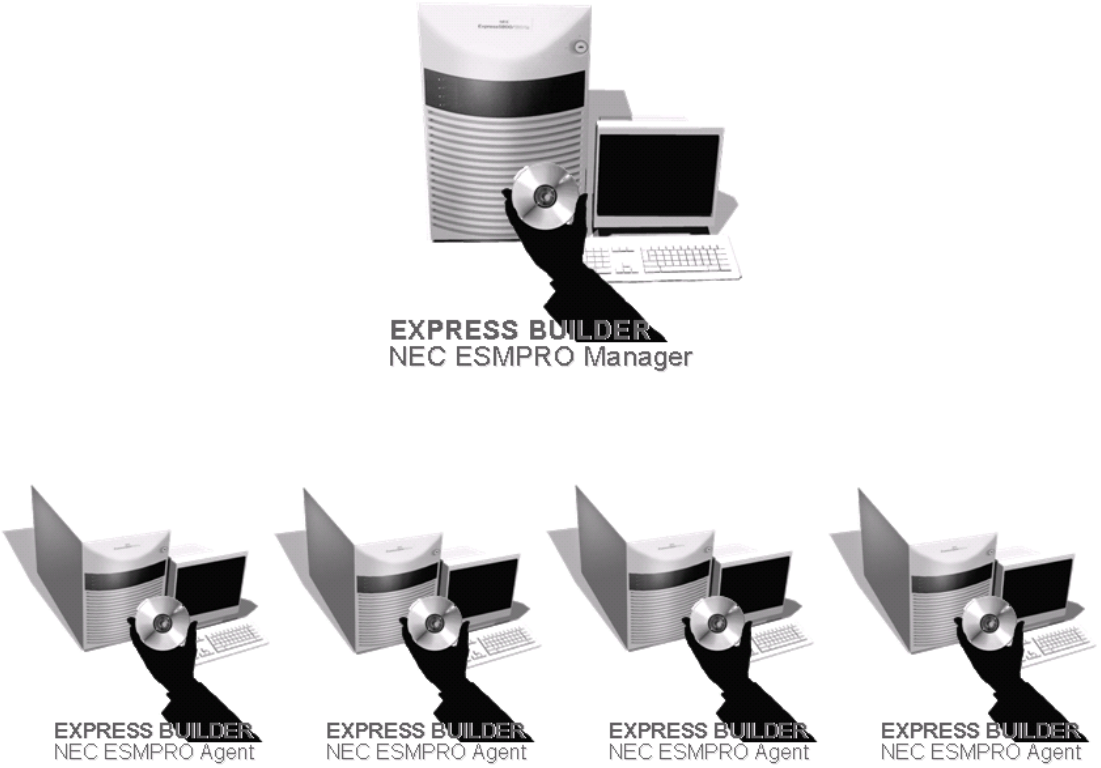
Chap. 6

Introduction of NEC ESMPRO Manager and Agent

6.1 Preparation of Installation
6.2 Installation
6.3Remote Installation Utilizing ESMPRO/DeploymentManager
6.4 Setup of Post-Installation
6.5 Confirmation of Post-Installation
6.6 Uninstallation
6.7 In case Trouble Happens
6.8 Port used by NEC ESMPRO Manager and Agent

NEC ESMPRO Manager and Agent are bundled with NEC EXPRESSBUILDER of servers as standard.
If you purchase servers, you can use server management function of NEC ESMPRO Manager and Agent.



Introduction procedure of NEC ESMPRO Manager and Agent is described hereafter. Introduction is done in the following procedure roughly:

STEP1	Preparation before installation	NEC ESMPRO Agent - Setting of network service - Setting of SNMP service NEC ESMPRO Manager - Setting of network service - Setting of security
STEP2	installation	Installation from NEC EXPRESSBUILDER
STEP3	Setting after installation	Installation of Related Utility - Global Array Manager - Power Console Plus
STEP4	Confirmation of post installation	Operation check of NEC ESMPRO Agent Operation check of NEC ESMPRO Manager

6.1 Preparation Before Installation

6.1-1 Operating environment

The operating environment for use of NEC ESMPRO Manager and Agent is as follows:

NEC ESMPRO Agent

・ Hardware

Installation system

NEC Express5800 series
iStorage NS/FS series
Internet Streaming Server

Memory

Memory capacity required to operate OS + 30.0 MB or larger

Empty capacity of hard disk

50.0 MB or larger

Modem (modem is required only for Pager, alert function and ALIVE Alert function.)

Modem(faster than 2400bps)must interpret AT command. You can not send message through dial line. Utilize push line.

