NEC ESMPRO Manager Ver.5
Installation Guide (Linux)

Chapter 1  About NEC ESMPRO Manager
Chapter 2  System Requirements
Chapter 3  NEC ESMPRO Manager Installation
Chapter 4  Precautions for Use
Contents

Front Cover ................................................................. 1
Contents................................................................................. 2
"External Libraries" and their Copyright" ........................................ 6
About This Document .................................................... 8
About Download of the Latest NEC ESMPRO......................... 9
Chapter1 About NEC ESMPRO Manager ................................ 10
  1.1 Components............................................................ 11
  1.2 Connection Types.................................................... 11
  1.3 Functions.................................................................... 12
    1.3.1 NEC ESMPRO Agent Extension Function................. 14
Chapter2 System Requirements ........................................ 15
  2.1 NEC ESMPRO Manager server .................................. 15
  2.2 Web client............................................................... 16
  2.3 Managed component ................................................. 17
  2.4 Requirements for Connection between the NEC ESMPRO Manager Server and Managed Component ........................................................................ 17
    2.4.1 Notes on Managed Components and Network Devices 18
  2.5 Port numbers that NEC ESMPRO Manager uses .................. 20
    2.5.1 Web Client ↔ NEC ESMPRO Manager Server .......... 20
    2.5.2 NEC ESMPRO Manager Server ↔ Managed Component ... 20
    2.5.3 NEC ESMPRO Manager Component ↔ EM Card ....... 21
    2.5.4 NEC ESMPRO Manager Server Inside ................. 21
Chapter3 NEC ESMPRO Manager Installation ..................... 23
  3.1 NEC ESMPRO Manager Installation for Linux ................. 23
    3.1.1 Check before installation ..................................... 23
    3.1.2 Install the NEC ESMPRO Manager ....................... 23
    3.1.3 Update install the NEC ESMPRO Manager .............. 24
  3.2 Settings after installation ......................................... 24
    3.2.1 Access setting from Web Client ......................... 24
  3.3 NEC ESMPRO Manager Un-installation for Linux ............. 24
    3.3.1 Uninstall the NEC ESMPRO Manager ................. 24
  3.4 Login ........................................................................ 25
  3.5 Setting Environment.................................................. 26
  3.6 Change of the http connection port number ..................... 27
  3.7 SSL ......................................................................... 28
  3.8 SSL Setup for LDAP/Active Directory.......................... 30
Chapter4 Precautions for Use............................................. 31
  4.1 About NEC ESMPRO Manager .................................. 31
    4.1.1 About the use after NEC ESMPRO Manager is upgraded 31
    4.1.2 About use of two or more NEC ESMPRO Manager .... 31
    4.1.3 About Power Control.......................................... 31
    4.1.4 About IPMI Information Collection ....................... 32
    4.1.5 About Remote Console...................................... 32
    4.1.6 Power Management............................................ 33
    4.1.7 About CPU blade auto registration ...................... 33
    4.1.8 About the coexistence of NEC ESMPRO Manager with DianaScope Agent or NEC ESMPRO Agent Extension on the same component 33
    4.1.9 RAID operation............................................... 33
    4.1.10 Suspend Periods Setting .................................... 33
    4.1.11 The default setting of EXPRESSSCOPE Engine 3 .... 33
    4.1.12 About Standby BMC Configuration Setting ............ 34
    4.1.13 DHCP setting for Advanced Remote Management Card 34

2
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About This Document

This document introduces remote management using the server management utility "NEC ESMPRO Manager" for Linux and explains the complete procedures from installation to managed component's setup.

Before attempting to operate the server management utility NEC ESMPRO Manager, 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 components. The notes and restrictions on use of each product as a managed component are explained in the user's guide provided with the managed component and "Appendix C. Managed Components Summary" on the "NEC ESMPRO Manager Ver.5".

If the NEC EXPRESSBUILDER(SE) CD-ROM or Maintenance Management Tool CD-ROM is attached to the managed component, read the word in place of "NEC EXPRESSBUILDER" in this document.

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.

About 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 components.

**CHECK:** Points or notes you need to check when handling software or components.

**TIPS:** Useful information.

Other Documents for NEC ESMPRO Manager
For other information about the NEC ESMPRO Manager, see the documents below.

- **Which components can NEC ESMPRO Manager control?**
  See the "Appendix C. Managed Components Summary" of the "NEC ESMPRO Manager Ver.5 Setup Guide".

- **How to operate after setup.**
  See the NEC ESMPRO Manager's online help information.

- **How to operate the command line Interface.**
  See the "NEC ESMPRO Manager Command Line Interface".
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See the following URL for NEC ESMPRO information. You can download the latest version of the NEC ESMPRO from the URL.

http://www.58support.nec.co.jp/global/download/index.html
Chapter 1  About NEC ESMPRO Manager

NEC ESMPRO Manager is software designed for reducing operational management costs by remotely managing components. The NEC ESMPRO Manager is primarily made up of "NEC ESMPRO Manager" running on a management PC (called an "NEC ESMPRO Manager server") and "NEC ESMPRO Agent Extension" running on a managed component. Components that NEC ESMPRO Manager can manage remotely are as follows:

- Express5800 series that conform to IPMI (Intelligent Platform Management Interface) Ver.1.5 or Ver.2.0 as the industry standard for server management
- NEC iStorage series
- Express5800 series based on vPro including iAMT (Intel Active Management Technology) Ver.6.0 and later

The NEC ESMPRO Manager provides the following capabilities:

- **Rebuilding even if the operating system on the managed component has failed.**
  Even if the operating system on the managed component is inoperable (in the state of operating system's stall, BIOS POST (Power On Self Test), or DC OFF), NEC ESMPRO Manager allows you to collect the managed component's hardware information and control the power supply.

- **Operation while viewing the managed component's screen.**
  While key-in and mouse operations are enabled, the managed component's screen can be viewed on the remote browser at any time during POST just after the managed component is turned ON.

- **Operation of more than one managed component at a time.**
  By specifying a component group, you can provide power control or change a setting for managed components through a single operation.

- **Specification of remote operation time**
  The managed component 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 component can be operated with a Web browser. If you use Internet's standard SSL (Secure Socket Layer) for the NEC ESMPRO Manager, you enable secure remote operation from an external network.
1.1 Components

The NEC ESMPRO Manager consists of the following software group:

- **Software running on the NEC ESMPRO Manager component**
  The NEC ESMPRO Manager manages a remote component by communicating with the BMC (Baseboard Management Controller), vPro, System BIOS, NEC ESMPRO Agent Extension or DianaScope Agent, which are on the managed component.

- **Software running on the managed component**
  - **NEC ESMPRO Agent Extension**
    Configures the BMC on the managed component, and executes commands specified by the NEC ESMPRO Manager.

