NEC

# NEC ESMPRO Manager Ver.6
# Setup Guide


**Chapter1 Setup for Managed Component in which EXPRESSSCOPE Engine 3 is integrated**

**Chapter2 Setup for Managed Component in which a BMC excluding EXPRESSSCOPE Engine 3 is integrated (for LAN connection)**

**Chapter3 Setup for Managed Component in which a BMC excluding EXPRESSSCOPE Engine 3 is integrated (for modem / direct connection)**

**Chapter4 Setup for Managed Component in which iLO is integrated**

**Chapter5 Setup for Managed Component of BMC (Other)**

**Chapter6 EM Card and Chassis Management**

**Chapter7 Setup for the NEC Storage M series**

**Chapter8 Setup for the Managed Component based on vPro**

**Chapter9 Setup for NEC Scalable Modular Server DX2000**

**Chapter10 Setup for the VMware ESXi server**

**Chapter11 Setup for the Alert only Component**

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# Terminology

| Term | Description |
|---|---|
| BMC (EXPRESSSCOPE Engine) | Baseboard Management Controller<br>An Embedded controller which is able to monitor the system status or error regardless of DC off/on. |
| BMC (Other) | Baseboard Management Controller<br>Management component pre-contains EMS (Embedded Management Software).<br>(Product other than BMC (EXPRESSSCOPE Engine), iLO and vPro.) |
| ESXi management | Managed connect VMware vSphere Web Service.<br>The target of management is VMware ESXi8.<br>The management of VMware ESXi8 is supported ESMPRO/ServerManager Ver.6.61. |
| iAMT | Intel® Active Management Technology<br>Remote control technology and one of main functions of vPro. |
| iLO | Integrated Lights-Out<br>A management controller which is able to monitor the system status or error regardless of DC off/on. |
| SNMP management | Managed using Simple Network Management protocol.<br>The target of management is NEC ESMPRO Agent, iStorage. |
| SOL | Serial Over LAN<br>A function which BMC converts the serialized data to UDP Packet and sends to LAN. |
| vPro | Intel platform brand for business users (Intel® vPro™ Technology). |
| WS-Man | WS-Management<br>Open standard protocol for remotely accessing management data with any computer device. |
| WS-Man management | Managed using WS-Management protocol.<br>The target of management is NEC ESMPRO ServerAgentService, VMware ESXi7 and earlier. |
| IPMI | Intelligent Platform Management Interface<br>It is a standard interface specification for monitoring server hardware independently of system state or OS. |
| Redfish | Redfish is a standard interface specification defined by the DMTF (Distributed Management Task Force) that is newer than IPMI, which manages the operation of servers. |

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Windows Server 2022 stands for Windows Server® 2022 Standard, and Windows Server® 2022 Datacenter.
Windows Server 2019 stands for Windows Server® 2019 Standard, and Windows Server® 2019 Datacenter.
Windows Server 2016 stands for Windows Server® 2016 Standard, and Windows Server® 2016 Datacenter.
Windows 11 stands for Windows® 11 Pro 64-bit Edition
Windows 10 stands for Windows® 10 Pro 64-bit Edition
vPro stands for Intel® vPro™.

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# About This Document

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

Before attempting to operate the component 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 D. Managed Components Summary".

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 D. Managed Components Summary".
- **How to operate after setup.**
  See the NEC ESMPRO Manager online help information.
- **How to operate the command line Interface.**
  See the "NEC ESMPRO Manager Command Line Interface".

# About the advanced software and the user support

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

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

# Chapter1 Setup for Managed Component in which EXPRESSSCOPE Engine 3 is integrated

This chapter explains the setup procedure for the NEC ESMPRO Manager to manage the BMC and NEC ESMPRO Agent Extension ver.2.xx on a managed component remotely via LAN connection.

## 1.1 Setup Flow

Setup by the following setup procedure:

(1) Connect the management PC on which NEC ESMPRO Manager is installed and the managed component on the same network.

(2) Configure BMC on the managed component to enable ESMPRO Management.

(3) Register the managed component on NEC ESMPRO Manager.

## 1.2 Configure BMC on Managed Component

Configure BMC of the managed component at first.

**TIPS:**

- This section explains about the minimum setting that is necessary to connect NEC ESMPRO Manager with the managed component. For details of BMC configuration, see document of each tool.

There are three ways for configuring a BMC on a managed component for LAN connection.

**Configuration with NEC EXPRESSSCOPE Engine 3 WebConsole**

You can access EXPRESSSCOPE Engine 3 from a Web browser, and set BMC Configuration.

**CHECK:**

- You can use EXPRESSSCOPE Engine 3 only when the HTTP/HTTPS is enabled.
- You cannot configure BMCs on ft server with NEC EXPRESSSCOPE Engine 3 Web Console. Please choose other method.

**Configuration with online BMC Configuration.**

Online configuration tool installed on Windows/Linux OS configures BMC.

**TIPS:**

- The name of the tool is “BMC Configuration” or “Server Configuration Utility”. It is depends on a model of server.

**Configuration with off-line BMC Configuration.**

Off-line tool started from POST screen by F4 key configures BMC.

**TIPS:**

- The name of the tool is “BMC Configuration” or “Server Configuration Utility”. It is depends on a model of server.

### 1.2.1 Configuration with EXPRESSSCOPE Engine 3 WebConsole

Explain the operation of Web Console of EXPRESSSCOPE Engine 3.

**CHECK:**

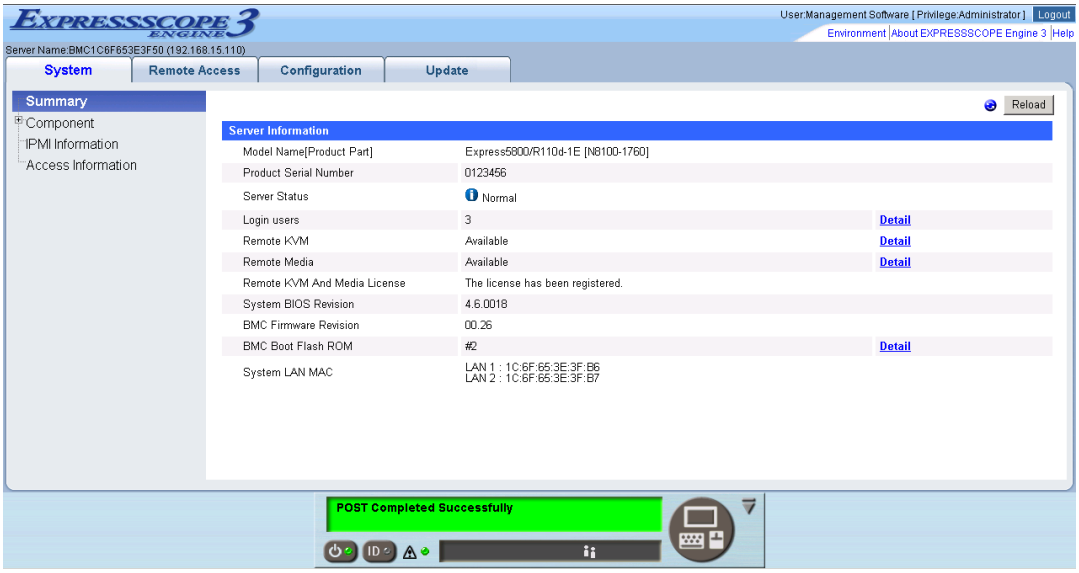
- You cannot configure BMCs on ft server with NEC EXPRESSSCOPE Engine 3 Web Console. Please choose other method.

(1) After starting a web browser on the management PC, input following URL.

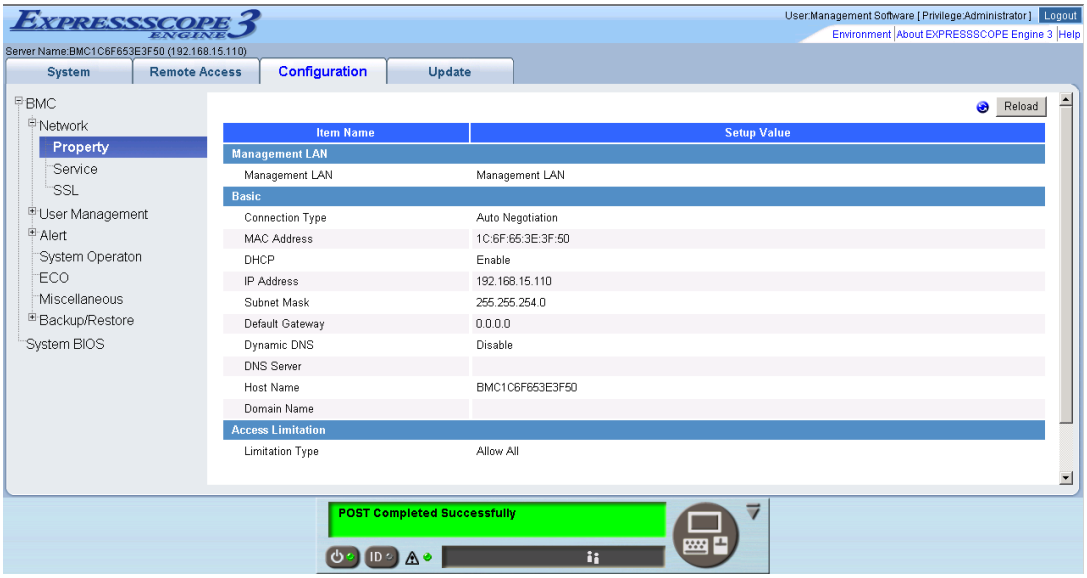
In the case that the IP address of BMC is 192.168.1.1 and the setting of HTTPS is enable.

```
https://192.168.1.1/
```

(2) "Main Menu" screen will be displayed.
Select "Configuration" tab.
The following screen shows example.



(3) "Configuration" screen will be displayed.
Select "Miscellaneous".

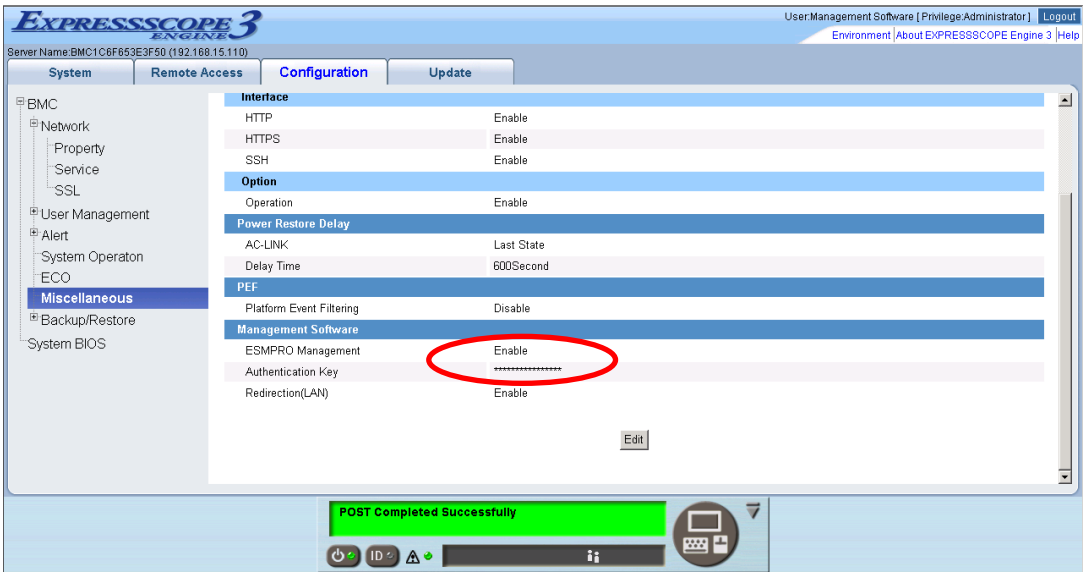



(4) "Miscellaneous" screen will be displayed.

Be sure to set the following items. The other items can be used with the default values.

-- "ESMPRO Management"
Click "Enable".
-- "Authentication Key"
Enter the authentication key.

The following screen shows example.



**CHECK:**

- If a managed component supports SOL and "Redirection" is selected to "Enable", you must change the following items for the remote console via the LAN.
  "Configuration" page - "System BIOS" page - "Flow Control": Hardware RTS/CTS.

(5) Select "Apply".
The configuration information is set in the BMC.

(6) Select "Property" page in "Network" screen.
Set the following items. The other items can be used with the default values.

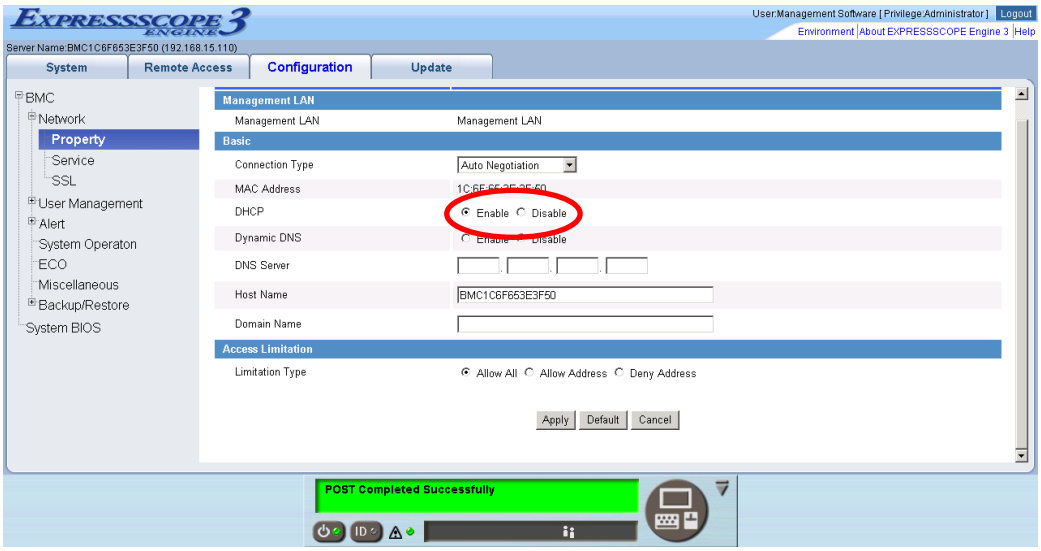
-- "DHCP"
Determine whether to dynamically obtain an IP address from a DHCP server.
If the item is set Enable and applied, BMC set the value obtained from DHCP server on "IP Address", "Subnet Mask" and "Default Gateway".

-- "IP Address"
Enter the BMC IP address.

-- "Subnet Mask"
Enter the subnet mask for the IP address.

-- "Default Gateway"
Enter the default gateway if the managed component connects to management PC via any gateway

The following screen shows example.




(7) If you set "Default Gateway", confirm that the gateway is connected to network.

(8) Select "Apply".
The configuration information is set in the BMC.

**CHECK:**

- Please set the following items for NEC ESMPRO Manager to receive alerts from the BMC.
  - Miscellaneous
    - Platform Event Filtering : Enable
  - Alert
    - Alert - SNMP Alert :
      - Alert : Enable
      - Computer Name : Any
      - Alert Receiver 1 IP Address:
        IP address of the management PC on which NEC ESMPRO Manager is installed.

        * Please set the checkbox to enable..

## 1.2.2 Online Configuration

### 1.2.2.1 Configuration with Configuration tool for Windows

Explain the operation of Configuration tool for Windows.

(1) After booting Windows on the managed component, start “BMC Configuration” or “Server Configuration Utility” from start menu on Windows.

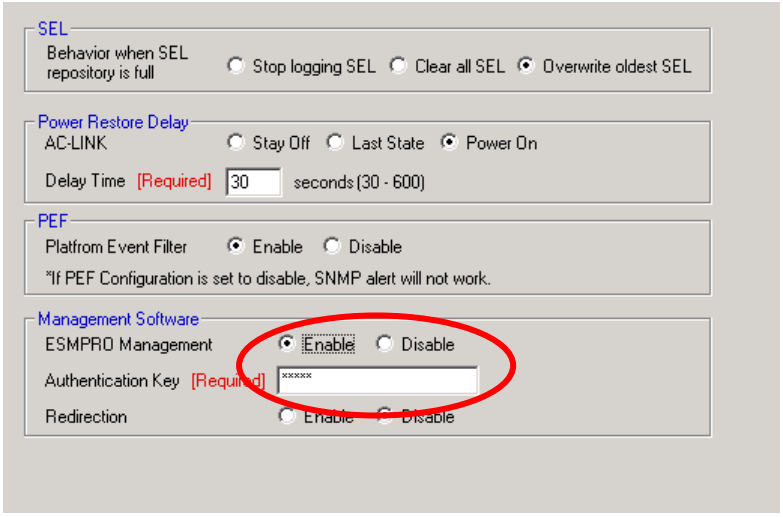
(2) The main dialog box is displayed.

- In the case of BMC Configuration: “Set BMC Configuration” → “Miscellaneous”
- In the case of Server Configuration Utility: “EXPRESSSCOPE Engine 3” → “Miscellaneous”

(3) Be sure to set the following items. The other items can be used with the default values.

-- "ESMPRO Management"
Click "Enable".
-- "Authentication Key"
Enter the authentication key.

The following screen shows example.




**CHECK:**

- If a managed component supports SOL and "Redirection" is selected to "Enable", you must change the following items for the remote console via the LAN.
  Main dialog box - "Set BIOS Configuration" page - "Flow Control": Hardware RTS/CTS.

Select Network configuration screen.
- In the case of BMC Configuration: “Set BMC Configuration” → “Network”
- In the case of Server Configuration Utility: “EXPRESSSCOPE Engine 3” → “Network” → “Property”

**CHECK:**
- If you configure a fault tolerant server, there are the tab ”Network 0” (for CPU/IO module 0) and the tab “Network 1” (for CPU/IO module 1). Please configure both CPU/IO modules.

(4) Set the following items. The other items can be used with the default values.

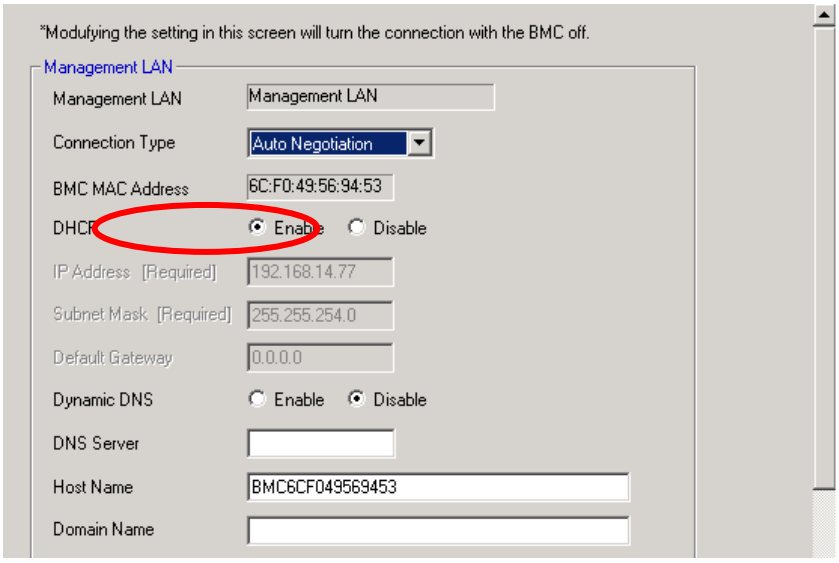
-- "DHCP"
Determine whether to dynamically obtain an IP address from a DHCP server.
If the item is set Enable and applied, BMC set the value obtained from DHCP server on "IP Address", "Subnet Mask" and "Default Gateway".

-- "IP Address"
Enter the BMC IP address.

-- "Subnet Mask"
Enter the subnet mask for the IP address.

-- "Default Gateway"
Enter the default gateway if the managed component connects to management PC via any gateway.

The following screen shows example.




(5) If you set "Default Gateway", confirm that the gateway is connected to network.

(6) Click "Apply".
The configuration information is set in the BMC.

**CHECK:**

- Please set the following items for NEC ESMPRO Manager to receive alerts from the BMC.
  - Miscellaneous
    - Platform Event Filter : Enable
  - SNMP Alert
    - Alert : Enable
    - Computer Name : Any
    - Alert Receiver Primary IP Address :
      IP address of the management PC on which NEC ESMPRO Manager is installed.

      * Please set the checkbox to enable.

### 1.2.2.2 Configuration with Configuration tool for Linux

Explains the operation of Configuration tool for Linux.

(1) After booting Linux on the managed component, start BMC Configuration or Server Configuration Utility by the following commands

In the case of BMC Configuration:.

```
/opt/nec/BMC_Configuration/bmcconf
```

(2)

In the case of Server Configuration Utility:

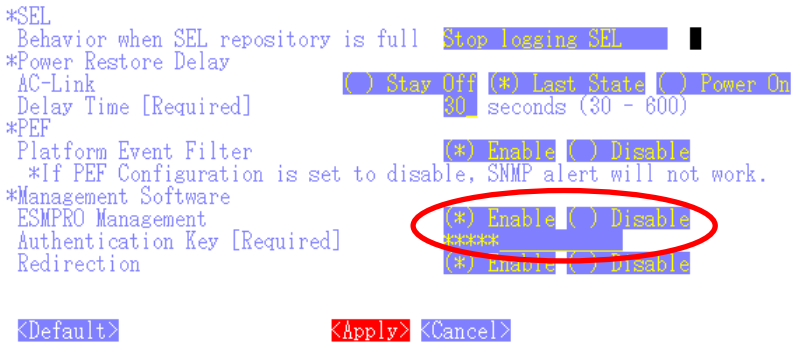
```
/opt/nec/ServerConfiguration/svconf
```

(3) The main dialog box is displayed.

- In the case of BMC Configuration: “Set BMC Configuration” → “Miscellaneous”
- In the case of Server Configuration Utility: “EXPRESSSCOPE Engine 3” → “Configuration” → “Miscellaneous”

(4) "Miscellaneous" screen is displayed.
Be sure to set the following items. The other items can be used with the default values.

-- "ESMPRO Management"
Click "Enable".
-- "Authentication Key"
Enter the authentication key.




**CHECK:**

- If a managed component supports SOL and "Redirection" is selected to "Enable", you must change the following items for the remote console via the LAN.
  Main dialog box - "Set BIOS Configuration" page - "Console Redirection Configuration" page - "Flow Control": Hardware RTS/CTS.

(5) Select "Apply".
The configuration information is set in the BMC.

(6) Select network configuration screen.

- In the case of BMC Configuration: “Set BMC Configuration” → “BMC Configuration” → “Network” → “Property”
- In the case of Server Configuration Utility: “EXPRESSSCOPE Engine 3” → “Configuration” → “Network” → “IPv4 Property”

(7) Set the following items. The other items can be used with the default values.

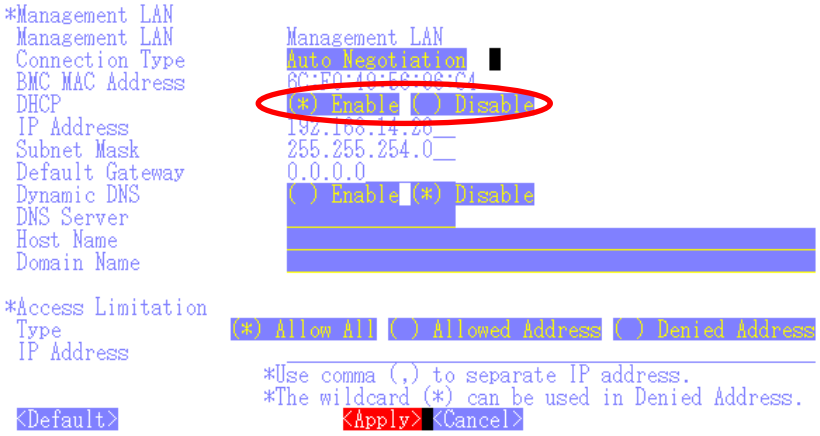
-- "DHCP"
Determine whether to dynamically obtain an IP address from a DHCP server.
If the item is set Enable and applied, BMC set the value obtained from DHCP server on "IP Address", "Subnet Mask" and "Default Gateway".

-- "IP Address"
Enter the BMC IP address.

-- "Subnet Mask"
Enter the subnet mask for the IP address.

-- "Default Gateway"
Enter the default gateway if the managed component connects to management PC via any gateway.

The following screen shows example.




(8) If you set "Default Gateway", confirm that the gateway is connected to network.

(9) Select "Apply".
The configuration information is set in the BMC.

**CHECK:**

- Please set the following items for NEC ESMPRO Manager to receive alerts from the BMC.
  - Miscellaneous
    - Platform Event Filter : Enable
  - SNMP Alert:
    - Alert : Enable
    - Computer Name : Any
    - Primary Alert Receiver : Enable
    - IP Address :
      IP address of the management PC on which NEC ESMPRO Manager is installed..

### 1.2.3 Configuration with Off-line BMC Configuration

(1) The following message is displayed on the bottom of POST screen.

```
Press<F2> SETUP, <F3> Internal flash memory, <F4> ROM Utility, <F12> Network
```

(2) Press F4 key on this screen. If F4 key is entered, Keyboard type selection screen is displayed after POST screen. Select keyboard type.

(3) "Main Menu" screen is displayed.
Select "BMC Configuration" or “Server Configuration Utility”.

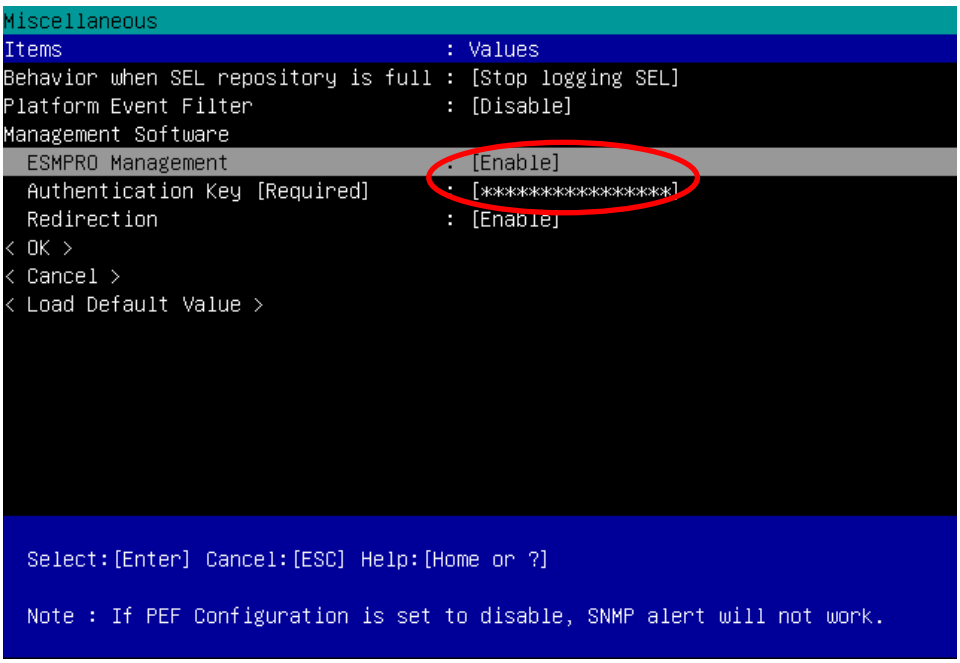
(4) Select Miscellaneous screen.

- In the case of BMC Configuration: “BMC Configuration” → “Miscellaneous”
- In the case of Server Configuration Utility: “EXPRESSSCOPE Engine 3” → “Configuration” → “Miscellaneous”

(5) Be sure to set the following items. The other items can be used with the default values.

-- "ESMPRO Management"
Click "Enable".
-- "Authentication Key"
Enter the authentication key.

The following screen shows example.



**CHECK:**
- If a managed component supports SOL and "Redirection" is selected to "Enable", you must change the following items necessary for the remote console via the LAN.
  Input <F2> key on the POST screen of the managed component.
  "SETUP" page - "Advanced" page - "Serial Port Configuration" page - "Flow Control": Hardware RTS/CTS.

(6) Select "OK".
The configuration information is set in the BMC.

(7) Select network configuration screen.

- In the case of BMC Configuration: “BMC Configuration” → “Network” → “Property”
- In the case of Server Configuration Utility: “EXPRESSSCOPE Engine 3” → “Configuration” → “Network” → “IPv4 Property”

**CHECK:**
- If you configure a fault tolerant server, there are the menu ”Network: CPU/IO module 0” and the menu “Network 1: CPU/IO module 1”. Please configure both CPU/IO modules.

(8) Set the following items. The other items can be used with the default values.

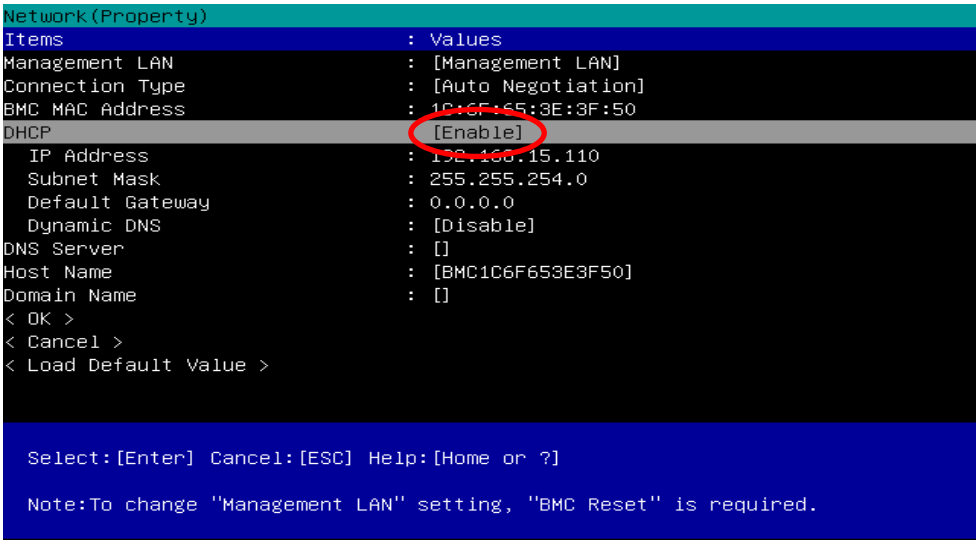
-- "DHCP"
Determine whether to dynamically obtain an IP address from a DHCP server.
If the item is set Enable and applied, BMC set the value obtained from DHCP server on "IP Address", "Subnet Mask" and "Default Gateway".

-- "IP Address"
Enter the BMC IP address.

-- "Subnet Mask"
Enter the subnet mask for the IP address.

-- "Default Gateway"
Enter the default gateway if the managed component connects to management PC via any gateway.

The following screen shows example.




(9) If you set "Default Gateway", confirm that the gateway is connected to network.

(10) Select "OK".
The configuration information is set in the BMC.

**IMPORTANT:**

- When “Shared BMC LAN” of BMC Network setting is enabled via "BMC Configuration" or “Server Configuration Utility”, the system LAN port that is shared and the BMC are not able to communicate directly.
  Therefore, when BMC is managed by NEC ESMPRO Manager of own component, “Management LAN” is enabled instead of enabling “Shared BMC LAN”. Detail of this, please refer to EXPRESSSCOPE Engine 3 User’s Guide.

**CHECK:**

- Please set the following items for NEC ESMPRO Manager to receive alerts from the BMC.
  - Miscellaneous
    - Platform Event Filter : Enable
  - SNMP Alert:
    - SNMP Alert : Enable
    - Computer Name : Any
    - Alert Receiver 1: Enable
    - IP Address 1:
      IP address of the management PC on which NEC ESMPRO Manager is installed.

## 1.3 Register a managed component on NEC ESMPRO Manager

To register the managed component on the NEC ESMPRO Manager, login to the NEC ESMPRO Manager and perform in the following order:

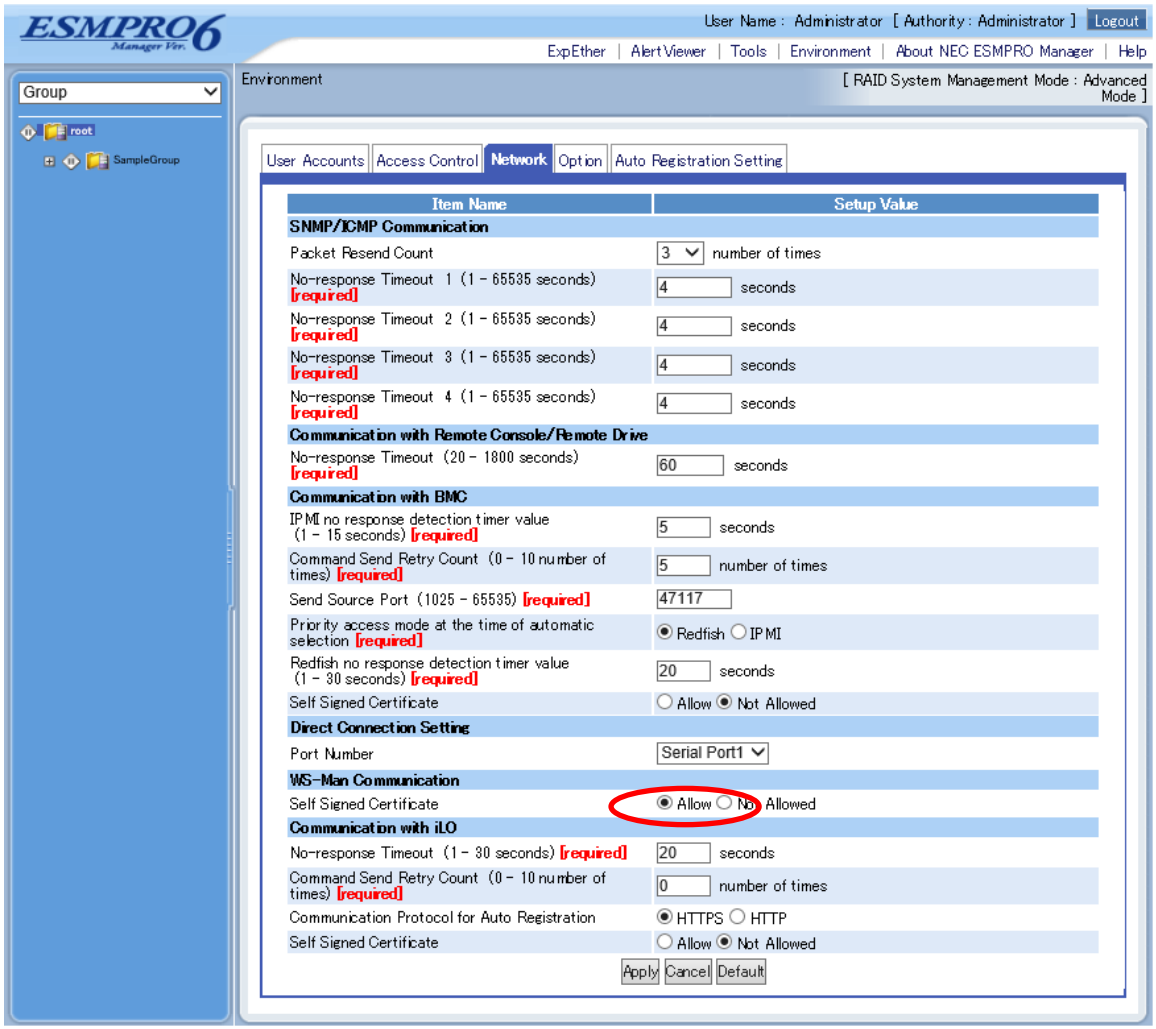
(1) Configure environment setting
(2) Add the group to which the managed component will belong.
(3) Register a managed component.

### 1.3.1 Environment setting

If it has never been set, NEC ESMPRO Manager cannot register following components.
In following cases, "Self-Signed Certification" should be accepted by NEC ESMPRO Manager. Otherwise NEC ESMPRO Manager cannot manage components via WS-Management protocol or ESXi.

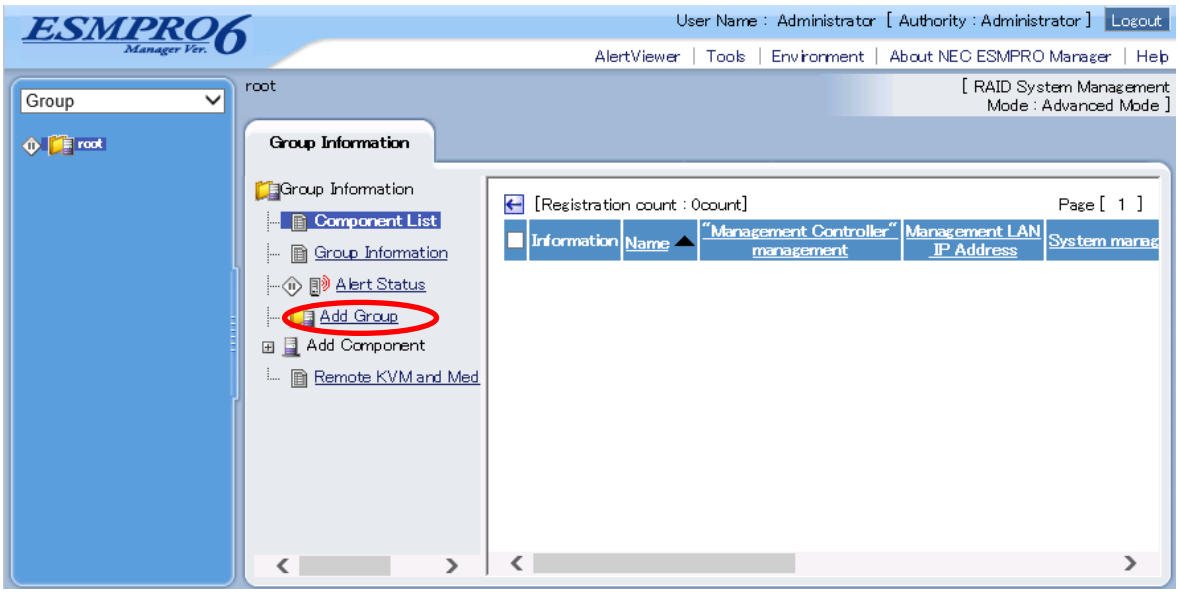
- If the managed is a VMware ESXi server, and you have not registered VMware ESXi with VMware vCenter Server and installed the VMware vCenter Server root certificate on NEC ESMPRO Manager machine, you have not registered it with VMware vCenter Server. or if you are using a self-signed certificate.
- NEC ESMPRO ServerAgentService is installed to managed component, and HTTPS with ”Self-Signed Certificate” is used for communication between ServerAgentService and NEC ESMPRO Manager.

(1) [Step] : On “Environment” - “Network” screen, set “Self-Signed Certificate” to “Allow”.


ESMPRO6 Manager Ver.
User Name : Administrator [ Authority : Administrator ] Logout
ExpEther | AlertViewer | Tools | Environment | About NEC ESMPRO Manager | Help
Group
root
SampleGroup
Environment
[ RAID System Management Mode : Advanced Mode ]
User Accounts
Access Control
Network
Option
Auto Registration Setting
Item Name
Setup Value
SNMP/ICMP Communication
Packet Resend Count
3
number of times
No-response Timeout 1 (1 - 65535 seconds) [required]
4
seconds
No-response Timeout 2 (1 - 65535 seconds) [required]
4
seconds
No-response Timeout 3 (1 - 65535 seconds) [required]
4
seconds
No-response Timeout 4 (1 - 65535 seconds) [required]
4
seconds
Communication with Remote Console/Remote Drive
No-response Timeout (20 - 1800 seconds) [required]
60
seconds
Communication with BMC
IPMI no response detection timer value (1 - 15 seconds) [required]
5
seconds
Command Send Retry Count (0 - 10 number of times) [required]
5
number of times
Send Source Port (1025 - 65535) [required]
47117
Priority access mode at the time of automatic selection [required]
Redfish
IPMI
Redfish no response detection timer value (1 - 30 seconds) [required]
20
seconds
Self Signed Certificate
Allow
Not Allowed
Direct Connection Setting
Port Number
Serial Port1
WS-Man Communication
Self Signed Certificate
Allow
Not Allowed
Communication with iLO
No-response Timeout (1 - 30 seconds) [required]
20
seconds
Command Send Retry Count (0 - 10 number of times) [required]
0
number of times
Communication Protocol for Auto Registration
HTTPS
HTTP
Self Signed Certificate
Allow
Not Allowed
Apply
Cancel
Default

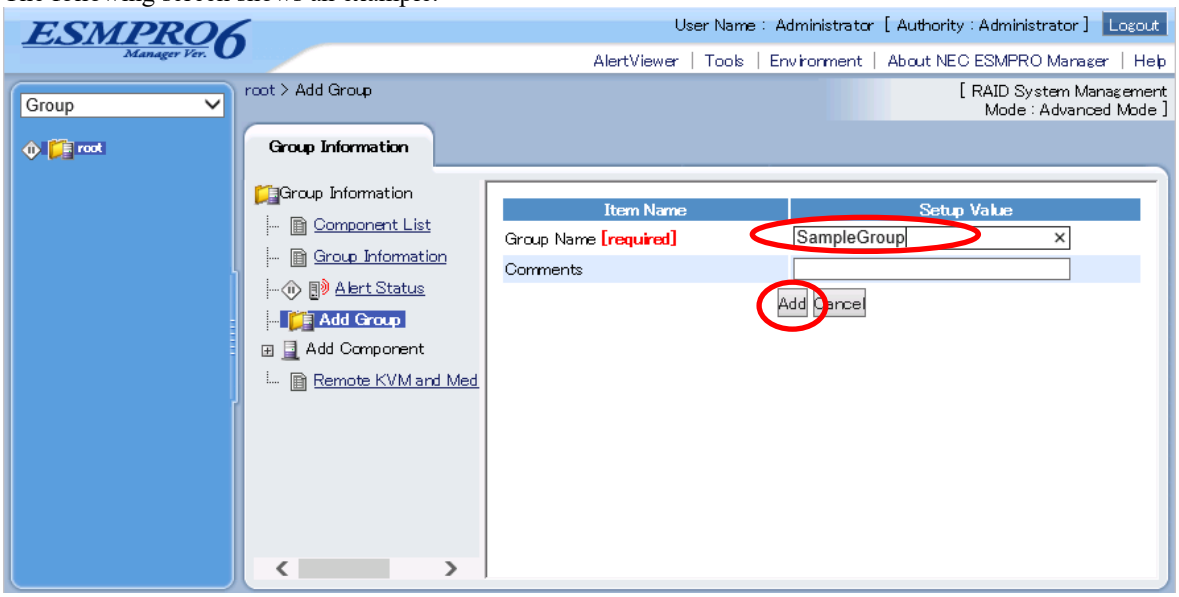
### 1.3.2 Add Group to which the managed component will belong

(1) If you want to register the managed component in the specific group, click "Add Group" on the "Group Information" tab.

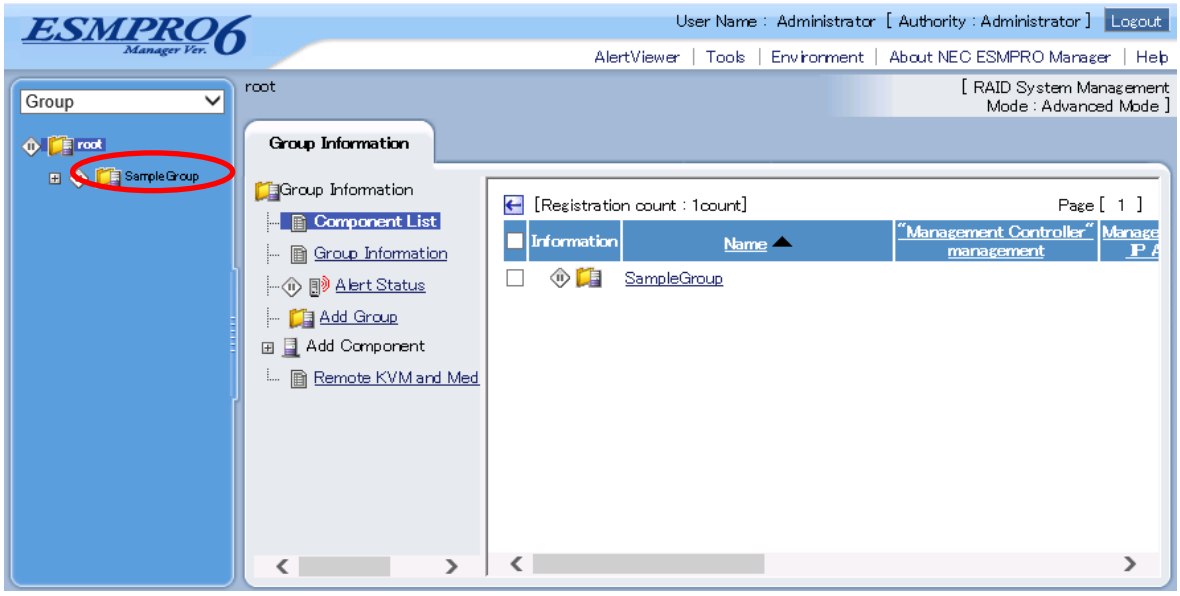



(2) Enter the group name, and click "Add".

The following screen shows an example.



The added group will be displayed on the "Group" tree.



### 1.3.3 Register the Managed Component

Use either of the two methods to register the managed component.

**Manual Registration**

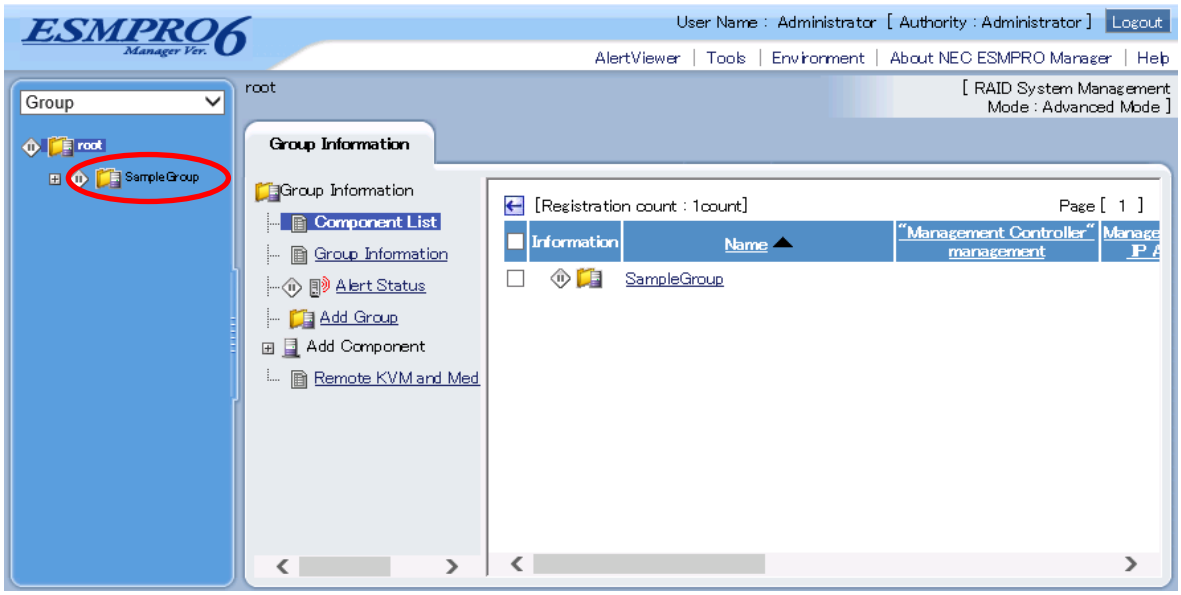
This method requires the operator to directly enter the managed component's information such as the IP address of the BMC and to perform "Check Connection".

