NEC ESMPRO Agent Extension
Installation Guide

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About This Document

This document explains the complete procedures from installation of "NEC ESMPRO Agent Extension" to setup of managed server.

Before attempting to operate NEC ESMPRO Agent Extension, read this document so as to gain an adequate understanding of the contents.

- Notes

This document is intended for persons who are familiar with the operating system's functions and operations and the network's functions and setup. For operations and inquiries about the operating system, see its online help information.

This document covers universal information about generally managed servers. The notes and restrictions on use of each product as a managed server are explained in the user's guide provided with the managed server and "ESMPRO Manager Ver.5 Setup guide".

Names used with screen images in this document are fictitious. They are unrelated to existing product names, names of organizations, or individual names. The setting values on the screen images are shown as examples, so setting values such as IP addresses on screen images are not guaranteed for operation.

In this document, "¥" expresses back slash.

- Symbols in This Document

The following explains three symbols that are used in this document:

  IMPORTANT:  Points or particular notes you must follow when handling software of servers.
  CHECK:      Points or notes you need to check when handling software or servers.
  TIPS:        Useful information.
Chapter 1  Summary

NEC ESMPRO Agent Extension (Ver.2) is software that works on the managed server. When "ESMPRO Management" of BMC configuration on the managed server is set "Enable", you can execute commands specified by NEC ESMPRO Manager Ver.5.4 or later.

CHECK:

- You can configure BMC on the managed server by the following software.
  - BMC Configuration (Windows/Linux/Off-line TOOL)
  - Web Console of EXPRESSSCOPE Engine 3 (except ft Server)
  - NEC ESMPRO Manager (Ver.5.4 or later) (ft Server: Ver.5.61 or later)
- You can not configure BMC by NEC ESMPRO Agent Extension (Ver.2 or later).
Chapter 2  System Requirements

2.1 Managed server
Install NEC ESMPRO Agent Extension (Ver.2) in the managed server. It works on the following environment.

- **Hardware**
  It needs to be managed by NEC ESMPRO Manager (Ver.5.4 or later) and satisfy the following conditions.

  - **Managed Server**
    NEC Express5800 series and NEC Storage NS series that integrates EXPRESSSCOPE Engine 3.

  **IMPORTANT:**
  - You cannot install NEC ESMPRO Agent Extension (Ver.2) in the server with EXPRESSSCOPE Engine 2 or earlier.
  - You cannot install NEC ESMPRO Agent Extension (Ver.1) or NEC DianaScope Agent in the server with EXPRESSSCOPE Engine 3.

  **CHECK:**
  - ft Server (NEC Express5800/R320c-M4, R320c-E4 and R310c-E4) is supported by the upper version from ESMPRO Agent Extension for Windows Ver.2.02.
  - ECO CENTER (NEC Express5800/E120d-M and E110d-M) is supported by the upper version from ESMPRO Agent Extension for Windows Ver.2.03 and ESMPRO Agent Extension for Linux Ver.2.02.

  - **Memory**
    512MB or more

  - **Availability of hard disk**
    100MB or more

- **Software**
  - **Operating system**
    - Microsoft Windows Server 2003 R2, Standard/Enterprise x64 Edition
    - Windows Server 2008 R2, Standard/Enterprise/Datacenter
    - Windows Server 2012 Standard/Datacenter
    - Red Hat Enterprise Linux Advanced Platform 5 (x86, x64)
    - Red Hat Enterprise Linux Server 5 (x86, x64)
    - Red Hat Enterprise Linux Server 6 (x86, x64)
    - SUSE Linux Enterprise Server 10 (SP3) (x86, x64)
IMPORTANT:
- You cannot install NEC ESMPRO Agent Extension in the following case.
  -- Installation on guest OS virtual of machine.
- The following packages are necessary to use NEC ESMPRO Agent Extension on Red Hat Enterprise Linux Server 6(x64).
  -- glibc i686
  -- nss-softokn-freebl i686
  -- libgcc i686