  **TIPS:**
  - BMC is provided with form below. For details, see "Appendix C. Managed Components Summary" of the "NEC ESMPRO Manager Ver.5 Setup Guide".
    - Managed component integrates BMC.
    - Managed component integrates EXPRESSSCOPE Engine or EXPRESSSCOPE Engine 2.
    - Remote Management Card integrates BMC.
    - Advanced Remote Management Card integrates BMC.
  - EXPRESSSCOPE Engine and EXPRESSSCOPE Engine 2 are generically called EXPRESSSCOPE Engine series.

1.2 Connection Types

There are only via LAN of connections that can be made between the NEC ESMPRO Manager server and managed component.
1.3 Functions
The NEC ESMPRO Manager has following functions:

- **Remote console**
  The remote console function allows the operator to view the managed component's display screen from the remote console.
  During POST (Power On Self Test) just after the power is turned ON, or while DOS is active, data can be input into the managed component from the keyboard. The managed component's BIOS setup and POST monitoring can be enabled remotely by this function.
  Even after Linux has been booted, the operator can perform various operations such as OS setting change or application execution while viewing the managed component's screen on the remote browser.

  **CHECK:**
  - After Windows or Linux starts up, login to the EXPRESSSCOPE Engine series, key input and mouse operation are possible from remote KVM.

- **Information collection**
  The information collection function allows the operator to collect information from the managed component.

  - **Component Status:** Managed component's STATUS lamp state and power state.
  - **Version Information:** Information about the versions of NEC DianaScope Agent or NEC ESMPRO Agent Extension, operating system, LAN driver and System BIOS.
  - **BMC Configuration:** BMC configuration information. You can also change the information.
  - **Power Restore Delay:** Interval from AC-ON to DC-ON that is also set using BIOS Setup utility on the managed component.
  - **IPMI Information:** Hardware information, log information, and the current status of each sensor.
  - **Power Management:** Managed component's power value. You can read it for specified period.

- **Power control**
  The following power control is provided for the managed component:
  - **Power ON**
  - **Power OFF**
  - **Power Cycle (turns power on after turning it off.)**
  - **Reset**
  - **DUMP Switch** (The managed component performs the same operation as when the dump switch is pressed.)
  - **Sutdown OS**

- **Component Monitoring**
  The component monitoring function always monitors the managed component's STATUS lamp state and power state. When a failure occurs, the function notifies the operator of the failure.
  If the managed component is a CPU blade, this function also monitors and notifies the operator of the slot change.
  The component monitoring function is supported only via LAN.
- **Remote batch**
  The remote batch function enables the following control automatically at specified time:
  - Power ON
  - Power OFF
  - Shutdown OS
  - Clear System Event Log
  - Collect System Event Log, Sensor Information, Filed Replaceable Unit Information

- **Scheduled running**
  The scheduled running function enables the setting of a down period for the managed component. According to the specified schedule, the managed component shuts down the operating system at the start of the down period and turns the power ON at the end.

- **Update of firmware and software on the managed component (NEC ExpressUpdate)**
  NEC ExpressUpdate is the function that manages versions of modules like firmware and software on the managed component and that updates the modules. NEC ExpressUpdate can download the update packages automatically for the managed component, and install them without stopping the system.

  **CHECK:**
  - Some update packages are not provided via NEC ExpressUpdate, please see NEC Global Site for all update packages for your managed component.

- **Operation through the command line**
  In general, NEC ESMPRO Manager is operated on the Web browser. The command line interface also provides commands like power control or information collection.

  **TIPS:**
  - For details of the command line interface, see "NEC ESMPRO Manager Command Line Interface".
1.3.1 NEC ESMPRO Agent Extension Function

Before the following of the functions introduced in 1.3"Functions" can be used, NEC ESMPRO Agent Extension must be installed in the managed component.

- **Shutdown OS**
  The NEC ESMPRO Agent Extension shuts down the operating system upon request of the NEC ESMPRO Manager.

- **Version Information collection**
  Information about the versions of the operating system, LAN driver, and BIOS in addition to the NEC ESMPRO Agent Extension can be collected upon request of the NEC ESMPRO Manager.

- **BMC configuration information collection/change**
  The BMC configuration information set on the managed component can be collected or changed upon request of the NEC ESMPRO Manager.

- **Scheduled Running**
  According to the specified schedule sent by the NEC ESMPRO Manager, the NEC ESMPRO Agent Extension shuts down the operating system at the start of the down period. It also makes a setting for the BMC to turn the power OFF at the end of the down period.

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**TIPS:**
- NEC ESMPRO Agent Extension will perform the scheduled running after the NEC ESMPRO Manager set the schedule in the NEC ESMPRO Agent Extension.
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Chapter 2  System Requirements

2.1 NEC ESMPRO Manager server
Install NEC ESMPRO Manager in a management PC. The management PC installed the NEC ESMPRO Manager is called a "NEC ESMPRO Manager server."

- **Hardware**
  - **Processor**
    - Intel Celeron 566MHz or more, or equivalent compatible processor
    - (Recommended Intel Pentium III 1GHz or more)
  - **Memory**
    - Memory required for running the operating system plus 512MB or more (1GB or more is recommended.)
  - **Availability of hard disk**
    - 256MB or more
  - **Communication Medium**
    - TCP/IP network

- **Software**
  - **Operating System**
    - Red Hat Enterprise Linux 5 (5.5 or later) (x86, intelEM64T)
    - Red Hat Enterprise Linux 5 AP (5.5 or later) (x86, intelEM64T)
    - Red Hat Enterprise Linux 6 (x86, intelEM64T)
    - Miracle Linux 4.0 – Asianux Inside (32bit, 64bit) *1
    - Asianux Server 3 == MIRACLE LINUX V5 (32bit, 64bit) *1
  - *1 required C library glibc 2.4 or later.

- **Number of managed components**
Addition of component licenses permits a single NEC ESMPRO Manager to manage a maximum of 1000 components.
2.2 Web client

The NEC ESMPRO Manager is operable on Web clients connected to the NEC ESMPRO Manager server via LAN that satisfy the following conditions:

The NEC ESMPRO Manager server can also be used as a Web client.

- **Web browser**
  - Internet Explorer 8, 10 and 11
  - FireFox ESR24 (Windows / Linux)

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**CHECK:**

- If you use NEC ESMPRO Manager from a browser, install JRE 7 and above on the browsing PC. If JRE is not installed, some screen is not displayed correctly.
- Java Applet and Java scripts must be executable. Please set the web browser to play animation in webpages.
- 1024 by 768 pixels or more are recommended as a screen area in display properties.
2.3 Managed component
This section explains conditions for components to be managed by the NEC ESMPRO Manager.

