NEC

NEC ESMPRO ServerAgentService Ver. 2 User's Guide (Linux)

10.201.04-130.15

Contents

Conventions Used in This Document

Notations used in the text

In addition to safety-related symbols urging caution, three other types of notations are used in this document. These notations have the following meanings.

Important	Indicates critical items that must be followed when handling operating software.
Note	Indicates items that must be confirmed when handling operating software.
Tips	Indicates information that is helpful to keep in mind when using this software.

Trademarks

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NEC ESMPRO ServerAgentService Ver. 2

1 Products Overview

This chapter explains products overview of NEC ESMPRO ServerAgentService.

1. Products Overview

NEC ESMPRO Manager and NEC ESMPRO ServerAgentService are software packages for server management aimed at the stable operation and the efficient management of servers. This software tracks configuration information and operation statuses of the server resources, detects server failures, and reports the alert to the system administrator, to prevent or quickly respond to such failures.

Importance of server management

To ensure stable server operations, you need to reduce the workload for server management.

Stable server operations

Server shutdowns directly lead to a loss of your business opportunities and profits. Therefore, you always need to ensure complete operations. In case of a server failure, you will have to notice it as early as possible to track down the cause and take necessary measures. If you quickly recover the system from the failure, you'll be able to minimize profit (cost) losses.

Reduction of the workload for server management

It takes a large workforce to manage servers, especially in a large system or when using servers in a remote location. Reduction of the workload for server management leads to cost reduction.

What are NEC ESMPRO Manager and NEC ESMPRO ServerAgentService?

NEC ESMPRO Manager and NEC ESMPRO ServerAgentService are server management software packages that manage and monitor servers on the network. If you introduce this software, you will be able to obtain/manage/monitor information on configuration, performance, and failures. In addition, you will be able to notice a failure by notification from the reporting function on a real-time basis.

Effectiveness of NEC ESMPRO Manager and NEC ESMPRO ServerAgentService

NEC ESMPRO Manager and NEC ESMPRO ServerAgentService are very effective for various needs within a system environment that is getting increasingly diversified and complicated.

Detection of server failures

NEC ESMPRO ServerAgentService collects a variety of failure information and checks system statuses. When it detects abnormality, it reports the alert to NEC ESMPRO Manager.

Prevention of server failures

As preventive measures, NEC ESMPRO ServerAgentService supports a preventive maintenance function that predicts failure occurrences. NEC ESMPRO ServerAgentService can detect a temperature increase inside cabinets, free space of file system and hard disk drive degradation at early stage.

Management of server operating statuses

NEC ESMPRO ServerAgentService obtains detailed information on hardware and performance of server. You can access the information from anywhere via NEC ESMPRO Manager.

Central management of distributed servers

NEC ESMPRO Manager offers GUI interfaces that allow you to efficiently manage servers distributed on a network.

2. Function Summary

NEC ESMPRO ServerAgentService provides the CIM Provider and the Monitoring Service to NEC ESMPRO Manager. "Service Mode" and "Non-Service Mode" exist in NEC ESMPRO ServerAgentService. Use BMC management for monitoring of the hardware.

With the Service Mode, it provides the CIM Provider and the Monitoring Service.
With the Non-Service Mode, it provides the CIM Provider.

Tips

Execute the following commands, confirm which mode NEC ESMPRO ServerAgentService is installed with.

```
# rpm -qa | grep Esmpro-Cmnsrv
```

It is Service Mode when Esmpro-Cmnsrv package was displayed.

Esmpro-Cmnsrv-"Version Information"

Tips

Refer to Chapter 2 "1. Before installation" and Chapter 2 "3. After installation" of NEC ESMPRO ServerAgentService Installation Guide (Linux), which is included in EXPRESSBUILDER or Starter Pack, downloaded from a web site before using NEC ESMPRO ServerAgentService.

2.1 CIM Provider

- Esmpro-Provider package

Function	Class
Note	
ESMPRO Information Provider	ESM_GeneralInformation ESM_VideoController ESM_Network ESM_Alive
This provider provides the information that is dearth in Linux standard provider.	
CPU Load Information Provider	ESM_Processor
This provider provides the CPU load information of 1 minute load average.	
Physical Memory Information Provider	ESM_PhysicalMemory
This provider provides the physical memory information.	
Virtual Memory Information Provider	ESM_VirtualMemory
This provider provides the virtual memory information.	
Page File Information Provider	ESM_PageFile
This provider provides the page file information.	

- Esmpro-strgfs-Provider package

Function	Class
Note	
Storage Information Provider	ESM_StorageThread
This provider provides the storage information. iLO support model is not supported.	
Filesystem Information Provider	ESM_FileSystemThread
This provider provides the filesystem information.	

2.2 Monitoring Service

・ Esmpro-Cmnsrv package

Function	Process	Source of Alert
Note		
NEC ESMPRO ServerAgentService Basic service	ESMntserver	None
This process controls interprocess communication of NEC ESMPRO ServerAgentService.		
Monitoring Thread Start and Stop Service	ESMcmn	None
This process starts or stops in the following threads. When a state changed, monitoring thread record in a syslog and report it in report method.		
Syslog Monitoring and Report service	ESMamvmain	None
This process is monitoring syslog. It reports it in report method. It provides to reports it to a manager using TCP/IP.		
SNMP report service	ESMntagent	None
This process provides to reports it to a manager using SNMP.		

- Monitoring Thread

Function	Class	Source of Alert
Note	Default	
CPU Load	ESM_Processor	ESMCPUPERF
This thread is monitoring CPU load.	Utilization Rate : Load For 1 min Sample Interval (Seconds) : 10 Monitoring : Disable Fatal %t : 100 Reset (Error) : 97 Warning % : 95 Reset (Warning) : 92	
Physical Memory Used	ESM_PhysicalMemory	ESMMEMORYUSAGE
This thread is monitoring physical memory used.	Sample Interval (Seconds) : 60 Monitoring : Disable Fatal (MB) : 95% of Total Capacity Reset (Error) (MB) : 90% of Total Capacity Warning (MB) : 85% of Total Capacity Reset (Warning) (MB) : 80% of Total Capacity	
Virtual Memory Used	ESM_VirtualMemory	ESMMEMORYUSAGE
This thread is monitoring virtual memory used.	Sample Interval (Seconds) : 60 Monitoring : Disable Fatal (MB) : 95% of Total Capacity Reset (Error) (MB) : 90% of Total Capacity Warning (MB) : 85% of Total Capacity Reset (Warning) (MB) : 80% of Total Capacity	
Page File Used	ESM_PageFile	ESMMEMORYUSAGE
This thread is monitoring page file used.	Sample Interval (Seconds) : 60 Monitoring : Disable Fatal (MB) : 95% of Total Capacity Reset (Error) (MB) : 90% of Total Capacity Warning (MB) : 85% of Total Capacity Reset (Warning) (MB) : 80% of Total Capacity	
Storage	ESM_StorageThread	ESM STORAGE SERVICE
This thread is monitoring simple substance storage. iLO support model is not supported.	Sample Interval (Seconds) : 60 SMART Monitoring : Enable	
Filesystem	ESM_FileSystemThread	ESMFSSERVICE
This thread is monitoring filesystem.	Sample Interval (Seconds) : 60	

Function	Class	Source of Alert
Note	Default	
	Monitoring : Enable Fatal (MB) : 1% of Total Capacity Warning (MB) : 10% of Total Capacity	
CPU and Memory Degenerate	None	ESMCOMMONSERVICE
This thread is monitoring CPU and memory degenerate in start ESMcmn. iLO support model is not supported.		

- Esmpro-Selsrv package

Function	Process	Source of Alert
Note		
Hardware Log Monitoring Service	ESMsmsrv	ESMCOMMONSERVICE
This thread is hardware log. It records in a syslog, and reports it in report method.		

- Esmpro-Expsrv package

Function	Process	Source of Alert
Note		
Express Report Service	None	None
This package add report measures of Express Report Service to Report Service (ESMamvmain).		

NEC ESMPRO ServerAgentService Ver. 2

2

Monitoring Features

This chapter explains monitoring features of NEC ESMPRO ServerAgentService.

1. Monitoring Setting

2. SNMP Trap

3. Syslog Monitoring

1. Monitoring Setting

This section explains the monitoring function. To change the setting of each monitoring function, use Control Panel (ESMagntconf).

Note

Because Monitoring Service is not installed in Non-Service Mode, it can not be set. And monitoring setting of CPU/Memory/Storage/Filesystem can not be set from NEC ESMPRO Manager.

Note

When Control Panel can not be started, refer to Chapter 6 FAQ "Fail in registration or connection check from NEC ESMPRO Manager, or NEC ESMPRO ServerAgentService does not start".

Tips

Do not start Control Panel from plural consoles. It can not start from the console which it executed later.

Tips

Refer to Chapter 2 "1. Before installation" and Chapter 2 "3. After installation" of NEC ESMPRO ServerAgentService Installation Guide (Linux), which is included in EXPRESSBUILDER or Starter Pack, downloaded from a web site before using NEC ESMPRO ServerAgentService.

Tips

Monitoring setting of CPU/Memory/Storage/Filesystem select a monitoring target server in NEC ESMPRO Manager, and set it from [Setting]-[NEC ESMPRO ServerAgentService Setting]. Refer to online help of NEC ESMPRO Manager for details.
When doing a threshold value in Manager, and when displayed with "Cannot connect with the Agent", refer to Chapter 6 FAQ "Fail in registration or connection check from NEC ESMPRO Manager, or NEC ESMPRO ServerAgentService does not start."

Method of starting Control Panel (ESMagntconf)

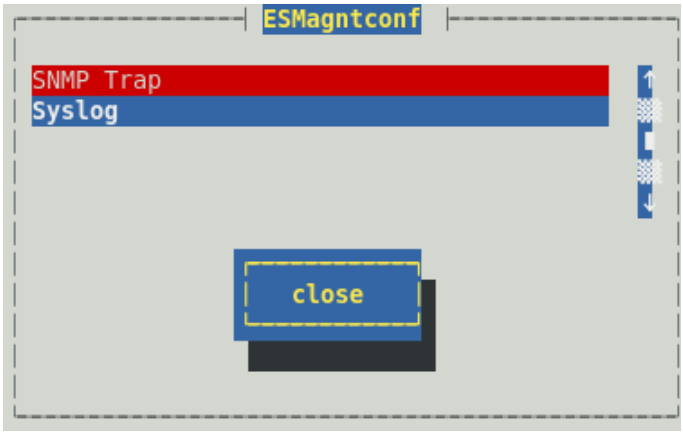
1. Log in to the system as the root user.

2. Move to the directory where Control Panel is stored.

```
# cd /opt/nec/esmpro_sa/bin/
```

3. Start Control Panel.

```
# ./ESMagntconf
```



The main screen of Control Panel (ESMagntconf)

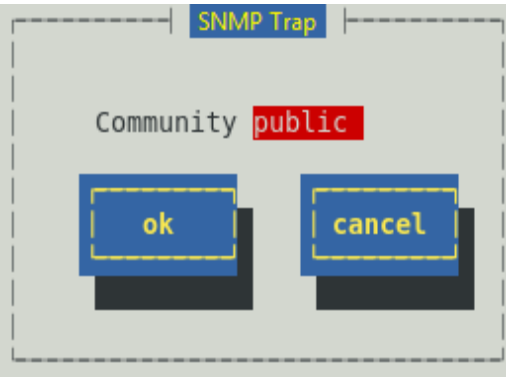
2. SNMP Trap

Functions

You can set the SNMP community name to use when it sends SNMP Trap in Syslog Monitoring function.

