Chap. 2

Server Management Utilizing NEC ESMPRO

2.1 Start-up of Server Management Functions
2.2 Easy Registration of Server to be Managed(Operation Window)
2.3 Configuration Information of Server and Management of Operating Status (DataViewer)
2.4 Check of Long-Term Operating Status of Server (Automatic Data Collection)
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2.6 Addition of Monitoring Items of Server (Local Polling)
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2.8 Remote Shutdown of Server (Remote Shutdown)
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2.10 Identify Function
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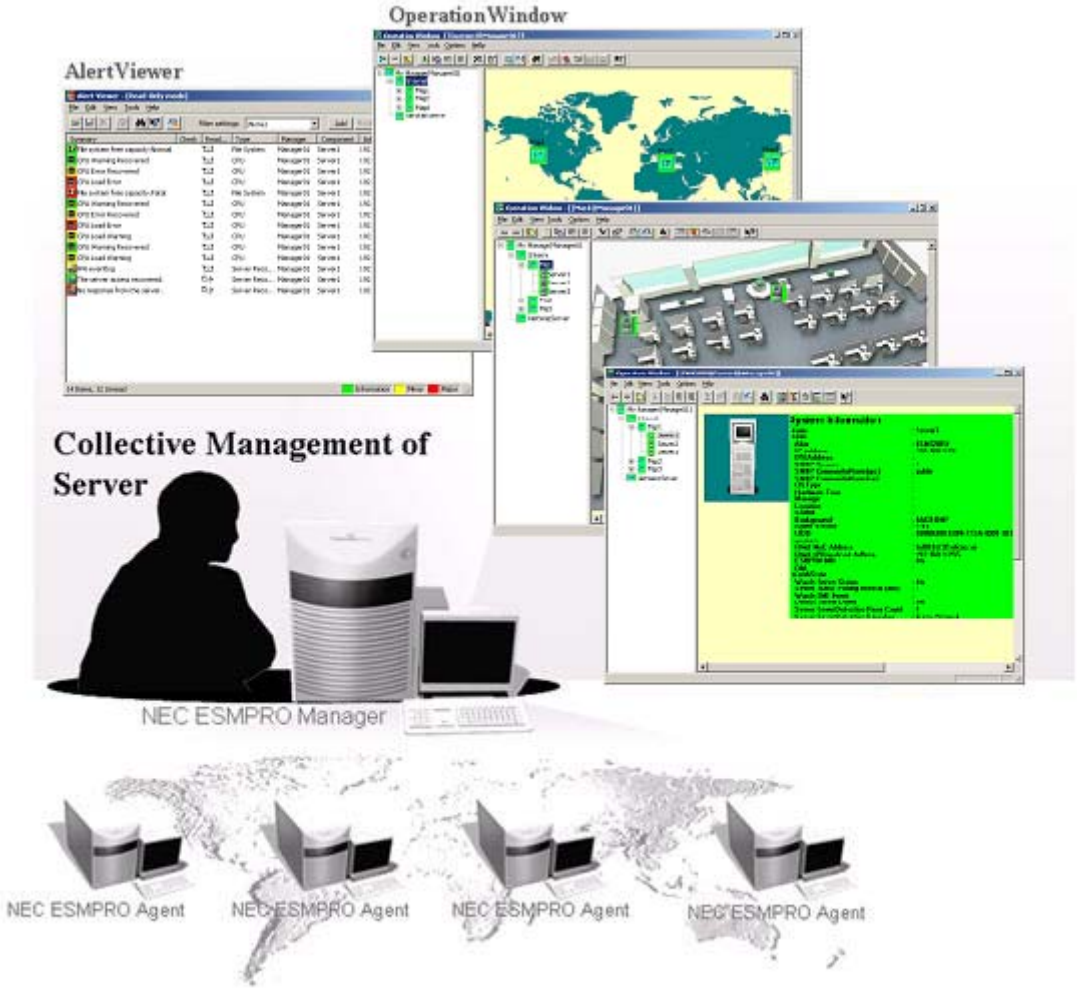
2.12 Redirect SNMP Trap to Other Vendor's Console (SNMP Trap Redirection)
2.13 Server Management by Script (Script Component)
2.14 Extension of Report Method

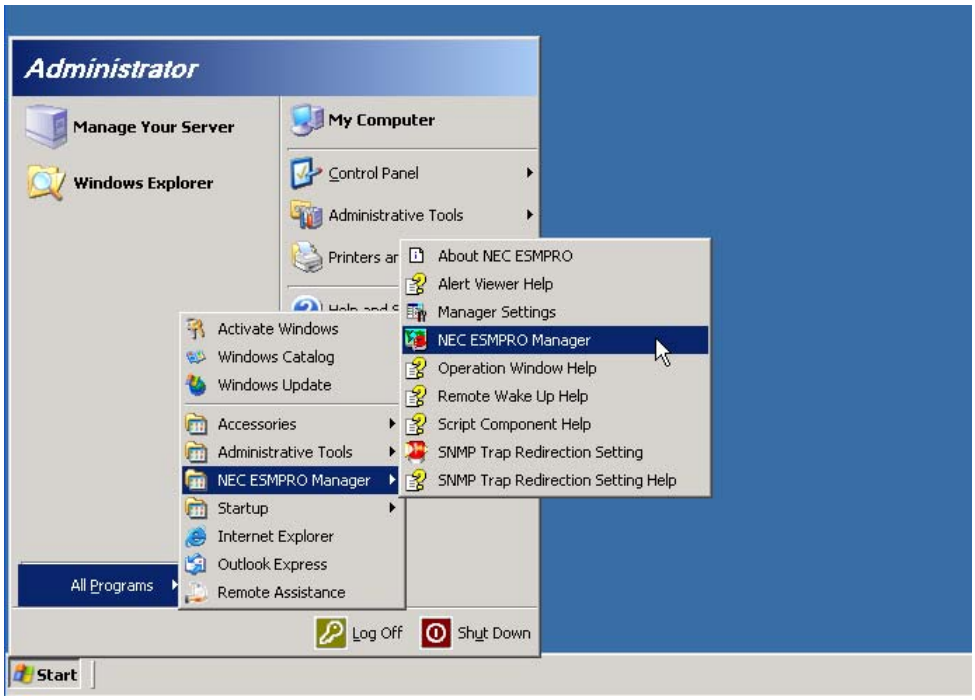
2.1 Start-up of Server Management Functions

You can manage the operating status of all the number of distributed server on the screen of NEC ESMPRO Manager.
In Operation Window and DataViewer, efficient server management can be done by stratified management items.
In AlertViewer, all the report (Alert) of managed server can be managed.



1. How to activate NEC ESMPRO Manager

1. Select [Program] from [Start] menu of taskbar, and [NEC ESMPRO Manager] from program group.



Start-up of NEC ESMPRO Manager

2. Operation Window and AlertViewer activate. In normal operation, check whether or not failure happens by Operation Window and AlertViewer. Activate DataViewer when you would like to know configuration information of server and each monitoring information, if necessary.

CAUTION

AlertViewer is minimized after its activation. Select from taskbar when you use.

CAUTION

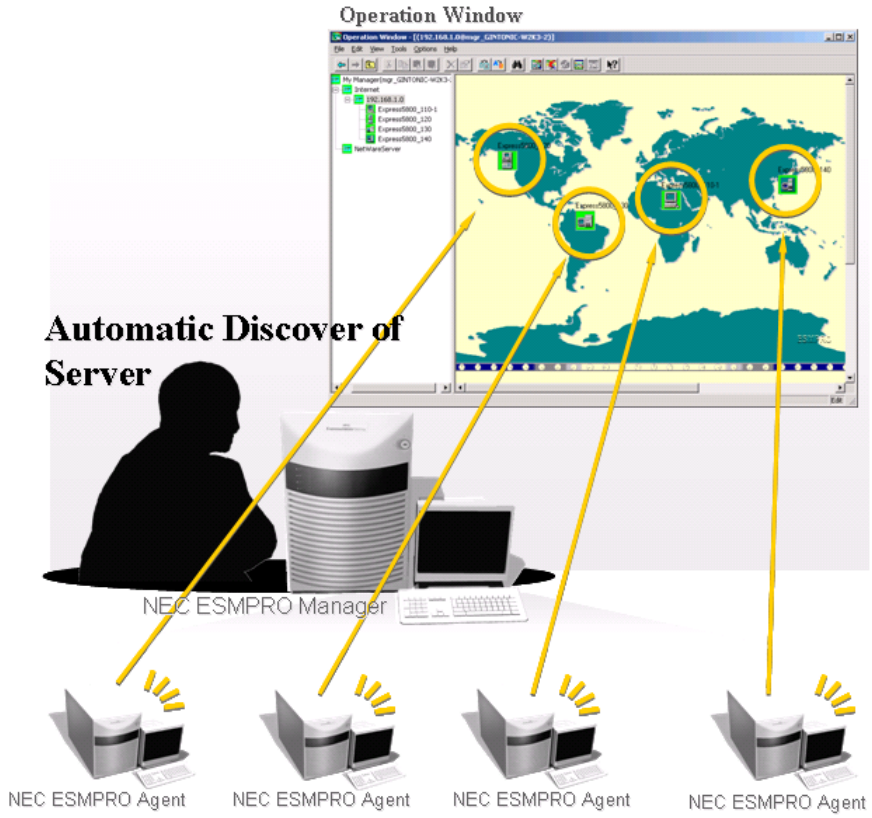
Operation to activate NEC ESMPRO Agent is not necessary. After activation of machine, it automatically starts to monitor the operating status.

CAUTION

NEC ESMPRO Manager manages based on IP address. Therefore, do not use DHCP that IP address changes dynamically.

2.2 Easy Registration of Server to be Managed (Operation Window)

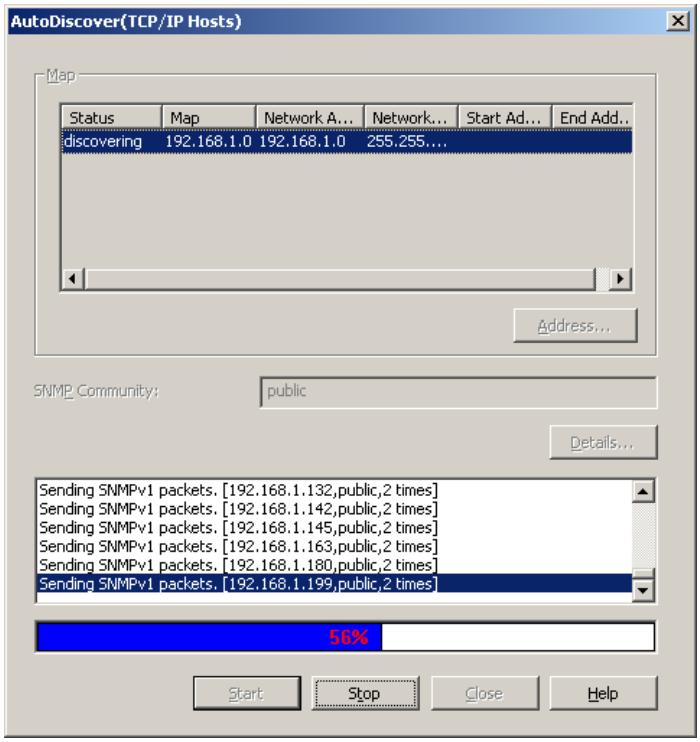
By using automatic discovery function of Operation Window, you can discover the managed server from network and register it on Operation Window.
Furthermore, by setting the automatic discover regularly, you can automatically register it on Operation Window when server is added.



2.2-1 How to discover server automatically

1. Procedures

1. Activate Operation Window, select map with mouse to register the server to be discovered automatically.
2. Select [Autodiscover] from [Tools] menu and select [TCP/IP Hosts…] from [Foreground].
3. Input the SNMP community name set on the server to be discoverd into the [SNMP Community].
4. Press [Start] button.



[AutoDiscover] Dialog Box

CAUTION

AutoDiscover function also discovers and registers hosts on which NEC ESMPRO Agent is not installed.

POINT

Narrowing AutoDiscover Target

It may require considerable time in case that the object of AutoDiscover is all the addresses in sub network designated in specified value. In case that IP address is preliminarily known, by pressing [Address…] button and refining the object, you can discover the server for monitoring object in a short time.

POINT

To discover network via router automatically, you must preliminarily register map icon of network manually. When you execute AutoDiscover to map icon of the network, server is registered under the map icon.

POINT

About Managed Servers

There is no limitation that an NEC ESMPRO Manager can manage multiple servers but performance deteriorates as the multiple servers to be managed increases. Therefore, in operation, the limit number of server to be managed should be around 250 and system should be built considering this point.

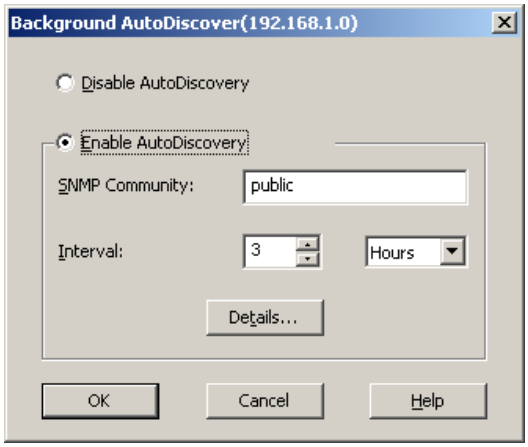
2. How to execute AutoDiscover regularly

1. Select map of network you turn into an object of regular AutoDiscover by left tree of Operation Window.

CAUTION

At this time, select [Properties] with right mouse button and check that [Network Address] and [Network Mask] are set. In case map icon is not set, regular AutoDiscover can not be set.

2. Select [Autodiscover]-[Background…] from [Tools] Menu.



[Background AutoDiscover] Dialog Box

3. Check [Enable AutoDiscovery], set the details, pressing [Details…] button, if necessary.
4. Close settings screen, pressing [OK] button.

CAUTION

When you set AutoDiscover regularly, server icon is automatically registered in Operation Window when a new server is added. However, when the number of server decreases such as dismantlement, as the server icon remains unchanged, you need to manually delete it.

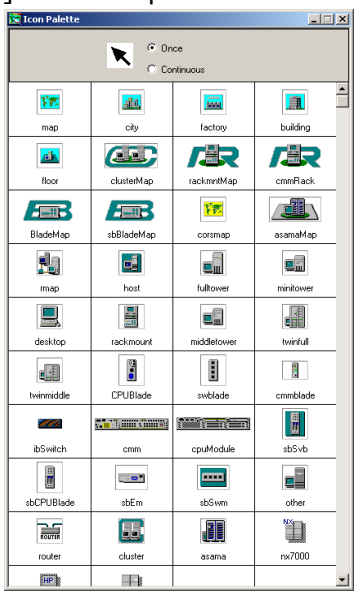
CAUTION

When you set AutoDiscover regularly, server icon is automatically and conveniently registered in Operation Window when a new server is added. However, packet to network increases.
It is recommended not to use this function in case of environment where add-on of server is not taken into account. or for the network where billing problem such as WAN may happen.
Please note that you must be very careful of setting interval when you use it.

3. How to change map configuration

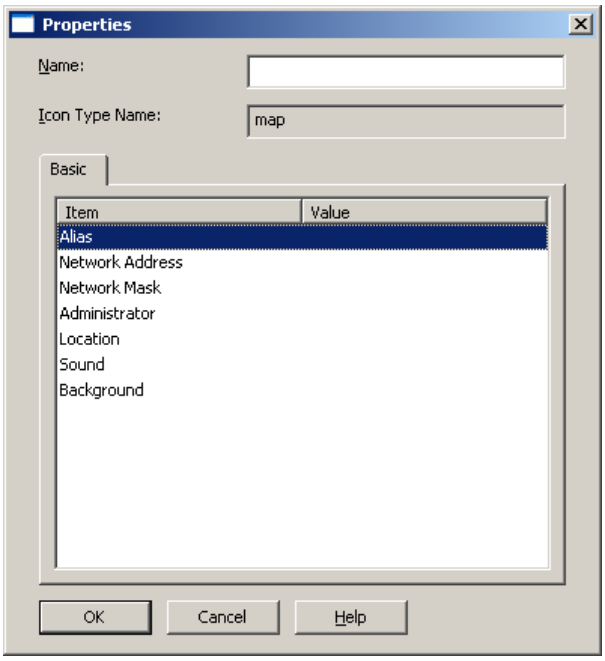
The layer system of registered server can be changed.

1. Select location to make a new map in Operation Window Tree.
2. Select [Icon Palette] of [View] menu and open Icon Palette.



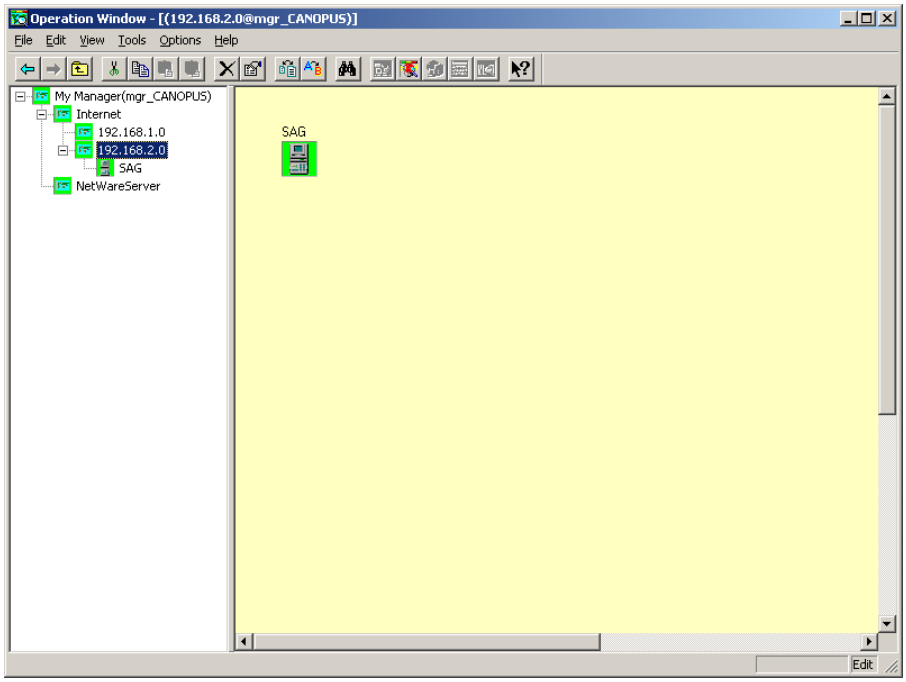
[Icon Palette] Dialog Box

3. After selecting map icon to make in Icon Palette, when you click right pane of Operation Window, new map icon is attached.
4. Then, as dialog box to set attribute of map icon is displayed, set necessary items.