**Hardware**
- Express5800 series and NEC Storage series in which the BMC complying with IPMI Ver.1.5 or Ver.2.0 is integrated
- Express5800 series and NEC Storage series in which EXPRESSSCOPE Engine or EXPRESSSCOPE Engine 2 complying with IPMI Ver.2.0 is integrated
- Express5800 series and NEC Storage series in which a Remote Management Card [N8115-01CP01] complying with IPMI Ver.1.5 or Ver.2.0 is integrated
- Express5800 series and NEC Storage series in which an Advanced Remote Management Card [N8115-02CP01] complying with IPMI Ver.2.0 is integrated
- Express5800 series based on vPro including iAMT Ver.6.0 and later

**CHECK:**
- The monitor function by the SNMP does not support it. NEC ESMPRO Manager will not be managed as the result of the install. See the "Appendix C. Managed Components Summary" of the "NEC ESMPRO Manager Ver.5 Setup Guide".
- The required environment varies depending on the connection type with the managed component. See 2.4"Requirements for Connection between the NEC ESMPRO Manager Server and Managed ."

**TIPS:**
- EXPRESSSCOPE Engine and EXPRESSSCOPE Engine 2 are generically called EXPRESSSCOPE Engine series.

**Software**
- You cannot use the monitoring function by the SNMP even if you install NEC ESMPRO Agent.
- If you use NEC ExpressUpdate function that manages versions of modules like firmware and software, NEC ExpressUpdate Agent is required.
- If you use RAID system management function, Universal RAID Utility (ver.3.0 or later) is required.

2.4 Requirements for Connection between the NEC ESMPRO Manager Server and Managed Component

**LAN connection**
- TCP/IP network
- LAN port
  - LAN port that BMC uses depends on the type of BMC. Some BMC uses standard LAN port. Other BMC uses a Management LAN port. See the "Appendix C. Managed Components Summary" of the "NEC ESMPRO Manager Ver.5 Setup Guide".
  - There are 2 types of managed components that BMC uses standard LAN port: one type is permitted to use only LAN1 port, and the other type is permitted to use both LAN1 and LAN2 ports. See the "Appendix C. Managed Components Summary" of the "NEC ESMPRO Manager Ver.5 Setup Guide".
2.4.1 Notes on Managed Components and Network Devices
This section explains particular notes on managed components and network devices.

-- Use of network switch / router
  If the managed component installed BMC that uses a standard LAN port or loaded Advanced Remote Management Card, and there is network switch / router between manager server and the managed components, please set the network switch / router to receive Gratuitous ARP.
  See each instruction manual of the switch / router about how to set it.

-- Use of a layer-2/layer-3 switching hub
  Set "Disable" for the STP (Spanning Tree Protocol) function of the switching hub or the STP of the port to which a managed component is connected.
  Set "Enable" for the auto-negotiation function of the port to which a managed component is connected.

-- Use of DHCP
  In case that BMC on the managed component uses a standard LAN port, communication between the NEC ESMPRO Manager and System BIOS or BMC is not compatible with a DHCP environment.
  Be sure to use a fixed IP address with the NEC ESMPRO Manager server in which the NEC ESMPRO Manager is to be installed.
  To use a managed component in a DHCP environment, start NEC DianaScope Agent or NEC ESMPRO Agent Extension.

-- Setting of Teaming for standard LAN with the OS (providing redundancy or multiplexing with multiple network adapters) for the managed component installed BMC that uses a standard LAN port:
  The managed component installed BMC that uses a standard LAN port shares the embedded standard LAN controller between BMC, System BIOS and OS, but the BMC and System BIOS do not support the LAN teaming modes including AFT (Adapter Fault Tolerance) and ALB (Adaptive Load Balancing). So if the 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 RLB (Receive Load Balancing) is set with ALB (Adaptive Load Balancing), disable the RLB. (If RLB cannot be disabled, NEC ESMPRO Manager cannot communicate with BMC.)
  - Make the Teaming-set address ("preferred primary") identical to the LAN1 IP address and MAC address in the BMC configuration information.
  - Even if the configuration of LAN2 for the BMC on the managed component is available, do not set LAN2 in the BMC configuration information.
  - 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.

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

-- Setting of Teaming for LAN with the OS (providing redundancy or multiplexing with multiple network adapters) for the managed component installed BMC that uses a Management LAN port:
If the teaming setting was made available for the LAN port that NEC DianaScope Agent or NEC ESMPRO Agent Extension uses, see "Appendix B. How to setup for using NEC ESMPRO Agent Extension or NEC DianaScope Agent on the managed component that is set LAN teaming" of the "NEC ESMPRO Manager Ver.5 Setup Guide".
-- Change of the hardware of a default gateway or an alert receiver
  in case that there is a gateway between NEC ESMPRO Manager server and a managed component, 
  re-configure BMC on the managed component after the change the hardware of the gateway. In case that 
  there is not gateway between an alert receiver and a managed component, re-configure BMC on the 
  managed component after the change the hardware of the alert receiver. The BMC on the managed 
  component can know MAC address of the new hardware by setting the BMC configuration.

-- Use of a dialup router or a PPP server
  If an alert receiver via modem uses Windows Remote Access Service, please 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 component cannot be used for connecting another device 
  in the following cases because the BMC occupies the serial port 2:
  - The managed component compatible with 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 the BMC configuration information.
    (Even if the NEC ESMPRO Manager and managed component are not connected, the BMC occupies the 
    serial port 2 (COM2).)

CHECK:
• See "Appendix C. Managed Components Summary" of the "NEC ESMPRO Manager Ver.5 
  Setup Guide" to confirm whether that your component supports SOL.
## 2.5 Port numbers that NEC ESMPRO Manager uses

NEC ESMPRO Manager uses the following port numbers:

### 2.5.1 Web Client ↔ NEC ESMPRO Manager Server

<table>
<thead>
<tr>
<th>Function</th>
<th>Web Client</th>
<th>Protocol /direction</th>
<th>NEC ESMPRO Manager Server</th>
<th>Module Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management / monitoring</td>
<td>Web Browser</td>
<td>TCP</td>
<td>8080</td>
<td>NEC ESMPRO Manager (*1)</td>
</tr>
</tbody>
</table>

*1 The port number used by Tomcat can be changed on setting of NEC ESMPRO Manager.

