a standard LAN port**

  The managed server installed BMC that uses a standard LAN port shares the embedded standard LAN controller between BMC, System BIOS and OS, but BMC and System BIOS do not support LAN teaming modes including Adapter Fault Tolerance (AFT) and Adaptive Load Balancing(ALB). So if AFT mode or ALB mode was made available by OS, NEC ESMPRO Manager can communicate with BMC and System BIOS only under the following conditions while Failover does not occur.

  - If Receive Load Balancing (RLB) is set with ALB, disable RLB. (If RLB cannot be disabled, NEC ESMPRO Manager cannot communicate with BMC.)
  - Make the teaming-set address ("preferred primary") identical to LAN1 IP address and MAC address in BMC configuration information.
  - Even if the configuration of LAN2 for BMC on the managed server is available, do not set LAN2 in BMC configuration information.
  - See "Appendix B B.1 On the managed server that BMC uses standard LAN port" in "NEC ESMPRO Manager Ver.6 Setup Guide" if you install DianaScope Agent or NEC ESMPRO Agent Extension on the managed server whose OS is Windows.

    Note that NEC ESMPRO Manager cannot communicate with BMC when you use RLB or Fast Ether Channel (FEC) teaming mode on the managed server.

- If the teaming is set with channel bonding on Linux, please add "mode" and "primary" definition to the line of /etc/modprobe.conf or /etc/modules.conf as following.

```
options bondname mode=1 primary=eth0 miimon=100
```

-

- **Setting of Teaming for LAN that DianaScope Agent or NEC ESMPRO Agent Extension uses with OS (providing redundancy or multiplexing with multiple network adapters) on the managed server installed BMC that uses a Management LAN port**

  If the teaming setting is made available for LAN port that DianaScope Agent uses on the managed server installed BMC that uses a Management LAN port, see "Appendix B B.2 On the managed server that BMC uses a Management LAN port" in "NEC ESMPRO Manager Ver.6 Setup Guide".

- **Change of the hardware of a default gateway or an alert receiver**

  In case that there is a gateway between a PC for Management and a managed server, re-configure BMC on the managed server after the change the hardware of the gateway. In case that there is not gateway between an alert receiver and a managed server, re-configure BMC on the managed server after the change the hardware of the alert receiver. BMC on the managed server can know MAC address of the new hardware by setting BMC configuration.

- **Use of a dialup router or a PPP server**

  If an alert receiver via modem uses Windows Remote Access Service, select "Allow any authentication including clear text" about the encryption on the Windows Remote Access Service properties.

- **Restrictions on use of the standard serial port 2 (COM2)**

  The standard serial port 2 (COM2) on a managed server cannot be used for connecting another device in the following cases because BMC occupies the serial port 2.

  - The managed server compatible with Serial over LAN (SOL) and set enable on following BMC Configuration items:

    "Remote control (WAN/Direct)"

    "Redirection (LAN)"

    "Redirection (WAN/Direct)"

  - Connection via modem or direct connection has been made.

  - Direct connection has been set in BMC configuration information. (Even if NEC ESMPRO Manager and managed server are not connected, BMC occupies the serial port 2 (COM2).)

Note	See "Appendix D Managed Components Summary" in "NEC ESMPRO Manager Ver.6 Setup Guide" to confirm whether that your server supports SOL.

18

NEC ESMPRO Manager Ver. 6

2

Installation

This chapter explains installation of NEC ESMPRO Manager.

1. Before Installation

Describes about necessary setting before NEC ESMPRO Manager installation.

2. Installation

Describes about installation procedure of NEC ESMPRO Manager.

3. After Installation

Describes about necessary setting after NEC ESMPRO Manager installation.

1. Before Installation

Be sure to read this page before installing NEC ESMPRO Manager.

Prerequisites

Before installing NEC ESMPRO Manager, check the followings:

- See "chapter1 3.1PC for Management" to check the system requirement of NEC ESMPRO Manager server.

- Login to Linux as root user, or get authority of root by "su" command.

Note	NEC ESMPRO Manager installer exists on the following directory in EXPRESSBUILDER: "EXPRESSBUILDER revision"/lnx/pp/esmpro_sm. (ex. 001/lnx/pp/esmpro_sm/en)

If an older version of NEC ESMPRO Manager or DianaScope Manager has already been installed

- If NEC ESMPRO Manager Ver. 5.0 or later has already been installed, you can update it to this version. If the version older than the above or DianaScope Manager has been installed, uninstall it before installation.

- If you update it, the registered information of old NEC ESMPRO Manager is inherited.

2. Installation

This page describes fresh installation and update installation of NEC ESMPRO Manager.

Be sure to read "Before Installation" and install this product.

2.1 Installation procedure

Install NEC ESMPRO Manager

1. Save NEC ESMPRO Manager installer into any directory, and uncompress it. (It has been already uncompressed, this procedure is unnecessary.)

- In the case of .zip file

The following is an example of uncompressing EXPRESSBUILDER7_02091000_6355209163477098 99.zip.

```
unzip EXPRESSBUILDER7_02091000_635520916347709899.zip
```

Note	When the following message be displayed, unzip command may be installed. In this case, try it again after installing unzip command. "-bash: unzip: command not found"

- In the case of .tgz file

The following is an example of uncompressing esm_x_60405.tgz.

```
tar -zxvf esm_x_60405.tgz
```

2. Move to the directory containing "esmpro.sh" file.

The following is an example of the case that "esmpro.sh" file exists under /usr/local/bin:

```
cd /usr/local/bin
```

3. Start NEC ESMPRO Manager installer.

NEC ESMPRO Manager will be installed under /opt/nec/es_manager.

```
sh esmpro.sh
```

4. Input of the http connector port.

A message to confirm whether you specify the http connector port that NEC ESMPRO Manager uses is displayed.

If you specify them, input "yes" and "Enter" key. And then input the unused port number.

Note	If you input "no" in this installing procedure immediately after uninstalling NEC ESMPRO Manager, the following message may be displayed. In this case, try it again later. "The entered http connect port has already been used. Enter the un used port."

5. Confirmation for change preservation directory of update package.

A message to confirm whether you specify the directory where update packages are stored is displayed. If you specify them, input "yes" and "Enter" key. And then input the directory path.

6. **Enter the administrator name and the password.**

   A message to register an administrator of NEC ESMPRO Manager is displayed. Enter the administrator

   name and password.

Note	• Specify the administrator name with 1 to 16 alphanumeric characters, and the password with 6 to 16 alphanumeric characters. • Administrator name is the user name to operate NEC ESMPRO Manager with the administrator authority.

7. **The installation completes.**

   When the installation is completed, the following message is displayed:

   "Installation of NEC ESMPRO Manager is now completed."

Note	If NEC ESMPRO Manager on the web browser may display incorrectly after you install it, see the procedure "Installation" in "chapter 4 1.1 NEC ESMPRO Manager".

Update install NEC ESMPRO Manager

Note	If NEC ESMPRO Manager Ver. 5.0 or later has already been installed, you can update it to this version.