**Auto Registration**

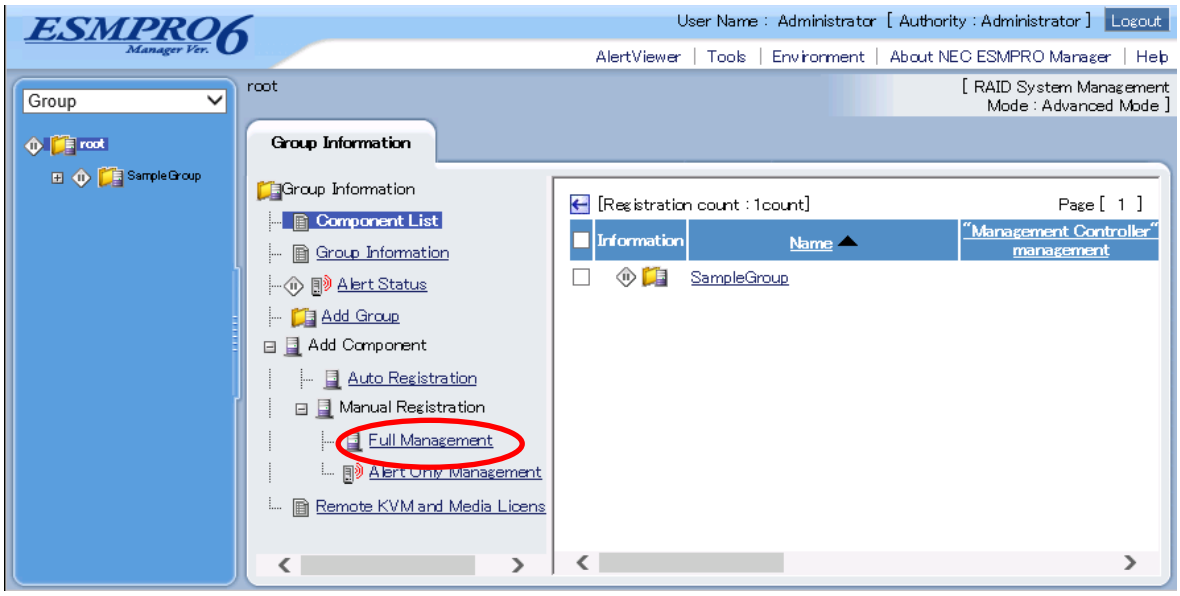
This method automatically searches the network for managed components that are not registered yet on the NEC ESMPRO Manager, and registers the managed components. This method is available only when LAN connection is used.

#### 1.3.3.1 Manual Registration

(1) Click the managed component's "Group name".



(2) Click the "Manual Registration"-"Full Management" from "Add Component" of "Group Information" tab.




(3) Input the following items:

| Name | Value |
|---|---|
| Component Name | Specify the name of the managed component on NEC ESMPRO Manager. Assign a name different from other managed component names. Do not enter a name including blank characters. Uppercase characters are distinguished from lowercase characters. |
| Alias | Specify the information about the managed component. Do not enter a name including blank characters. Uppercase characters are distinguished from lowercase characters. |
| Group | Specify the group to which the managed component will belong. |
| Connection Type | Select “LAN”. |
| **Common Setting** | |
| OS IP Address | Specify the OS IP Address of the managed component. |
| **SNMP (NEC ESMPRO Agent) / WS-Man / ESXi** | |
| Management | Select "Registration" to manage the system of the component. |
| Management Type | Select a management type of the managed component.<br>- SNMP *1<br>NEC ESMPRO Agent is installed on the managed component.<br>- WS-Man *1, *2<br>NEC ESMPRO ServerAgentService is installed on the managed component.<br>The operating system of the managed component is VMware ESXi7.<br>- ESXi *1, *2<br>The operating system of the managed component is VMware ESXi8. |
| SNMP Community Name(Get) | SNMP Community Name which is specified at SNMP Agent running on the managed component.<br>It is necessary to get the information, configure, monitor via SNMP |
| SNMP Community Name(Set) | When you want to set SNMP Community names for Get and Set separately on the managed component, specify the SNMP Community name for Set in this field by alphanumeric characters. |

| | |
|---|---|
| | If it is not specified, SNMP Community name for Get will be used. |
| User Name<br><br>Password | Enter the Username/Password for communication with WS-Man or ESXi.<br><br>- NEC ESMPRO ServerAgentService (Windows) is installed.<br>Enter Username(Local User Accounts)/Password of Windows system Administrator<br>(does not use a user object in Active Directory Domain Services)<br><br>- NEC ESMPRO ServerAgentService (Linux) is installed.<br>Enter root/Password of Linux operating system<br><br>- The operating system of the managed component is VMware ESXi.<br>Enter Username/Password of VMware ESXi Administrator |
| Communication Protocol | Select protocol HTTP/HTTPS for connection WS-Man service. *2<br>If you want to use HTTPS for WS-MAN communication with ESMPRO/ServerAgentService, refer to Chapter 2, Installation 3.3 HTTPS Setting in the ESMPRO/ServerAgentService Installation Guide (Windows). |
| Port Number | Enter port number where WS-Man service listens for connection. *3 |
| **RAID system management** | |
| Management | Select "Registration" to manage the RAID system of the component.<br>- The operating system of the managed component is VMware ESXi7.<br>WS-Man management must be enabled in addition to this setting.<br>- The operating system of the managed component is VMware ESXi8.<br>The RAID system management feature unregistered because there is no utility to manage the RAID system.<br>- The managed component is Express5800/ft server.<br>The RAID system management feature unregistered because there is no utility to manage the RAID system. |
| **NEC ExpressUpdate** | |
| Updates via NEC ExpressUpdate Agent | Select "Registration" to manage the component using NEC ExpressUpdate. |
| Updates via Management Controller | Select "Registration" to manage the component using Management Controller |
| **"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (Common)** | |
| Management | Select "Registration" otherwise NEC ESMPRO Manager may not monitor HW status. |
| Management Type | Select "BMC". |
| Authentication Key | Enter the "authentication key" that you set in “1.2 Configure BMC on Managed Component”. |
| **"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (LAN)** | |
| Current IP Address | If you set both “IP Address1” and “IP Address2”, specify which IP address you want to use for connection. |
| Failover | This setting is valid only when both “IP Address1” and “IP Address2” are set. Determine whether to enable/disable the “Failover” feature. |
| IP Address 1 | Enter the IP address that is specified on LAN1 of the BMC configuration for the managed component.<br>If the managed component is a fault tolerant server, you should enter the IP address of the management LAN port for the CPU/IO module 0 to the form.<br>If the managed component is a server which has EXPRESSSCOPE Engine SP3(2BMC model), you should enter the IP address of the management LAN port for the Master BMC to the form. |
| Subnet Mask1 *4 | Enter the subnet mask that is specified on LAN1 of the BMC configuration for the managed component. |

| | |
|---|---|
| | If the managed component is a fault tolerant server, you should enter the subnet mask of the management LAN port for the CPU/IO module 0 to the form.<br>If the managed component is a server which has EXPRESSSCOPE Engine SP3(2BMC model), you should enter the subnet mask of the management LAN port for the Master BMC to the form. |
| IP Address 2 | Enter the IP address that is specified on LAN2 of the BMC configuration for the managed component.<br>If the managed component is a fault tolerant server, you should enter the IP address of the management LAN port for the CPU/IO module 1 to the form.<br>If the managed component is a server which has EXPRESSSCOPE Engine SP3(2BMC model), you should enter the IP address of the management LAN port for the Standby BMC to the form. |
| Subnet Mask2 *4 | Enter the subnet mask that is specified on LAN2 of the BMC configuration for the managed component.<br>If the managed component is a fault tolerant server, you should enter the subnet mask of the management LAN port for the CPU/IO module 1 to the form.<br>If the managed component is a server which has EXPRESSSCOPE Engine SP3(2BMC model), you should enter the subnet mask of the management LAN port for the Standby BMC to the form. |

**CHECK:**
- *1 If NEC ESMPRO Manager is installed on Linux system, “SNMP” and VMware ESXi server management are not supported.

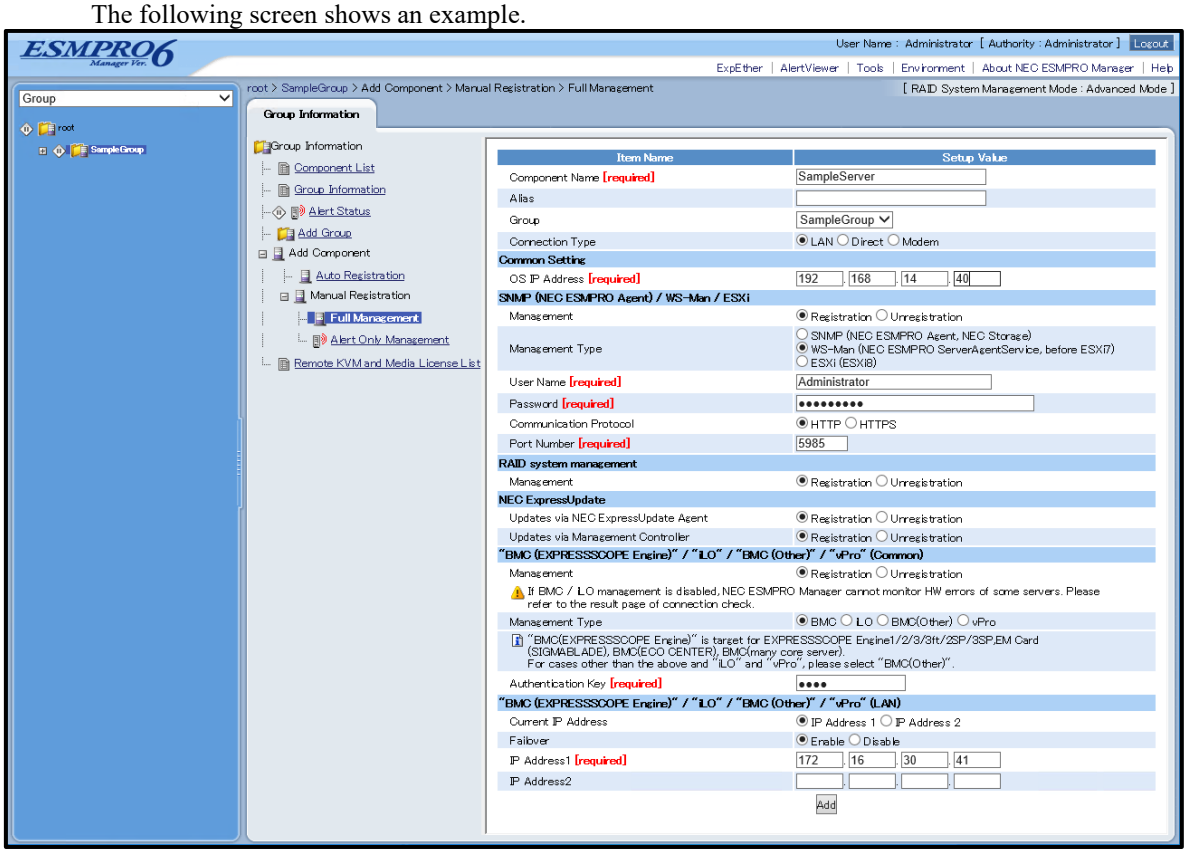
**CHECK:**
- *2 If a self-signed certificate is installed on the managed server for HTTPS communication, a setting to allow it is required. Refer to “1.3.1 Environment setting” for detailed information.

**CHECK:**
- *3 Regarding a port number for WS-Man communication, refer to “Appendix C. Port number for WS-Man communication”.

**CHECK:**
- *4 In NEC ESMPRO Manager Ver.6.06 or later, "Subnet Mask1" and "Subnet Mask2" are not displayed.

**IMPORTANT:**
- If BMC(EXPRESSSCOPE Engine) management is disabled, NEC ESMPRO Manager may not be able to monitor HW status. Detailed information is shown in the connection check result screen.

The following screen shows an example.



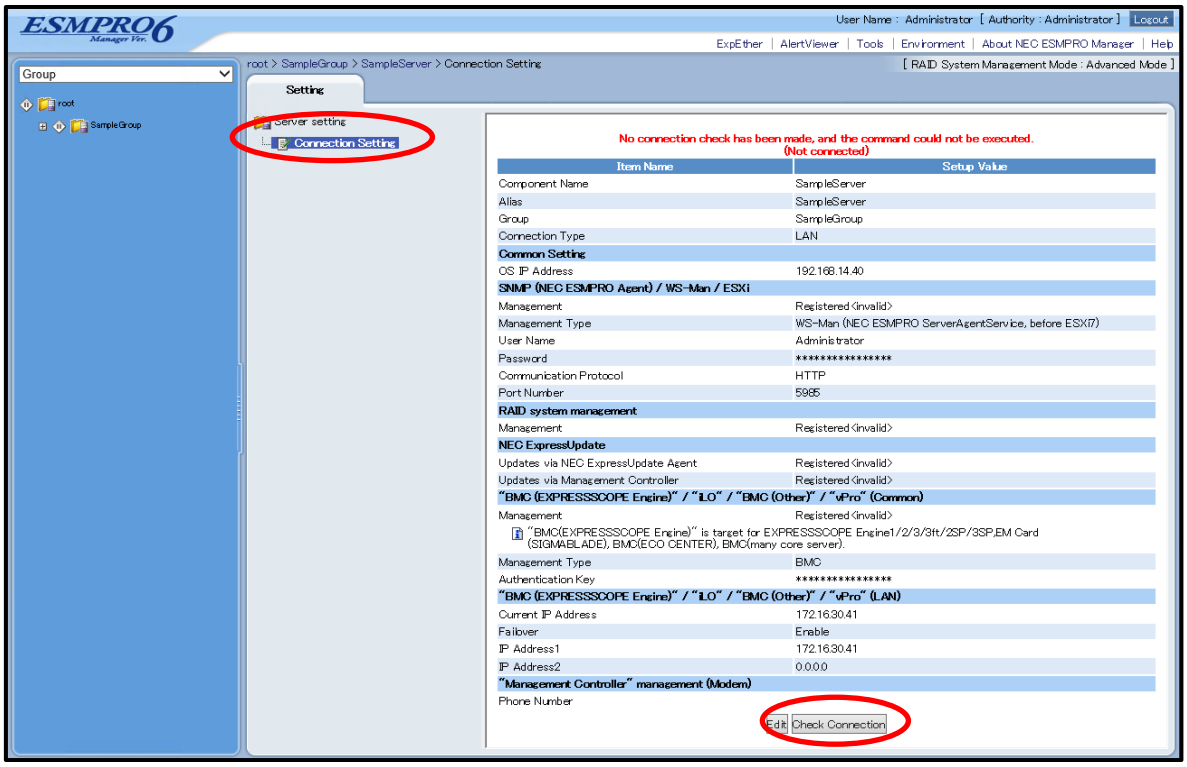

(4) Click "Add".

**TIPS:**

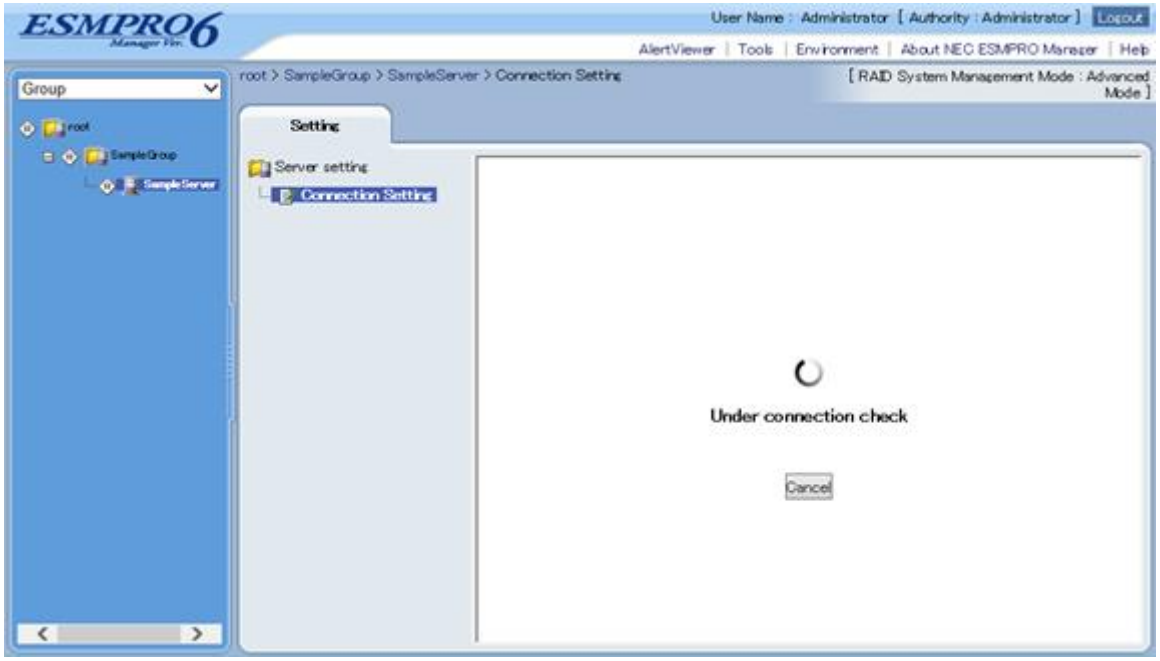
- A managed component cannot be controlled remotely by only registering it. Perform a "Check Connection".

(5) Click "Connection Setting" from "Setting" tab of the managed component.
"Connection Setting" view is displayed.

NEC ESMPRO Manager will execute "Check Connection" and collect the component information for the management.

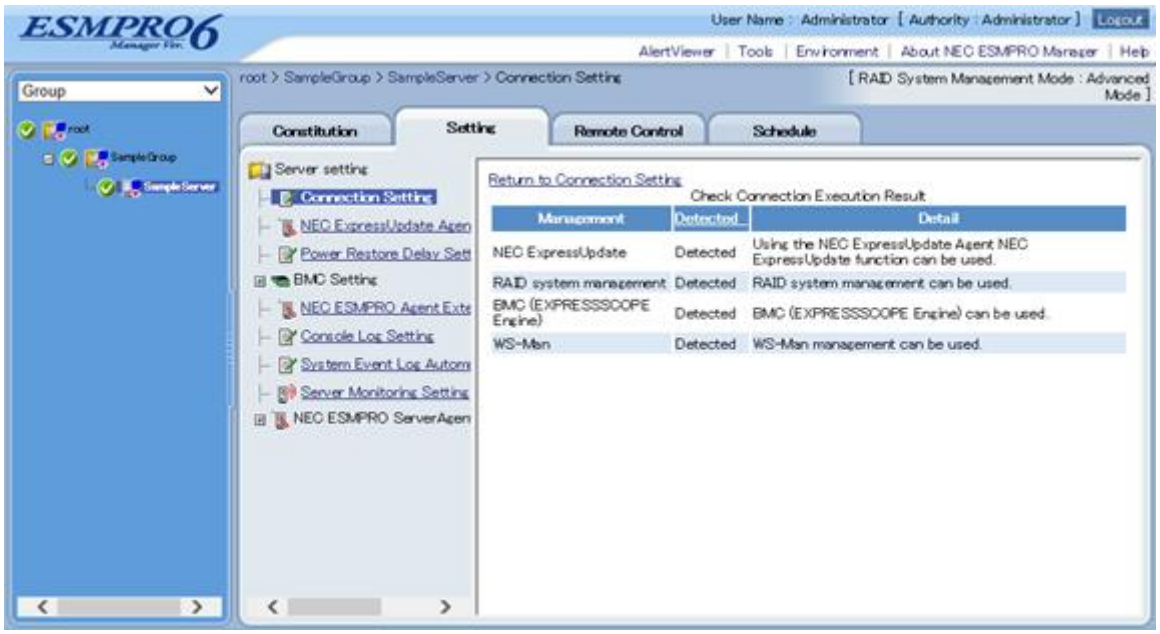


(6) Click "Check Connection" and following screen will be displayed.




(7) After finishing connection check, “Check Connection Execution Result” screen is shown.

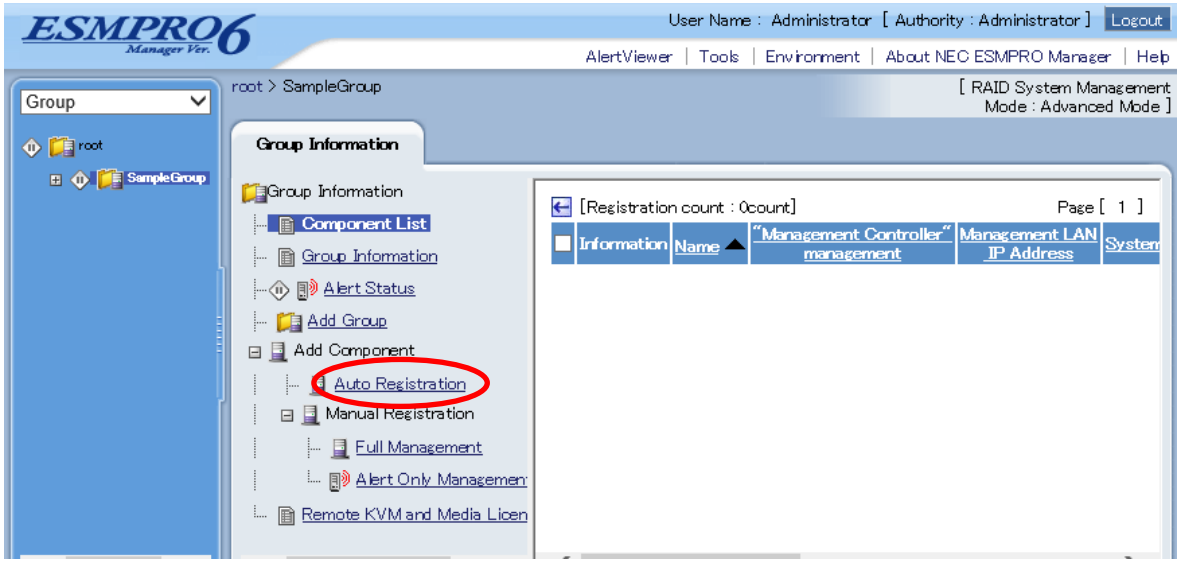
| Detected | Detail |
|---|---|
| Detected | The feature was detected.<br>NEC ESMPRO Manager can use the feature to manage the component. |
| Not Detected | The feature was not detected.<br>NEC ESMPRO Manager cannot use the feature to manage the component.<br>Check parameters corresponding to the feature. |



### 1.3.3.2 Auto Registration

(1) Click the managed component's "Group name" on the "Group" tree.

(2) Click the "Auto Registration" from "Add Component" of "Group Information" tab.




(3) Input the following items:

| Name | Value |
|---|---|
| Destination Group | Specify the group to which the managed component will belong. |
| **Discovery Range** | |
| Discovery Mode | With "IP Address Range Search" selected, the NEC ESMPRO Manager searches for the managed components using the IP address range.<br>With "Network Address Search" selected, the NEC ESMPRO Manager searches for the managed components using the specified network address. |
| Start Address<br>End Address | When you select "IP Address Range Search" for "Search Mode", specify the start IP address and end IP address of the range in which managed components are to be searched for. |
| Network Address<br>Network Mask | When you select "Network Address Search" for "Search Mode", specify the network address and network mask of the managed component to be searched for. |
| **SNMP (NEC ESMPRO Agent)** | |
| Discovery | Select “Enable” to manage the system of the component.*1 |
| SNMP Community Name | SNMP Community Name which is specified at SNMP Agent running on the managed component.<br>It is necessary to get the information, configure, monitor via SNMP |
| **WS-Man** | |
| Discovery | Select “Enable” to manage VMware ESXi7 of the component. *1,*2,*5 |
| User Name/Password | Enter username and password for WS-Man communication. The account must be a system administrator of the managed operating system.<br>Click “Add” button and you can add a pair of username and password up to 5. *3<br>- NEC ESMPRO ServerAgentService (Windows) is installed.<br>Enter Username(Local User Accounts)/Password of Windows system Administrator<br>(does not use a user object in Active Directory Domain Services) |

| | |
|---|---|
| | - NEC ESMPRO ServerAgentService (Linux) is installed.<br>Enter root/Password of Linux operating system<br>- The operating system of the managed component is VMware ESXi7.<br>Enter Username/Password of VMware ESXi Administrator |
| **ESXi** | |
| Discovery | Select “Enable” to manage VMware ESXi8 of the component. *1,*2 |
| User Name/Password | Enter username and password for ESXi. The account must be a system administrator of the managed operating system.<br>Click “Add” button and you can add a pair of username and password up to 5. *3<br>- The operating system of the managed component is VMware ESXi8.<br>Enter Username/Password of VMware ESXi Administrator |
| **RAID system management** | |
| Management | Select "Enable" to manage the RAID system of the component.<br>- The operating system of the managed component is VMware ESXi7.<br>WS-Man management must be enabled in addition to this setting.<br>- The operating system of the managed component is VMware ESXi8.<br>The RAID system management feature unregistered because there is no utility to manage the RAID system.<br>- The managed component is Express5800/ft server.<br>The RAID system management feature unregistered because there is no utility to manage the RAID system. |
| **NEC ExpressUpdate** | |
| Updates via NEC ExpressUpdate Agent | Select "Enable" to manage the component using NEC ExpressUpdate. |
| **BMC (EXPRESSSCOPE Engine)** | |
| Discovery | Select "Enable" otherwise NEC ESMPRO Manager may not monitor HW status. |
| Features NEC ExpressUpdate | Select "Enable" to feature NEC ExpressUpdate. |
| Authentication Key | Enter the "authentication key" that you set in “1.2 Configure BMC on Managed Component”. *3 *4 |
| **iLO** | |
| Discovery | When you discover components which have EXPRESSSCOPE Engine3, this item should be “Disable”. |
| **BMC (Ohter)** | |
| Discovery | When you discover components which have EXPRESSSCOPE Engine3, this item should be “Disable”. |
| **Intel(R) vPro(TM) Technology** | |
| Discovery | When you discover components which have EXPRESSSCOPE Engine3, this item should be “Disable”. |

**CHECK:**

- *1 If NEC ESMPRO Manager is installed on Linux system, “SNMP” and VMware ESXi management are not supported.

**CHECK:**

- *2 If a self-signed certificate is installed on the managed server for HTTPS communication, a setting to allow it is required. Refer to “1.1 Setup Flow” for detailed information.

**CHECK:**

- *3 On “Environment” - “Auto Registration Setting List” screen, you can manage a

list of username/password and authentication key. All entries in the list are used for auto registration every time.

**CHECK:**

- *4 If you register the "Management Controller" management for a fault tolerant server, you should specify the search range which includes BMC IP addresses of CPU/IO module 0 and 1.
- *4 If you register the "Management Controller" management for a server which has EXPRESSSCOPE Engine SP3(2BMC model), you should specify the search range which includes both BMC IP addresses of Master and Standby.

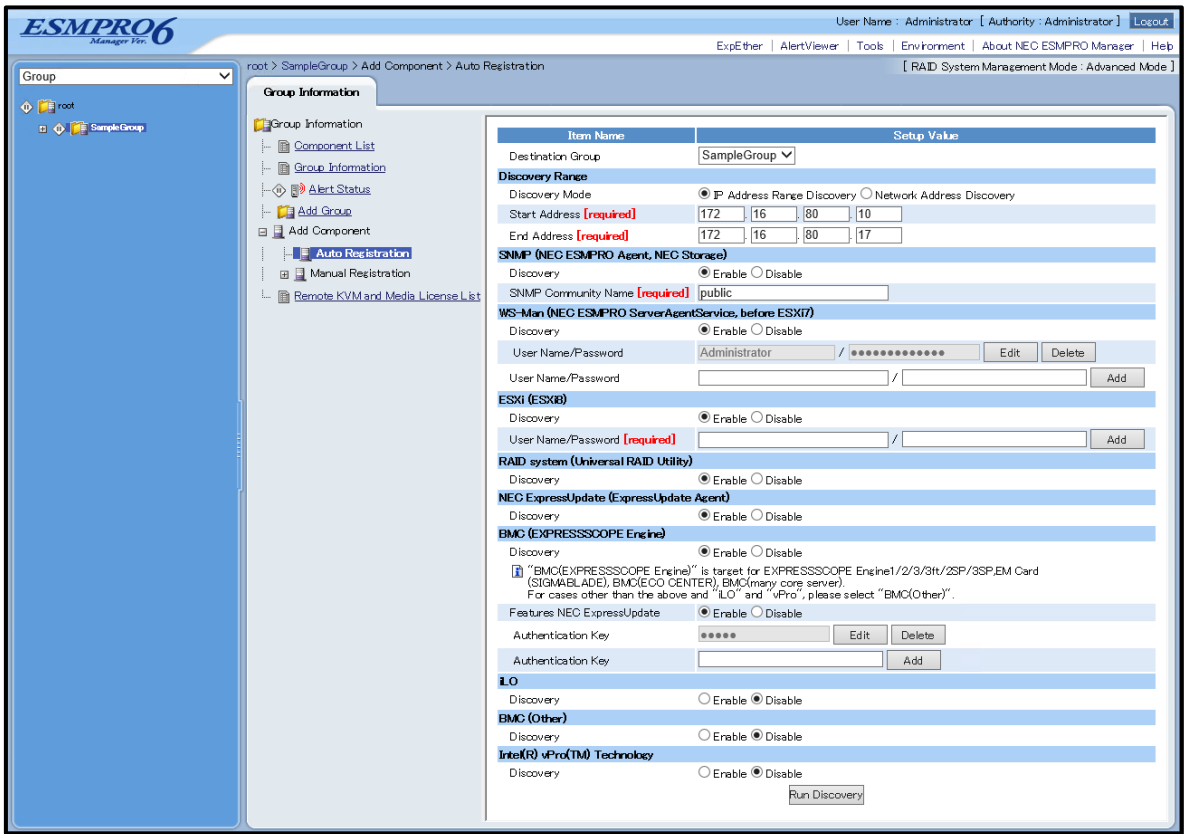
**CHECK:**

- *5 If you want to use HTTPS for WS-MAN communication with ESMPRO/ServerAgentService, refer to Chapter 2, Installation 3.3 HTTPS Setting in the ESMPRO/ServerAgentService Installation Guide (Windows).

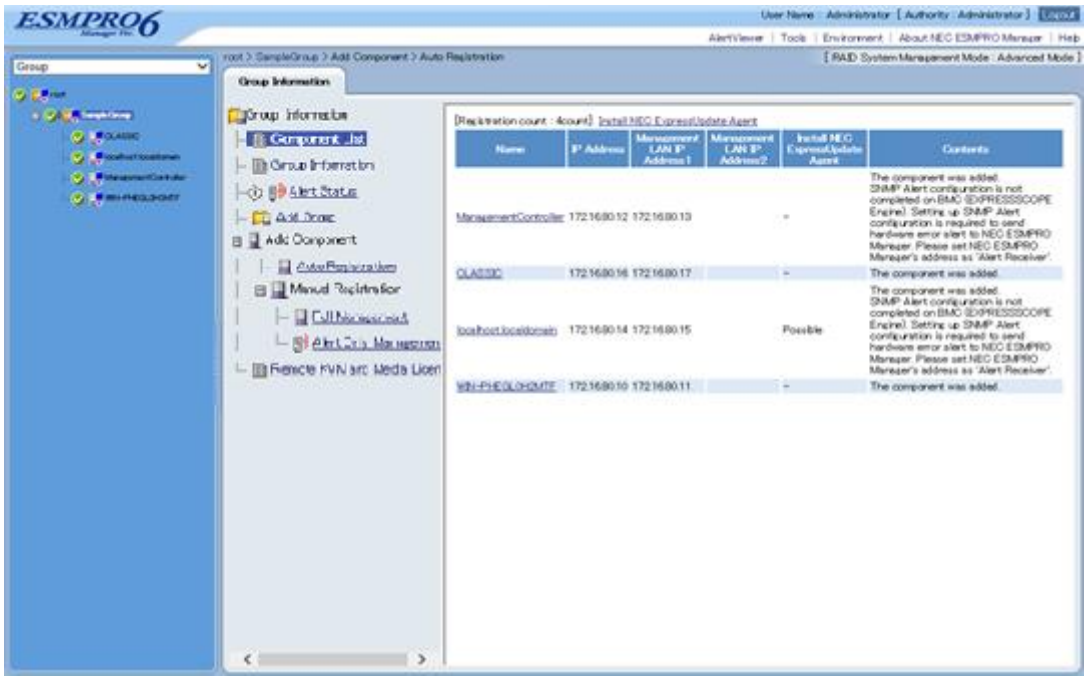
**IMPORTANT:**

- If BMC(EXPRESSSCOPE Engine) management is disabled, NEC ESMPRO Manager may not be able to monitor HW status. Detailed information is shown in the connection check result screen.

(4) Click "Run Discovery" and then the search for the managed components will start.
The following screen is an example display with "IP Address Range Search" selected.



(5) When the "Auto Registration" is completed, the NEC ESMPRO Manager starts to control the managed component.



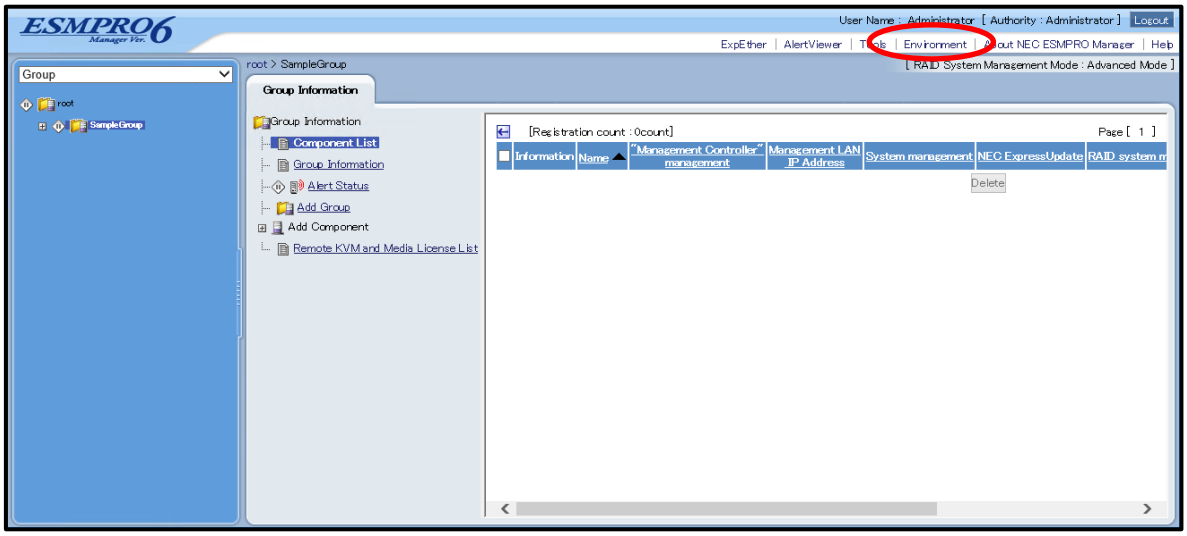
**TIPS:**

- When the managed component is registered by auto registration but the system management for the managed component cannot be registered, the "Component Name" of the managed component is set to the "ManagementController + number". You can change the component name on "Component setting" - "Connection Setting".

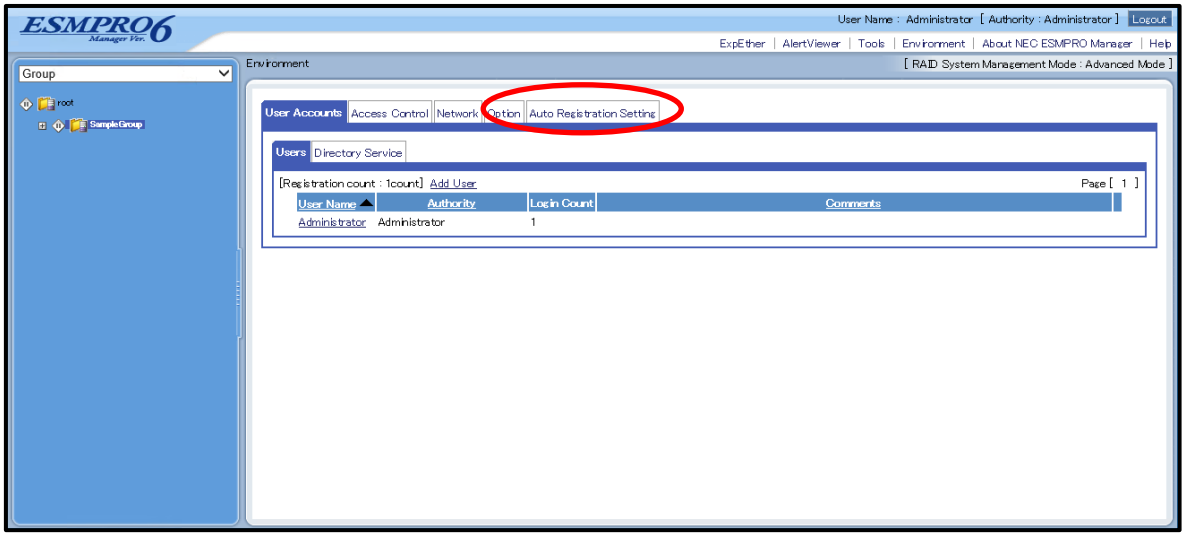
### 1.3.3.3 Auto Registration Setting

Before executing auto registration, User Name/Password and Authentication Key can be registered up to 5. Using this feature, you do not have to enter these information for each auto registration process.

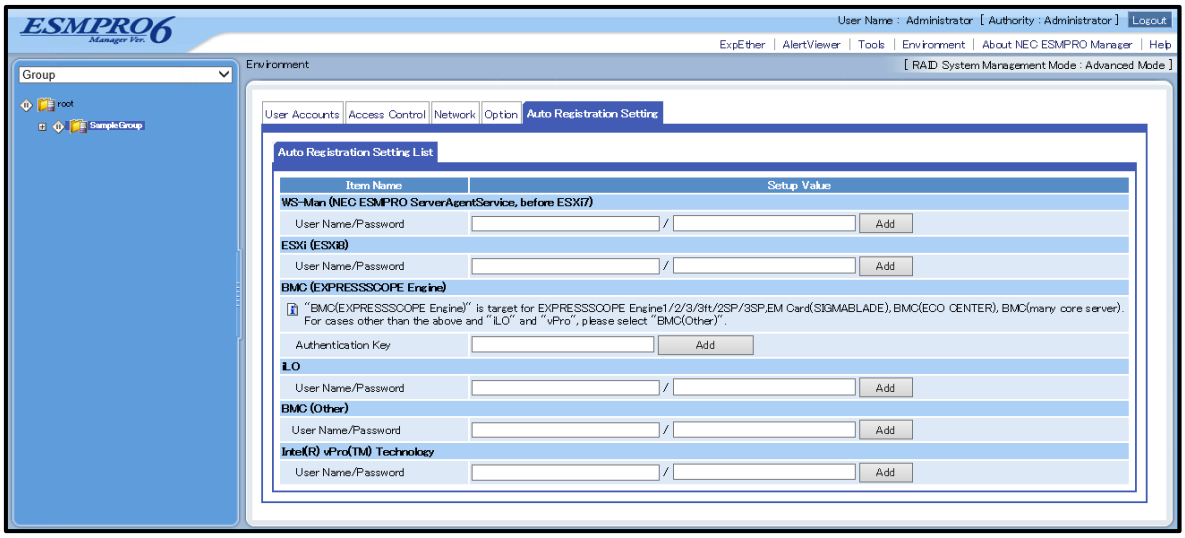
(1) Click Environment




(2) Click “Auto Registration Setting”.



(3) Enter each item.




**WS-Man (NEC ESMPRO ServerAgentService, brfore ESXi7)**
- "User Name/Password"
  Enter a pair of username and password for WS-Man auto registration. You can enter up to 5 pairs.

**ESXi (ESXi8)**
- "User Name/Password"
  Enter a pair of username and password for ESXi auto registration. You can enter up to 5 pairs.

**BMC (EXPRESSSCOPE Engine)**
- Authentication Key
  Enter an authentication key for BMC auto registration. You can enter it up to 5. Refer to "1.2 Configure BMC on Managed Component" for more information about Authentication Key.

**iLO**
- "User Name/Password"
  Enter a pair of user name and password for iLO auto registration. You can enter up to 5 pairs.

**BMC (Other)**
- "User Name/Password"
  Enter a pair of user name and password for BMC (Other) auto registration. You can enter up to 5 pairs.

**Intel(R) vPro(TM) Technology**
- "User Name/Password"
  Enter a pair of user name and password for vPro auto registration. You can enter up to 5 pairs.

(4) Execute auto registration.
Executing auto registration, User Name/Password and Authentication Key entered in this screen are used in addition to the information entered in auto registration screen.

# Chapter2 Setup for Managed Component in which a BMC excluding EXPRESSSCOPE Engine 3 is integrated (for LAN connection)

This chapter explains the setup procedure for the NEC ESMPRO Manager to manage the BMC and NEC ESMPRO Agent Extension ver1.xx (or NEC DianaScope Agent) on a managed component remotely via LAN connection.

## 2.1 Setup Flow (for LAN connection)

Perform the following setup procedure:

(1) Connect the NEC ESMPRO Manager server and the managed component on the same network.

(2) Configure BMC on the managed component.

(3) Register the managed component on the NEC ESMPRO Manager.

## 2.2 Configure BMC on Managed Component (for LAN connection)

Configure BMC of the managed component at first.

**TIPS:**

- This section explains about the minimum setting that is necessary for connection the NEC ESMPRO Manager with the managed component. For details of BMC configuration, see document of each tool.

There are two methods for configuring the BMC on a managed component for LAN connection.

**Configuration with NEC ESMPRO Agent Extension ver.1.xx, NEC DianaScope Agent or "System Management" tool of NEC EXPRESSBUILDER CD-ROM**

This section explains the configuration procedure using NEC ESMPRO Agent Extension for Windows.

**CHECK:**

- There are other BMC configuration tools, but do not use the following tools for setup with NEC ESMPRO Manager.
  -- NEC MWA Agent
  -- "System management" started from NEC EXPRESSBUILDER that does not contain NEC ESMPRO Manager.

**Configuration with NEC EXPRESSBUILDER DOS based with remote console feature.**

NEC EXPRESSBUILDER DOS based with remote console feature is to configure the BMC on the managed component when a keyboard is not connected.

**CHECK:**

- Configuration with NEC EXPRESSBUILDER DOS based with remote console feature can be available only from the NEC EXPRESSBUILDER that contains NEC ESMPRO Manager.
  See the user's guide provided with the managed component about NEC EXPRESSBUILDER DOS based with remote console feature.
  If there is the description about NEC EXPRESSBUILDER DOS based with remote console feature, the feature is available.

## 2.2.1 Configuration with NEC ESMPRO Agent Extension ver1.xx (for LAN connection)

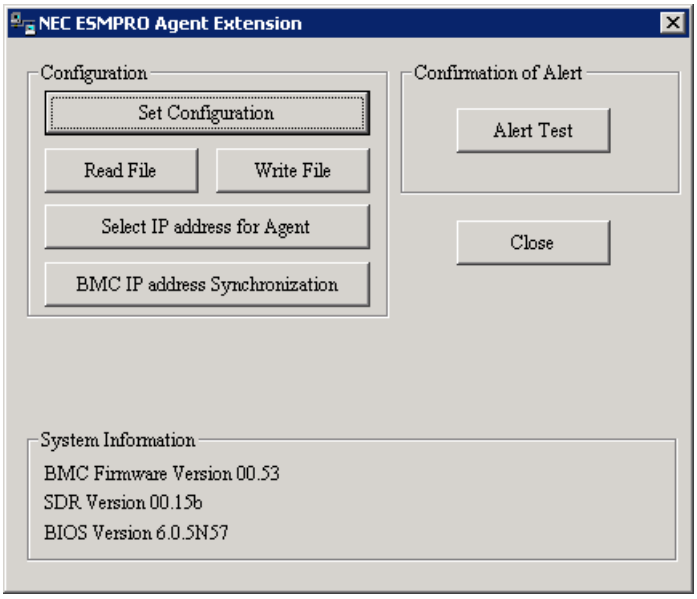
### 2.2.1.1 Configuration with NEC ESMPRO Agent Extension ver1.xx for Windows

This section explains the configuration procedure using NEC ESMPRO Agent Extension for Windows.

(1) After booting Windows on the managed component, click Windows "start" and start the BMC configuration function of NEC ESMPRO Agent Extension.

(2) The main dialog box will be appeared.
Click "Set Configuration". When a confirmation message is displayed, click "OK".

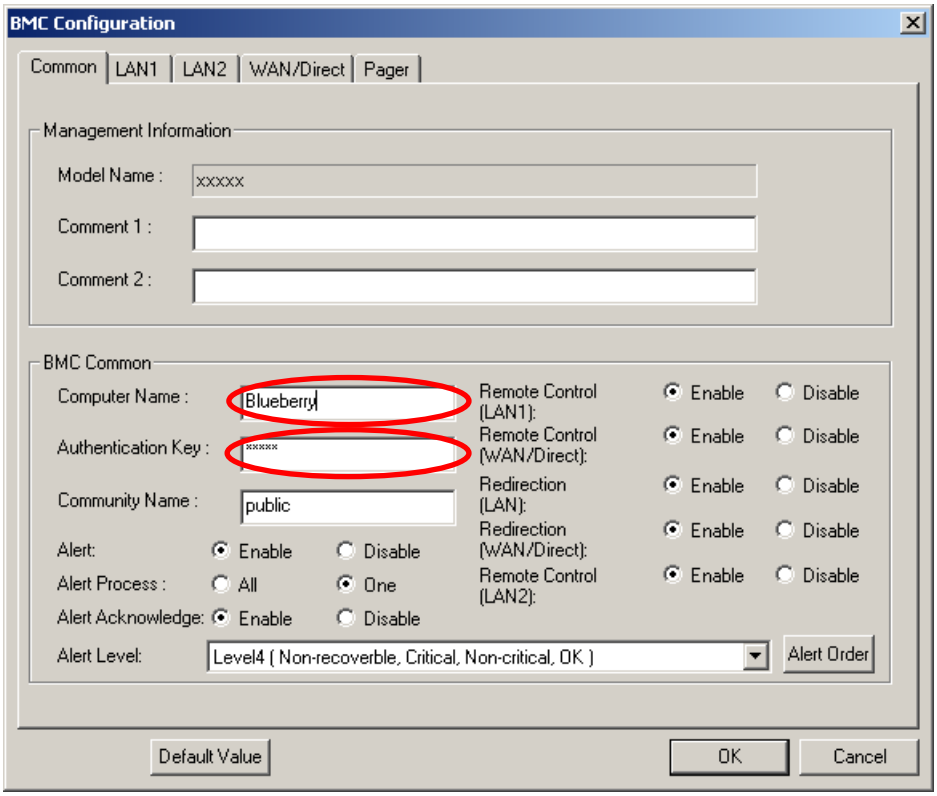
The following screen shows example for the managed component that the BMC uses standard LAN port.