### 2.5.2 NEC ESMPRO Manager Server ↔ Managed Component

<table>
<thead>
<tr>
<th>Function</th>
<th>NEC ESMPRO Manager Server</th>
<th>Protocol /direction</th>
<th>Managed Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote Console (CUI, non-SOL)</td>
<td>NEC ESMPRO Manager</td>
<td>UDP</td>
<td>2069</td>
</tr>
<tr>
<td>Remote Console (CUI, SOL)</td>
<td>NEC ESMPRO Manager</td>
<td>UDP</td>
<td>623</td>
</tr>
<tr>
<td>Power Control</td>
<td>NEC ESMPRO Manager</td>
<td>UDP</td>
<td>623</td>
</tr>
<tr>
<td>Component Monitoring</td>
<td>NEC ESMPRO Manager</td>
<td>UDP</td>
<td>623</td>
</tr>
<tr>
<td>Information Collection (through NEC ESMPRO Agent Extension or DianaScope Agent)</td>
<td>NEC ESMPRO Manager</td>
<td>TCP</td>
<td>47120-47129 (*4)</td>
</tr>
<tr>
<td>Information Collection (through BMC)</td>
<td>NEC ESMPRO Manager</td>
<td>UDP</td>
<td>623</td>
</tr>
<tr>
<td>Remote Batch</td>
<td>NEC ESMPRO Manager</td>
<td>UDP</td>
<td>623</td>
</tr>
<tr>
<td>Scheduled Running</td>
<td>NEC ESMPRO Manager</td>
<td>TCP</td>
<td>47120-47129 (*4)</td>
</tr>
<tr>
<td>Operation with Command Line I/F</td>
<td>NEC ESMPRO Manager</td>
<td>UDP</td>
<td>623</td>
</tr>
<tr>
<td>Search of NEC ExpressUpdate</td>
<td>NEC ESMPRO Manager</td>
<td>UDP</td>
<td>427</td>
</tr>
<tr>
<td>NEC ExpressUpdate Agent</td>
<td>NEC ESMPRO Manager</td>
<td>TCP</td>
<td>Unknown</td>
</tr>
<tr>
<td>Event Monitoring</td>
<td>NEC ESMPRO Manager</td>
<td>TCP</td>
<td>Unknown</td>
</tr>
</tbody>
</table>
Remote installation of the NEC ExpressUpdate Agent (When managed component's OS is Windows type) | NEC ESMPRO Manager | Unknown | UDP  | 137 | OS
|----------------|-------------------|--------|------|-----|-----
| | | Unknown | TCP | 445 | OS

Remote installation of the NEC ExpressUpdate Agent (When managed component's OS is Linux type) | NEC ESMPRO Manager | Unknown | TCP  | 22  | OS

Search of Universal RAID Utility | NEC ESMPRO Manager | Unknown | UDP  | 427 | Universal RAID Utility

RAID system management function | NEC ESMPRO Manager | Unknown | TCP  | Unknown | Universal RAID Utility

Communication with the vPro | NEC ESMPRO Manager | Unknown | HTTP | 16992 | vPro

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

*3 “Unknown” means that the module uses one port that any module does not use.

*4 The module uses one port of the range.

### 2.5.3 NEC ESMPRO Manager Component ↔ EM Card

<table>
<thead>
<tr>
<th>Function</th>
<th>NEC ESMPRO Manager Component</th>
<th>Protocol /direction</th>
<th>EM Card</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Module Name</td>
<td>Port No.</td>
<td>Port No.</td>
</tr>
<tr>
<td>Information Collection</td>
<td>NEC ESMPRO Manager</td>
<td>47117 (*2)</td>
<td>UDP</td>
</tr>
<tr>
<td></td>
<td>NEC ESMPRO Manager</td>
<td>47170-47179 (*4)</td>
<td>TCP/IP</td>
</tr>
<tr>
<td></td>
<td>NEC ESMPRO Manager</td>
<td>47180-47189 (*4)</td>
<td>UDP</td>
</tr>
<tr>
<td>Component Monitoring</td>
<td>NEC ESMPRO Manager</td>
<td>47117 (*2)</td>
<td>UDP</td>
</tr>
<tr>
<td>BMC configuration of CPU blade</td>
<td>NEC ESMPRO Manager</td>
<td>47117 (*2)</td>
<td>UDP</td>
</tr>
<tr>
<td>Operation with Command Line I/F</td>
<td>NEC ESMPRO Manager</td>
<td>47117 (*2)</td>
<td>UDP</td>
</tr>
</tbody>
</table>

*2 The NEC ESMPRO Manager uses a same port number for communication with BMC and EM card. The port number can be changed on the "Environment" screen.

*4 The module uses one port of the range.

### 2.5.4 NEC ESMPRO Manager Server Inside

<table>
<thead>
<tr>
<th>Function</th>
<th>NEC ESMPRO Manager Server</th>
<th>Port No.</th>
<th>Protocol /direction</th>
<th>NEC ESMPRO Manager Server</th>
<th>Port No.</th>
<th>Module Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Web Client Module Name</td>
<td>Port No.</td>
<td>Protocol /direction</td>
<td>Module Name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEC ESMPRO Manager</td>
<td>NEC ESMPRO Manager</td>
<td>1099</td>
<td>UDP</td>
<td>NEC ESMPRO Manager</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


| NEC ESMPRO Manager | NEC ESMPRO Manager | TCP | 8105  
|-------------------|-------------------|-----|------  
|                   |                   | ←→ | 8109  
|                   |                   |     | 8105  
|                   |                   |     | 8109  
|                   |                   |     | NEC ESMPRO Manager |
Chapter 3  NEC ESM PRO Manager Installation

3.1  NEC ESM PRO Manager Installation for Linux

3.1.1  Check before installation
Check the followings:
-- See chapter 2.1 to check the system requirement of NEC ESM PRO Manager server.
-- Login to Linux as root user, or get authority of root by "su" command.

CHECK:
- NEC ESM PRO Manager installer exists on the following directory in EXPRESSBUILDER:
  "EXPRESSBUILDER revision"/lnx/pp/esmpro_sm. (ex. 001/lnx/pp/esmpro_sm/en)

3.1.2  Install the NEC ESM PRO Manager
Install the NEC ESM PRO Manager.
In below input examples, the installer file name is shown like "esmpro-5.sh".

(1) Copy the NEC ESM PRO Manager installer into any directory.

(2) Move to the directory containing the NEC ESM PRO Manager installer.
The following is an example of installation into /usr/local/bin:

```
cd /usr/local/bin
./esmpro-5.sh
```

(3) Start the NEC ESM PRO Manager installer.
The NEC ESM PRO Manager will be installed under /opt/nec/es_manager.

```
./esmpro-5.sh
```

(4) A message to confirm whether you specify the http connector port that NEC ESM PRO Manager uses is displayed. If you specify them, input "yes" and "Enter" key. And then input the unused port number.

(5) 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) A message to register an administrator of NEC ESM PRO Manager is displayed. Enter the administrator name and password.

CHECK:
- Administrator name is the user name to operate NEC ESM PRO Manager with the administrator authority.

When the installation is completed, the following message is displayed:
"Installation of NEC ESM PRO Manager is now completed."
3.1.3 **Update install the NEC ESMPRO Manager**
Install the NEC ESMPRO Manager.
In below input examples, the installer file name is shown like "esmpro-5.sh".