Settings

With the screen which you choose "SNMP Trap" of Control Panel (ESMagntconf), and is displayed [SNMP Trap], setting is possible.



Community

Select the community name to use when it sends SNMP Trap in Syslog Monitoring function. The community name displayed in the list is the community name registered in SNMP configuration file (snmpd.conf). Specify the community name within 33 alphanumeric characters.

[ok]

Settings are saved and this screen closes.

[cancel]

This screen closes without saving changes.

3. Syslog Monitoring

Functions

When a set keyword is recorded in a syslog ("/var/log/messages"), Syslog Monitoring function reports an alert to NEC ESMPRO Manager. Syslog Monitoring Event comes by additional / deletion by a new source depending on system environment, a monitoring event other than a monitoring event registering at the time of NEC ESMPRO ServerAgentService installation beforehand. Refer to chapter 3 "4.Syslog Events Setting" for how to add/delete Syslog Monitoring Event. Supported locale is UTF-8.

Default Monitoring Object

The syslog to be targeted for monitoring is only "/var/log/messages", a change cannot add it. In addition, the file name after logrotate targeted for monitoring is as follows.

"dateext" is not defined by /etc/logrotate.conf : /var/log/messages.n [n=1, 2, 3 ...]

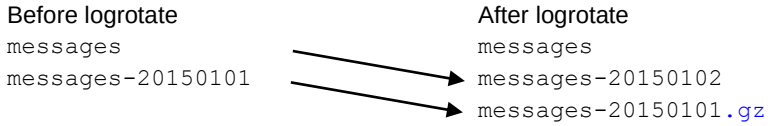
"dateext" is defined by /etc/logrotate.conf : /var/log/messages-YYYYMMDD

It cannot monitor by Syslog Monitoring function at time except the above file name.

If "compress" is defined by /etc/logrotate.conf, it cannot monitoring by Syslog Monitoring function because after logrotate file is not text.

With Red Hat Enterprise Linux 6, "dateext" is defined with an existing set price.

With Red Hat Enterprise Linux 7, "dateext" is defined with an existing set price. "compress" is not defined, but file (messages-YYYYMMDD) which Ro Tate did before one of the files which Ro Tate does is compressed by gz form (messages-YYYYMMDD.gz). Therefore Syslog Monitoring cannot monitoring it. But Syslog Monitoring do not influence it because Syslog Monitoring watch a syslog before becoming the gz form when NEC ESMPRO Agent does not stop.



Custom Monitoring Object

You can add the targeted for monitoring file which does not include "/var/log/messages" character string one. By the timing of the monitoring interval, chronological order may reverse to check an additional monitoring file after having checked /var/log/messages.

It becomes only a file output with a format same as a syslog and does not watch the first bank of the monitoring relevant file.

```
%b %d %H:%M:%S %HOSTNAME% %MESSAGE%
```

%b (Jan to Dec) %d (1 to 31) %H (00 to 23):%M (00 to 59):%S (00 to 59)

When it appoint the file which logrotate does, the file after logrotate does not become targeted for monitoring. In the timing when a file name is replaced by logrotate, it cannot sometimes watch a part of Custom Monitoring Object relevant file.

File Monitoring Object

When it appoints the file which logrotate does, in the timing divided by the change of the log file name, it may not watch an additional monitoring relevant file in the latter half part.

You can add the targeted for monitoring file which does not include "/var/log/messages" character string one. By the timing of the monitoring interval, chronological order may reverse to check a file monitoring file after having checked /var/log/messages and an additional monitoring file.

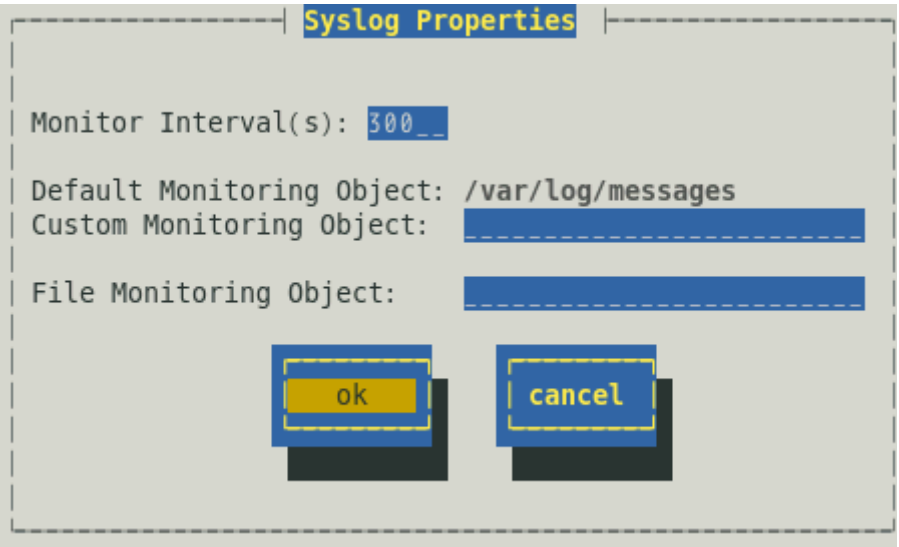
The format of the file monitoring relevant file does not have the designation.

When it appoint the file which logrotate does, the file after logrotate does not become targeted for monitoring. In the timing when a file name is replaced by logrotate, it cannot sometimes watch a part of File Monitoring Object relevant file.

Settings

From [Syslog Properties] screen, you can set the following information.

To display [Syslog Properties] screen, select "Syslog" on Control Panel (ESMagntconf).



Monitor Interval

Specify the monitoring interval of Syslog Monitoring. Range is 10 to 3600 seconds.
Default value is 300 seconds.

Default Monitoring Object

A change from "/var/log/messages", the deletion are not possible. Refer to Functions of "3. Syslog Monitoring".

Custom Monitoring Object

Set the monitoring object which does not include "/var/log/messages" character string with the absolute pass which becomes with less than 255 bytes of length of the pass.
The setting in the relative path is not possible. It becomes only a file output with a format same as a syslog and does not watch the first bank of the monitoring relevant file. Refer to Functions of "3. Syslog Monitoring".
The existing set price is a blank, and the additional monitoring object is not set.

File Monitoring Object

Set the monitoring object which does not include "/var/log/messages" character string with the absolute pass which becomes with less than 255 bytes of length of the pass.
The setting in the relative path is not possible. The format of the file monitoring relevant file does not have the designation. Refer to Functions of "3. Syslog Monitoring".
The existing set price is a blank, and the additional monitoring object is not set.

[ok]

Settings are saved and this screen closes.

[cancel]

This screen closes without saving changes.

NEC ESMPRO ServerAgentService Ver. 2

3

Report Features

This chapter explains report features of NEC ESMPRO ServerAgentService.

1. Report Setting

2. Base Setting

3. Destination Setting

4. Syslog Events Setting

1. Report Setting

This section explains the report setting for where and when an event is to be reported.
To change the report setting, use Control Panel (ESMamsadm).

Note Because Monitoring Service is not installed in Non-Service Mode, cannot set report means.

Tips Do not start Control Panel from plural consoles. It can not start from the console which it executed later.

Tips Refer to Chapter 2 "1. Before installation" and Chapter 2 "3. After installation" of NEC ESMPRO ServerAgentService Installation Guide (Linux), which is included in EXPRESSBUILDER or Starter Pack, downloaded from a web site before using NEC ESMPRO ServerAgentService.

A method to report to a manager includes following three kinds.

1. Manager (SNMP)
   NEC ESMPRO ServerAgentService transmits SNMP Trap (UDP Trap).
   It can report it to a manager supporting SNMP Trap reception except NEC ESMPRO Manager.

2. Manager (TCP_IP In-Band)
   NEC ESMPRO ServerAgentService reports it to a manager using TCP/IP.
   When it does a reliable report, use it.

3. Manager (TCP_IP Out-of-Band)
   Through Point to Point Protocol (PPP), NEC ESMPRO ServerAgentService reports it to NEC ESMPRO Manager using TCP/IP like TCP_IP In-Band. Therefore, NEC ESMPRO ServerAgentService and NEC ESMPRO Manager exist in the distant place and use it when they report it to NEC ESMPRO Manager through a public line (Wide Area Network). In addition, a modem and phone line is necessary for both NEC ESMPRO ServerAgentService side and manager side to become the dial-up connection.

Other than Manager mentioned above, Monitoring Thread of ESMPRO Provider reports it to a manager to the change that is in a state in CIM-Indication. Register NEC ESMPRO ServerAgentService with NEC ESMPRO Manager to receive CIM-Indication in NEC ESMPRO Manager. Thereby, a Subscription of CIM-Indication is made and transmits CIM-Indication to NEC ESMPRO Manager from NEC ESMPRO ServerAgentService.
- CPU Load Monitoring Thread (Class : ESM_Processor)
- Physical Memory Used Monitoring Thread (Class : ESM_PhysicalMemory)
- Virtual Memory Used Monitoring Thread (Class : ESM_VirtualMemory)
- Page File Used Monitoring Thread (Class : ESM_PageFile)
- Storage Monitoring Thread (Class : ESM_StorageThread)
- Filesystem Monitoring Thread (Class : ESM_FileSystemThread)
- CPU and Memory Degenerate Monitoring Thread (Class : none)

CIM-Indication can be set as the report destination from after NEC ESMPRO ServerAgentService Ver.2.1.3-0. Therefore CIM-Indication is not reported from a Monitoring Thread of ESMPRO Provider.

Note Because a time limit is established for a Subscription, when the time limit of the subscription expires by the cases that NEC ESMPRO Manager stopped, it cannot receive CIM-Indication.

Tips When a network with NEC ESMPRO Manager is blocked off, CIM-Indication does not re-try.

Note

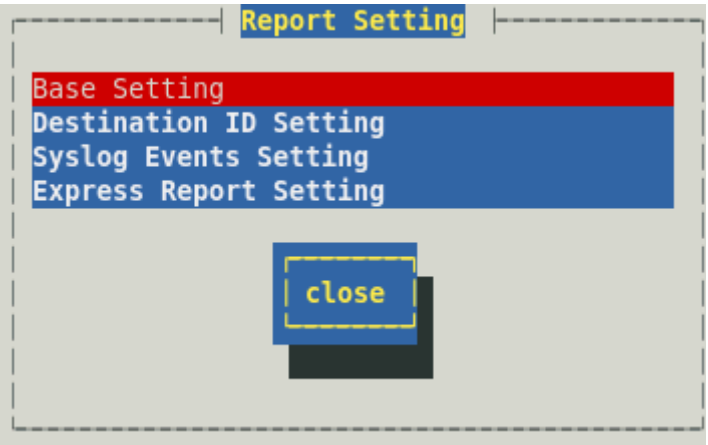
When Control Panel can not be started, refer to Chapter 6 FAQ "Fail in registration or connection check from NEC ESMPRO Manager, or NEC ESMPRO ServerAgentService does not start".