(3) "BMC Configuration" dialog box will be display. Click "Common" tab page.

Be sure to set the below item. The other items can be used with the default values.
-- "Computer Name"
Enter a unique name for each managed component.
-- "Authentication Key"

The following screen shows example.




**TIPS:**

- If a managed component is compatible with SOL and "Enable" is selected for the item "Redirection (LAN)," the following items necessary for the remote console via the LAN will be changed automatically.
  "Common" tab page - "Redirection (WAN/Direct)": Enable
  "WAN/Direct" page - "Flow Control": RTS/CTS

(4) Select "LAN1" tab page for LAN port 1 of the BMC.
Set the below items. The other items can be used with the default values.

-- "Obtain an IP Address automatically (DHCP)"
Determine whether to dynamically obtain an IP address from a DHCP server.
If the item is set enable and registered, the BMC set the value obtained from DHCP server on "IP Address", "Subnet Mask" and "Default Gateway".
You can set enable on the item only if the BMC supports this capability.

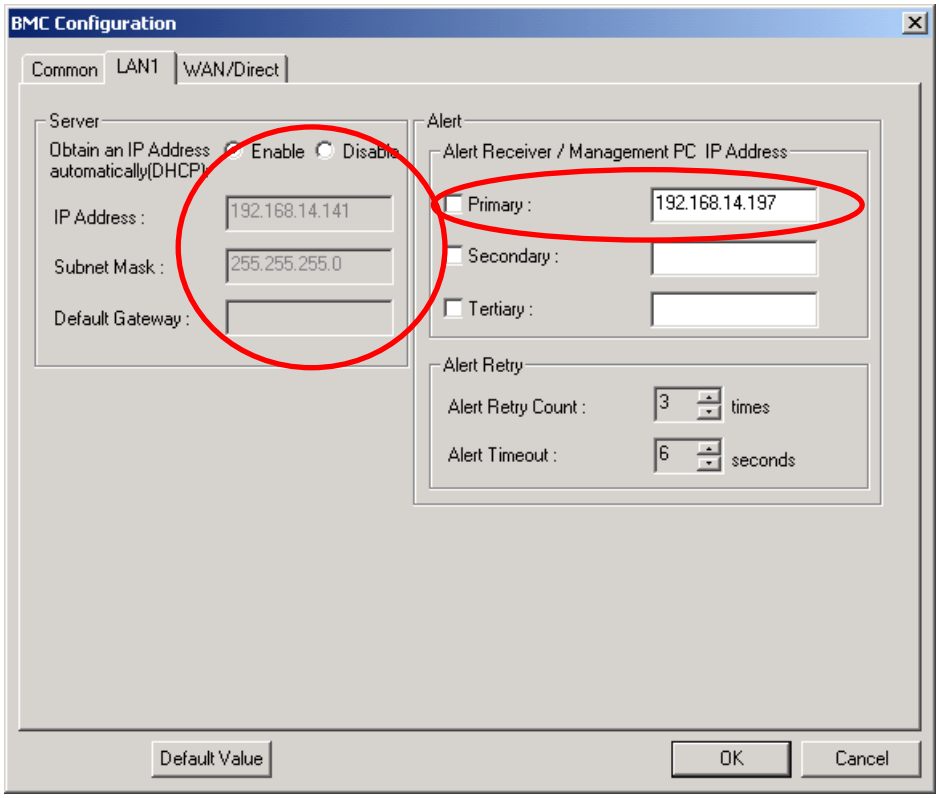
-- "IP Address"
Case that BMC on the managed component uses Management LAN port; enter the IP address for the Management LAN port.
Case that BMC on the managed component uses a standard LAN port; be sure to make the setting identical to the setting on the operating system of the managed component.

-- "Subnet Mask"
Enter the subnet mask for the IP address.

-- "Default Gateway"
Enter the default gateway if the managed component connects to NEC ESMPRO Manager Server via any gateway

-- "Alert Receiver / Management PC IP Address" - "Primary".
Enter the IP address of the management PC.

The following screen shows example.




**TIPS:**

- The "LAN2" tab is displayed only when the managed component's BMC supports communication via LAN2. To communicate with the NEC ESMPRO Manager via LAN2, make the setting on the "LAN2" tab as same as "LAN1" tab.

**CHECK:**

- Please set the following items for NEC ESMPRO Manager to receive alerts from the BMC.
  - LAN1 / LAN2
    - Alert Receiver / Management PC IP Address
      - Primary :
        IP address of the management PC on which NEC ESMPRO Manager is installed.
        * Please set the checkbox to enable.

(5) If you set "Default Gateway", please connect the managed component via LAN port used by BMC and the gateway to network.
If you set "Alert Receiver / Management PC IP Address" on same network with the managed component, please connect the managed component via LAN port used by BMC and the alert receiver/management PC to network.

(6) Click "OK".
The configuration information will be set in the BMC. The MAC addresses of the gateway and the alert receivers will be also set in the BMC.

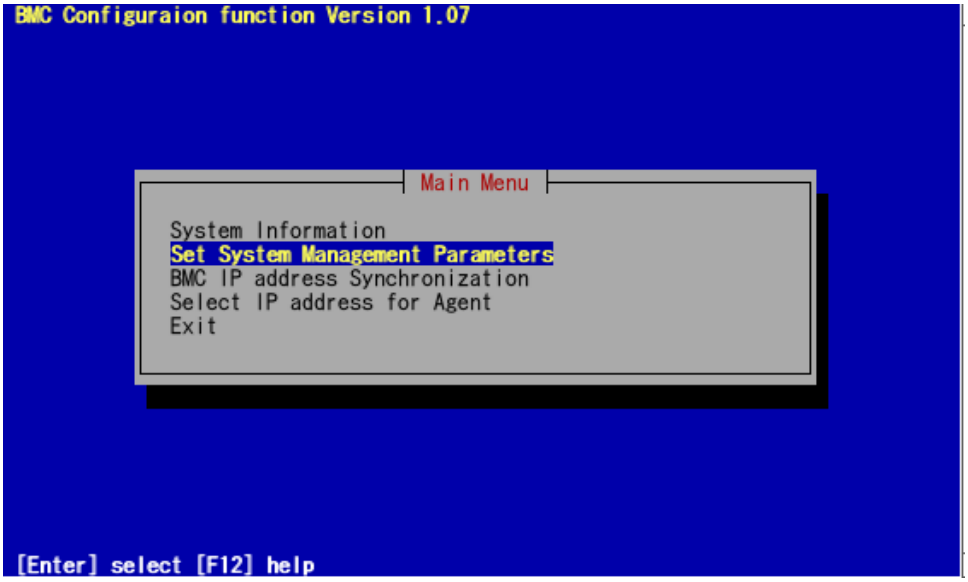
#### 2.2.1.2 Configuration with NEC ESMPRO Agent Extension ver.1.xx for Linux

This section explains the configuration procedure using NEC ESMPRO Agent Extension ver.1.xx for Linux.

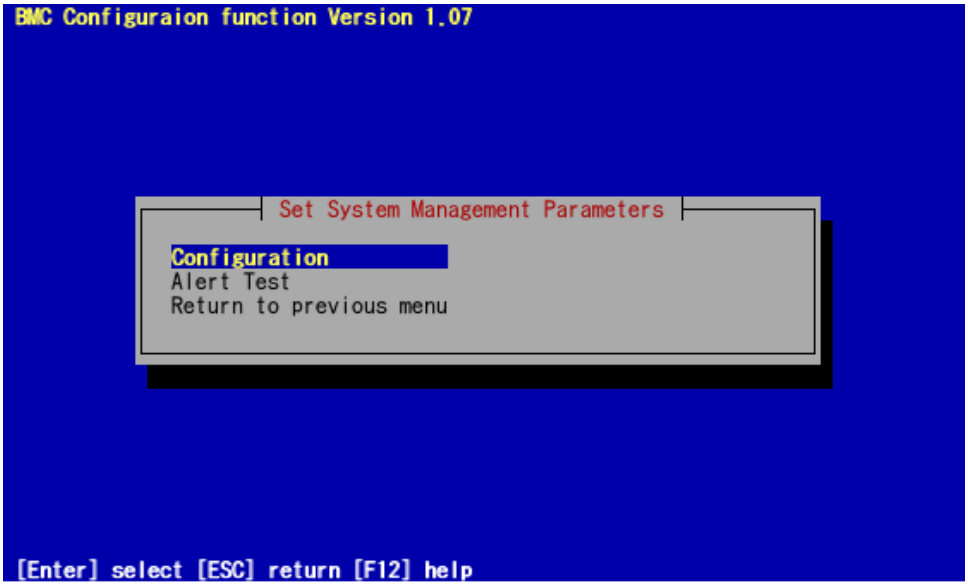
(1) After booting Linux on the managed component, start the BMC configuration function of NEC ESMPRO Agent Extension by the following command.

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

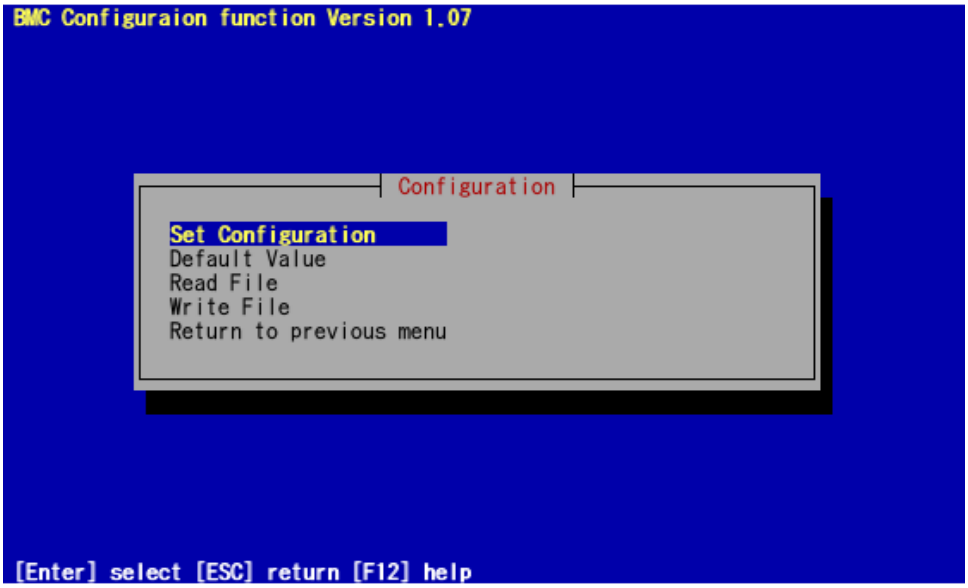
(2) "Main Menu" screen will be displayed.
Select "Set System Management Parameters".
The following screen shows example for the managed server that the BMC uses standard LAN port.



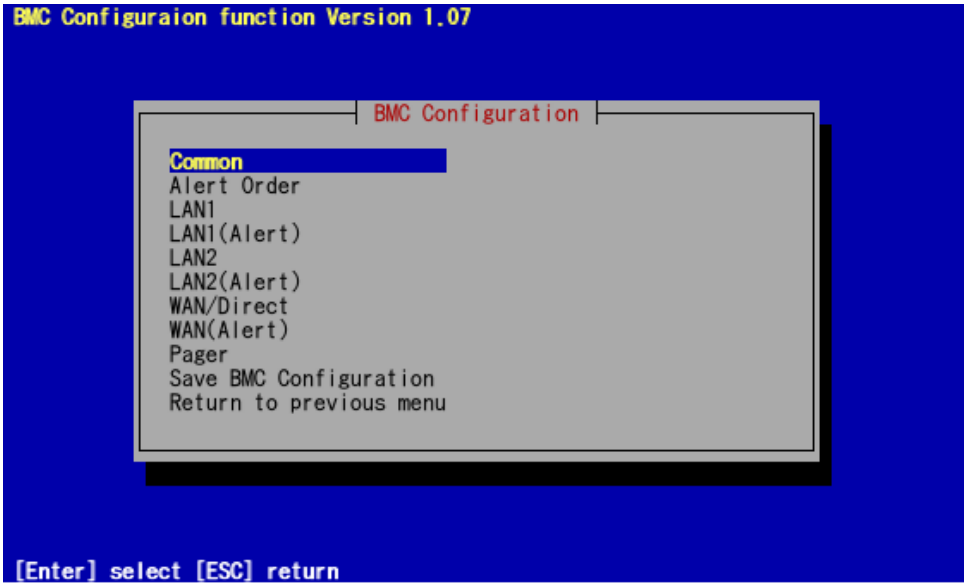
(3) "Set System Management Parameters" screen will be displayed.
Select "Configuration".




(4) "Configuration" screen will be displayed.
Select "Set Configuration".



(5) "BMC Configuration" screen will be displayed.
Select "Common".

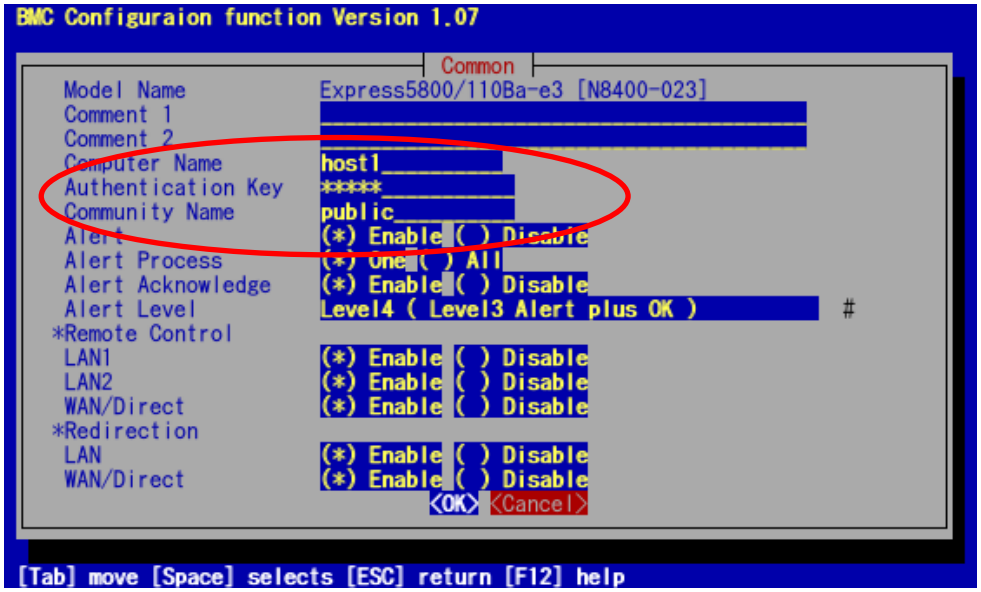



(6) "Common" screen will be displayed.

Be sure to set the below item. The other items can be used with the default values.

-- "Computer Name"
Enter a unique name for each managed server.
-- "Authentication Key"

The following screen shows example.



**TIPS:**

- If a managed server is compatible with SOL and "Enable" is selected for the item "Redirection (LAN)," the following items necessary for the remote console via the LAN will be changed automatically.
  "Common" screen - "Redirection (WAN/Direct)": Enable
  "WAN/Direct" screen - "Flow Control": RTS/CTS

**CHECK:**

- Please set the following items for NEC ESMPRO Manager to receive alerts from the BMC.
  - LAN1 (Alert) / LAN2 (Alert) :
    - Primary Alert Receiver : Enable
    - IP Address:
      IP address of the management PC on which NEC ESMPRO Manager is installed.

(7) Select "LAN1" from "BMC Configuration" screen.
Set the below items. The other items can be used with the default values.

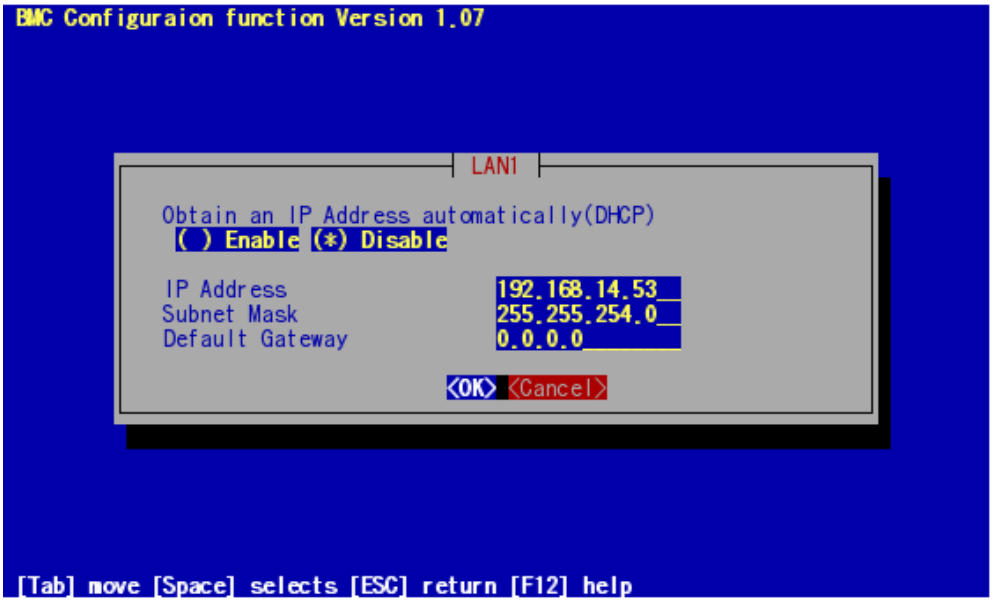
-- "Obtain an IP Address automatically (DHCP)"
Determine whether to dynamically obtain an IP address from a DHCP server.
If the item is set enable and registered, the BMC set the value obtained from DHCP server on "IP Address", "Subnet Mask" and "Default Gateway".
You can set enable on the item only if the BMC supports this capability.

--"IP Address"
Case that BMC on the managed server uses Management LAN port; enter the IP address for the Management LAN port.
Case that BMC on the managed server uses a standard LAN port; be sure to make the setting identical to the setting on the operating system of the managed server.

-- "Subnet Mask"
Enter the subnet mask for the IP address.

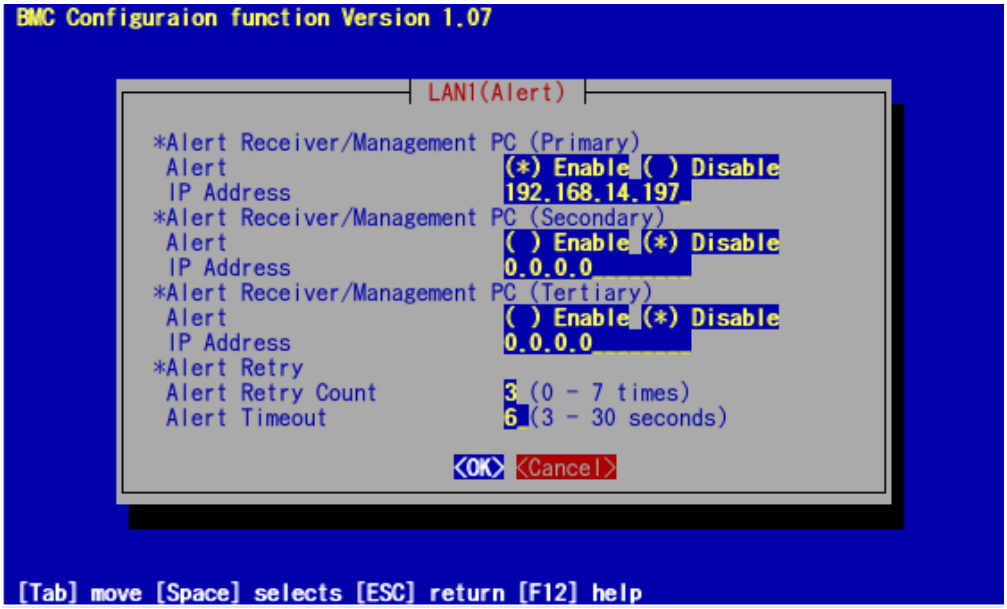
-- "Default Gateway"
Enter the default gateway if the managed server connects to NEC ESMPRO Manager Server via any gateway

The following screen shows example.




-- "Alert Receiver / Management PC IP Address" - "Primary".
Enter the IP address of the management PC.

The following screen shows example.



**CHECK:**

- The "LAN2" in "BMC Configuration" screen is displayed only when the managed component's BMC supports communication via LAN2. To communicate with the NEC ESMPRO Manager via LAN2, make the setting on the "LAN2" and "LAN2(Alert)" as same as "LAN1" and "LAN1(Alert)".

(8) If you set "Default Gateway", please connect the managed component via LAN port used by BMC and the gateway to network.
If you set "Alert Receiver / Management PC IP Address" on same network with the managed component, please connect the managed component via LAN port used by BMC and the alert receiver/management PC to network.

(9) Select "Save BMC Configuration" from "BMC Configuration" screen.
The configuration information will be set in the BMC. The MAC addresses of the gateway and the alert receivers will be also set in the BMC.

### 2.2.2 Configuration with NEC EXPRESSBUILDER DOS based with remote console feature (for LAN connection)

NEC EXPRESSBUILDER DOS based with remote console feature can configure the BMC on the managed component with the configuration information FD containing the configuration information.

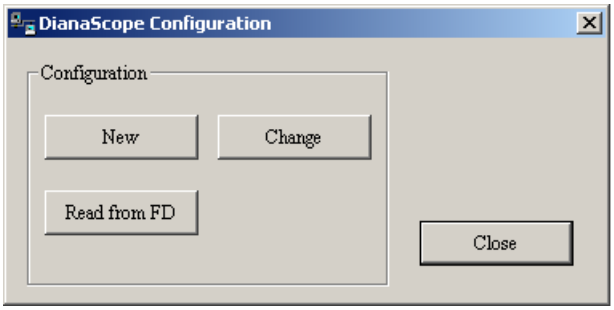
**CHECK:**

- Configuration with NEC EXPRESSBUILDER DOS based with remote console feature is available only from the NEC EXPRESSBUILDER that contains NEC ESMPRO Manager.
  See the user's guide provided with the managed component about NEC EXPRESSBUILDER DOS based with remote console feature.
  If there is the description about NEC EXPRESSBUILDER DOS based with remote console feature, the feature is available.

Perform the following procedure:
(1) Create a configuration information file
(2) Run NEC EXPRESSBUILDER DOS based with remote console feature

#### 2.2.2.1 Create a configuration information file

(1) Start the NEC ESMPRO Manager configuration installed on any PC to create the configuration information file.

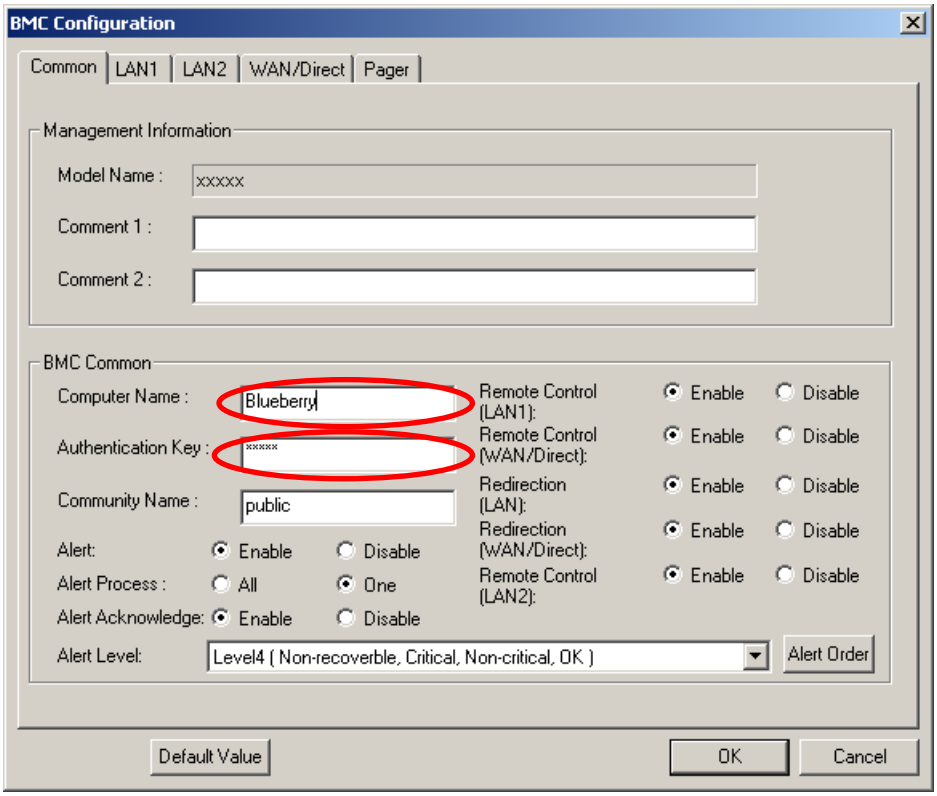



(2) Click "New". The confirming message will be displayed. Click "OK".

(3) The "BMC Configuration" dialog box will appear.
Click "Common" tab page.

Be sure to set the below item. The other items can be used with the default values.
-- "Computer Name"
Enter a unique name for each managed component
-- "Authentication Key"
-- Set "Remote Control (LAN)", "Remote Control (WAN/Direct)", "Redirection (LAN)" and "Redirection (WAN/Direct)" to enable

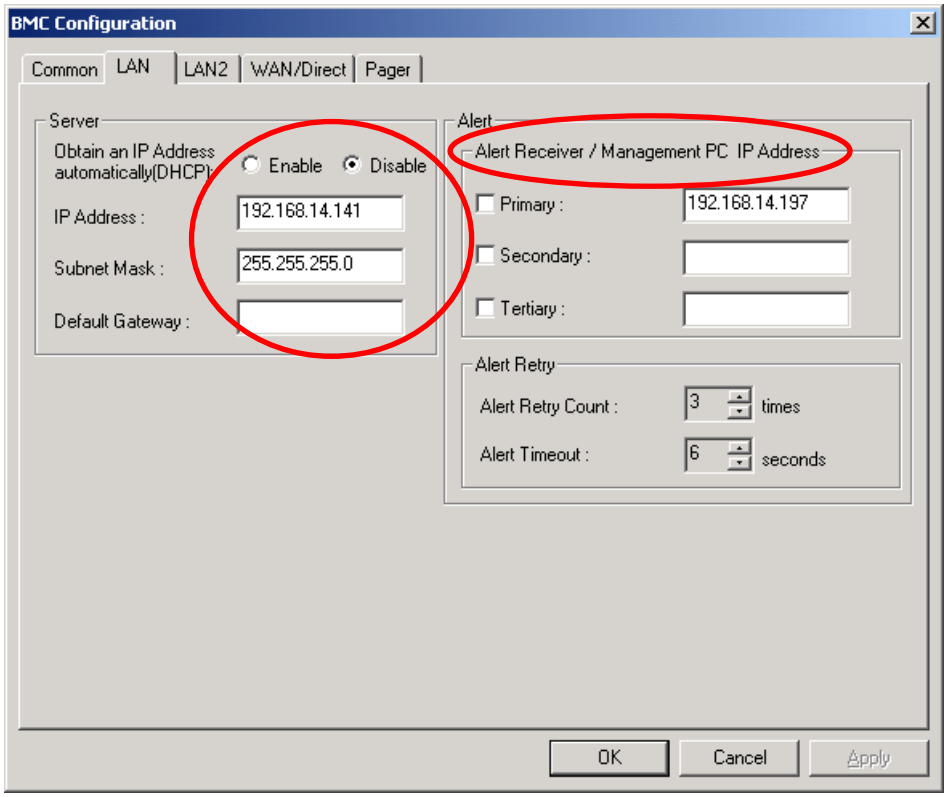
The following screen shows example.



(4) Select "LAN" tab page for LAN port 1 of the BMC.
Set the below items. The other items can be used with the default values.

-- "Obtain an IP Address automatically (DHCP)"
Determine whether to dynamically obtain an IP address from a DHCP server.
If the item is set enable and registered, the BMC set the value obtained from DHCP server on "IP Address", "Subnet Mask" and "Default Gateway".
You can set enable on the item only if the BMC supports this capability.
-- "IP Address"
Case that BMC on the managed component uses Management LAN port; enter the IP address for the Management LAN port.
Case that BMC on the managed component uses a standard LAN port: be sure to make the setting identical to the setting on the operating system of the managed component.
-- "Subnet Mask"
Enter the subnet mask for the IP address.
-- "Default Gateway"
Enter the default gateway if the managed component connects to the management PC via any gateway,
-- "Alert Receiver / Management PC IP Address" - "Primary"
Enter the IP address of the management PC.

The following screen shows example.



**CHECK:**

- To communicate with the NEC ESMPRO Manager via LAN2, make the setting on the "LAN2" tab as same as "LAN" tab. If the BMC of the managed component does not support communication via LAN2, the values of "LAN2" tab page have no effect with the managed component.
  The managed component installed the BMC that uses Management LAN port supports the function of "Obtain an IP Address automatically (DHCP)".

**CHECK:**

- Please set the following items for NEC ESMPRO Manager to receive alerts from the BMC.
  - LAN1 / LAN2
    - Platform Event Filter : Enable
  - Alert Receiver / Management PC IP Address :
    - Primary :
      IP address of the management PC on which NEC ESMPRO Manager is installed.

(5) Insert a formatted floppy disk into the FD drive, and click "OK". A dialog box will appear for specifying a location where the configuration information is to be saved.

(6) Specify the floppy disk's root directory as the location.
Enter "CSL_LESS.CFG" for the file name, and click "OK".

The configuration information file will be saved on the floppy disk. This floppy disk is called a "configuration information FD".

**CHECK:**

- Place the configuration information FD in the write-enable state.

#### 2.2.2.2 Run NEC EXPRESSBUILDER DOS based with remote console feature

(1) If you set "Default Gateway" at creating the configuration information file, please connect the managed component via LAN port used by BMC and the gateway to network.
If you set "Alert Receiver / Management PC IP Address" on same network with the managed component at creating the configuration information file, please connect the managed component via LAN port used by BMC and the alert receiver/management PC to network.

(2) Configure the BMC of the managed component with the configuration information.
Insert the NEC EXPRESSBUILDER CD-ROM into the CD-ROM drive and the "configuration information FD" into the FD drive on the managed component. And then turn on the component.
After NEC EXPRESSBUILDER DOS based with remote console feature is started and the configuration information is loaded from the FD into the managed component. The MAC addresses of the gateway and the alert receivers will be also set in the BMC. And then the Operating System will be rebooted.

**TIPS:**

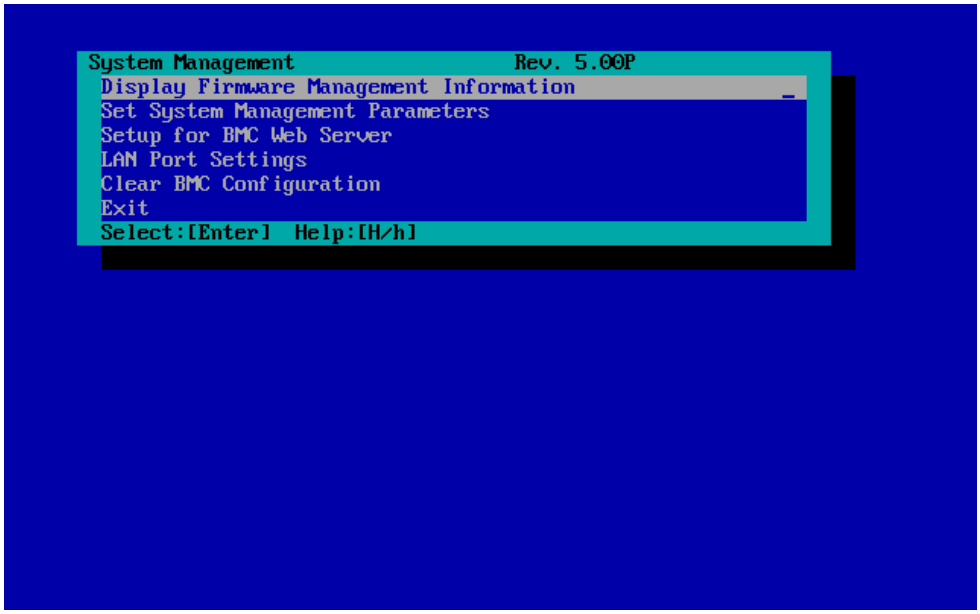
- If the setting in the configuration information file is already configured, the managed component will be not rebooted.
  When the console-less function for LAN connection is used, the BIOS settings are changed as follows:
  Serial Port Address: On Board COM B (only for the managed server supporting SOL)
  Baud Rate: 19.2kbps (only for the managed server supporting SOL)
  Flow Control : RTS/CTS for the managed server supporting SOL
  No Flow for the managed server not supporting SOL
  Terminal Type (Console Type) : PC-ANSI (only for the managed server supporting SOL)
  To check whether that the managed component supports SOL, see Appendix D. Managed Components Summary
  The managed component is opened the main menu of the NEC EXPRESSBUILDER after executing the feature.
  After registering the managed component on the NEC ESMPRO Manager and confirm the remote console for the managed component, remove the NEC EXPRESSBUILDER from the CD-ROM drive if you need.

### 2.2.3 Configuration with NEC EXPRESSBUILDER System Management (for LAN connection)

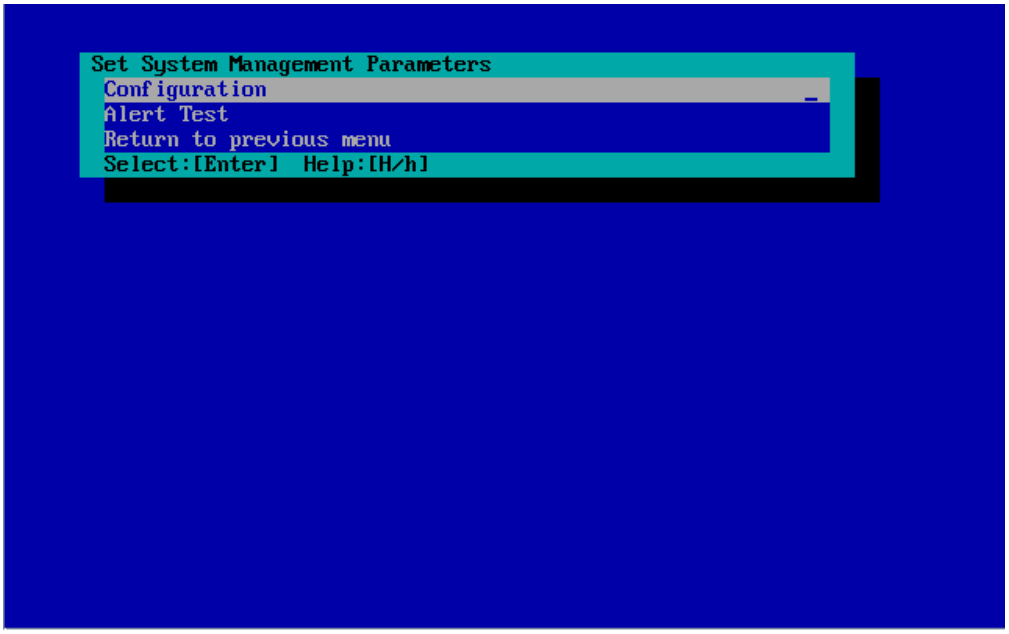
This section explains the configuration procedure using NEC EXPRESSBUILDER System Management.

(1) After booting NEC EXPRESSBUILDER on the managed component, select "System Management" from "TOOL MENU".

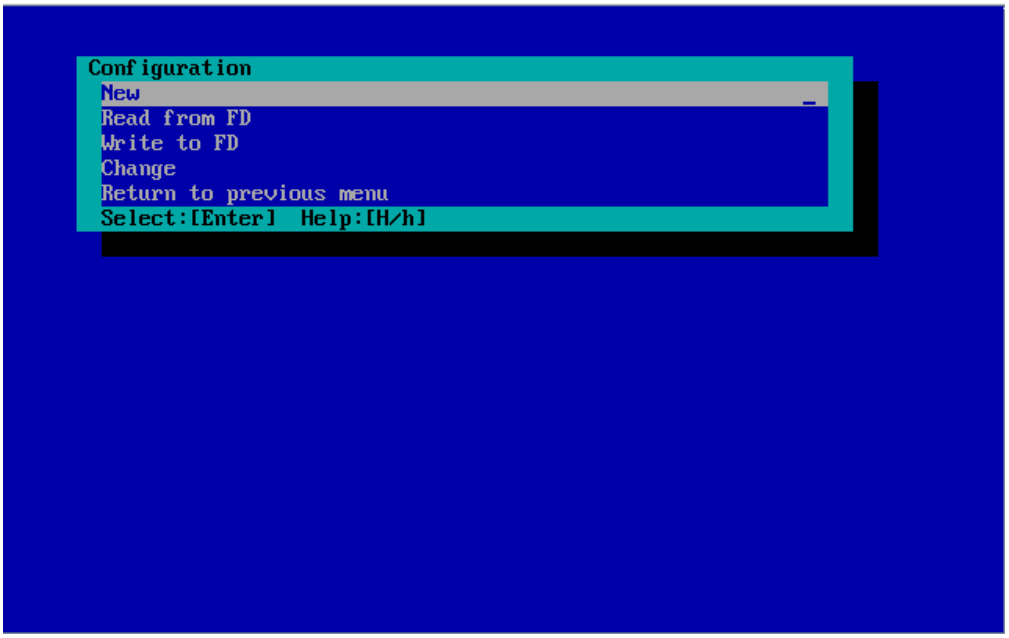
(2) The main screen will be appeared.
Select "System Management".



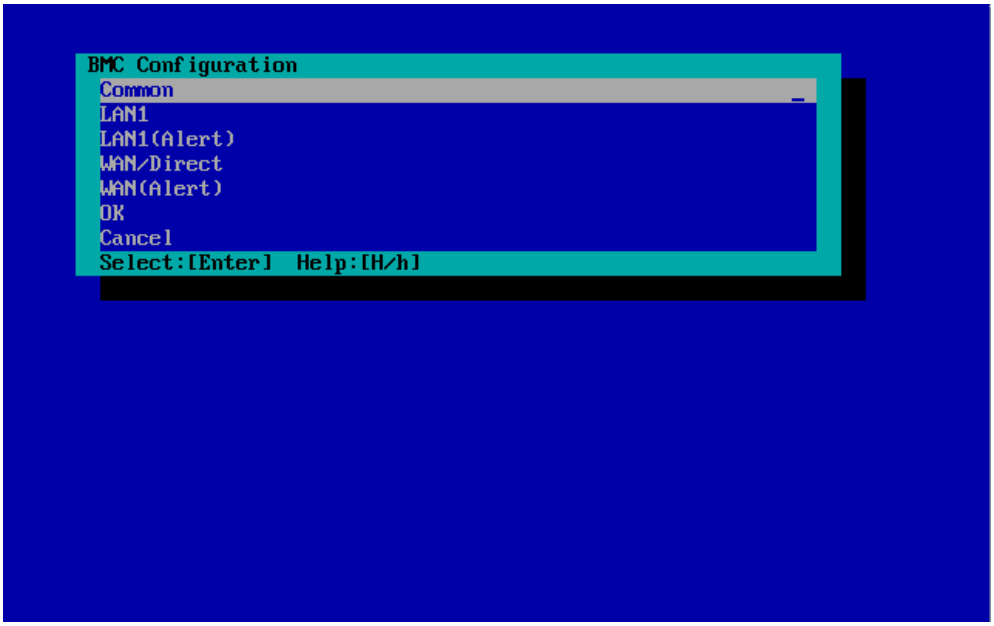
(3) Set System Management Parameters" screen will be displayed.
Select "Configuration".




(4) "Configuration" screen will be displayed.
Select "New".



(5) "BMC Configuration" screen will be displayed.
Select "Common".

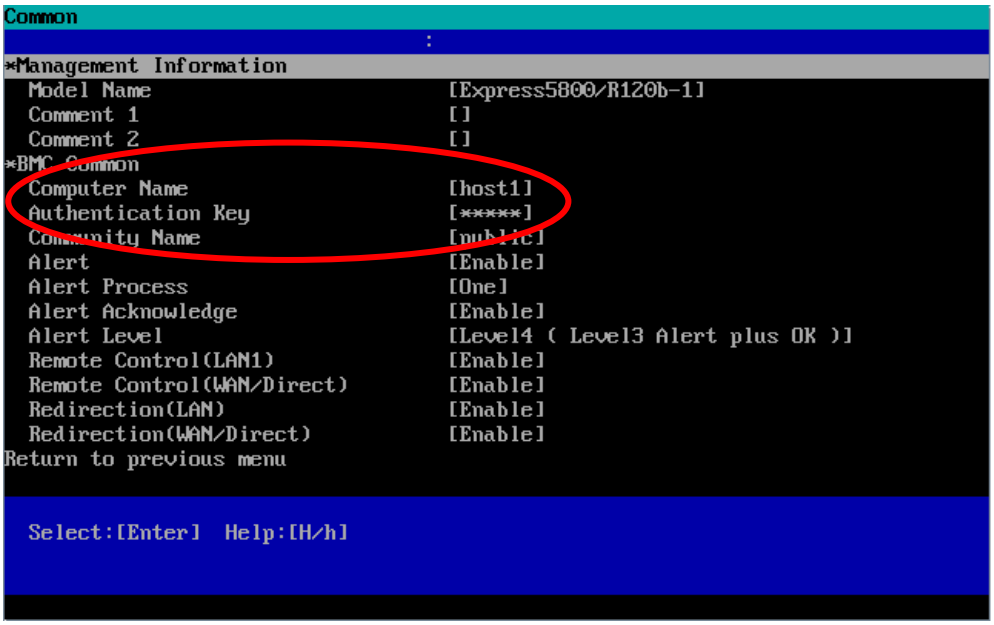



(6) "Common" screen will be displayed.

Be sure to set the below item. The other items can be used with the default values.

-- "Computer Name"
Enter a unique name for each managed server.
-- "Authentication Key"

The following screen shows example.



**TIPS:**

- If a managed server is compatible with SOL and "Enable" is selected for the item "Redirection (LAN)", the following items necessary for the remote console via the LAN will be changed automatically.
  "Common" screen - "Redirection (WAN/Direct)": Enable
  "WAN/Direct" screen - "Flow Control": RTS/CTS

(7) Select "LAN1" from "BMC Configuration" screen.
Set the below items. The other items can be used with the default values.

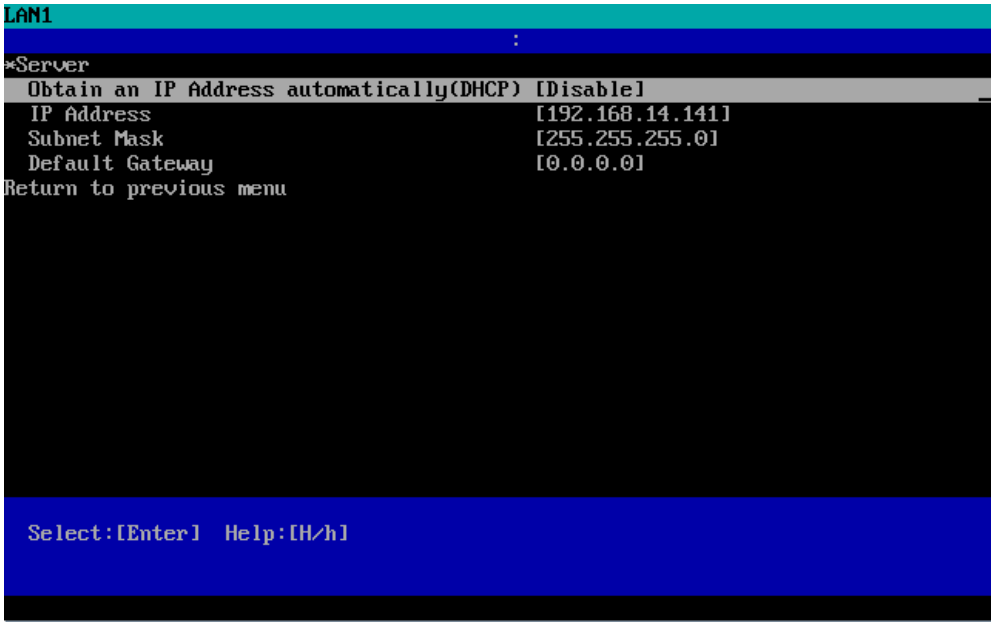
-- "Obtain an IP Address automatically (DHCP)"
Determine whether to dynamically obtain an IP address from a DHCP server.
If the item is set enable and registered, the BMC set the value obtained from DHCP server on "IP Address", "Subnet Mask" and "Default Gateway".
You can set enable on the item only if the BMC supports this capability.

-- "IP Address"
Case that BMC on the managed component uses Management LAN port; enter the IP address for the Management LAN port.
Case that BMC on the managed component uses a standard LAN port; be sure to make the setting identical to the setting on the operating system of the managed component.

-- "Subnet Mask"
Enter the subnet mask for the IP address.

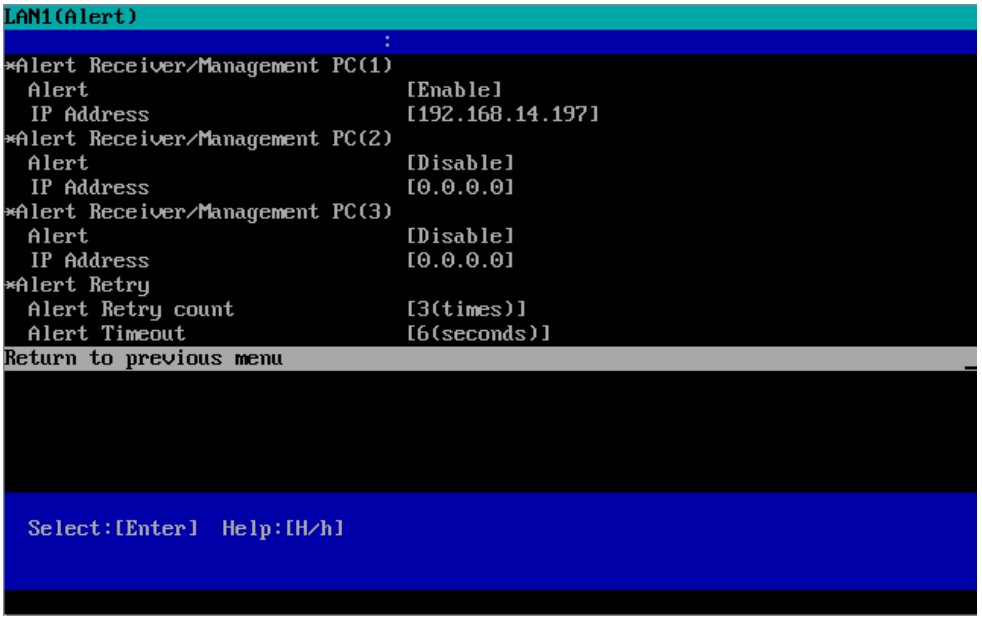
-- "Default Gateway"
Enter the default gateway if the managed component connects to NEC ESMPRO Manager Server via any gateway

The following screen shows example.




-- "Alert Receiver / Management PC(1)".
Enter the IP address of management PC.

The following screen shows example.



**TIPS:**

- The "LAN2" in "BMC Configuration" screen is displayed only when the managed component's BMC supports communication via LAN2. To communicate with the NEC ESMPRO Manager via LAN2, make the setting on the "LAN2" and "LAN2(Alert)" as same as "LAN1" and "LAN1(Alert)".