* It not supports since Ver4.0.

CAUTION In case of installing NEC ESMPRO Agent on PC/AT compatible machine, separate handling is necessary. In case of PC/AT compatible machine, the items to be monitored are different.

・ Software

Windows Server 2008
Windows Vista
Windows Server 2003
Windows Server 2003 x64 Editions
Windows XP
Windows XP x64 Edition
Windows 2000

CAUTION Use the version of NEC ESMPRO Agent for monitoring and its followers for NEC ESMPRO Manager. Otherwise, normal monitoring may not be done.

NEC ESMPRO Manager

・ Hardware

Equipment to Install

Computer enabling to install Operating system supported by NEC ESMPRO Manager
(NEC ESMPRO Manager can be installed on the computer other than Express500 series.)

* Faster than Intel Pentium 4 1.3GHz or compatible processor of equivalent class is recommended.

Memory

Memory necessary for operating OS (incl. IIS) + more than 30MB
(In case of Itanium base system, Memory necessary for operating OS (incl. IIS) + more than 230MB)

Free Area of Hard Disk

More than100MB
More than 140MB in case of installing Web component.

・ Software

Operating system

Windows 2000 Advanced Server operating system
Windows 2000 Server operating system
Windows 2000 Professional operating system
Windows XP Professional operating system
Windows XP Professional x64 Edition operating system
Windows Server 2003, Standard Edition
Windows Server 2003, Enterprise Edition
Windows Server 2003, Standard x64 Edition
Windows Server 2003, Enterprise x64 Edition
Windows Server 2003, Enterprise Edition for 64-bit Itanium-based systems
Windows Server 2003 R2, Standard Edition
Windows Server 2003 R2, Enterprise Edition
Windows Server 2003 R2, Standard x64 Edition
Windows Server 2003 R2, Enterprise x64 Edition
Windows Vista Business
Windows Vista Enterprise
Windows Vista Ultimate
Windows Server 2008 Standard
Windows Server 2008 Enterprise
Windows Server 2008 Datacenter
Windows Server 2008 for Itanium-based Systems

Web server (in case of using Web component)

IIS 5.0~7.0

Web client (in case of using Web component)

Internet Explorer Version 6.0～7.0 (JavaScript must be executed.)

Script Component client (in case of using Script Component)

Windows Script Host Version 5.6 or later

6.1-2 NEC ESMPRO Agent

1. TCP/IP Setting

To operate NEC ESMPRO Agent, you need to make settings of TCP/IP and the SNMP of components associated with TCP/IP.
See the Help started from the Start menu for how to set TCP/IP.

2. SNMP Service Setting

To install the SNMP Service

[For Windows Server 2008]

1. Go to [Start] - [Control Panel] and select [Programs and Features].
2. Click [Turn Windows features on or off].
3. Click [Features Summary]. "Server Manager" window appears
4. Click [Features].
5. Click [Add Features]. "Add Features Wizard" appears.
6. Check the [SNMP Services] check box.

7. Click [Next].

CAUTION

"Windows Server 2008 Server Core", SNMPService is installed according to the following procedures.
.

1. SNMPService is installed
   Execute the following commands by the command prompt."Start /w ocsetup SNMP-SC"
2. The port used on SNMP appears.
   Execute the following commands by the command prompt."netsh firewall add portopening protocol = UDP port = 161 name = snmp mode = ENABLE scope = ALL"

[For Windows Vista]

1. Go to [Start] - [Control Panel] and select [Programs and Features].
2. Click [Turn Windows features on or off].
   Windows Features Window appears.
3. Check the [SNMP feature] check box.
4. Click [OK].

[For other than Windows Server 2008]

1. Open [Add/Remove Programs] in [Control Panel].
2. Click [Add/Remove Windows Components].
3. Select [Management and Monitoring Tools] in the Windows component wizard and click the [Details...] button.
4. Check the check box of [Simple Network Management Protocol].
5. Click the [Next] button.
   The file copy operation is started.
6. After the file copy is finished, click the [Finish] button.

To change the settings of the SNMP Service:

CAUTION

For Windows Server 2008 Server Core, the setting change of the SNMP service is done with the computer for management.
The setting change is prepared according to the procedure of "Method of setting change of SNMP service on Windows Server 2008 Server Core", after that you execute it from the third procedures.

1. Double-click [Administrative Tool] in [Control Panel].
2. Start [Services] in [Administrative Tool].
3. Select [SNMP Service] from the service list and then [Properties] in the [Action] menu.
   The "SNMP Properties" dialog box appears.
4. Enter "public" or an arbitrary name in the [Community name] box of the [Traps] property sheet and click [Add to list].