1. **Save NEC ESMPRO Manager installer into any directory, and uncompress it. (For details of procedure to uncompress it, see "2.1 Installation procedure (procedure 1)".)**

2. **Move to the directory containing "esmpro.sh" file.**

   The following is an example of the case that "esmpro.sh" file exists under /usr/local/bin:
   ```
   cd /usr/local/bin
   ```

3. **Start the NEC ESMPRO Manager installer.**

   The NEC ESMPRO Manager will be installed under /opt/nec/es_manager.
   ```
   sh esmpro.sh
   ```

4. **A message to confirm whether you continue the installation is displayed.**

   Input "add" and "Enter" key.Input of the http connector port.

5. **The installation completes.**

   When the installation is completed, the following message is displayed:

   "Installation of NEC ESMPRO Manager is now completed."

Note	If NEC ESMPRO Manager on the web browser may display incorrectly after you install it, see the procedure "Installation" in "chapter 4 1.1 NEC ESMPRO Manager".

3. After Installation

Login

When the installation of NEC ESMPRO Manager completes, check that you can login to it.

1.Access to the following address on a Web browser on the web client.

http://"the computer name installed NEC ESMPRO Manager":"HTTP connection port number"/esmpro/

This is an example of address to access with HTTP connection port "21112" from the web browser on

PC for Management.

http://localhost:21112/esmpro/

   *   If EXPRESSCLUSTER system is installed, access to the following address.

    http://" Floating IP (FIP) or Virtual computer name":"HTTP connection port number"/esmpro/

Tips	• When you use NEC ESMPRO Manager from Web Client, login to NEC ESMPRO Manager locally, then add the Web Client address from [Environment] - [Access Control].

2.NEC ESMPRO Manager login window opens.

Enter the administrator name and the password that were registered at the installation, and click [Login]

button.
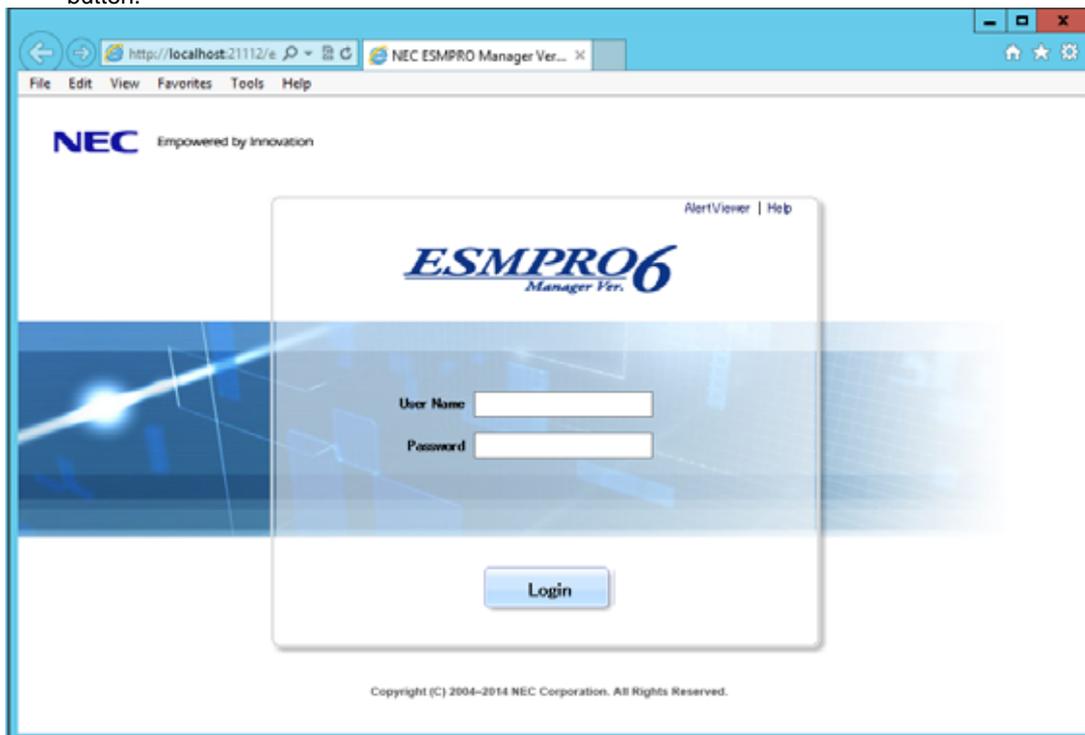
When the login succeeds, the following window appears:
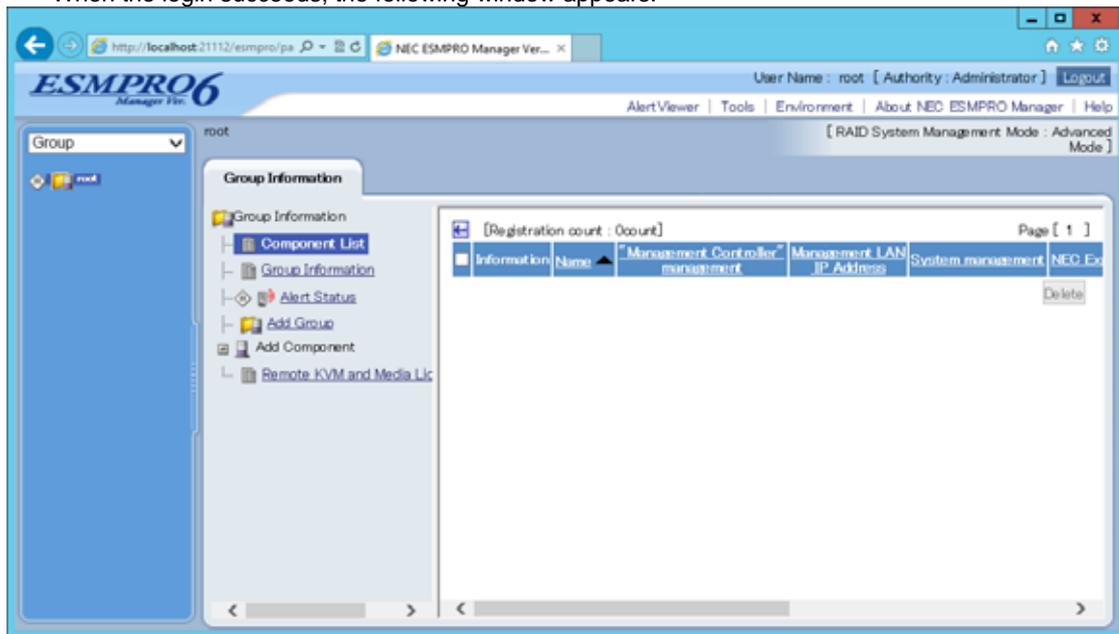
Note	The area on which commands, such as [AlertViewer], [Tools] are displayed is called [Header Menu]. Use these commands on [Header Menu] to operate NEC ESMPRO Manager.

Setting environment

You can change the optional setting of NEC ESMPRO Manager.

Click [Environment] on [Header menu] to check the setting. For details, see the online help.