[Properties] Dialog Box

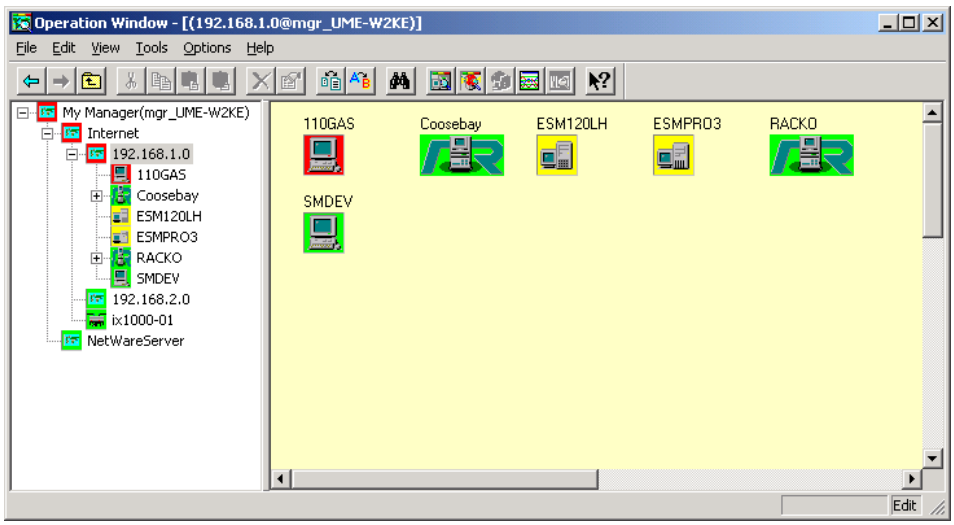
5. Select server icon you want to move, and move the server icon under a new map icon by cut & paste.



[New Map]

2.2-2 How to monitor server status

For AutoDiscovered server on 2.2-1, its status is periodically monitored and the color of server icon of Operation Window changes, depending on its situation.



The color of server icon of Operation Window is set by default as follows:

Server Status	Color of Server Icon
Normal	Green
Warning	Yellow
Error	Red
Unknown	Gray

POINT

About Status Color of Server Icon

You can change the status color of server icon for server status.

1. Select [Options] from Operation Window menu.
2. Select [Customize] - [Fault Indicators…] from displayed menu.
3. Click the status you want to change from [Fault Indicators], and press [Change…] button.
4. Select the color you want to set and press [OK] button, and close [Fault Indicators] Dialog box.

CAUTION

In case the monitoring target server stops or is in sleep mode and some problem on network happens, the status color of server icon is gray (unknown).

1. How to check setting of status monitoring of server

1. Right-click server icon you want to check on Operation Window.
2. Select [Properties] from menu.
3. Select [WatchState] tab. And check the value of [Watch Server Status] is ”On”. When the value of [Watch Server Status] is ”On”, server is monitored, while it is ”Off”, it is not.

CAUTION

Between NEC ESMPRO Manager and NEC ESMPRO Agent, packet is sent and received at the following time.:
Please be very careful of system operation in which billing problem such as WAN may happen.

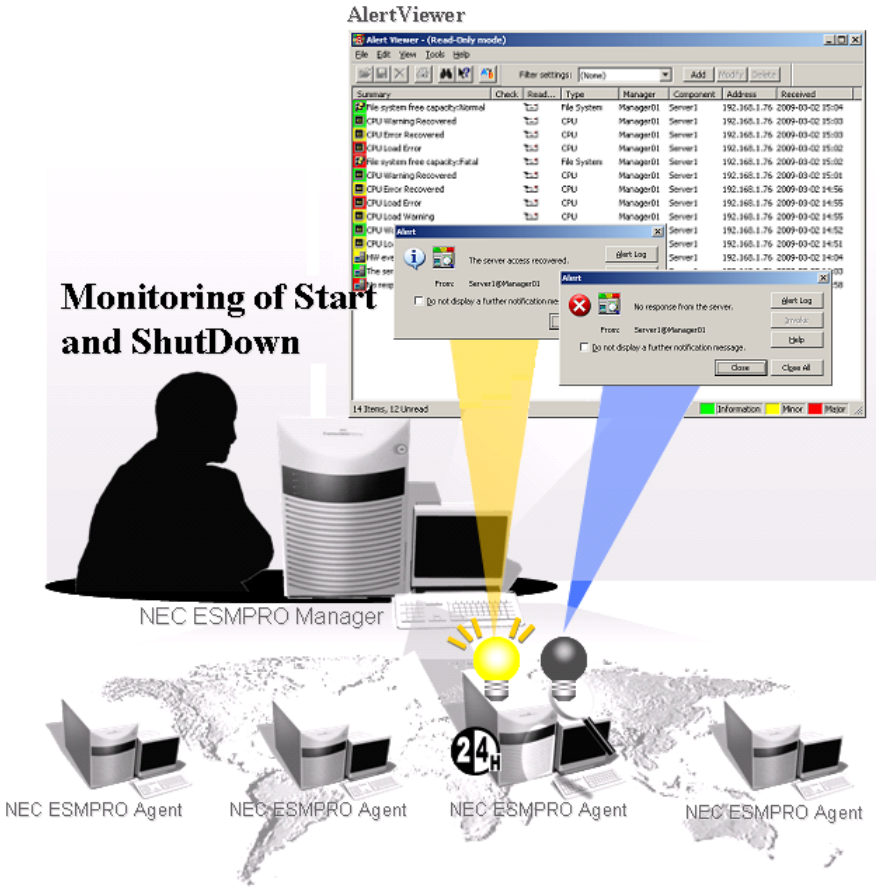
- When regular polling such as around every 1 minute to monitor server status if you set "Watch Server Status" Off on property of server icon, you can avoid it. However, the icon color of Operation Window does not reflect the server status.
- When you execute AutoDiscover of server by Operation Window
- When you execute AutoDisover at designated intervals after setting steady AutoDiscover by Operation Window
- When you execute Remote Wake Up by Operation Window
- When you execute Remote Shutdown by Operation Window
- Irregularly after setting Inter-Manager Communication
- When you receive SNMP trap
- When you collect information around every 1 minute after start-up of DataViewer
- When you collect information around every 1 minute after start-up of GraphViewer
- When you collect information at a designated interval after setting automatic statistical information collection

CAUTION

Normal color is set for the status color of server icon when server status monitor is not executed.

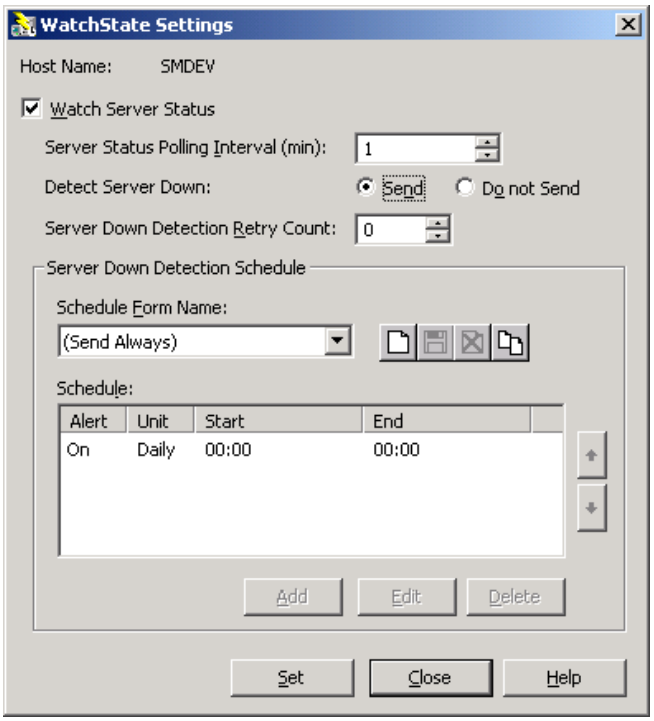
2.2-3 How to detect shut down and recovery of server

By utilizing Server Down Detection function, you can monitor shut down and recovery of server.
In case of shut down of server, alert of "No response from the server." is reported to AlertViewer.
In case of recovery by reboot etc., alert of "The server access recovered." is reported to AlertViewer.



1. Preparation

1. Right-click server icon relevant on Operation Window and select [WatchState Settings].



[WatchState Settings] Dialog Box of Server

2. Confirm that the checkbox of [Watch Server Status] is checked. In case [Watch Server Status] item is not checked, check the checkbox of [Watch Server Status].

CAUTION

In case the checkbox of Watch Server Status is not checked, alert of shut down and recovery of server is not reported.

3. Check the checkbox of [Send] of [Detect Server Down].
4. Input number of retry until detecting server down in [Server Down Detection Retry Count].

POINT

Set the number of retry until detecting server down by status monitoring.
Setting the number of retry properly can avoid alert reported when the status where communication can not be done by temporary network failure, high-load of server and etc. is deemed as server down.

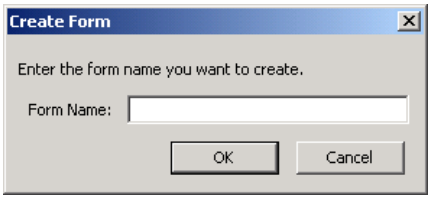
5. In case of monitoring server down constantly select "(Send Always)" by [Schedule Form Name] and press the [Set] button.

POINT

When you shut down server regularly for operation, you can suppress alert reported in case of server down, by setting schedule in advance.

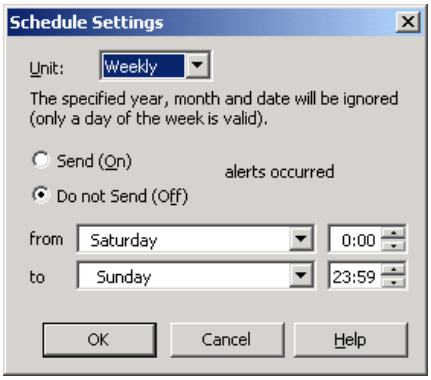
To Set Schedule

1. Press button of [WatchState Settings] screen and display [Create Form] Dialog Box
2. Input name of schedule form and press [OK] Button.



[Create Form] Dialog Box

3. Press [Add] button of [WatchState Settings] screen, set the schedule and press [OK] button.



[Schedule Settings] Dialog

4. Press button of [WatchState Settings] Dialog. The contents indicated on schedule list are reflected in selected schedule form.
5. Select schedule form to use and press [Set] button.
6. Press [Close] button and close [WatchState Settings] Dialog.

CAUTION

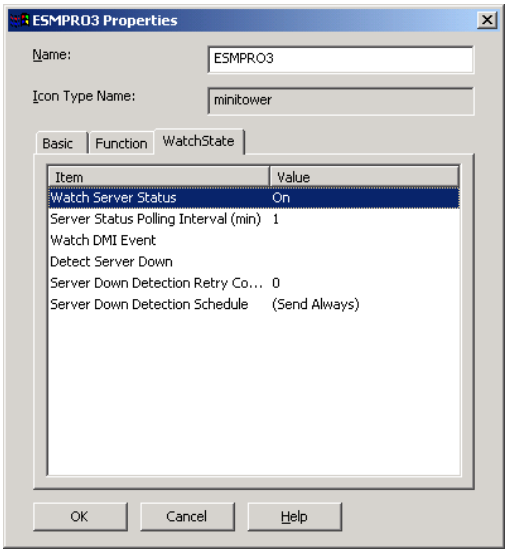
The mark "*" beside the name of schedule form means under editing. If you close [WatchState Settings] Dialog without pressing button, the contents you are editing are not saved.

POINT

When you shut down server regularly, you can control alert reported in case of server down, by setting schedule in advance.

POINT

By [WatchState] tab of server property on Operation Window, you can set alert reporting function in case of server failure but can not set schedule. For schedule, please set [WatchState Settings] Dialog Box mentioned above.



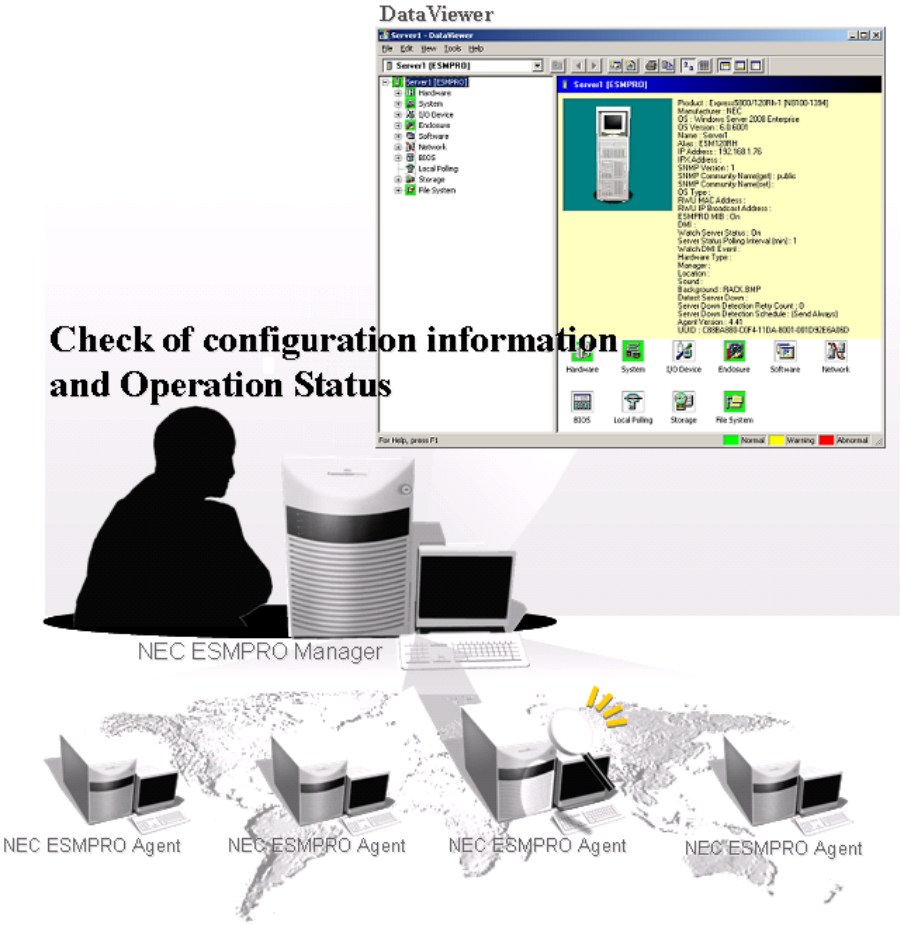
[Properties] Dialog Box of Server

PLUS 1

NEC ESMPRO Manager sends management packet to server and judges that server is stopped if not responded.
Therefore, in case that server is in sleep mode and in case of network problem while server actually operates, alert of [No response from the server.] is reported.

2.3 Configuration Information of Server and Management Operating Status (DataViewer)

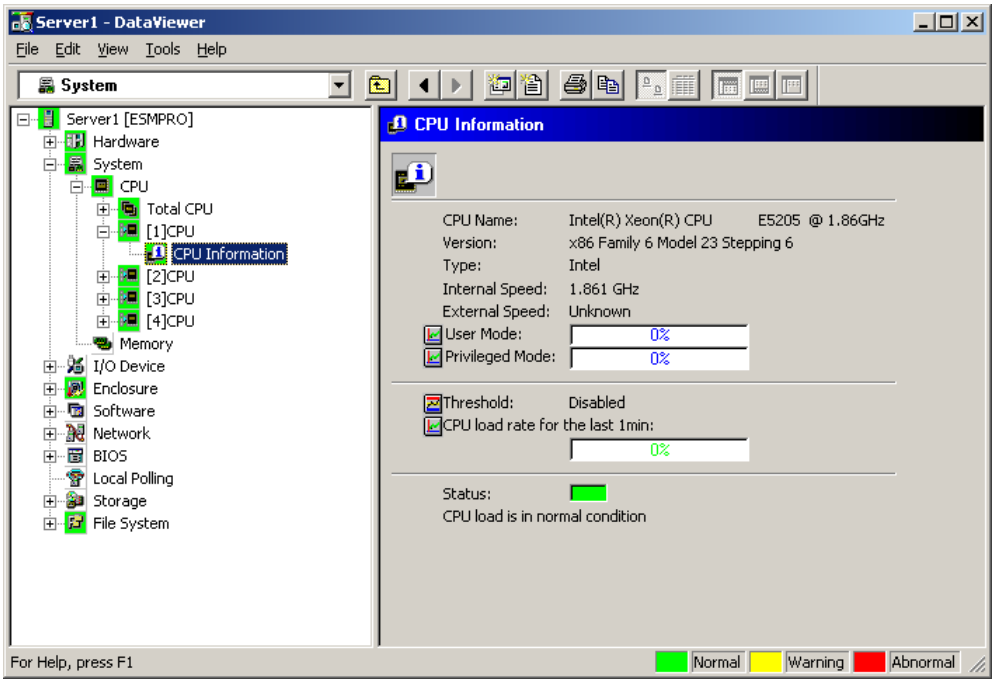
You can check the configuration information and operating status of server by DataViewer.
It displays various items such as hardware, software components, voltage, temperature and others in real time.



2.3-1 How to check configuration information and operating status

1. Procedures

1. Activate Operation Window and select server by left tree of screen.
2. Select [DataViewer] from [Tools] menu.
3. DataViewer activates and the information gotten from server is displayed.