**CHECK:**

- Please set the following items for NEC ESMPRO Manager to receive alerts from the BMC.
  - LAN1 (Alert) / LAN2 (Alert) :
    - Alert Receiver / Management PC (1) :
      - Alert : Enable
      - IP Address :
        IP address of the management PC on which NEC ESMPRO Manager is installed.

(8) If you set "Default Gateway", please connect the managed component via LAN port used by BMC and the gateway to network.
If you set "Alert Receiver / Management PC IP Address" on same network with the managed component, please connect the managed component via LAN port used by BMC and the alert receiver/management PC to network.

(9) Select "Save BMC Configuration" from "BMC Configuration" screen.
The configuration information will be set in the BMC. The MAC addresses of the gateway and the alert receivers will be also set in the BMC.

## 2.3 Register a managed component on NEC ESMPRO Manager (for LAN connection)

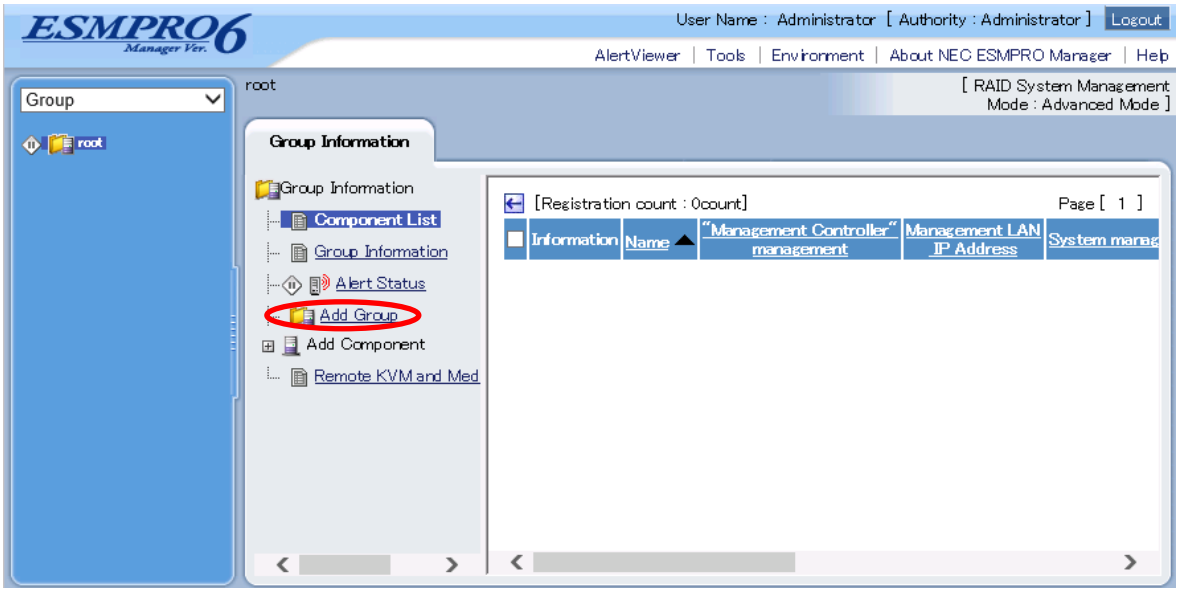
To register the managed component on the NEC ESMPRO Manager, login to the NEC ESMPRO Manager and perform in the following order:

(1) Add the group to which the managed component will belong.

(2) Register a managed component.

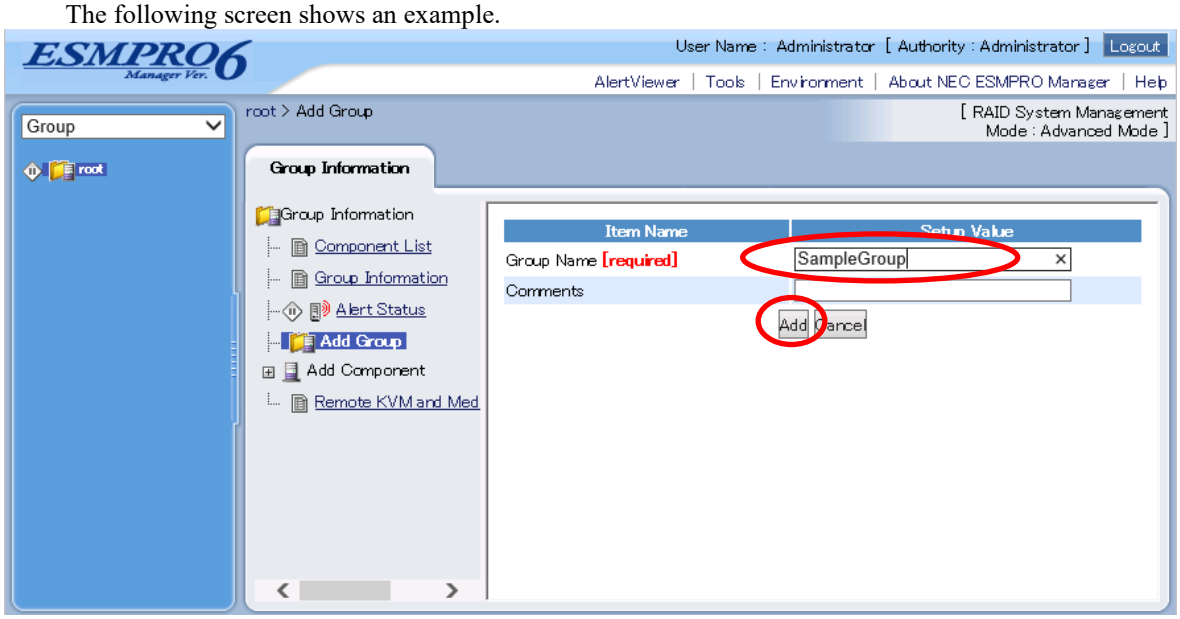
### 2.3.1 Add Group to which the managed component will belong

(1) If you want to register the managed component in the specific group, click "Add Group" on the "Group Information" tab.

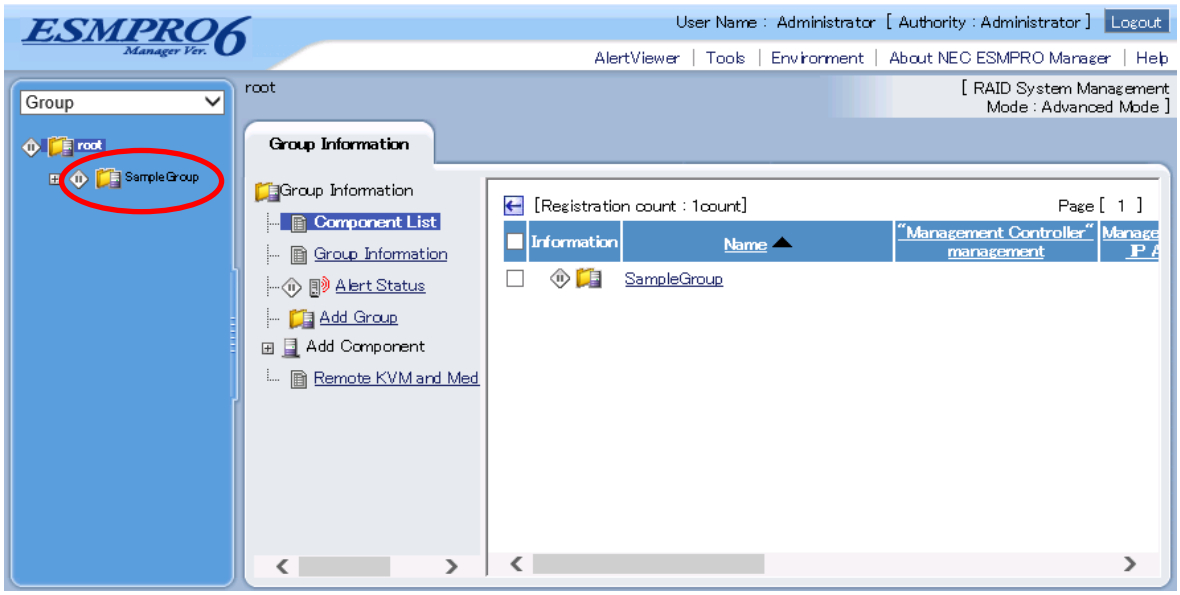


(2) Enter the group name, and click "Add".

The following screen shows an example.




The added group will be displayed on the "Group" tree.



## 2.3.2 Register the Managed Component (for LAN connection)

Use either of the two methods to register the managed component.

**Manual Registration**

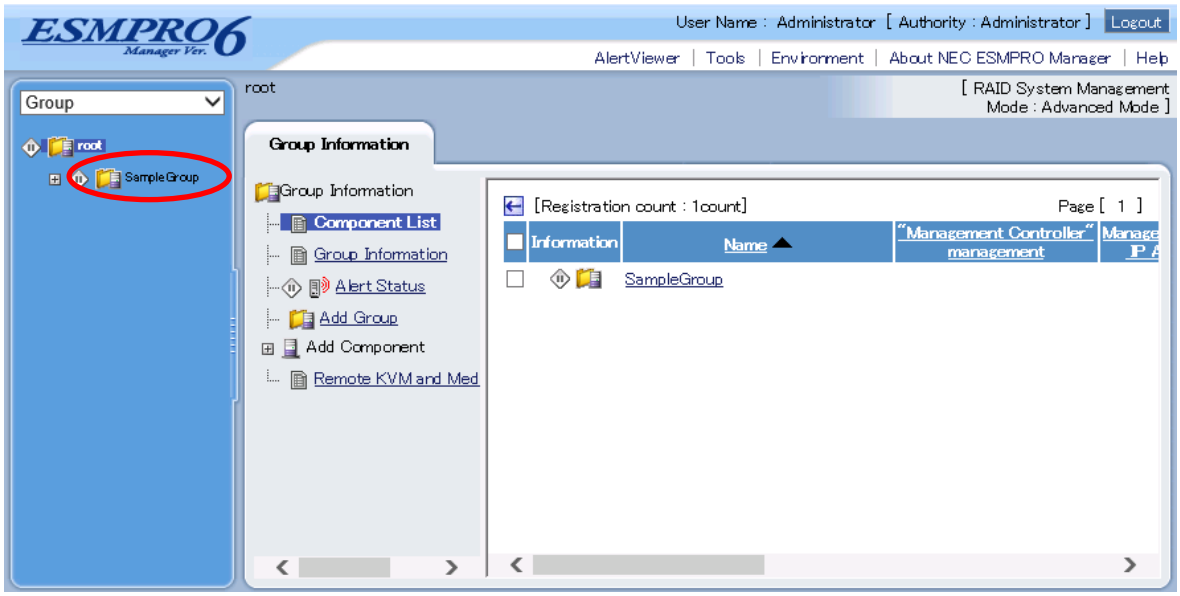
This method requires the operator to directly enter the managed component's information such as the IP address of the BMC and to perform "Check Connection".

**Auto Registration**

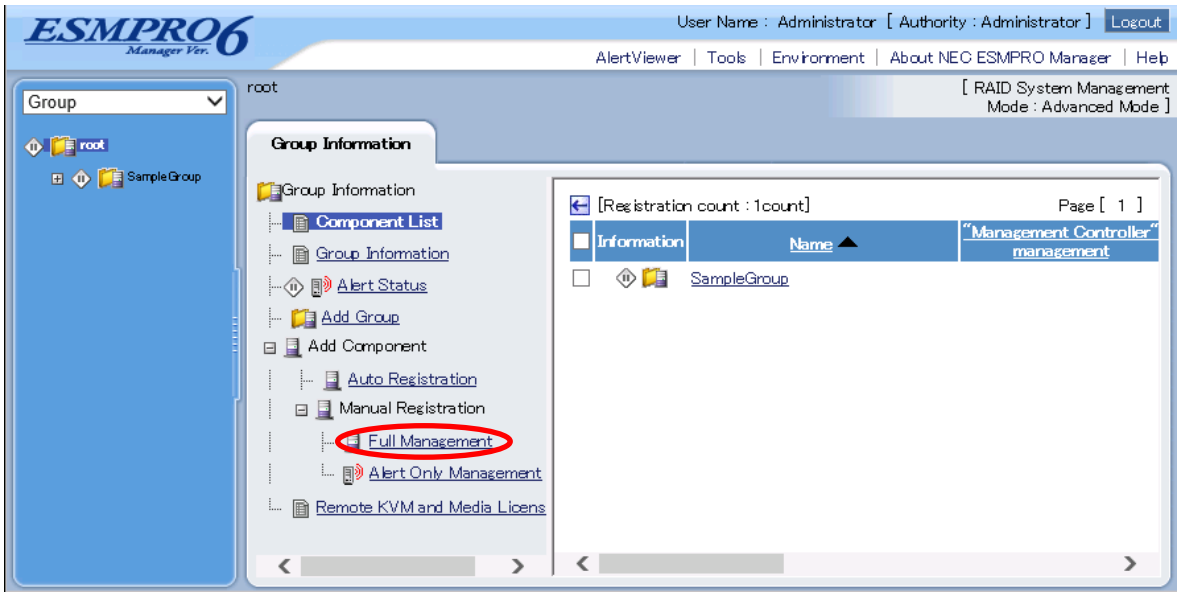
This method automatically searches the network for managed components that are not registered yet on the NEC ESMPRO Manager, and registers the managed components. This method is available only when LAN connection is used.

### 2.3.2.1 Manual Registration

(1) Click the managed component's "Group name".



(2) Click the "Manual Registration"-" Full Management" from "Add Component" of "Group Information" tab.




(3) Input the following items:

| Name | Value |
|---|---|
| Component Name | Specify the name of the managed component on NEC ESMPRO Manager. Assign a name different from other managed component names. Do not enter a name including blank characters. Uppercase characters are distinguished from lowercase characters. |
| Alias | Specify the information about the managed component. Do not enter a name including blank characters. Uppercase characters are distinguished from lowercase characters. |
| Group | Specify the group to which the managed component will belong. |
| Connection Type | Select “LAN”. |
| **Common Setting** | |
| OS IP Address | Specify the OS IP Address of the managed component. |
| **SNMP (NEC ESMPRO Agent) / WS-Man / ESXi** | |
| Management | Select "Registration" to manage the system of the component. |
| Management Type | Select a management type of the managed component.<br>- SNMP *1<br>NEC ESMPRO Agent is installed on the managed component.<br>- WS-Man *1, *2<br>The operating system of the managed component is VMware ESXi7.<br>- ESXi *1, *2<br>The operating system of the managed component is VMware ESXi8. |
| SNMP Community Name(Get) | SNMP Community Name which is specified at SNMP Agent running on the managed component.<br>It is necessary to get the information, configure, monitor via SNMP |
| SNMP Community Name(Set) | When you want to set SNMP Community names for Get and Set separately on the managed component, specify the SNMP Community name for Set in this field by alphanumeric characters.<br>If it is not specified, SNMP Community name for Get will be used. |

| | |
|---|---|
| User Name | Enter the Username/Password for communication with WS-Man or ESXi .<br>- The operating system of the managed component is VMware ESXi.<br>Enter Username/Password of VMware ESXi Administrator |
| Password | |
| Communication Protocol | Select protocol HTTP/HTTPS for connection WS-Man service. *2 |
| Port Number | Enter port number where WS-Man service listens for connection. *3 |
| **RAID system management** | |
| Management | Select "Registration" to manage the RAID system of the component.<br>If the operating system of the managed component is VMware ESXi7, WS-Man management must be enabled in addition to this setting.<br>Select "Unregistration" when the operating system of the managed component is VMware ESXi8. |
| **NEC ExpressUpdate** | |
| Updates via NEC ExpressUpdate Agent | Select "Registration" to manage the component using NEC ExpressUpdate. |
| Updates via Management Controller | Select "Registration" to manage the component using Management Controller |
| **"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (Common)** | |
| Management | Select "Registration" otherwise NEC ESMPRO Manager may not monitor HW status. |
| Management Type | Select "BMC". |
| Authentication Key | Enter the "authentication key" that you set in “1.2 Configure BMC on Managed Component”. |
| **"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (LAN)** | |
| Current IP Address | If you set both “IP Address1” and “IP Address2”, specify which IP address you want to use for connection. |
| Failover | This setting is valid only when both “IP Address1” and “IP Address2” are set. Determine whether to enable/disable the “Failover” feature. |
| IP Address 1 | Enter the IP address that is specified on LAN1 of the BMC configuration for the managed component. |
| Subnet Mask1 *4 | Enter the subnet mask that is specified on LAN1 of the BMC configuration for the managed component. |
| IP Address 2 | Enter the IP address that is specified on LAN2 of the BMC configuration for the managed component. |
| Subnet Mask2 *4 | Enter the subnet mask that is specified on LAN2 of the BMC configuration for the managed component. |

**CHECK:**

- *1 If NEC ESMPRO Manager is installed on Linux system, “SNMP” and VMware ESXi server management are not supported.

**CHECK:**

- *2 If a self-signed certificate is installed on the managed server for HTTPS communication, a setting to allow it is required. Refer to “1.3.1 Environment setting” for detailed information.

**CHECK:**

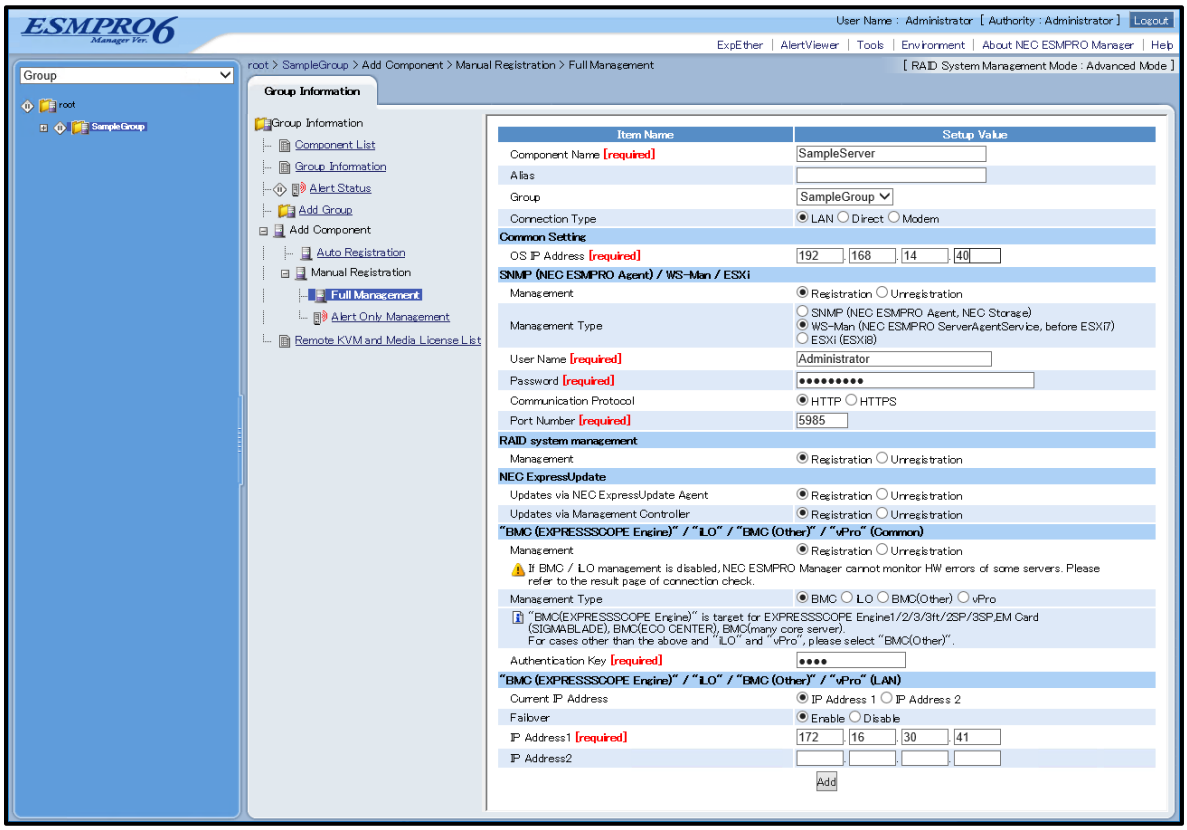
- *3 On “Environment” - “Auto Registration Setting List” screen, you can manage a list of username/password and authentication key. All entries in the list are used for

auto registration every time.

**CHECK:**

- *4 In NEC ESMPRO Manager Ver.6.06 or later, "Subnet Mask1" and "Subnet Mask2" are not displayed.

The following screen shows an example.




(4) Click "Add".

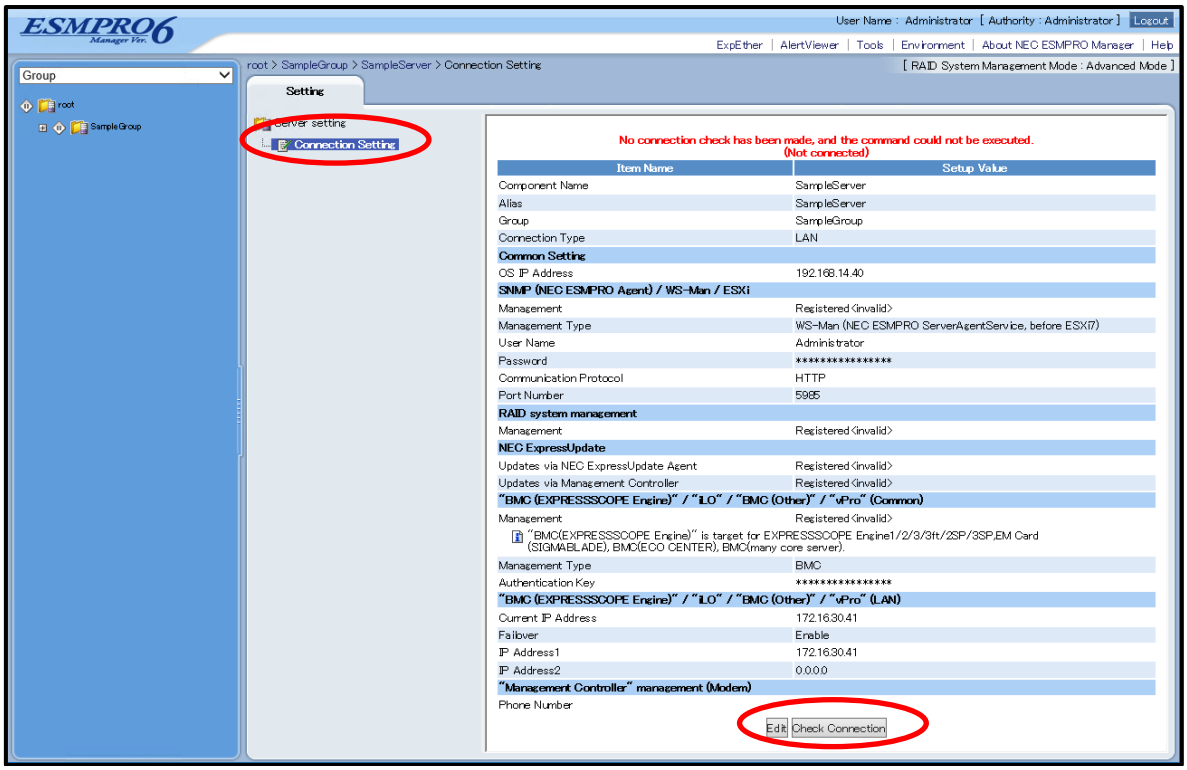
**TIPS:**

- A managed component cannot be controlled remotely by only registering it. Perform a "Check Connection".

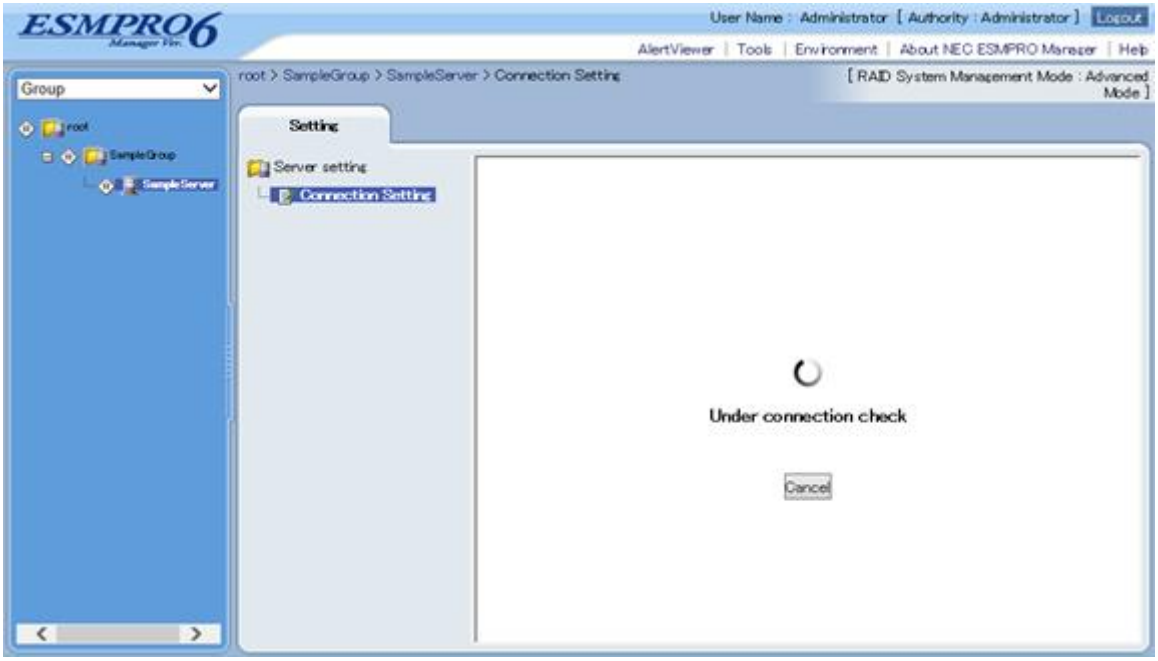
(5) Click "Connection Setting" from "Setting" tab of the managed component.
"Connection Setting" view is displayed.

NEC ESMPRO Manager will execute "Check Connection" and collect the component information for the management.

When the "Check Connection" is completed, the NEC ESMPRO Manager starts to control the managed component.



(6) Click "Check Connection" and following screen will be displayed.



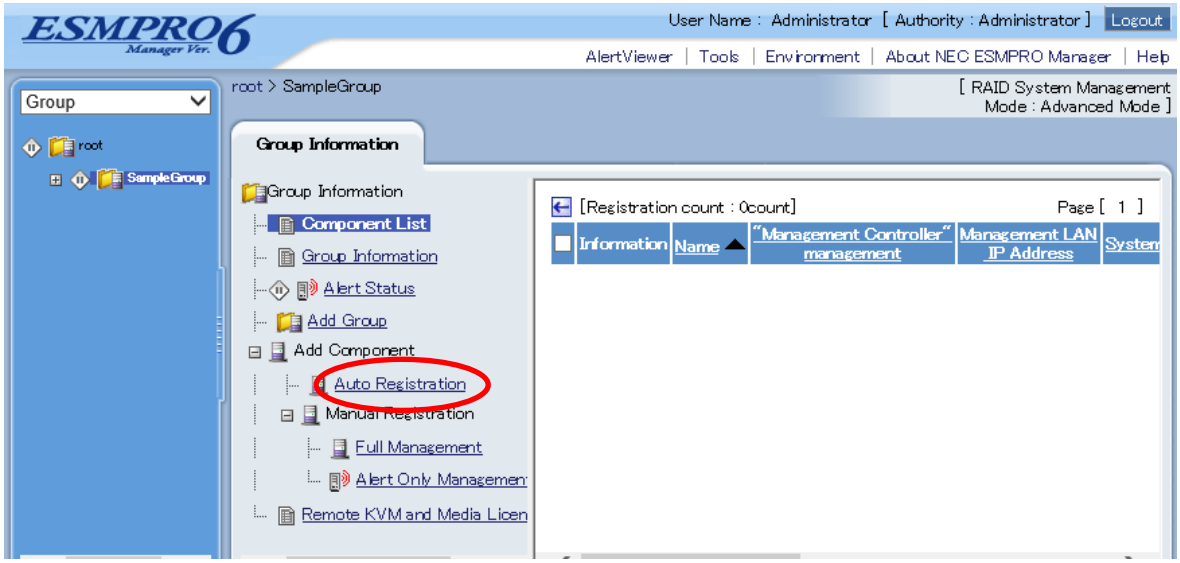

(7) After finishing connection check, “Check Connection Execution Result” screen is shown.

| Detected | Detail |
|---|---|
| Detected | The feature was detected.<br>NEC ESMPRO Manager can use the feature to manage the component. |
| Not Detected | The feature was not detected.<br>NEC ESMPRO Manager cannot use the feature to manage the component.<br>Check parameters corresponding to the feature. |

### 2.3.2.2 Auto Registration

(1) Click the managed component's "Group name" on the "Group" tree.

(2) Click the "Auto Registration" from "Add Component" of "Group Information" tab.




(3) Input the following items:

| Name | Value |
|---|---|
| Destination Group | Specify the group to which the managed component will belong. |
| **Discovery Range** | |
| Discovery Mode | With "IP Address Range Search" selected, the NEC ESMPRO Manager searches for the managed components using the IP address range.<br>With "Network Address Search" selected, the NEC ESMPRO Manager searches for the managed components using the specified network address. |
| Start Address<br>End Address | When you select "IP Address Range Search" for "Search Mode", specify the start IP address and end IP address of the range in which managed components are to be searched for. |
| Network Address<br>Network Mask | When you select "Network Address Search" for "Search Mode", specify the network address and network mask of the managed component to be searched for. |
| **SNMP (NEC ESMPRO Agent)** | |
| Discovery | Select “Enable” to manage the system of the component.*1 |
| SNMP Community Name | SNMP Community Name which is specified at SNMP Agent running on the managed component.<br>It is necessary to get the information, configure, monitor via SNMP |
| **WS-Man** | |
| Discovery | Select “Enable” to manage VMware ESXi7 server of the component. *1,*2 |
| User Name/Password | Enter username and password for WS-Man communication. The account must be a system administrator of the managed operating system.<br>Click “Add” button and you can add a pair of username and password up to 5. *3<br>- The operating system of the managed component is VMware ESXi. |

| | |
|---|---|
| | Enter Username/Password of VMware ESXi Administrator |
| **ESXi** | |
| Discovery | Select “Enable” to manage VMware ESXi8 server of the component. *1,*2 |
| User Name/Password | Enter username and password for ESXi communication. The account must be a system administrator of the managed operating system.<br>Click “Add” button and you can add a pair of username and password up to 5. *3<br>- The operating system of the managed component is VMware ESXi8.<br>Enter Username/Password of VMware ESXi Administrator |
| **RAID system management** | |
| Management | Select "Enable" to manage the RAID system of the component.<br>If the operating system of the managed component is VMware ESXi7, WS-Man management must be enabled in addition to this setting.<br>Select "Disable" when the operating system of the managed component is VMware ESXi8. |
| **NEC ExpressUpdate** | |
| Updates via NEC ExpressUpdate Agent | Select "Enable" to manage the component using NEC ExpressUpdate. |
| **BMC (EXPRESSSCOPE Engine)** | |
| Discovery | Select "Enable" otherwise NEC ESMPRO Manager may not monitor HW status. |
| Features NEC ExpressUpdate | Select "Enable" to feature NEC ExpressUpdate. |
| Authentication Key | Enter the "authentication key" that you set in “1.2 Configure BMC on Managed Component”. *3 |
| **iLO** | |
| Discovery | When you discover components which have BMC excluding EXPRESSSCOPE Engine3, this item should be “Disable”. |
| **BMC (Other)** | |
| Discovery | When you discover components which have BMC excluding EXPRESSSCOPE Engine3, this item should be “Disable”. |
| **Intel(R) vPro(TM) Technology** | |
| Discovery | When you discover components which have BMC excluding EXPRESSSCOPE Engine3, this item should be “Disable”. |

**CHECK:**

- *1 If NEC ESMPRO Manager is installed on Linux system, “SNMP” and VMware ESXi management are not supported.

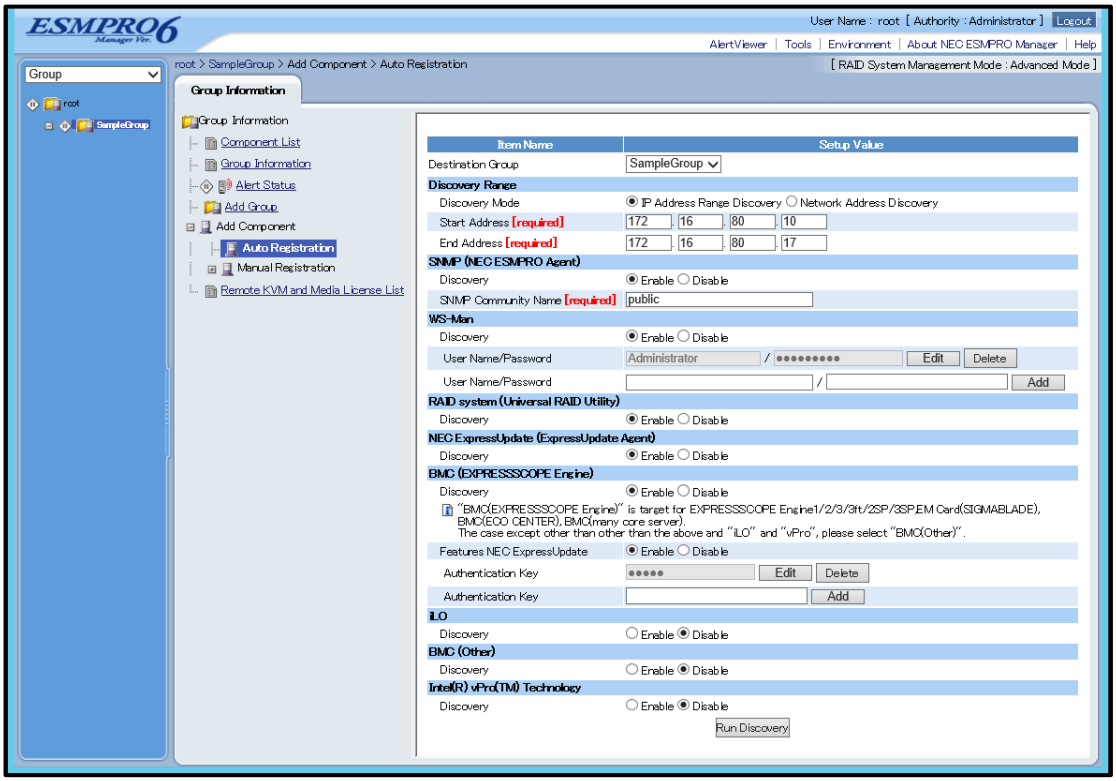
**CHECK:**

- *2 If a self-signed certificate is installed on the managed server for HTTPS communication, a setting to allow it is required. Refer to “1.3.1 Environment setting” for detailed information.

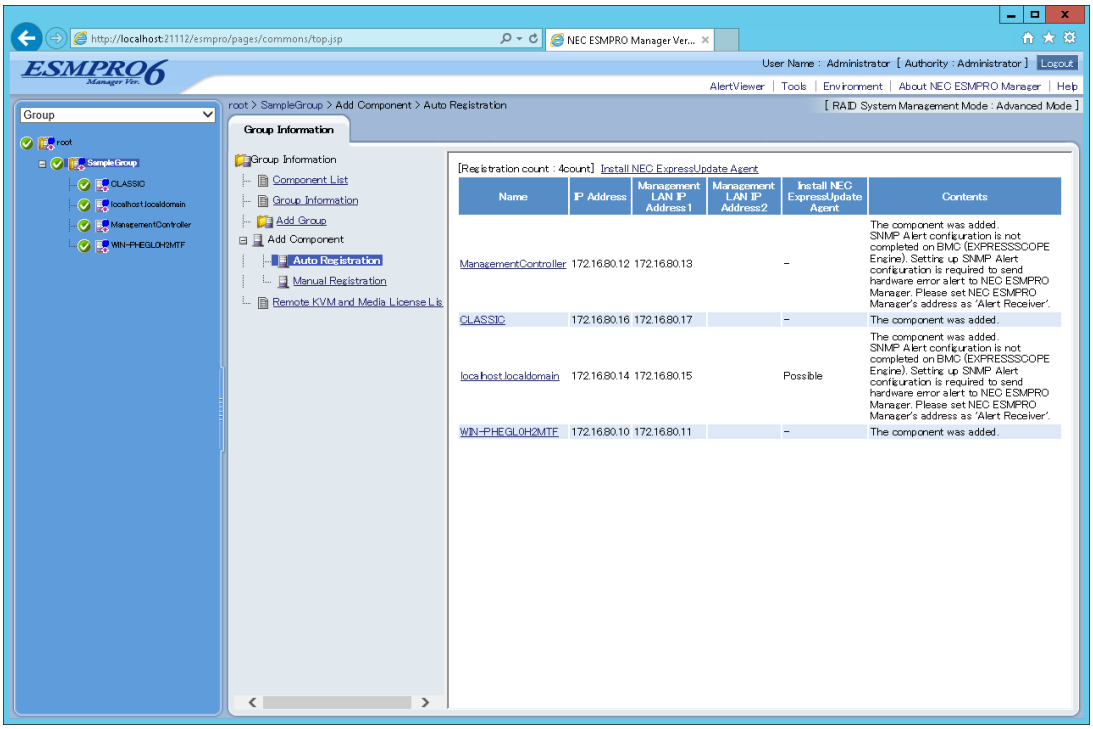
**CHECK:**

- *3 On “Environment” - “Auto Registration Setting List” screen, you can manage a list of username/password and authentication key. All entries in the list are used for auto registration every time.

(4) Click "Search" and then the search for the managed components will start.
The following screen is an example display with "IP Address Range Search" selected.



(5) When the "Auto Registration" is completed, the NEC ESMPRO Manager starts to control the managed component.




**TIPS:**

- When the managed component is registered by auto registration, but the system management for the managed component cannot be registered, the "Component Name" of the managed component is set to the "ManagementController + number".
- You can change the component name on "Component setting" - "Connection Setting".

# Chapter3 Setup for Managed Component in which a BMC excluding EXPRESSSCOPE Engine 3 is integrated (for modem / direct connection)

This chapter explains the setup procedure for the NEC ESMPRO Manager to manage the BMC on a managed component remotely via modem / direct connection.
Case of direct connection is explained on the center.

## 3.1 Setup Flow (for modem/direct connection)

Perform the following setup procedure:

(1) Connect the NEC ESMPRO Manager server and the managed component on the same on the network.
With direct connection, connect the NEC ESMPRO Manager server and the managed component directly with RS-232C cross cable. The serial port of the NEC ESMPRO Manager server NEC ESMPRO Manager is specified on the "Environment" screen of the NEC ESMPRO Manager.

(2) Configure the BMC on the managed component.

(3) Register the managed component on the NEC ESMPRO Manager.

## 3.2 Configure BMC on Managed Component (for modem/direct connection)

Configure BMC of the managed component at first.

**TIPS:**

- This section explains about the minimum setting that is necessary for connection the NEC ESMPRO Manager with the managed component. For details of BMC configuration, see document each tool.

There are two methods for configuring the BMC on a managed component for modem / direct connection.

**Configuration with NEC ESMPRO Agent Extension, NEC DianaScope Agent or "System Management" tool of NEC EXPRESSBUILDER CD-ROM**

This section explains the configuration procedure using the NEC ESMPRO Agent Extension for Windows.

**CHECK:**

- There are other BMC configuration tools, but do not use the following tools for setup with NEC ESMPRO Manager.
  -- NEC MWA Agent
  -- "System management" started from NEC EXPRESSBUILDER that does not contain NEC ESMPRO Manager.

**Configuration with NEC EXPRESSBUILDER DOS based with remote console feature.**

NEC EXPRESSBUILDER DOS based with remote console feature is to configure the BMC on the managed component when a keyboard is not connected. This method cannot use for modem connection.

**CHECK:**

- Configuration with NEC EXPRESSBUILDER DOS based with remote console feature can be available only from the NEC EXPRESSBUILDER that contains NEC ESMPRO Manager.
  See the user's guide provided with the managed component about NEC EXPRESSBUILDER DOS based with remote console feature.
  If there is the description about NEC EXPRESSBUILDER DOS based with remote console feature, the feature is available.

### 3.2.1 Configuration with NEC ESMPRO Agent Extension (for modem/direct connection)

This section explains the configuration procedure using the NEC ESMPRO Agent Extension for Windows.

(1) After booting Windows on the managed component, click Windows "start" and start the BMC configuration function of NEC ESMPRO Agent Extension.

(2) The main dialog box will be appeared.
Click "New". When a confirmation message is displayed, click "OK".

(3) "BMC Configuration" dialog box will be display. Confirm "Common"
Click "Common" tab page.

Be sure to set the below item. The other items can be used with the default values.
-- "Computer Name"
Enter a unique name for each managed component.
-- "Authentication Key"

(4) Select "WAN/Direct" tab page for LAN port 1 of the BMC.
Be sure to set the below items. The other items can be used with the default values.

-- "Serial Port Mode"
Select "Direct" for direct connection.
Select "WAN (modem)" for modem connection.
-- "Flow Control"
Select "RTS/CTS"

(5) Click "Register".
The configuration information will be set in the BMC.

### 3.2.2 Configuration with NEC EXPRESSBUILDER DOS based with remote console feature (for modem/direct connection)

NEC EXPRESSBUILDER DOS based with remote console feature can configure the BMC on the managed component with the configuration information FD containing the configuration information. This section explains for direct connection.

**CHECK:**

- Configuration with NEC EXPRESSBUILDER DOS based with remote console feature can be available only from the NEC EXPRESSBUILDER that contains NEC ESMPRO Manager.
  See the user's guide provided with the managed component about NEC EXPRESSBUILDER DOS based with remote console feature.
  If there is the description about NEC EXPRESSBUILDER DOS based with remote console feature, the feature is available.

Perform the following procedure:
(1) Creates a configuration information file

(2) Run NEC EXPRESSBUILDER DOS based with remote console feature

#### 3.2.2.1 Creates a configuration information file

(1) Start the NEC ESMPRO BMC configuration installed on any PC to create the configuration information file.

(2) Click "New". The confirming message will be displayed. Click "OK".

(3) The "BMC Configuration" dialog box will appear.
Click "Common" tab page.

Be sure to set the below item. The other items can be used with the default values.
-- "Computer Name"
Enter a unique name for each managed component.
-- "Authentication Key"
-- Set "Remote Control (WAN/Direct)" and "Redirection (WAN/Direct)" to enable.

(4) Select "WAN/Direct" tab page.

Be sure to set the below items. The other items can be used with the default values.
-- "Serial Port Mode"
Select "Direct" for direct connection.
Select "WAN (modem)" for modem connection.
-- "Flow Control"
Select "RTS/CTS"

(5) Insert a formatted floppy disk into the FD drive, and click "OK". A dialog box will appear for specifying a location where the configuration information is to be saved.

(6) Specify the floppy disk's root directory as the location.
Enter "CSL_LESS.CFG" for the file name, and click "OK".

The configuration information file will be saved on the floppy disk. This floppy disk is called a "configuration information FD".

**CHECK:**

- Place the configuration information FD in the write-enable state

### 3.2.2.2 Run NEC EXPRESSBUILDER DOS based with remote console feature

(1) Configure the BMC of the managed component with the configuration information.
Insert the NEC EXPRESSBUILDER CD-ROM into the CD-ROM drive and the "configuration information FD" into the FD drive on the managed component. And then turn on the component.

After NEC EXPRESSBUILDER DOS based with remote console feature is started and the configuration information is loaded from the FD into the managed component, the Operating System will be rebooted.

**TIPS:**

- If the setting in the configuration information file is already configured, the managed component will be not rebooted.
  When the console-less function for direct connection is used, the BIOS settings are changed as follows:
  Serial Port Address: On Board COM B
  Baud Rate: 19.2kbps
  Flow Control: RTS/CTS for the managed server supporting SOL
  No Flow for the managed server not supporting SOL
  Terminal Type (Console Type) : PC-ANSI
  To check whether that the managed server supports SOL, see "Appendix D. Managed Components Summary"
  The managed component is still opened the main menu of the NEC EXPRESSBUILDER after executing the feature.
  After registering the managed component on the NEC ESMPRO Manager and confirm the remote console for the managed component, remove the NEC EXPRESSBUILDER from the CD-ROM drive if you need.

## 3.3 Register the managed component on NEC ESMPRO Manager (for modem/direct connection)

Register the managed component on the NEC ESMPRO Manager, perform the "Check Connection".
Login to the NEC ESMPRO Manager and perform the following:

(1) Add the group to which the managed component will belong.

(2) Register a managed component.

### 3.3.1 Add Group to which the managed component will belong

See 2.3.1"Add Group to which the managed component will belong".

### 3.3.2 Register the Managed Component (for modem/direct connection)

(1) Click the managed component's "Group name" on the "Group" tree.

(2) Click "Manual Registration"-" Full Management" of "Add Component" on the "Group Information" tab.

(3) Input the following items:

| Name | Value |
|---|---|
| Component Name | Specify the name of the managed component on NEC ESMPRO Manager. Assign a name different from other managed component names. Do not enter a name including blank characters. Uppercase characters are distinguished from lowercase characters. |
| Alias | Specify the information about the managed component. Do not enter a name including blank characters. Uppercase characters are distinguished from lowercase characters. |
| Group | Specify the group to which the managed component will belong. |
| Connection Type | Select "Direct" for direct connection. Select "Modem" for modem connection. |
| **"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (Common)** | |
| Authentication Key | Enter the "authentication key" that you set in “1.2 Configure BMC on Managed Component”. |
| **“Management Controller” management (Modem)** | |
| Phone Number | If you select “Modem”, enter phone number. |

**TIPS:**
- For details of other items, see the NEC ESMPRO Manager online help.

(4) Click "Add".

**TIPS:**
- A managed component cannot be controlled remotely by only registering it.

(5) Click "Connection Setting" from "Setting" tab and click "Connection".

(6) Click "Check Connection".

NEC ESMPRO Manager will communicate with the BMC of the managed component to check the connection. The NEC ESMPRO Manager will also collect the component information for the

management.

When the "Check Connection" is completed, the NEC ESMPRO Manager starts to control the managed component.

| Detected | Detail |
|---|---|
| Detected | The feature was detected.<br>NEC ESMPRO Manager can use the feature to manage the component. |
| Not Detected | The feature was not detected.<br>NEC ESMPRO Manager cannot use the feature to manage the component.<br>Check parameters corresponding to the feature. |

**CHECK:**

- After the operation for the managed component is finished, click "Disconnect" on the "Connection Setting".

# Chapter4 Setup for Managed Component in which iLO is integrated

This chapter explains the setup procedure for the NEC ESMPRO Manager to manage the iLO component.

## 4.1 Setup Flow

Setup by the following setup procedure:

(1) Connect the management PC on which NEC ESMPRO Manager is installed and the managed component on the same network.

(2) Configure iLO on the managed component.

(3) Register the managed component on NEC ESMPRO Manager.

## 4.2 Configure iLO on Managed Component

### 4.2.1 SNMP Settings

This section explains about the setup procedure for NEC ESMPRO Manager to receive SNMP alerts from iLO.