CAUTION

To change the community name of traps to be received from the default "*" in NEC ESMPRO Manager site, enter the same name as the community name newly set in NEC ESMPRO Manager site.
To receive trap from NEC ESMPRO Agent at NEC ESMPRO Manager machine, both community names should be the same.

5. Click the [Add...] button in [Trap destinations]. After entering the IP address of the NEC ESMPRO Manager machine of the send destination in the [Host name, IP or IPX address] box, click the [Add] button.

CAUTION

If you specify the same IP address (or host name) specified on the trap destination also for the Manager Alert (TCP/IO) setting, a warning message appears to indicate redundancy.With this configuration, the alert is redundantly sent to NEC ESMPRO Manager of a specified IP address (or host name).

6. Open the [Security] property sheet and make settings as follows;

- Add the community name entered in Step 4 to [Accepted community names].
- Set its authority to [READ CREATE] or [READ WRITE].
- Select [Accept SNMP packets from any host.]

CAUTION

- If you entered any community name other than "public" in Step 4, add that name to "Accepted community names."
- If you do not set the authority of [Accepted community names] as "READ CREATE" or "READ WRITE", you cannot perform configuration or monitoring from NEC ESMPRO Manager.

Setup of receiving SNMP packets from specific hosts only

Select [Accept SNMP packets from these hosts], specify IP addresses of the hosts, IP addresses of the servers to install NEC ESMPRO Agent, and the loop-back address (127.0.0.1).

Setup of receiving SNMP packets from specific communities only

Change the name of the community receiving SNMP packets from the default "public" to any name.

CAUTION

- If the community name is changed, the community of NEC ESMPRO Agent is changed and registered by starting from [Control Panel]. To change the community to another and register it, use the [SNMP Community] list box in the [General] tab.
- To allow NEC ESMPRO Agent to receive SNMP packets sent from NEC ESMPRO Manager, set the send community name in NEC ESMPRO Manager to be the same as that accepted by the SNMP Service in NEC ESMPRO Agent.

7. Terminate the network setup.

CAUTION

- During OS installation, if the SNMP service is added to the system after applying the service package, apply it again. If not, the SNMP service may not operate properly, and this can cause the improper operation of NEC ESMPRO Agent.
- The SNMP Service is required for operating NEC ESMPRO Agent. If the SNMP Service is deleted after the installation of NEC ESMPRO Agent, install the SNMP Service and then reinstall NEC ESMPRO Agent.
- Some software products provided by other vendors may change the SNMP Service configuration. If you install NEC ESMPRO Agent on the system under the condition where these types of software are already installed, NEC ESMPRO Agent service may not work properly.
  In such a case, delete the SNMP Service once and then install the service again. Afterward, reinstall NEC ESMPRO Agent and the software products provided by other vendors.

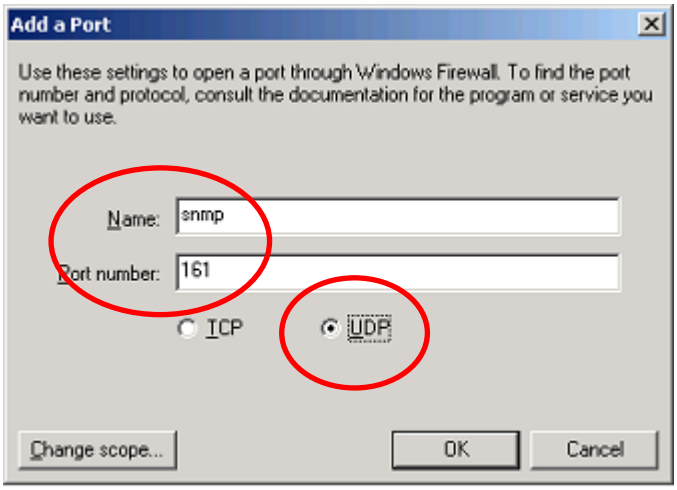
How to Set Firewall

In case the setting of firewall is valid, port (161/UDP) SNMP uses is blocked. In this case, NEC ESMPRO Manager can not communicate with NEC ESMPRO Agent, server can not be monitored.
Set opening of port according to the following procedures:

In case of Windows XP / Server 2003 (after application of Service Pack),

1 Activate [Windows Firewall] from [Control Panel].
  [Windows Firewall] Dialog Box is displayed.

2 Click [Add Port] of [Exceptions Tab].
  Set as below on [Add a Port] Dialog Box and click [OK].



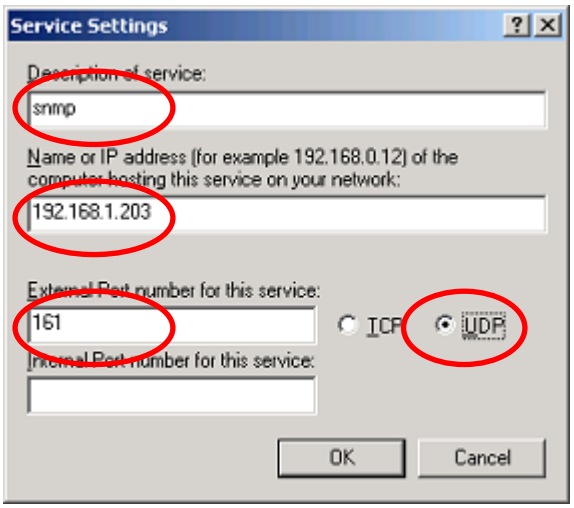
[Add a Port] Dialog Box of Windows Firewall

Name :snmp
Port number :161
UDP :Select

3 Close Dialog Box of [Windows Firewall].

In case of Windows Server 2003 (Service Pack is not applied),

1 Select [network connection] from [Control Panel].
2 Right-click the connection you use and select [Property].
3 Select [setting] button of [detailed setting] tab.
4 Select [Add] button of [service] tab.
Set on [service setting] Dialog Box as below and click [OK].



[Service Settings] Dialog Box

Description of service	:	snmp
Name or IP address of the computer hosting this service on your network	:	Input Name or IP address of the computer
External Pt number for this serviceor	:	161
UDP	:	Select

5 Close [Network Connection] Window.

Method of setting change of SNMP service on Windows Server 2008 ServerCore

The setting change of the SNMP service of the server that executes, the Server Core installation is done from the computer for management by way of the network.

1. Connected preparation is done on the server side.

   Execute the following commands by the command prompt on the server side. "netsh firewall set service FILEANDPRINT enable SUBNET" "netsh firewall set service REMOTEADMIN enable SUBNET"

2. The session from the computer for management to the server is established.

   After this item You operate it with the computer for management. Execute the following commands by the command prompt on Computer for management side. "Net use * \\ (ServerName) \c$ /u: (UserName)"

   CAUTION ServerName is a name of the server that executes the Server Core installation.
   UserName is a name of the Administrative account.

3. Click the "Control Panel", and double click "Administrative Tools" icon.

4. Right-click on the "Computer Management" from the tree on the left pane.

   Click the "Connect to another computer...".

5. The computer name of the server that executes the Server Core installation is input to "Select Computer" box, and click the "OK" button.

   It is connected with "Computer Management" of the server that executes the Server Core installation.
   Do the setting change of the SNMP service.

3. About system update

Before installation of NEC ESMPRO Agent, system update is required. When you set up NEC ESMPRO Agent for chassis which does not update system, the following error is displayed and installation is not done and they system closes.
For system update, refer to the User's Guide attached to each product.

Message Dialog in case of installation without system update

6.1-3 NEC ESMPRO Manager

1. Setting of network service

Set in order to operate TCP/IP normally.

2. Setting of security~setting of NEC ESMPRO User Group~

To use the NEC ESMPRO Manager, you must belong to a user group called the NEC ESMPRO User Group for security purposes.
The NEC ESMPRO User Group name should be determined during the installation. The Manager setup names it "Administrators" by default.
If you want to specify another user group name, you must create it before installing the NEC ESMPRO Manager and specify the group name during installation. The NEC ESMPRO User Group is case sensitive.
Also, to make this security feature function effectively, please install the NEC ESMPRO Manager on a hard drive formatted with NTFS.

CAUTION

When you create the NEC ESMPRO User Group as a global group, make sure that there is no local group having the same name. Also, when you install the NEC ESMPRO Manager on a backup domain Controller, you must create it as a global group.

3. Setting of firewall

In the environment where communication is blocked off by Firewall Product (Windows Firewall, etc,), firewall is required to set cancellation of port, to use NEC ESMPRO Manager.
For the port used by NEC ESMPRO Manager and Agent, refer to “Port used by 6.8 NEC ESMPRO Manager and Agent”

6.2 Installation

6.2-1 NEC ESMPRO Agent

NEC ESMPRO Agent may be installed manually on the Autorun Menu of NEC EXPRESSBUILDER as follows.