SSL

If you need to login to NEC ESMPRO Manager using SSL, you must change the setting of NEC ESMPRO Manager. Perform the procedure that is necessary in order to use SSL with NEC ESMPRO Manager as follows:

1.Create a key

The Key tool is needed for creating the key using with SSL. The Key tool is contained in JRE. Create the key as follows:

```
/opt/nec/es_manager/jre/bin/keytool -genkey   -alias   tomcat   -keyalg   RSA
```

Some messages are displayed with dialog style. Input the information about the creator of the key.

You need to set the same password as the keystore password to the key password for <sdo>.

The following is shown an example.

```
Enter keystore password: ******
What is your first and last name?
    [Unknown]: Scott Oaks
What is the name of your organizational unit?
    [Unknown]: SMCC
What is the name of your organization?
    [Unknown]: Sun Microsystems
What is the name of your City or Locality?
    [Unknown]: New York
What is the name of your State or Province?
    [Unknown]: NY
What is the two-letter country code for this unit?
    [Unknown]: US
Is <CN=Scott Oaks, OU=SMCC, O=Sun Microsystems, L=New York, S=NY, C=US> correct?
    [no]: y
Enter key password for <sdo>
(RETURN if same as keystore password): ******
```

Confirm that the key was created.
```
~/.keystore
```

| Tips | ~/ means a home directory for login user. |

2.Change the setting of NEC ESMPRO Manager.

Edit the server.xml file to enable SLL. The server.xml is in the directory containing NEC ESMPRO

Manager. Move to the conf directory that there is a server.xml file.

```
cd /opt/nec/es_manager/wbserver/conf
```

Open the server.xml file with an editor tool, search the description of <Connector> which is specified port

number 8443, and delete the comment form "<!-" and "->". Modify the port number if you need.

Add the keystore file path and the password that is specified at the time creating the keystore, in the

description of <Connector>.

```
<--Define a SSL HTTP/1.1 Connector on port 8443-->
<!--NOTES: Delete these lines
<Connector port="8443"    NOTES: Change it if you need.
    maxHttpHeaderSize="8192"
    maxThreads="150" minSpareThreads="25" maxSpareThreads="75"
    enableLookups="false" disableUploadTimeout="true"
    acceptCount="100" scheme="https" secure="true" SSLEnabled="true"
    clientAuth="false" sslProtocol="TLS"
    keystoreFile="<the directory that contains keystore>/.keystore"
    keystorePass="<the password>"
    useBodyEncodingForURI="true"  NOTES: Add these lines.
     />
-->    NOTES:Add these lines.
```

3.Reboot PC for Management.

Reboot the server installed NEC ESMPRO Manager.

4.Login.

Confirm to login to NEC ESMPRO Manager with "https:".

Make access to the following address using the web browser on the web client.

https://" the computer name installed NEC ESMPRO Manager":" port number that is specified in

server.xml"/esmpro/

An example of address to access from the web browser on PC for Management is shown.

https://localhost:8443/esmpro/

SSL Setup for LDAP/ActiveDirecroty

To use SSL connection between NEC ESMPRO Manager and the authentication server of

LDAP/ActiveDirectory, please import certificate into a keystore of JRE which NEC ESMPRO Manager uses.

The certificate can be imported by entering the following commands in a console.

/opt/nec/es_manager/jre/bin/keytool -import -trustcacerts -alias ldapsvr -file /root/ldap/client.pem

-keystore ../lib/security/cacerts

Note	• Change "root/ldap/client.pem" according to the location and the file name of the certificate. • A default password of a keystore is "changeit".

Changing the port number

You can change the available port number after installation of NEC ESMPRO Manager.

An example of address to access in HTTP connection port "21112".

1. Stop NEC ESMPRO Manager.

♦ **Stop procedure (RHEL6.x or earlier)**

1. /etc/rc.d/init.d/esmweb stop

2. /etc/rc.d/init.d/esmsm stop

♦ **Stop procedure (RHEL7.0 or later)**

1. systemctl stop esmweb esmsm

2. Edit the port number in the "server.xml" setting file.

Edit the "server.xml" file to change a port number. The "server.xml" is in the directory containing the "conf" directory of the installation directory of NEC ESMPSRO Manager. Move to the "conf" directory that there is a "server.xml" file.

```
cd /opt/nec/es_manager/wbserver/conf
```

In this file, you search the following <Connector> description specified port number 21112 and change the port number.

```
<!-- Define a non-SSL HTTP/1.1 Connector on port 21112 -->
<Connector port="21112" maxHttpHeaderSize="8192"
            maxThreads="150" minSpareThreads="25" maxSpareThreads="75"
            enableLookups="false" redirectPort="8443" acceptCount="100"
            connectionTimeout="20000" disableUploadTimeout="true"
            useBodyEncodingForURI="true" />
```

3. Start NEC ESMPRO Manager.

♦ **Start procedure (RHEL6.x or earlier)**

1. /etc/rc.d/init.d/esmsm start

2. /etc/rc.d/init.d/esmweb start

♦ **Start procedure (RHEL7.0 or later)**

1. systemctl start esmsm esmweb

Coexistence with Tomcat

When NEC ESMPRO Manager and Tomcat are installed same computer, the application software installed later will not be running correctly.

In this case, you can avoid it by the following way.

1. If NEC ESMPRO Manager has started, stop NEC ESMPRO Manager.

♦ **Stop procedure (RHEL6.x or earlier)**

1. /etc/rc.d/init.d/esmweb stop

2. /etc/rc.d/init.d/esmsm stop

♦ **Stop procedure (RHEL7.0 or later)**

1. systemctl stop esmweb esmsm

2. If Tomcat service has started, stop the service.

3. Edit the server port number and connector port number in the "server.xml" setting file.

Edit the "server.xml" file to change a port number. The "server.xml" is in the directory containing the "conf" directory of the installation directory of NEC ESMPSRO Manager. Move to the "conf" directory that there is a "server.xml" file.

```
cd /opt/nec/es_manager/wbserver/conf
```

In this file, you search the following description specified <Server port="21113" …> <Connector port = "21114" …> and change the port number to unused number.

- **server port number**

```
 <Server port="21113" shutdown="SHUTDOWN">
```

- **connector port number**

```
 <!-- Define an AJP 1.3 Connector on port 21114 -->
<Connector port="21114"
           enableLookups="false" redirectPort="8443" protocol="AJP/1.3" />
```

4. Start NEC ESMPRO Manager.

♦ **Start procedure (RHEL6.x or earlier)**

1. /etc/rc.d/init.d/esmsm start

2. /etc/rc.d/init.d/esmweb start

♦ **Start procedure (RHEL7.0 or later)**

1. systemctl start esmsm esmweb

5. Start Tomcat service.

Note	• Specify the port numbers of NEC ESMPRO Manager and Tomcat not to overlap. If you change the port number of NEC ESMPRO Manager, see the preceding clause "Change the Port Number". • When you use SSL communication on Tomcat or connect Tomcat with Apache, you may need to change another port number. See Tomcat is Document for detail.

NEC ESMPRO Manager Ver. 6

3

Uninstallation

This chapter explains uninstallation of NEC ESMPRO Manager.

1. Uninstallation

Describes about uninstallation procedure of NEC ESMPRO Manager.