Other information
If you use the remote management function realized by the communication between NEC ESMPRO Manager (Ver.5.4 or later) and NEC ESMPRO Agent Extension (Ver.2), NEC ESMPRO Agent Extension needs following:
  JRE 6 (32bit version 1.6.0_20 or later) or JRE 7 (32bit version 1.7.0_07 or later).
  (JRE is attached to NEC ESMPRO Agent Extension)

IMPORTANT:
- You cannot update NEC ESMPRO Agent Extension from Ver.1 to Ver.2 because the server that is able to be installed NEC ESMPRO Agent Extension is different between Ver.1 and Ver.2.

CHECK:
- JRE 7 is supported by the upper version from ESMPRO Agent Extension for Windows Ver2.03 and ESMPRO Agent Extension for Linux Ver2.02.

2.1.1 Server Management Driver
On Linux, OpenIPMI Driver must be started to use NEC ESMPRO Agent Extension (Ver.2).

CHECK:
- Use the following command to confirm that OpenIPMI Driver has been installed on Linux.
  rpm -qa | grep -i OpenIPMI

- If the OpenIPMI Driver is stopped, you need to start OpenIPMI Driver. You can confirm the status of OpenIPMI Driver by the following command.
  /etc/init.d/ipmi status

  If "not loaded" is displayed after executing the above command, please start OpenIPMI Driver by the following command.
  /etc/init.d/ipmi start

  And you can start OpenIPMI Driver automatically at the system booting to execute the following command and reboot the operation system.
  chkconfig ipmi on
2.2 Notes on Managed Servers

This section explains particular notes on managed servers.

2.2.1 Teaming Setting

If you set Teaming (providing redundancy or multiplexing with multiple network adapters) for LAN port that NEC ESM PRO Agent Extension uses on the managed server, please setup the NEC ESM PRO Agent Extension with the procedure below. This procedure does not depend on OS of the managed server.

Set IP address that NEC ESM PRO Agent Extension uses.
- Set the IP address that is used for Teaming on any LAN in the NEC ESM PRO Agent Extension screen.

CHECK:
- If the "Check Connection" for the managed server has been completed, perform "Check Connection" again after performing "Set IP address that NEC ESM PRO Agent Extension uses".
Chapter 3  Installation

3.1 NEC ESMPRO Agent Extension Installation for Windows

Install NEC ESMPRO Agent Extension in the managed server in following order:

(1) Install JRE
   It is necessary to install JRE before the installation of NEC ESMPRO Agent Extension.

(2) Install NEC ESMPRO Agent Extension
   Install NEC ESMPRO Agent Extension on the managed server.

(3) Set IP Address of the OS that NEC ESMPRO Agent Extension uses
   Do the setting by NEC ESMPRO Agent Extension.

3.1.1 Check before installation

Check the followings:
-- See chapter 2.1 to check the system requirement of the managed server and NEC ESMPRO Agent Extension.
-- Login to Windows as Administrator.

3.1.2 Start installation menu

- If you install NEC ESMPRO Agent Extension by using downloaded modules:

  Open the following files of NEC ESMPRO Agent Extension Installer on web browser.
  ¥esmpro_sa_ex¥menu¥en¥menu.html

  CHECK:
  - Installation menu must be opened using Microsoft Internet Explorer.

- If you install NEC ESMPRO Agent Extension by using EXPRESSBUILDER

  You can open the installation menu as follows:

  Insert EXPRESSBUILDER into the DVD drive on the managed server which Windows has started. Autorun Menu will be displayed.

  TIPS:
  - If Autorun Menu does not launch, double-click ¥autorun¥dispatcher.exe from EXPRESSBUILDER. (x64 Edition : dispatcher_x64.exe)
  - If the device selection window is displayed, select the device you are using.

Click [Set up Software] → [ESMPRO] → [Agent Extension].
NEC ESMPRO Agent Extension installation menu for Windows will appear.
3.1.3 Install JRE
Be sure to install JRE of the version specified in chapter 2.1.