PLUS 1

- NEC ESMPRO Agent can be installed by using "Seamless Setup" function of the attached DVD-ROM "NEC EXPRESSBUILDER".
- Select [Install NEC ESMPRO Agent] which sets NEC ESMPRO of ExpressPicnic by Dialog Box. In addition, The setting of TCP/IP protocol･SNMP service by setting the information of ExpressPicnic until then is required to select this installation option.
- Installation using ExpressSetup,
  GAM and Power Console Plus may not be able to install automatically when using ExpressSetup. On the models that GAM and Power Console Plus cannot be installed with ExpressSetup, you must install GAM or Power Console Plus depending on the disk array controller to be used after completing the Express Setup.

CAUTION

- In case of executing from DVD-ROM drive on network, after allocation of network drive, activate from that drive. Do not activate from network computer of Explorer.
- Installing to the models embedding Remote Management Card/Advanced Remote Management Card,
  Some of the models support optional Remote Management Card and Advanced Remote Management Card. You must install and update NEC ESMPRO Agent after embedding/removing Remote Management Card and Advanced Remote Management Card. If you do not, you will not be able to acquire the device information properly.
- Start the installation after the system completely starts up.
- If installation is conducted right after the system startup, it may fail. Wait for a while and retry if the error message appears.

About Update Installation

In case NEC ESMPRO Agent is already installed, the following message is displayed:

```
NEC ESMPRO Agent is already installed
```

Update and install according to message.

6.2-2 NEC ESMPRO Manager

Run NEC ESMPRO Manager installer from EXPRESSBUILDER. After the installer started, proceed with the installation by following the message in the dialog box.

About Update Installation

If NEC ESMPRO Manager Ver. 4.0 or later is already installed in the system, you can update it to this version. The setting information is taken over.

* If the version of NEC ESMPRO Manager already installed is older than 4.0, you cannot update it to this version. In such a case, install this version after uninstalling the old version.

6.3 Remote Installation Using ESMPRO/DeploymentManager

6.3-1 NEC ESMPRO Agent

In case of Blade server, when you use DeploymentManager,NEC ESMPRO Agent can be installed remotely from management server.

1. Click [Register to DeploymentManager] by main menu of NEC ESMPRO on server where DeploymentManager.
2. Click [NEC ESMPRO Agent] by [Register to DeploymentManager] of NEC ESMPRO setup.
   By this operation, it is registered to DeploymentManager.
3. Refer to the User's Guide of DeploymentManager and install NEC ESMPRO Agent.

CAUTION

Installation path of NEC ESMPRO Agent is fixed as C:\ESM.

6.4 Setting after Installation

6.4-1 Installation of Disk Array Management Utility

NEC ESMPRO Manager and Agent obtain the information of Disk Array from Disk Array Management Utility. Therefore, in order to monitor Disk Array by NEC ESMPRO, Management Utility of each Disk Array is required to be installed in system.
For the installation of Disk Array Management Utility, follow the instructions of each Disk Array.

For Disk Array Management Utility corresponding to type of Disk Array, refer to the table below.(Only the utility NEC ESMPRO uses to collect information is shown.)

DiskArray Management Utility	RAID Controller
Universal RAID Utility	- RAID Controller(128MB, RAID 0/1) [N8103-116A] - RAID Controller(128MB, RAID 0/1/5/6) [N8103-117A] - RAID Controller(256MB, RAID 0/1/5/6) [N8103-118A] - RAID Controller(128MB, RAID 0/1) [N8103-116] - RAID Controller(128MB, RAID 0/1/5/6) [N8103-117] - RAID Controller(256MB, RAID 0/1/5/6) [N8103-118] - RAID Controller [N8103-115] - RAID Controller [N8103-109] - RAID Controller [N8403-026] - LSI Embedded MegaRAID(tm) - Internal RAID Controller (N8103-116 or equivalent) - SAS PCI EXPRESS(TM) ROMB - Disk Array Controller [N8103-90] *
MegaRAID Storage Manager	- Disk Array Controller [N8103-90] * - Disk Array Controller(Internal SAS HDD) [N8103-91] - Disk Array Controller(0ch) [N8103-99] - Disk Array Controller [N8403-019] - LSI Logic Embedded MegaRAID(tm) - LSI Logic MegaRAID(tm) SAS PCI EXPRESS(tm) ROMB
Web-based Promise Array Manager Professional	- Disk Array Controller(SAS) [N8103-105]
Web-based Promise Array Manager	- Disk Array Controller(SATA2) [N8103-103] - Disk Array Controller(SATA2) [N8103-101] - Disk Array Controller(SATA) [N8103-89]
Promise Array Manager	- Disk Array Controller(SATA) [N8103-78]

CAUTION

*** About Disk Array Controller [N8103-90]**
The disk array management utility of Disk Array controller [N8103-90] is different depending on the

6.4-2 Settings of Each Management Function

After the installation of NEC ESMPRO Manager, Agent and mandatory related utility, Minimum setting for NEC ESMPRO Manager and Agent or change of setting meeting system environment is required. Set referring to the following table.