1. Uninstallation

This page describes how to uninstall NEC ESMPRO Manager.

1.1 Uninstallation procedure

1. **Save NEC ESMPRO Manager installer into any directory, and uncompress it. (For details of procedure to uncompress it, see "2.1 Installation procedure (procedure 1)".)**

2. **Move to the directory containing "esmpro.sh" file.**

   The following is an example of the case that "esmpro.sh" file exists under /usr/local/bin:
   ```
   cd /usr/local/bin
   ```

3. **Start NEC ESMPRO Manager uninstaller.**

   NEC ESMPRO Manager will be installed under /opt/nec/es_manager.
   ```
   sh esmpro.sh
   ```

4. **Confirmation for uninstallation.**

   A message to confirm whether you continue the uninstallation is displayed.

   Input "delete" and "Enter" key.

5. **Confirmation for deletion preservation directory of update package.**

   A message to confirm whether you delete the directory where update packages are stored is displayed. If you want to delete it, input "yes" and "Enter" key.

6. **The uninstallation completes.**

   When the uninstallation is completed, the following message is displayed:

   "Uninstallation of NEC ESMPRO Manager is now completed."

NEC ESMPRO Manager Ver. 6

4

Appendix

1. Notes

Describes about note when using NEC ESMPRO Manager.

2. Port numbers / Protocols

Describes about the port numbers and port Protocols NEC ESMPRO Manager uses.

1. Notes

Check the following points after installing NEC ESMPRO Manager:

1.1 NEC ESMPRO Manager

Installation

- After NEC ESMPRO Manager is updated, NEC ESMPRO Manager on the web browser may display incorrectly. Take the following steps to avoid it.

  [Internet Explorer 10,11]

  1. Click [Tools].
  2. Select [Delete Browsing History].
  3. Select the checkbox for [Temporary Internet Files].
  4. Click [Delete] button.

  [Firefox(Linux)]

  1. Click [Edit].
  2. Click [Preferences] menu.
  3. Select [Advanced].
  4. Select [Network].
  5. Click [Clear Now] in [Cached Web Content] section.
  6. Click [Clear Now] in [Offline Web Content and User Data] section.
  7. Click [OK].

  [Firefox(Windows)]

  1. Click [Tools].
  2. Click [Options] menu.
  3. Select [Advanced].
  4. Select [Network].
  5. Click [Clear Now] in [Cached Web Content] section.
  6. Click [Clear Now] in [Offline Web Content and User Data] section.
  7. Click [OK].

- NEC ESMPRO Manager cannot be downgraded to the older version. If you want to use the older version, uninstall the current version and then install new version.

  Note: All the registered information will be deleted as the result of the uninstalling.

- You must logout from the web browser that is login to NEC ESMPRO Manager before NEC ESMPRO Manager is updated. After NEC ESMPRO is updated during login, some error may be displayed on any web browser. When the error is displayed, you must close web browser that is login to NEC ESMPRO Manager and restart NEC ESMPRO Manager.

  ♦ **Stop procedure (RHEL6.x or earlier)**

  1. /etc/rc.d/init.d/esmweb stop

  2. /etc/rc.d/init.d/esmsm stop

  ♦ **Stop procedure (RHEL7.0 or later)**

  1. systemctl stop esmweb esmsm

  ♦ **Start procedure (RHEL6.x or earlier)**

  1. /etc/rc.d/init.d/esmsm start

  2. /etc/rc.d/init.d/esmweb start

  ♦ **Start procedure (RHEL7.0 or later)**

  1. systemctl start esmsm esmweb

Use of two or more NEC ESMPRO Manager

A single managed component can be controlled remotely by up to three NEC ESMPRO Manager.
Follow these notes on the remote control:

- Use only one NEC ESMPRO Manager for "management controller" management of the managed component.
- Use only one NEC ESMPRO Manager for RAID system management and NEC ExpressUpdate of the managed component. If you register the managed component on two or more NEC ESMPRO Manager, you must set "unregistration" for RAID system management and NEC ExpressUpdate of the managed component.
- Use one NEC ESMPRO Manager for all EM cards and CPU blades on one blade enclosure.

Power OFF, Power Cycle, Reset, and Dump

Since power control is provided by hardware regardless of the state of the managed server is OS, the system may be damaged. Be careful of operation under power control.

Power OFF, Power Cycle, Reset with BIOS Setup Utility active

If you use the managed server integrated BMC, do not execute Power Off, Power Cycle or Reset while BIOS Setup Utility is active on the managed server. Otherwise, the alert setting of BMC configuration will be disabled.

Shutdown OS

NEC ESMPRO Manager commands NEC ESMPRO Agent Extension or NEC ExpressUpdate Agent on the managed component to shutdown OS. The order of priority for the shutdown function is NEC ESMPRO Agent Extension and NEC ExpressUpdate Agent.

IPMI information collection

While a managed server is tuned OFF, some records of management controller information and FRU (Field Replaceable Unit) information cannot be read in.

The current status of some sensors cannot be read in either while the managed server is turned OFF.

Restriction on concurrent connection to Remote Console

When a single NEC ESMPRO Manager is operating the remote console of a managed server, another Manager cannot execute the remote console function for the managed server. A managed server can transmit redirection data to only a single NEC ESMPRO Manager.

Remote console before OS boot or during DOS program running

If a graphic screen is displayed on a managed server, data cannot be displayed correctly on CUI (Character User Interface) remote console. CUI remote console screen is displayed only when the managed server displays a text screen.

In case of interruption to Remote Console

After BMC on a managed server establishes communication via WAN/Direct connection, communication with DianaScope Agent or NEC ESMPRO Agent Extension may ends up with a timeout or the remote console may not be updated any more. This is because priority is given to communication with BMC.

To restart the remote console, use [Restart Redirection] button on NEC ESMPRO Manager.

Display of a special character

CUI remote console screen is not displayed correctly in the following cases:

- **Special character**

  Ruled lines, arrows correctly and en-size left arrows cannot be displayed.

- **User definition font**

  User definition font cannot be displayed.

In case of display of illegally keyed data on the remote console

If you use the managed server integrated BMC, unintentionally keyed data may appear on a managed server in the following conditions when NEC ESMPRO Manager issues a command to BMC:

WAN/Direct connection.

Special Administration Console (SAC) screen at Windows boot or CUI remote console under Linux is accessed.

In case of key-in failure on the remote console

- During DOS boot or access to the removable media immediately after the managed server is power switch is turned ON, data cannot be keyed in from the remote console or the keyed data display may be delayed.
- Remote Console is realized by using SOL function of IPMI conformity and the Serial Redirection function of BIOS.
  Data cannot be keyed in from the remote console when the firmware (BIOS and so on) or the software requires the key code that VT100 terminal emulator (the hyper-terminal and so on) cannot control.
  Refer to the document of each firmware or software for the details.

RAID EzAssist Configuration Utility

To operate RAID EzAssist for a SOL-incompatible managed server from CUI remote console via LAN, set the item "Console Redirection" to "Disable" on BIOS Setup Utility screen, reboot the system, and then boot RAID EzAssist Configuration Utility.