**CHECK:**

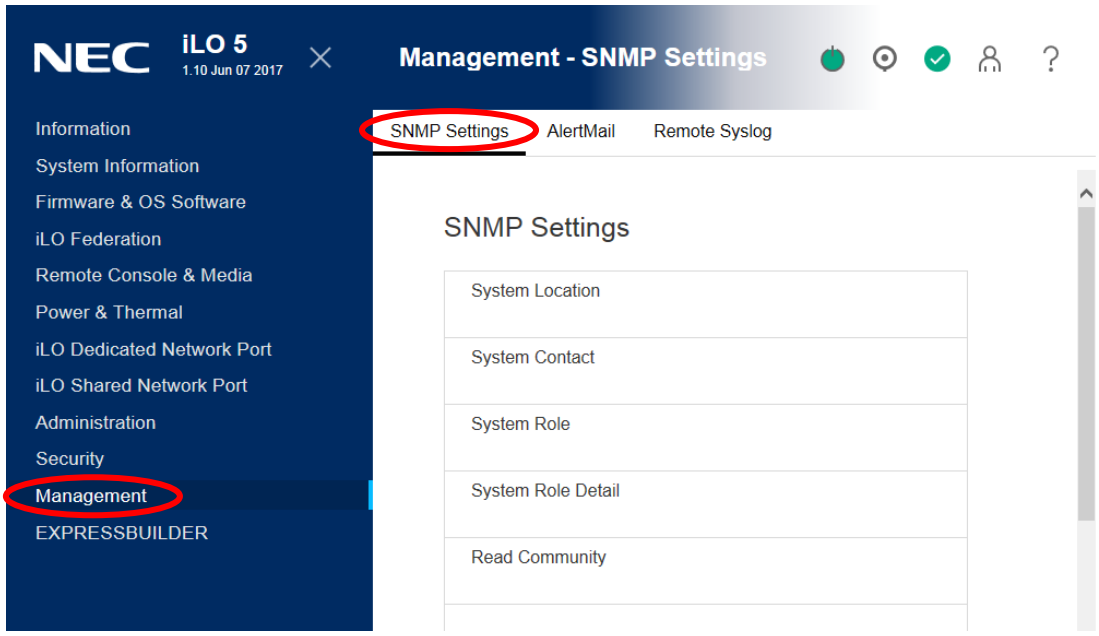
- Because this section uses iLO WebConsole, you need to set the network of iLO beforehand. Please see the user's guide of the managed component about the network setting of iLO.

(1) After starting a web browser on the management PC, input URL as below.

In the case that the IP address of iLO is 192.168.1.1 and the setting of HTTPS is enable.

```
https://192.168.1.1/
```

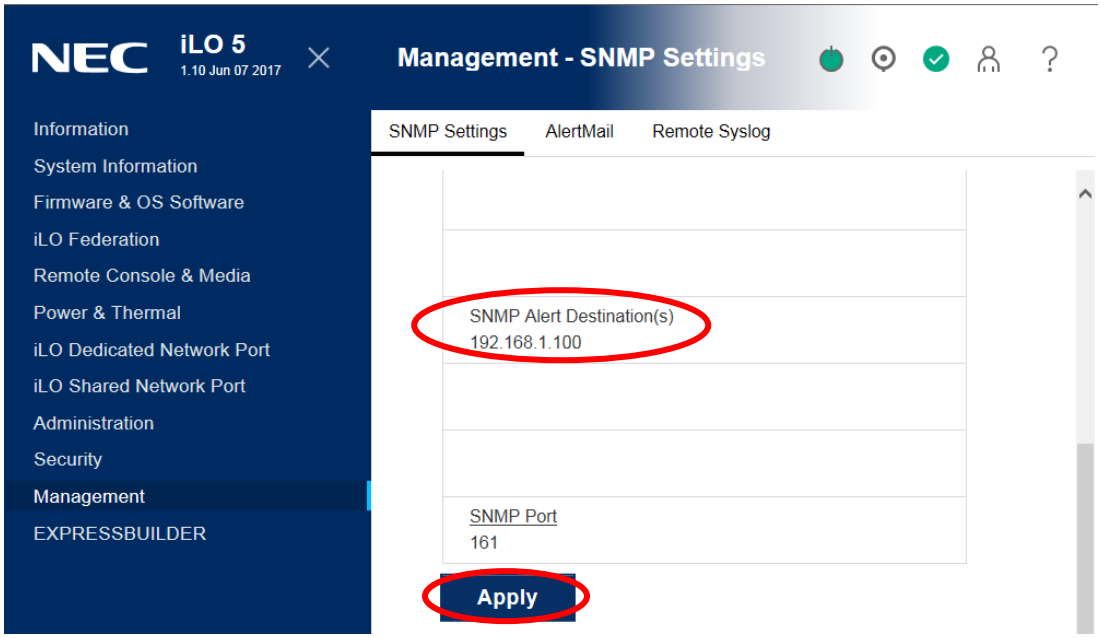
(2) A login screen of iLO will be displayed.
After login to the iLO, Select "Management" - "SNMP Settings" at the WebConsole menu.
The following screen shows example.




(3) Set IP address of the management PC on which NEC ESMPRO Manager is installed in the following order.

-- If iLO5 firmware version is less than 1.20, set a following value and select “Apply” button.
“SNMP Alert Destination(s)” : IP address of the management PC on which NEC ESMPRO Manager is installed.

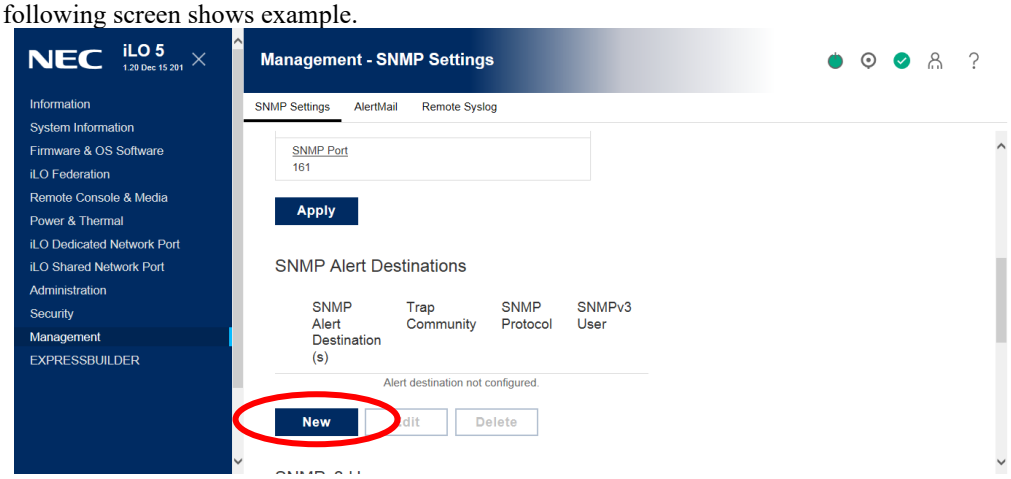
The following screen shows example.

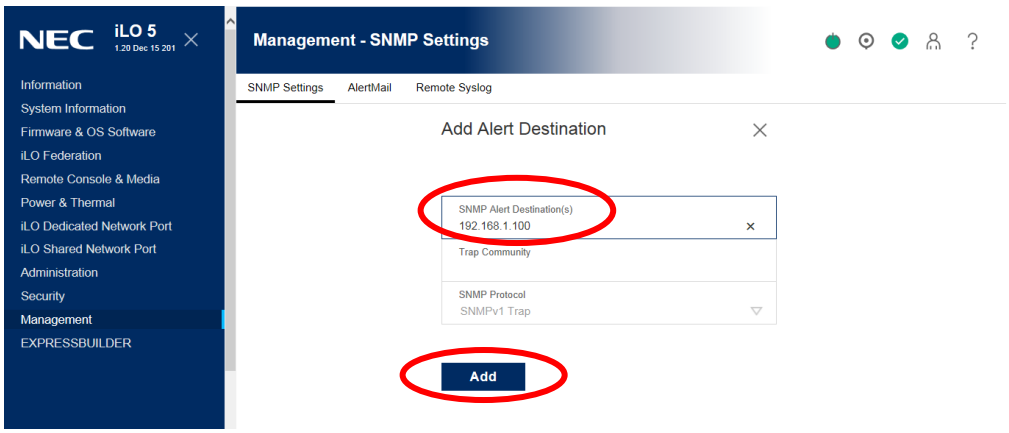



-- If iLO5 firmware version is 1.20 or later, select “New” button of “SNMP Alert Destinations”. And set a following value and select “Add” button.

“SNMP Alert Destination(s)” : IP address of the management PC on which NEC ESMPRO Manager is installed.

The following screen shows example.



### 4.2.2 NEC SSO Settings

This section explains about the setup procedure for NEC ESMPRO Manager to login iLO WebConsole with Single Sign-On.

Regarding Single Sign-On settings of iLO, the following trust mode is supported.

Single Sign-On Trust Mode options

- Trust None (SSO disabled) (default) —Rejects all SSO connection requests.
- Trust by Certificate (most secure)—Enables SSO connections from an NEC SSO-compliant application by matching a certificate previously imported to iLO.
- Trust by Name—Enables SSO connections from an NEC SSO-compliant application by matching a directly imported IP address or DNS name.
- Trust All (least secure)—Accepts any SSO connection initiated from any NEC SSO-compliant application.

In order to enable NEC SSO feature, the different procedure is required for each mode. Refer to below.

**CHECK:**

- If "Trust None" is configured, when you click "Login to iLO" on NEC ESMPRO Manager, you only browses iLO Top page and login step is required.
- Because this section uses iLO WebConsole, you need to set the network of iLO beforehand. Please see the user's guide of the managed component about the network setting of iLO.

#### 4.2.2.1 The procedure for Trust by Certificate

(1) When you configure "Trust by Certificate" mode, it is necessary to install certificate. Suppose the following for each options when generating it.

| Options | Description | Sample for settings |
|---|---|---|
| alias | Alias specifies key or Certificate entries stored in keystore file. | esmpro_ilosso |
| storepass | Password to access keystore. | secret |
| validity | Validity of the certificate. The unit is 'day'. | 365 |
| keystore | Location of keystore. | C:¥Users¥Administrator¥.keystore |

(2) Open command prompt on the management PC and change directory as follows:
<NEC ESMPRO Manager install folder>¥ESMWEB¥java¥r1¥bin

Example)

```
cd C:¥Program Files¥ESMPRO¥ESMWEB¥java¥r1¥bin
```

(3) Execute following command to generate a key.

keytool -genkeypair -keysize 2048 -keyalg RSA -sigalg SHA384withRSA -alias {alias value in step(1)} -storepass {storepass value in step(1)} -validity {validity value in step(1)} –keystore {key store value in step (1)}

Example)

```
keytool -genkeypair -keysize 2048 -keyalg RSA -sigalg SHA384withRSA -alias
esmpro_ilosso -storepass secret -validity 365 -keystore C:¥Users¥Administrator¥.keystore
```

(4) After command in step (3), some inputs are required as follows:

```
Enter keystore password ********
What is your first and last name?(*1)
  [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): (*2)
```

(*1) You can enter host name or IP address for "first and last name".
(*2) Press Enter in order to enter same password as keystore password.

(5) Confirm if keystore is generated in location of step (1).

(6) In order to convert a keystore to PEM format, execute the following command. If password is required, input storepass value in step (1).

keytool -exportcert -keystore {keystore value in step(1)} -alias {alias value in step(1)} -rfc > {location of output file}

Example)

```
keytool -exportcert -keystore C:¥Users¥Administrator¥.keystore -alias esmpro_ilosso
-rfc > C:¥Users¥Administrator¥test.pem
```

(7) Confirm if Certificate in PEM format is generated in location of step (6).

Example of PEM data)

```
-----BEGIN CERTIFICATE-----
MIIDaTCCAlGgAwIBAgIEZqpiaTANBgkqhkiG9w0BAQwFADBIMQswCQYDVQQGEwJK
UDEQMA4GA1UECBMHVW5rbm93bjEQMA4GA1UEBxMHVW5rbm93bjEQMA4GA1UEChMH
VW5rbm93bjEQMA4GA1UECxMHVW5rbm93bjEQMAwGA1UEAxMFZHVtbXkwHhcNMTgw
OTEyMDcxMzM0WhcNMjgwOTA5MDcxMzM0WjBIMQswCQYDVQQGEwJKUDEQMA4GA1UE
CBMHVW5rbm93bjEQMA4GA1UEBxMHVW5rbm93bjEQMA4GA1UEChMHVW5rbm93bjEQ
MA4GA1UECxMHVW5rbm93bjEQMAwGA1UEAxMFZHVtbXkwggEiMA0GCSqGSIb3DQEB
AQUAA4IBDwAwggEKAoIBAQDuoz6D+q0OIInDCEpIhP+EjQDQzPPwPoB4/tAQst/S
jOsjR2r8r7rm7Sn0zBL9VPaqjeSBCqd5YthHAgwN/J6GKeRsbPCVFwCWH9RmmvhM
WrETCLXe663KTAMIC4jZyjCrHvIyIOpyBxu6/CDRPs4FFvOLZKYdkaVwyRCpXbsI
ENvdUdHX3v9A8niii1rZQvTmIcMN5Xd+8Anb5m8XJZJDV+8BpnBdhBQKUeU9/WkX0
LsksB/xNSz+ac5qTK2pGazBxQueFWc7wNXpj/heBvI8k+RmpKTJVa6OOVt+I+b+S
9LQUfddavmj7Dh4IGyG4UYr7gXIs/3RyBuY/H16HnOVnAgMBAAGjITAfMB0GA1Ud
DgQWBBTT9z1swVwNOCre+ygmTtT9xgysqTANBgkqhkiG9w0BAQwFAAOCAQEAbQ8C
7CVOvFFkKt1jQd6CWDg99FSoL9vFIthn4Ax8nDmR3Tt400cSLDmPVM16ya12AtNN
3Yfu2zt3kfxehkJAwNGyQzAqNFDTF6fkNjenBp5oJWWBQ11QmpgZsxFmo3iSJj+Y
GgM/AD5jxmnsVxKx2uM7CN9igKK6U5c0vRzrUZAPwduIYS68hNWqGFJKjN+vPg+L
Z0tpq2Kbb040KRF4INoo4tapayY0fV0/I6iyKtgVVTLfugXrDE3uiWsX+wDvcKJ8
2ZhclJF1kscnDhRm9Rehv8LmVifAObMLRI4IAtrwTw0TBeU3mUV4r4GGzbbAcq9A
eAh7MNU4BvN4HPT3iw==
-----END CERTIFICATE-----
```

(8) Open "ilosso.properties" in the following location with text editor on the management PC.

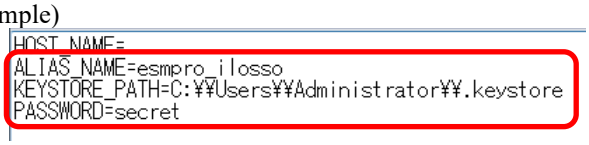
Location of "ilosso.properties":
<NEC ESMPRO Manager install folder>¥ESMWEB¥wbserver¥webapps¥esmpro¥WEB-INF¥service¥iLOSSO

**CHECK:**
- When you open "ilosso.properties" with text editor, select UTF-8 encoding without BOM.

(9) Update the value of the following properites.

| Property Name | Value | Sample for property |
|---|---|---|
| ALIAS_NAME | "alias" in step (1) | esmpro_ilosso |
| KEYSTORE_PATH | "location" of keystore in step (1). File separator must be "/" or "¥¥". | -In case that file separator is "¥¥":<br>C:¥¥Users¥¥Administrator¥¥.keystore<br>-In case that file separator is "/":<br>C:/Users/Administrator/.keystore |
| PASSWORD | "storepass" in step (1). | secret |

Example)



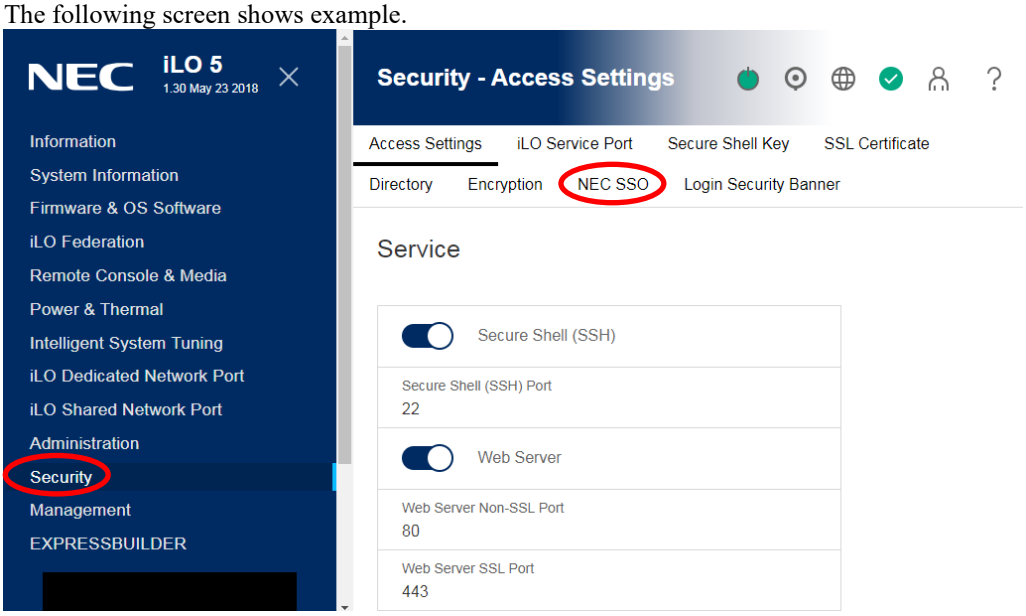

(10) Restart the management PC.

**CHECK:**
- After NEC ESMPRO Manager restarting, Value of PASSWORD is encrypted and saved as ENCRYPTED_PASSSWORD automatically and then is removed.

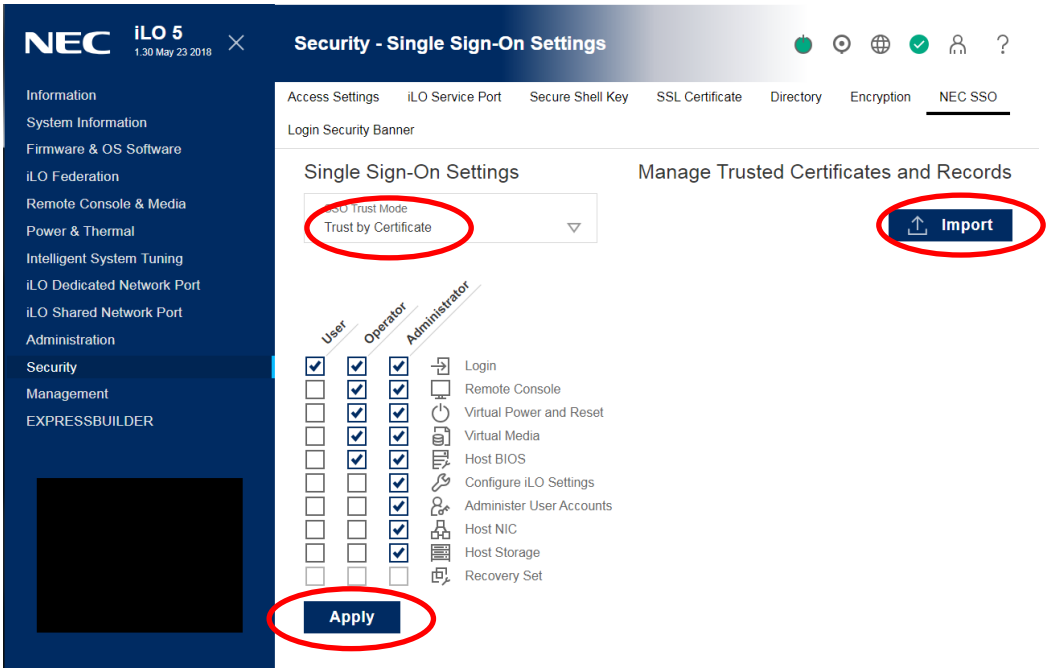
(11) Start a web browser on the management PC and input URL as below.
In the case that the IP address of iLO is 192.168.1.1 and the setting of HTTPS is enable.

```
https://192.168.1.1/
```

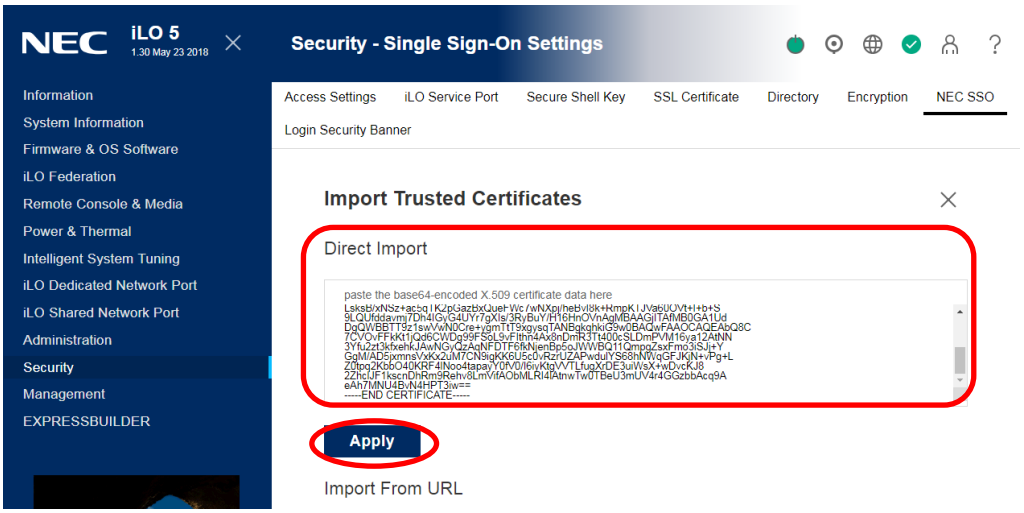
(12) After login to iLO, Select "Security" - "NEC SSO" at the WebConsole menu.
The following screen shows example.




(13) Select "Trust by Certificate" as SSO Trust Mode and click "Apply" button. Then click "Import" button in "Manage Trusted Certificates and Records" to install the trusted certificate.

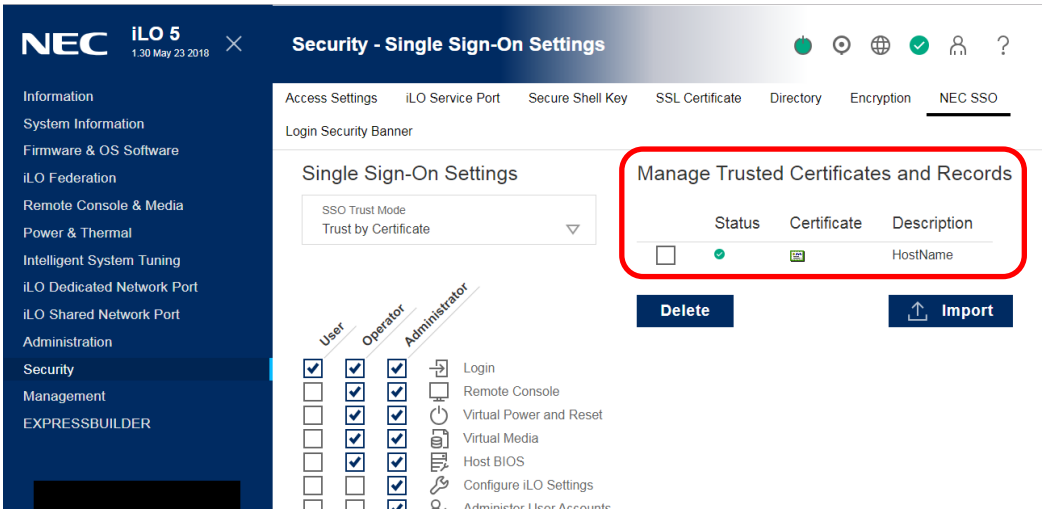


(14) Copy text of Certificate(*1) generated in step (7) and paste it in text field. Then Click "Apply" button.




*1: You must copy and paste all text including "-----BEGIN CERTIFICATE-----" and "-----END CERTIFICATE-----".

(15) Confirm if Certificate is added in "Manage Trusted Certificates and Records" field on NEC SSO settings.



#### 4.2.2.2 The procedure for Trust by Name

(1) Open "ilosso.properties" in the following location with text editor on the management PC.

Location of "ilosso.properties":
<NEC ESMPRO Manager install folder>¥ESMWEB¥wbserver¥webapps¥esmpro¥WEB-INF¥service¥iLOSSO

**CHECK:**
- When you open "ilosso.properties" with text editor, select UTF-8 encoding without BOM.

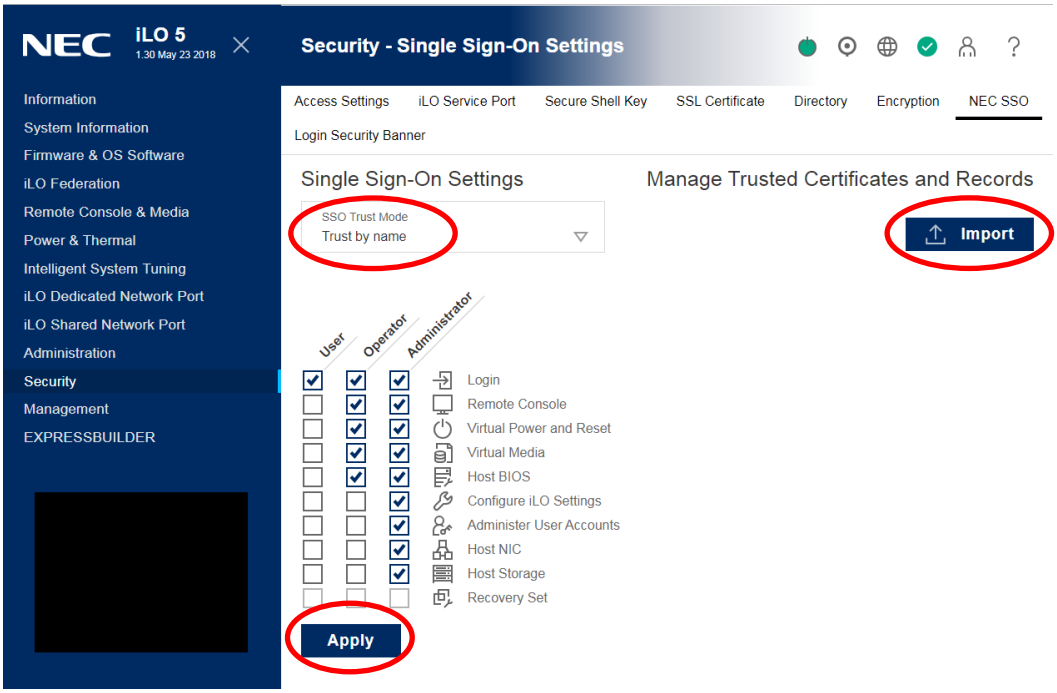
(2) Configure IP address or Domain Name of the management PC for "HOST_NAME" property and save properties file.
Example)

```
HOST_NAME=192.168.1.2
ALIAS_NAME=
KEYSTORE_PATH=
PASSWORD=
```

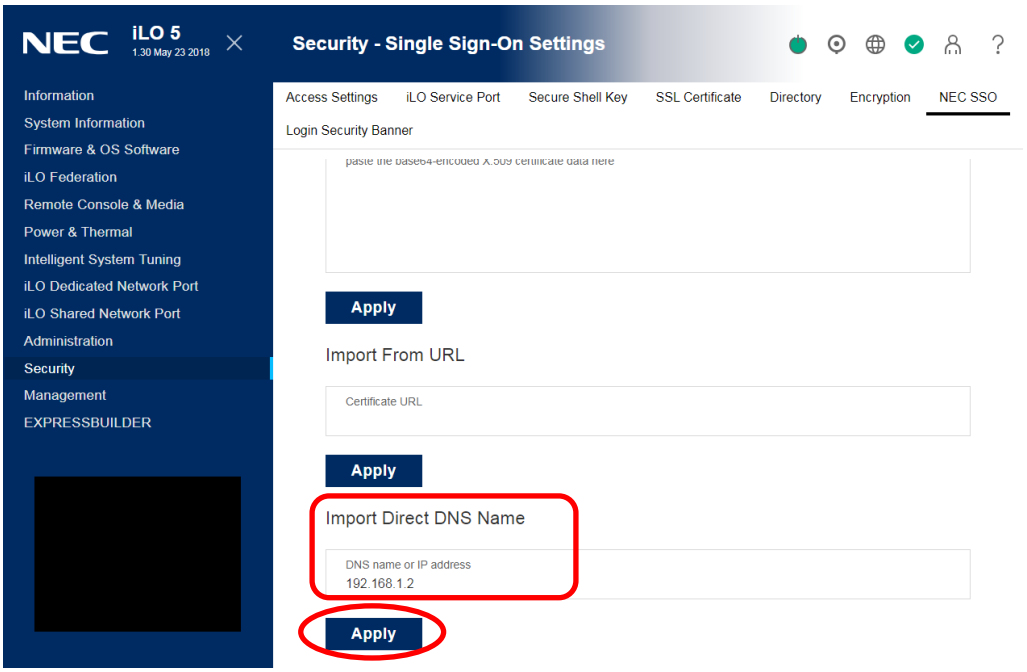
(3) Restart the management PC.

(4) Execute step (11) and (12) in 4.2.2.1.

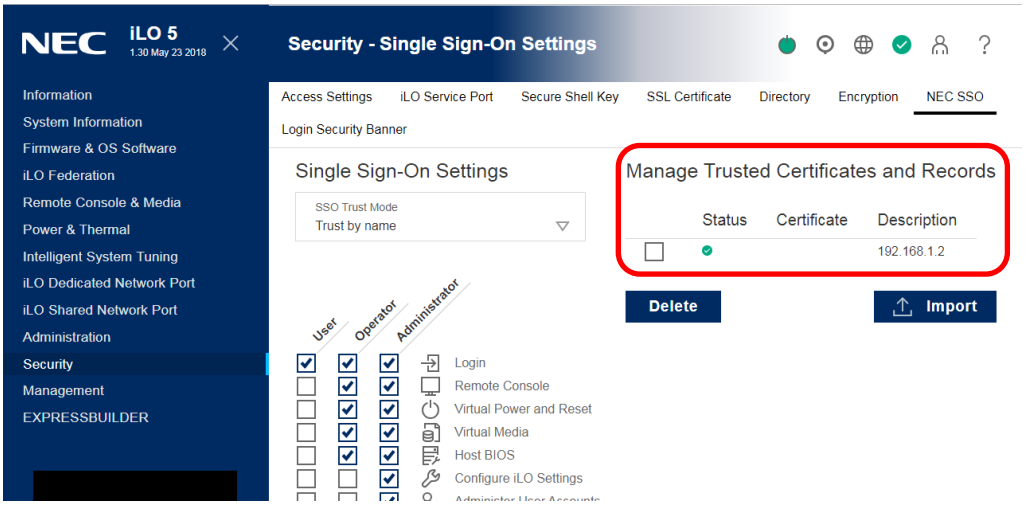
(5) Select "Trust by name" as SSO Trust Mode and click "Apply" button. Then click "Import" button in "Manage Trusted Certificates and Records".



(6) Configure the value saved as "HOST_NAME" in step (2) in text field of "Import Direct DNS Name" and click "Apply" button.



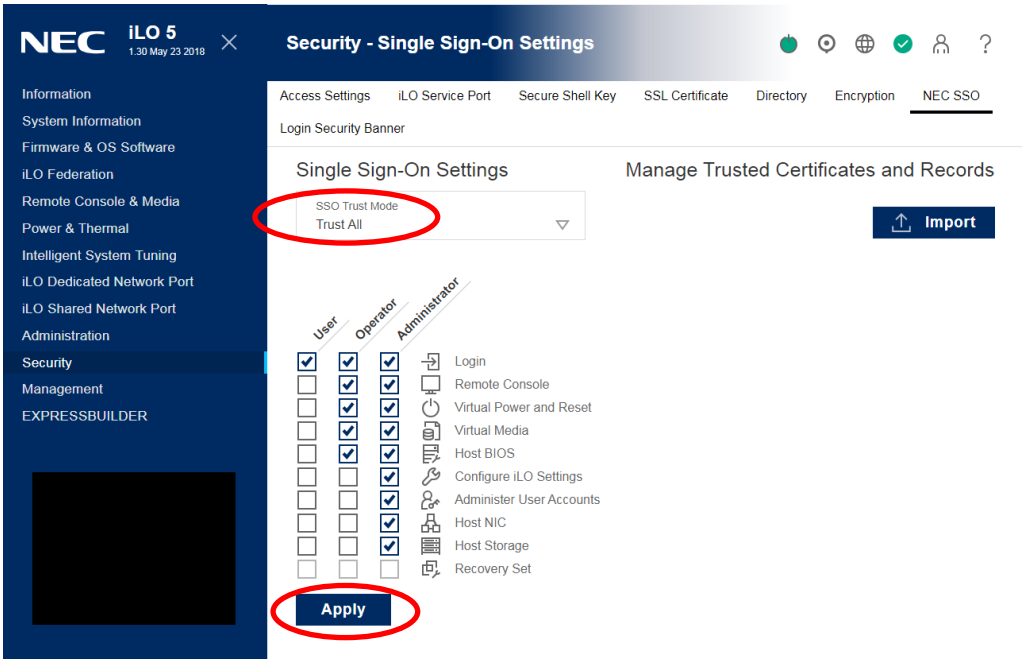

(7) Confirm if name set in step (6) is added in "Manage Trusted Certificates and Records" field on NEC SSO settings.



### 4.2.2.3 The procedure for Trust by All

(1) Execute step (11) and (12) in 4.2.2.1.

(2) Select "Trust by All" as SSO Trust Mode and click "Apply" button.



## 4.3 Register a managed component on NEC ESMPRO Manager

To register the managed component on the NEC ESMPRO Manager, login to the NEC ESMPRO Manager and perform steps in the following order:

(1) Configure environment setting
(2) Add the group to which the managed component will belong.
(3) Register a managed component.

### 4.3.1 Environment setting

If NEC ESMPRO Manager manages components in which iLO is integrated, in following cases, "Self-Signed Certification" should be accepted by NEC ESMPRO Manager in “Environment Setting”. Otherwise NEC ESMPRO Manager cannot manage components in which iLO is integrated.

- NEC ESMPRO Manager communicates with iLO by HTTPS and using “Self-Signed Certificate”.

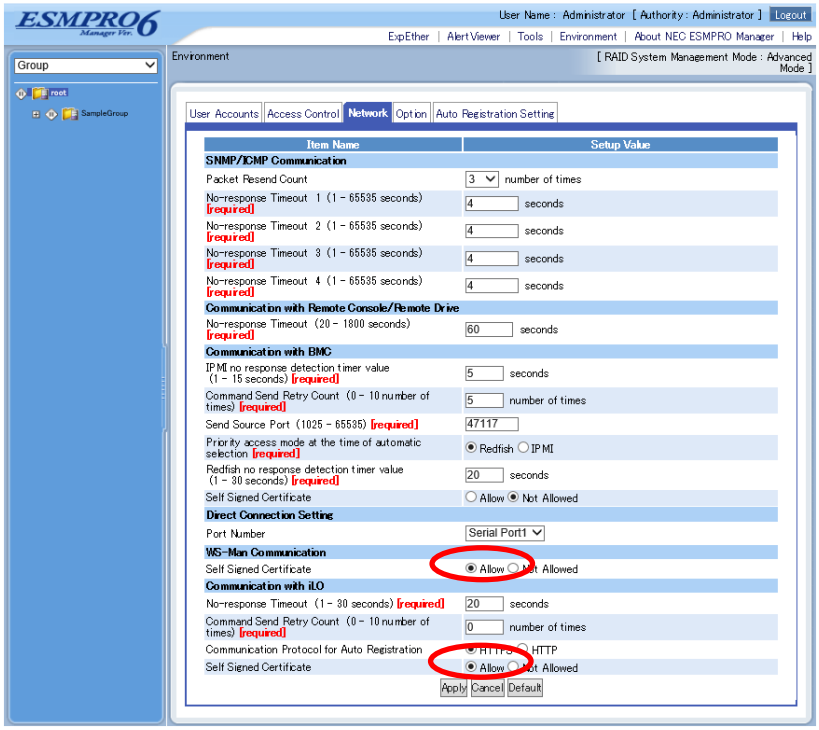
**CHECK:**

- The communication protocol used between NEC ESMPRO Manager and iLO is HTTPS by default.
  The communication protocol can be changed by Communication Protocol settings of “Communication with iLO” at “Environment Setting” - “Network”.

(1) [Step] : On “Environment Setting” - “Network” screen, set “Self-Signed Certificate” of “Communication with iLO” to “Allow”.

When using WS-Man communication or ESXi in the following environment, "Self-signature proof" of "WS-Man Communication / ESXi"
Set it to "Allow".

- If the managed is a VMware ESXi server and you cannot trust the VMware ESXi server certificate by https connection by IP address.
- When the management side is configured to use HTTPS for communication between NEC ESMPRO ServerAgentService and NEC ESMPRO Manager, and when using self-signing



### 4.3.2 Add Group to which the managed component will belong

See 1.3.2 Add Group to which the managed component will belong.

### 4.3.3 Register the Managed Component

Use either of following two methods to register the managed component.

**Manual Registration**

This method requires the operator to directly enter the managed component's information such as the IP address of iLO and to perform "Check Connection".

**Auto Registration**

This method automatically searches the network for managed components and iLO that are not registered yet on the NEC ESMPRO Manager and registers them.

#### 4.3.3.1 Manual Registration

(1) Click the group name to which the managed component based on iLO will belong on the "Component List" or the "Group" tree.

(2) Click the "Manual Registration"-"Full Management" from "Add Component" of "Group Information" tab

(3) Input the following items.

| Name | Value |
|---|---|
| Component Name | Specify the name of the managed component on NEC ESMPRO Manager. Assign a name different from other managed component names. Do not enter a name including blank characters. Uppercase characters are distinguished from lowercase characters. |
| Alias | Specify the information about the managed component. Do not enter a name including blank characters. Uppercase characters are distinguished from lowercase characters. |
| Group | Specify the group to which the managed component will belong. |
| Connection Type | Select “LAN” |
| **Common Setting** | |
| OS IP Address | Specify the OS IP Address of the managed component. |
| **SNMP (NEC ESMPRO Agent) / WS-Man / ESXi** | |
| Management | Select "Registration" to manage the system of the component. |
| Management Type | Select “WS-Man” in the following cases. *1<br>The operating system of the managed component is VMware ESXi7.<br>NEC ESMPRO ServerAgentService is installed on the managed component.<br>Select “ESXi” in the following cases. *1<br>The operating system of the managed component is VMware ESXi8. |
| User Name | Enter the user name and password for communication with WS-Man or ESXi.<br><br>- NEC ESMPRO ServerAgentService (Windows) is installed.<br>Enter Username(Local User Accounts)/Password of Windows system Administrator<br><br>- NEC ESMPRO ServerAgentService (Linux) is installed.<br>Enter root/Password of Linux operating system<br><br>- The operating system of the managed component is VMware ESXi.<br>Enter Username/Password of VMware ESXi Administrator |
| Password | |

| | |
|---|---|
| Communication Protocol | Select protocol HTTP/HTTPS for connection WS-Man service.<br>If you want to use HTTPS for WS-MAN communication with ESMPRO/ServerAgentService, refer to Chapter 2, Installation 3.3 HTTPS Setting in the ESMPRO/ServerAgentService Installation Guide (Windows). |
| Port Number | Enter port number where WS-Man service listens for connection. *2 |
| **RAID system management** | |
| Management | If the managed component is NEC ESMPRO ServerAgentService, Select “Unregistration”.<br>If the operating system of the managed component is VMware ESXi, refer to “10.3.3.1 Manual Registration”. |
| **NEC ExpressUpdate** | |
| Updates via NEC ExpressUpdate Agent | Select “Unregistration”. The managed component in which iLO is integrated does not support updating via NEC ExpressUpdate Agent. |
| Updates via Management Controller | Select “Unregistration”. The managed component in which iLO is integrated does not support updating via Management Controller. |
| **"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (Common)** | |
| Management | Select "Registration". |
| Management Type | Select "iLO". |
| User Name | Enter the user name and password for communication with the iLO, *3 |
| Password | |
| Communication Protocol | Select protocol used by communication with iLO. |
| Port Number | Select port number used by communication with iLO. *4 |
| **"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (LAN)** | |
| IP Address 1 | Enter the IP address of iLO. |

**CHECK:**

- *1 If a self-signed certificate is installed on the managed server for HTTPS communication, a setting to allow it is required. Refer to “1.1 Setup Flow” for detailed information.

**CHECK:**

- *2 Regarding a port number for WS-Man communication, refer to “Appendix C. Port number for WS-Man communication”.

**CHECK:**

- *3 Set a user name and a password of following user account. Please refer to "iLO5 user’s guide" for details about a user account of iLO.
  -- Administrator of the default user
  -- Additional user with all user privileges.

  If a user account of other than the above is used, there is a possibility that you can't use some function for managing iLO.

**CHECK:**

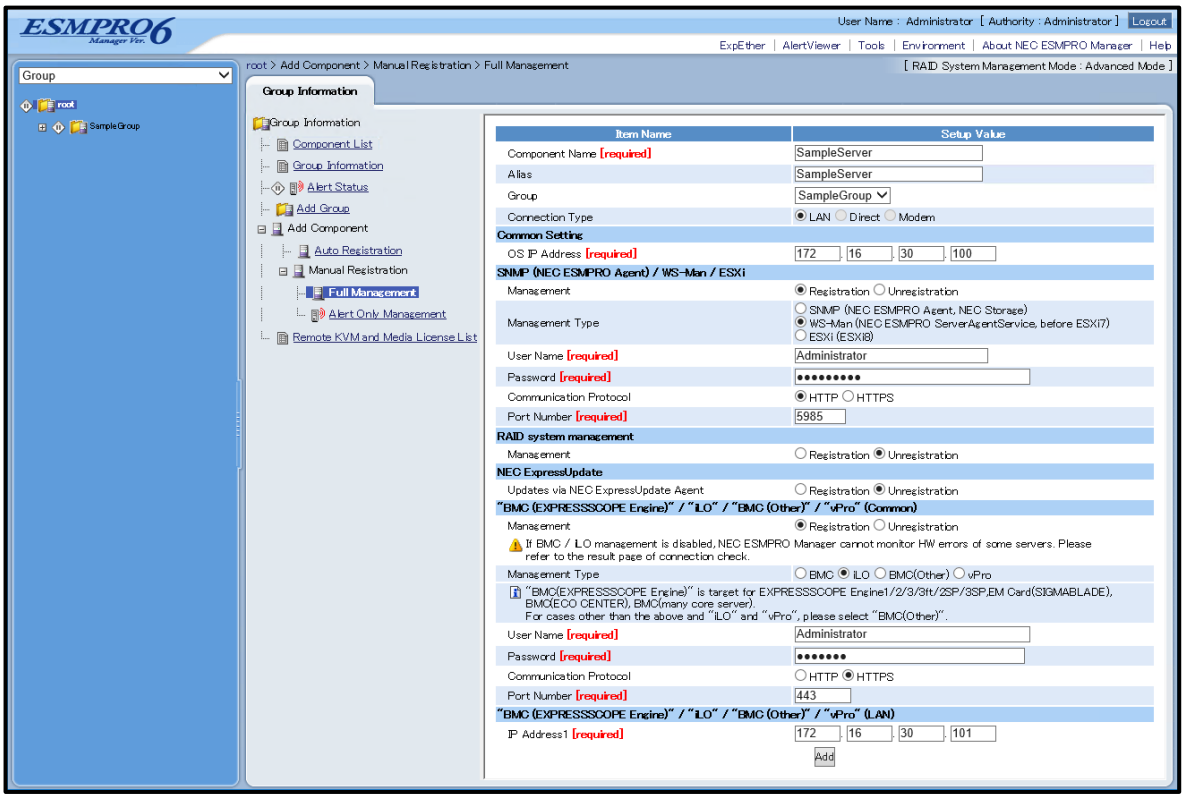
- *4 Set the port number of iLO Web Server. The default value of iLO Web Server is 80 for HTTP or 443 for HTTPS. If the default value is changed, you need to set the port number after the change. Please refer to "iLO5 user’s guide" for details.

**IMPORTANT:**

- If iLO management is disabled, NEC ESMPRO Manager may not be able to monitor HW status. Detailed information is shown in the connection check result

screen.

The following screen shows an example.




(4) Click "Add".

(5) Click the "Connection Setting" from "Setting" tab of the managed component.
Click "Check Connection" to collect the managed component information for the management.

When the "Check Connection" is completed, the NEC ESMPRO Manager starts to control the managed component.

| Detected | Detail |
|---|---|
| Detected | The feature was detected.<br>NEC ESMPRO Manager can use the feature to manage the component. |
| Not Detected | The feature was not detected.<br>NEC ESMPRO Manager cannot use the feature to manage the component.<br>Check parameters corresponding to the feature. |

#### 4.3.3.2 Auto Registration

(1) Click the group name to which the managed component based on iLO will belong on the "Component List" or the "Group" tree.

(2) Click the "Auto Registration" from "Add Component" of the "Group Information" tab.

(3) Input the following items to search managed components based on iLO.

| Name | Value |
|---|---|
| Destination Group | Specify the group to which the managed component will belong. |
| **Discovery Range** | |
| Discovery Mode | With "IP Address Range Search" selected, the NEC ESMPRO Manager searches for the managed components using the IP address range.<br>With "Network Address Search" selected, the NEC ESMPRO Manager searches for the managed components using the specified network address. |
| Start Address<br>End Address | When you select "IP Address Range Search" for "Search Mode", specify the start IP address and end IP address of the range in which managed components are to be searched for. |
| Network Address<br>Network Mask | When you select "Network Address Search" for "Search Mode", specify the network address and network mask of the managed component to be searched for. |
| **SNMP (NEC ESMPRO Agent)** | |
| Discovery | When you discover only the components in which iLO is integrated, this item should be “Disable”. |
| **WS-Man** | |
| Discovery | When you discover components installed NEC ESMPRO ServerAgentService or VMware ESXi7, select “Enable”. *1, *4 |
| User Name/Password | Enter username and password for WS-Man communication. The account must be a system administrator of the managed operating system.<br>Click “Add” button and you can add a pair of username and password up to 5. *2<br>- NEC ESMPRO ServerAgentService (Windows) is installed.<br>Enter Username(Local User Accounts)/Password of Windows system Administrator<br>- NEC ESMPRO ServerAgentService (Linux) is installed.<br>Enter root/Password of Linux operating system<br>- The operating system of the managed component is VMware ESXi7.<br>Enter Username/Password of VMware ESXi Administrator |
| **ESXi** | |
| Discovery | VMware ESXi8 or later, select “Enable”. *1 |
| User Name/Password | Enter username and password for ESXi. The account must be a system administrator of the managed operating system.<br>Click “Add” button and you can add a pair of username and password up to 5. *2<br>- The operating system of the managed component is VMware ESXi8.<br>Enter Username/Password of VMware ESXi Administrator |
| **RAID system management** | |
| Management | If the operating system of the managed component is VMware ESXi, refer to “10.3.3.2 Auto Registration”. |
| **NEC ExpressUpdate** | |
| Updates via NEC ExpressUpdate Agent | When you discover only the components in which iLO is integrated, this item should be “Disable”. |

| | |
|---|---|
| **BMC (EXPRESSSCOPE Engine)** | |
| Discovery | When you discover only the components in which iLO is integrated, this item should be “Disable”. |
| **iLO** | |
| Discovery | Select “Enable” |
| User Name/Password | Enter username and password for communication with the iLO,<br>Clicking “Add” button, you can enter up to 5 pairs of username and password. *2, *3 |
| **BMC (Other)** | |
| Discovery | When you discover only the components in which iLO is integrated, this item should be “Disable”. |
| **Intel(R) vPro(TM) Technology** | |
| Discovery | When you discover only the components in which iLO is integrated, this item should be “Disable”. |

**CHECK:**

- *1 If a self-signed certificate is installed on the managed server for HTTPS communication, a setting to allow it is required. Refer to “1.1 Setup Flow” for detailed information.