1. Copy the NEC ESMPRO Manager installer into any directory.

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

2. Move to the directory containing the NEC ESMPRO Manager installer.
The following is an example of installation into /usr/local/bin:

3. Start the NEC ESMPRO Manager installer.

   ```
   ./esmpro-5.sh
   ```

4. A message to confirm whether you continue the installation is displayed. Input "add" and "Enter" key.

When the update installation is completed, the following message is displayed:
"Installation of NEC ESMPRO Manager is now completed."

3.2 **Settings after installation**

3.2.1 **Access setting from Web Client**
When you access the NEC ESMPRO Manager from Web Client, login to the NEC ESMPRO Manager from local beforehand, Please add the address with [Environment] - [Access Control].

3.3 **NEC ESMPRO Manager Un-installation for Linux**

3.3.1 **Uninstall the NEC ESMPRO Manager**
In below input examples, the installer file name is shown like "esmpro-5.h".

1. Start the NEC ESMPRO Manager installer.

   ```
   ./esmpro-5.sh
   ```

2. The terms of the end user license agreement for the product will be displayed. Input "yes" and "Enter" key.

3. A message to confirm whether you continue the installation is displayed. Input "delete" and "Enter" key.

4. 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.

When the un-installation is completed, the following message is displayed:
"Uninstallation of NEC ESMPRO Manager is now completed."
3.4 Login

After installation of the NEC ESMPRO Manager is completed, confirm that you can log into the NEC ESMPRO Manager.

1. Make access to the following address using the Web browser on the Web client.  
   URL:  
   http://"the computer name installed the NEC ESMPRO Manager" : "port number that the 
   Tomcat uses"/esmpro/

   An Example of address to access from the web browser on the NEC ESMPRO Manager component is 
   shown.  
   "http://localhost:8080/esmpro/"

2. The login screen of the NEC ESMPRO Manager will be open.  
   Input the administrator name and the password that has registered at the installation, and then click 
   "login".
When the login is successful, the following screen will appear:

CHECK:
- "Tools", "Search", "Environment" and other commands are displayed in the bar. This bar is called "Header menu".

3.5 Setting Environment
You can change the optional setting of the NEC ESMPRO Manager. Click "Environment" on the "Header menu" to check the setting. For details, see the online help.
3.6 Change of the http connection port number

After installation of NEC ESMPRO Manager, you can change a port number to use.

1. Stop the NEC ESMPRO Manager.

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

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

2. 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 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 8080, and change a port number.

   <!-- Define a non-SSL HTTP/1.1 Connector on port 8080 -->
   <Connector port="8080" maxHttpHeaderSize="8192"
               maxThreads="150" minSpareThreads="25" maxSpareThreads="75"
               enableLookups="false" redirectPort="8443" acceptCount="100"
               connectionTimeout="20000" disableUploadTimeout="true"
               useBodyEncodingForURI="true" />

3. Start the NEC ESMPRO Manager.

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

   /etc/rc.d/init.d/esmweb start
3.7 SSL

If you need to login to the NEC ESMPRO Manager using SSL, you should change the setting of the NEC ESMPRO Manager.

Perform the procedure that is necessary in order to use SSL with the 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 the NEC ESMPRO Manager.

   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]: yes
   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 the NEC ESMPRO Manager

Edit the server.xml file to enable SSL. The server.xml is in the directory containing the 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 modify the description to a comment form with "<!-" 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 `<Factory>`.

```xml
<!-- 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: Delete these lines.
```  

(3) Reboot the server

Reboot the server installed the NEC ESMPRO Manager.

(4) Login

Confirm to login to the NEC ESMPRO Manager with "https:"
Make access to the following address using the Web browser on the Web client.
URL: https://"the computer name installed the NEC ESMPRO Manager":" port number that is specified in server.xml"/esmpro/

An Example of address to access from the web browser on the NEC ESMPRO Manager server is shown.
"https://localhost:8443/esmpro/"
3.8 SSL Setup for LDAP/Active Directory

To use SSL connection between the NEC ESMPRO Manager and the authentication server of LDAP/Active Directory, please import certificate into a keystore of JRE which the NEC ESMPRO Manager uses. It is possible to import a certificate by inputting the following command by a console.

```
/opt/nec/es_manager/jre/bin/keytool -import -trustcacerts -alias ldapsvr -file
/root/ldap/client.pem -keystore ../lib/security/cacerts
```

CHECK:
- Change “root/ldap/client.pem” according to the location and the file name of the certificate.
- A default password of keystore is “changeit”.
Chapter 4  Precautions for Use

4.1 About NEC ESMPRO Manager

4.1.1 About the use after NEC ESMPRO Manager is upgraded
After NEC ESMPRO Manager is upgraded, NEC ESMPRO Manager on the web browser may display incorrectly. Take the following steps to avoid it.

-- Internet Explorer 8
  1) Click the Safety menu on the command bar.
  2) Select Delete Browsing History.
  3) Select the checkbox for Temporary Internet Files.
  4) Click the Delete button.

-- Internet Explorer 10, 11
  1) Click the Tools button.
  2) Select Delete Browsing History.
  3) Select the checkbox for Temporary Internet Files.
  4) Click the Delete button.

-- FireFox
  1) Click the Tools button.
  2) Click the Options menu.
  3) Select the Advanced.
  4) Select the Network.
  5) Click the Clear Now button in the Offline Web Content and User Data section.
  6) Click the OK button.

4.1.2 About 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 the "management controller" management of the managed component.

-- Use only one NEC ESMPRO Manager for NEC ExpressUpdate of the managed component. If you register the managed component on two or more NEC ESMPRO Manager, you should set "unregistration" for NEC ExpressUpdate of the managed component.

-- Use one NEC ESMPRO Manager for all EM cards and CPU blades on one blade enclosure.

4.1.3 About Power Control
4.1.3.1 Power OFF, Power Cycle, Reset, and Dump
Since power control is provided by hardware regardless of the state of the managed component's operating system, the system may be damaged. Be careful of operation under power control.

4.1.3.2 Power OFF, Power Cycle, Reset with the BIOS Setup Utility Active
Do not control the power supply while the BIOS Setup Utility is active on the managed component. Otherwise, the alert setting of BMC configuration will be disabled.
4.1.3.3 OS shutdown
NEC ESM PRO Manager commands one of the agent modules on the managed component to shutdown OS. The order of priority for the shutdown function is NEC ESM PRO Agent Extension, NEC ESM PRO Agent and NEC ExpressUpdate Agent.
NEC ESM PRO Agent Extension or NEC ExpressUpdate Agent shuts down OS regardless the setting "Permit Remote Shutdown / Reboot" on NEC ESM PRO Agent.

4.1.4 About IPMI Information Collection
While a managed component is tuned OFF, some records of management controller information and FRU (Field Replaceable Unit) information cannot be read in. Error messages about records which could not be read in are shown in the details display area.
The current status of some sensors cannot be read in either while the managed component is turned OFF.