Make sure to set the items written as " mandatory"
The items written as "optional" are ones to set meeting system environment.
For each operation outline, refer to section mentioned in "Reference" column.

NEC ESMPRO Agent

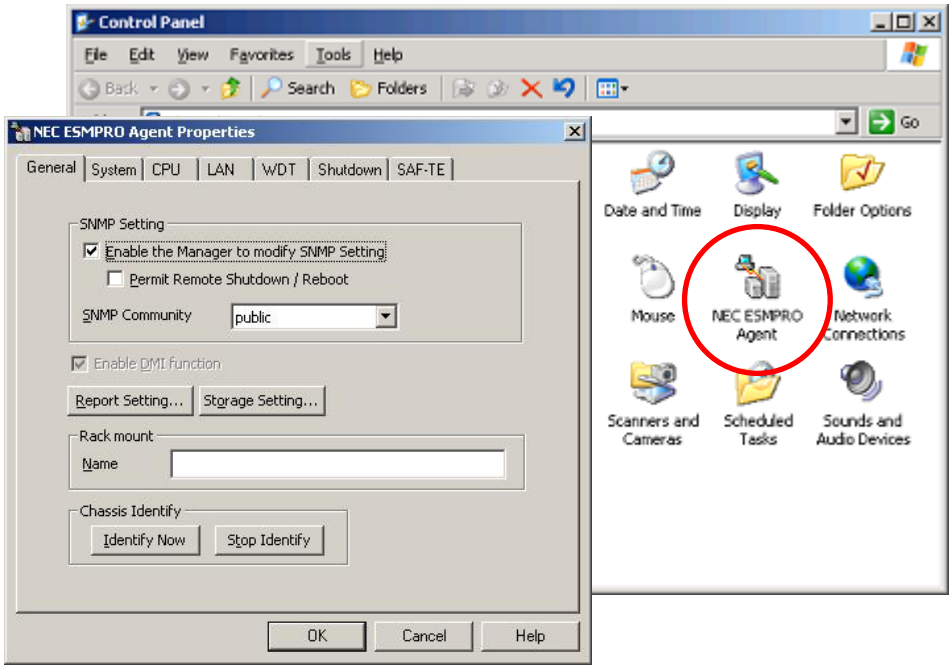
Setting Item	Classification	Reference
Setting of Alert	mandatory	Chap.2 2.5
Change of Threshold of CPU Monitoring	optional	Chap.3 3.1
Change of Threshold of File System free area Monitoring	optional	Chap.3 3.9
Change of Threshold of LAN Monitoring	optional	Chap.3 3.12
Setting of MonitoringEvent	optional	Chap.3 3.15

NEC ESMPRO Manager

Setting Item	Classification	Reference
Registration of Server to Operation Window	mandatory	Chap.2 2.2
Addtion of Sever to be managed	optional	Chap.2 2.2
Detection of Start-up and shutdown of Server	optional	Chap.2 2.2
Usage of Statistical Information Function	optional	Chap.2 2.4
Usage of Local Polling	optional	Chap.2 2.6
Usage of Remote Start-up of Server(Remote Wake Up)	optional	Chap.2 2.7
Communication between Remote Manager and NEC ESMPRO Manager	optional	Chap.2 2.9
Restraint of Blade Chassis Sensor Alert	optional	Chap.2 2.11
Redirection SNMP Trap to other vendor's Management Console	optional	Chap.2 2.12
Usage of Web Component	optional	Chap.4
Integration with HP OpenView	optional	Chap.5