**CHECK:**

- *2 On “Environment” - “Auto Registration Setting List” screen, you can manage a list of username/password and authentication key. All entries in the list are used for auto registration every time.

**CHECK:**

- *3 Set a user name and a password of following user account. Please refer to "iLO5 user’s guide" for details about a user account of iLO.
  -- Administrator of the default user
  -- Additional user with all user privileges.

  If a user account of other than the above is used, there is a possibility that you can't use some function for managing iLO.

**CHECK:**

- *4 If you want to use HTTPS for WS-MAN communication with ESMPRO/ServerAgentService, refer to Chapter 2, Installation 3.3 HTTPS Setting in the ESMPRO/ServerAgentService Installation Guide (Windows).

(4) Click “Run Discovery” and the discovery for the managed components will start.

(5) When the auto registration is completed, registered components are listed. After that, NEC ESMPRO Manager starts to manage them.

**TIPS:**

- When the managed component is registered by auto registration but the system management for the managed component cannot be registered, the "Component Name" of the managed component is set to the "ManagementController + number". You can change the component name on "Component setting" - "Connection Setting".

# Chapter5 Setup for Managed Component of BMC (Other)

This chapter explains the setup procedure for the NEC ESMPRO Manager to manage the BMC (Other) component.

In addition to IPMI, which has traditionally supported access modes for BMC (Other) components, Redfish is now available.

**CHECK:**
- For information on devices accessible in Redfish, see Appendix D, Managed Components Summary - Component of BMC (Other)

**CHECK:**
- If you install an update with BMC (Other) components registered in the old NEC ESMPRO Manager, IPMI is set as the access mode.

## 5.1 Setup Flow

Setup by the following setup procedure:

(1) Connect the management PC on which NEC ESMPRO Manager is installed and the managed component on the same network.

(2) Configure BMC on the managed component to enable ESMPRO Management.

(3) Register the managed component on NEC ESMPRO Manager.

## 5.2 Configure BMC on Managed Component

Configure BMC (Other) of the managed component via Embedded Management Software.
After starting a web browser on the management PC, input URL in order to start Embedded Management Software.

In the case that the IP address of BMC (Other) is 192.168.1.1 and the setting of HTTPS is enable.

```
https://192.168.1.1/
```

**CHECK:**
- Please set “Platform Events” and “Trap settings” so that NEC ESMPRO Manager receive alerts from the BMC.

**CHECK:**
- If you want to use Redfish as the access mode for BMC (Other) devices, enable Redfish by selecting the settings panel "Redfish Interface" from the BMC settings menu.
  The default value is disable.

## 5.3 Register a managed component on NEC ESMPRO Manager

In order to register the managed component on the NEC ESMPRO Manager, login to the NEC ESMPRO Manager and perform the following procedure:

(1) Configure environment setting
(2) If necessary, add the group to which the managed component will belong.
(3) Register a managed component.

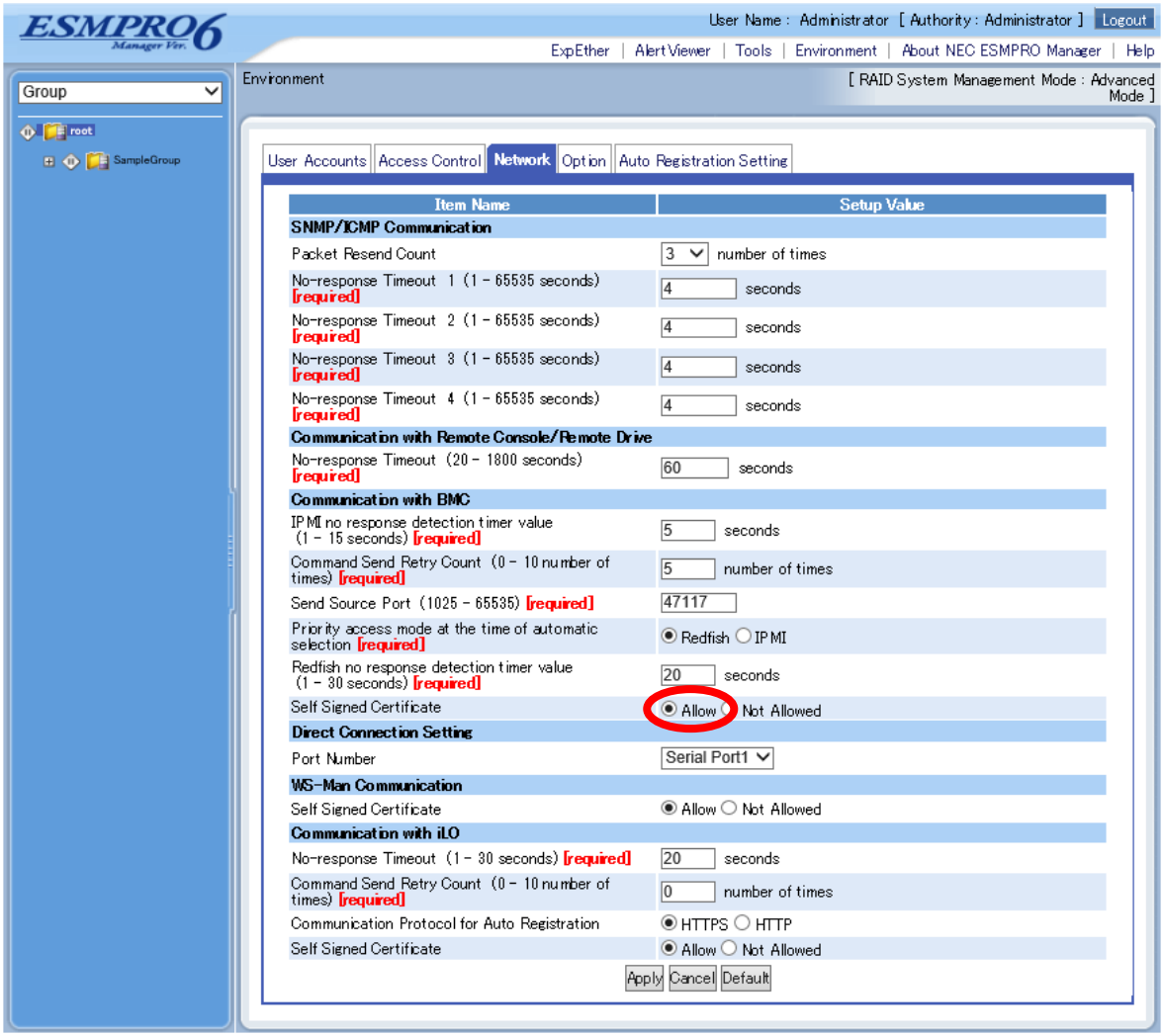
### 5.3.1 Environment setting

#### 5.3.1.1 Configuring to Allow Self-Signed Certificates

If NEC ESMPRO Manager manages components in which BMC (Other) is integrated, in following cases, "Self-Signed Certification" should be accepted by NEC ESMPRO Manager in “Environment Setting”. Otherwise NEC ESMPRO Manager cannot manage components in which BMC (Other) is integrated.

- If you use Redfish as the access mode for communication between BMC (Other) components and NEC ESMPRO Manager and use self-signed.

  [Step] : On “Environment Setting” - “Network” screen, set “Self-Signed Certificate” of “Communication with BMC (Other)” to “Allow”.



#### 5.3.1.2 Set the preferred access mode for automatic selection

In an environment where both Redfish and IPMI access modes can be connected, if "Auto" is selected as the access mode used to search for BMC (Other) management functions, you can set the preferred access mode. Subsequent connections use the first automatically selected access mode.

### 5.3.2 Add Group to which the managed component will belong

See 1.3.2 Add Group to which the managed component will belong.

### 5.3.3 Register the Managed Component

Use either of following two methods to register the managed component.

**Manual Registration**

This method requires the operator to directly enter the managed component's information such as the IP address of BMC (Other) and to perform "Check Connection".

**Auto Registration**

This method automatically searches the network for managed components and BMC (Other) that are not registered yet on the NEC ESMPRO Manager and registers them.

#### 5.3.3.1 Manual Registration

(1) Click the group name to which the managed component based on BMC (Other) will belong on the "Component List" or the "Group" tree.

(2) Click the "Manual Registration"-"Full Management" from "Add Component" of "Group Information" tab.

(3) Input the following items.

| Name | Value |
|---|---|
| Component Name | Specify the name of the managed component on NEC ESMPRO Manager. Assign a name different from other managed component names. Do not enter a name including blank characters. Uppercase characters are distinguished from lowercase characters. |
| Alias | Specify the information about the managed component. Do not enter a name including blank characters. Uppercase characters are distinguished from lowercase characters. |
| Group | Specify the group to which the managed component will belong. |
| Connection Type | Select “LAN” |
| **Common Setting** | |
| OS IP Address | Specify the OS IP Address of the managed component. |
| **SNMP (NEC ESMPRO Agent) / WS-Man / ESXi** | |
| Management | Select "Registration" to manage the system of the component. |
| Management Type | Select “WS-Man” in the following cases. *1<br>The operating system of the managed component is VMware ESXi7.<br>NEC ESMPRO ServerAgentService is installed on the managed component.<br>Select “ESXi” in the following cases. *1<br>The operating system of the managed component is VMware ESXi8. |

| | |
|---|---|
| User Name | Enter the user name and password for communication with WS-Man or ESXi.<br><br>- NEC ESMPRO ServerAgentService (Windows) is installed.<br>Enter Username(Local User Accounts)/Password of Windows system Administrator.<br><br>- NEC ESMPRO ServerAgentService (Linux) is installed.<br>Enter root/Password of Linux operating system.<br><br>- The operating system of the managed component is VMware ESXi.<br>Enter Username/Password of VMware ESXi Administrator. |
| Password | |
| Communication Protocol | Select protocol HTTP/HTTPS for connection WS-Man service.<br>If you want to use HTTPS for WS-MAN communication with ESMPRO/ServerAgentService, refer to Chapter 2, Installation 3.3 HTTPS Setting in the ESMPRO/ServerAgentService Installation Guide (Windows). |
| Port Number | Enter port number where WS-Man service listens for connection. *2 |
| **RAID system management** | |
| Management | Select "Registration" to manage the RAID system of the component.<br>If the operating system of the managed component is VMware ESXi7, WS-Man management must be enabled in addition to this setting.<br>Select "Unregistration" when the operating system of the managed component is VMware ESXi8. |
| **NEC ExpressUpdate** | |
| Updates via NEC ExpressUpdate Agent | Select "Registration" to manage the component using NEC ExpressUpdate. |
| Updates via Management Controller | Select “Unregistration”. The managed component in which BMC (Other) is integrated does not support updating via Management Controller. |
| **"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (Common)** | |
| Management | Select "Registration". |
| Management Type | Select "BMC (Other)". |
| Access Mode | Select the access mode you want to use to search for BMC (Other) management functions. *3<br>・Auto<br>Automatically select either Redfish or IPMI. If you can connect with both access modes, follow the settings in "Preferred access mode for automatic selection" on the Preferences - Network screen. Subsequent connections use the first automatically selected access mode.<br>・Redfish<br>Specify Redfish as the access mode to the BMC(Other).<br>・IPMI<br>Specify IPMI as the access mode to the BMC(Other). |
| Port Number | Specify the port number to connect to using Redfish.<br>If you select "Auto" or "Redfish" as the access mode, setting the port number is mandatory. |
| User Name | Enter the user name and password for communication with the BMC (Other), *4 |
| Password | |
| **"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (LAN)** | |
| IP Address 1 | Enter the IP address of BMC (Other). |

**CHECK:**

・ *1 If a self-signed certificate is installed on the managed server for HTTPS communication, a setting to allow it is required. Refer to “1.1 Setup Flow” for

detailed information.

**CHECK:**

- *2 Regarding a port number for WS-Man communication, refer to “Appendix C. Port number for WS-Man communication”.

**CHECK:**

- *3 When using Redfish as the BMC (Other) access mode, it is necessary to allow self-signing in NEC ESMPRO Manager by referring to "5.3.1 Configure configuration" in the following cases.

  If you use Redfish as the access mode for communication between BMC (Other) components and NEC ESMPRO Manager and use self-signed.

**CHECK:**

- *4 Set a user name and a password of following user account. Please refer to "BMC/CMC Management Console User's Guide" for details about a user account of BMC (Other).
  -- Administrator of the default user
  -- Additional user with all user privileges.

  If a user account of other than the above is used, there is a possibility that you can't use some function for managing BMC (Other).

**IMPORTANT:**

- If BMC (Other) management is disabled, NEC ESMPRO Manager may not be able to monitor HW status. Detailed information is shown in the connection check result screen.

**IMPORTANT:**

- If the BMC (Other) access mode is Redfish, you cannot use the Remote Console and Console Log Setting.
  Other features are not different between IPMI and Redfish.

(4) Click "Add".

(5) Click the "Connection Setting" from "Setting" tab of the managed component.
Click "Check Connection" to collect the managed component information for the management.

When the "Check Connection" is completed, the NEC ESMPRO Manager starts to control the managed component.

| Detected | Detail |
|---|---|
| Detected | The feature was detected.<br>NEC ESMPRO Manager can use the feature to manage the component. |
| Not Detected | The feature was not detected.<br>NEC ESMPRO Manager cannot use the feature to manage the component.<br>Check parameters corresponding to the feature. |

### 5.3.3.2 Auto Registration

(1) Click the group name to which the managed component based on BMC (Other) will belong on the "Component List" or the "Group" tree.

(2) Click the "Auto Registration" from "Add Component" of the "Group Information" tab.

(3) Input the following items to search managed components of BMC (Other).

| Name | Value |
|---|---|
| Destination Group | Specify the group to which the managed component will belong. |
| **Discovery Range** | |
| Discovery Mode | With "IP Address Range Search" selected, the NEC ESMPRO Manager searches for the managed components using the IP address range.<br>With "Network Address Search" selected, the NEC ESMPRO Manager searches for the managed components using the specified network address. |
| Start Address<br>End Address | When you select "IP Address Range Search" for "Search Mode", specify the start IP address and end IP address of the range in which managed components are to be searched for. |
| Network Address<br>Network Mask | When you select "Network Address Search" for "Search Mode", specify the network address and network mask of the managed component to be searched for. |
| **SNMP (NEC ESMPRO Agent)** | |
| Discovery | When you discover only the components in which BMC (Other) is integrated, this item should be “Disable”. |
| **WS-Man** | |
| Discovery | When you discover components installed NEC ESMPRO ServerAgentService or VMware ESXi7, select “Enable”. *1, *5 |
| User Name/Password | Enter username and password for WS-Man communication. The account must be a system administrator of the managed operating system.<br>Click “Add” button and you can add a pair of username and password up to 5. *2<br>- NEC ESMPRO ServerAgentService (Windows) is installed.<br>Enter Username(Local User Accounts)/Password of Windows system Administrator<br>- NEC ESMPRO ServerAgentService (Linux) is installed.<br>Enter root/Password of Linux operating system<br>- The operating system of the managed component is VMware ESXi7.<br>Enter Username/Password of VMware ESXi Administrator |
| **ESXi** | |
| Discovery | Select “Enable” to manage VMware ESXi8 of the component. *1 |
| User Name/Password | Enter username and password for ESXi. The account must be a system administrator of the managed operating system.<br>Click “Add” button and you can add a pair of username and password up to 5. *2<br>- The operating system of the managed component is VMware ESXi8.<br>Enter Username/Password of VMware ESXi Administrator |
| **RAID system management** | |
| Management | Select "Enable" to manage the RAID system of the component.<br>If the operating system of the managed component is VMware ESXi7, WS-Man management must be enabled in addition to this setting.<br>Select "Disable" when the operating system of the managed component is VMware ESXi8. |
| **NEC ExpressUpdate** | |

| | |
|---|---|
| Updates via NEC ExpressUpdate Agent | Select "Enable" to manage the component using NEC ExpressUpdate. |
| **BMC (EXPRESSSCOPE Engine)** | |
| Discovery | When you discover only the components of BMC (Other), this item should be “Disable”. |
| **iLO** | |
| Discovery | When you discover only the components of BMC (Other), this item should be “Disable”. |
| **BMC (Other)** | |
| Discovery | Select “Enable” |
| Access Mode | Select the access mode you want to use to search for BMC (Other) management functions. *3<br>・Auto<br>Automatically select either Redfish or IPMI. If you can connect with both access modes, follow the settings in "Preferred access mode for automatic selection" on the Preferences - Network screen. Subsequent connections use the first automatically selected access mode.<br>・Redfish<br>Specify Redfish as the access mode to the BMC(Other).<br>・IPMI<br>Specify IPMI as the access mode to the BMC(Other). |
| User Name/Password | Enter username and password for communication with the BMC (Other), Clicking “Add” button, you can enter up to 5 pairs of username and password. *2, *4 |
| **Intel(R) vPro(TM) Technology** | |
| Discovery | When you discover only the components of BMC (Other), this item should be “Disable”. |

**CHECK:**

- *1 If a self-signed certificate is installed on the managed server for HTTPS communication, a setting to allow it is required. Refer to “1.1 Setup Flow” for detailed information.

**CHECK:**

- *2 On “Environment” - “Auto Registration Setting List” screen, you can manage a list of username/password and authentication key. All entries in the list are used for auto registration every time.

**CHECK:**

- *3 When using Redfish as the BMC (Other) access mode, it is necessary to allow self-signing in NEC ESMPRO Manager by referring to "5.3.1 Configure configuration" in the following cases.

  If you use Redfish as the access mode for communication between BMC (Other) components and NEC ESMPRO Manager and use self-signed.

**CHECK:**

- *4 Set a user name and a password of following user account. Please refer to "BMC/CMC Management Console User's Guide" for details about a user account of BMC (Other).
  -- Administrator of the default user
  -- Additional user with all user privileges.

  If a user account of other than the above is used, there is a possibility that you can't

use some function for managing BMC (Other).

**CHECK:**

- *5 If you want to use HTTPS for WS-MAN communication with ESMPRO/ServerAgentService, refer to Chapter 2, Installation 3.3 HTTPS Setting in the ESMPRO/ServerAgentService Installation Guide (Windows).

**IMPORTANT:**

- If the BMC (Other) access mode is Redfish, you cannot use the Remote Console and Console Log Setting.
  Other features are not different between IPMI and Redfish.

(4) Click “Run Discovery” and the discovery for the managed components will start.

(5) When the auto registration is completed, registered components are listed. After that, NEC ESMPRO Manager starts to manage them.

**TIPS:**

- When the managed component is registered by auto registration but the system management for the managed component cannot be registered, the "Component Name" of the managed component is set to the "ManagementController + number". You can change the component name on "Component setting" - "Connection Setting".

# Chapter6 EM Card and Chassis Management

## 6.1 Overview

The NEC ESMPRO Manager has following functions by communication with the EM card in a blade enclosure,

**Information Collection**

NEC ESMPRO Manager collects the status and the information of the blade enclosure as follows.

-- Blade / EM Card / Switch Module List

If the slot state of CPU blade, EM card or switch module is changed, NEC ESMPRO Manager collects current slot state.

-- Chassis Information

NEC ESMPRO Manager collects the blade enclosure name, the name and ID of the rack in which the blade enclosure is installed.

-- EM Card / Switch Module Status

NEC ESMPRO Manager obtains the STATUS Lamp of the EM card and the switch module.

**Component Monitoring**

NEC ESMPRO Manager always monitors the slot state in the blade enclosure and the STATUS Lamp of the EM card and the Switch Module. When some slot state change or failure occurs, NEC ESMPRO Manager notifies the operator.

**CPU Blade Auto Setting**

When NEC ESMPRO Manager detects new CPU blade installed on the blade enclosure, the NEC ESMPRO Manager configures BMC on the CPU blade (managed component) through the EM card to control the managed component remotely. NEC ESMPRO Manager also registers the managed component for its own, and execute the "Check Connection".

## 6.2 System Requirements

NEC ESMPRO Manager can manage the following EM card.

**Hardware**

EM card that is listed "Appendix D. Managed Components Summary".

- **Communication Medium**

  TCP/IP network

**CHECK:**

・ NEC ESMPRO Agent Extension and NEC DianaScope Agent cannot be installed on EM card.

## 6.3 Setup for EM Card

### 6.3.1 Setup Flow

Perform the following setup procedure:

(1) Connect the NEC ESMPRO Manager server and the EM card.

(2) Setup EM card for communication with NEC ESMPRO Manager.

(3) Register the EM card on NEC ESMPRO Manager.

### 6.3.2 Setup EM Card for communication with NEC ESMPRO Manager Setup the EM Card as follows. See Users Guide that attached to EM Card for detail.

(1) Set the IP address of the EM Card.

**CHECK:**

- The IP address set on the EM card should be the value that can be divided by 4. If the IP address be set other value, NEC ESMPRO Manager will fail "Check Connection".
  NEC ESMPRO Manager communicates to the EM card with the "fixed IP address".

(2) Setup EM Card for communication with NEC ESMPRO Manager (DianaScope support).
Use setdsl command for SIGMABLADE-M.
Use SET DSGPASSWORD and SET DSGSTATE command for SIGMABLADE-H.

### 6.3.3 Register EM Card on NEC ESMPRO Manager

You can register the EM card with similar way of registering the ordinary managed component.
Use either of the two methods to register EM card.

**Manual Registration**

This method requires the operator to directly enter the EM card's information such as the IP address and to perform "Check Connection".

**Auto Registration**

This method automatically searches the network for managed components and EM card that are not registered yet on the NEC ESMPRO Manager, and registers them.

**TIPS:**

- NEC ESMPRO Manager distinguishes the EM card from ordinary managed component by "Check Connection".
  After "Check Connection" of the EM card is completed, Information of the blade enclosure (chassis) is displayed on the "Chassis List" on the NEC ESMPRO Manager.
  The chassis name on the NEC ESMPRO Manager is set to the first 16 characters of the blade enclosure name. If the same name is already registered, some number is added to the name.
  You can change the chassis name on "Chassis Information".

#### 6.3.3.1 Manual Registration

(1) Click the group name for the EM card on the "Component Link" view or "Group" tree.

(2) Click the "Manual Registration" from "Add Component" of "Group Information" tab.

(3) Input the following items on the "Manual Registration"-" Full Management" view.

| Name | Value |
|---|---|
| Component Name | Specify the name of the EM card on NEC ESMPRO Manager.<br>Assign a name different from other managed component names. Do not enter a name including blank characters. Uppercase characters are distinguished from lowercase characters. |
| Alias | Specify the information about the EM card. Do not enter a name including blank characters. Uppercase characters are distinguished from lowercase characters. |
| Group | Specify the group to which the EM card will belong. |
| Connection Type | Select “LAN” |
| **Common Setting** | |
| OS IP Address | Specify the Address of the EM card. |
| **SNMP (NEC ESMPRO Agent) / WS-Man / ESXi** | |
| Management | Select "Registration" to manage the EM card. |
| Management Type | Select “SNMP” |
| SNMP Community Name(Get) | SNMP Community Name which is specified at the EM card.<br>The default value is “public”. |
| SNMP Community Name(Set) | SNMP Community Name which is specified at the EM card.<br>The default value is “public”. |
| **RAID system management** | |
| Management | Select “Unregistration”. |
| **NEC ExpressUpdate** | |
| Updates via NEC ExpressUpdate Agent | Select “Unregistration”. |
| Updates via Management Controller | Select “Unregistration”. |
| **"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (Common)** | |
| Management | Select "Registration". |
| Management Type | Select "BMC". |
| Authentication Key | Enter the "authentication key" for the EM card. |
| **"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (LAN)** | |
| Current IP Address | Select IP Address 1 |
| Failover | Select “Disable”. |
| IP Address 1 | Enter the IP address that is specified on LAN1 of the BMC configuration for the managed component.<br>If the managed component is a fault tolerant server, you should enter the IP address of the management LAN port for the CPU/IO module 0 to the form.<br>If the managed component is a server which has EXPRESSSCOPE Engine SP3(2BMC model), you should enter the IP address of the management LAN port for the Master BMC to the form. |
| Subnet Mask1 *1 | Enter the subnet mask that is specified on LAN1 of the BMC configuration for the managed component.<br>If the managed component is a fault tolerant server, you should enter the subnet mask of the management LAN port for the CPU/IO module 0 to the form. |

| | |
|---|---|
| | If the managed component is a server which has EXPRESSSCOPE Engine SP3(2BMC model), you should enter the subnet mask of the management LAN port for the Master BMC to the form. |
| IP Address 2 | This field can be blank. |
| Subnet Mask2 *1 | This field can be blank. |

**CHECK:**
- *1 In NEC ESMPRO Manager Ver.6.06 or later, "Subnet Mask1" and "Subnet Mask2" are not displayed.

(4) Click "Add".

(5) Click "Connection Setting" from "Setting" tab of the managed component. And Click “Check Connection”.

(6) NEC ESMPRO Manager will execute "Check Connection" and collect the information for the management.
When the "Check Connection" is completed, the NEC ESMPRO Manager starts to control the EM card

| Detected | Detail |
|---|---|
| Detected | The feature was detected.<br>NEC ESMPRO Manager can use the feature to manage the component. |
| Not Detected | The feature was not detected.<br>NEC ESMPRO Manager cannot use the feature to manage the component.<br>Check parameters corresponding to the feature. |

### 6.3.3.2 Auto Registration

(1) Click the group name for the EM card on the "Component Link" view or "Group" tree.

(2) Click the "Auto Registration" from "Add Component" of "Group Information" tab.

(3) Enter following information.

| Name | Value |
|---|---|
| Destination Group | Specify the group to which the EM card will belong. |
| **Discovery Range** | |
| Discovery Mode | With "IP Address Range Search" selected, the NEC ESMPRO Manager searches for the managed components using the IP address range.<br>With "Network Address Search" selected, the NEC ESMPRO Manager searches for the managed components using the specified network address. |
| Start Address<br>End Address | When you select "IP Address Range Search" for "Search Mode", specify the start IP address and end IP address of the range in which managed components are to be searched for. |
| Network Address<br>Network Mask | When you select "Network Address Search" for "Search Mode", specify the network address and network mask of the managed component to be searched for. |
| **SNMP (NEC ESMPRO Agent)** | |
| Discovery | Select “Enable”. |
| SNMP Community Name | SNMP Community Name which is specified at SNMP Agent running on the EM card. |
| **WS-Man** | |

| | |
|---|---|
| Discovery | Select “Disable” |
| **ESXi** | |
| Discovery | Select “Disable” |
| **RAID system management** | |
| Management | Select “Disable” |
| **NEC ExpressUpdate** | |
| Updates via NEC ExpressUpdate Agent | Select “Disable” |
| **BMC (EXPRESSSCOPE Engine)** | |
| Discovery | Select "Enable". |
| Features NEC ExpressUpdate | Select “Disable” |
| Authentication Key | Enter the password that you set in EM card. |
| **iLO** | |
| Discovery | Select “Disable”. |
| **BMC (Other)** | |
| Discovery | Select “Disable”. |
| **Intel(R) vPro(TM) Technology** | |
| Discovery | Select “Disable”. |

(4) The search for the managed components will start.

(5) The IP addresses of the found managed component and EM cards will be listed.
When the "Auto Registration" is completed, the NEC ESMPRO Manager starts to control the EM card.

**TIPS:**
- When the EM card is registered by auto registration, the EM card name is set to blade enclosure + "-EM" + EM card number. You can change the EM card name on "Setting" tab - "Connection Setting".

## 6.4 Operation of EM card

You can open the screen to check the STATUS lamp and to turn UID lamp on as follows.

(1) Click "Chassis" from the tree view.

(2) Click the EM card name on the "Component List".

(3) Click the EM card parts on the "Chassis MAP" screen.

## 6.5 CPU Blade Auto Registration

NEC ESMPRO Manager monitors blade slot state of the blade enclosure on which the EM card is installed. If NEC ESMPRO Manager detects new CPU blade installed on the chassis, NEC ESMPRO Manager configures BMC on the CPU blade (managed component) through the EM card. To control the managed component, NEC ESMPRO Manager also registers the managed component and executes "Check Connection".

You should set the item for the BMC configuration and component registration on the NEC ESMPRO Manager on the "Chassis Properties" - "CPU Blade Auto Setting".

See the online help of the NEC ESMPRO Manager for the details of the items.

# Chapter7 Setup for the NEC Storage M Series

## 7.1 Register NEC Storage on NEC ESMPRO Manager

You can register the NEC Storage with similar way of registering the ordinary managed component.
Use either of the two methods to register NEC Storage.

**Manual Registration**

This method requires the operator to directly enter the NEC Storage's information such as the "Floating IP Address" and to perform "Check Connection".

**Auto Registration**

This method automatically searches the network for managed components and NEC Storage, and registers them.

**TIPS:**

- NEC ESMPRO Manager distinguishes the NEC Storage from ordinary managed component by "Check Connection".
- The managed component name on the NEC ESMPRO Manager is set to the disk array name that is set in iSMClient. You can change the managed component name on "Connection Setting".

### 7.1.1 Manual Registration

(1) Click the group name for the NEC Storage on the "Component Link" view or "Group" tree.

(2) Click the "Manual Registration" from "Add Component" of "Group Information" tab.

(3) Input the following items on the "Manual Registration"-"Full Management" view.

| Name | Value |
|---|---|
| Component Name | Specify the NEC Storage name on the NEC ESMPRO Manager, |
| Alias | Specify the information about the NEC Storage. Do not enter a name including blank characters. Uppercase characters are distinguished from lowercase characters. |
| Group | Specify the group to which the NEC Storage will belong. |
| Connection Type | Select “LAN” |
| **Common Setting** | |
| OS IP Address | Enter the Fixed IP address of "Floating IP Address" of the NEC Storage. |
| **SNMP (NEC ESMPRO Agent) / WS-Man / ESXi** | |
| Management | Select "Registration". |
| Management Type | Select “SNMP” |
| SNMP Community Name(Get) | Enter the "SNMP community name" specified on iSMClient. |
| SNMP Community Name(Set) | Enter the "SNMP community name" specified on iSMClient. |
| **RAID system management** | |
| Management | Select “Unregistration”. |
| **NEC ExpressUpdate** | |
| Updates via NEC ExpressUpdate Agent | Select “Unregistration”. |
| Updates via Management Controller | Select “Unregistration”. |
| **"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (Common)** | |

| | |
|---|---|
| Management | Select "Unregistration". |

(4) Click "Add".

(5) Click "Connection Setting" from "Setting" tab of the managed component. And Click “Check Connection”. NEC ESMPRO Manager will execute "Check Connection" and collect the information for the management.
When the "Check Connection" is completed, the NEC ESMPRO Manager starts to control the NEC Storage

| Detected | Detail |
|---|---|
| Detected | The feature was detected.<br>NEC ESMPRO Manager can use the feature to manage the component. |
| Not Detected | The feature was not detected.<br>NEC ESMPRO Manager cannot use the feature to manage the component.<br>Check parameters corresponding to the feature. |

### 7.1.2 Auto Registration

(1) Click the group name for the NEC Storage on the "Component Link" view or "Group" tree.

(2) Click the "Auto Registration" from "Add Component" of "Group Information" tab.

(3) Select "Search Mode" on the "Auto Registration" view and enter following information.

| Name | Value |
|---|---|
| Destination Group | Specify the group to which the NEC Storage will belong. |
| **Discovery Range** | |
| Discovery Mode | With "IP Address Range Search" selected, the NEC ESMPRO Manager searches for the managed components using the IP address range.<br>With "Network Address Search" selected, the NEC ESMPRO Manager searches for the managed components using the specified network address. |
| Start Address<br>End Address | When you select "IP Address Range Search" for "Search Mode", specify the start IP address and end IP address of the range which includes the NEC Storage's floating IP address. |
| Network Address<br>Network Mask | When you select "Network Address Search" for "Search Mode", specify the network address and network which includes NES Storage's floating IP address. |
| **SNMP (NEC ESMPRO Agent)** | |
| Discovery | Select "Enable". |
| SNMP Community Name | "SNMP Community Name" is the "SNMP Community Name" specified on iSMClient. |
| **WS-Man** | |
| Discovery | Select "Disable" |
| **ESXi** | |
| Discovery | Select "Disable" |
| **RAID system management** | |
| Management | Select "Disable" |
| **NEC ExpressUpdate** | |
| Updates via NEC ExpressUpdate Agent | Select "Disable" |
| **BMC (EXPRESSSCOPE Engine)** | |
| Discovery | Select "Disable". |
| **iLO** | |
| Discovery | Select "Disable". |
| **BMC (Other)** | |
| Discovery | Select "Disable". |
| **Intel(R) vPro(TM) Technology** | |
| Discovery | Select "Disable". |

(4) The search for the managed components will start.

(5) The IP addresses of the found managed component and NEC Storages will be listed.
When the "Auto Registration" is completed, the NEC ESMPRO Manager starts to control the NEC Storage

**TIPS:**
- Refer to the "NEC Storage Software Manual Guide" (IS901) for the overview of NEC Storage and the related manuals.

# Chapter8 Setup for the Managed Component based on vPro

## 8.1 Setup Flow

Setup by the following setup procedures:

(1) Connect the management PC on which NEC ESMPRO Manager is installed and the managed component based on vPro on the same network.

(2) Configure iAMT on the managed component based on vPro.

(3) Register the managed component based on vPro on NEC ESMPRO Manager.

## 8.2 Configure iAMT on the Managed Component

Turn the managed component on.
Press <Ctrl+P> immediately after the component based on vPro displays the message prompting you to press the key.
Main menu of the iAMT configuration is displayed.
Please enter the password to configure the iAMT.

**TIPS:**

- The NEC ESMPRO Manager can manage the vPro including the iAMT firmware version 6.0 and later.
- The default user name and password are both "admin".
- The iAMT configuration method may depend on the iAMT firmware version.
  Refer to the website for detail configuration information and configure iAMT.
  The following is an example of the website.
  Please note that this URL is subject to change without notice.
  http://software.intel.com/en-us/articles/intel-active-management-technology-intel-amt-software-development-kit-sdk-start-here-guide/
  "Performing Manual Setup (from Release 6.0)" or "Manually Configuring an Intel AMT 7.0" of "AMT7.0 Start Here Guide"

## 8.3 Register the managed component on NEC ESMPRO Manager

### 8.3.1 Add Group to which the managed component will belong

See 1.3.2 Add Group to which the managed component will belong

### 8.3.2 Register the Managed Component

Use either of following two methods to register the managed component.

**Manual Registration**
This method requires the operator to directly enter the managed component's information such as the IP address of the vPro and to perform "Check Connection".

**Auto Registration**
This method automatically searches the network for managed components that are not registered yet on the NEC ESMPRO Manager and registers them.

#### 8.3.2.1 Manual Registration

(1) Click the group name to which the managed component based on vPro will belong on the "Component List" or the "Group" tree.

(2) Click the "Manual Registration"-"Full Management" from "Add Component" of "Group Information" tab.

(3) Input the following items.

| Name | Value |
|---|---|
| Component Name | Specify the name of the managed component on NEC ESMPRO Manager. Assign a name different from other managed component names. Do not enter a name including blank characters. Uppercase characters are distinguished from lowercase characters. |
| Alias | Specify the information about the managed component. Do not enter a name including blank characters. Uppercase characters are distinguished from lowercase characters. |
| Group | Specify the group to which the managed component will belong. |
| Connection Type | Select “LAN” |
| **Common Setting** | |
| OS IP Address | Specify the OS IP Address of the managed component. |
| **SNMP (NEC ESMPRO Agent) / WS-Man / ESXi** | |
| Management | Select "Registration" to manage the system of the component. |
| Management Type | Select a management type of the managed component.<br>- SNMP *1<br>NEC ESMPRO Agent is installed on the managed component.<br>- WS-Man *1, *2<br>NEC ESMPRO ServerAgentService is installed on the managed component. |
| SNMP Community Name(Get) | SNMP Community Name which is specified at SNMP Agent running on the managed component.<br>It is necessary to get the information, configure, monitor via SNMP |
| SNMP Community Name(Set) | When you want to set SNMP Community names for Get and Set separately on the managed component, specify the SNMP Community name for Set in this field by alphanumeric characters.<br>If it is not specified, SNMP Community name for Get will be used. |
| User Name<br>Password | Enter the password for communication with WS-Man service.<br>- NEC ESMPRO ServerAgentService (Windows) is installed.<br>Enter Username(Local User Accounts)/Password of Windows system Administrator<br>- NEC ESMPRO ServerAgentService (Linux) is installed.<br>Enter root/Password of Linux operating system |
| Communication | Select protocol HTTP/HTTPS for connection WS-Man service. *2 |

| | |
|---|---|
| Protocol | If you want to use HTTPS for WS-MAN communication with ESMPRO/ServerAgentService, refer to Chapter 2, Installation 3.3 HTTPS Setting in the ESMPRO/ServerAgentService Installation Guide (Windows). |
| Port Number | Enter port number where WS-Man service listens for connection. *3 |
| **RAID system management** | |
| Management | Select "Registration" to manage the RAID system of the component. |
| **NEC ExpressUpdate** | |
| Updates via NEC ExpressUpdate Agent | Select "Registration" to manage the component using NEC ExpressUpdate. |
| Updates via Management Controller | Select "Registration" to manage the component using Management Controller |
| **"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (Common)** | |
| Management | Select "Registration" otherwise NEC ESMPRO Manager may not monitor HW status. |
| Management Type | Select "vPro". |
| User Name | Enter the user name for communication with the vPro, |
| Password | Enter the password for communication with the vPro, |
| **"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (LAN)** | |
| IP Address 1 | Enter the IP address that is specified on LAN of the iAMT configuration for the managed component. |
| Subnet Mask1 *4 | Enter the subnet mask that is specified on LAN of the iAMT configuration for the managed component. |

**CHECK:**
- *1 If NEC ESMPRO Manager is installed on Linux system, “SNMP” and VMware ESXi server management are not supported.

**CHECK:**
- *2 If a self-signed certificate is installed on the managed server for HTTPS communication, a setting to allow it is required. Refer to “1.1 Setup Flow” for detailed information.

**CHECK:**
- *3 Regarding a port number for WS-Man communication, refer to “Appendix C. Port number for WS-Man communication”.

**CHECK:**
- *4 In NEC ESMPRO Manager Ver.6.06 or later, "Subnet Mask1" is not displayed.

(4) Click "Add".

(5) Click the "Connection Setting" from "Setting" tab of the managed component.
Click "Check Connection" to collect the managed component information for the management.

When the "Check Connection" is completed, the NEC ESMPRO Manager starts to control the managed component.

| Detected | Detail |
|---|---|
| Detected | The feature was detected.<br>NEC ESMPRO Manager can use the feature to manage the component. |
| Not Detected | The feature was not detected.<br>NEC ESMPRO Manager cannot use the feature to manage the component.<br>Check parameters corresponding to the feature. |

**CHECK:**

- This IP Address and OS IP Address are the same if you set the DHCP mode to "ENABLED" on the iAMT configuration.

### 8.3.2.2 Auto Registration

(1) Click the group name to which the managed component based on vPro will belong on the "Component List" or the "Group" tree.

(2) Click the "Auto Registration" from "Add Component" of the "Group Information" tab.

(3) Input the following items to search managed components based on vPro.

| Name | Value |
|---|---|
| Destination Group | Specify the group to which the managed component will belong. |
| **Discovery Range** | |
| Discovery Mode | With "IP Address Range Search" selected, the NEC ESMPRO Manager searches for the managed components using the IP address range.<br>With "Network Address Search" selected, the NEC ESMPRO Manager searches for the managed components using the specified network address. |
| Start Address<br>End Address | When you select "IP Address Range Search" for "Search Mode", specify the start IP address and end IP address of the range in which managed components are to be searched for. |
| Network Address<br>Network Mask | When you select "Network Address Search" for "Search Mode", specify the network address and network mask of the managed component to be searched for. |
| **SNMP (NEC ESMPRO Agent)** | |
| Discovery | Select “Enable” to manage the system of the component.*1 |
| SNMP Community Name | SNMP Community Name which is specified at SNMP Agent running on the managed component.<br>It is necessary to get the information, configure, monitor via SNMP |
| **WS-Man** | |
| Discovery | Select “Enable” to manage the system of the component. *1,*2, *4 |
| User Name/Password | Enter username and password for WS-Man communication. The account must be a system administrator of the managed operating system.<br>Click “Add” button and you can add a pair of username and password up to 5. *3<br>- NEC ESMPRO ServerAgentService (Windows) is installed.<br>Enter Username(Local User Accounts)/Password of Windows system Administrator<br>- NEC ESMPRO ServerAgentService (Linux) is installed.<br>Enter root/Password of Linux operating system |
| **ESXi** | |
| Discovery | Select “Disable” |
| **RAID system management** | |
| Management | Select "Enable" to manage the RAID system of the component. |
| **NEC ExpressUpdate** | |
| Updates via NEC ExpressUpdate Agent | Select "Enable" to manage the component using NEC ExpressUpdate. |

| | |
|---|---|
| **BMC (EXPRESSSCOPE Engine)** | |
| Discovery | Select "Disable" |
| **iLO** | |
| Discovery | Select “Disable” |
| **BMC (Other)** | |
| Discovery | Select “Disable” |
| **Intel(R) vPro(TM) Technology** | |
| Discovery | Select “Enable” |
| User Name/Password | Enter username and password for communication with the vPro, Clicking “Add” button, you can enter up to 5 pairs of username and password. *3 |

**CHECK:**
- *1 If NEC ESMPRO Manager is installed on Linux system, “SNMP” and VMware ESXi management are not supported.

**CHECK:**
- *2 If a self-signed certificate is installed on the managed server for HTTPS communication, a setting to allow it is required. Refer to “1.1 Setup Flow” for detailed information.

**CHECK:**
- *3 On “Environment” - “Auto Registration Setting List” screen, you can manage a list of username/password and authentication key. All entries in the list are used for auto registration every time.

**CHECK:**
- *4 If you want to use HTTPS for WS-MAN communication with ESMPRO/ServerAgentService, refer to Chapter 2, Installation 3.3 HTTPS Setting in the ESMPRO/ServerAgentService Installation Guide (Windows).

(4) Click “Run Discovery” and the discovery for the managed components will start.

(5) When the auto registration is completed, registered components are listed. After that, NEC ESMPRO Manager starts to manage them.

# Chapter9 Setup for NEC Scalable Modular Server DX2000

## 9.1 Overview

The NEC ESMPRO Manager can manage following modules of NEC Scalable Modular Server DX2000:

**Server Module**

NEC ESMPRO Manager manages each server module on the enclosure as same as the server which has integrates EXPRESSSCOPE Engine 3.

**CSC Module**

NEC ESMPRO Manager collects the following information of the enclosure by managing the CSC module.

-- STATUS lamp:
You can monitor the status of the whole enclosure.
-- Constitution information:
You can monitor each sensor status (fan, voltage, temperature, etc.) in the enclosure.
-- Power measurement:
You can measure the power consumption of the whole enclosure.

**Network Switch Module**

NEC ESMPRO Manager collects the following information of the Network Switch by managing the Network Switch module.

-- Constitution information:
You can monitor each sensor status (voltage, temperature.) in the Network Switch.
-- Power measurement:
You can measure the power consumption of the Network Switch.

**CHECK:**

- When registering CSC Module, Network Switch Module is registered automatically. Network Switch Module can not be registered individually.
- Network Switch Module and CSC Module are deleted together as related component. When Network Switch Module is registered, it is not possible to delete Network Switch Module and CSC Module separately.

## 9.2 Notes of before setup

The management of NEC Scalable Modular Server DX2000 can be supported with NEC ESMPRO Manager ver.6.08 or later.
The management of Network Switch Module can be supported with NEC ESMPRO Manager ver.6.13 or later.

## 9.3 Setup Flow

Setup by the following setup procedures:

(1) Connect the management PC on which NEC ESMPRO Manager is installed and the managed component on the same network.

(2) Configure BMC on the managed component to enable ESMPRO Management.

(3) Register the managed component on NEC ESMPRO Manager.

**CHECK:**

- Refer to “Chapter1 Setup for Managed Component in which EXPRESSSCOPE Engine 3 is integrated”.
- You can configure CSC module only with EXPRESSSCOPE Engine 3 Web Console. Refer “1.2.1Configuration with EXPRESSSCOPE Engine 3 WebConsole” and the user’s guide for the NEC Scalable Modular Server DX2000.

# Chapter10 Setup for the VMware ESXi server

## 10.1 Setup Flow

Setup by the following setup procedures:

**TIPS:**

- When the VMware ESXi7 server registered or earlier registered on NEC ESMPRO Manage is updated by VMware ESXi8, refer to "10.4 Upgrade to VMware ESXi8" of NEC ESMPRO Manager Ver.6 Setup Guide.

(1) Connect the management PC on which NEC ESMPRO Manager is installed and the VMware ESXi server as a managed component on the same network.

**IMPORTANT:**

Target of IMPORTANT is VMware ESXi 7.0 or earlier.

- Regarding making the WBEM service effective. (VMware ESXi 7.0 or earlier)
  On a new install of VMware ESXi, WBEM services may be disabled by default.
  You can check the status of the WBEM service with the following command:
  # esxcli system wbem get
  Enable: false Disabled Enable: true Enabled
  So you will need to use the following command to enable WBEM services.
  # esxcli system wbem set --enable true
  (*)If you installed SMI-S provider, WBEM services are enabled. So you don't need to use this command.
  (*)This command is not required FT server. Regarding the settings for WBEM(WS-MAN) service on FT server, refer to “7. NEC ESMPRO” of Chapter 3 in Maintenance Guide (VMware) for FT server.

- Set-up for sfcbd service restart
  sfcbd service starts in the state to which CIM Indication can't be transmitted.
  We confirmed that this issue is corrected by restarting sfcbd service.
  We confirmed that this issue is improved by restarting sfcbd service.
  To manage the RAID System by NEC ESMPRO Manager, please insert the following line just before the line ”exit 0”in the /etc/rc.local.d/local.sh.
  /etc/init.d/sfcbd-watchdog restart
  Sfcbd service will restarts automatically.