4.1.5 About Remote Console
4.1.5.1 Restriction on Concurrent Connection to the Remote Console
When a single NEC ESM PRO Manager is operating the remote console of a managed component, another Manager cannot execute the remote console function for the managed component. A managed component can transmit redirection data to only a single NEC ESM PRO Manager.

4.1.5.2 About Remote Console before OS boot or during DOS program running
If a graphic screen is displayed on a managed component, data cannot be displayed correctly on the CUI remote console. The CUI remote console screen is displayed only when the managed component displays a text screen.

If the DOS program running on a managed component displays Japanese words, follow these notes:
-- On the BIOS Setup Utility screen of the managed component, select "Server" → "Console Redirection" and change Terminal Type" to "PC-ANSI" in advance. (If a managed component of which BIOS Setup does not include the item Terminal Type, Terminal Type is already set to PC-ANSI, so the managed component can be used as it is.)
-- Boot the DOS in English mode (with no Japanese-language driver). At this time, the screen contents cannot be displayed correctly on the managed component, but Japanese words are displayed correctly on the CUI remote console of the NEC ESM PRO Manager.

4.1.5.3 About Remote Console after starting Linux
Notes in the case of using the remote console after starting Linux on the managed component by the redirection function of Linux are shown below.
-- The Home key and End key are not enabled when you operate Linux with the CUI remote console function.

-- If the managed component is rebooted after NEC ESM PRO Manager displays CUI remote console for the managed component that runs Linux, you may not input following keys on remote console:
   F5-F12, Arrows, Insert, Delete, Home, End, Page Up, and Page Down.
Close the remote console window and re-open it.

4.1.5.4 About the display of a special character
The CUI remote console screen is not displayed correctly in the following cases:
-- Terminal Type
   If Terminal Type is not set to PC-ANSI on the BIOS Setup Utility screen of a managed component, Japanese words on the POST or DOS screen cannot be displayed correctly on the CUI remote console.
-- Special character
   Ruled lines, arrows correctly and en-size left arrows cannot be displayed.
4.1.5.5 In Case of Key-in Failure on the Remote Console
-- During DOS boot or access to the FD or CD-ROM drive immediately after the managed component's 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 the Serial Over LAN (SOL) function of the 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) can't control. Refer to the manual of each firmware or software for the details.

4.1.6 Power Management
-- The power value which NEC ESMPRO Manager reads from the managed component has about +/-10% margin of error.
-- 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 doesn't fall any more.
-- For more detail about the Power Monitoring and Power Control Function, please reference the following site.
http://www.58support.nec.co.jp/global/download/index.html
[Others] - [Technology paper]

4.1.7 About CPU blade auto registration
When "Check Connection" of "CPU blade auto registration" was failed, retry of "CPU Blade auto registration" is not necessary. You can execute "Check Connection" on "Server Setting" – "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 the CPU blade because old information remains in the ARP table on the management PC. Wait for a few minutes and try the "Check Connection".

4.1.8 About the coexistence of NEC ESMPRO Manager with DianaScope Agent or NEC ESMPRO Agent Extension on the same component
If the managed component is installed Advanced Remote Management Card or EXPRESSSCOPE Engine series (the BMC uses Management LAN port), NEC ESMPRO Manager can manage the component itself installed.
It the managed component is installed BMC that uses the standard LAN port, NEC ESMPRO Manager cannot manage the component itself installed. It is possible only to install NEC ESMPRO Manager and DianaScope Agent or NEC ESMPRO Agent Extension on the same component. But the communication with BMC on the component is prevented by local loopback function of OS and the BMC cannot receive any packets from the NEC ESMPRO Manager.

4.1.9 RAID operation
See the User’s Guide of Universal RAID Utility (ver.3.0 or later) installed on the managed component for notes about the operation of RAID system with [Information of server state/constitution] navigation tree.

4.1.10 Suspend Periods Setting
When you set 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.

4.1.11 The default setting of EXPRESSSCOPE Engine 3
You can change the BMC Configuration Information from [BMC Setting] of the NEC ESMPRO Manager.
For details of [BMC Setting], see the online help of the NECESMPRO Manager.
Please refer to the EXPRESSSCOPE Engine 3 User’s Guide about difference between NEC ESMPRO
Manager’s default value and a value which ‘BMC Initialization’ function will set.

4.1.12 About 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.

4.1.13 DHCP setting for Advanced Remote Management Card
If you change the 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 the MAC address for the destination becomes unsuitable in the case that enabling DHCP changes the address range.
Set the DHCP setting for Advanced Remote Management Card using BMC configuration tools on the managed server.
4.2 About NEC ExpressUpdate

4.2.1 About installation of NEC ExpressUpdate Agent

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

*1 Change following configurations with the user belongs to the Administrators group.
*2 See Appendix for network ports which this function uses.

(1) Windows XP Professional

1) Windows Firewall Configuration
   *Control Panel->Security Center->Windows Firewall->Select General tab and turn off [Don't allow exceptions].
   * Select Exceptions tab and turn on [File and Printer Sharing].

2) Sharing Wizard Configuration
   *Control Panel->Appearance and Themes->Folder Options->Select View tab and turn off [Use simple file sharing].

(2) Windows Vista

1) Windows Firewall Configuration
   *Control Panel->Security->Windows Firewall->Allow a program through Windows Firewall->Select Exceptions tab and turn on [File and Printer Sharing].

2) Sharing Wizard Configuration
   *Control Panel->Appearance and Personalization->Folder Options->Select View tab and turn off [Use Sharing Wizard].

3) UAC Configuration
   *Control Panel->User Accounts->User Accounts->Turn User Account Control on or off->Turn off [Use User Account Control(UAC) to help protect your computer]

(3) Windows 7, Windows Server 2008 R2

1) Windows Firewall Configuration
   *Control Panel->System and Security->Windows Firewall->Allow a program or feature through Windows Firewall ->Select [File and Printer Sharing] and execute [OK].

2) UAC Configuration
   *Control Panel->User Accounts->User Accounts ->Change User Account Control settings->Select [Never notify].

(4) Windows Server 2008

1) Windows Firewall Configuration
   *Control Panel->Security->Windows Firewall->Allow a program through Windows Firewall->Select Exceptions tab and Turn on [File and Printer Sharing].

2) UAC Configuration
   *Control Panel->User Accounts->User Accounts ->Turn User Account Control on or off->Turn off [Use User Account Control(UAC) to help protect your computer]
(5) Windows Server 2008 R2 Core

1) Windows Firewall Configuration
1-1) Make up the remote PC to change "Windows Server 2008 R2's Windows Firewall settings" remotely.