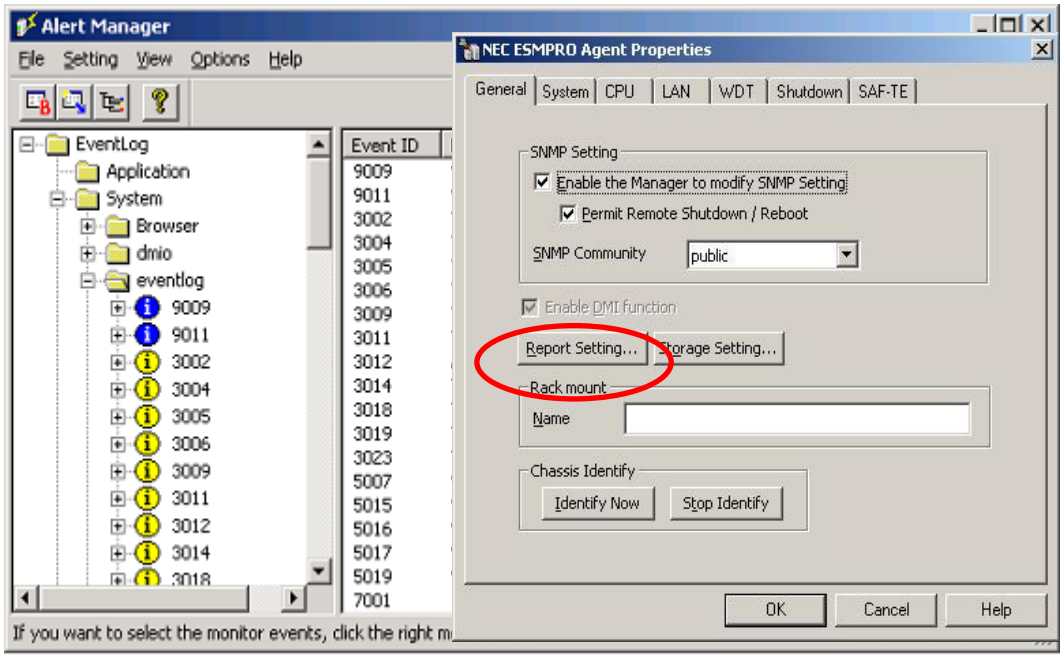
1. How to change operation setting for NEC ESMPRO Agent

To change various setting for NEC ESMPRO Agent, activate [NEC ESMPRO Agent] of control panel. Open Tab of Item to change and change the setting.



[NEC ESMPRO Agent] of Control Panel

In addition, to change alert and setting related to alert, press [Alert Setting] button of [General] tab and activate Alert Manager Setting Tool.



[Alert Setting] button of Control Panel and Alert Manager Setting Tool

6.5 Confirmation of Post-Installation

After installation and various settings, confirm whether both NEC ESMPRO Manager and Agent can operate normally.

1. To confirm operation of NEC ESMPRO Agent

Confirm NEC ESMPRO Agent according to the following procedures:

1. Reboot server and open EventLog.
2. Confirm whether error concerning monitoring service of NEC ESMPRO Agent is registered or not. If error concerning monitoring service of NEC ESMPRO Agent is registered, the installation is successful.

2. How to confirm operation of NEC ESMPRO Manager

Confirm NEC ESMPRO Manager according to the following procedures:

1. After you finished installing NEC ESMPRO Agent and registering server to Operation Window, refer to server icon of Operation Window.
2. Confirm whether the status color of server icon is Normal, Warning or Error.

CAUTION

In case that status color is Unknown (gray), there is possibility that NEC ESMPRO Agent on server side may operate normally. Confirm whether NEC ESMPRO Agent normally operates.

3. Next, right-click server icon and select [DataViewer] from menu.
4. Confirm that DataViewer is displayed correctly.

6.6 Uninstallation

6.6-1 NEC ESMPRO Agent

ProceduresIn case of uninstallation of NEC ESMPRO Agent, proceed according to the following procedures:

1. Procedures

With using NEC EXPRESSBUILDER:

1. Make the main menu of the NEC ESMPRO setup appear by referring to the section "Install" in this document.
2. Click [Agent].
   The "Welcome to the InstallShield Wizard for Agent" dialog box appears.
3. Click [Next].
   The message [NEC ESMPRO Agent is already installed] is displayed.
4. Select [Delete] and then click the [Next] button.
   Now NEC ESMPRO Agent is uninstalled.

Without using NEC EXPRESSBUILDER:

1. Start [Programs and Features] or [Add or Remove Programs] from [Control Panel].
2. Select [NEC ESMPRO Agent] and click [Uninstall/Change] (or [Change/Remove]).
   Now NEC ESMPRO Agent is uninstalled.

CAUTION

- Depending on OS, the name of [Change/ Remove] button is different, be careful of it.
- Start the uninstallation of NEC ESMPRO Agent after the system is started completely.
- If uninstallation is conducted right after the system startup, it may fail. Wait for a while and retry if the error message appears.
- A [AMIRTUpt.dll] file may remain solely in the installation folder. In this case, delete it manually. If files other than [AMIRTUpt.dll] also remain, do not delete them.