DataViewer

2. Preparation

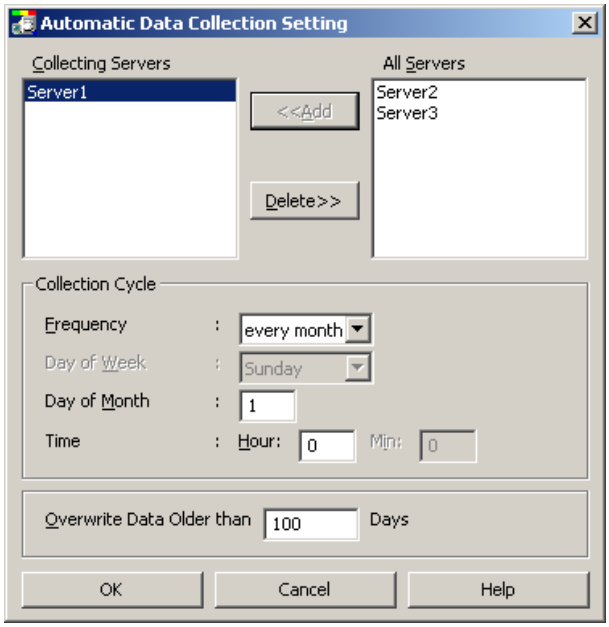
In order to refer to information by DataViewer, it is necessary to register on Operation Window in advance.

2.4 Check of Long-Term Operating Status of Server (Automatic Data Collection)

By utilizing Automatic Data Collection, you can regularly collect the statistical information of server, graph and print. Statistical information can make you analyze the operating status of server, maintain the system and expansion plan.

1. To set automatic data collection

1. Select [Automatic Data Collection Setting…] from [Tools] menu of DataViewer.
2. On setting Dialog Box, server list is displayed on the right side. Select and add the server you want to make automatic collection. Please change collection cycle, if required.



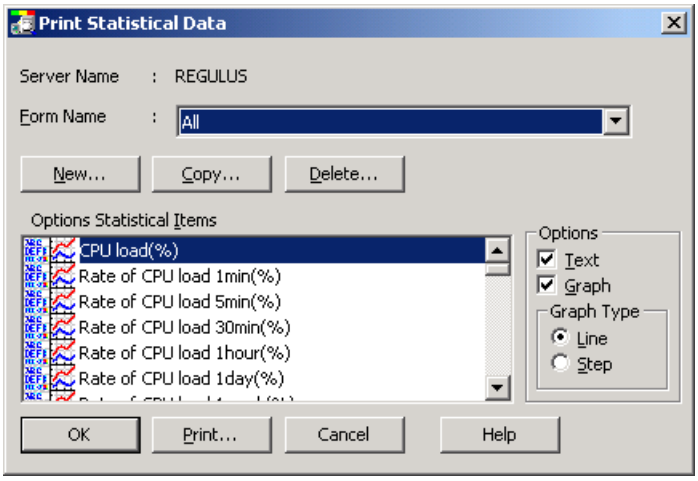
[Automatic Data Collection Setting] Dialog Box

POINT 40KB disk space is necessary to collect information per server.

POINT It is output at predefined position(~/Program Files/ESMPRO/esmwork/esm) in CSV form.

2. How to print out collected data

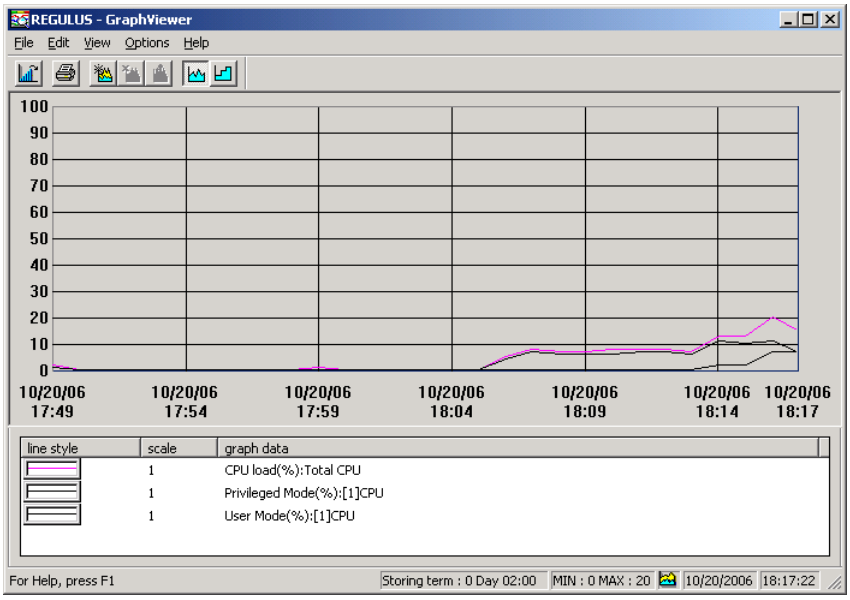
1. Select [Print Statistical Data…] from [Tools] menu of DataViewer. Please set necessary items at displayed Check of Long-Term Operating Status of Server (Automatic Data Collection) screen and press [Print…] button.



[Print Statistical Data] Dialog Box

3. How to graph collected data

1. Select server you want to graph by Operation Window and activate DataViewer.
2. Display the screen CPU information by DataViewer, press graph button( ) and activate GraphViewer.
3. Select [Open statistics…] from [File] menu of GraphViewer.
4. As confirmation of deletion of graph and data is displayed, press [Yes].
5. Select [Add graph lines….] from [Edit] menu and add the items to be added.



GraphViewer

4. About Collected Statistical Information

The statistical items to be collected when you execute Automatic Data Collection for NEC ESMPRO Agent Ver. 4.3/4.4 are as follows:
However, the items not to support by server to be monitored are not collected.

PLUS 1

Automatic Data Collection collects server information at that time in a set collecting cycle.。
For instance, the data of statistical item "Rate of CPU load 1 min (%)" is not accumulated or calculated Rate of CPU load on NEC ESMPRO Manager side but is collected the data of Rate of CPU load 1 min (%) calculated on NEC ESMPRO Agent side in advance at the time of collection.

[Statistical Item List]

CPU Information	CPU load(%) Rate of CPU load 1min(%) Rate of CPU load 5min(%) Rate of CPU load 30min(%) Rate of CPU load 1hour(%) Rate of CPU load 1day(%) Rate of CPU load 1week(%) User Mode(%) Privileged Mode(%) Nice Mode
Memory Information	Correctable Error Uncorrectable Error Physical Memory Available(KB) Physical Memory Currently Used(KB) Physical Memory Percent Used(%) Page File Available(KB) Page File Currently Used(KB) Page File Percent Used(%)
Network Statistical Information	Received Total Octets Received Total Packets Received Unicast Packets Received Non-Unicast Packets Received Packets Disposed Received Error Packets Received Undefined Protocols Transmitted Total Octets Transmitted Total Packets Transmitted Unicast Packets Transmitted Non-Unicast Packets Transmitted Packets Disposed Transmitted Error Packets Transmitted Queue Length
Network MAC Information	Received Alignment Errors Received FCS Errors Received Excessive Frames Received Additional Errors Transmitted Carrier Sense Errors Transmitted Late Collisions Transmitted Excess Collisions Transmitted Multiple-Collision Frames Transmitted Single-Collision Frames Transmitted Delayed Frames Transmitted Additional Errors
OS Information	Number of processes Number of threads
Temperature Information	Temperature
Voltage Information	Voltage Level(mV)

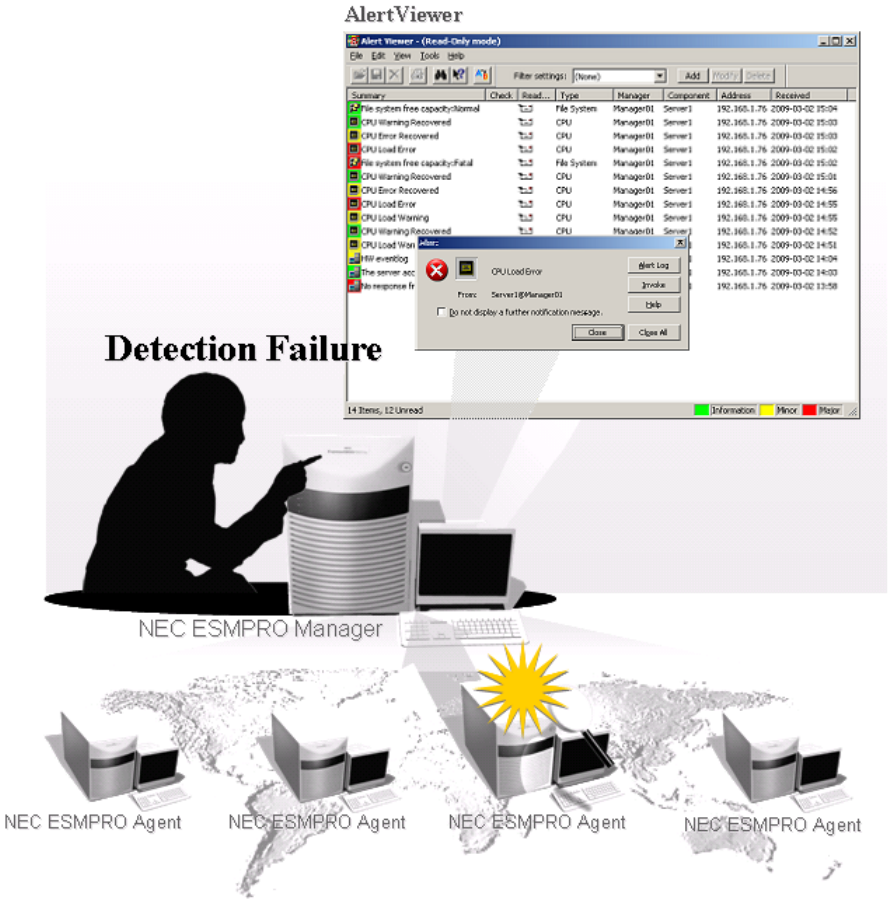
Fan Information	Fan Speed
File System Information	Unused Capacity(MB) Used Clusters
Hard Disk Information	Device Read Sectors Device Write Sectors

As for ft server, the following information is also collected in addition to the above.

CPU Module Information	CPU Module Correctable Error CPU Module Intermittent Error CPU Module Uncorrectable Error
Memory Information	Correctable Error Uncorrectable Error Intermittent Error
Ethernet Board Information	Received Good Frames Received Total Collisions Received Total Errors Received CRC Errors Received Alignment Errors Received Resource Errors Received Overrun Errors Received Short Frame Errors Transmitted Good Frames Transmitted Total Collisions Transmitted Total Errors Transmitted Max Collisions Transmitted Late Collisions Transmitted Under Runs Transmitted Lost CRS

2.5 Quick Detection of Server Failure (AlertViewer)

Report (Alert) of server failure is promptly sent to NEC ESMPRO Manager.
If you activate AlertViewer, when you receive Alert, Pop-up is displayed. Therefore, you can recognize it immediately.
As alert includes detailed information of failure and countermeasure to it, you can handle the alert properly.



2.5-1 To check alert

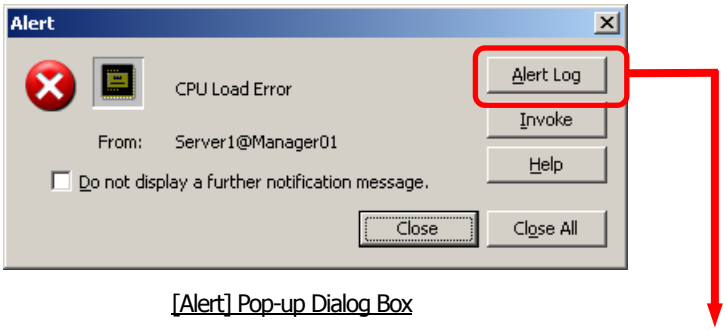
1. Procedures

1. Activate [NEC ESMPRO Manager] from NEC ESMPRO Manager program group.
   AlertViewer activates in minimization (iconization) position.

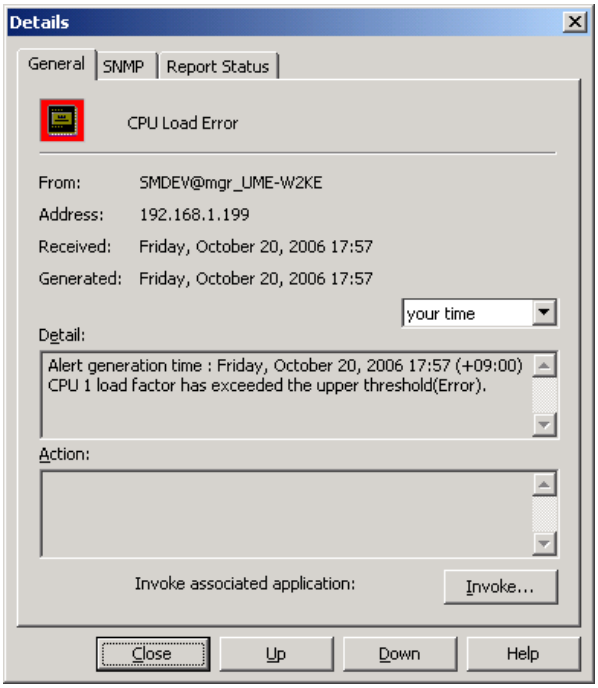
POINT

You can also activate AlertViewer by selecting [AlertViewer…] from [Tools] menu of Operation Window.

2. When alert happens, Pop-up Dialog Box is displayed. Press [Alert Log] here, detailed screen is displayed. You can check the detailed information of failure and handling method. and others.



[Alert] Pop-up Dialog Box



Details Screen of Alert

CAUTION

When you do not activate AlertViewer, Pop-up is not displayed. However, alert is received. When you activate AlertViewer later, received alert is displayed on alert list.

POINT

Around 1KB disk space is necessary for one alert.

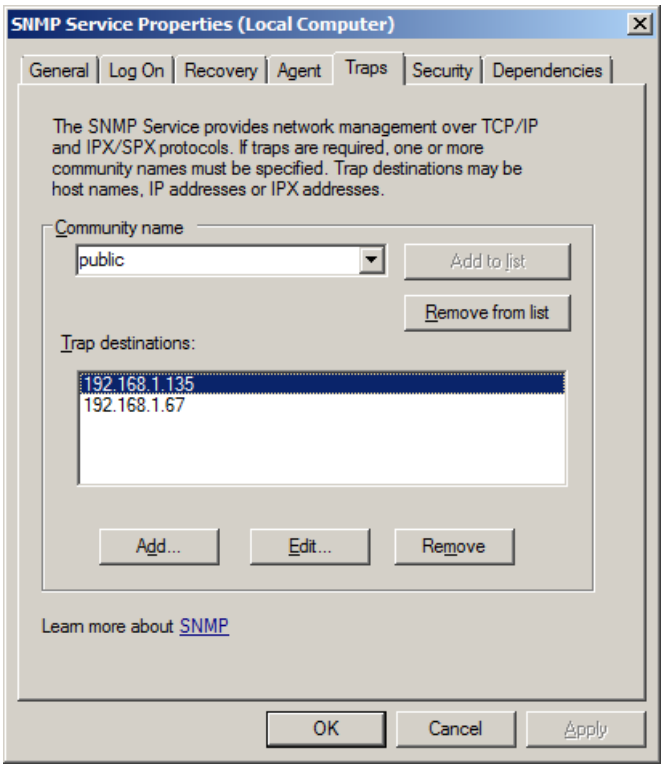
POINT

The alert which happened when the power of NEC ESMPRO Manager machine was off can be received after power-on of NEC ESMPRO Manager machine by designating retransmission setting through TCP/IP report on NEC ESMPRO Agent side.
For details, refer to P. 2.5-3 "How to utilize various report method".

2. Preparation

To receive alert regarding server failure at NEC ESMPRO Manager, setting address of machine installed NEC ESMPRO Manager for Trap Destination on server side is required.
Please set Trap Destination in the following manner.

1. Select [Administrative Tools] - [Services] of Control Panel.
2. Select "SNMP Service" on [Services] screen and select [Action]-[Properties] from menu.



Property of SNMP Service

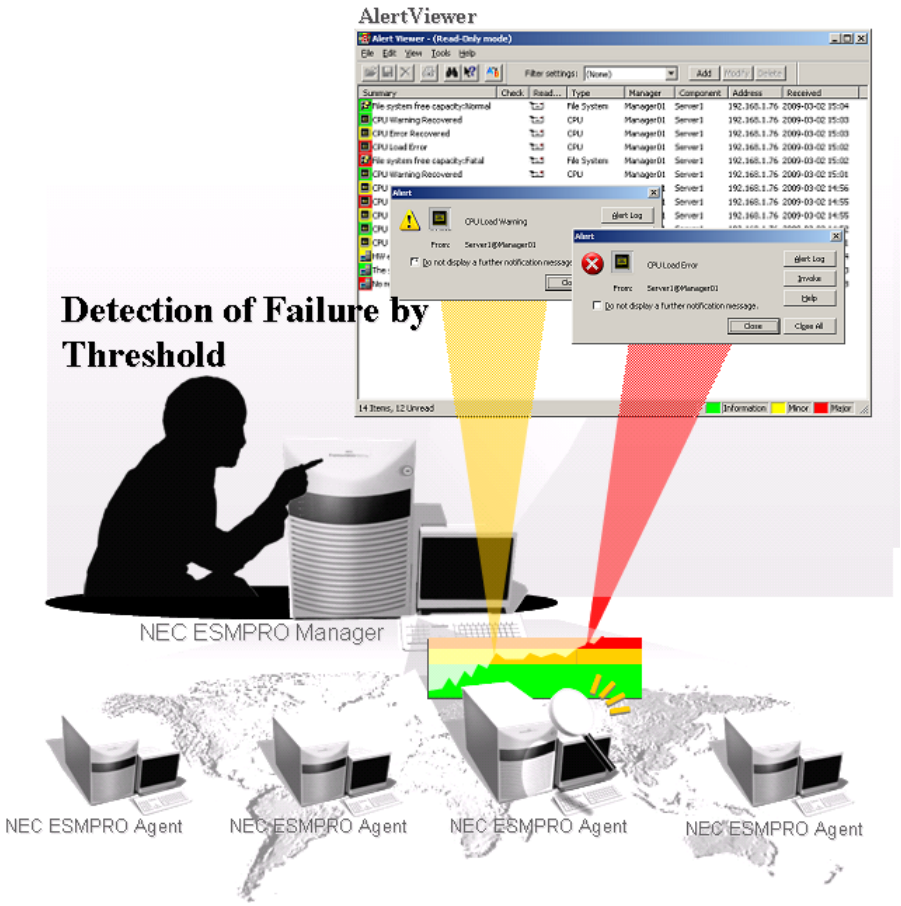
3. Select [Traps] tab and add the address of the computer on which NEC ESMPRO Manager is installed to the Trap destinations list. Click [OK].