- Notes on Service Location Protocol Service Disabled Service
  For the release of VMware ESXi 7.0 Update 2c or later, the SLP service is disabled by default.
  If the SLP service is disabled, new VMware ESXi server cannot be monitored and connected.
  If NEC ESMPRO Manager registers VMware ESXi server and performs connection checks as a monitored server, the SLP service must be running and firewall settings.
  To perform monitoring registration and connection checking of new VMware ESXi server, follow these steps:
  1. Start SLP service on an ESXi host.
  Configure firewalls and enable SLP services and start SLP services.
  Perform the Solution "To remove the perform the perform the following steps:" of the following knowledge information.
  How to Disable/Enable the SLP Service on VMware ESXi.
  https://kb.vmware.com/s/article/76372

2. Register a new ESXi server as a monitored server with NEC ESMPRO Manager and perform connection checks.

**Notes:**

- When managing VMware ESXi8, if the VMware ESXi certificate cannot be verified with the certificate on the managed machine in an environment where there is no Internet connection, the connection may take a long time and a composition screen-display and so on sometimes take time.
  To avoid this, store the CA certificate in the Trusted Root Certification Authorities on the local computer of the managed machine so that VMware ESXi certificates can be validated.
  If VMware ESXi is managed by vCenter Server, this is usually the CA certificate of vCenter Server.
  If you have changed the certificate, store the corresponding CA certificate.

(2) Configure the management controller on VMware ESXi server if you want to manage the management controller.

(3) Register VMware ESXi server as a managed component on NEC ESMPRO Manager.

## 10.2 Configure the management controller on the Managed Component

Configure the management controller on the VMware ESXi server if you want to manage the management controller.

**In case that VMware ESXi server in which EXPRESSSCOPE ENGINE3 is integrated**:
See 1.2Configure BMC on Managed Component.

**In case that VMware ESXi server in which a BMC excluding EXPRESSSCOPE ENGINE3 is integrated:**
See 2.2Configure BMC on Managed Component (for LAN connection).

**TIPS:**

- To check the BMC type of the managed component, see Appendix D. Managed Components Summary

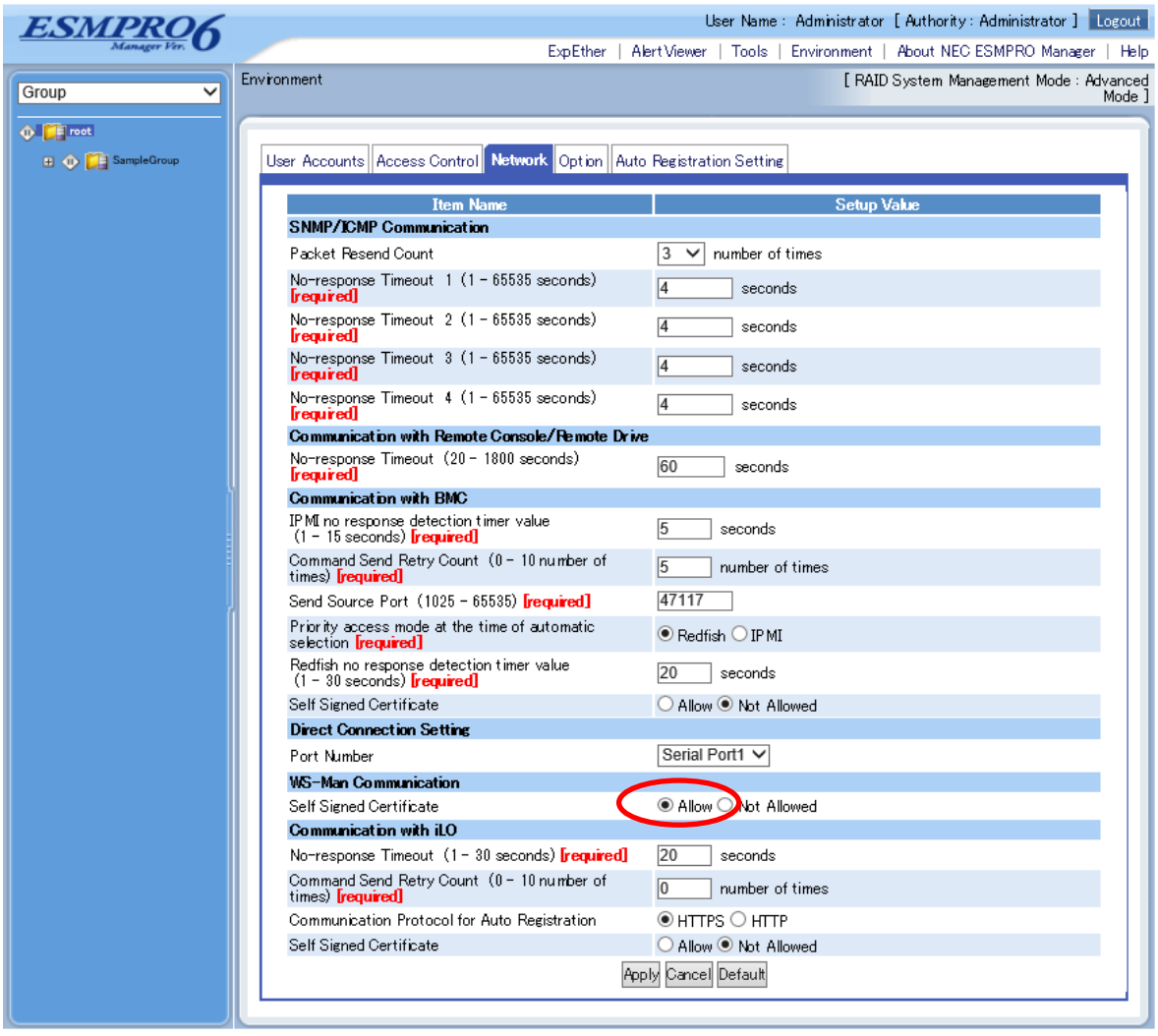
**In case that VMware ESXi server in which iLO is integrated**:
See 4.2 Configure iLO on Managed Component.

# 10.3 Register the managed component on NEC ESMPRO Manager

## 10.3.1 Set the Environment

(1) When using VMware ESXi in the following environment, set the “Self-Signed Certificate” to “ Allowed” on “Network” tab of “Environment”.

・If the managed is a VMware ESXi server and you cannot trust the VMware ESXi server certificate by https connection by IP address.



### 10.3.2 Add Group which the managed component will belong

See 1.3.2 Add Group to which the managed component will belong".

### 10.3.3 Register the Managed Component

Use either of following two methods to register the managed component.

**Manual Registration**

This method requires the operator to directly enter the VMware ESXi server's information such as the IP address.

**Auto Registration**

This method automatically searches the network for VMware ESXi servers and managed components that are not registered yet on the NEC ESMPRO Manager and registers them.

#### 10.3.3.1 Manual Registration

(2) Click the group name to which the VMware ESXi server will belong.

(3) Click the "Manual Registration"-"Full Management" from “Add Component” of “Group Information” tab.

(4) Input the following items.

| Name | Value |
|---|---|
| Component Name | Specify the name of the managed component on NEC ESMPRO Manager. Assign a name different from other managed component names. Do not enter a name including blank characters. Uppercase characters are distinguished from lowercase characters. |
| Alias | Specify the information about the managed component. Do not enter a name including blank characters. Uppercase characters are distinguished from lowercase characters. |
| Group | Specify the group to which the managed component will belong. |
| **Common Setting** | |
| OS IP Address | Specify the OS IP Address of the managed component. |
| **SNMP (NEC ESMPRO Agent) / WS-Man / ESXi** | |
| Management | Select "Registration" to manage the system of the component. |
| Management Type | Select a management type of the managed component.<br>- WS-Man *1, *2<br>NEC ESMPRO ServerAgentService is installed on the managed component.<br>The operating system of the managed component is VMware VMware ESXi7.<br>- ESXi *1, *2<br>The operating system of the managed component is VMware ESXi8. |
| User Name/Password | Enter an administrative user’s account of VMware ESXi server. |
| Communication Protocol | Select protocol HTTPS. *1 |
| Port Number | Enter port number where WS-Man service listens for connection. *2 |
| **RAID system management** | |
| Management | Select "Registration" to manage the RAID system of the component.<br>If the operating system of the managed component is VMware VMware ESXi7, WS-Man management must be enabled in addition to this setting.<br>Select "Unregistration" when the operating system of the managed component is VMware ESXi8. |
| **NEC ExpressUpdate** | |
| Updates via NEC ExpressUpdate Agent | Select "Registration" to manage the component using NEC ExpressUpdate. |
| Updates via Management Controller | Select "Registration" to manage the component using Management Controller |
| **"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (Common)** | |
| Management | Select "Registration" otherwise NEC ESMPRO Manager may not monitor HW status. |
| Management Type | In the case of VMware ESXi server integrated BMC:<br>Select "BMC".<br>In the case of VMware ESXi server integrated iLO:<br>Select "iLO".<br>In the case of VMware ESXi server integrated BMC other than "BMC (EXPRESSSCOPE Engine)":<br>Select "BMC (Other)". |
| Authentication Key | If select “BMC (EXPRESSSCOPE Engine)” in “Management Type”, this |

| | |
|---|---|
| | item will be displayed.<br>Enter the "authentication key" that you set in “1.2 Configure BMC on Managed Component”. |
| Access Mode | If select “BMC (Other)”in “Management Type”, this item will be displayed.<br>Select the access mode used to search for BMC (Other) management functions.*4<br>・Auto<br>Automatically select either Redfish or IPMI. If you can connect with both access modes, follow the settings in "Preferred access mode for automatic selection" on the Preferences - Network screen. Subsequent connections use the first automatically selected access mode.<br>・Redfish<br>Specify Redfish as the access mode to the BMC (Other).<br>・IPMI<br>Specify IPMI as the access mode to the BMC (Other). |
| Port Number | If select “BMC (Other)” in “Management Type”, this item will be displayed.<br>Specify the pot number to connect tot using Redfish.<br>If you select “Auto Select” or “Redfish” as the access mode, setting the port number is mandatory. |
| User Name<br>Password | If select “iLO” or “BMC (Other)” in “Management Type”, this item will be displayed.<br>If select “iLO” in “Management Type”, enter the user name and password for communication with the iLO, *5<br>If select “BMC (Other)” in “Management Type”, enter the user name and password for communication with the BMC (Other). *6 |
| **"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (LAN)** | |
| Current IP Address | If you set both “IP Address1” and “IP Address2”, specify which IP address you want to use for connection. |
| Failover | This setting is valid only when both “IP Address1” and “IP Address2” are set. Determine whether to enable/disable the “Failover” feature. |
| IP Address 1 | Enter the IP address that is specified on LAN1 of the BMC configuration for the managed component.<br>If the managed component is a fault tolerant server, you should enter the IP address of the management LAN port for the CPU/IO module 0 to the form.<br>If the managed component is a server which has EXPRESSSCOPE Engine SP3(2BMC model), you should enter the IP address of the management LAN port for the Master BMC to the form. |
| Subnet Mask1 *3 | Enter the subnet mask that is specified on LAN1 of the BMC configuration for the managed component.<br>If the managed component is a fault tolerant server, you should enter the subnet mask of the management LAN port for the CPU/IO module 0 to the form.<br>If the managed component is a server which has EXPRESSSCOPE Engine SP3(2BMC model), you should enter the subnet mask of the management LAN port for the Master BMC to the form. |
| IP Address 2 | Enter the IP address that is specified on LAN2 of the BMC configuration for the managed component.<br>If the managed component is a fault tolerant server, you should enter the IP address of the management LAN port for the CPU/IO module 1 to the form.<br>If the managed component is a server which has EXPRESSSCOPE Engine SP3(2BMC model), you should enter the IP address of the |

| | |
|---|---|
| | management LAN port for the Standby BMC to the form. |
| Subnet Mask2 *3 | Enter the subnet mask that is specified on LAN2 of the BMC configuration for the managed component.<br>If the managed component is a fault tolerant server, you should enter the subnet mask of the management LAN port for the CPU/IO module 1 to the form.<br>If the managed component is a server which has EXPRESSSCOPE Engine SP3(2BMC model), you should enter the subnet mask of the management LAN port for the Standby BMC to the form. |

**CHECK:**

- *1 If a self-signed certificate is installed on the managed server for HTTPS communication, a setting to allow it is required. Refer to “1.1 Setup Flow” for detailed information.

**CHECK:**

- *2 Regarding a port number for WS-Man communication, refer to “Appendix C. Port number for WS-Man communication”.

**CHECK:**

- *3 In NEC ESMPRO Manager Ver.6.06 or later, "Subnet Mask1" and "Subnet Mask2" are not displayed.

**CHECK:**

- *4 When using Redfish as the BMC (Other) access mode, it is necessary to allow self-signing in NEC ESMPRO Manager by referring to "5.3.1 Configure configuration" in the following cases.

  If you use Redfish as the access mode for communication between BMC (Other) components and NEC ESMPRO Manager and use self-signed.

**CHECK:**

- *5 Set a user name and a password of following user account. Please refer to "iLO5 user’s guide" for details about a user account of iLO.
  -- Administrator of the default user
  -- Additional user with all user privileges.

  If a user account of other than the above is used, there is a possibility that you can't use some function for managing iLO.

**CHECK:**

- *6 Set a user name and a password of following user account. Please refer to "BMC/CMC Management Console User's Guide" for details about a user account of BMC (Other).
  -- Administrator of the default user
  -- Additional user with all user privileges.

  If a user account of other than the above is used, there is a possibility that you can't use some function for managing BMC (Other).

**IMPORTANT:**

- If BMC(EXPRESSSCOPE Engine) management and iLO management and BMC (Other) management are disabled, NEC ESMPRO Manager cannot monitor HW status. Detailed information is shown in the connection check result screen.

**IMPORTANT:**

- If the BMC (Other) access mode is Redfish, you cannot use the Remote Console and Console Log Setting.
  Other features are not different between IPMI and Redfish.

(5) Click “Add”.

(6) Click the “Connection Setting” from “Setting” tab of the managed component.
Click “Check Connection” to collect the VMware ESXi server information for the management.

When the “Check Connection” is completed, the NEC ESMPRO Manager starts to control the VMware ESXi server.

| Detected | Detail |
|---|---|
| Detected | The feature was detected.<br>NEC ESMPRO Manager can use the feature to manage the component. |
| Not Detected | The feature was not detected.<br>NEC ESMPRO Manager cannot use the feature to manage the component.<br>Check parameters corresponding to the feature. |

#### 10.3.3.2 Auto Registration

(1) Click the group name to which the VMware ESXi server will belong.

(2) Click the “Auto Registration” from “Add Component” of the “Group Information” tab.

(3) Input the following items to search VMware ESXi servers.

| Name | Value |
|---|---|
| Destination Group | Specify the group to which the managed component will belong. |
| **Discovery Range** | |
| Discovery Mode | With "IP Address Range Search" selected, the NEC ESMPRO Manager searches for the managed components using the IP address range.<br>With "Network Address Search" selected, the NEC ESMPRO Manager searches for the managed components using the specified network address. |
| Start Address<br>End Address | When you select "IP Address Range Search" for "Search Mode", specify the start IP address and end IP address of the range in which managed components are to be searched for. |
| Network Address<br>Network Mask | When you select "Network Address Search" for "Search Mode", specify the network address and network mask of the managed component to be searched for. |
| **SNMP (NEC ESMPRO Agent)** | |
| Discovery | Select “Disable” |
| **WS-Man** | |
| Discovery | Select “Enable” to manage VMware ESXi7 of the component. *1 |
| User Name/Password | Enter an administrative user’s account of VMware ESXi server.<br>Click “Add” button and you can add a pair of username and password up to 5. *2 |
| **ESXi** | |
| Discovery | Select “Enable” to manage VMware ESXi8 of the component. *1 |
| User Name/Password | Enter an administrative user’s account of VMware ESXi server.<br>Click “Add” button and you can add a pair of username and password up to 5. *2 |
| **RAID system management** | |
| Management | Select "Enable" to manage the RAID system of the component.<br>WS-Man management must be enabled in addition to this setting.<br>Select "Disable" when the operating system of the managed component is VMware ESXi8. |
| **NEC ExpressUpdate** | |
| Updates via NEC ExpressUpdate Agent | Select "Disable". |
| **BMC (EXPRESSSCOPE Engine)** | |
| Discovery | If you search for VMware ESXi server in which BMC is integrated, select "Enable" otherwise NEC ESMPRO Manager cannot monitor HW status. |
| Features NEC ExpressUpdate | Select "Enable" to feature NEC ExpressUpdate. |
| Authentication Key | Enter the "authentication key" that you set in “1.2 Configure BMC on Managed Component”. *2 *3 |
| **iLO** | |
| Discovery | If you search for VMware ESXi server in which iLO is integrated, select “Enable” otherwise NEC ESMPRO Manager cannot monitor HW status. |

| | |
|---|---|
| User Name/Password | Enter username and password for communication with the iLO,<br>Clicking “Add” button, you can enter up to 5 pairs of username and password. *5 |
| **BMC (Other)** | |
| Discovery | If you search for VMware ESXi server in which BMC other than "BMC (EXPRESSSCOPE Engine)" is integrated, select “Enable” otherwise NEC ESMPRO Manager cannot monitor HW status. |
| Access Mode | Select the access mode you want to use to search for BMC (Other) management functions. *6<br>・Auto<br>Automatically select either Redfish or IPMI. If you can connect with both access modes, follow the settings in "Preferred access mode for automatic selection" on the Preferences - Network screen. Subsequent connections use the first automatically selected access mode.<br>・Redfish<br>Specify Redfish as the access mode to the BMC(Other).<br>・IPMI<br>Specify IPMI as the access mode to the BMC(Other). |
| User Name/Password | Enter username and password for communication with the BMC (Other).<br>Clicking “Add” button, you can enter up to 5 pairs of username and password. *7 |
| **Intel(R) vPro(TM) Technology** | |
| Discovery | Select “Disable” |

**CHECK:**

- *1 If a self-signed certificate is installed on the managed server for HTTPS communication, a setting to allow it is required. Refer to “1.1 Setup Flow” for detailed information.

**CHECK:**

- *2 On “Environment” - “Auto Registration Setting List” screen, you can manage a list of username/password and authentication key. All entries in the list are used for auto registration every time.

**CHECK:**

- *3 If you register the "Management Controller" management for a fault tolerant server, you should specify the search range which includes BMC IP addresses of CPU/IO module 0 and 1.
- *4 If you register the "Management Controller" management for a server which has EXPRESSSCOPE Engine SP3(2BMC model), you should specify the search range which includes both BMC IP addresses of Master and Standby.

**CHECK:**

- *5 Set a user name and a password of following user account. Please refer to "iLO5 user’s guide" for details about a user account of iLO.
  -- Administrator of the default user
  -- Additional user with all user privileges.

  If a user account of other than the above is used, there is a possibility that you can't use some function for managing iLO.

**CHECK:**

- *6 When using Redfish as the BMC (Other) access mode, it is necessary to allow self-signing in NEC ESMPRO Manager by referring to "5.3.1 Configure configuration" in the following cases.

  If you use Redfish as the access mode for communication between BMC (Other) components and NEC ESMPRO Manager and use self-signed.

**CHECK:**

- *7 Set a user name and a password of following user account. Please refer to "BMC/CMC Management Console User's Guide" for details about a user account of BMC (Other).
  -- Administrator of the default user
  -- Additional user with all user privileges.

  If a user account of other than the above is used, there is a possibility that you can't use some function for managing BMC (Other).

**IMPORTANT:**

- If BMC(EXPRESSSCOPE Engine) management and iLO management and BMC (Other) management are disabled, NEC ESMPRO Manager may not be able to monitor HW status. Detailed information is shown in the connection check result screen.

**IMPORTANT:**

- If the BMC (Other) access mode is Redfish, you cannot use the Remote Console and Console Log Setting.
  Other features are not different between IPMI and Redfish.

(4) Click “Search”.
The search for managed components will start

(5) The list of the registered components is displayed. After that, NEC ESMPRO Manager starts to manage them.

# 10.4 Upgrade to VMware ESXi8

## 10.4.1 Changes Management Type.

Change to ESXi management from WS-Man management when being upgraded by VMware ESXi8.

(1) In the ESXi management, it does not use when setting the following to manage WS-Man in NEC ESMPRO Manager.

- Enable the WBEM service.
- Configure the sfcbd service to restart automatically when VMware ESXi boots.
- Enable the Service Location Protocol service.

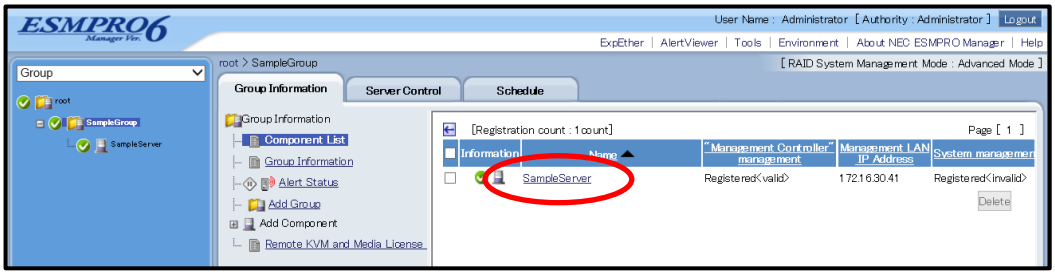
Therefore, the following configure when not using except NEC ESMPRO Manager.

- Disable the WBEM service.
  Execute following command to disable the WBEM service.
  # esxcli system wbem set --enable false

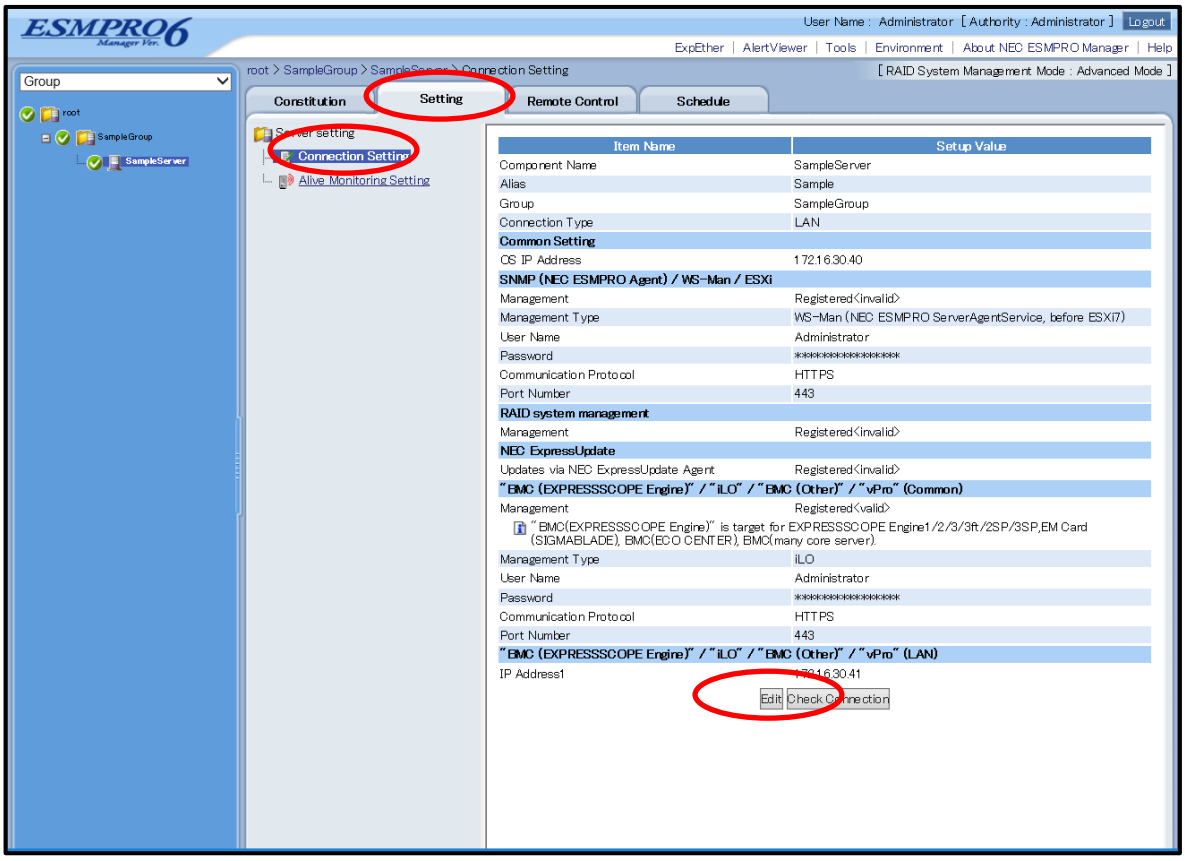
- Do not automatically restart the sfcbd service when VMware ESXi boots.
  Delete the following line added to /etc/rc.local.d/local.sh.
  /etc/init.d/sfcbd-watchdog restart

- Disable the Service Location Protocol service.
  Perform the Solution "To implement the workaround perform the following steps:" of the following knowledge information.
  How to Disable/Enable the SLP Service on VMware ESXi (76372)
  https://kb.vmware.com/s/article/76372

(2) Click the component of the VMware ESXi7 server.



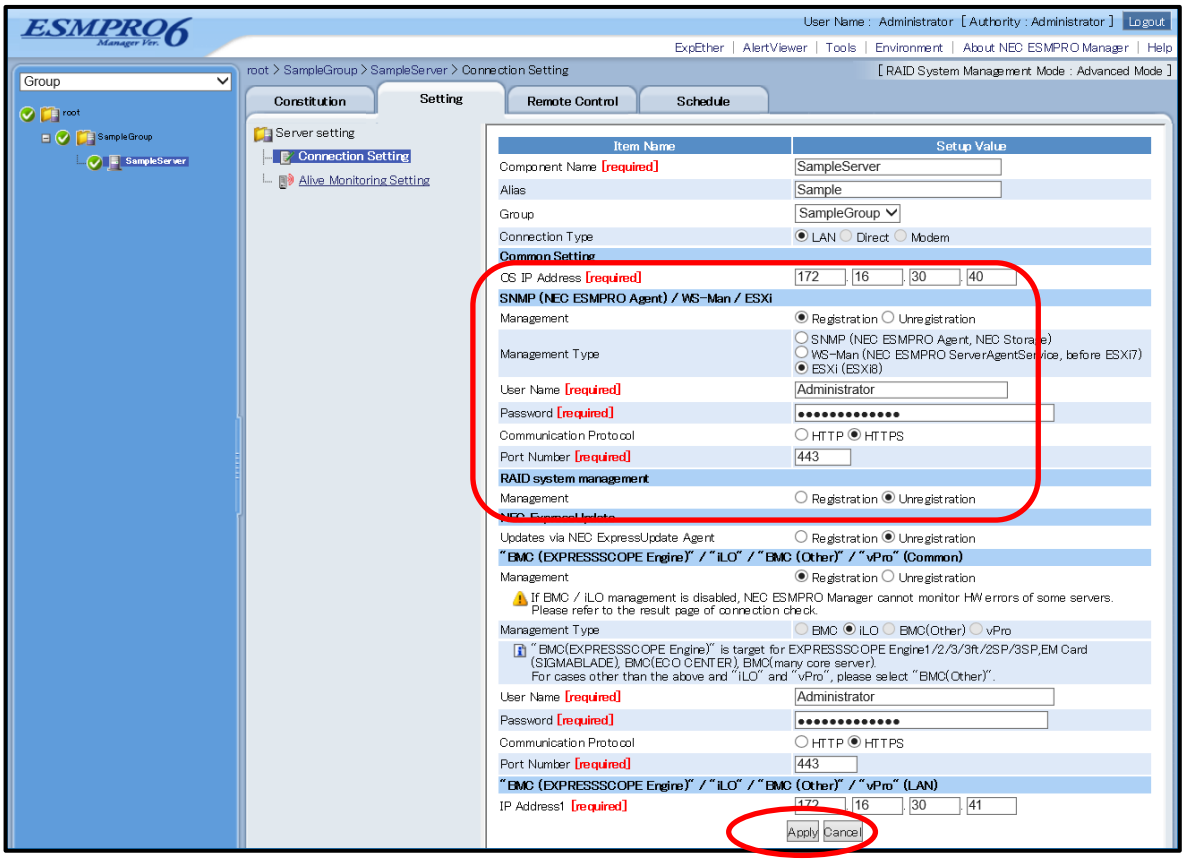
(3) Click "Connection Setting" from "Setting" tab of the managed component.
"Connection Setting" view is displayed. Click "Edit".




(4) Change into ESXi management from WS-Man management.

| Name | Value |
|---|---|
| **SNMP (NEC ESMPRO Agent) / WS-Man / ESXi** | |
| Management Type | Change to ESXi from WS-Man. |
| User Name/Password | Enter an administrative user's account of VMware ESXi server. |
| Communication Protocol | Select protocol HTTPS. *1 |
| Port Number | Enter port number where WS-Man service listens for connection. *2 |
| **RAID system management** | |
| Management | In case of Registration, choose Unregistration. |

(5) Click "Apply".




(6) Click the "Connection Setting" from "Setting" tab of the managed component.
Click "Check Connection" to collect the VMware ESXi server information for the management.

When the "Check Connection" is completed, the NEC ESMPRO Manager starts to control the VMware ESXi server.

| Detected | Detail |
|---|---|
| Detected | The feature was detected.<br>NEC ESMPRO Manager can use the feature to manage the component. |
| Not Detected | The feature was not detected.<br>NEC ESMPRO Manager cannot use the feature to manage the component.<br>Check parameters corresponding to the feature. |

# Chapter11 Setup for the Alert only Component

NEC ESMPRO Manager ver.6.02 or later can receive SNMP Trap from registered component as “Alert Only Management”.
This chapter explains the setup procedure for the NEC ESMPRO Manager to manage the Alert only Component

## 11.1 Setup Flow

Perform the following setup procedure:

(1) Connect the management PC on which NEC ESMPRO Manager is installed and the managed SNMP Trap component on the same network.

(2) Configure SNMP Trap on the managed Alert only component by NEC ESMPRO Manager to enable SNMP Trap.
* Please refer to procedure manual of component to enable SNMP Trap.

(3) Register the managed component on NEC ESMPRO Manager.

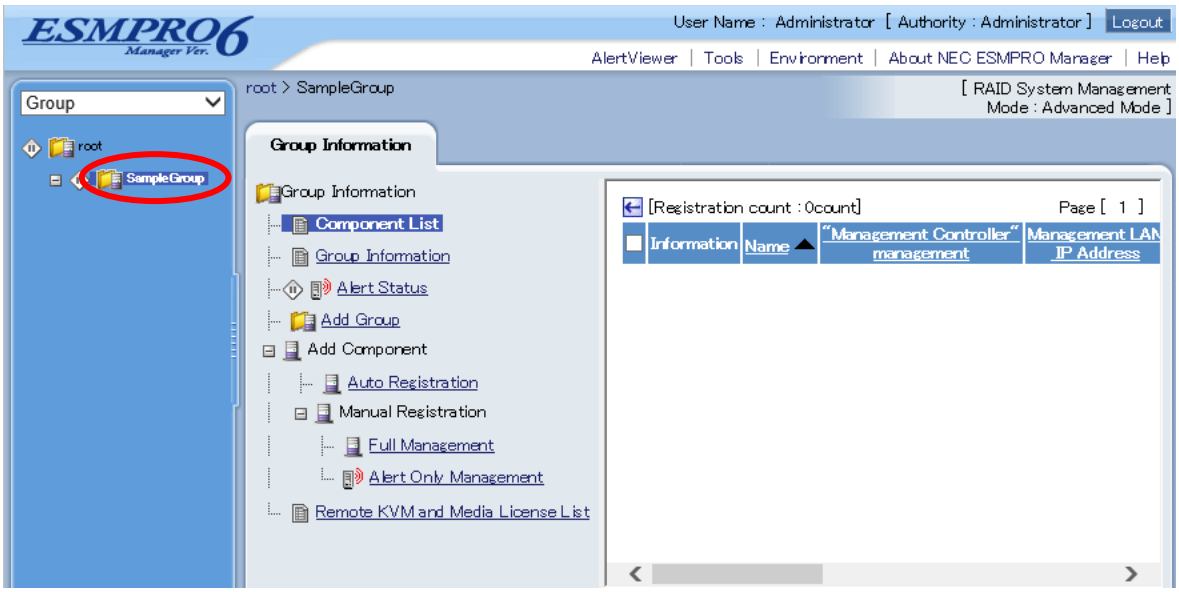
## 11.2 Register a managed component on NEC ESMPRO Manager

To register the managed component on the NEC ESMPRO Manager, login to the NEC ESMPRO Manager and perform in the following order:

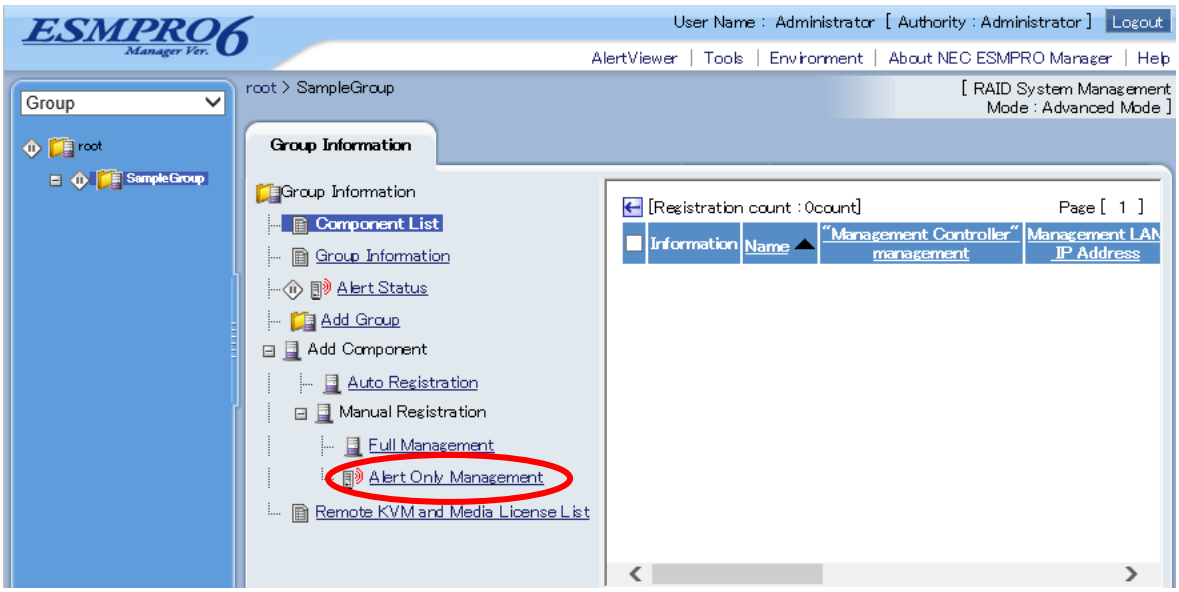
**CHECK:**

- Alert Only Management can be registered from “Manual Registration”. Cannot be registered from “Auto Registration”.

(1) Click the managed component's "Group name".
* If you want to register the managed component in the new group, please refer to Chapter. 1.3.2



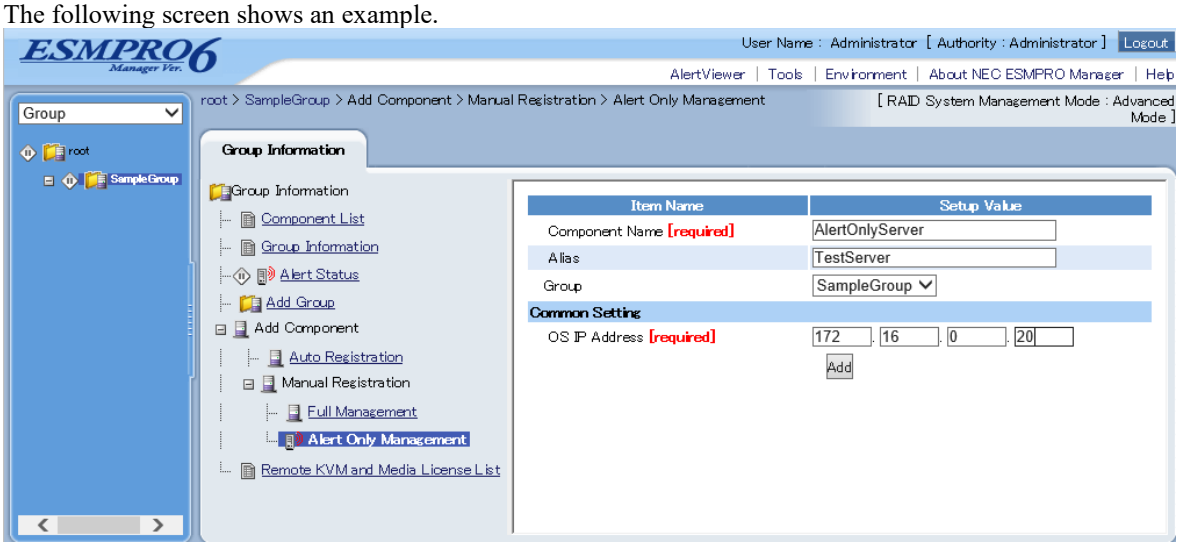

(2) Click the "Manual Registration" - “Alert Only Management” from "Add Component" of "Group Information" tab



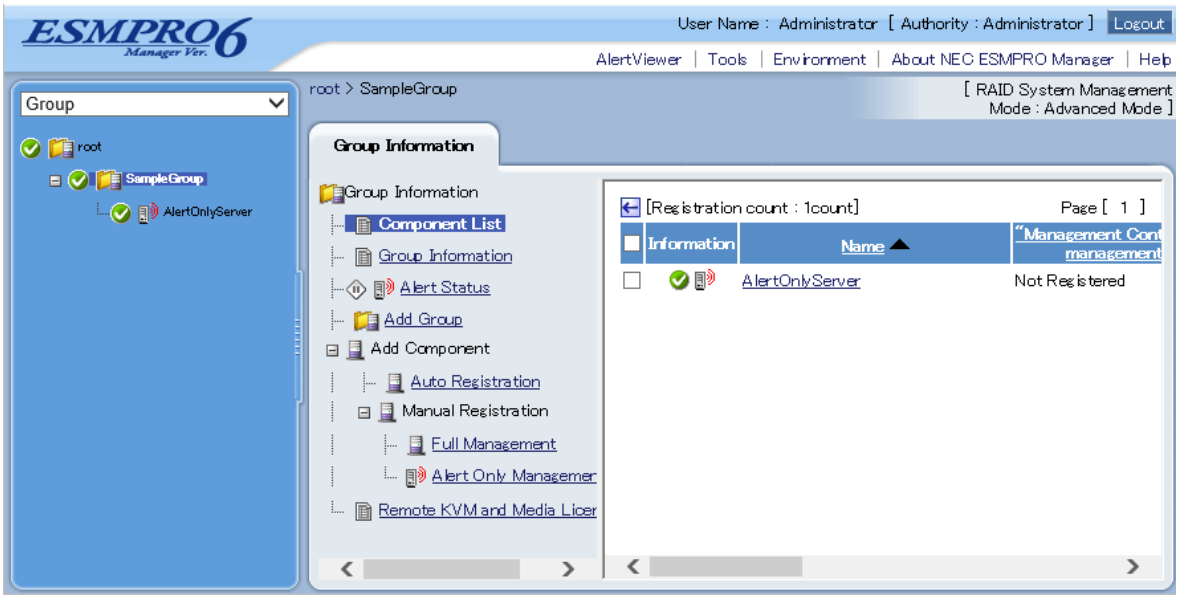
(3) Click the managed component's "Group name".

| Name | Value |
|---|---|
| Component Name | Specify the name of the managed component on NEC ESMPRO Manager. Assign a name different from other managed component names. Do not enter a name including blank characters. Uppercase characters are distinguished from lowercase characters. |
| Alias | Specify the information about the managed component. Do not enter a name including blank characters. Uppercase characters are distinguished from lowercase characters. |
| Group | Specify the group to which the managed component will belong. |
| **Common Setting** | |
| OS IP Address | Specify the OS IP Address of the managed component. |

The following screen shows an example.




(4) Click "Add" button. Component information is added in selected Group member.



# Chapter12 Setup for ExpEther

NEC ESMPRO Manager ver.6.15 or later can manage ExpEther.

## 12.1 Notes of before setup

NEC ESMPRO Manager cooperates with ExpEther Manager to manage ExpEther.
ExpEther must have its host's serial number in own EEPROM so that NEC ESMPRO Manager can manage ExpEther. So User should set host's serial number to the EEPROM on ExpEther board by using ExpEtherConfigTool.

For the ExpEtherConfig Tool, see the user's guide of ExpEther IO Expansion Unit (40G).

## 12.2 Setup Flow

Perform the following setup procedure:

(1) Install ExpEther Manager on the server which is connected to the same network as NEC ESMPRO Manager.

For the installation of ExpEther Manager, see the user's guide of ExpEther IO Expansion Unit (40G).

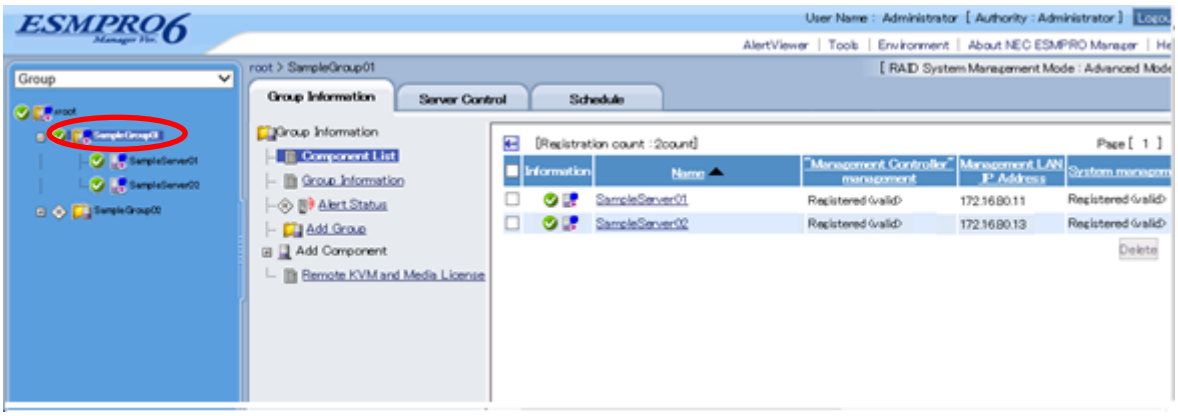
(2) Register the ExpEther Manager on NEC ESMPRO Manager by using "Discovery ExpEther Manager API".

Perform "Discovery ExpEther Manager API" after performing “Login API”.
Refer to “NEC ESMPRO Manager Ver.6 RESTful API Reference” for details of API.
When executing "Diascovery ExpEther Manager API", you can use a sample script which is mentioned in “Appendix E. Means to perform REST API using a sample script”.

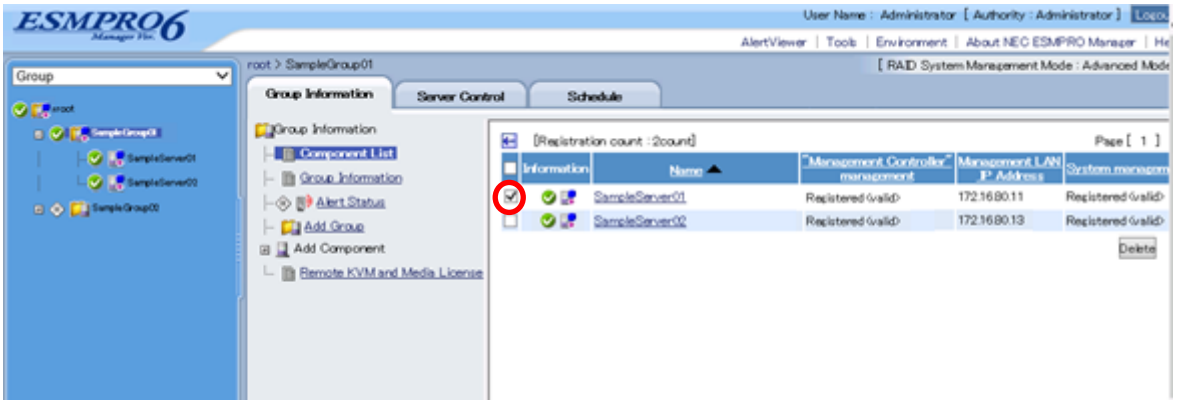
# Chapter13 Removing components and groups

## 13.1 Removing components

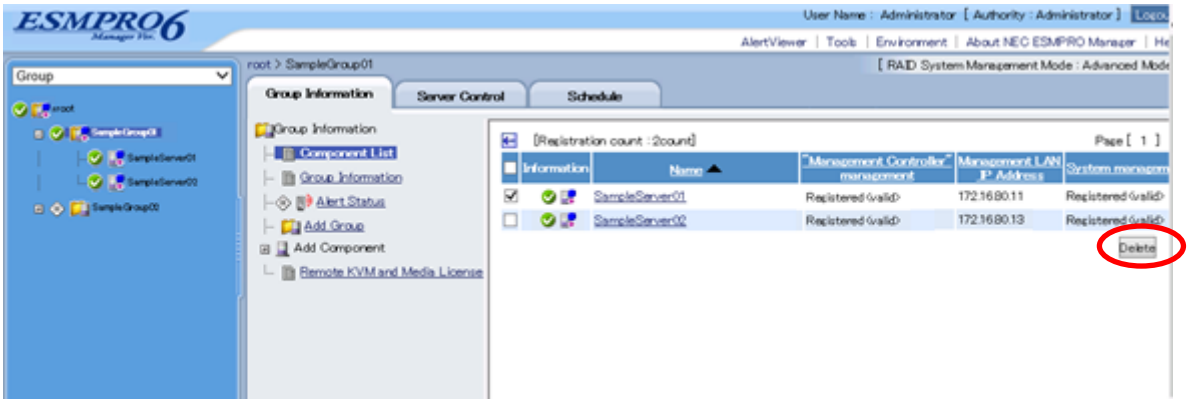
(1) Select a group which target components belong to.




(2) Check target components.

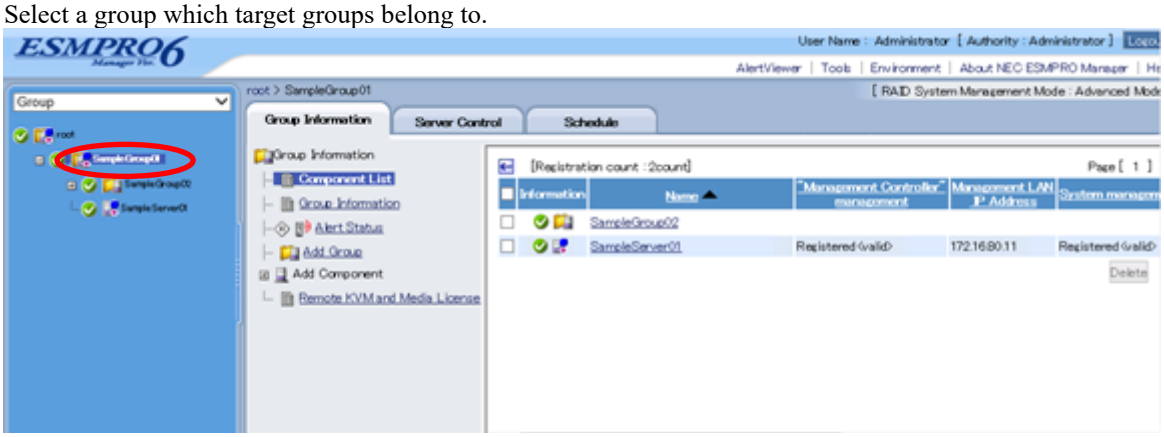



(3) Click “Delete” button and you can remove checked components from NEC ESMPRO Manager.