Power management

- If you set the value on the managed server which does not support power management, you cannot put back the value to "unsetting". Set "zero" to each value, it is accepted as "unsetting".
- The electric power value might not necessarily reach even the value of Power Cap value.
  The electric power control lowers the power consumption of the system by lowering the frequency of CPU / Memory.
  When CPU / Memory Throttling value reaches 100%, the electric power value does not fall any more.

Note	For more detail about Power Monitoring and Power Control Function, reference the following site. http://www.58support.nec.co.jp/global/download/index.html [Others] - [Technology paper]

CPU blade auto registration

When "Check Connection" of "CPU blade auto registration" was failed. You can execute "Check Connection" on "Server Properties" - "Connection Setting".

If a specified IP address is set from a CPU blade to another CPU blade during "CPU blade auto registration" process (ex. when you replace CPU blade and execute "CPU blade auto registration"), NEC ESMPRO Manager may not be able to connect CPU blade because old information remains in ARP table on PC for Management. Wait for a few minutes and try "Check Connection".

Coexistence of NEC ESMPRO Manager with DianaScope Agent or NEC ESMPRO Agent Extension on the same server

If the managed server is installed Advanced Remote Management Card or EXPRESSSCOPE Engine series (BMC uses exclusive LAN port (management LAN port)), NEC ESMPRO Manager can manage the server itself installed. If the managed server is installed BMC that uses the standard LAN port, NEC ESMPRO Manager on the managed server cannot manage itself.

You can install NEC ESMPRO Manager and NEC ESMPRO Agent Extension (formerly DianaScope Agent) on the same server, but the communication with BMC on the server is prevented by local loopback function of OS and BMC cannot receive any packets from NEC ESMPRO Manager.

EM Card registration

- When you resister EM Card, you need to set valid on SNMP management and "Management Controller" management each other.
- If the connection is failed at "Auto Registration" or "Check Connection", it is not recognized as EM Card because both management is invalid. In this case, set correct connection setting and execute "Check Connection" again.

Remote Control

When all the following conditions are satisfied, remote control cannot be executed from NEC ESMPRO Manager.

- The managed server has either following BMC.
  - BMC uses standard LAN port
  - Advanced Remote Management Card or equivalent BMC
- The managed server has been power off.

Display of the monitoring window

If you exit and restart the monitoring window of NEC ESMPRO Manager with AlertViewer started, the displayed AlertViewer window is rewritten and the window may not be properly displayed.

In such a case, exit the monitoring window and AlertViewer once, and then restart them.

Usage of DHCP

NEC ESMPRO Manager and managed servers communicate by the IP address on OS.

Therefore, do not use DHCP on NEC ESMPRO Manager's OS and managed server's OS.

Display of the Information of server state/constitution

In case that NEC ESMPRO Manager has been updated from Ver. 5.23 and below, the display of the selected item on [Information of server state/constitution] may take long time with the hardware constitution of the managed server.

Perform the followings in this case:

- Change the "Update Interval" value of "Automatically update display" setting from 5 seconds (default value) to 60 seconds.

  The changing of the automatic update interval by JavaScript will reduce the load of NEC ESMPRO Agent on the managed server, and so allows NEC ESMPRO Manager to display DataViewer quickly.

  <settings>

  [Environment] - [Option] - [Automatically update display] - [Update Interval]

Display of the network speed

- When you monitor Linux servers, Speed will not be displayed on the network general view of [Information of server state]. In such a case, check it on the monitored server.
- When you monitor Windows servers which have network interfaces of which speeds are 10Gbps or over, Speed may not be displayed correctly on the network general view of [Information of server state]. In such a case, check it on the monitored servers.
- When you monitor Windows Server 2008 or later servers which have network interfaces with which a cable is not connected, an incorrect value (4,294 Mbps) may be displayed for the Speed on the network general view of [Information of server state].

Display of the network status

When you monitor a server with Windows Vista installed, the message "Dormant" appears for Status on the Network General view of [Information of server state] even if the network properly works. In such a case, check the network status on the monitored server.

Display of the teamed network interfaces

Depending on OS, if network interfaces are teamed, the network information may not be properly displayed on [Information of server state]. Check it on the monitored server

Power saving mode of OS

- When a computer on which NEC ESMPRO Manager is installed goes into a power saving mode, all features of NEC ESMPRO Manager (such as alert reception, server status monitoring and automatic statistical data collection) stop. Disabling the power saving mode is recommended.
- When a monitored server with the Wake On Directed Packet option enabled for the network adapter setting goes into the power saving mode, the server is powered on immediately by the server status monitoring feature of NEC ESMPRO Manager which regularly sends packets to the server. In such a case, disable Wake On Directed Packet option.

Replacing a managed server

After replacing monitored server, even if the server name and IP address remains the same, delete the corresponding server icon and execute AutoRegistration.

Otherwise, the replaced server is not recognized and the server status and the configuration information is not correctly displayed.

If communication with a monitored server becomes disabled

If communication with a monitored server becomes disabled due to server down or network problem during display of the status of the server, the server icon of the group or chassis shows unknown status. In this case, the status color of the configuration information tree item may not indicate the latest status. Click the server icon from the group or chassis to display the latest information.

Changing the configuration of the servers

If you change the configuration of the servers (such as attaching or removing HDDs) with [Information of server state/constitution] tree displayed, the changes will not be reflected to [Information of server state/constitution] tree. After changing the configuration, click the target server icon displayed in [Group] or [Chassis] tree to update [Information of server state/constitution] tree.

Display of the Information of EM Card state/constitution

To update the monitoring display in case of EM Card configuration such as removing/mounting CPU blade, switching power redundancy mode, reselect EM card icon from Group/Chassis tree.

If the page cannot be displayed on web browser

When you start NEC ESMPRO Manager or application that is installed after NEC ESMPRO Manager installation, the web browser may displays "The page cannot be displayed." or "The server cannot be found." and the page cannot be displayed. In this case, the port number of NEC ESMPRO Manager and other application may be overlapped. See the procedure on "Coexistence with Tomcat" in "Chapter 2 3.After Installation".

RAID operation

See User's Guide of Universal RAID Utility (after Ver.4.0) installed on the managed server for notes about the operation of RAID system with [Information of server state] navigation tree.

Suspend Periods Setting

When you set a suspend period schedule for a group, NEC ESMPRO Manager deletes the same schedule which has already been set for the managed component.

Please be careful that the group schedule is deleted from the managed component if you move the managed component from the group to another group.

The default setting of EXPRESSSCOPE Engine 3

You can change BMC Configuration Information from [BMC Setting] of NEC ESMPRO Manager.

For details of [BMC Setting], see the online help of NEC ESMPRO Manager.

Refer to EXPRESSSCOPE Engine 3 User's Guide about difference between NEC ESMPRO Manager's

default value and a value which 'Configuration Initialization' function will set.

Standby BMC Configuration Setting

It may take a few minutes to set the Standby BMC Configuration.

If the setting is failed, please set it again after waiting for a few minutes.