POINT

In addition to the alert by SNMP Trap, the alert of high reliable alert of NEC ESMPRO Agent can be used.

2.5-2 How to report (Alert) necessary failure only

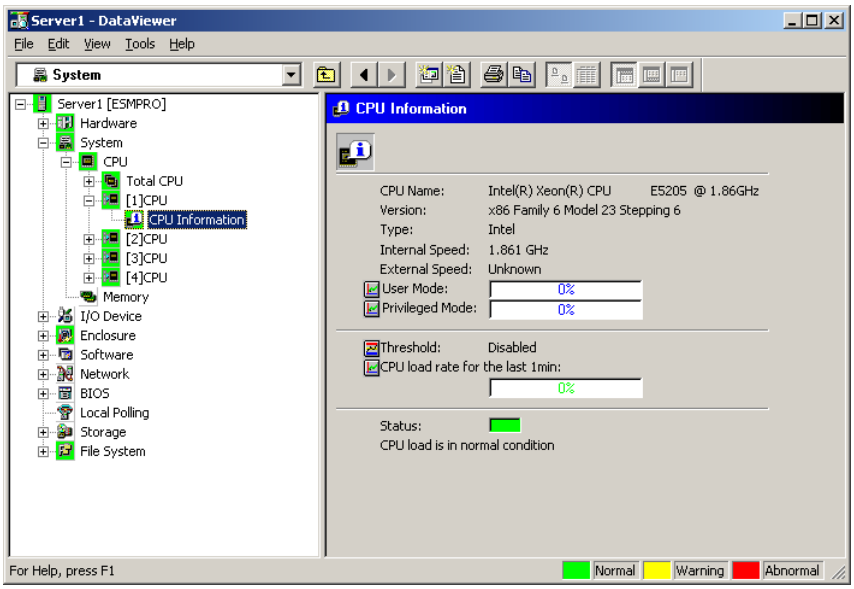
By setting threshold for various monitoring item regarding server such as Rate of CPU load and free space of file system by DataViewer, for instance, in case CPU load anomaly happens in server, alert is immediately reported to NEC ESMPRO Manager.
Alert has three kinds of level, "Information", "Minor" and "Major". Yon can take precautions to prevent major failure, by alert of status in a phased manner.



1. How to set threshold

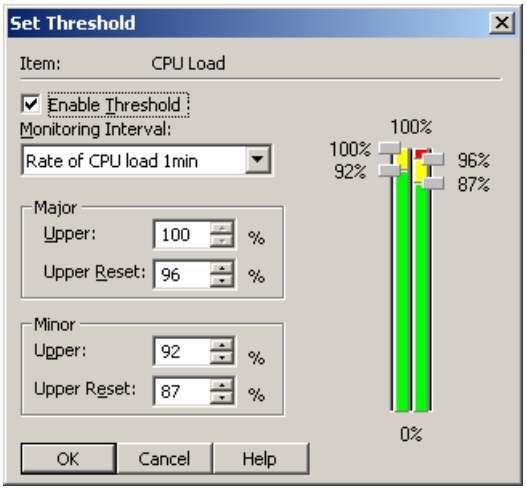
For example, you can set threshold of CPU in a following manner:

1. Activate DataViewer by Operation Window
   Trace in [System]-[CPU] order on the left tree of DataViewer and select the tree below it and display the detailed CPU information to set threshold on the right of DataViewer.



CPU ([1]CPU) of DataViewer

2. When you press threshold button ( ) which is on left of Threshold item, Set Threshold screen opens.



[Set Threshold] Dialog Box of CPU

3. For monitoring, check [Enable Threshold].
4. When you check [Enable Threshold], the Rate of CPU load of server is checked based on the value set here whether it is normal or not. Every time the status of server changes, alert is reported. (ex. Normal -> Warning and Warning -> Normal).

2.5-3 How to utilize various report method

1. Alert method to Manager

Alert method to Manager has the following three kinds:
- Manager(SNMP)
- Manager(TCP/IP In-Band)
- Manager(TCP/IP Out-of-Band)

Manager(SNMP) is reported by SNMP Trap of SNMP service.
Besides NEC ESMPRO Manager, alert can be executed for "Manager supporting SNMP".
Manager (TCP/IP In-Band) uses TCP/IP and communicates with Manager, thus high reliable alert can be executed..
Manager (TCP/IP Out-of-Band) communicates with remote Manager by using TCP/IP as same as In-Band but its alert is executed through Remote Access Service.
In case that NEC ESMPRO Agent and Manager exist at remote location, the alert can be executed to Manager via public line by utilizing Manager(TCP/IP Out-Of-Band).

PLUS 1

Manager(SNMP) is simple protocol using UDP protocol. Therefore, alert may delay and be lost. In this case, NEC recommends high reliable Manager (TCP/IP In-Band). In case of using Manager (TCP/IP Out-Of-Band), NEC ESMPRO Agent and Manager needs mode respectively.

POINT

In case that NEC ESMPRO Agent and Manager exist on the same LAN, because you can freely set retry term and retry interval by using Manager (TCP/IP In-Band), even in the environment where the machine of Manager is not power-on, alert can be surely executed.

2. Other alert methods

At the time of server failure, besides alert to Manager, the following alert methods can be used from NEC ESMPRO Agent.

Pager Alert
Paging by pager
* It not supports since Ver4.0.

PLUS 1

For using pager, modem is required for each server.

POINT

By using pager, you can report alert in real time to maintenance personnel at remote location and do alert urgent failure to system administrator.

CAUTION

Even though line is busy, alert is successfully executed.

Report to Client
By utilizing Messenger Service, you can report client within the same domain.

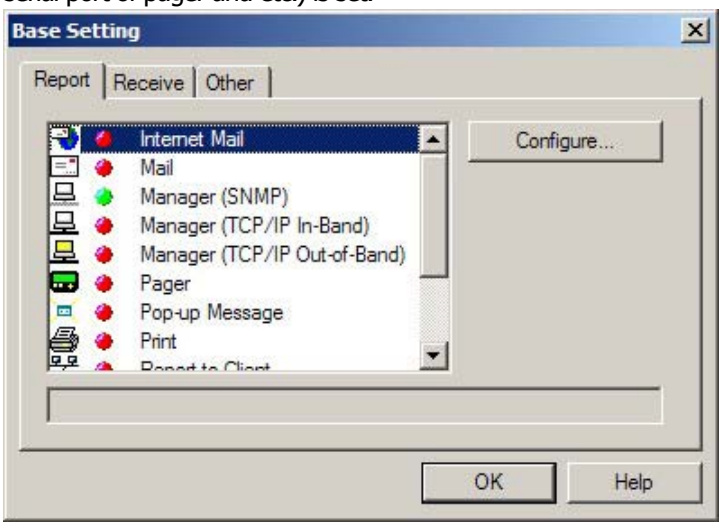
POINT

Alert can be executed for server other than administrator (Administration Terminal).

3. Preparation

In order to set reporting alert, you can do Alert Manager Setting Tool.

1. Activate Alert Manager Setting Tool.
2. Basic setting of alert
   Select [Base Setting] from Setting menu of menu bar or click [Base Setting] of toolbar. [Base Setting] Dialog Box is displayed. Here, alert method which is common to basic setting (Selection of serial port of pager and etc.) is set.

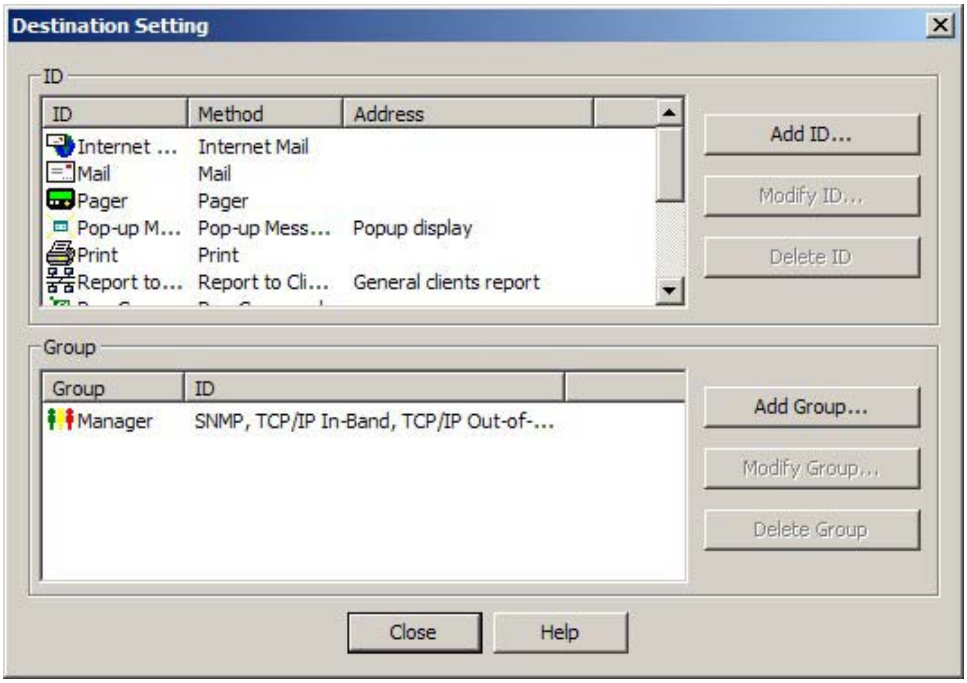


[Base Setting] Dialog Box

PLUS 1

The necessity of Alert Basic Setting depends on alert method At the time of selecting alert method, the items you can press [Configure] button are alert method necessary for Alert Basic Setting.

3. How to make out destination of alert
   Select [Destination Setting] from [Setting] menu of menu bar or click [Destination Setting] of toolbar. [Destination Setting] Dialog Box is displayed.
   Here, by using optional alert method, you set optional destination of alert.



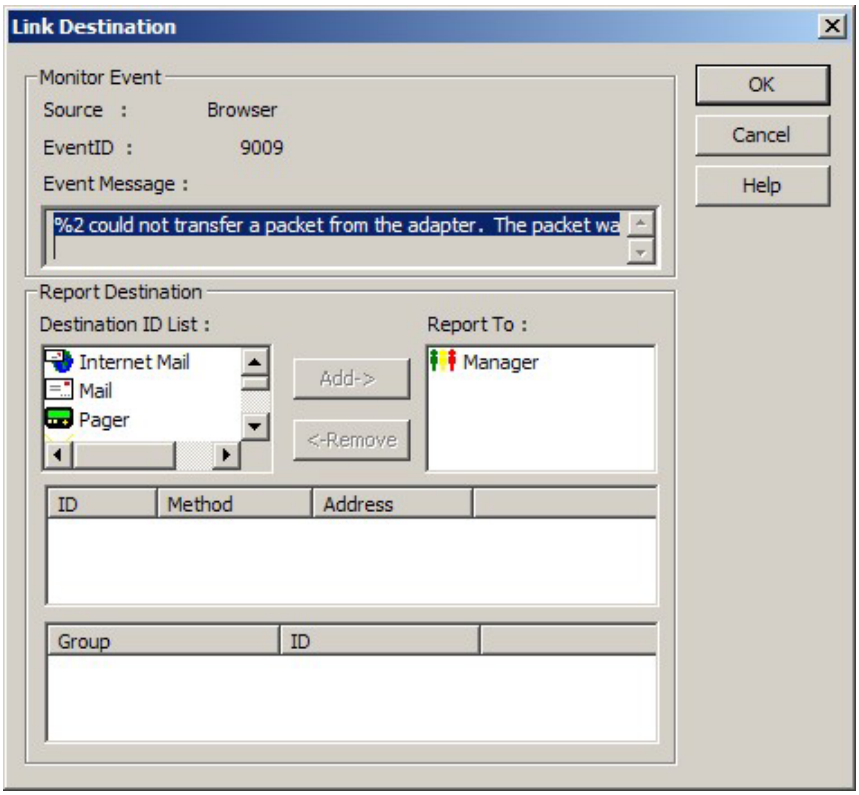
[Destination Setting] Dialog Box

POINT

You can report alert to multiple destinations by one alert method. In addition, you can group the multiple destinations of alert and thus easily manage the destination of alert.

4. Link monitor Event to alert.

   In case an event for monitoring happens, alert is reported to the destination of alert linked here. Select Event for monitoring from EventLog of tree view and Event of NEC ESMPRO Agent by mouse and click right mouse button. Select [Link Destination] from displayed Pop-up menu. After [Link Destination] Dialog Box is displayed, select link of alert, link destination of alert to Event.



[Link Destination] Dialog Box

POINT

By linking Event to optional destination of alert you want to make alert at the time of server failure, you can set destination of alert, depending on the operating environment.

CAUTION

If you delete destination of alert and group, they are deleted from Event for monitoring and alert.

Please be careful when you delete destination of alert and group.

2.6 Addition of Monitoring Items of Server (Local Polling)

By using Local Polling function, setting threshold, threshold monitoring, and alert report can be made for even items which do not have threshold setting button.

KEYWORD

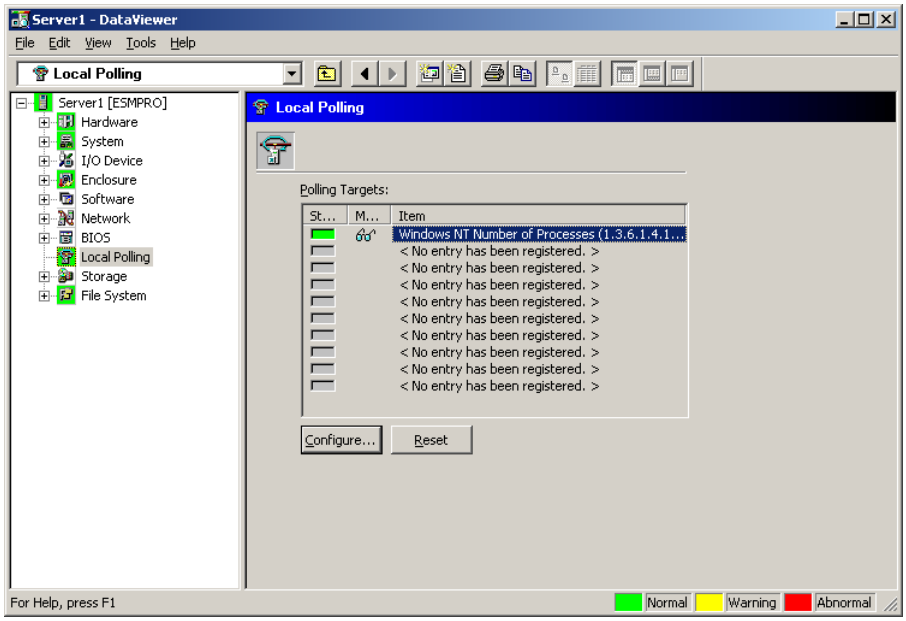
Local Polling

Local Polling means function to monitor optional items (integer only) which is not supported by GUI of DataViewer. As it monitors by NEC ESMPRO Agent (local) locally based on set information, it is called Local Polling. You can set it meeting system environment to reflect server status color and generate alert.

However, setting is required for special knowledge and MIB information of monitoring items.

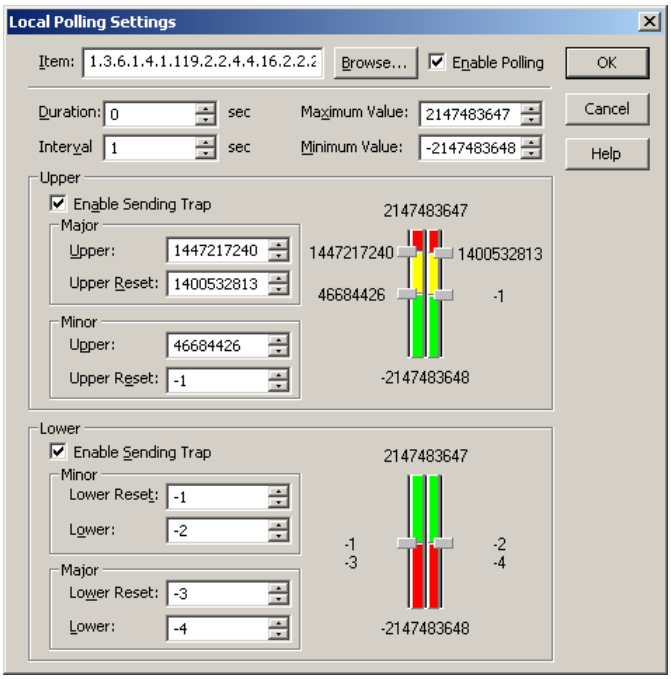
1. How to use Local Polling function

1. Activate DataViewer.
2. Select [Local Polling] of tree.



[Local Polling] of DataViewer

3. When you select item field of right pane, [Configure…] button becomes available. Click it.
4. Input object ID of MIB in [Item] of [Local Polling Settings] Dialog Box. By clicking [Browse…] button, you can also select it from MIB List set in advance.
5. Set [Duration], [Interval] [Maximum Value] and [Minimum Value].
6. Set threshold.