Click "Java Runtime Environment (JRE)" on the installation menu. The "Download Files" dialog box will appear. Click [Open].
JRE installer will be started.

TIPS:
- Depending on your environment, please substitute [Run] for [Open].

Install JRE according to the installer's instructions.

3.1.4 Install NEC ESMPRO Agent Extension
Check before perform the installation.
-- Login to Windows as Administrator.
-- Confirm that JRE has been installed. See chapter 2.1 for JRE version.

Click "NEC ESMPRO Agent Extension" on the installation menu. The "Download Files" dialog box will appear. Click [Open].
NEC ESMPRO Agent Extension installer will be started.

TIPS:
- Depending on your environment, please substitute [Run] for [Open].
- When asked to run or save the file, please run without saving it.

NEC ESMPRO Agent Extension installer will be started. Click [Next].
Enter a folder name to install. Click [Next].

Confirm the installation setting, and click [Next]. The installation will be started.

When the installation is completed, NEC ESMPRO Agent Extension service is started and available.

**TIPS:**
- You can confirm whether the installation of NEC ESMPRO Agent Extension is completed or not.
  - Click "Administrative Tools" - "Services", if the Status of "ESM Agent Extension Service" is started, the installation is completed.
3.1.5 Set the IP Address that NEC ESMPRO Agent Extension uses
Do the setting on the managed server.

Click "NEC ESMPRO Agent Extension" - "NEC ESMPRO Agent Extension" from [start] on Windows to open the setting dialog box of NEC ESMPRO Agent Extension.

Select IP address of Operating System that NEC ESMPRO Agent Extension uses.

CHECK:
- Please execute [Set Agent IP address] again if you change the LAN ports or a new LAN card is inserted to the managed server. Perform the "Check Connection" of NEC ESMPRO Manager (Ver.5.4 or later) after the setting is changed.

TIPS:
- Set Primary an IP Address which NEC ESMPRO Agent Extension mainly use to connect with NEC ESMPRO Manager (Ver.5.4 or later), and set Secondary a spare IP Address. Secondary is used when the connection error occurs on Primary.
3.2 NEC ESMPRO Agent Extension Uninstallation for Windows

To uninstall the software, perform it in following order:

Uninstall NEC ESMPRO Agent Extension
Open "Add/Remove Programs" of control panel on Windows. Select NEC ESMPRO Agent Extension and click [Delete]. Uninstall it according to the on-screen instructions.

CHECK:
- Close the dialog box of NEC ESMPRO Agent Extension if it has been opened, and then uninstall NEC ESMPRO Agent Extension.

Uninstall JRE
Open "Add/Remove Programs" of control panel on Windows. Select JRE and click [Delete]. When the version of JRE is 7 Update7, select [Java 7 Update 7].

3.3 JRE Update for Windows

To update JRE on the managed server which NEC ESMPRO Agent Extension has been installed on, perform it in following order.

The following is an example that NEC ESMPRO Agent Extension is installed under "C:¥Program Files¥ServerAgent Extension", and JRE7 is installed under "C:¥Program Files¥Java".

Stop NEC ESMPRO Agent Extension service.

TIPS:
- Service name is "ESM Agent Extension Service".

Install the new version JRE.

IMPORTANT:
- If the reboot of operating system is required, please reboot Operating System after 0.
- If you reboot Operating System, the process (4) is unnecessary.

Edit path of the JRE that NEC ESMPRO Agent Extension use.

Open the following file with text editor.

C:¥Program Files¥ServerAgent Extension¥service¥jsl.ini

Edit the path of JRE.

```
jrepath=C:¥Program files¥Java¥jre7
```

Start NEC ESMPRO Agent Extension service.
3.4 NEC ESMPRO Agent Extension Installation for Linux

To install the software, perform it in following order:

(1) Install JRE
   It is necessary to install JRE before the installation of NEC ESMPRO Agent Extension.