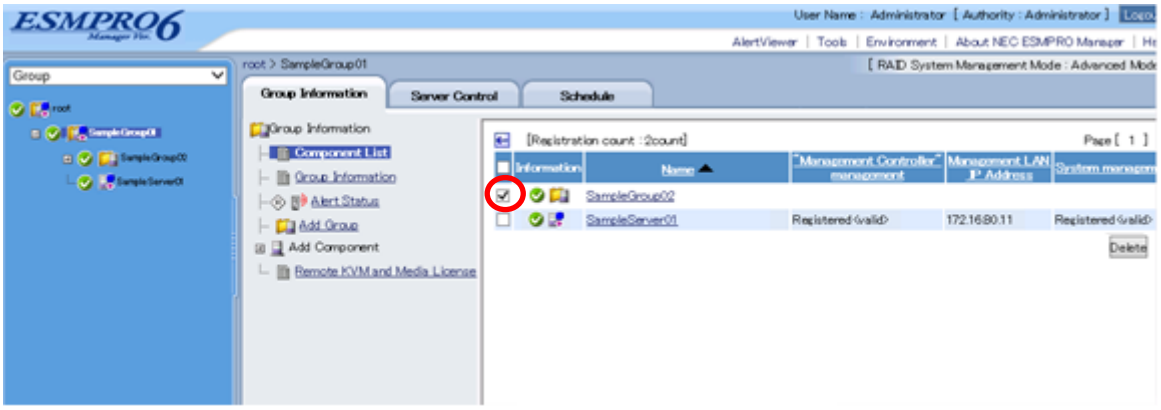


## 13.2 Removing groups

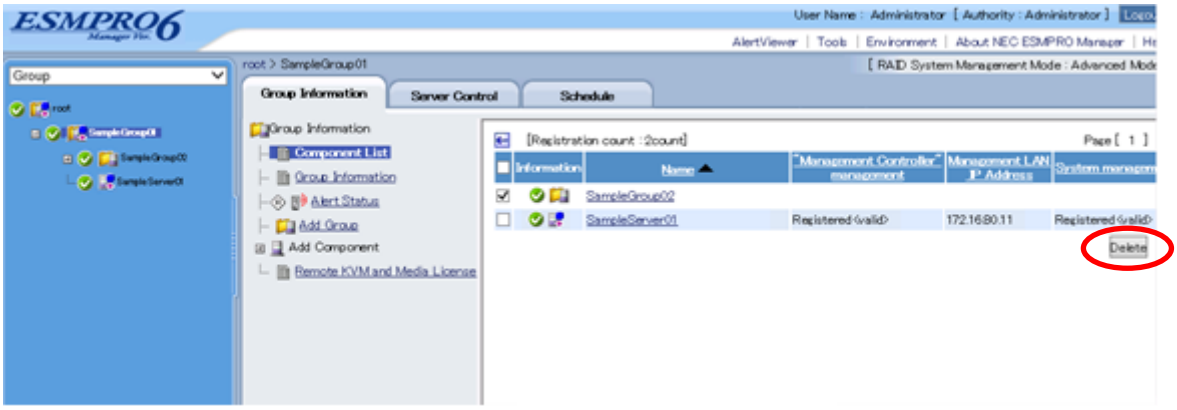
(1) Select a group which target groups belong to.




(2) Check target groups.




(3) Click “Delete” button and you can remove checked groups from NEC ESMPRO Manager. And components belong to the checked groups are also removed.




**TIPS:**

- Removing components and removing groups cannot be executed at the same time.

# Appendix A. How to setup for the managed component that does not has local console

Even if a managed component does not have local consoles like a keyboard, you can operate BIOS setup and DOS tools of the managed component using NEC ESMPRO Manager. Here procedure of the minimum in order to use the remote control for the managed component is shown.

1. Install NEC ESMPRO Manager and set the Environment.
2. Configure BMC on a managed component.
3. Register a managed component on NEC ESMPRO Manager.
4. Open the remote console.

**1. Install NEC ESMPRO Manager and set the Environment.**

(1) Install NEC ESMPRO Manager on a management PC.
Refer to NEC ESMPRO Manager Ver.6 Installation Guide.

(2) Confirm that you can login to the NEC ESMPRO Manager.

(3) When you use LAN connection, connect the NEC ESMPRO Manager server and the managed component on the network.

(4) When you use direct connection, connect a serial port of the NEC ESMPRO Manager server to serial port 2 of the managed component using RS232-C cross cable. Then, set the serial port of the NEC ESMPRO Manager server on OS.

(5) Install NEC ESMPRO BMC Configuration on any PC.

**2. Configure BMC on a managed component.**

(1) Configure BMC of the managed component.
When you use LAN connection, refer to 2.2.2”Configuration with NEC EXPRESSBUILDER DOS based with remote console feature (for LAN connection)”.
When you use direct connection, refer to 3.2.2”Configuration with NEC EXPRESSBUILDER DOS based with remote console feature (for modem/direct connection)”.

**3. Register a managed component on NEC ESMPRO Manager.**

(1) After login to NEC ESMPRO Manager, register Add a new group that the managed component will belong.
Refer to 2.3.1”Add Group to which the managed component will belong”.

(2) Register the managed component.
For LAN connection, refer to 2.3.2.2”Auto Registration”.
For direct connection, refer to 3.3.2”Register the Managed Component (for modem/direct connection)”.

**4. Open the remote console.**

(1) Select the managed component on NEC ESMPRO Manager and click remote console tab to open the remote console.

(2) Select the managed component on NEC ESMPRO Manager and click remote control tab.
Reboot the managed component using some remote control command.
When the managed component is booted using NEC EXPRESSBUILDER CD-ROM, the main menu of NEC EXPRESSBUILDER will be displayed on the remote console of NEC ESMPRO Manager.

**TIPS:**

- If you use DOS based tool on the managed component, execute a remote control command with checking the check box of “Utility Boot” on remote control tab.
  If the anything is not displayed on the remote console.
  For LAN connection input ESC+{ key on the remote console.
  For direct connection, click “Resume Redirection” and then input ESC+{ key on the remote console.

**CHECK:**

- After the operation to the managed component is finished, click “disconnect” on “Connection setting” to disconnect for direct connection.

# Appendix B. How to setup for using NEC ESMPRO Agent Extension or NEC DianaScope Agent on the managed component that is set LAN teaming

Please setup NEC ESMPRO Manager with the procedure below using NEC ESMPRO Agent Extension, or NEC DianaScope Agent ver.2.00.00 and above.
The operation for NEC ESMPRO Agent Extension is explained.

How to setup is depended on the type of the managed component on which NEC ESMPRO Agent Extension has been installed.
- On the managed component that BMC uses standard LAN port.
- On the managed component that BMC uses Management LAN port.

Please see the appropriate explanation.

## B.1 On the managed component that BMC uses standard LAN port

**CHECK:**
- DO NOT refer this description for the managed component in which EXPRESSSCOPE Engine series is integrated.

Refer to “NEC ESMPRO Manager Ver.6 Installation Guide” about the setting of LAN Teaming that is available for NEC ESMPRO Manager.

If OS on the managed component is Linux, how to setup the NEC ESMPRO Manager is not depended on LAN teaming.

If OS on the managed component is Windows, please setup the NEC ESMPRO Manager with the procedure below.

1. Invalidate BMC IP address synchronization function of NEC DianaScope Agent.
2. Set BMC configuration by using the NEC DianaScope Agent.
3 Select IP address for NEC DianaScope Agent.
4. Register the managed component on the NEC DianaScope Agent.

**1. Invalidate BMC IP address synchronization function of the NEC DianaScope Agent**.

(1) Click “NEC DianaScope Agent” - “NEC DianaScope Agent” from the start menu on Windows.

(2) Click “synchronization” on the dialog box of the NEC DianaScope Agent.

(3) Set the BMC IP address synchronization to disable.

**2. Set BMC configuration by using the NEC DianaScope Agent.**

(1) See 2.2.1"Configuration with NEC ESMPRO Agent Extension ver1.xx (for LAN connection)" and set BMC configuration information.
Note the followings:
- Set LAN1 IP address to same value of the teaming-set IP address.
- 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 LAN2 IP address for BMC is already set, change it to "0.0.0.0".)

**CHECK:**
- Even if the BMC configuration has been already set, confirm the LAN1 IP address and register it again after invalidating BMC IP address synchronization function.

**3 Select IP address for NEC DianaScope Agent**.

(1) Select "Select IP address for Agent" on NEC DianaScope Agent.

(2) Enter the teaming address for LAN1.

**4. Register the managed component on the NEC ESMPRO Manager.**

(1) See 2.3"Register a managed component on NEC ESMPRO Manager (for LAN connection)" and register the managed component.

**CHECK:**
- Confirm the IP address of the managed component even if the "Check Connection" for the managed component has been completed. If the IP address is different from the teaming-set IP address that is set in the procedure "2. Set BMC configuration through NEC DianaScope Agent", edit it and perform "Check Connection" again.

## B.2 On the managed component that BMC uses Management LAN port

Please setup the NEC ESMPRO Manager with the procedure below. This procedure does not depend on OS of the managed component.

1. Set IP address that NEC ESMPRO Agent Extension uses on NEC ESMPRO Agent Extension.
2. Register the managed component on the NEC ESMPRO Manager.

**1. Set IP address that NEC ESMRPO Agent Extension uses on NEC ESMPRO Agent Extension.**

(1) Click “Set Agent IP address” of NEC ESMPRO Agent Extension and set the IP address that is used for Teaming on any LAN.

**2. Register the managed component on the NEC ESMPRO Manager.**

(1) See 2.3”Register a managed component on NEC ESMPRO Manager (for LAN connection)” and register the managed component.

**CHECK:**

- If the “Check Connection” for the managed component has been completed, perform “Check Connection” again after performing “Set IP address that NEC ESMPRO Agent Extension uses on NEC ESMPRO Agent Extension”.

# Appendix C. Port number for WS-Man communication

A port number where WS-Man service listens for connection is as follow.

(1) Windows system
WS-Man service listens for HTTPS connection at port 5986, for HTTP connection at port 5985.

(2) Linux system
WS-Man service listens for HTTPS connection at port 5986. Linux system does not support HTTP connection.

(3) VMware ESXi system
WS-Man service listens for HTTPS connection at port 443. VMware ESXi system does not support HTTP connection.

# Appendix D. Managed Components Summary

## Component which is installed BMC/iLO/BMC(Other)

The NEC ESMPRO Manager has following functions for BMC conforming to management components.

- Remote console
- Information collection
- Power control
- Component monitoring
- Remote batch
- Operation through the command line

Some available functions are dependent on the product type of the managed component. See the following managed component list.
The notes and restrictions of each component product are also explained in the user's guide provided with the managed component. See the user's guide.

### <Explanation of the managed components list>

| | | |
|---|---|---|
| Product Name: | Indicates the name of the product that NEC ESMPRO Manager can control. | |
| MC Type: | "BMC": | means that the managed component pre-contains BMC other than EXPRESSSCOPE Engine or EXPRESSSCOPE Engine 2 or EXPRESSSCOPE Engine 3 or EMS (Embedded Management Software). |
| | "BMC (EE)": | means that the managed component pre-contains EXPRESSSCOPE Engine or EXPRESSSCOPE Engine 2. |
| | "BMC (EE3)": | means that the managed component pre-contains EXPRESSSCOPE Engine 3. |
| | "iLO": | means that the managed component pre-contains iLO. |
| | "BMC(Other)": | means that the managed component pre-contains EMS. |
| Standard LAN2: | "Supported" means that MC and system BIOS on the managed component can communicate the NEC ESMPRO Manager via standard LAN port 2. (Advanced Remote Management Card, the function which is equal to Advanced Remote Management Card or EXPRESSSCOPE Engine series uses a dedicated LAN port, not use standard LAN port on the managed component.) | |
| Management LAN Port: | "Use" means that MC on the managed component uses a Management LAN Port. "-" means that BMC on the managed component uses a standard LAN Port. | |
| Remote Console: | "Supported" means that the managed component supports the Remote Console function. | |
| Scheduled Running: | "Supported" means that the managed component supports the scheduled running function. | |
| Power option setting: | "Supported" means that the managed component supports the "Power Restore Delay" function. | |
| SOL: | "Supported" means that the managed component supports the SOL (Serial over LAN. A kind of the system actualizing remote console function.) | |
| force network-boot: | "Supported" means that the managed component supports the "force network-boot" function, by which NEC ESMPRO Manager can indicate the managed component to force a network boot regardless of the boot order in Bios Setup menu. * It can operator the command line interface of NEC ESMPRO Manager. | |

| | |
|---|---|
| Electric Power Management | “Supported” means that the managed component supports the “Electric Power Management” function. |
| ECO Setting | “Supported” means that the managed component supports the “ECO Setting” function. |
| Redfish | “Supported” means that the connection method to the component supports Redfish. |
| Notes: | Refer the note number of the section “Notes for Each Managed Component”. |

## Component which is installed BMC

**Express5800/100 series (Tower/Rack Server)**

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 110Ek | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(a),2-(e) |
| 110Rh-1 | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(e) |
| 110Ri-1 | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(e) |
| 120Eh | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(a),2-(e) |
| 120Ei | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(a),2-(e) |
| 120Li | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(a),2-(e) |
| 120Lj | BMC (EE) | - | use | supported | supported | supported | supported | supported | - | supported | 2-(a),2-(e) |
| 120Rg-1 | BMC (EE) | - | use | supported | supported | supported | supported | supported | - | supported | 2-(e) |
| 120Rh-1 | BMC (EE) | - | use | supported | supported | supported | supported | supported | - | supported | 2-(e) |
| 120Ri-2 | BMC (EE) | - | use | supported | supported | supported | supported | supported | - | supported | 2-(e) |
| 120Rj-2 | BMC (EE) | - | use | supported | supported | supported | supported | supported | - | supported | 2-(e) |
| 140Rf-4 | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(e) |

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GT110d | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b),2-(a) |
| GT110e | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b),2-(a) |
| GT110d-S | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b),2-(a) |
| GT110e-S | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b),2-(a) |
| GT110h | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b),2-(a) |
| GT110i | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b),2-(a) |

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| R110a-1 | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(e) |
| R110b-1 | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(e) |
| R110d-1E | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R110e-1E | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R110f-1E | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R110h-1 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R110i-1 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| R120a-1 | BMC (EE) | - | use | supported | supported | supported | supported | supported | supported | supported | 2-(e) |
| R120a-2 | BMC (EE) | - | use | supported | supported | supported | supported | supported | supported | supported | 2-(e) |
| R120b-1 | BMC (EE) | - | use | supported | supported | supported | supported | supported | supported | supported | 2-(e) |
| R120b-2 | BMC (EE) | - | use | supported | supported | supported | supported | supported | supported | supported | 2-(e) |
| R120d-1E | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R120d-2E | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R120d-1M | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R120d-2M | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R120e-1E | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R120e-2E | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R120e-1M | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R120e-2M | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| R120f-1M | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R120f-2M | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R120g-1M | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R120g-2M | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R120f-1E | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R120f-2E | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R120g-1E | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R120g-2E | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R140a-4 | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(e) |
| R140b-4 | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(e) |

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T110b | BMC (EE) | - | use | supported | supported | supported | supported | supported | supported | supported | 2-(e) |
| T110e-M | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b),2-(a) |
| T110f-E | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b),2-(a) |
| T110f-S | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b),2-(a) |
| T110h | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b),2-(a) |
| T110h-S | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b),2-(a) |
| T120a-E | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(e) |
| T120a-M | BMC (EE) | - | use | supported | supported | supported | supported | supported | supported | supported | 2-(e) |
| T120b-M | BMC (EE) | - | use | supported | supported | supported | supported | supported | supported | supported | 2-(e) |
| T120d | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b),2-(a) |
| T120e | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b),2-(a) |
| T120f | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b),2-(a) |

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T120g | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b),2-(a) |
| E120d-1 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| E120d-M | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| E120e-M | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| E120f-M | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| E120g-M | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |

**Express5800/Blade Server**

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 120Bb-6 | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(e), 3-(a) |
| 120Bb-d6 | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(e), 3-(a) |
| 120Bb-m6 | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(e), 3-(a) |
| 140Ba-10 | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(e), 3-(a) |
| B110d | BMC (EE3) | - | use | supported | supported | supported | supported | supported | - | supported | 1-(a), 1-(b), 3-(b) |
| B120a | BMC (EE) | - | use | supported | supported | supported | supported | supported | - | supported | 2-(e), 3-(a) |
| B120a-d | BMC (EE) | - | use | supported | supported | supported | supported | supported | - | supported | 2-(e), 3-(a) |
| B120b | BMC (EE) | - | use | supported | supported | supported | supported | supported | - | supported | 2-(e), 3-(a) |
| B120b-d | BMC (EE) | - | use | supported | supported | supported | supported | supported | - | supported | 2-(e), 3-(a) |
| B120b-h | BMC (EE) | - | use | supported | supported | supported | supported | supported | - | supported | 2-(e), 3-(a) |

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B120d | BMC (EE3) | - | use | supported | supported | supported | supported | supported | - | supported | 1-(a), 1-(b), 3-(b) |
| B120d-h | BMC (EE3) | - | use | supported | supported | supported | supported | supported | - | supported | 1-(a), 1-(b), 3-(b) |
| B120e-h | BMC (EE3) | - | use | supported | supported | supported | supported | supported | - | supported | 1-(a), 1-(b), 3-(b) |
| B140a-T | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(e), 3-(a) |

**Express5800/iModel (Data Center Server)**

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| i110Rh-1 | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(e) |
| i120Ra-e1 | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(e) |
| iR110a-1h | BMC (EE) | - | use | supported | supported | supported | supported | - | supported | supported | 2-(e) |
| iR120a-1E | BMC (EE) | - | use | supported | supported | supported | supported | supported | supported | supported | 2-(a),2-(e) |

**Express5800/ECO CENTER (Energy Efficient Server)**

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| E110b-M | BMC (EE) | - | use | supported | supported | supported | supported | supported | - | supported | 2-(e) |
| E110d-1 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| E120a | BMC | - | use | supported | supported | - | supported | supported | - | - | 1-(a),1-(b),2-(f),2-(g) |
| E120b-1 | BMC (EE) | - | use | supported | supported | supported | supported | - | - | supported | 2-(e) |
| E120b-M | BMC | - | use | supported | supported | - | supported | supported | - | - | 1-(a),1-(b),2-(f),2-(g) |

**Fault tolerant server**

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| R320c-E4 | BMC (EE3) | - | use | - | supported | supported | - | - | - | supported | 1-(a),1-(b) |
| R320c-M4 | BMC (EE3) | - | use | - | supported | supported | - | - | - | supported | 1-(a),1-(b) |
| R320d-M4 | BMC (EE3) | - | use | - | supported | supported | - | - | - | supported | 1-(a),1-(b) |
| R320e-E4 | BMC (EE3) | - | use | - | supported | supported | - | - | - | supported | 1-(a),1-(b) |
| R320e-M4 | BMC (EE3) | - | use | - | supported | supported | - | - | - | supported | 1-(a),1-(b) |
| R320f-E4 | BMC (EE3) | - | use | - | supported | supported | - | - | - | supported | 1-(a),1-(b) |
| R320f-M4 | BMC (EE3) | - | use | - | supported | supported | - | - | - | supported | 1-(a),1-(b) |
| R320g-M4 | BMC (EE3) | - | use | - | supported | supported | - | - | - | supported | 1-(a),1-(b) |
| R320g-E4 | BMC (EE3) | - | use | - | supported | supported | - | - | - | supported | 1-(a),1-(b) |
| R310g-E4 | BMC (EE3) | - | use | - | supported | supported | - | - | - | supported | 1-(a),1-(b) |
| R320h-M4 | BMC (EE3) | - | use | - | supported | supported | - | - | - | supported | 1-(a),1-(b) |
| R320h-E4 | BMC (EE3) | - | use | - | supported | supported | - | - | - | supported | 1-(a),1-(b) |

**Express5800/The highly parallel computing server**

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HR120a-1 | BMC | - | use | supported | - | - | supported | supported | - | - | 1-(a),1-(b),2-(c),2-(d),2-(i) |
| HR120b-1 | BMC | - | use | supported | - | - | supported | supported | - | - | 1-(a),1-(b),2-(c),2-(d),2-(i) |
| HR110c-M | BMC | - | use | supported | - | - | supported | supported | - | - | 1-(a),1-(b),2-(c),2-(d),2-(i) |

**NEC Scalable Modular Server**

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DX2000 (Server module) | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| DX2000 (CSC module) | BMC (EE3) | - | use | - | - | - | - | supported | - | - | 1-(a),1-(b),2-(b),2-(c),2-(i),2-(j) |

**Express5800/Scalable HA Server (Expandable Enterprise Server)**

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A1020a | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A1020b | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A1080a-D | BMC | - | use | supported | supported | - | supported | supported | supported | - | 1-(a),1-(b),2-(d),2-(h) |
| A1080a-E | BMC | - | use | supported | supported | - | supported | supported | supported | - | 1-(a),1-(b),2-(d),2-(h) |
| A1080a-S | BMC | - | use | supported | supported | - | supported | supported | supported | - | 1-(a),1-(b),2-(d),2-(h) |
| A1040a | BMC | - | use | supported | supported | - | supported | supported | supported | - | 1-(a),1-(b),2-(d),2-(h) |
| A1040b | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A2010b | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A2020b | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A2040b | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R140e-4 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A1040c | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A2010c | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A2020c | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A2040c | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R140f-4 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A1040d | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A2010d | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A2020d | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A2040d | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R140g-4 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A1040e | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A2040e | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| R140h-4 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |

**NX7700x/Enterprise Server**

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A2010M-60 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A2010M-30 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A2010M-15 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A2010L-60 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A3012M-4 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A3012L-2 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A3012L-1 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A3010M-4 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A3010E-2 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A4010E-2 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A4012M-4 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A4012L-2 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A4012L-1 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A4010M-4 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A4012L-2D | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A4012L-1D | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A5012M-4 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A5012L-2 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A5010M-4 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A5012L-2D | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A5012L-1D | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A5012M-4 v2 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A5012L-2 v2 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A5010M-4 v2 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A5012L-2D v2 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |
| A5012L-1D v2 | BMC (EE3) | - | use | supported | supported | supported | supported | supported | supported | supported | 1-(a),1-(b) |

## Component in which iLO is integrated

**Express5800/100 series (Tower/Rack Server)**

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| R120h-1M | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R120h-2M | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R120h-1E | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R120h-2E | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| T120h | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R110j-1 | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R110k-1 | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R120h-1M(2nd-Gen) | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R120h-2M(2nd-Gen) | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R120h-1E(2nd-Gen) | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R120h-2E(2nd-Gen) | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| T120h(2nd-Gen) | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| T120h(3rd-Gen) | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R120h-1M(3rd-Gen) | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R120h-2M(3rd-Gen) | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R120h-1E(3rd-Gen) | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R120h-2E(3rd-Gen) | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R120i-1M | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R120i-2M | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R110j-1(2nd-Gen) | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R110j-1M | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R120j-1M | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R120j-2M | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| R110k-1M | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| T110k-M | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |

**NX7700x/Enterprise Server**

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A5010E-2 | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| A6010E-2 | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| A7010E-2c | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| A7010E-2 | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |
| A7012M-2 | iLO | - | use | - | - | - | - | supported | - | - | 2-(i) |

**CHECK:**

- The component in which iLO is integrated is displayed in the screen of [Server Control], but you can't use the following function for the component.
  - [Remote Power Control] - [Power Cycle] and [OS Shutdown] *1

  *1 When the component is registered with WS-Man management, you can use the function of [OS Shutdown].

## Component of BMC (Other)

**Express5800/100 series (Tower/Rack Server)**

| Product name | MC Type | Standard LAN2 | Management LAN Port | Remote Console | Scheduled running | Power option setting | SOL | Electric Power Management | ECO Setting | force network boot | Redfish | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D120h (Server module) | BMC(Other) | - | use | supported | - | supported | supported | supported | supported | - | - | |
| D120h (CMC module) | BMC(Other) | - | use | - | - | - | - | - | - | - | - | |
| T110i | BMC(Other) | - | use | supported | - | supported | supported | supported | supported | - | - | |
| T110i-S | BMC(Other) | - | use | supported | - | supported | supported | supported | supported | - | - | |
| T110j | BMC(Other) | - | use | supported | - | supported | supported | supported | supported | - | - | |
| T110j-S | BMC(Other) | - | use | supported | - | supported | supported | supported | supported | - | - | |
| T110j(2nd-Gen) | BMC(Other) | - | use | supported | - | supported | supported | supported | supported | - | - | |
| T110j-S(2nd-Gen) | BMC(Other) | - | use | supported | - | supported | supported | supported | supported | - | - | |
| T110k | BMC(Other) | - | use | supported | - | supported | supported | supported | supported | - | supported | |
| T110k-S | BMC(Other) | - | use | supported | - | supported | supported | supported | supported | - | supported | |
| GT110j | BMC(Other) | - | use | supported | - | supported | supported | supported | supported | - | - | |

**CHECK:**

- If Redfish is selected as the access mode for the BMC (Other) component, The Remote Console is not available.

## <Notes for Each Managed Component>

This section explains the functional difference and notes of each managed component.
If note number for the managed component is displayed on the column "notes" of "Managed Components List", refer the notes of the note number.

1. About the connection type or the connection port.
 1-(a) Remote management with modem connection is not supported for this product.
 1-(b) Remote management with direct connection is not supported for this product.

2. About function
 2-(a) This product has no function to identify the chassis like UID lamp, however "Identify Chassis" command of the NEC ESMPRO Manager is executer successfully.
 2-(b) This product does not support remote console function.
 2-(c) NEC ESMPRO Agent Extension or NEC DianaScope Agent cannot be installed on this product. Some functions of NEC ESMPRO Manager are not supported for the product if the functions need to communicate with NEC ESMPRO Agent Extension or NEC DianaScope Agent.
 2-(d) BMC on this product cannot be configured using either NEC ESMPRO Agent Extension, NEC DianaScope Agent or NEC ESMPRO Manager PXE Service. Please refer to the user's guide that is attached in this product for BMC configuration.
 2-(e) This product does not support to shutdown OS from NEC ESMPRO Manager with modem/direct connection.
 2-(f) The power measurement for the server 1 reads a total of the server 1 and the server 2. The power measurement for the server 2 always reads 0.
 2-(g) Please execute "check connection" for the managed component when BMC FW is updated on the managed component. If "check connection" is not executed, the remote console function may not run normally.
 2-(h) If the managed component is Dual Server System, the power measurement for each server reads a total of the server 1 and the server 2.
 2-(i) NEC ExpressUpdate Agent cannot be installed on this product. NEC ExpressUpdate of NEC ESMPRO Manager is not support for the product.
 2-(j) Power consumption value of the whole enclosure is shown when power measurement is executed to CSC module.
 When not wanting to do electric power measurement of the whole enclosure, Please set "Display Nominal Value" to the Power Measurement.

3. About the operation
 3-(a) Please do not change the delay time on the Power Restore Delay function for this product. This product is turned on after the waiting time ((slot number - 1) * 2sec). If the delay time is changed from 0 sec (the default value), the waiting time is not set correct value.
 3-(b) NEC ESMPRO Manager does not change the power restore delay time for this product even if you order NEC ESMPRO manager to set the delay time. Because the waiting time ((slot number - 1) * 2sec) should be guaranteed before this product is turned on.

## EM Card

NEC ESMPRO Manager can get a blade enclosure information by communication with the following EM Card in the blade enclosure.

--EM Card [N8405-019A]
--EM Card [N8405-27]
--EM Card [N8405-043]

## Power Bay

NEC ESMPRO Manager can manage the following Power Bay remotely.

--EcoPowerGateway [N8142-36F]

## Component based on vPro

NEC ESMPRO Manager can manage Express5800/Workstation based on the vPro including the iAMT firmware version 6.0 and later.

# Appendix E. Means to perform REST API using a sample script

NEC ESMPRO Manager uses REST API to manage ExpEther.
A sample script of a ruby is prepared to perform REST API.

There is a sample script of 3 of REST API.
- Discovery ExpEther Manager API
- Deletion ExpEther Manager API
- Get ExpEther Manager list API

## Prepare

Ruby has to be installed in the management PC of NEC ESMPRO Manager.

## Edit sample script

A sample script has a parameter and sets the information which accesses NEC ESMPRO Manager and request data of each API as a parameter.
Therefore edit these parameters according to the environment beforehand.

A parameter with the necessity to edit is indicated in the following.

(1) search_eem.rb
This script perform "Discovery ExpEther Manager API".
Correct the following parameter according to the environment.

- HOST
Write host or IP address of NEC ESMPRO Manager.
Ex) IP Address of NEC ESMPRO Manager is "192.168.1.1"
HOST="192.168.1.1"
The same host as NEC ESMPRO Manager.
HOST="localhost"

- PORT
Write the port number NEC ESMPRO Manager is using.
An initial value of port number of NEC ESMPRO Manager is "21112".
Ex) PORT=21112

- login_account
Write user name and password of NEC ESMPRO Manager Account.
Ex) login_account = {'user'=>'Administrator', 'password'=>'Password'}

- request_data
Write a request of "Discovery ExpEther Manager API".
Refer to "Diascovery ExpEther Manager API" in "NEC ESMPRO Manager Ver.6 RESTful API Reference" for details of a request.

(2) delete_eem.rb

This script perform "Deletion ExpEther Manager API".
Correct the following parameter according to the environment.

- HOST
  This parameter is same as a "Discovery ExpEther Manager API".

- PORT
  This parameter is same as a "Discovery ExpEther Manager API".

- login_account
  This parameter is same as a "Discovery ExpEther Manager API".

- name
  Write a target ExpEther Manager name.

(3) list_eem.rb

This script perform "Get ExpEther Manager list API".
Correct the following parameter according to the environment.

- HOST
  This parameter is same as a "Discovery ExpEther Manager API".

- PORT
  This parameter is same as a "Discovery ExpEther Manager API".

- login_account
  This parameter is same as a "Discovery ExpEther Manager API".

## Sample code

(1) search_eem.rb

```
#
# NEC ESMPRO Manager REST API Sample
#

require 'openssl'
require 'base64'
require 'net/http'
require 'json'

########################################
###
### Change below value
###
########################################
HOST="192.168.14.189"
PORT=21112
login_account = {'user'=>'Administrator', 'password'=>'Password'}
request_data = {'discoveryMode'=>'0', 'startAddress'=>'192.168.1.1','endAddress'=>'192.168.1.10','networkAddress'=>'192.168.1.0','networkMask'=>'255.255.255.0', 'accounts'=>[{'user'=>'admin', 'password'=>'eemeem'}]}

########################################


session_id = nil

def make_header(session_id=nil)
httpheader = {};

httpheader['X-ESMPRO-API-Version'] = "1.0";
httpheader['Content-Type'] = "application/json; charset=utf-8";
httpheader['Cookie'] = "JSESSIONID=#{session_id}" if session_id != nil;

return httpheader;
end



def send_restreq(method ,session_id, url, req_body)

response = nil
http = Net::HTTP.new(HOST,PORT);

req_header = make_header(session_id);

if (method == :post)
time1 = Time.now;
response = http.post(url, req_body.to_json, req_header);
time2 = Time.now;
time3 = time2 - time1;
```

```
end

if (method == :get)
time1 = Time.now;
response = http.get(url,req_header);
time2 = Time.now;
time3 = time2 - time1;
end

if (method == :delete)
transaction = Net::HTTP::Delete.new(url,req_header);
time1 = Time.now;
response = http.request(transaction)
time2 = Time.now;
time3 = time2 - time1;
end

if (req_body == nil)
req_body = {};
end

puts "============================================================"
puts "---- Request Data ----------------------------------"
print("    Method                  : ", method, "¥n");
print("    URL                     : ", url, "¥n");
print("    Request Header      : ", req_header, "¥n");
print("    Session ID              : ", session_id, "¥n");
print("    Request Time          : ", time1, "¥n");
print("    Request Body          : ", req_body, "¥n");
puts "---- Response Data ----------------------------------"
print("    Status Code             : ", response.code, " ", response.message,"¥n");
#print("    Response Header    : ", response.header, "¥n");
print("    Response Body        : ", response.body, "¥n");
print("    Response Time        : ", time2, "¥n");
print("    Elapsed    Time        : ", time3, "¥n");
puts "------------------------------------------------------------"

if (response.body == "")
return nil
else
res_body = JSON.parse(response.body);
end
end


# Login
login_url = "/esmpro/api/login-session";
count = 0;
result = send_restreq(:post ,nil, login_url, login_account);
session_id = result['sessionId'];

# Discover EEM
url = "/esmpro/api/eem"
result = send_restreq(:post ,session_id, url, request_data);
jobstate_url = result['url'];
```

```
while true do
    # Job status
    result = send_restreq(:get ,session_id, jobstate_url, nil);
    if ( result['jobStatus'] == "Running"    || result['jobStatus'] == "Waiting")
        sleep(1);
    elsif ( result['jobStatus'] == "Completed" )
        # Job result
        result_url = result['url'];
        result = send_restreq(:get ,session_id, result_url, nil);
        break;
    else
        break;
    end
end


# Logout
result = send_restreq(:delete ,session_id, login_url, nil);
```

(2) delete_eem.rb

```
#
# NEC ESMPRO Manager REST API Sample
#

require 'openssl'
require 'base64'
require 'net/http'
require 'json'

########################################
###
### Change below value
###
########################################
HOST="192.168.14.189"
PORT=21112
login_account = {'user'=>'Administrator', 'password'=>'Password'}
name="ExpEtherManager001"

########################################


session_id = nil

def make_header(session_id=nil)
httpheader = {};

httpheader['X-ESMPRO-API-Version'] = "1.0";
httpheader['Content-Type'] = "application/json; charset=utf-8";
httpheader['Cookie'] = "JSESSIONID=#{session_id}" if session_id != nil;

return httpheader;
end



def send_restreq(method ,session_id, url, req_body)

response = nil
http = Net::HTTP.new(HOST,PORT);

req_header = make_header(session_id);

if (method == :post)
time1 = Time.now;
response = http.post(url, req_body.to_json, req_header);
time2 = Time.now;
time3 = time2 - time1;
end

if (method == :get)
time1 = Time.now;
response = http.get(url,req_header);
time2 = Time.now;
```

```
time3 = time2 - time1;
end

if (method == :delete)
transaction = Net::HTTP::Delete.new(url,req_header);
time1 = Time.now;
response = http.request(transaction)
time2 = Time.now;
time3 = time2 - time1;
end

if (req_body == nil)
req_body = {};
end

puts "============================================================"
puts "---- Request Data ----------------------------------"
print("    Method                  : ", method, "¥n");
print("    URL                     : ", url, "¥n");
print("    Request Header      : ", req_header, "¥n");
print("    Session ID              : ", session_id, "¥n");
print("    Request Time          : ", time1, "¥n");
print("    Request Body          : ", req_body, "¥n");
puts "---- Response Data ---------------------------------"
print("    Status Code             : ", response.code, " ", response.message,"¥n");
#print("    Response Header    : ", response.header, "¥n");
print("    Response Body        : ", response.body, "¥n");
print("    Response Time        : ", time2, "¥n");
print("    Elapsed    Time        : ", time3, "¥n");
puts "------------------------------------------------------"

if (response.body == "")
return nil
else
res_body = JSON.parse(response.body);
end
end


# Login
login_url = "/esmpro/api/login-session";
count = 0;
result = send_restreq(:post ,nil, login_url, login_account);
session_id = result['sessionId'];

# Delete EEM
url = "/esmpro/api/eem"
resource = url + "?name=" + name
result = send_restreq(:delete ,session_id, resource, nil);

# Logout
result = send_restreq(:delete ,session_id, login_url, nil);
```

(3) list_eem.rb

```
#
# NEC ESMPRO Manager REST API Sample
#

require 'openssl'
require 'base64'
require 'net/http'
require 'json'

########################################
###
### Change below value
###
########################################
HOST="192.168.14.189"
PORT=21112
login_account = {'user'=>'Administrator', 'password'=>'Password'}

########################################



session_id = nil

def make_header(session_id=nil)
httpheader = {};

httpheader['X-ESMPRO-API-Version'] = "1.0";
httpheader['Content-Type'] = "application/json; charset=utf-8";
httpheader['Cookie'] = "JSESSIONID=#{session_id}" if session_id != nil;

return httpheader;
end



def send_restreq(method ,session_id, url, req_body)

response = nil
http = Net::HTTP.new(HOST,PORT);

req_header = make_header(session_id);

if (method == :post)
time1 = Time.now;
response = http.post(url, req_body.to_json, req_header);
time2 = Time.now;
time3 = time2 - time1;
end

if (method == :get)
time1 = Time.now;
response = http.get(url,req_header);
time2 = Time.now;
```

```
time3 = time2 - time1;
end

if (method == :delete)
transaction = Net::HTTP::Delete.new(url,req_header);
time1 = Time.now;
response = http.request(transaction)
time2 = Time.now;
time3 = time2 - time1;
end

if (req_body == nil)
req_body = {};
end

puts "============================================================"
puts "---- Request Data ----------------------------------"
print("    Method                  : ", method, "¥n");
print("    URL                     : ", url, "¥n");
print("    Request Header      : ", req_header, "¥n");
print("    Session ID              : ", session_id, "¥n");
print("    Request Time          : ", time1, "¥n");
print("    Request Body          : ", req_body, "¥n");
puts "---- Response Data ----------------------------------"
print("    Status Code             : ", response.code, " ", response.message,"¥n");
#print("    Response Header    : ", response.header, "¥n");
print("    Response Body        : ", response.body, "¥n");
print("    Response Time        : ", time2, "¥n");
print("    Elapsed    Time        : ", time3, "¥n");
puts "------------------------------------------------------"

if (response.body == "")
return nil
else
res_body = JSON.parse(response.body);
end
end


# Login
login_url = "/esmpro/api/login-session";
count = 0;
result = send_restreq(:post ,nil, login_url, login_account);
session_id = result['sessionId'];

# List EEM
url = "/esmpro/api/eem"
result = send_restreq(:get ,session_id, url, nil);

# Logout
result = send_restreq(:delete ,session_id, login_url, nil);
```

# Appendix F. View the NEC ESMPRO Extension for Windows Admin Center screen from the Alert Viewer

Provides step-by-step instructions on how to view the NEC ESMPRO Extension for Windows Admin Center link from NEC ESMPRO Manager Alert Viewer.

[ Premise ]
Verify that NEC ESMPRO Extension for Windows Admin Center(*1) is installed in Windows Admin Center.

(*1) THE NEC ESMPRO Extension for Windows Admin Center is an extension that displays information about the hardware of the NEC Express5800 server to the Windows Admin Center.
For more information, please visit:
https://www.support.nec.co.jp/en/View.aspx?id=4170100048
NEC ESMPRO Extension for Windows Admin Center

(1) Component registration
Register your iLO device with System Management (WS-Man) and MC Management (iLO) enabled and registered with NEC ESMPRO Manager.

The iLO-powered operating system is a Windows OS for servers such as Windows Server 2019 that is supported by Windows Admin Center.

(2) Edit the Alert Viewer configuration file
Use the comment line that begins with the following file to specify the Windows Admin Center host name (or IP address) and port number.

%ESMPRO%¥ESMWEB¥wbserver¥webapps¥esmpro¥WEB-INF¥service¥alertviewer¥WindowsAdminCenter_settings.txt

* %ESMPRO% : where to install NEC ESMPRO Manager

* The default value for installs NEC ESMPRO Manager is <C:/Program Files (x86)/ESMPRO> (64bitOS).

(3) Nec ESMPRO Extension for Windows Admin Center
Make sure that there are alerts for the device on the alert list screen.

Click the Components section of the alert to display the LINKED NEC ESMPRO Extension for Windows Admin Center screen.

**Notes**
Use Microsoft Edge for the browser you want to use.
However, do not perform any NEC ESMPRO Manager screen operations in Edge other than the Alert Viewer.

**Revision History**

| | | |
|---|---|---|
| 1.00 | 2014/08/01 | (Ver6.00)<br>Initial release for Ver.6 |
| 1.01 | 2014/12/08 | (Ver6.02)<br>Added chapter8 Setup for the Alert only Component |
| 1.02 | 2015/03/03 | (Ver6.03)<br>Typo fixed. |
| 1.03 | 2015/11/24 | (Ver6.06)<br>Adds NEC ESMPRO ServerAgentService (Linux).<br>Adds model to the appendix D.<br>Typo fixed. |
| 1.04 | 2016/02/26 | (Ver.6.08)<br>Adds Chapter7 Setup for NEC Scalable Modular Server DX 2000.<br>Adds model to the appendix D. |
| 1.06 | 2016/04/12 | (Ver.6.08)<br>Adds notes about Teaming to the appendix B. |
| E6.12-01-STD | 2016/06/10 | Fixed revision format.<br>Fixed the appendix D (Fault tolerant server). |
| E6.13-01-STD | 2016/07/14 | Fixed the chapter4 (4.3.2) (DianaScope support)<br>Added Network Switch module to the chapter7<br>Fixed the appendix D 2-(r) |
| E6.14-01-STD | 2016/11/01 | Adds model to the appendix D. |
| E6.15-01-STD | 2016/12/02 | Revised edition(6.15) |
| E6.15-02-STD | 2016/12/12 | Adds Chapter10 Setup for ExpEther.<br>Adds the appendix E. |
| E6.16-01-STD | 2016/12/19 | Revised edition(6.16) |
| E6.16-02-STD | 2017/01/31 | Adds VMware ESXi6.<br>Adds notes about ESXi6.5 to the Chapter8.<br>Adds model to the appendix D (The highly parallel computing server) |
| E6.17-01-STD | 2017/06/13 | Revised edition(6.17)<br>Adds model to the appendix D (Enterprise Server) |
| E6.20-01-STD | 2017/07/07 | Revised edition(6.20)<br>Adds Chapter4 Setup for Managed Component in which iLO is integrated. |
| E6.22-01-STD | 2017/07/20 | Revised edition(6.22)<br>Adds Chapter5 Setup for Managed Component of BMC (Other) |
| E6.23-01-STD | 2017/10/30 | Revised edition(6.23)<br>Adds setting items (Communication Protocol and Port Number) to the Chapter4.<br>Adds model to the appendix D (Component in which iLO is integrated) |
| E6.24-01-STD | 2018/01/23 | Revised edition(6.24)<br>Adds model to the appendix D (Component in which iLO is integrated) |
| E6.25-01-STD | 2018/02/15 | Revised edition(6.25)<br>Adds model to the appendix D (Fault tolerant server) |
| E6.30-01-STD | 2018/03/26 | Revised edition(6.30)<br>Adds "SNMP Settings" for iLO5 FW 1.20 or later to chapter4.2 |
| E6.31-01-STD | 2018/07/27 | Revised edition(6.31)<br>Adds model to the appendix D (Scalable HA Server / Enterprise Server) |
| E6.33-01-STD | 2018/09/28 | Revised edition(6.33)<br>Adds chapter 4.2.2 NEC SSO Settings<br>Adds Appendix C (2) Linux system |
| E6.34-01-STD | 2018/10/17 | Revised edition(6.34)<br>Adds model to the appendix D (Component of BMC (Other)) |
| E6.35-01-STD | 2018/12/03 | Revised edition(6.35)<br>Adds model to the appendix D (Fault tolerant server) |

| | | |
|---|---|---|
| E6.37-01-STD | 2019/02/04 | Revised edition(6.37)<br>Adds model to the appendix D (Component in which iLO is integrated) |
| E6.40-01-STD | 2019/03/13 | Revised edition(6.40) |
| E6.41-01-STD | 2019/03/20 | Revised edition(6.41)<br>Update the description of BMC(Other) in Terminology.<br>Updates the managed components list for iLO components and BMC(Other) components in Appendix D. |
| E6.42-01-STD | 2019/05/13 | Revised edition(6.42)<br>Adds the description regarding the settings of ESXi6.x on FT server in Chapter 10.<br>Adds model to the Component in which iLO is integrated List in Appendix D.<br>Updates the managed components list for iLO components in Appendix D. |
| E6.42-02-STD | 2019/07/18 | Updates the managed components list for BMC components in Appendix D.<br>Updates the managed components list for iLO components in Appendix D. |
| E6.42-03-STD | 2019/07/29 | Updates the managed components list for BMC components in Appendix D. |
| E6.44-01-STD | 2019/07/30 | Revised edition(6.44)<br>Adds model to the appendix D (Component of BMC (Other)) |
| E6.44-02-STD | 2019/11/14 | Adds model to the Component in which iLO is integrated List in Appendix D.<br>Adds model to the Component in which BMC(Other) is integrated List in Appendix D. |
| E6.45-01-STD | 2019/10/04 | Revised edition(6.45) |
| E6.47-01-STD | 2020/01/09 | Revised edition(6.47)<br>Adds model to the Component in which iLO is integrated List in Appendix D. |
| E6.48-01-STD | 2020/03/31 | Revised edition(6.48) |
| E6.49-01-STD | 2020/07/31 | Revised edition(6.49) |
| E6.49-02-STD | 2020/09/04 | Revision of document number. |
| E6.49-03-STD | 2020/09/16 | Adds VMware ESXi7. |
| E6.50-01-STD | 2020/10/30 | Revised edition(6.50) |
| E6.51-01-STD | 2020/11/09 | Revised edition(6.51)<br>Adds model to the Component in which iLO is integrated List in Appendix D. |
| E6.51-03-STD | 2021/04/19 | Revision of document number. |
| E6.52-01-STD | 2021/07/26 | Revised edition(6.52) |
| E6.53-01-STD | 2021/09/30 | Revised edition(6.53) |
| E6.54-01-STD | 2021/12/03 | Revised edition(6.54)<br>Adds model to the appendix D (Component of BMC (Other)) |
| E6.56-01-STD | 2021/12/13 | Revised edition(6.56) |
| E6.56-02-STD | 2022/01/07 | Revision of document number. |
| E6.57-01-STD | 2022/02/25 | Revised edition(6.57) |
| E6.57-02-STD | 2022/03/10 | Add SLP start-up steps in Chapter 10. |
| E6.58-01-STD | 2022/05/13 | Revised edition(6.58) |
| E6.59-01-STD | 2022/06/30 | Revised edition(6.59) |
| E6.59-02-STD | 2022/10/11 | Added WS-Man settings in Chapter 4.3.1 |
| E6.60-01-STD | 2022/12/12 | Revised edition(6.60) |
| E6.60-02-STD | 2022/12/13 | Revision of document number. |
| E6.61-01-STD | 2023/02/28 | Revised edition(6.61)<br>Adds VMware ESXi8. |
| E6.62-01-STD | 2023/06/08 | Revised edition(6.62) |
| E6.62-02-STD | 2023/06/26 | Adds model to the Component in which iLO is integrated List in Appendix D |
| E6.63-01-STD | 2023/07/31 | Revised edition(6.63) |
| E6.63-02-STD | 2023/08/25 | Adds model to the Component in which iLO is integrated List in Appendix D |
| E6.64-01-STD | 2023/09/25 | Revised edition(6.64) |
| E6.64-02-STD | 2023/09/30 | Revision of document number. |
| E6.64-03-STD | 2023/10/11 | References to Windows Server 2012 and Windows Server 2012 R2 have been deleted. |
| E6.64-04-STD | 2023/11/16 | References to VMware ESXi 6.5/6.7 have been deleted. |

| | | |
|---|---|---|
| E6.65-01-STD | 2023/12/22 | Revised edition(6.65)<br>Adds model to the Component in which iLO is integrated List in Appendix D |