[Local Polling Settings] Dialog Box

For Local Polling, value of Upper and Lower respectively for monitoring item can be set. For instance, as temperature needs right range of value, you need to set values for Upper and Lower. Meanwhile, for CPU load and others, you need to set Upper value only because it can be regarded as malfunction when it exceeds optional rate of load.

* When the monitored item value exceeds (falls below) Upper (Lower) value, it is determined as malfunction or warning and status changes. Upper (Lower) Reset recovers the judgment of malfunction and warning in case of exceeding (falling below) this value.

7. By changing the setting of [Enable Polling], you can set whether or not execute polling to MIB. Only in case of check here, the value you set on [Interval] can be valid.

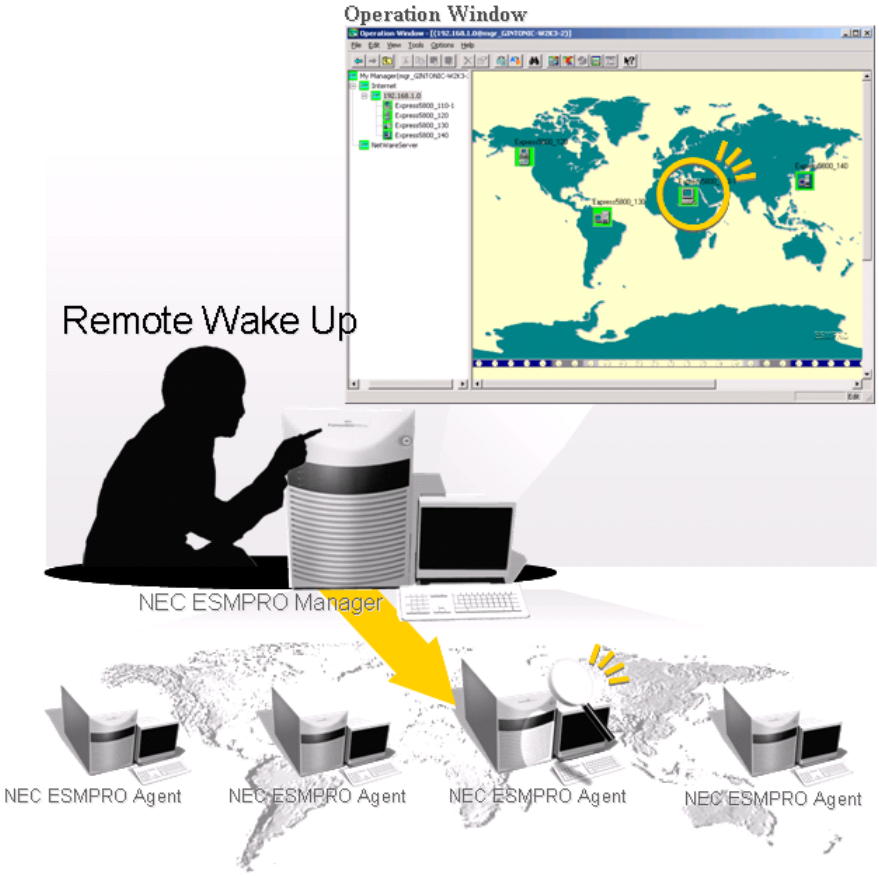
POINT

In case SNMP related product (SNMPAgent) is installed in server, you can monitor MIB which is defined by its product in the same manner mentioned above.
However, for designating object ID in [Setting of Local Polling] Dialog Box, special knowledge is required because you need to investigate in advance how MIB is defined on the product.

Ex: Monitoring database engine which has SNMPAgent function by NEC ESMPRO Manager.

2.7 Remote Start-up of Server (Remote Wake Up)

You can start up the system which stops on network.



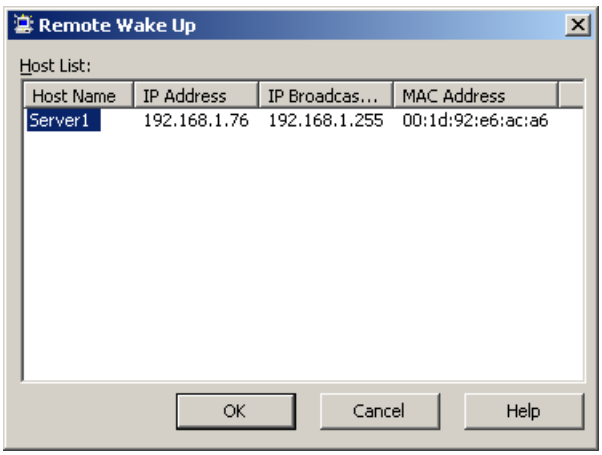
POINT

How to start-up server from remote site

Relevant server is required to meet Remote Wake Up function.

1. How to start-up remote wake up function

1. Click relevant server icon on Operation Window.
2. Select [Remote Wake Up Tool] with right mouse button.
3. When you press [OK] button, Magic Packet frame is sent and power of server is activated.
4. You can confirm start-up of machine by changing status color of relevant server icon on Operation Window to other than unknown (gray).



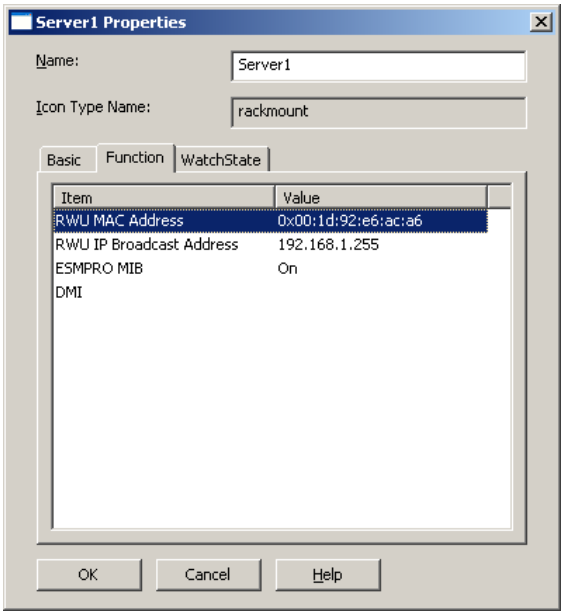
Remote Wake Up Tool

POINT

You can start up plural servers at once
Select relevant server icon multiply on Operation Window, or select relevant host name in [Remote Wake Up] Dialog Box.

2. Preparation

1. Select relevant server icon on Operation Window and select [Properties] with right mouse button.
2. Select [Function] tab and input [RWU MAC Address] and [RWU IP Broadcast Address].



[Properties] Dialog Box of Server

3. Click [OK] and close [Properties].

CAUTION

Setting of Remote Wake Up on server side is required. For details, refer to instructions of machine to be activated.
When you want to start it up over router, setting of direct broadcast is required for router. For details, refer to the instructions of router.

PLUS 1

RWU MAC Address
Set MAC address for Remote Wake Up function set for the machine to be activated. For details, refer to the instructions of the machine to be activated.

RWU IP Broadcast Address
Used to send Magic Packet frame to the machine to be activated. Confirm with network administrator about IP broadcast address.

KEYWORD

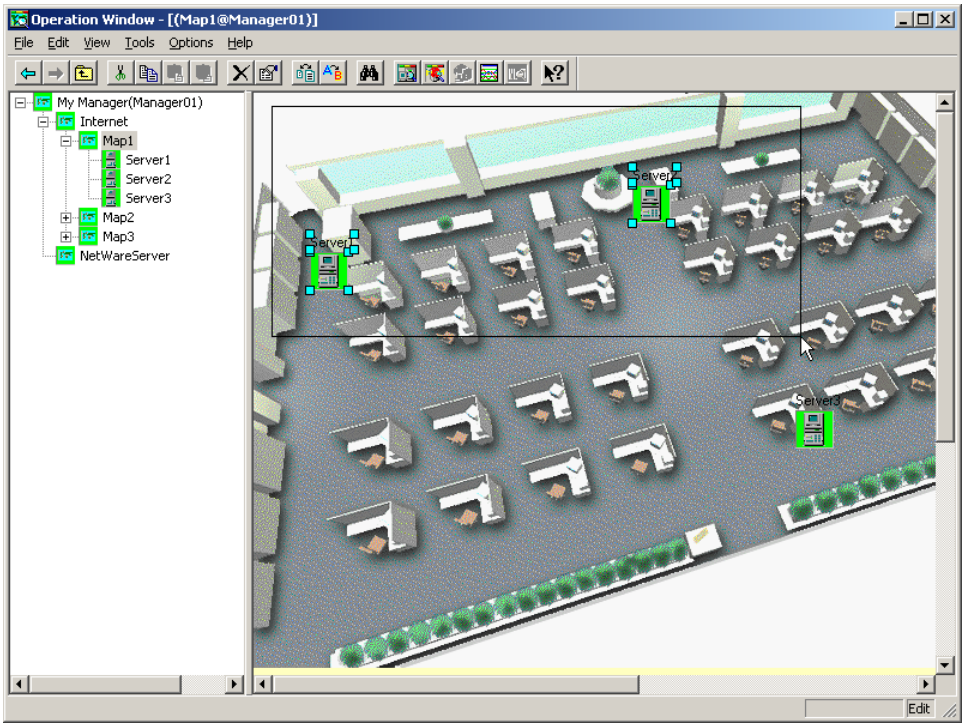
Magic Packet Frame
Means particular packet to start up stopped system from remote site.

2.8 Remote Shutdown of Server (Remote Shutdown)

You can shut down the system operating on network from remote site.

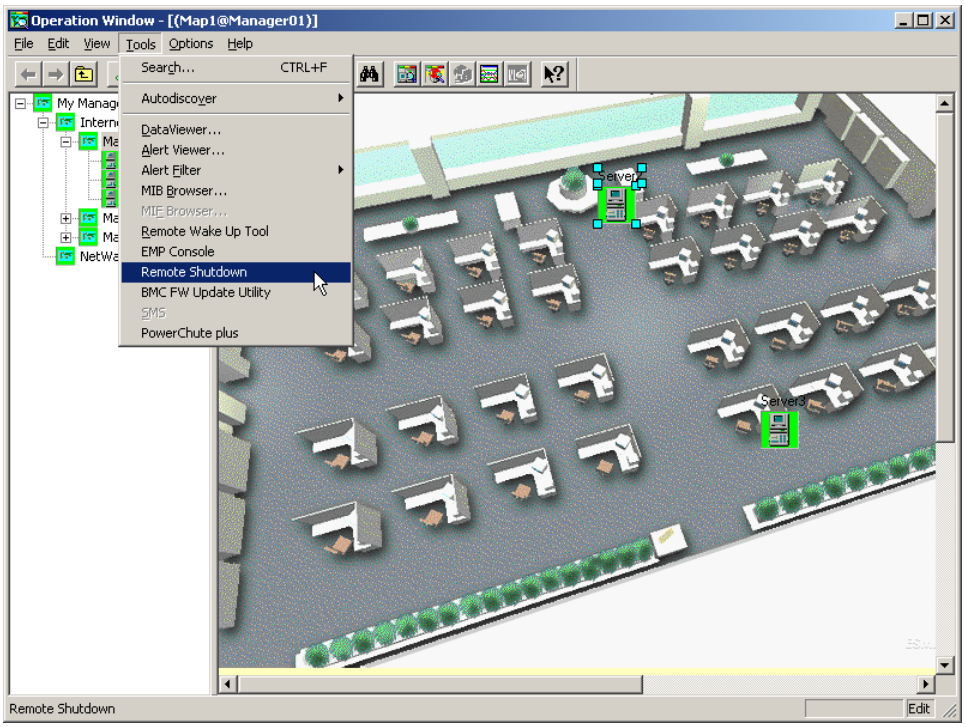
1. To shut down server from remote operation

1. Select map including the server to shut down on Operation Window
   Drag mouse by right pane on Operation Window and select the relevant server.



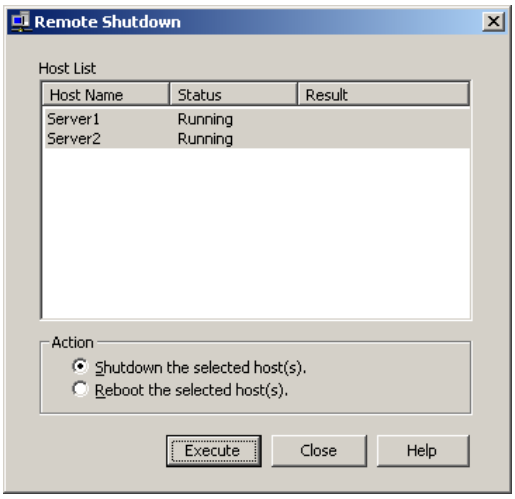
Selection of Server for Remote Shutdown

2. Select the relevant server and [Remote Shutdown] from [Tools] menu.



Remote Shutdown Menu

3. Select list from server you want to shut down on [Remote Shutdown] Dialog Box and select [Action] you want by radio button.



[Remote Shutdown] Dialog Box

4. When you press [Execute] button, shutdown of computer is executed.
5. You can confirm the shutdown of computer by the execution result.

POINT

In case of some server models, power-off might not take place after shutdown.

PLUS 1

When you select Remote Shutdown with selecting map on Operation Window, all the servers under map are displayed on Remote Shutdown Dialog Box.

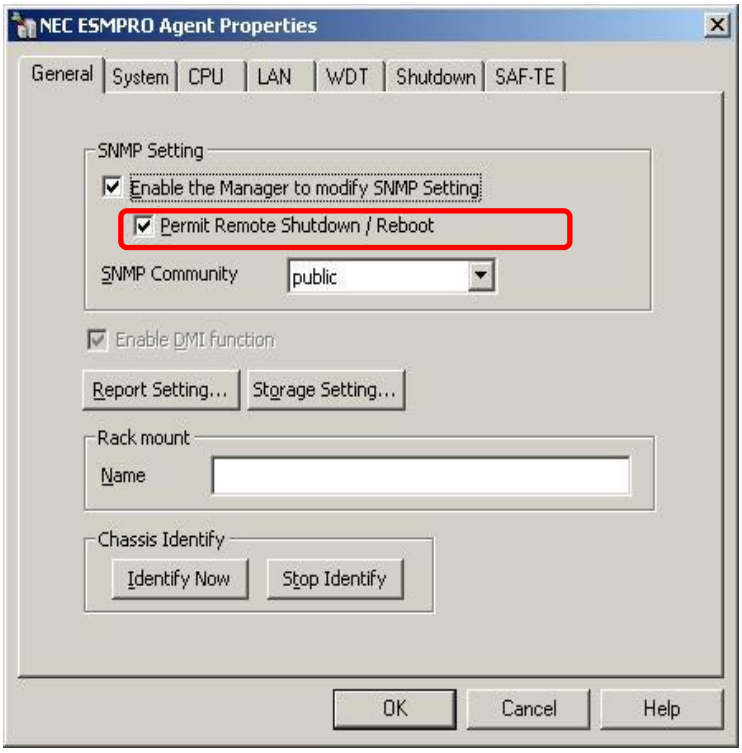
PLUS 1

You can also shut down it by opening [Remote Shutdown] from [Tools] of menu, after activating DataViewer of relevant server.

2. Preparation of Server

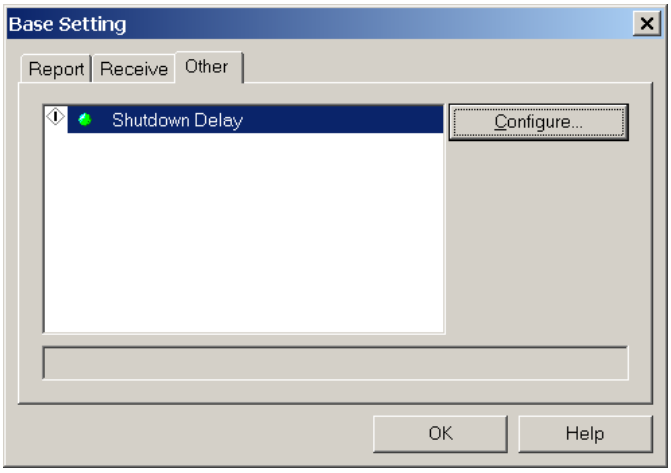
In order to execute Remote Shutdown, setting of NEC ESMPRO Agent of relevant server is required.

1. Select NEC ESMPRO Agent of control panel.
2. Check Permit Remote Shutdown / Reboot in the setting field of SNMP of [General] tab.



Control Panel of NEC ESMPRO Agent [General]

3. Press [Report Setting…] button of [General] tab and Open screen of Alert Manager.
4. Select [Base Setting…] from [Setting] menu and open Base Setting screen Confirm that "Shutdown Delay" item is green icon like below. If it is red, click the icon and change to green.



[Base Setting] Dialog Box

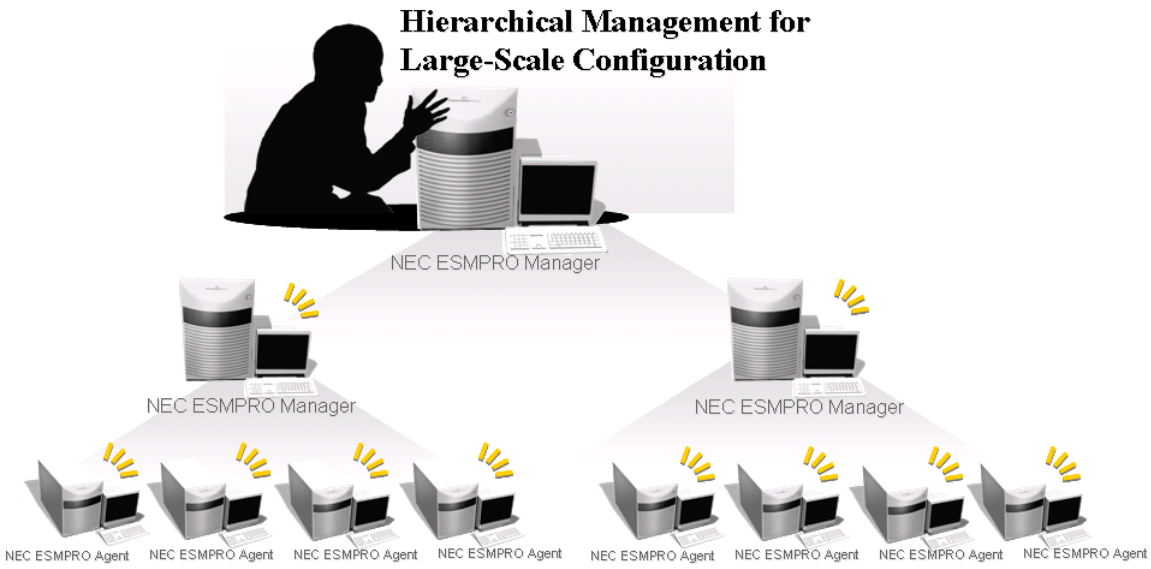
5. Press [OK] button and close screen.