(2) Copy and extract NEC ESMPRO Agent Extension installer
   Copy the installer to the hard disk on the managed server and extract it.

(3) Install NEC ESMPRO Agent Extension
   Install NEC ESMPRO Agent Extension on the managed server.

(4) Set IP Address of the OS that NEC ESMPRO Agent Extension uses
   Do the setting by NEC ESMPRO Agent Extension.

3.4.1 Check before installation

Check the followings:
-- See chapter 2.1 to check the system requirement of managed server and NEC ESMPRO Agent Extension.
-- Login to Linux as root user.

CHECK:
- NEC ESMPRO Agent Extension installer exists on following directory:
  -- If you install by using downloaded modules:/esmpro_sa_ex.
  -- If you install by using EXPRESSBUILDER: <revision folder>/lnx/pp/esmpro_sa_ex.
  As for <revision folder>, confirm the number in the parenthesis of the version displayed
  on the lower right of Autorun Menu.
  For example, if the version is "Version 6.10-020.05 (024)", then <revision folder> is 024.

3.4.2 Install JRE

JRE installer is attached to NEC ESMPRO Agent Extension installer. JRE installer (Linux) is in the below
directory.
/esmpro_sa_ex/jre_x

Regardless of below input examples, be sure to install JRE of the version specified in chapter 2.1.

Copy JRE installer into any directory.
The following is an example of copying from EXPRESSBUILDER to /usr/local/bin/jre_x.
(The mount path is dependent on the OS. Specify the right path.)

```
cp -r /mnt/cdrom/001/lnx/pp/esmpro_sa_ex/jre_x /usr/local/bin
```

Move to the directory containing the JRE installer.
The following is an example of copying into /usr/local/bin/jre_x:

```
cd /usr/local/bin/jre_x
```
Install JRE. JRE will be installed in the directory named JRE version under JRE/usr/java.

The following is an example that the version of JRE is 7 Update7.
```
chmod a+x jre-7u7-linux-i586.rpm
rpm -ivh jre-7u7-linux-i586.rpm
```

3.4.3 Copy and extract NEC ESMPRO Agent Extension installer

Copy NEC ESMPRO Agent Extension installer into any directory on the managed server. NEC ESMPRO Agent Extension installer files are in /esmpro_sa_ex/agt_x. The following is an example to copy into /usr/local/bin:

Copy all installer files to /usr/local/bin.

It is shown example that files is copied from EXPRESSBUILDER to /use/local/bin directory. (The mount path is dependent on the OS. Specify the right path.)
```
cp -r /mnt/cdrom/001/lnx/pp/esmpro_sa_ex/agt_x /usr/local/bin
```

Move to the directory containing the installer.
```
cd /usr/local/bin/agt_x
```

Extract the installer.
```
tar xzvf EsmproSaEx-N.NN-x.tgz
```
"N.NN" in the example file name means the version.

3.4.4 Install NEC ESMPRO Agent Extension

Move to the directory that the installer was extracted.
```
cd /usr/local/bin/agt_x/EsmproSaEx-N.NN-x
```
"N.NN" in the example directory name means the version.

Execute the shell for the installation.
```
./EsmproSaEx-N.NN-x.sh
```
"N.NN" in the example file name means the version.

A message to confirm whether to install NEC ESMPRO Agent Extension is displayed. Input "yes" and "Enter" key. NEC ESMPRO Agent Extension will be installed under /opt/nec/esmpro_sa_ex_sysman and /opt/nec/esmpro_sa_ex_agent directory. If you input "no", the installation is not executed.

When the installation is completed, following message will be displayed.
"The installation of NEC ESMPRO Agent Extension is now completed."

NEC ESMPRO Agent Extension service is available.

CHECK:
- Do not delete the files that are used to install, because you will use them to uninstall.
3.4.5 Set the IP Address of NEC ESMPRO Agent Extension uses
Do the setting on the managed server.

Open the setting of NEC ESMPRO Agent Extension.