Method of starting Control Panel (ESMamsadm)

1. Log in to the system as the root user.

2. Move to the directory where Control Panel is stored.
```
# cd /opt/nec/esmpro_sa/bin/
```

3. Start Control Panel.
```
# ./ESMamsadm
```



The main screen of Control Panel (ESMamsadm)

To report the alert by using SNMP as the report method

When NEC ESMPRO ServerAgentService was installed, the setting to report the alert by using SNMP as the report method for monitor events was almost completely established beforehand. The report preparation is completed by setting IP address of NEC ESMPRO Manager for the base setting. Refer to chapter 3 "2.1.1. Base Setting of Manager (SNMP)" for details of the setting.

To report the alert by using the report methods other than SNMP

Set it according to the following flows.

1. Perform Base Setting. (Base Setting)
   Refer to chapter 3 "2.1.2. Base Setting of Manager (TCP_IP In-Band)" for the basic setting to report the alert by using TCP_IP In-Band as the report method.
   Refer to chapter 3 "2.1.3. Base Setting of Manager (TCP_IP Out-of-Band)" for the basic setting to report the alert by using TCP_IP Out-of-Band as the report method.
   Refer to chapter 3 "2.1.4. Base Setting of Manager (CIM-Indication)" for basic setting to report the alert by using CIM-Indication as the report method.

2. Set the list of report destinations. (Destination Setting)
   Refer to chapter 3 "3.1.1.Address Setting when Manager (TCP_IP In-Band) is used as a report method" for the address setting to report the alert by using TCP_IP In-Band as a report method.
   Refer to chapter 3 "3.1.2.Address Setting when Manager (TCP_IP Out-of-Band) is used as a report method" for the address setting to report the alert by using TCP_IP Out-of-Band as a report method.

3. Set Syslog Events and associate Syslog Events with report destinations.
   Syslog Events indicate monitor events that Syslog Monitoring function detects.
   Refer to chapter 3 "4. Syslog Events Setting" for the setting of Syslog Events.

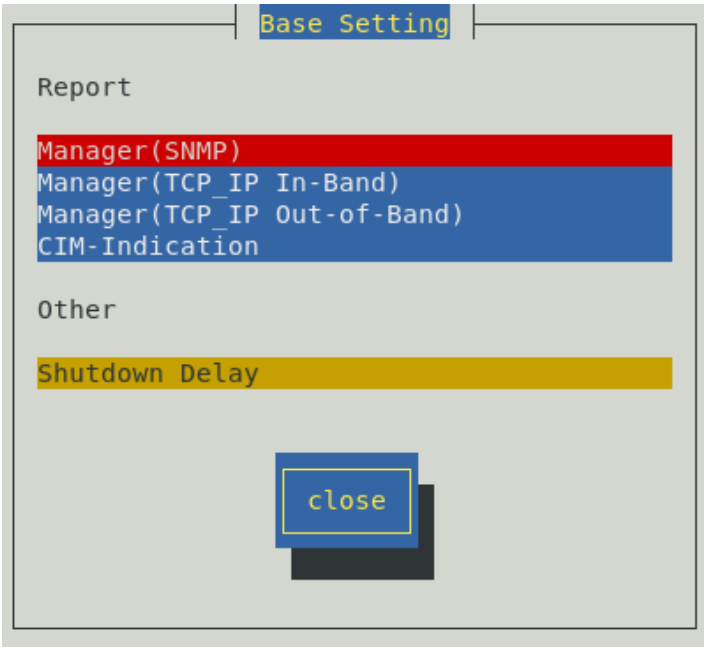
2. Base Setting

Functions

Here you set enabling/disabling reporting methods, trap destinations of Manager Report (SNMP), enabling/disabling the shutdown function in the event of an error, and waiting time before the shutdown. When you disable a reporting method, the method will not perform reporting for any monitoring items. When you disable the shutdown function, the shutdown/reboot function as the action after reporting will also be disabled.

Settings

Select "Base Setting" on Control Panel (ESMamsadm) and [Base Setting] screen opens.



Report

The list of report methods is displayed.

Other

The list of the other settings is displayed.

[close]

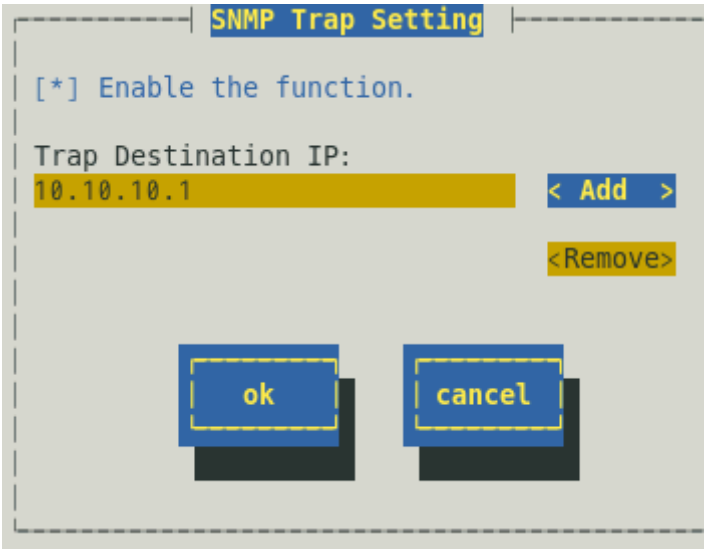
Close this screen.

2.1 Setting of Report Method

Enable/Disable reporting methods and set the trap destinations of Manager Report (SNMP).

2.1.1 Base Setting of Manager (SNMP)

Enable/Disable Manager Report (SNMP) and set the trap destinations for this method.
Select "Manager (SNMP)" on [Base Setting] screen, then [SNMP Trap Setting] screen opens.



Enable the function

Enable/Disable Manager Report (SNMP). When checked, it is active. Set using <space> key. This field is checked by default.

Trap Destination IP

IP address setting a report earlier is displayed with a list. The address of Trap transmitting a message from NEC ESMPRO ServerAgentService does not use Trap Destination set in SNMP configuration files (snmpd.conf).
It can set Trap Destination IP to up to 128.

[Add]

New IP address is added to "Trap Destination IP".

[Remove]

IP address selected from "Trap Destination IP" is deleted.

[ok]

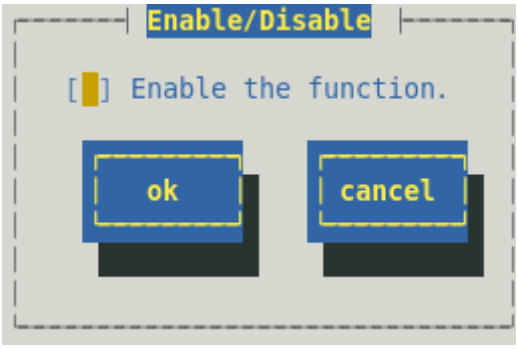
Settings are saved and this screen closes.

[cancel]

This screen closes without saving changes.

2.1.2 Base Setting of Manager (TCP_IP In-Band)

Enable/Disable Manager Report (TCP_IP In-Band).
Select "Manager (TCP_IP In-Band)" on [Base Setting] screen and [Enable/Disable] screen opens.



Enable the function

Enable/Disable Manager (TCP_IP In-Band). When checked, it is active. Set using <space> key.
This field is not checked by default.

[ok]

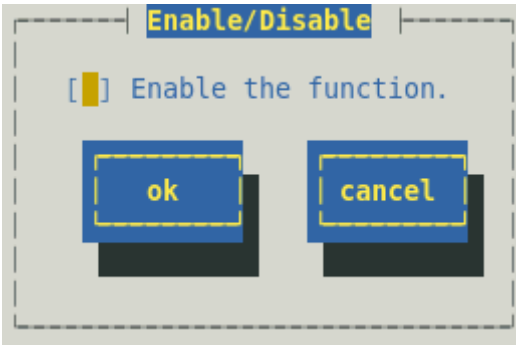
Settings are saved and this screen closes.

[cancel]

This screen closes without saving changes.

2.1.3 Base Setting of Manager (TCP_IP Out-of-Band)

Enable/Disable Manager Report (TCP_IP Out-of-Band).
Select "Manager (TCP_IP Out-of-Band)" on [Base Setting] screen and [Enable/Disable] screen opens. When you use Manager Report (TCP_IP Out-of-Band), make sure to select "Permit discretionary authentication including clear text" for the encryption setting in Remote Access Service (RAS) setting on NEC ESMPRO Manager.



Enable the function

Enable/Disable Manager (TCP_IP Out-of -Band). When checked, it is active. Set using <space> key. This field is not checked by default.

[ok]

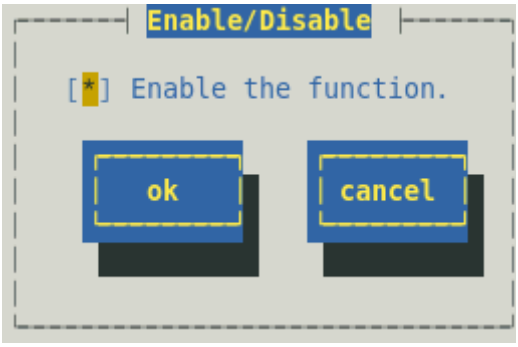
Settings are saved and this screen closes.

[cancel]

This screen closes without saving changes.

2.1.4 Base Setting of Manager (CIM-Indication)

Enable/Disable Manager Report (CIM-Indication).
Select "Manager (CIM-Indication)" on [Base Setting] screen and [Enable/Disable] screen opens.



Enable the function

Enable/Disable Manager (CIM-Indication). When checked, it is active. Set using <space> key.
This field is checked by default.

[ok]

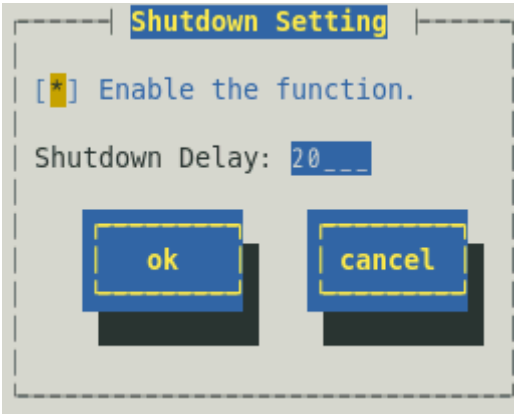
Settings are saved and this screen closes.

[cancel]

This screen closes without saving changes.

2.2 Other Setting

Specify the time that elapses before shutdown.
Select "Shutdown Delay" on [Base Setting] screen and [Shutdown Setting] screen opens.



Enable the function

Enable/Disable the shutdown function. When checked, it is active. Set using <space> key.
This field is checked by default.

Shutdown Delay

Set time before NEC ESMPRO ServerAgentService starting the shutdown of the OS.
Default value is 20 seconds.
Range is 0 to 1800 seconds.
If you specified "Shutdown" for "Action After Report", shutdown is started after the time set here has passed.