2.9 Easy Management of Large-Scale Network (Inter-Manager Communication)

NEC ESMPRO Manager supports Inter-Manager Communication which enables management of larger-scale network by exchanging information each other with multiple NEC ESMPRO Managers.
When you utilize this function, for instance,

1. The servers of each branch manage are managed by Manager to be installed at each branch.
2. You can confirm the status of server using Inter-Manager Communication by connecting the Manager of each branch from the Manager of headquarters.

Hierarchical management can be done like above.
You can refer to the information of server of branch, by activating DataViewer from the server of headquarters.



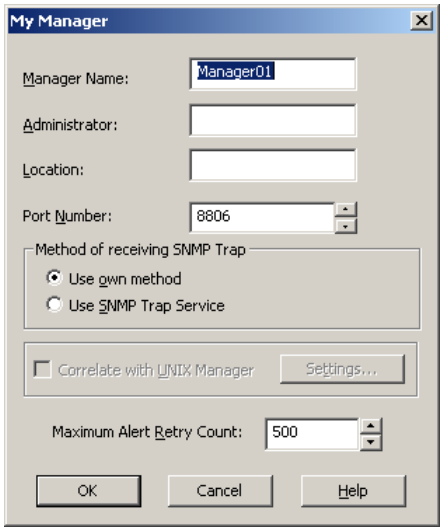
1. How to use Inter-Manager Communication

1. Check "Manager Name", "IP Address" and "Password" of Manager to which you want to connect. In case that the Manager to which you want to connect is not yet set, please set the Manager according to the following procedure.

PLUS 1

In case of connection through a router and others, please set routing information and others of the router beforehand.

2. Select [Customize]-[My Manager] form [Options] menu of Operation Window. [My Manager] Dialog Box is displayed.



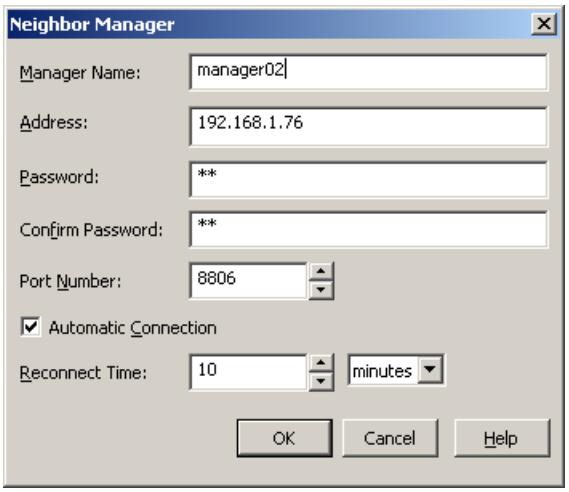
[My Manager] Dialog Box

3. Check [Manager Name] and [Port Number] on [My Manager] Dialog Box.

CAUTION

[Manager Name] must not be set the same name as all the other remote Manager(s). Change name not to duplicate. [Port Number] is not required to change. Change it only if duplication of the port number for other application happens. You must reboot the system after changing the port number.

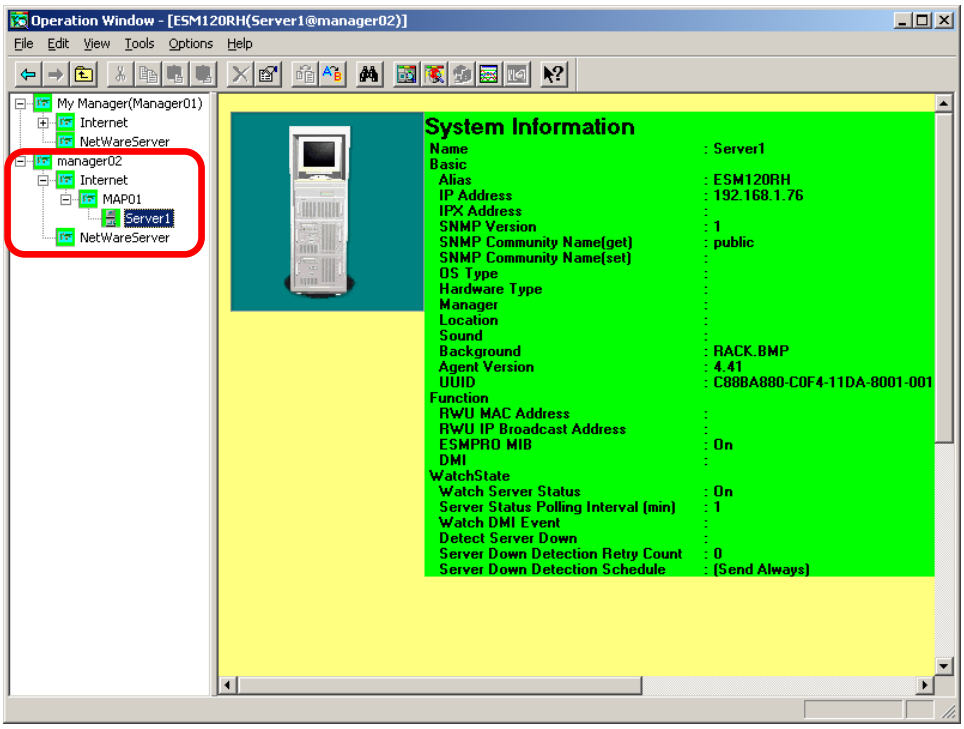
4. Select [Customize]-[Remote Manager] from [Options] menu of Operation Window and display [Remote Manager] Dialog Box.
5. Click [Add…] button and display [Neighbor Manager] Dialog Box.



[Neighbor Manager] Dialog Box

6. Designate other Manager Name for [Manager Name].
7. Set IP address of other machine for [Address].

8. Input the same password as you input [Neighbor Manager] Dialog Box of other side for [Password]. In order to avoid misinputting password, input the same password in [Confirm Password] once again. Do not use space, tab character, double quotation ("), single quotation ('), backslash (\) for password.
9. Press [OK] button after finishing input and close [Neighbor Manager] Dialog Box.
10. The display field of [Neighbor Manager] tab displays entry of Neighbor Manager which you newly added in "disconnected" position. If the registered contents have no problem, click [OK] button.
11. When you activate Operation Window and you can refer to the information of other Manager as below.



Operation Window

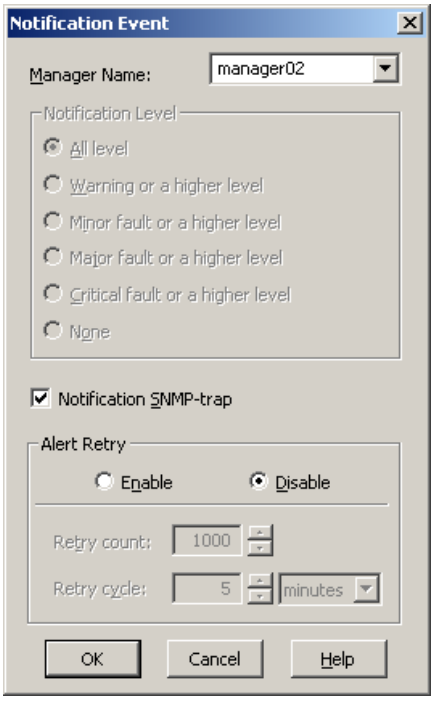
PLUS 1

Please be careful of billing and others because packet is sent to network at interval designated by [Reconnect Time] of [Neighbor Manager] Dialog Box while you connect to other Manager using Inter-Manager Communication and even if you do not refer to other Manager screen.

POINT

How to redirect alert report

1. On the side of Manager which redirects alert, open [Customize]-[Remote Manager] Dialog Box from [Options] menu of menu bar of Operation Window, select [Notification Event] tab and press [Add…] button.



[Notification Event] Dialog Box

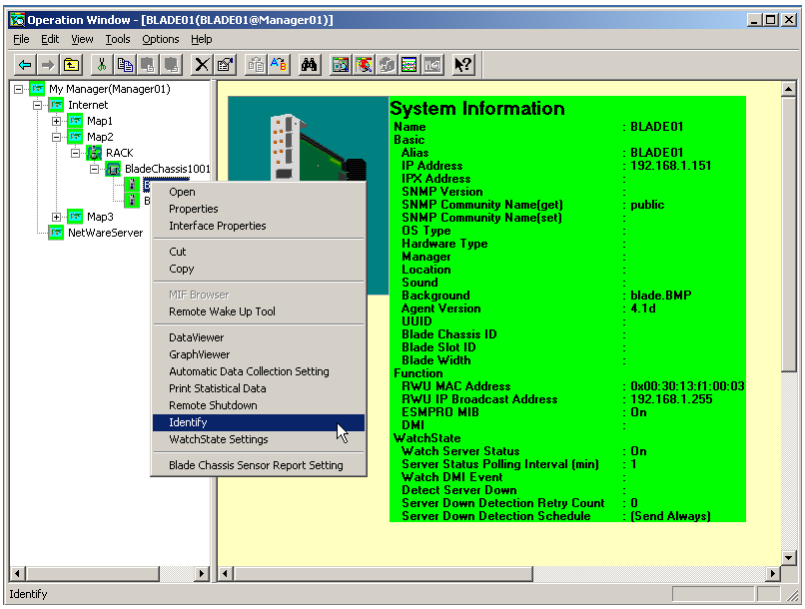
2. Set the Manager name of alert to be redirected, and check the checkbox of [Notification SNMP-trap].
3. To report alert in case of alert failure, check [[Enable] of [Alert Retry] and set [Retry count] and [Retry cycle].
4. Press [OK] button and close Dialog Box
5. Activate Operation Window.
   After reboot, with connection by Inter-Manager Communication, the alert the redirected Manager received is to Manager set by Manager Name] of [Notification Event] Dialog Box

2.10 Identify Function

You can identify chassis by lighting of ID LED when using Identify Function.

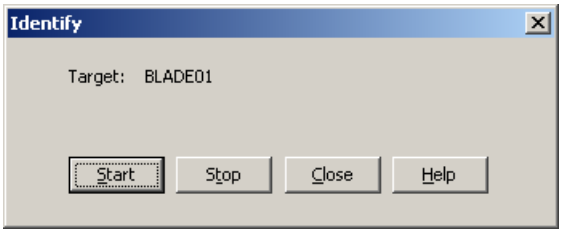
1. How to use identify function

1. Click relevant server icon on Operation Window.
2. Select [Identify] depending on version by right mouse button.



Identify Menu

3. [Identify] Dialog Box is displayed.



[Identify] Dialog Box

4. When you press [Start] button, Identify is displayed.
5. When you press [Stop] button, Identify stops.

CAUTION

The target must be NEC ESMPRO Agent Ver. 4.0 or later installed, and Identify must be supported.

CAUTION

In case started Identify on NEC ESMPRO Agent itself, NEC ESMPRO Manager can not stop Identify. In addition, in case you started Identify by NEC ESMPRO Manager, NEC ESMPRO Agent itself can not stop identifying chassis.

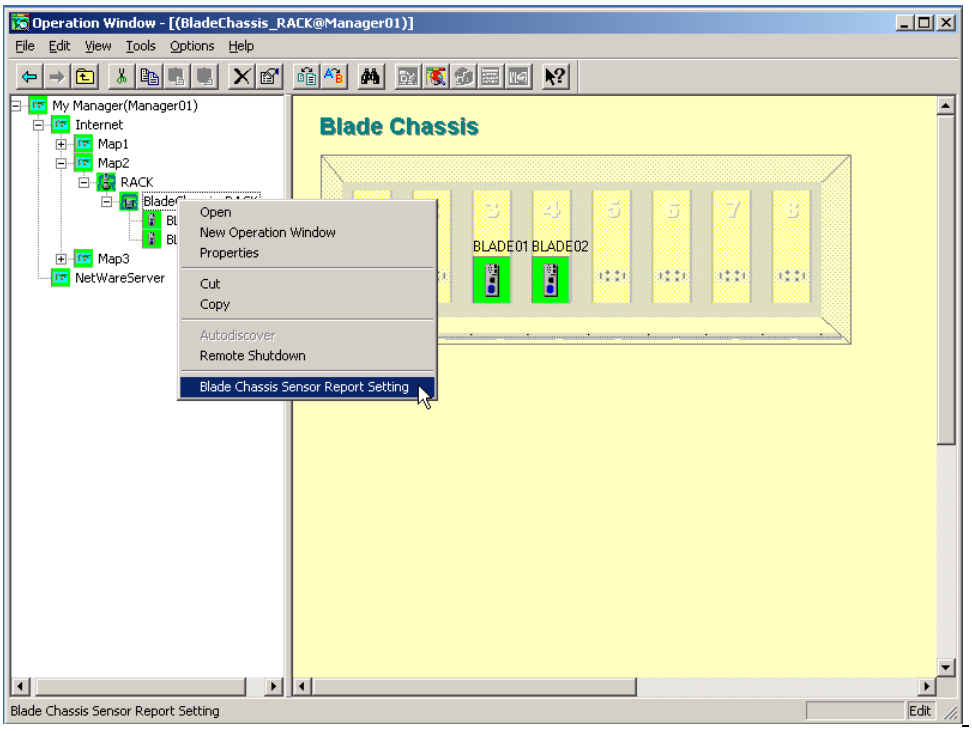
2.11 Suppression of Blade Chassis Sensor Report

This chapter describes how to set alert of Event concerning chassis sensor of Blade server.
In blade server, in case chassis sensor detects failure, alert is made redundantly from all the Blade servers among the same blade storage unit. You can avoid these alerts by setting alert.

CAUTION As for SIGMABLADE, this function is not related because redundant alerts are not reported.

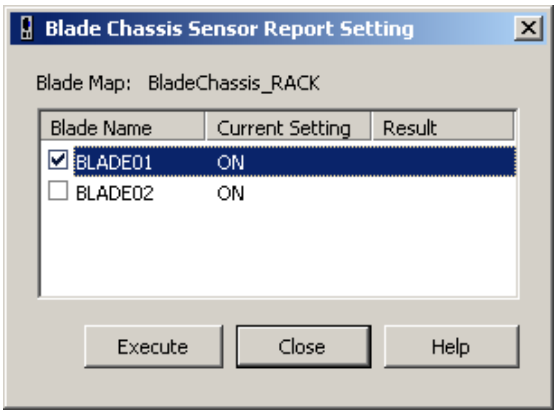
1. How to suppress blade chassis sensor report

1. Click relevant blade map or blade server icon on Operation Window.
2. Select [Blade Chassis Sensor Report Setting] by right button of mouse.



Blade Chassis Sensor Report Setting Menu

3. Select only server to alert from list of [Blade Chassis Sensor Report Setting] Dialog Box.



[Blade Chassis Sensor Report Setting] Dialog Box

4. When pressing [Execute] button, Blade Chassis Sensor Report Setting is executed.
5. After execution, confirm the execution result of list.

CAUTION

In order to operate from NEC ESMPRO Manager, the following is require to be set on NEC ESMPRO Agent side.

- To be permitted setting on SNMP from Manager by control panel of NEC ESMPRO Agent on NEC ESMPRO Agent side
- In setting of SNMP service on NEC ESMPRO Agent side, the right of community name set on NEC ESMPRO Manager is "READ_WRITE" or "READ_CREATE".

2.12 Redirect SNMP Trap to Other Vendor's Console (SNMP Trap Redirection)

There are many different types of alert from NEC ESMPRO Agent. In order for the console of other vendor's product to directly receive and display it, the message definition file of alert meeting each type is necessary.. By utilizing Trap Redirect Function, you can reduce your work drastically to display the console managed by other vendor because you can receive the alert of NEC ESMPRO Agent received by NEC ESMPRO Manager which is converted into single format.

CAUTION

You must not Redirect Trap to NEC ESMPRO Manager and display it.

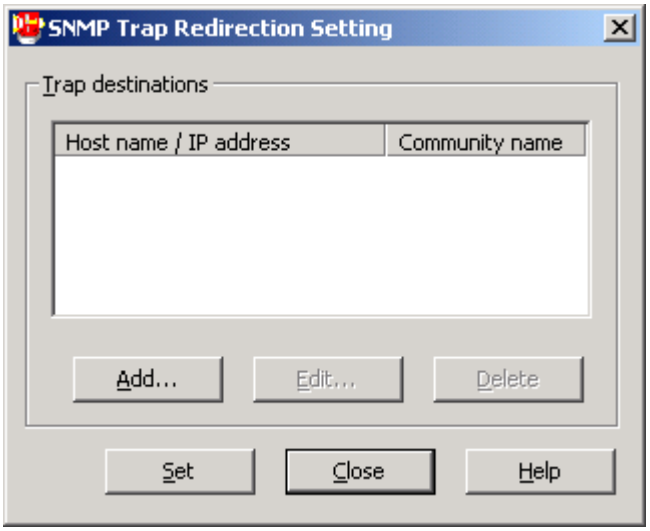
POINT

For details of Trap Redirect Function, refer to "SNMP Trap Redirection Help".
For "SNMP Trap Redirection Help", select [Program]-[NEC ESMPRO Manager]-[SNMP Trap Redirection Help] from [Start] button of taskbar.