1-2) Input below command on the managed component to enable remote configuration of the Windows Firewall.
netsh advfirewall set currentprofile settings remotemanagement 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 component. You can get host name of the managed component with [hostname] command.

1-5) Inbound Rules->Select [File and Printer Sharing] and execute [Enable Rule].

(6) Windows 8, Windows Server 2012 and later

"NEC ExpressUpdate Agent" cannot be installed on these operating systems remotely.

(7) Linux OS

* 1 See manual of the distribution for configuration.

1) Firewall Configuration.
* Enable remote ssh login.

2) SSH Configuration.
* Enable root login with SSH.
Typically, open the sshd configuration file [/etc/sshd/sshd_config] and set the "PermitRootLogin" option to "yes".
4.3 About managed component

4.3.1 About Windows Firewall
If Windows firewall is enabled on the managed component, DianaScope Agent or NEC ESMPRO Agent Extension may not work correctly.
Please perform following settings:

1. Open "Windows firewall" from "control panel" of Windows.
2. Select "Add Port" on "Exceptions" tab page.
3. Enter following setting:
   - Name: arbitrary name
   - Port number: Port number that you need to add.
   - If DianaScope Manager cannot communicate with DianaScope Agent or NEC ESMPRO Agent Extension:
     47120 – 47129
   - TCP/UDP: TCP

4.3.2 About 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

4.3.3 About 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, the DianaScope Agent or NEC ESMPRO Agent Extension shuts down 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, NEC ESMPRO Agent Extension or DianaScope Agent does not shutdown OS. However, in case that any error is occurred during booting, NEC ESMPRO Agent Extension or DianaScope Agent may shutdown OS even though power up by NEC ESMPRO Manager.
4.3.4 About Remote Console

4.3.4.1 About SOL
The SOL (Serial over LAN) system implements a CUI remote console via LAN by the following method: the BMC 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 the BMC configuration information, the serial port 2 (COM2) cannot be used for connecting another device such as UPS because the BMC occupies the serial port 2. Please refer to "Appendix C. Managed Components Summary" of the "NEC ESMPRO Manager Ver.5 Setup Guide" to confirm the managed component supports SOL.

The remote console of Linux or SAC (Special Administration Console) of Windows can be used when the managed component support SOL. However, there are the following notes:
-- Use of serial port 2 is restricted. See 2.4.1 "Notes on Managed Components and Network Devices".
-- In the case of the managed server based on vPro, NEC ESMPRO Manager does not support the Remote Console.

There are the following notes in the managed component which does not support SOL:
-- Do not attempt to boot Windows or Linux on the managed component 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 component from the CUI remote console via LAN, set the item "Console Redirection" to "Disable" on the BIOS Setup Utility screen, reboot the system, and then boot the RAID EzAssist Configuration Utility.

-- The remote console by the redirection function of Linux and the remote console of SAC (Special Administration Console) of Windows cannot be used via LAN.

4.3.4.2 Power Control with the BIOS Setup Utility Active
Do not control the power supply while the BIOS Setup Utility is active on the managed component. Otherwise, the alert setting of BMC configuration will be disabled.

4.3.4.3 CUI Remote Console of DOS
To execute the CUI remote console function of the DOS screen, select "Component" -> "Console Redirection" and change "ACPI Redirection" to "Disable" on the BIOS Setup Utility screen of the managed component if "ACPI Redirection" exists on the "Console Redirection".

4.3.4.4 CUI Remote Console after Windows Boot
-- The remote console via LAN cannot be used for SAC if the managed component does not support SOL.

-- To execute the CUI remote console function of the SAC screen after Windows boot, select "Server" -> "Console Redirection" and change "ACPI Redirection" to "Enable" on the BIOS Setup Utility screen of the managed component. When "ACPI Redirection" is set to "Enable" on the BIOS Setup Utility screen, the CUI remote console function cannot be executed after POST. If "ACPI Redirection" does not exist on the "Console Redirection" menu, please confirm that "Console Redirection after POST" is enabled.
4.3.4.5 CUI Remote Console under Linux

-- The remote console by the redirection function of Linux cannot be used via LAN if the managed component does not support SOL.

-- To execute the CUI remote console function of the Linux redirection, select "Server" -> "Console Redirection" and change "ACPI Redirection" to "Disable" on the BIOS Setup Utility screen of the managed component if "ACPI Redirection" exists on the "Console Redirection".

-- When you execute a remote console by the redirection function of Linux, following settings are necessary.

(1) Set as following example at the line that begins with "kernel/vmlinuz" in the setting file (/boot/grub/grub.conf) on Linux:

    console=tt00 console=ttS1,19200n8r

(2) Make a setting like the following example in the setting file (/etc/inittab) on Linux:

    S0:2345:respawn:/sbin/agetty –h –L 19200 ttyS1 vt100

(Explanation of the example setting)
"agetty" is to be used in the following conditions:
* Hardware control (RTS/CTS) is enabled. (This setting is an example. Determine whether to enable/disable it, conforming to the configuration information setting on the managed component.)
* A directly connected local line not requiring carrier detection is assumed.
* Baud rate 19200 bps (This setting is an example. Set the baud rate conforming to the BMC configuration information setting on the managed component.)
* Serial1 port 2 of the managed component is used.
* The terminal type is vt100.

-- Even if connection with a managed component is of any type (LAN, WAN, or Direct), Linux on the managed component recognizes that operation through the remote console of the DianaScope Manager is connection via the serial port. The initial setting on Linux does not permit any super-user (root) to log in via the serial port. To log in as a super-user, disable the security function for the serial port 2. Be very careful of operation in this case.
To disable the security function for the serial port 2, add "ttyS1" to the /etc/security file.

-- To display the editor or menu screen on the CUI remote console, set the OS terminal screen to the 80-column, 24-line size.
4.4 About BMC Configuration

4.4.1 About BMC Configuration tool
Among the BMC configuration information tools there are some tools which cannot be used to setup ESMPRO.
-- NEC MWA Agent cannot be used.
-- If the DianaScope is not stored in the NEC EXPRESSBUILDER CD-ROM, "A setup of a system management" stored in the CD-ROM cannot be used.
-- The Console-less function of the NEC EXPRESSBUILDER can be used only when ESMPRO is stored in the same NEC EXPRESSBUILDER CD-ROM.

4.4.2 In Case of Exchange of management PC
If a management PC as an alert receiver has been exchanged, register the managed component's BMC configuration information again even when the IP address of the management PC remains unchanged. Otherwise, the BMC may fail to recognize the alert receiver.

4.4.3 About the function "Obtain an IP Address automatically (DHCP)"
The managed component included the 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.