[ok]

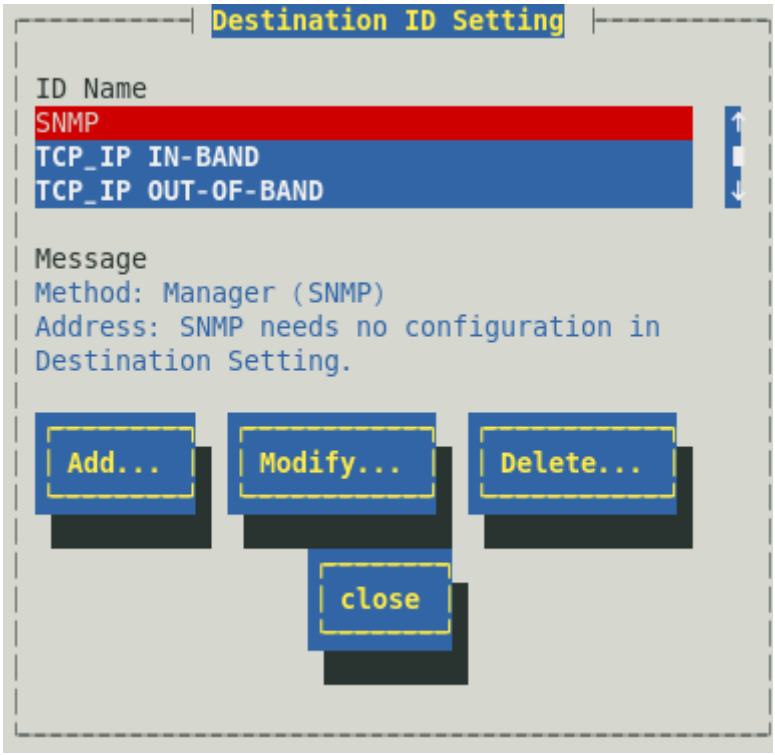
Settings are saved and this screen closes.

[cancel]

This screen closes without saving changes.

3. Destination Setting

Select "Destination ID Setting" on Control Panel (ESMamsadm) and [Destination ID Setting] screen opens.



ID Name

The list of the registered Destination ID is displayed.

Message

Method: The report method of ID selected from "ID Name" is displayed.
Address: The address information of ID selected from "ID Name" is displayed.

[Add...]

New Destination ID is added. Press this button to open [ID Setting] screen. If you have registered a Destination ID that has different destinations using the same reporting method, you can send messages to multiple addresses with this method.

[Modify...]

Press to modify the setting of Destination ID selected from "ID Name".

[Delete...]

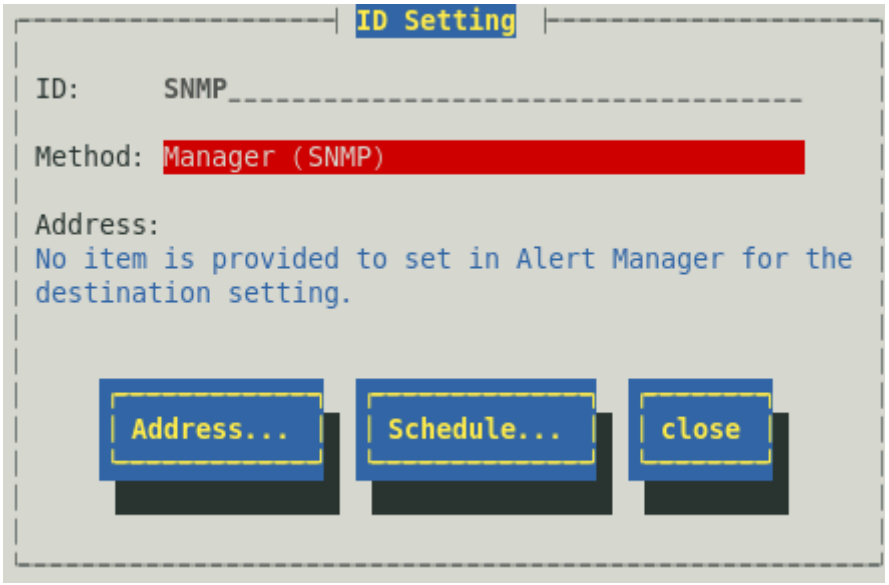
Destination ID selected from "ID Name" is deleted. "SNMP", "TCP_IP In-Band" and "TCP_IP Out-of-Band" are set as default. You cannot delete them.
When you delete a Destination ID, it will also be deleted from events to be monitored.
Destination ID for the "CIM-Indication" is being added NEC ESMPRO ServerAgentService Ver.2.1.3-0 or later, but it can not be deleted.

[close]

Close this screen.

3.1 Changing the Setting of Destination ID

Change the setting of Destination ID registered in the list. Select Destination ID you want to change from "ID Name" on [Destination ID Setting] screen and press [Modify...] to open [ID Setting] screen. The setting steps are different by the report methods.



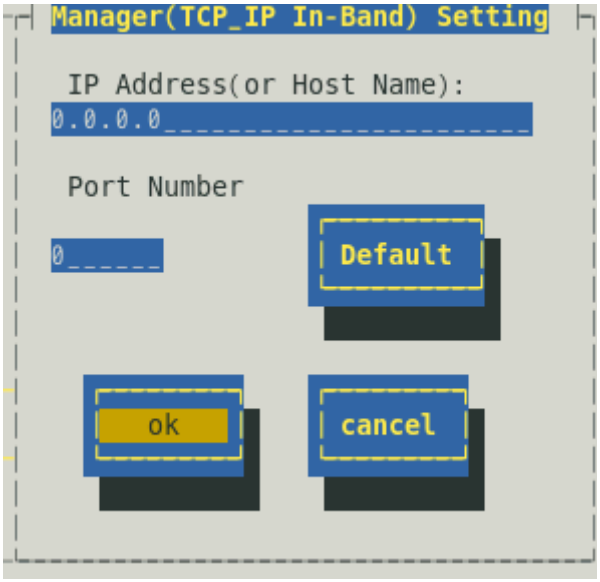
[Setting Method]

Press [Address...] and [Schedule...] to set where and when to report. While modifying the settings, you cannot modify "ID" and "Method". (read only) When "Manager (SNMP)" has been selected as "Method", even if [Address...] is pressed, the address setting screen is not displayed because it is not necessary to set the address.

Destination ID for the "CIM-Indication" is being added NEC ESMPRO ServerAgentService Ver.2.1.3-0 or later, but when "CIM-Indication" has been selected as "Method", even if [Address...] is pressed, the address setting screen is not displayed because it is not necessary to set the address.

3.1.1 Address Setting of Manager (TCP_IP In-Band)

When [Address...] is pressed when "Manager (TCP_IP In-Band)" has been selected as "Method" on [ID Setting] screen, [Manager (TCP_IP In-Band) Setting] screen opens.



IP Address (or Host Name)

Set IP address (or Host Name) of NEC ESMPRO Manager. You cannot omit it.

Port Number

The port number used for the communication between sockets can be set. For this number, the value must be the same for NEC ESMPRO ServerAgentService and NEC ESMPRO Manager. Default value is 31134. Do not change the value as long as default value works. When an existing set price has a problem, change a number in range of 6001 to 65535, and carry out a setting tool with the machine which NEC ESMPRO Manager of the report is installed in, and change setting of "Setting" - "Base Setting" - "Receive from Agent (TCP/IP)".

Note **Open ports through your access limit to allow access to localhosts.**

[Default]

The port number will be set to default value (31134).

[ok]

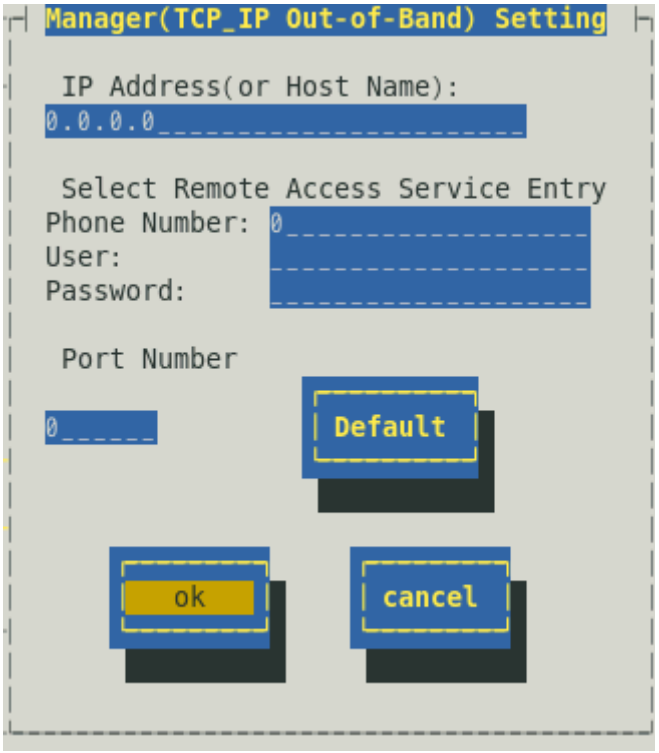
Settings are saved and this screen closes.

[cancel]

This screen closes without saving changes.

3.1.2 Address Setting of Manager (TCP_IP Out-of-Band)

When [Address...] is pressed when "Manager (TCP_IP Out-of-Band)" has been selected as "Method" on [ID Setting] screen, [Manager (TCP_IP Out-of -Band) Setting] screen opens.



IP Address (or Host Name)

Set IP address (or Host Name) of NEC ESMPRO Manager. You cannot omit it.

Select Remote Access Service Entry

Set Phone Number, User, and Password.

Port Number

The port number used for the communication between sockets can be set. For this number, the value must be the same for NEC ESMPRO ServerAgentService and NEC ESMPRO Manager. Default value is 31134. Do not change the value as long as default value works. When an existing set price has a problem, change a number in range of 6001 to 65535, and carry out a setting tool with the machine which NEC ESMPRO Manager of the report is installed in, and change setting of "Setting" - "Base Setting" - "Receive from Agent (TCP/IP)".

Note **Open ports through your access limit to allow access to localhosts.**

[Default]

The port number will be set to default value (31134).

[ok]

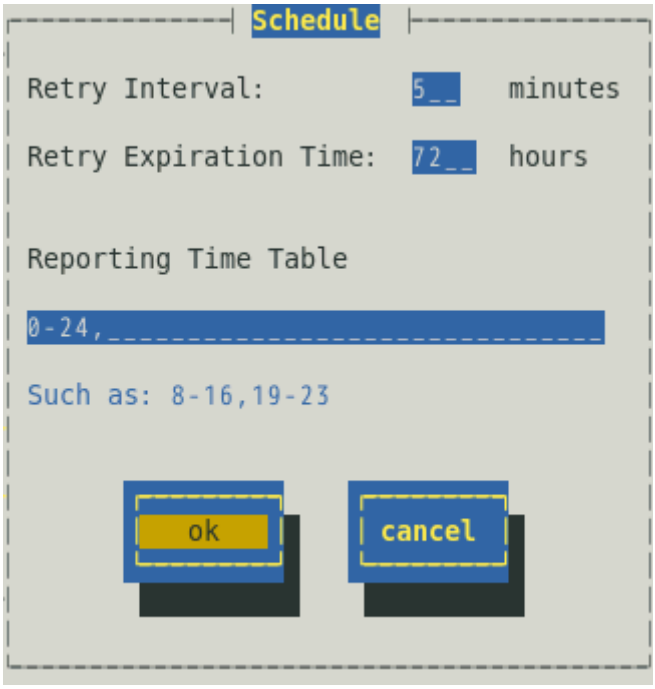
Settings are saved and this screen closes.