2.12-1 How to redirect trap

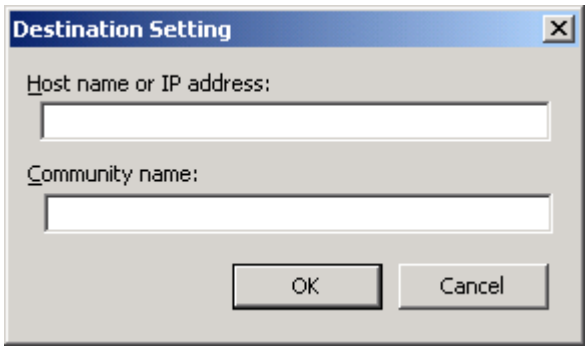
1. How to set destination of redirection

1. Select [Program] from [Start] button of taskbar and [SNMP Trap Redirection Setting] of program group of [NEC ESMPRO Manager].



SNMP Trap Redirection Setting Screen

2. Press [Add…] button on [SNMP Trap Redirection Setting] Dialog Box and open Destination Setting Screen.



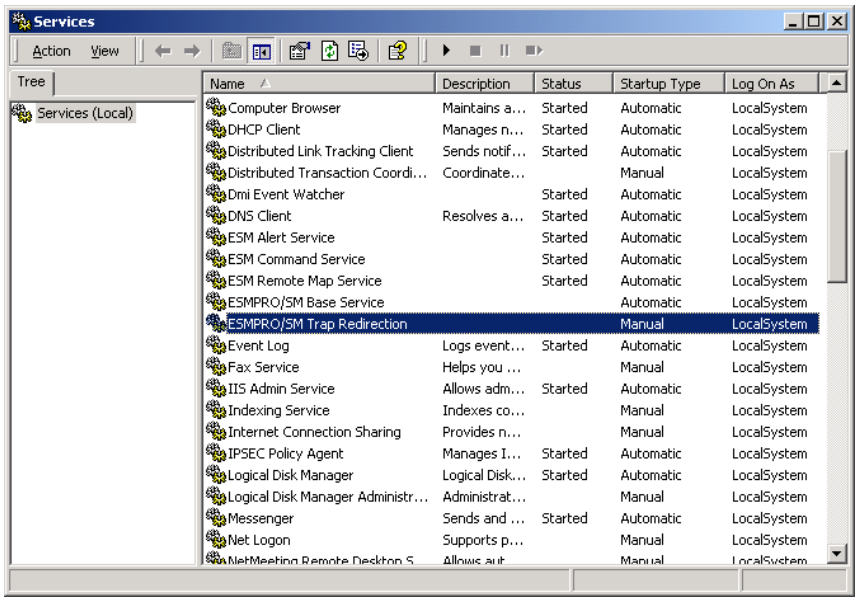
Destination Setting Screen

3. Input Host name or IP address for destination to be redirected of SNMP Trap in [Host name or IP address] and input Community name to use when you redirect SNMP Trap in [Community name]
4. Press [Set] button. At this time, in case a message which indicates that service is not started is displayed, please start the service according to the following procedure.
5. Press [Close] button.

2. How to start ESMPRO/SM Trap Redirection Service

After installation of NEC ESMPRO Manager, ESMPRO/SM Trap Redirection service stops by default. Therefore, you need to start ESMPRO/SM Trap Redirection service

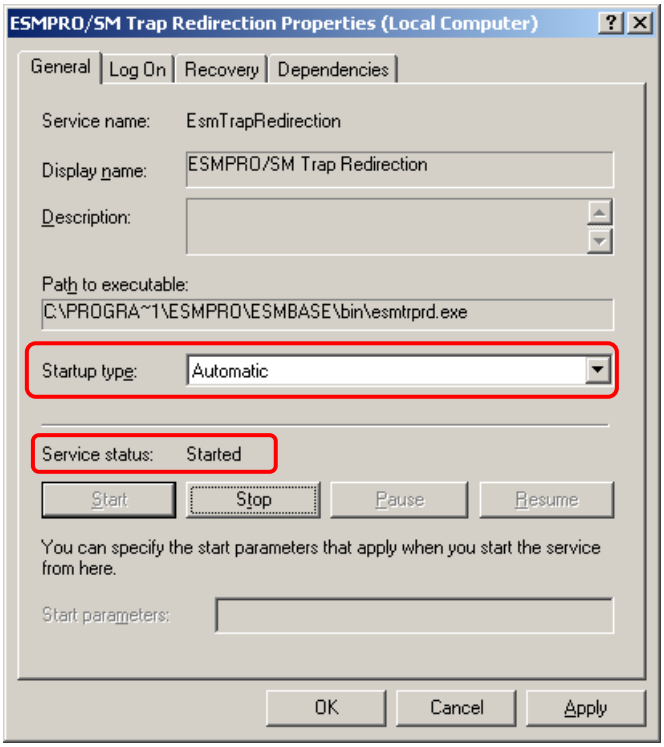
1. Select [Control Panel] - [Administrative Tools] - [Services] from [Start] menu of taskbar.
2. Select "ESMPRO/SM Trap Redirection" on [Services] screen and select [Action]-[Properties] from menu.



Services Screen

3. Change the followings with [General] tab on Property Screen of ESMPRO/SM Trap Redirection and click [OK] button.

Startup type:	Manual ->Automatic
Service status:	Stopped -> Started



[General] Tab Screen of ESMPRO/SM Trap Redirection Property

3. Trap formation to be redirected

The followings are the specification of trap to be reported by Trap Redirection.
For details, refer to the MIB definition file (ESMMNGR.MIB, ESMTPGEN.MIB) to be installed under the folder of \ESMPRO\ESMMNG\mib to which NEC ESMPRO Manager is installed.
SNMP version is SNMPv1.

ESMMNGR.MIB	Describes the definition of managerTrap.
ESMTPGEN.MIB	Is the source of import of Trap object to be used in managerTrap. Though there is Trap definition in this file sending is not made in this function.

Field	Value	
Enterprise	managerTrap (1.3.6.1.4.1.119.2.2.4.4.100.2)	
Agent address	IP Address of server sent the trap	
Generic trap type	Enterprise Specific(6)	Generic trap code 6:Enterprise specific traps
Specific trap type	managerTrapInformation(1) managerTrapWarning(2) managerTrapFatal(3)	Specific trap code 1:Information traps 2:Warning traps 3:Fatal traps
Timestamp	"0"Fixed	
Variable Bindings	managerName	Manager name of server to send trap
	managerHostName	Sever name sent trap In case of no-registration on Operation Window,"unknown"is applied.
	managerIPAddress	IP address of server sent trap
	trapGenName	Outline of trap
	trapGenDetailInfo	Detailed information of trap
	trapGenAction	Countermeasure of Trap

Field	Value	
	trapGenClassification	Product name of Trap
	trapGenSourceName	Trap Service
	trapGenEventID	Event ID of trap In case data do not exist, ffffffff(-1) is applied.
	trapGenAlertType	Alert type of Trap
	trapGenEventTimeStampWithOffset FromUTC	Time of Trap occurrence Format : YYYYMMDDHHMMSS.UUUUUU±OOO YYYYMMDD … Year, Month, Day HHMMSS … Hour, Min., Sec. UUUUUU … Microsecond ±OOO … Offset from agreed world time(Min.)

2.12-2. How to set console managed by other vendor

You need setting in accordance with product, in order to display the redirected Trap on management console of other vendor.
For details, refer to manual of each management console or ask for the manufacturer.

2.13 Server Management by Script (Script Component)

By using Script Component, you can manage server by utilizing VBScript, Script and others.
By using Script Component, the following is possible:

- To obtain Map and Server List of Operation Window
- To obtain configuration information of server
- To register alert to AlertViewer
- To activate server remotely
- To shut down server remotely

POINT

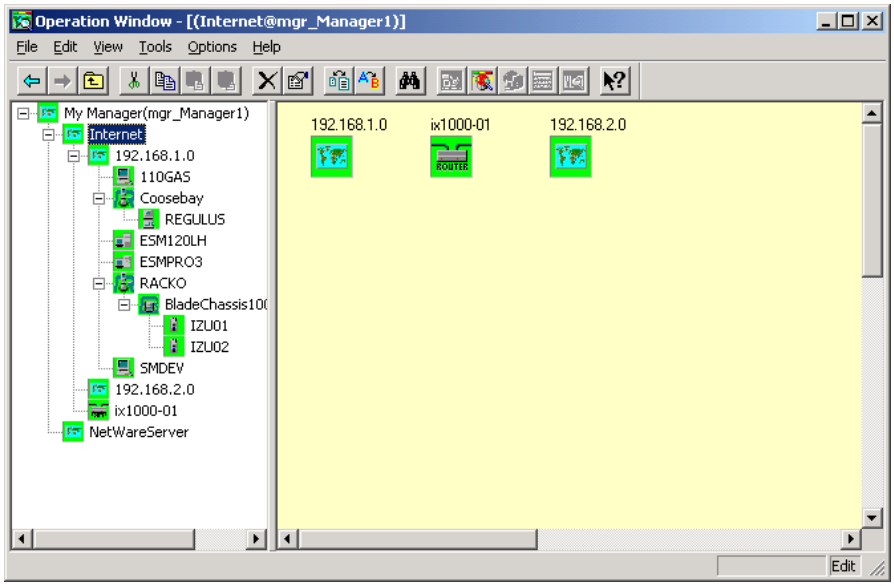
For details of Script Component, refer to "Script Component Help". For "Script Component Help", press[Program]-[NEC ESMPRO Manager]-[Script Component Help] form [Start] button of taskbar.

1. How to use Script Component

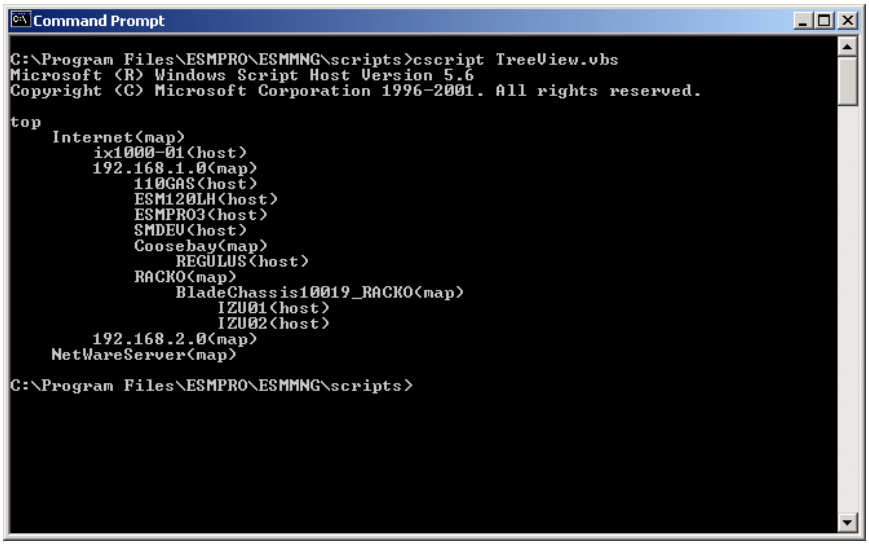
By installing NEC ESMPRO Manager, Script Component is installed automatically.

Execution Case Using Sample (Tree View of Map and Server)

1. Execute AutoDiscover on Operation Window.
2. Open sample " TreeView.vbs " which is \esmpro\esmmng\scripts installed NEC ESMPRO Manager by Notepad.
3. Change " MAP_NAME " to "top" in sample and store it in optional location.
4. Activate Command Prompt and execute file stored above 3.
   > cscript TreeView.vbs
5. Tree configuration registered on Operation Window is displayed.



Operation Window



Command Prompt (Script Component Execution Result)

You can set server down monitoring for all the servers and execute various tasks such as changing SNMP community name.
Other samples using Script Component other than the sample mentioned above are prepared
For details, refer to Help of Script Component.

CAUTION

Windows Script Host Version 5.6 or later is required to use Script Component.

CAUTION

It is necessary to access Script Component by member of Administrators Group or NEC ESMPRO User Group.

2.14 Extension of Report method

2.14-1 Alert Method to Manager

Alert method to Manager has the following three kinds:
- Manager(SNMP)
- Manager(TCP/IP In-Band)
- Manager(TCP/IP Out-of-Band)

Manager (SNMP) is reported by SNMP Trap of SNMP service.
Besides NEC ESMPRO Manager alert can be executed for "Manager supporting SNMP".
Manager (TCP/IP In-Band) uses TCP/IP and communicates with Manager, thus high reliable alert can be executed.
Manager (TCP/IP Out-of-Band) communicates with remote Manager by using TCP/IP as same as In-Band but its alert is executed through Remote Access Service.
In case that NEC ESMPRO Agent and Manager exist at remote location, the alert can be executed to Manager via public line by utilizing Manager (TCP/IP Out-Of-Band).

PLUS 1

Manager (SNMP) is simple protocol using UDP protocol, Therefore alert may delay and be lost. In this case, NEC recommends high reliable Manager (TCP/IP In-Band). In case of using Manager (TCP/IP Out-Of-Band), NEC ESMPRO Agent and Manager needs mode respectively.

POINT

In case that NEC ESMPRO Agent and Manager exist on the same LAN, because you can freely set retry term and retry interval by using Manager(TCP/IP In-Band), even in the environment where the machine of Manager is not always power-on, alert can be surely executed.

2.14-2 Other alert methods

In case of server failure, in addition to alert to Manager, the following alert methods can be used from NEC ESMPRO Agent.

Internet Mail

Reports alert to Mail server supporting SMTP by Internet Mail.
Mail server can be used for both LAN and WAN.

Mail

Executes mail alert by using MAPI.
MS Mail or Exchange Clients or Outlook is required to be installed.
In case the above MAPI support product can not be set up, Mail can not be set.

CAUTION

Mail does not support the versions following Exchange2000 client and Outlook2000.

Pager

can page pager from Manager.
* It not supports since Ver4.0.

Pop-up Message

displays Pop-up Message on screen.
Only one Pop-up Message is always displayed on screen. In case there are many Messages, if you

press button, it is displayed in series.

Print

Prints out at the occurrence of alert, it can be printed out to network printer.

Report to Client

Report alert to client among the same domain at the same time by using Messenger service.

Run Command

Executes command you designated at the occurrence of alert.
Can submit the information such as whether failure happens in computer, failure time, failure contents, as command argument.

Write File

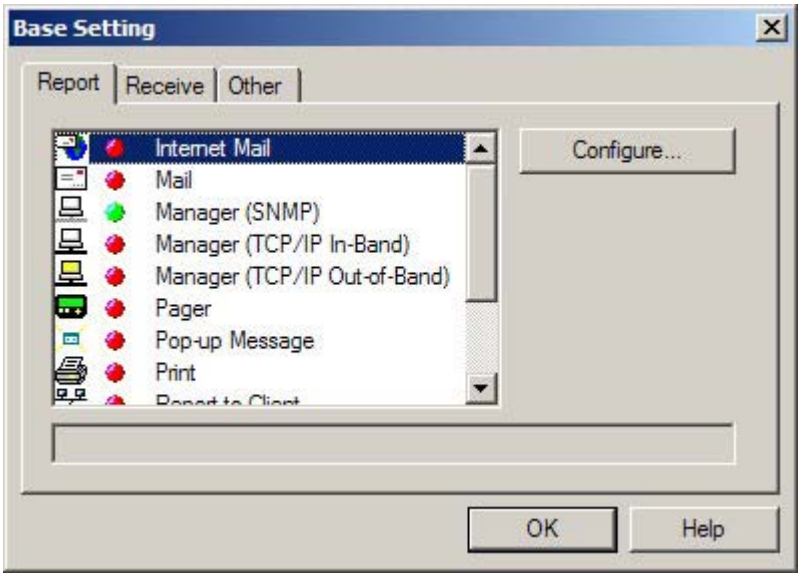
Writes in text file at the occurrence of alert.

- Internet Mail
- Mail
- Pager
- Pop-up Message
- Print
- Report to Client
- Run Command
- Write File

2.14-3 Preparation

You can set reporting alert by Alert Manager setting tool.

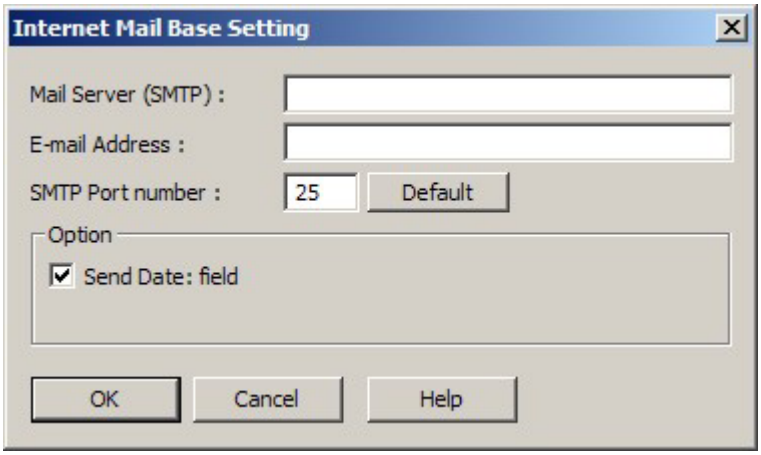
1. Activate Alert Manager.
2. Basic setting alert method
   Select [Base Setting] from [Setting] menu of menu bar or click [Base Setting] tool bar. [Base Setting] Dialog Box is displayed.



[Base Setting] Dialog Box

Base Setting is required only for Internet Mail and Pager. Base Setting is not required for other alert methods.

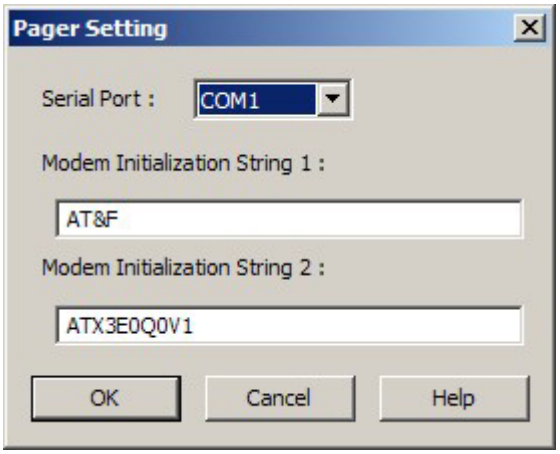
Internet Mail



[Internet Mail Base Setting] Dialog Box

Mail Server(SMTP)	Designates host name or IP address of mail server supporting SMTP.
E-mail Address	Sets mail address to be sender (From).
SMTP Port number	Designates port number of SMTP.
Send Date: field	Designates whether you add send field to mail header information.