Do the following operation to open the setting function of NEC ESMPRO Agent Extension.

```
/opt/nec/esmpro_sa_ex_sysman/agentconf
```

Select IP address of Operating System that NEC ESMPRO Agent Extension uses.

TIPS:
- Set Primary an IP Address which NEC ESMPRO Agent Extension mainly use to connect with NEC ESMPRO Manager (Ver.5.4 or later), and set Secondary a spare IP Address. Secondary is used when the connection error occurs on Primary.
3.5 NEC ESMPRO Agent Extension Uninstallation for Linux

Login to Linux as root user.

To uninstall the software, perform in following order:

(1) Uninstall NEC ESMPRO Agent Extension

(2) Uninstall JRE

3.5.1 Uninstall NEC ESMPRO Agent Extension

Move to the directory in which all installation files are copied.

```
cd /usr/local/bin/agt_x/EsmproSaEx-N.NN-x
```

"N.NN" in the example directory name means the version.

Execute the shell for uninstallation.

```
./EsmproSaEx-N.NN-x.sh
```

"N.NN" in the example file name means the version.

A confirmation message for uninstallation of NEC ESMPRO Agent Extension is displayed. Input "delete" and "Enter" key.

When the uninstallation is completed, following message will be displayed.
"The uninstallation of NEC ESMPRO Agent Extension is now completed."

3.5.2 Uninstall JRE

You can confirm the version of JRE by following command.

```
rpm –qa | grep jre
```

The following is an example that the version of JRE is 7 Update7.

```
rpm -e jre-1.7.0_07-fcs
```
3.6 JRE Update for Linux

Perform in following order to update JRE software on the managed server which NEC ESMPRO Agent Extension has been installed on:
This example is for updating JRE to ver.7 Update7 when you use NEC ESMPRO Agent Extension.

Stop NEC ESMPRO Agent Extension service.

```
/etc/rc.d/init.d/dianascopeagent stop
```

Update JRE.

```
chmod a+x jre-7u7-linux-i586.rpm
rpm -ivh jre-7u7-linux-i586.rpm
```

Start NEC ESMPRO Agent Extension service.

```
/etc/rc.d/init.d/dianascopeagent start
```
Chapter 4  Precautions for Use

4.1 NEC ESMPRO Agent Extension installation
-- NEC ESMPRO Agent Extension Installer (Windows & Linux) cannot downgrade to the older version. If you want to use the older version, uninstall the current version and then install older version. Note: All the registered information will be deleted as the result of the uninstalling.

-- NEC ESMPRO Agent Extension (Windows) Installer may indicate a message that requests some disk if you upgrade NEC ESMPRO Agent Extension with the installer on CD-ROM/DVD-ROM. In this case, copy the installer on the HDD and then upgrade.

-- You can not update NEC ESMPRO Agent Extension from Ver.1 to Ver.2 because the server that is able to be installed NEC ESMPRO Agent Extension is different between Ver.1 and Ver.2.

4.2 JRE7 installation
-- JRE7 Linux installer may indicate the following message depending on the JRE version. These messages are harmless, and can be ignored. To suppress these messages, please use the JRE7 Update21 or later.
   Error:Could not open input file /usr/java/jre1.7.0_15/lib/rt.pack
   Error:Could not open input file /usr/java/jre1.7.0_15/lib/jsse.pack
   Error:Could not open input file /usr/java/jre1.7.0_15/lib/charsets.pack
   Error:Could not open input file /usr/java/jre1.7.0_15/lib/localedata.pack
   Error:Could not open input file /usr/java/jre1.7.0_15/lib/plugin.pack
   Error:Could not open input file /usr/java/jre1.7.0_15/lib/javaws.pack
   Error:Could not open input file /usr/java/jre1.7.0_15/lib/deploy.pack

4.3 Firewall
If the firewall is enabled on the managed server, NEC ESMPRO Agent Extension can not communicate NEC ESMPRO Manager (Ver.5.4 or later). Please perform following settings on the managed server.