DHCP setting for Advanced Remote Management Card

If you change DHCP setting to [Enable] on [BMC setting] of NEC ESMPRO Manager, Advanced

Remote Management Card may not be able to send the alert to the destinations.

The reason is that MAC address for the destination becomes unsuitable in the case that enabling DHCP

changes the address range.

Set DHCP setting for Advanced Remote Management Card using BMC configuration tools on the managed

server.

In case of interruption to install NEC ESMPRO Manager

In case of interruption to install NEC ESMPRO Manager, unnecessary files may remain. If you re-install, you

must delete the files by "delete" command before re-installing.

About Login to EXPRESSSCOPE Engine series

"Login to EXPRESSSCOPE Engine series" may fail very rarely after network setting to the BMC or shortly

after the BMC reset.

In this case, please try to login again.

1.2 **NEC ExpressUpdate**

Installation of NEC ExpressUpdate Agent

To use the function of "Installing NEC ExpressUpdate Agent", following configurations are necessary.

*1 Change following configurations with the user belongs to Administrators group.

*2 See"Chapter4 2 Appendix Port numbers / Protocols" for network ports and protocols which this function uses.

- **Windows Vista**
  1) Configure Windows Firewall
     - [Control Panel] - [Security] - [Windows Firewall] - [Allow a program through Windows Firewall]-Select [Exceptions] tab and check [File and Printer Sharing].
  2) Configure File Sharing.
     - [Control Panel] - [Appearance and Personalization] - [Folder Options]-Select [View] tab and uncheck [Use Sharing Wizard].
  3) Configure UAC.
     - [Control Panel] - [User Accounts] - [User Accounts] - [Turn User Account Control on or off]-uncheck [Use User Account Control (UAC) to help protect your computer]
- **Windows 7**
  1) Configure Windows Firewall.
     - Select [File and Printer Sharing] on [Control Panel] - [System and Security] - [Windows Firewall] - [Allow a program or feature through Windows Firewall] and click [OK].
  2) Configure Configuration.
     - [Control Panel] - [User Account and Family Safety] - [User Accounts] - [Change User Account Control settings]-Select [Never notify]
- **Windows Server 2008**
  1) Configure Windows Firewall.
     - [Control Panel] - [Security] - [Windows Firewall] - [Allow a program through Windows Firewall]-Select [Exceptions] tab and check [File and Printer Sharing].
  2) Configure UAC Configuration.
     - [Control Panel] - [User Accounts] - [User Accounts] - [Turn User Account Control on or off]-uncheck [Use User Account Control (UAC) to help protect your computer].

- **Windows Server 2008 R2**
  1) Configure Windows Firewall.
     - Select [File and Printer Sharing] on [Control Panel] - [System and Security] - [Windows Firewall] - [Allow a program or feature through Windows Firewall] and click [OK].
  2) Configure UAC.
  - [Control Panel] - [User Accounts] - [User Accounts] - [Change User Account Control settings]-Select [Never notify].

- **Windows Server 2008 R2 Core**
  1) Configure Windows Firewall.
     1-1) Make up the remote PC to change "Windows Server 2008 R2 is Windows Firewall settings" remotely.
     1-2) Input below command on the managed server to enable remote configuration of Windows Firewall.
          netsh advfirewall set currentprofile settings remote management enable.
     1-3) Input [mmc] at [Run...] window on remote PC.
     1-4) File-Add/Remove Snap-in...-Add [Windows Firewall with Advanced Security].
          In the select computer window, input the host name of the managed server.
          You can get host name of the managed server with [hostname] command.
     1-5) [Inbound Rules]-Select [File and Printer Sharing] and execute [Enable Rule].

- **Windows 8, Windows Server 2012 or later**
  "NEC ExpressUpdate Agent" cannot be installed on OS remotely.

- **Linux OS**
  *1 See document of the distribution for configuration.
  1) Configure Firewall.
     - Enable remote SSH login.
  2) Configure SSH.
     - Enable root login with SSH.
       Typically, open the sshd configuration file [/etc/sshd/sshd_config] and set "PermitRootLogin" option to "yes".

1.3 **Managed Servers**

Setting Windows Firewall

If Windows Firewall is enabled, communication with the management machine will be interrupted and the system will not work correctly. To use NEC ESMPRO Manager Windows Firewall enabled, open the required ports.

Note	For ports used by NEC ESMPRO Manager, see "Chapter4 2 Appendix Port numbers / Protocols"

Support for SOL

The SOL system implements CUI remote console via LAN by the following method: BMC or vPro gets redirection data that has been output to the serial port 2 by System BIOS or console–less OS and transmits the data via the LAN. If the remote console has been set in BMC configuration information, the serial port 2 (COM2) cannot be used for connecting another device such as UPS because BMC occupies the serial port 2.

See "Appendix D Managed Components Summary" in "NEC ESMPRO Manager Ver.6 Setup Guide" to confirm the managed server supports SOL.

The remote console of Linux or SAC of Windows can be used when the managed server support SOL. However, there are the following notes:

- Use of serial port 2 is restricted. See "Notes on Managed Servers and Network Devices".
- In case of the managed server based on vPro, NEC ESMPRO Manager does not support the remote console and SAC of Windows.

There are the following notes in the managed server which does not support SOL:

- Do not attempt to boot Windows or Linux on the managed server when you use Remote Control function with utility boot mode via LAN connection. Booting of Windows or Linux may result in a failure.
- To operate RAID EzAssist for a SOL–incompatible managed server from CUI remote console via LAN, set the item ［Console Redirection] to [Disable］ on BIOS Setup Utility screen, reboot the system, and then boot RAID EzAssist Configuration Utility.
- The remote console by the redirection function of Linux cannot be used via LAN.

Power control with BIOS Setup Utility Active

If you use the managed server integrated BMC, do not control the power supply while BIOS Setup Utility is active on the managed server. Otherwise, the alert setting of BMC configuration will be disabled.

CUI Remote Console of DOS

To execute CUI remote console function of DOS screen, select [Server]‐［Console Redirection] and change ［ACPI Redirection］ to ［Disable］ on BIOS Setup Utility screen of the managed server if ［ACPI Redirection] exists on ［Console Redirection］.

CUI Remote Console after Windows boot

- If the managed server does not support SOL, Remote Console of SAC of Windows cannot be executed via LAN.

- To execute CUI remote console function of SAC screen after Windows boot, select ［Server］-［Console Redirection］ and change [ACPI Redirection] to [Enable] on BIOS Setup Utility screen of the managed server. When [ACPI Redirection] is set to [Enable] on BIOS Setup Utility screen, CUI remote console function cannot be executed after POST.

  If ［ACPI Redirection] does not exist on [Console Redirection］ menu, confirm that [Console Redirection after POST］ is enabled.

Shutdown OS

When the following operation is performed on the managed server running Windows Server 2008 or later, the cancellation dialog box may not be displayed.

- OS shutdown by NEC ESMPRO Manager.

- OS shutdown by scheduled running function.