<table>
<thead>
<tr>
<th>Managed component</th>
<th>DianaScope</th>
</tr>
</thead>
<tbody>
<tr>
<td>The managed component in which EXPRESSSCOPE Engine series is integrated.</td>
<td>DianaScope Agent</td>
</tr>
<tr>
<td>The managed component installed Advanced Remote Management Card.</td>
<td>DianaScope Configuration</td>
</tr>
</tbody>
</table>

When you use the module that does not support the setting of the function "Obtain an IP Address automatically (DHCP)" for the managed component that supports the function, please note followings:
-- If DianaScope Agent does not support the setting of the function, the DianaScope Agent always set "disable" for the function when it registers the BMC configuration. The DianaScope Agent also set "disable" when it writes the BMC configuration information file.

-- If DianaScope Configuration does not support the setting of the function, the DianaScope Configuration always set "disable" for the function when it writes the BMC configuration information file.

-- If "System Management" tool on NEC EXPRESSBUILDER does not support the setting of the function, the tool always set "disable" for the function when it registers the BMC configuration. The tool also set "disable" when it writes the BMC configuration information file.

-- If remote console feature of NEC EXPRESSBUILDER does not support the setting of the function, the tool always set "disable" for the function when it registers the BMC configuration.

(2) If the managed component has been installed Advanced Remote Management Card, the BMC may not immediately obtain the IP address after the BMC is set to obtain the IP address by the DHCP. Please turn the managed component AC-OFF and then AC-ON because the BMC try to obtain the IP address whenever the managed component is turned AC-ON.
4.4.4  About the Port that BMC uses
In case that Linux on the managed component uses port 623, NEC ESMPRO Manager cannot communicate with the BMC that uses standard LAN port.
Please perform following settings:

(1) Add following entries in services files (/etc/services) to reserve port 623.

<table>
<thead>
<tr>
<th>Service</th>
<th>Port</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>asf-rmcp</td>
<td>623/udp</td>
<td>ASF Remote Management and Control Protocol</td>
</tr>
</tbody>
</table>

(2) Reboot the OS.

4.4.5  About the initialization of the BMC Configuration Information setting
When you set "Default value" on the BMC Configuration Information with DianaScope Agent or NEC ESMPRO Agent Extension, or create New Configuration with "System Management Tool" started from NEC EXPRESBUILDER CD-ROM, each items of the BMC Configuration Information are initialized.
If the managed component integrates EXPRESSSCOPE Engine series or 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 NEC EXPRESBUILDER CD-ROM, and then select "Web server of BMC".
- Login to Web server of the BMC, and then select "Configuration" – "Network".
4.5 About Web client

4.5.1 About the 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, the NEC ESMPRO Manager cannot be operated using two or more tab.

4.5.2 About the login to EXPRESSSCOPE Engine series
4.5.2.1 About Java Plug-in
To login to EXPRESSSCOPE Engine series through ESMPRO Manager, Java plug-in of the web browser should be version 5.0 and above. If JRE plug-in version is 1.4.2_11 and below, the web browser may stall.

4.5.2.2 About Microsoft Internet Explorer
The "login to EXPRESSSCOPE Engine series" screen might not be displayed. In this case, add URL of the EXPRESSSCOPE Engine series to "Add this Web site to the zone".

1. Select "Internet Options" on "Tools" menu of Internet Explorer.
2. Click the Security tab.
3. Click "Local Internet" zone, and then click "Sites".
4. Enter the URL of the EXPRESSSCOPE Engine series on "add this Web site to the zone".
   For example: If the EXPRESSSCOPE Engine series has IP address 192.168.0.100, the URL is "http://192.168.0.100".
5. Click "add" zone, 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"

4.5.2.3 Note on using Internet Explorer since version 7
If you login to NEC ESMPRO Manager Ver.5 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.
4.5.2.4 About 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"

4.5.3 About [back] button of the browser
NEC ESMPRO Manager cannot be operated using [back] button. The screen contents cannot be displayed correctly on browsers. Choose a necessary link or a button again in that case.

4.5.4 About the automatic logout
NEC ESMPRO Manager logs out automatically when you don't operate a screen for more than 30 minutes. When you continue the operation, login to NEC ESMPRO Manager again.
Revision History

1.00 2008/11/11 Initial edition
1.01 2009/01/30 Appends the description about the NEC ESMPRO Agent Extension.
1.03 2009/09/01 Appends the description about the Web client.
1.05 2009/10/22 Modifies the description about trademarks.
   Update System Requirement.
   Appends the description about the installation of NEC ESMPRO Manager.
1.07 2009/11/24 Appends the description about NEC ExpressUpdate.
   Corrects writing errors.
1.08 2010/01/13 Modifies the description about the installation of NEC ESMPRO Manager.
1.09 2010/02/05 Modifies the description about the installation of NEC ESMPRO Manager.
   Modifies the description about the remote console function.
1.10 2010/03/23 Modifies the description about license.
   Corrects writing errors.
1.11 2010/09/03 Modifies maximum number of managed components.
   Change Universal design.
1.12 2010/11/24 Update System Requirement.
   Appends the description about the use after NEC ESMPRO Manager is upgraded.
1.13 2011/05/11 Appends the description about license.
   Appends the description in case of Key-in Failure on the Remote Console.
   Appends Power Management.
1.14 2011/06/17 Modifies the description about license.
   Appends port numbers that NEC ESMPRO Manager uses of Tomcat.
1.15 2011/08/02 Modifies the description about trademarks.
   Modifies the description about NEC ExpressUpdate.
1.16 2011/10/18 Appends Power Management.
   Corrects writing errors.
1.17 2011/12/01 Appends the description about download of the latest NEC ESMPRO.
   Modifies the description about SSL.
1.18 2012/01/27 Appends the description about vPro.
   Appends the description about Default setting.
1.19 2012/04/12 Appends Red Hat Enterprise Linux 6 to the operating system in the System Requirements.
1.20 2012/05/15 Appends precaution about OS shutdown.
   Modifies precautions about default setting and use of two or more NEC ESMPRO Manager.
   Corrects writing errors.
1.21 2012/07/07 Modifies the description about license.
   Appends Note about the web browser in the chapter system requirements.
1.22 2012/10/23 Modifies the description about trademarks.
   Modifies precaution about NEC ExpressUpdate.
1.23 2012/11/19 Updates web browser in the system requirements.
1.24 2012/12/11 Updates web browser in the system requirements.
1.25 2013/03/02 Updates the system requirements.
1.26 2013/04/24 (For Ver.5.7)
   Appends description about SSL setup for LDAP/Active Directory.
   Appends the precaution of Suspend Periods Setting.
1.27 2013/06/14 (For Ver.5.71)
   Supports RAID system management function.
   Modifies about the default setting of EXPRESSSCOPE Engine 3.
   Correct writing errors.
1.28 2013/10/25 (For Ver.5.73)
   Appends precaution about standby BMC configuration setting.
Appends the precaution of DHCP setting for Advanced Remote Management Card.

(For Ver.5.74)

Updates web browser in the system requirements.