[cancel]

This screen closes without saving changes.

3.1.3 Schedule Setting

Set the report Schedule for each Destination ID.



Retry Interval

Set the retry interval.
Range is 1 to 30 minutes.
Default value is 5 minutes.

Reporting Expiration Time

Set the maximum retry time.
Range is 0 to 240 hours.
Default value is 72 hours. If you set 0 hour, no report is reported.

Reporting Time Table

Set the reportable time periods. Only the alerts that occur during the reportable time are reported. It is possible to specify a time period of 1 hour. Default value is 24 hours. An alert that occurs outside the reportable time is not reported immediately. When the reportable time comes, it is reported. The event is reserved until then.

[ok]

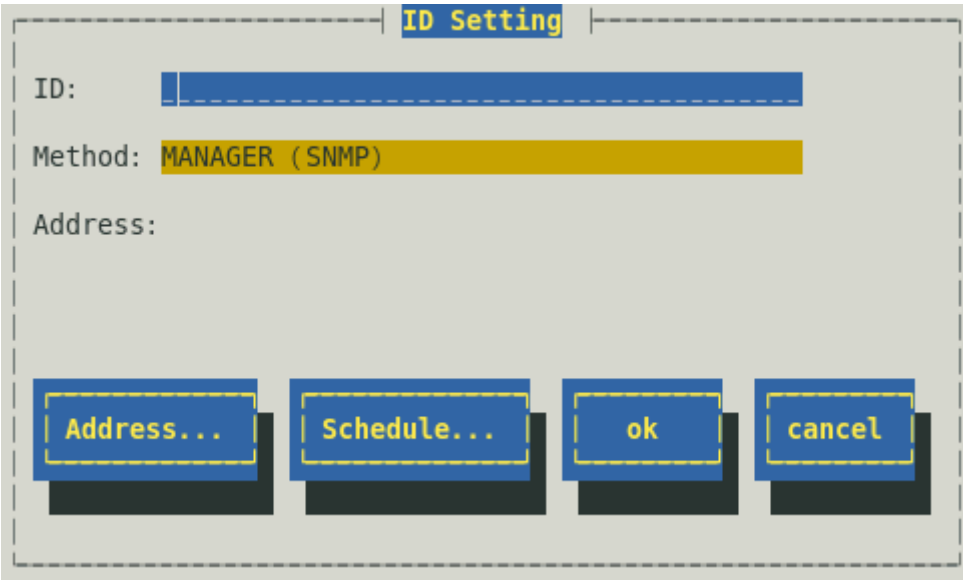
Settings are saved and this screen closes.

[cancel]

This screen closes without saving changes.

3.2 Adding Destination ID

Add Destination ID to the list. The setting steps differ by the report methods.



[Setting Method]

1. It input half size alphanumeric character or half size space, half size hyphen (-), half size under bar (_) in Input ID in less than 31 characters.
2. Select a report method, using < ↑ > or < ↓ > key.
3. Press [Address...] to set the address on displayed screen.
4. Press [Schedule...] to set the report schedule on displayed screen.
5. Press [ok].

When "Manager (SNMP)" has been selected as "Method", even if [Address...] button is pressed, the address setting screen is not displayed because it is not necessary to set the address.
Destination ID for the "CIM-Indication" is being added NEC ESMPRO ServerAgentService Ver.2.1.3-0 or later, but when "CIM-Indication" has been selected as "Method", even if [Address...] is pressed, the address setting screen is not displayed because it is not necessary to set the address.

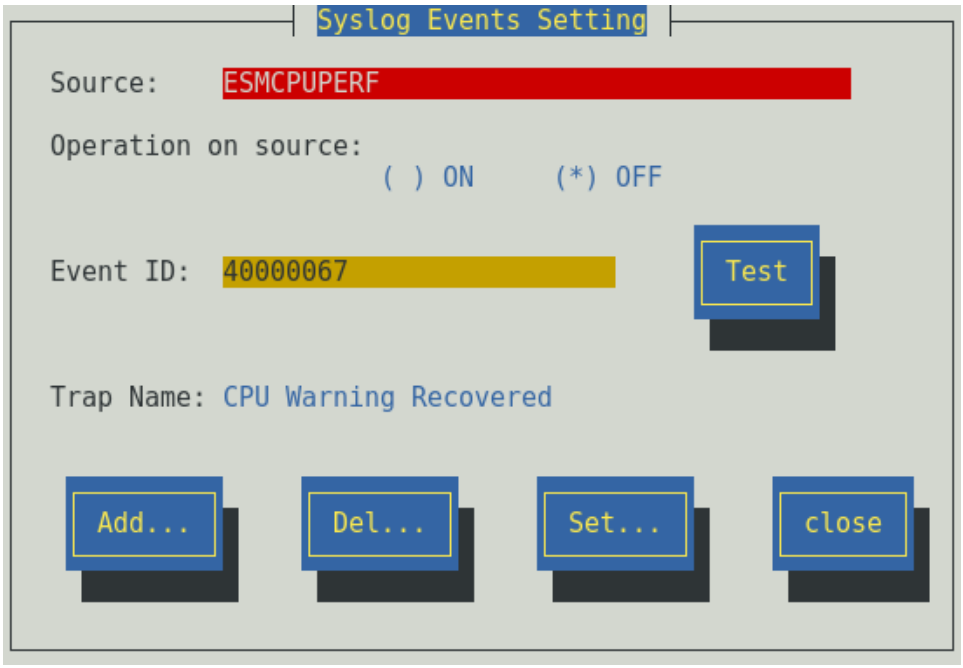
4. Syslog Events Setting

Functions

You can link the setting of Syslog Monitoring Event with the report to monitoring events. If monitor events occur, alerts will be sent to destinations set up here. You can arbitrarily add and delete new event sources and new monitoring events in addition to events registered beforehand according to the system environment.
Monitoring syslog events is performed at intervals of 5 minutes. You can change the monitoring interval of Syslog event monitoring.
Refer to chapter 2 "3. Syslog Monitoring" for the method to modify monitoring interval.

Settings

Select "Syslog Events Setting" on Control Panel (ESMamsadm) and [Syslog Events Setting] screen opens.



Source

The list of the source name is displayed. Select using < ↑ > or < ↓ > key.

Operation on source

Operation on source can be selected. Set using <space> key. This choice is choice of the processing method not setting contents. Therefore "OFF" is chosen every start of Control Panel.

When you do the following setting, you choose "ON".
- When, for none of Event ID of "Source" that you chose, you set report by a lump.
  But the setting of the monitoring event is not possible.
- When, "Source" that you chose, you delete or addition.

When you do the following setting, you choose "OFF".
- When, for Event ID of "Source" that you chose, you set report and a monitoring event.
- When, "Event ID" that you chose, you delete or addition.

Event ID

When "OFF" is selected in "Operation on source", Event ID list from the source selected in "Source" is displayed.
When "ON" is selected in "Operation on source", "ALL" is displayed in "Event ID".

[Test]

When "OFF" is selected in "Operation on source", for the test report, press this button. Not only the report but also "Action After Report" works. Therefore be careful about the choice of the report to test because it may be shut down depending on setting.
When "ON" is selected in "Operation on source", cannot test.

Note

It push "close" button to let the setting of Syslog Event re-reading when it changed addition and deletion, setting and close the setting screen of "Syslog Events Setting" of "Syslog Events Setting" among a "Report Setting" screen again.

Trap Name

The trap name of Event ID selected in "Event ID" is displayed.

[Add...]

When "OFF" is selected in "Operation on source", add Syslog Monitoring Event under the source selected in "Source". Pressing this button displays [Add Syslog Item] screen.
When "ON" is selected in "Operation on source", add the source of Syslog Monitoring Event. Pressing this button displays [Add Syslog Item] screen.

[Del...]

When "OFF" is selected in "Operation on source", delete Syslog Monitoring Event selected in "Event ID".
When "ON" is selected in "Operation on source", delete the source of Syslog Monitoring Event selected in "Source".

[Set...]

When "OFF" is selected in "Operation on source", modify the setting of the monitor event selected from "Event ID". Specify the report destination to the monitor event selected from "Event ID". Pressing this button displays [Syslog Application Setting] screen.
When "ON" is selected in "Operation on source", specify the report destination for to all Event ID of the source selected from "Source" at the same time. Pressing this button displays [Syslog Application Setting] screen.

[close]

[Syslog Events Setting] screen closes.
Press this button, the interval of Syslog Monitoring is reset, and do not detect Syslog Events from the time when pushed this button to Syslog Monitoring Intarval (Default value is 300 seconds).

4.1 Setting Destination (Syslog Event)

The following are the methods of specifying the report destination:

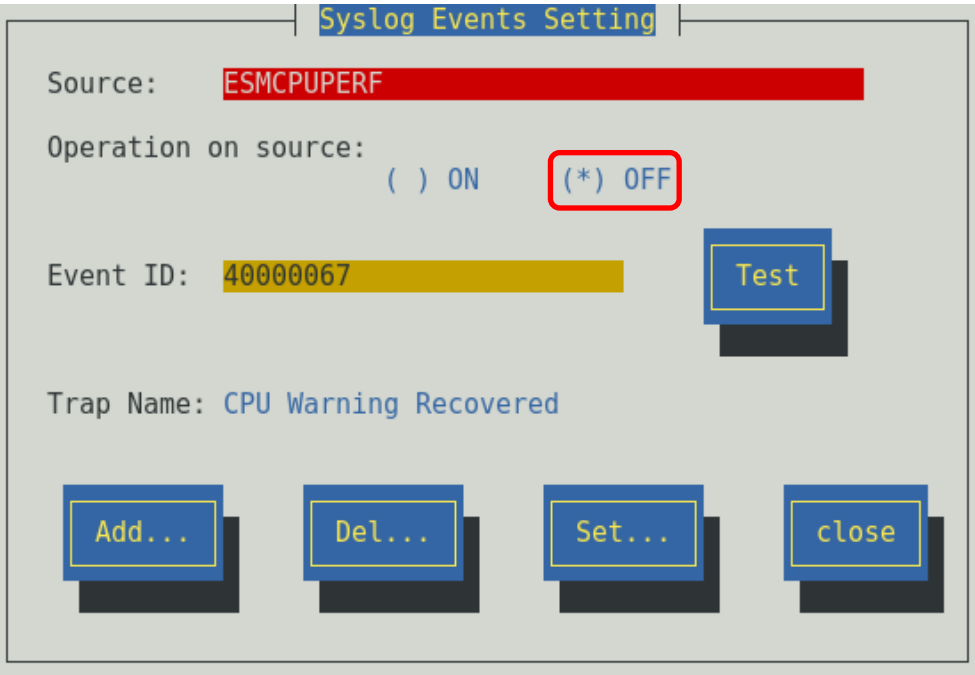
1. Specify the report destination for each monitor event individually.
2. Specify the same report destination for all Event ID under each source at the same time.