6.6-2 NEC ESMPRO Manager

1. Procedures

1. In case you run application of NEC ESMPRO Manager, stop all the applications. In addition, in case you open folder related to NEC ESMPRO Manager, close all the folders
2. Start up [Programs and Features] (or [Add or Remove Programs]) of Control Panel.
3. Perform deletion of NEC ESMPRO Manager from the list of currently installed programs.
4. Afterwards, proceed according to the messages.

6.7 In case Trouble Happens

Describes about coping process in case trouble happens during operation of NEC ESMPRO Manager and NEC ESMPRO Agent.

6.7-1 Trouble on NEC ESMPRO Agent

In case trouble happens during operation of NEC ESMPRO Agent. activate failure information collection tool and collect the information necessary for failure investigation.

1. About Failure Information Collection Tool

The failure information collection tool is to collect all the various information related to NEC ESMPRO Agent. By using this function, in case failure relating NEC ESMPRO Agent happens during user's system Operation, you can easily collect the information necessary for failure investigation.

2. About Operation Procedure of Failure Information Collection Tool

Proceed failure information collection tool according to the following procedures:

1. Open the tool\folder under the folder installed NEC ESMPRO Agent (Ex. : C:\ESM\tool)
2. Execute collect.exe in the above folder.

[log] folder is created and the information files related to multiple NEC ESMPRO Agent are stored under it.

3. Cautions

1. Administrators authorization is required to use this function.

In case you execute this function repeatedly without deleting [log] folder created by activation of failure information collection tool and the file under it, the information executed at last is stored.

6.7-2 Trouble on Manager

In case trouble on Manager during operation of NEC ESMPRO Manager, activate failure information collection tool and collect the information necessary for failure investigation.

1. About Failure Information Collection Tool

The failure information collection tool is to collect all the various information related to NEC ESMPRO Manager. By using this function, in case failure relating NEC ESMPRO Agent happens during user's system Operation, you can easily collect the information necessary for failure investigation.

2. About Operation Procedure of Failure Information Collection Tool

Proceed failure information collection tool according to the following procedures:

1. Open ESMMNG\collectm folder under the folder installed NEC ESMPRO Manager (Ex. : C:\Program Files\ESMPRO\ESMMNG\collectm)
2. Execute collectm.exe in the above folder.
3. [smlog] folder is created and the information files related NEC ESMPRO Manager are stored under it.

3. Cautions

1. Administrators authorization is required to use this function.
2. If the smlog folder already exists, delete or rename before running collectm.exe.

6.8 Port used by NEC ESMPRO Manager and Agent

Shows port used by NEC ESMPRO Manager and Agent.
In case of using firewall, set so as to authorize the communication between ports, if necessary.

CAUTION

Because Windows Firewall is enabled by default on Windows XP and Windows Vista, Windows Firewall is required to be set up so as to permit the communication between ports if necessary.

1. Between Manager and Agent

Function	Manager	Direction	Agent	Remarks
Autodiscover	-	→ ←	-	icmp
DataViewer/Life or Death Monitoring (SNMP)	indetermination	→ ←	161/udp	snmp
indetermination	162/udp	←	indetermination	snmp-trap
Manager Alert (TCP/IP in Band)	31134/tcp	← →	indetermination	
Manager Alert (DMI)	indetermination	← →	indetermination	rpc(tcp)
Remote Wake Up	indetermination	→	10101/udp	magic packet

* Bidirection means that the upper arrow is the start time of communication and lower one is return communication.
* The port number used by Manager Alert(TCP/IP in Band) can be changed on the screen of a setting,
* For the part of [indetermination], port is not determined.(use an unused port at the start time of communication.)

2. Between Manager and Manager

Function	Manager	Direction	Manager
Inter-Manager Communication	indetermination	→ ←	8806/tcp

* You can change port number you use at the time of addition of Neighbor Manager of [Options]-[Customize]-[Remote Manager…] of tool menu of Operation Window or by property.

3. Between Manager (IIS) and Web Browser

Function	Manager	Direction	Web Browser	Remarks
Web Component	80/tcp	← →	indetermination	http

4. Between Manager and Other Vendor's Management Console

Function	Manager	Direction	Other Vendor's Management Console	Remarks
SNMP Trap Redirection	indetermination	→	162/udp	snmp-trap

5. Between Agent and Mail Server

Function	Agent	Direction	Mail server	Remarks
Internet Mail	indetermination	→ ←	25/tcp	smtp

(*) does not meet server to need authorization, such as POP before SMTP and SMTP authorization and others.