Pager

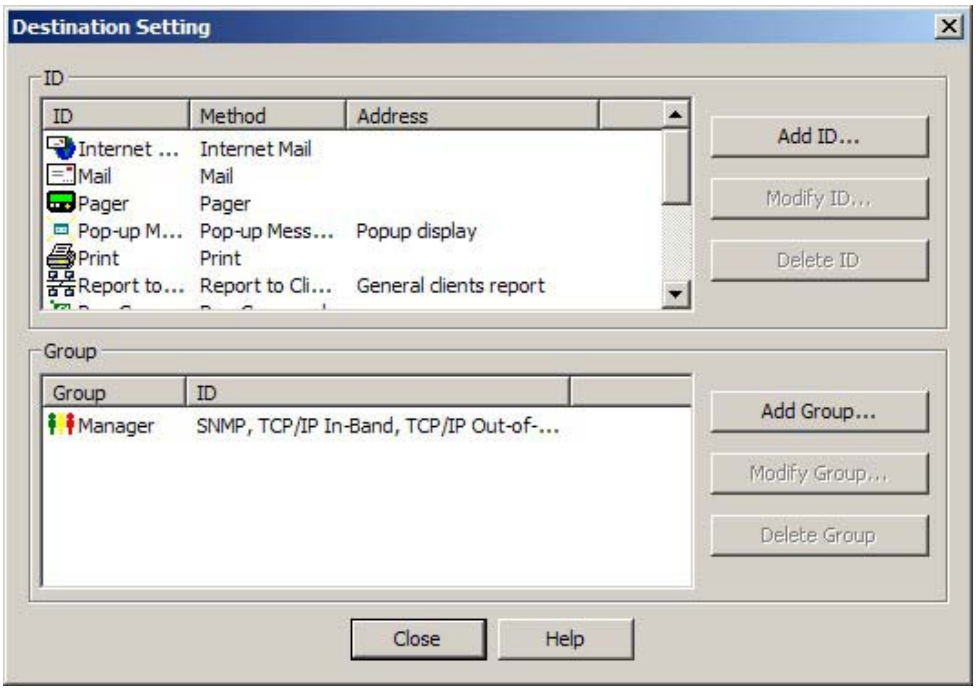


[Pager Setting] Dialog Box

Serial Port	Designates serial port to use.
Modem Initialization String1	Designates initialization command of modem. In case modem properly operates, change is not required.
Modem Initialization String 2	In case initialization command can not be sent at the first time, designating an additional initialization command is required. In case modem properly operates, change is not required.

3. Make up alert destination

Select [Destination Setting] from [Setting] menu of menu bar or click [Destination Setting] of toolbar. [Destination Setting] Dialog Box is displayed.



[Destination Setting] Dialog Box

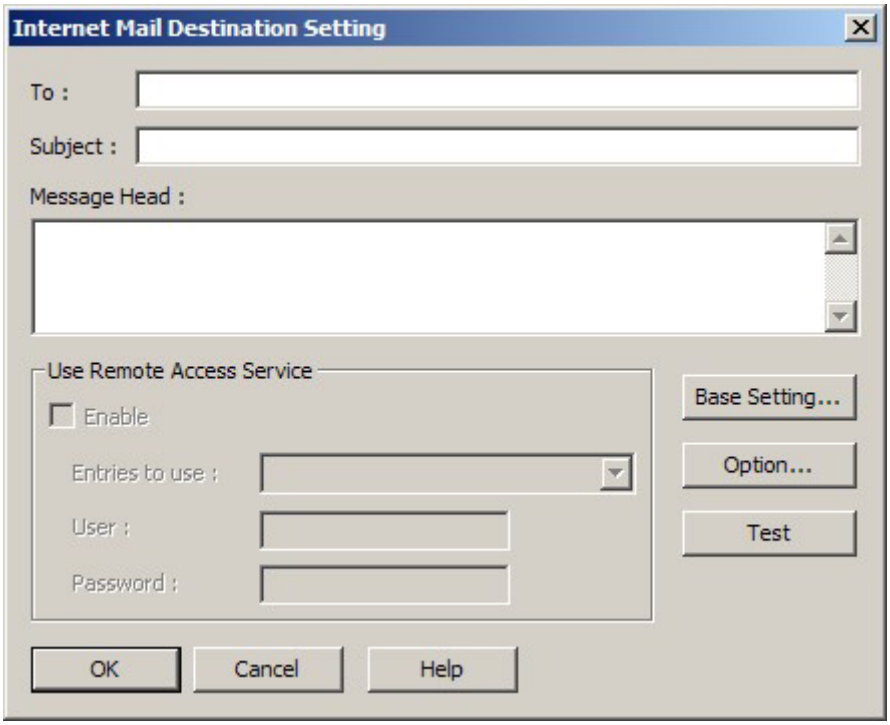
Alert Destination (ID) relating to each alert method is prepared one by one in advance. Select the ID of alert method you use and click [Address] button from screen which is displayed after clicking [Modify ID] button.

POINT

You can report alert to multiple destinations by one alert method. In addition, you can easily manage Alert Destination because the multiple destinations can be grouped.

Setting for Alert Destination You use

Internet Mail

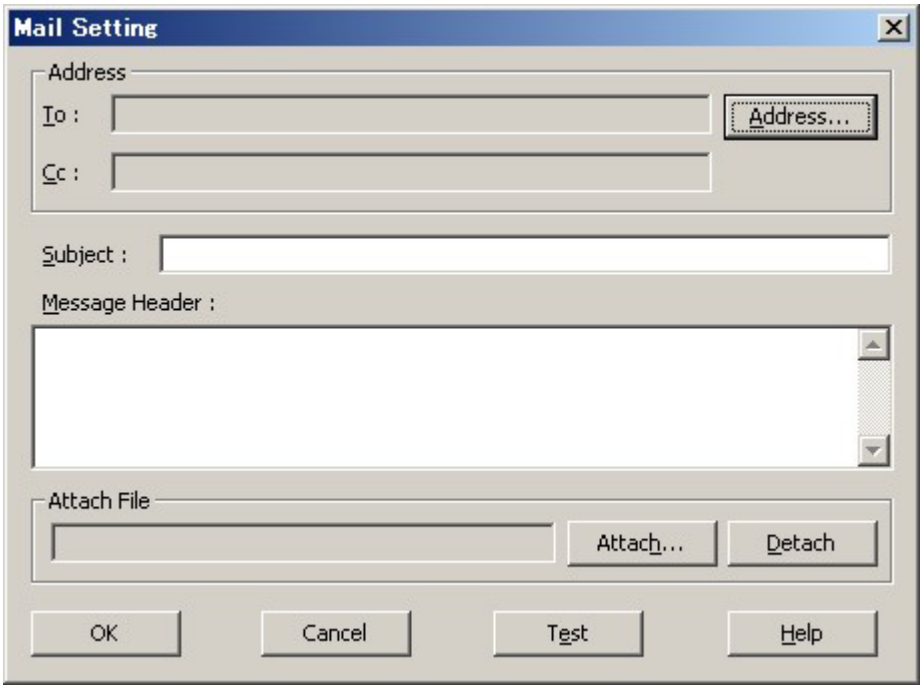


[Internet Mail Setting] Dialog Box

To	Designates mail destination address. You can designate multiple addresses in case of no more than 80 bytes in total. In that case,

	separate each address with ",".
Subject	Designates Subject.
Message Head	The contents you designated are inserted to header of message body.
Use Remote Access Service	
Enable	In case there is check here, ESMPRO connects to Internet Mail by Dial-up at the time of alert and cuts off after alert.

Mail

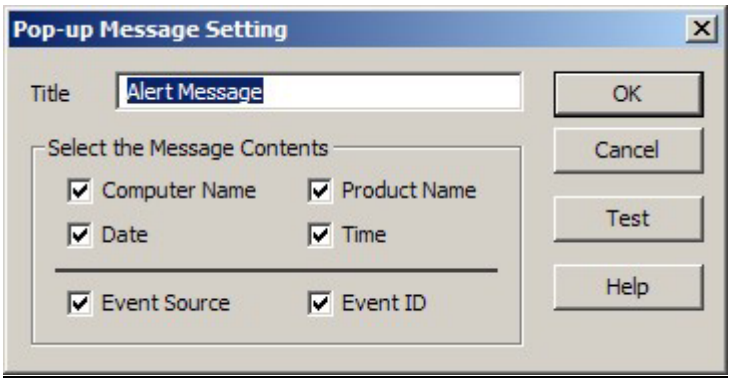


[Mail Setting] Dialog Box

Subject	Designates Subject.
Message Head	The contents you designated are inserted to header of message body.

Select To and Cc from address book. Designate file if required.

Pop-up Message

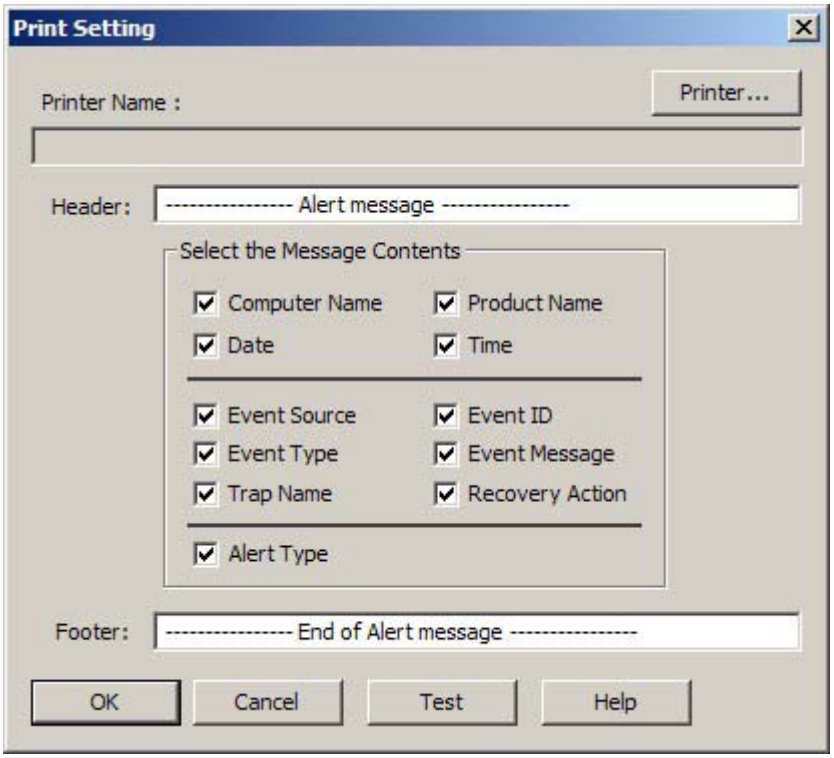


[Pop-up Message Setting] Dialog Box

Title	The character you designated here is displayed on title bar of Pop-up Message.

Pop-up Message displays the item ticked on the checkbox.

Printer Output

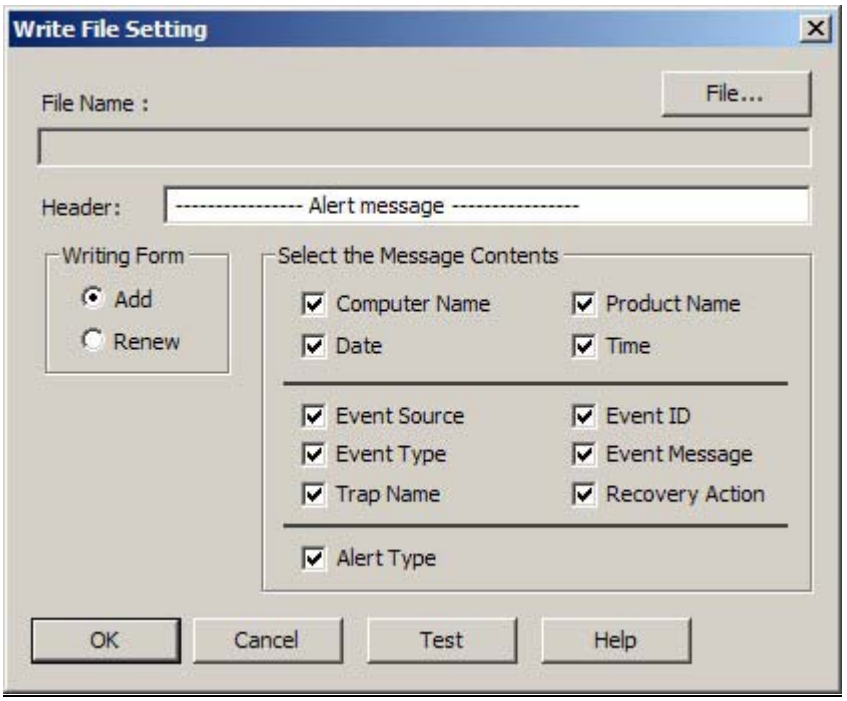


[Print Setting] Dialog Box

Printer Name	Designates printer to be used
Header	The contents are inserted to header of print body.
Footer	The contents is inserted to footer of print body

The item ticked on checkbox is output.

Write File



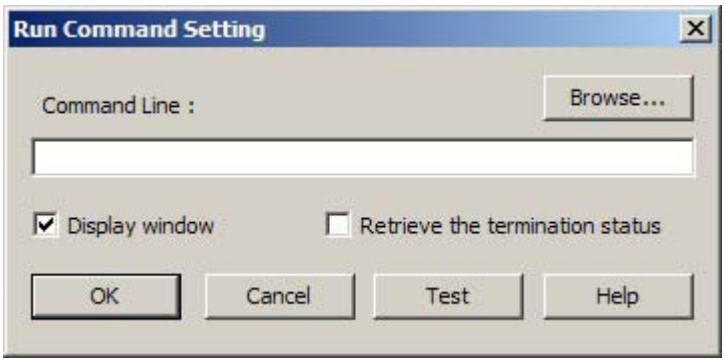
[Write File Setting] Dialog Box

File Name	Designates file name of output destination.
Header	The contents you designated are inserted to header of output

	message body.

The item ticked on checkbox is output.

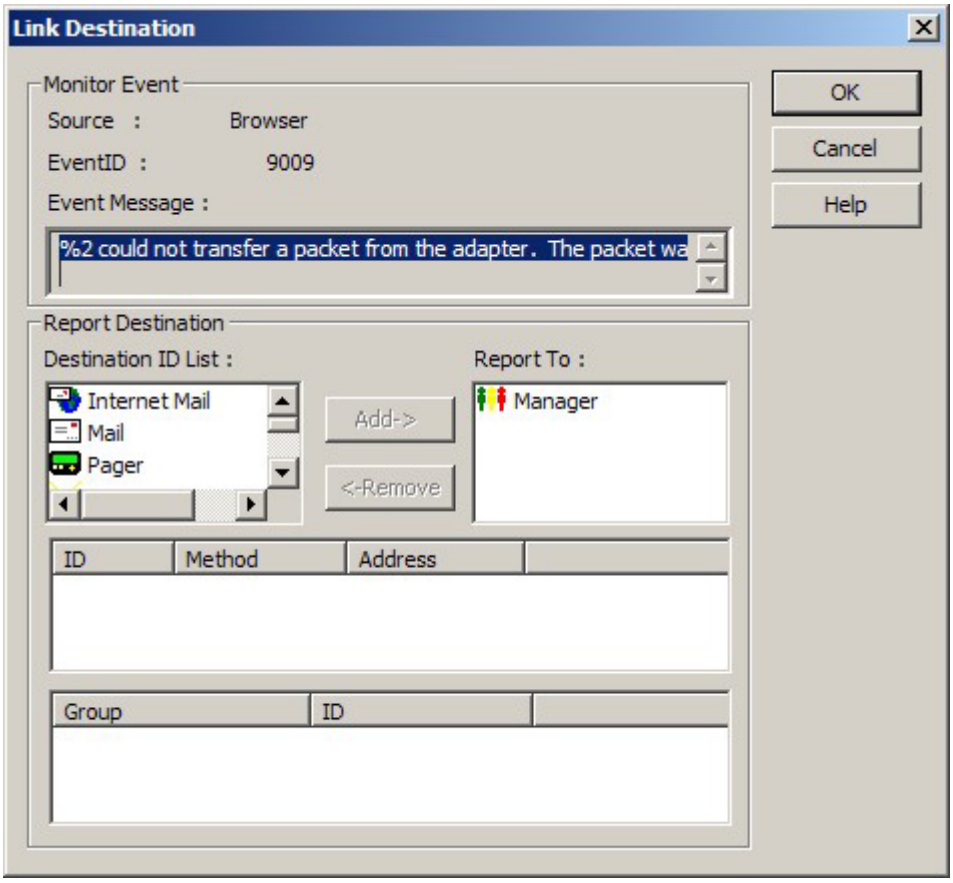
Command Execution



[Run Command Setting] Dialog Box

Command Line	Designates command to execute.
Display Window	Designates whether you display run command on window. In case there is check, window is displayed.
Retrieve the termination status	When you get return value of command, tick the checkbox.

5. How to connect Alert Destination to Monitoring Event.
   In case Event to be monitored happens, alert is reported to Alert Destination you connected here. Select Event to be monitored from Event Log of tree view and Event of NEC ESMPRO Agent with mouse and click right mouse button. Select [Link Destination] from Pop-up Menu to be displayed. [Link Destination] Dialog Box is displayed, select Alert Destination and connect Alert Destination to Event.



POINT

By connecting Event to report alert to optional alert when server failure happens, you can set Alert Destination according to operating environment.

CAUTION

When you delete Alert Destination and group, they are deleted from Monitor Event and alert report.

Please be careful when you delete Alert Destination and group.