4.1.1 To specify the report destination for each monitor event individually

Not only the report destination but also Action After Report, Deal Method, etc., can be set.

[Setting Method]

1. Start Control Panel (ESMamsadm) and select "Syslog Events Setting".
   [Syslog Events Setting] screen opens.

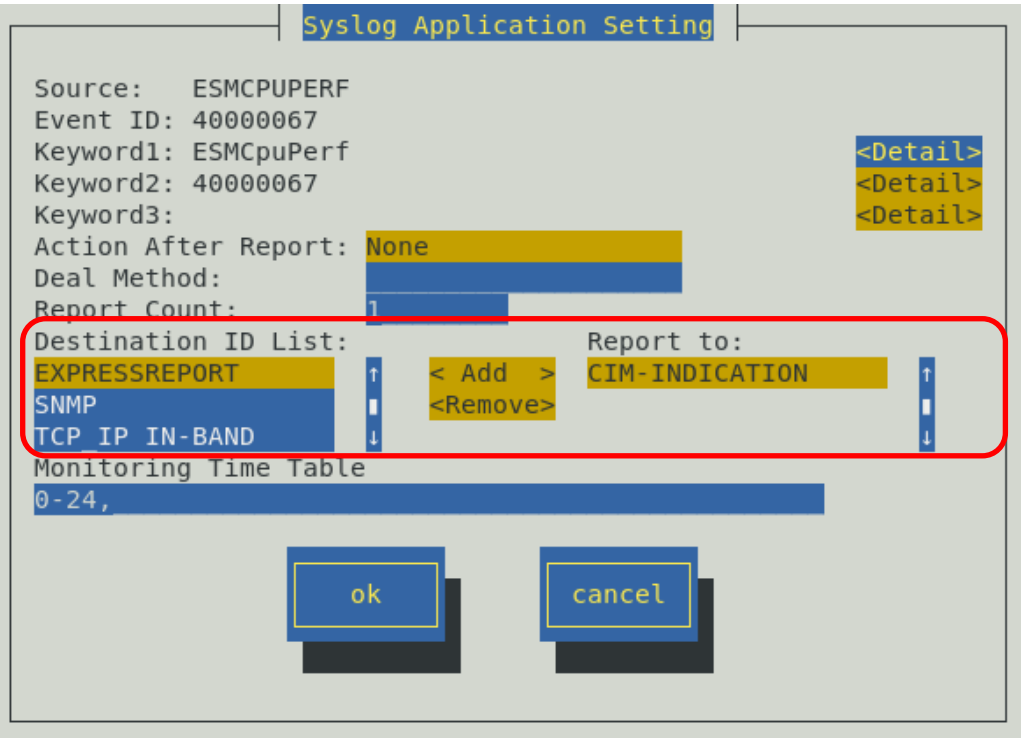


2. Select the source name from "Source", using < ↑ > or < ↓ > key.

3. Select "OFF" from "Operation on source". Set using <space> key.

4. Select Event ID for which you want to modify the setting from "Event ID", using < ↑ > or < ↓ > key.

5. Press [Set...] and [Syslog Application Setting] screen opens.



6. Select ID to be reported from "Destination ID List".

7. Pressing [Add] moves ID to "Report to".

8. To delete ID from "Report to", select ID from "Report to" and press [Remove] to move ID to "Destination ID List".

9. Press [ok].

Action After Report

Select either "Shutdown", "Reboot", or "None" from the list and specify an action after report, using < ↑ > or < ↓ > key.

Deal Method

Specify the action method to the reported item within 507 alphanumeric characters.

Report Count

The report is done when the keyword is registered in Syslog at the same frequency as the setting here.

Monitoring Time Table

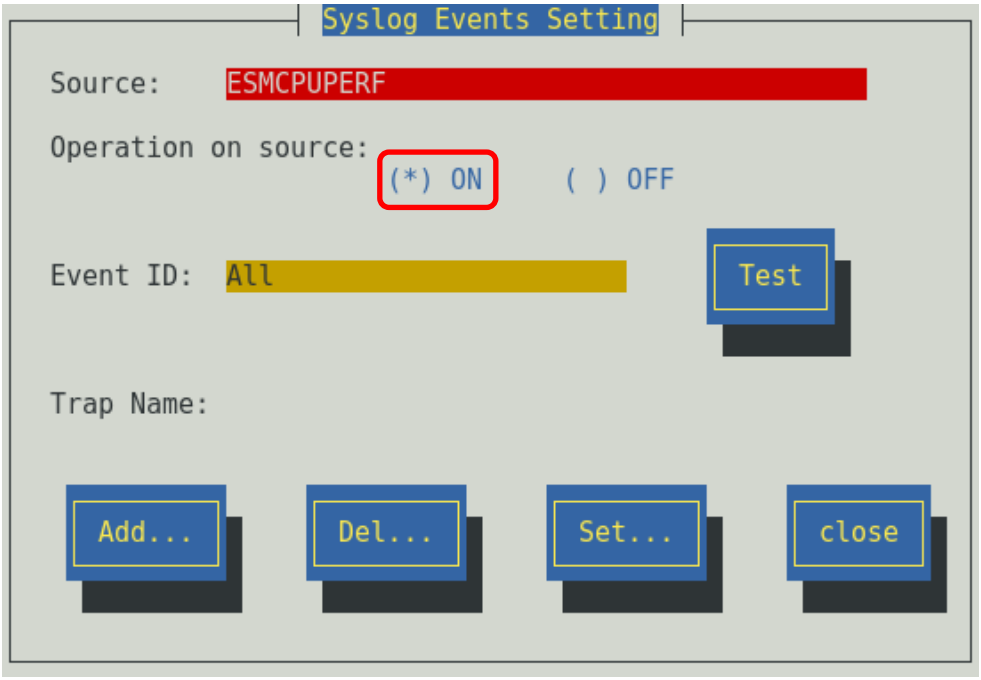
Set the reportable time periods. Only the alerts that occur during the reportable time are reported.
It is possible to specify 1 hour. Default value is 24 hours.

4.1.2 To specify the same report destination for all event ID under each source at the same time

Even if [Syslog Application Setting] screen is opened again after this setting is done, nothing is displayed in "Report to". Confirm the setting individually in each event.

[Setting Method]

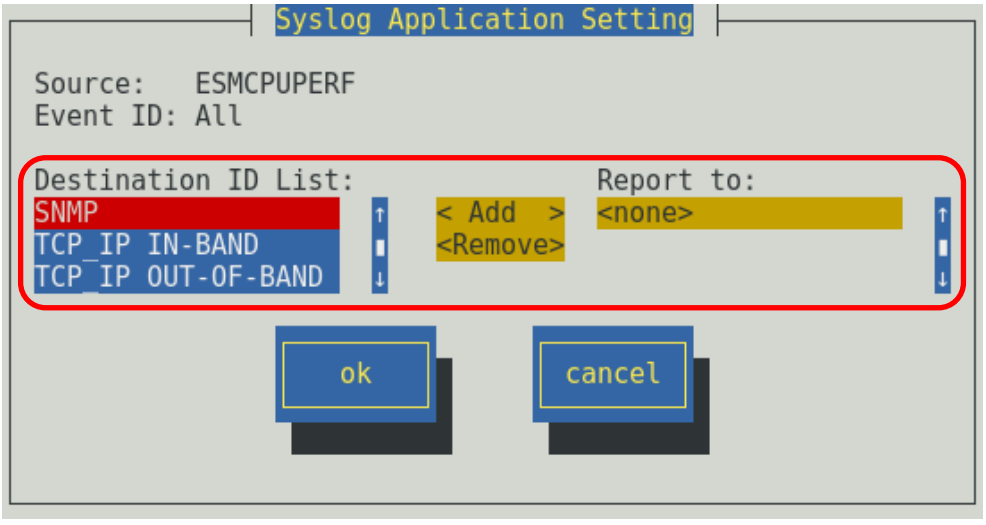
1. Start Control Panel (ESMamsadm) and select "Syslog Events Setting".
   [Syslog Events Setting] screen opens.



2. Select the source name from "Source", using < ↑ > or < ↓ > key.

3. Select "ON" from "Operation on source". Set using <space> key.

4. Press [Set...] and [Syslog Application Setting] screen opens.



5. Select ID to be reported from "Destination ID List".

6. Pressing [Add] moves ID to "Report to".

7. To delete ID from "Report to", select ID from "Report to" and press [Remove] to move ID to "Destination ID List".

8. Press [ok].

4.2 Adding of Syslog Monitoring Event Sources

According to the system environment, you can arbitrarily add new event sources. Add new event sources here when you want to monitor the event that applications other than NEC ESMPRO ServerAgentService register. You register the first new monitoring event, when registering a new event source. The maximum number of the event which can be registered is as follows. Keep in mind that the amount of the disk used and the amount of the memory used are increased by the number of registered events.

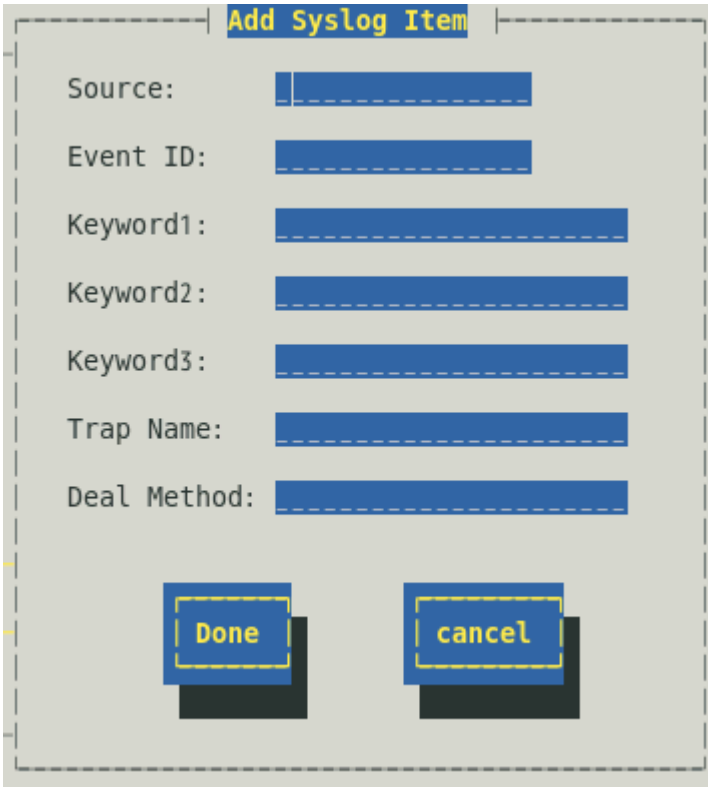
- NEC ESMPRO ServerAgentService Ver.1 = 1,024 events.
- NEC ESMPRO ServerAgentService Ver.2 = 2,048 events.