4.3.1 Windows Firewall
Open "Windows firewall" from "control panel" of Windows.
Select "Add Port" on "Exceptions" tab page.

Enter following setting:

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<thead>
<tr>
<th>Name:</th>
<th>arbitrary name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port number:</td>
<td>47120 - 47129</td>
</tr>
<tr>
<td>TCP/UDP:</td>
<td>TCP</td>
</tr>
</tbody>
</table>

4.3.2 Linux Firewall in Red Hat Enterprise Linux 5
Execute "setup" command.
Select "Firewall configuration" and "Customize".

Enter following setting at "Allow incoming":

| Other Port: | Port number that you need to add : tcp 47120 - 47129 |
4.3.3 Linux Firewall in Red Hat Enterprise Linux 6

Execute "setup" command.
Select "Firewall configuration" and "Customize".
Put "Forward" button and select "Add".

Enter following setting at "Port and Protocol":

<table>
<thead>
<tr>
<th>Port / Port Range</th>
<th>47120 - 47129</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protocol</td>
<td>tcp</td>
</tr>
</tbody>
</table>

4.3.4 Linux Firewall in SUSE Linux Enterprise Server

Execute "yast" command.
Select "Security and Users" and "Firewall".
Select "Allowed Services" and "Advanced...".

Enter following setting at "Additional Allowed Ports":

<table>
<thead>
<tr>
<th>TCP Ports</th>
<th>47120 - 47129</th>
</tr>
</thead>
</table>

4.4 Reservation TCP Ports

In Red Hat Enterprise Linux 6.0 or later or Red Hat Enterprise Linux 5.6 or later, NEC ESM PRO Agent Extension for Linux (Ver.2.03 or later) automatically reserves TCP ports (47120-47129) itself uses to avoid conflicts with the software automatically assigning TCP ports.

You can manually set the reservation TCP ports as follows:

Set the reservation TCP ports.
Execute the following command.

```
/sbin/sysctl -w net.ipv4.ip_local_reserved_ports=47120-47129
```

Save the setting of the reservation TCP ports.
Add the settings to the file as follows.

<table>
<thead>
<tr>
<th>File name</th>
<th>/etc/sysctl.conf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>net.ipv4.ip_local_reserved_ports = 47120-47129</td>
</tr>
</tbody>
</table>
**Revision History**

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.00</td>
<td>2011/05/10</td>
<td>Initial edition</td>
</tr>
<tr>
<td>2.01</td>
<td>2011/06/24</td>
<td>Adds required packages by Red Hat Enterprise Linux Server 6 (x64). Changes cover. Corrects writing errors.</td>
</tr>
<tr>
<td>2.02</td>
<td>2012/02/28</td>
<td>Corrects writing errors.</td>
</tr>
<tr>
<td>2.03</td>
<td>2012/05/25</td>
<td>Changes Installation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corrects writing errors.</td>
</tr>
<tr>
<td>2.04</td>
<td>2012/07/05</td>
<td>Changes Installation for Linux.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corrects writing errors.</td>
</tr>
<tr>
<td>2.05</td>
<td>2012/08/22</td>
<td>Adds ft Server.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corrects writing errors.</td>
</tr>
<tr>
<td>2.06</td>
<td>2012/10/31</td>
<td>Adds ECO CENTER.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adds Windows Server 2012.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adds JRE7.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Changes Installation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corrects writing errors.</td>
</tr>
<tr>
<td>2.07</td>
<td>2013/03/12</td>
<td>Adds reservation TCP ports Precautions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corrects writing errors.</td>
</tr>
<tr>
<td>2.08</td>
<td>2013/07/18</td>
<td>Adds JRE7 installation Precautions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corrects writing errors.</td>
</tr>
<tr>
<td>2.09</td>
<td>2013/09/11</td>
<td>Changes Installation for Windows.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corrects writing errors.</td>
</tr>
</tbody>
</table>