Shutdown OS during DC-OFF state by scheduled running

When ［Agent Setting］ - [Shut down OS after DC-ON during Scheduled Running Halt］ on NEC ESMPRO Manager is enabled, DianaScope Agent or NEC ESMPRO Agent Extension shutdowns OS if the managed server is powered up during the down period (DC OFF state time by scheduled running).
Only if the managed server is powered up from NEC ESMPRO Manager, DianaScope Agent or NEC ESMPRO Agent Extension does not shutdown OS. However, in case that any error is occurred during booting, DianaScope Agent or NEC ESMPRO Agent Extension may shutdown OS even though power up by NEC ESMPRO Manager.

1.4 BMC Configuration

BMC Configuration tool

Among BMC configuration information tools there are some tools which cannot be used to setup NEC ESMPRO Manager.

- NEC MWA Agent cannot be used.
- If DianaScope or NEC ESMPRO Agent Extension is not stored in EXPRESSBUILDER DVD-ROM, ［A setup of a system management］ stored in the same EXPRESSBUILDER DVD-ROM cannot be used.
- The Console-less function of EXPRESSBUILDER can be used only when ESMPRO is stored in the same EXPRESSBUILDER DVD-ROM.

In case of exchange of PC for Management

If a PC for Management as an alert receiver has been exchanged, register the managed server is BMC configuration information again even when IP address of PC for Management remains unchanged. Otherwise, BMC may fail to recognize the alert receiver.

Function "Obtain an IP Address automatically (DHCP)"

The managed server included BMC that uses a Management LAN port supports the function "Obtain an IP Address automatically (DHCP)".

1. Following version of NEC ESMPRO Manager modules supports the setting of the function.

Managed server	DianaScope
The managed server that integrates EXPRESSSCOPE Engine series.	DianaScope Agent Ver.2.03.05 or later
	DianaScope Configuration Ver.1.02 or later
The managed server installed Advanced Remote Management Card.	DianaScope Agent Ver.2.06.00 or later
	DianaScope Configuration Ver.1.02 or later

When you use the module that does not support the setting of the function "Obtain an IP Address automatically (DHCP)" for the managed server that supports the function, note followings :

- If DianaScope Agent does not support the setting of the function, DianaScope Agent always set [disable] for the function when it registers BMC configuration. DianaScope Agent also set [disable] when it writes BMC configuration information file.
- If DianaScope Configuration does not support the setting of the function, DianaScope Configuration always set [disable] for the function when it writes BMC configuration information file.
- If [System Management] tool on EXPRESSBUILDER does not support the setting of the function, the tool always set [disable] for the function when it registers BMC configuration. The tool also set [disable] when it writes BMC configuration information file.
- If remote console feature of EXPRESSBUILDER does not support the setting of the function, the tool always set "disable" for the function when it registers BMC configuration.

2. Advanced Remote Management Card

   If the managed server has been installed Advanced Remote Management Card, BMC may not

   immediately obtain IP address after BMC is set to obtain IP address by DHCP.

   Please turn the managed server AC-OFF and then AC-ON because BMC try to obtain IP address

   whenever the managed server is turned AC-ON.

Port that BMC uses

In case that Linux on the managed server uses port 623, NEC ESMPRO Manager cannot communicate

with BMC that uses standard LAN port.

Perform following settings:

1. Add the following entries in services files (/etc/services) to reserve port 623.
   ```
   asf-rmcp 623/tcp ASF Remote Management and Control Protocol
   asf-rmcp 623/udp ASF Remote Management and Control Protocol
   ```

2. Reboot OS.

Initialization of BMC Configuration Information setting

When you set ［Default value］ on BMC Configuration Information with DianaScope Agent or NEC ESMPRO

Agent Extension, or create New Configuration with [System Management Tool] started from

EXPRESSBUILDER, each items of BMC Configuration Information are initialized.

If the managed server integrates EXPRESSSCOPE Engine series, Advanced Remote Management Card,

following items for BMC Web server are also initialized because they are shared with BMC Configuration

Information:

   DHCP Configuration

   IP Address

   Subnet Mask

   Default Gateway

How to set the Web server is following:

- Select ［System Management Tool] on ［Tool]. Started from EXPRESSBUILDER DVD-ROM, and then

  select ［Web server of BMC].

- Login to Web server of BMC, and then select ［Configuration］ ［Network］.

1.5 Web client

Language setting on Web browser

NEC ESMPRO Manager and Web client needs to be the same OS language.

Do not change your browser language setting.

Operation from two or more browsers

NEC ESMPRO Manager cannot be operated using two or more browser windows by one Web client. When you use the browser which has tabbed browsing, NEC ESMPRO Manager cannot be operated using two or more tab.

Downloading Configuration Information File

When you try to download the file from ［Configuration Information File］ of ［Linkage Service］ on NEC ESMPRO Manager, Internet Explorer may block the download. Internet Explorer will also display the message on the information bar.

In this case, you can download the file with following settings:

1. Click information bar on Internet Explorer.
2. Click ［Download File］.
3. Read the confirmation message carefully, and select [Save].

Java Plug-in version

To login to EXPRESSSCOPE Engine series through NEC ESMPRO Manager, Java plug-in of the web browser must be version 7.0 or later.

Internet Explorer

- The "login to EXPRESSSCOPE Engine series" screen might not be displayed on Internet Explorer.

  In this case, add URL of EXPRESSSCOPE Engine series to "Add this Web site to the zone".

  1. Select ［Internet Options］ on [Tools］ menu of Internet Explorer.
  2. Click [Security] tab.
  3. Click [Local Internet］ zone, and then click [Sites］ button.
  4. Enter URL of EXPRESSSCOPE Engine series on [add this Web site to the zone］.

     For example: If EXPRESSSCOPE Engine series has IP address 192.168.0.100, URL is "http://192.168.0.100".
  5. Click [Add] button, and then click [OK]

- The screen including Java Applet might not be displayed on Internet Explorer.

  Through the following procedure, the situation can be avoided.

  - Disable the check box.

    [Java control panel] - [Advanced] tab [Enable the next-generation Java Plug-in].

Note on using Internet Explorer

If you login to NEC ESMPRO Manager from Web client using Internet Explorer for a long time, according to Internet Explorer restriction (for detail, see Microsoft Knowledge Base 830555), memory usage of Internet Explorer on Web client will increase. (About 10MB a day at maximum.)

So, do following processes if you use it for a long time after login from Web client.

- Logout Web client regularly. The increased memory by Internet Explorer restriction will be released by logout.

Using Firefox

The screen including Java Applet might not be displayed on Firefox. Through the following procedure, the situation can be avoided.

- Modify the version of Java Plug-in of web browser.
- Use Internet Explorer.
- Disable the check box.

  [Java control panel] - [Advanced] tab [Enable the next-generation Java Plug-in].

Using AlertViewer

In some environments, a pop-up window must be allowed on a browser to use AlertViewer.

If the pop-up window is not allowed, AlertViewer may not work properly.

[Back] button of the browser

NEC ESMPRO Manager cannot be operated using browser functions like [Back] button. The screen contents cannot be displayed correctly on browsers.

Choose a necessary link or a button again in that case.

Automatic logout

NEC ESMPRO Manager logs out automatically when you do not operate a screen for more than 30 minutes.

When you continue the operation, login to NEC ESMPRO Manager again.