[Setting Method]

1. Start Control Panel (ESMamsadm) and select "Syslog Events Setting". [Syslog Events Setting] screen opens.

2. Select "ON" from "Operation on source". Set using <space> key.

3. Press [Add...], and then [Add Syslog Item] screen opens.



4. Input Source, Event ID, Keyword, Trap Name and Deal Method.

5. Press [Done].
   It sets Action After Report: None and Report Count: 1 than.

Source (need)

Specify the source name within 40 alphanumeric characters. The source name converts it into a capital letter to use a capital letter even if you set a small letter for a source name, but "Type" to display with AlertViewer comes to remain an alphanumeric character which you set. When they set it by a small letter, in "Source", capital letter, "Type" becomes the small letter.
It is displayed by a "Source" column and "Type" column of AlertViewer of NEC ESMPRO Manager.

Event ID (need)

Specify Event ID by 8 alphanumeric characters (hexadecimal number) according to the following naming rule of event ID. The format of Event ID is "x0000yyy". (For example: 40000101, 800002AB, C0000101)
Select one as follows, and set it in "x":

- 4: Specifies events about information.
  The color of the icon displayed in AlertViewer is green.
- 8: Specifies events about warning.
  The color of the icon displayed in AlertViewer is yellow.
- C: Specifies events about abnormalities.
  The color of the icon displayed in AlertViewer is red.

Set an arbitrary hexadecimal number to "yyy". Range is 0x001 to 0xFFF.

Keyword1 (need), Keyword2, Keyword3

Specify the character string for which NEC ESMPRO ServerAgentService can uniquely specify the message registered in Syslog within 256 alphanumeric characters. When the message including all keywords is detected from Syslog, the full text of the message is reported to NEC ESMPRO Manager. It is displayed in "Details" column of AlertViewer of NEC ESMPRO Manager.
The detection range in one is from a head of a line to 1024Byte.

Trap Name (need)

Specify the outline of the report message within 79 alphanumeric characters.
It is displayed in "Outline" column of AlertViewer of NEC ESMPRO Manager.

Deal Method

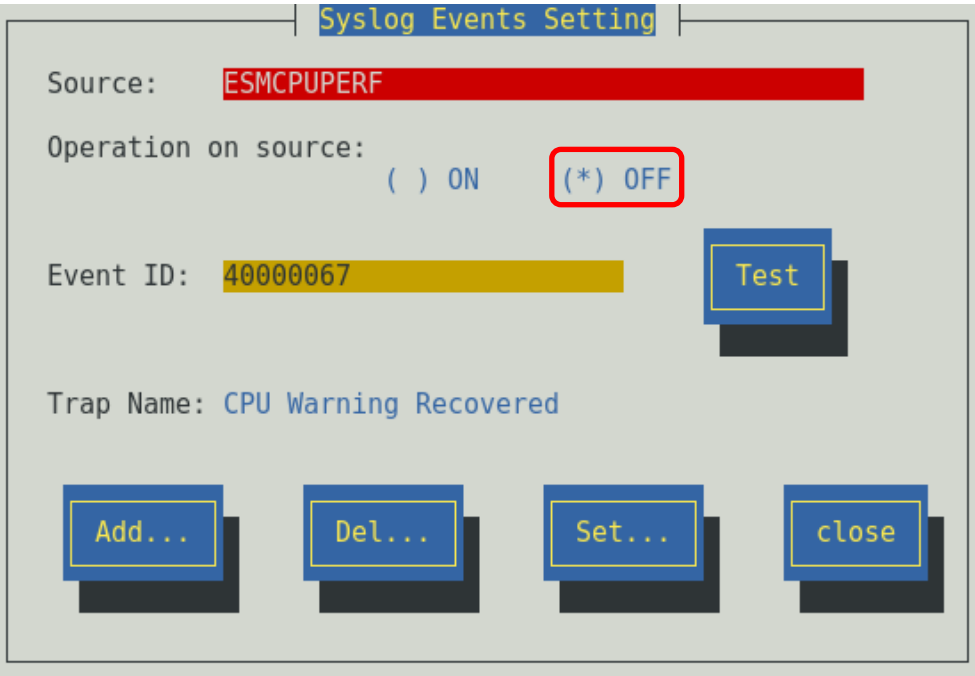
Specify the action method to the reported item within 507 alphanumeric characters.
It is displayed in "Action" column of AlertViewer of NEC ESMPRO Manager.

4.3 Adding of Syslog Monitoring Event

Responding to the system environment, you can add a new Syslog Monitoring Event under Syslog Monitoring Event Source that has already been registered.

[Setting Method]

1. Start Control Panel (ESMamsadm) and select "Syslog Events Setting".
   [Syslog Events Setting] screen opens.



2. Select the source name from "Source", using < ↑ > or < ↓ > key.

3. Select "OFF" from "Operation on source". Set using <space> key.

4. Press [Add...] and [Add Syslog Item] screen opens.

5. Input Event ID, Keyword, Trap Name and Deal Method.
   Refer to "4.2 Adding of Syslog Monitoring Event Sources" for details.

6. Press [Done].

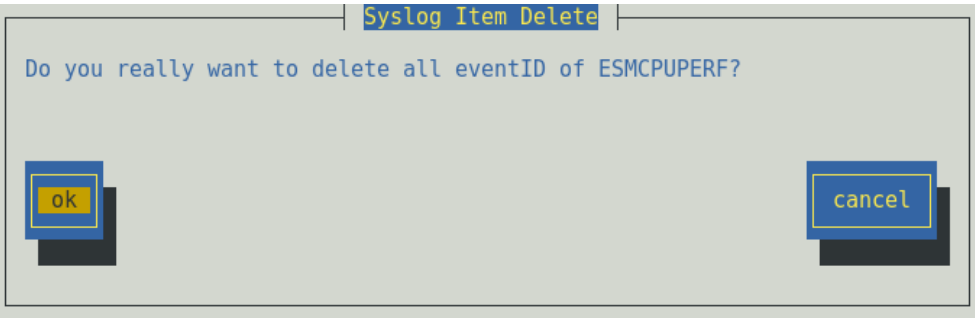
4.4 Deleting of Syslog Monitoring Event Sources

The source of Syslog Monitoring Event can be deleted from Syslog Event watch. When you delete an event source, all monitoring events contained in that source will be deleted. Certain monitoring event resources are registered with NEC ESMPRO ServerAgentService by default. You cannot delete them.

[Setting Method]

1. Start Control Panel (ESMamsadm) and select "Syslog Events Setting".
   [Syslog Events Setting] screen opens.

2. Select the source name that you want to delete from "Source", using < ↑ > or < ↓ > key.
3. Select "ON" from "Operation on source". Set using <space> key.
4. Press [Del...].
5. [Syslog Item Delete] screen opens.



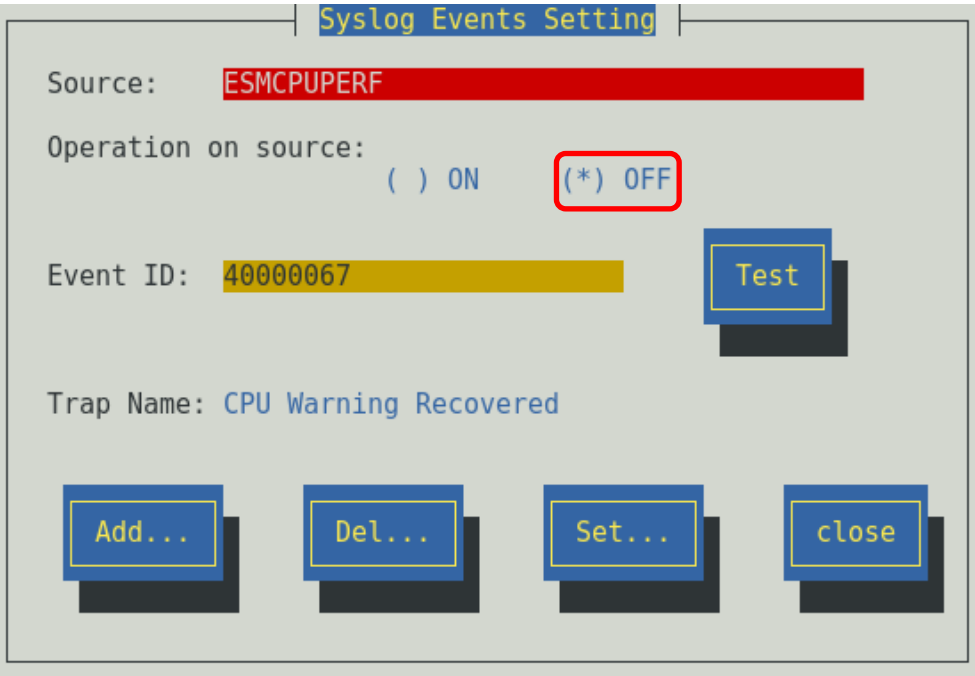
6. Press [ok].

4.5 Deleting of Syslog Monitoring Event

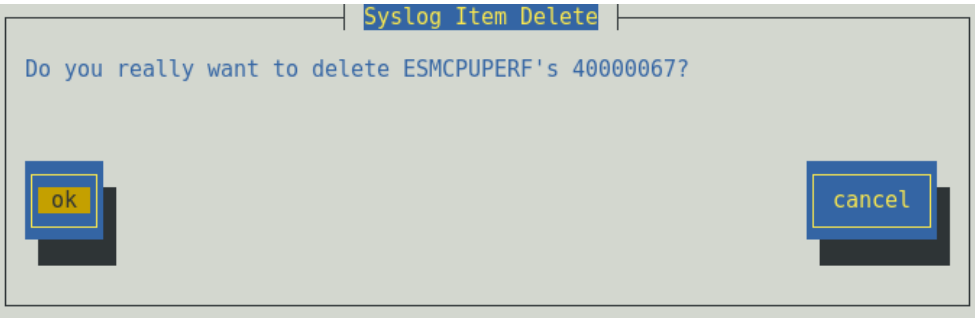
You can delete an event source from Syslog Monitoring Event.
The predetermined watch event that NEC ESMPRO ServerAgentService registers cannot be deleted.

[Setting Method]

1. Start Control Panel (ESMamsadm) and select "Syslog Events Setting".
   [Syslog Events Setting] screen opens.



2. Select the source name from "Source", using < ↑ > or < ↓ > key.
3. Select "OFF" from "Operation on source". Set using <space> key.
4. Select Event ID that you want to delete from "Event ID", using < ↑ > or < ↓ > key.
5. Press [Del...].
6. [Syslog Item Delete] screen opens.