2. Port numbers / Protocols

NEC ESMPRO Manager uses the following port numbers and protocols.

In case of two-way protocol, upper arrow shows that connection starts, and lower arrow shows that connection turns.

In case of port No. unknown, unused port is used to start connection.

[Web Client <->PC for Management]

Function	Web Client		Protocol	PC for Management	
	Component	Port No.	/Direction	Port No.	Component
Management/ monitoring	web browser	Unknown	TCP -> <-	21112 (*1)	NEC ESMPRO Manager

*1 You can change the port number at the installation or see [Changing the port number].

[PC for Management <->Managed Server]

Function	PC for Management		Protocol	Managed Server	
	Component	Port No.	/Direction	Port No.	Component
Server Monitoring (Ping)	NEC ESMPRO Manager	--	ICMP -> <-	--	OS
BMC Setting NEC ExpressUpdate	NEC ESMPRO Manager	Unknown	TCP -> <-	443(*1)	BMC
Alert from BMC	NEC ESMPRO Manager	162	UDP <-	623	BMC
Server Monitoring	NEC ESMPRO Manager	47117 (*2)	UDP -> <-	623	BMC
Information Collection (through BMC)	NEC ESMPRO Manager	47117 (*2)	UDP -> <-	623	BMC
Remote Batch	NEC ESMPRO Manager	47117 (*2)	UDP -> <-	623	BMC
Operation with Command Line I/F	NEC ESMPRO Manager	47117 (*2)	UDP -> <-	623	BMC
Power Control	NEC ESMPRO Manager	47117 (*2)	UDP -> <-	623	BMC
Remote Console (CUI, SOL)	NEC ESMPRO Manager	47117 (*2)	UDP -> <-	623	BMC
Remote Console (CUI, non-SOL)	NEC ESMPRO Manager	47115	UDP -> <-	2069	System BIOS
Remote Wake Up	NEC ESMPRO Manager	Unknown	UDP ->	10101	LAN Board
Information Collection (through NEC ESMPRO Agent Extension)	NEC ESMPRO Manager	Unknown	TCP -> <-	47120-47129 (*3)	DianaScope Agent NEC ESMPRO Agent Extension

Scheduled Running	NEC ESMPRO Manager	Unknown	TCP -> <-	47120-47129 (*3)	DianaScope Agent NEC ESMPRO Agent Extension	
Search of NEC ExpressUpdate Agent, Universal RAID Utility	NEC ESMPRO Manager	Unknown	TCP -> <-	7	OS	
Search of NEC ExpressUpdate Agent, Universal RAID Utility	NEC ESMPRO Manager	Unknown	UDP -> <-	427	NEC ExpressUpdate Agent Universal RAID Utility	
NEC ExpressUpdate Agent, Universal RAID Utility	NEC ESMPRO Manager	Unknown	TCP -> <-	Unknown	NEC ExpressUpdate Agent Universal RAID Utility	
NEC ExpressUpdate Agent, Universal RAID Utility event monitoring	NEC ESMPRO Manager	21112	TCP <- ->	Unknown	NEC ExpressUpdate Agent Universal RAID Utility	
Remote installation of NEC ExpressUpdate Agent (When managed server's OS is Windows type)	NEC ESMPRO Manager	Unknown	UDP -> <-	137	OS	
		Unknown	TCP -> <-	445	OS	
Remote installation of NEC ExpressUpdate Agent (When managed server's OS is Linux type)	NEC ESMPRO Manager	Unknown	TCP -> <-	22	OS	
Communication with the vPro	NEC ESMPRO Manager	Unknown	TCP -> <-	16992	vPro	
CIM Indication Receiving events	NEC ESMPRO Manager	6736 (*4)	TCP <- ->	Unknown	NEC ESMPRO ServerAgent Service	
Server Monitoring (WS-Man)(HTTP) CIM Indication Subscription(HTTP) (When managed server's OS is Windows type)	NEC ESMPRO Manager	Unknown	TCP -> <-	5985 80(*5)	NEC ESMPRO ServerAgent Service	
Server Monitoring (WS-Man)(HTTPS) CIM Indication Subscription(HTTPS) (When managed server's OS is Windows type)	NEC ESMPRO Manager	Unknown	TCP -> <-	5986 443(*5)	NEC ESMPRO ServerAgent Service	

*1 BMC's port number can be changed on [BMC Setting] - [Network] - [Service].

*2 NEC ESMPRO Manager's port number used for communication with BMC can be changed on the "Environment" screen.

*3 The module uses the lowest unused port of the range.

*4 The port number can be changed on [Alert Receive Setting] - [CIM-Indication Setting] - [Port Number] of AlertViewer.

*5 The used default port number depends on Windows Remote Management(WinRM) on the managed server. For detailed information, see " Appendix C Port number for WS-Man communication" in "NEC ESMPRO Manager Ver.6 Setup Guide". When managed server's OS is WindowsServer2008R1, the module uses this port number.

[PC for Management -> EM Card]

Function	PC for Management		Protocol /Direction	EM Card	
	Component	Port No.		Port No.	Component
Information Collection	NEC ESMPRO Manager	47117(*1)	UDP -> <-	623	EM Card
	NEC ESMPRO Manager	47170-47179(*2)	TCP/IP <-	623	EM Card
	NEC ESMPRO Manager	47180-47189(*2)	UDP -> <-	623	EM Card
EM Card Monitoring	NEC ESMPRO Manager	47117(*1)	UDP -> <-	623	EM Card
BMC configuration of CPU blade	NEC ESMPRO Manager	47117(*1)	UDP -> <-	623	EM Card
Operation with Command Line I/F	NEC ESMPRO Manager	47117(*1)	UDP -> <-	623	EM Card

*1 NEC ESMPRO Manager uses a same port number for communication with BMC and EM card. The port number can be changed on the [Environment Setting] screen.
*2 The module uses the lowest unused port of the range.

[PC for Management <-> Other Vendor's Management Console]

Function	PC for Management		Protocol /Direction	Other Vendor's Management Console	
	Component	Port No.		Port No.	Component
SNMP Trap Redirection	NEC ESMPRO Manager	Unknown	UDP ->	162	Other Vendor's Management Console

[Inside of PC for Management]

Function	Component	Port No.	Protocol /Direction	Port No.	Component
NEC ESMPRO Manager	NEC ESMPRO Manager	21115	TCP -> <	21115	NEC ESMPRO Manager
NEC ESMPRO Manager	NEC ESMPRO Manager	51099-51107 (*1)	UDP -> <-	51099-51107 (*1)	NEC ESMPRO Manager
NEC ESMPRO Manager	NEC ESMPRO Manager	21113 21114	TCP -> <-	21113 21114	NEC ESMPRO Manager
NEC ESMPRO Manager Direct connection / Modem connection	NEC ESMPRO Manager	Unknown	TCP -> <-	47140-47149 (*1)	NEC ESMPRO Manager (DianaScope Modem Agent)
Server Monitoring	NEC ESMPRO Manager	Unknown	TCP -> <-	Unknown	NEC ESMPRO Manager

*1 The module uses the lowest unused port of the range.