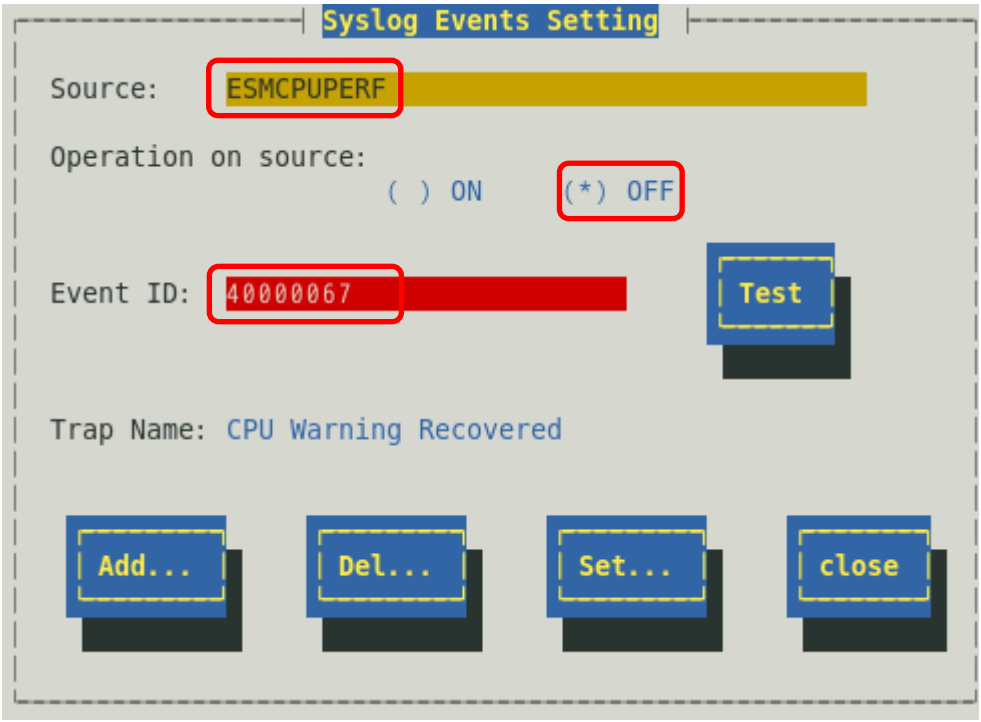
7. Press [ok].

4.6 Test of Syslog Monitoring Event

You can test Syslog Event and do a transmission test of report.
This test procedure is a procedure for snmp reporting, but by replacing it with TCP_IP or CIM-Indication, you can send TCP_IP or CIM-Indication reports.

[Testing Method]

1. Start Control Panel (ESMamsadm) and select "Syslog Events Setting".
   [Syslog Events Setting] screen opens.

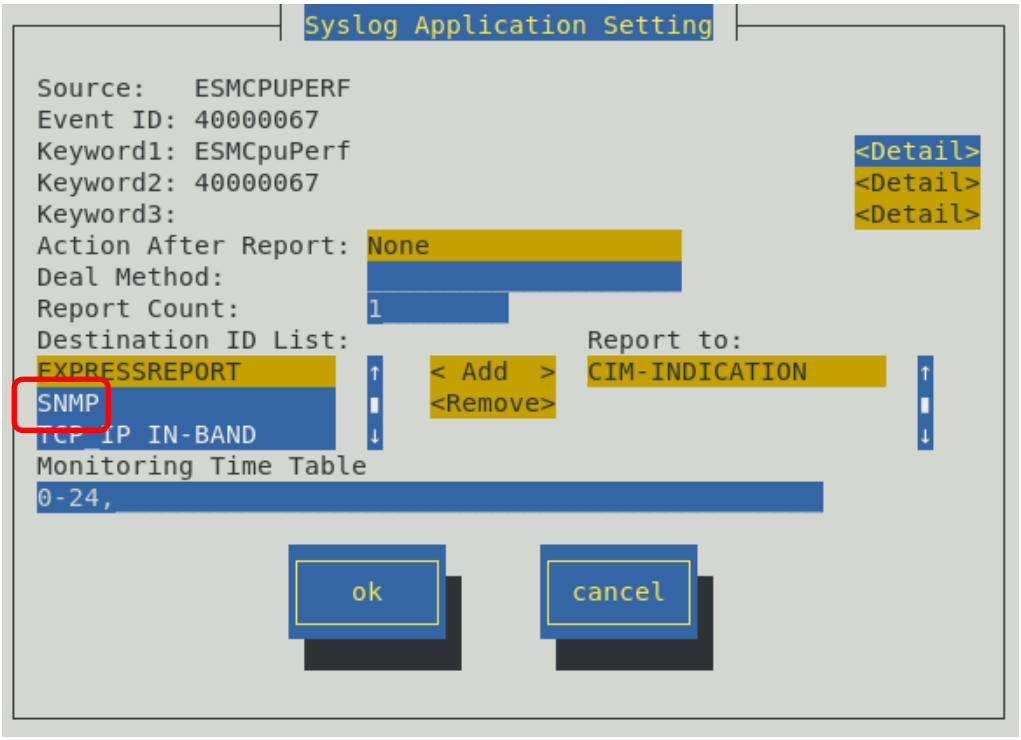


2. Select the source name from "Source", using < ↑ > or < ↓ > key.

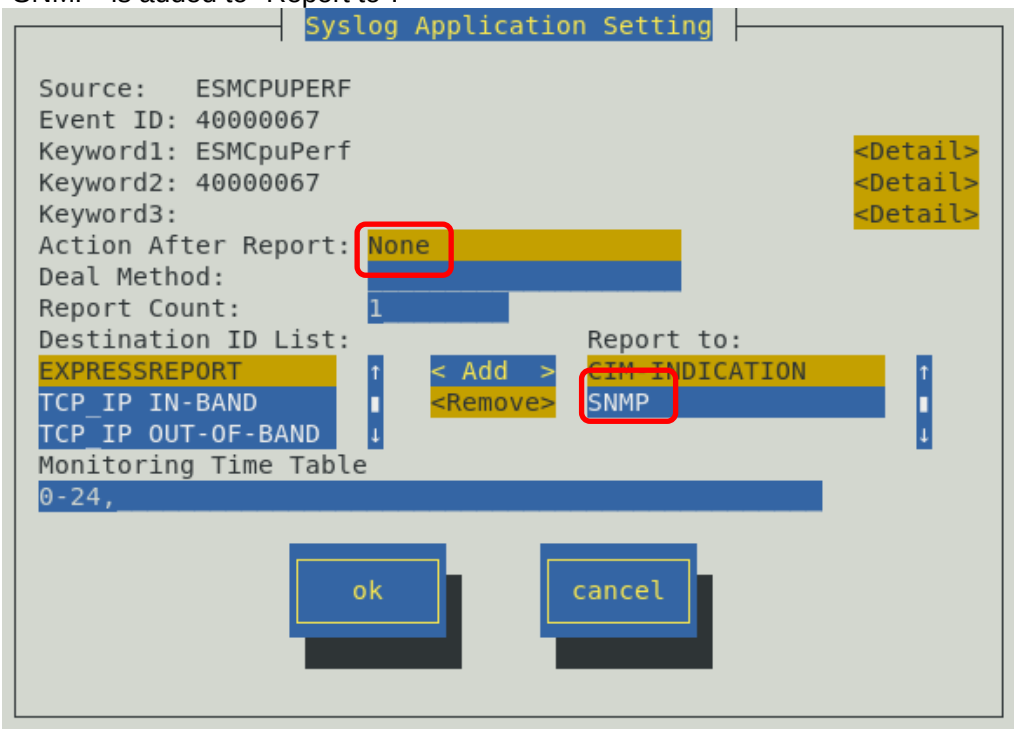
3. Select "OFF" from "Operation on source". Set using <space> key.

4. Select Event ID for which you want to test from "Event ID", using < ↑ > or < ↓ > key.

5. Press [Set...].
   [Syslog Application Setting] screen opens.



6. Check “SNMP” set in “Report to”.
If it is not set, select "SNMP" from "Destination ID List", and press < Add >.
"SNMP" is added to "Report to".



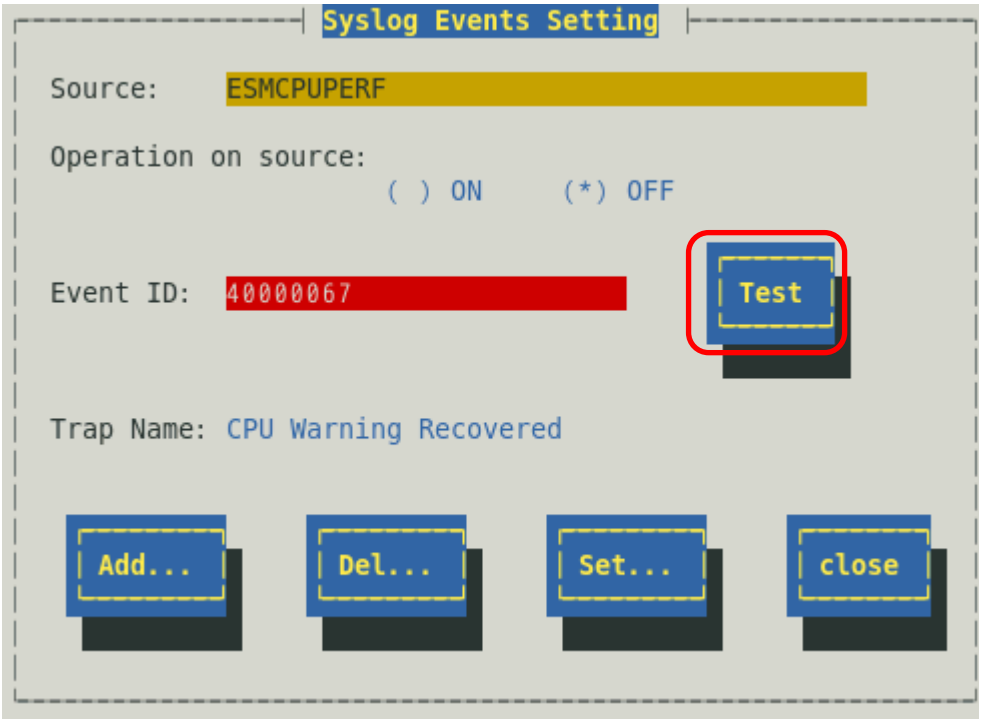
7. "Action After Report" confirms that "None" and "Report to" are "SNMP".

Note **In case of "Action After Report" is "Shutdown" or "Reboot", not only the report but also "Action After Report" works. In case of "Report to" is "<none>", report not send.**

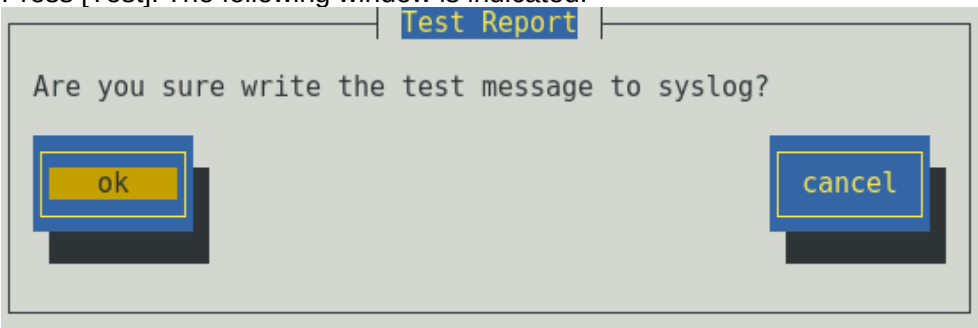
Note **It push “OK” and "close" button to let the setting of Syslog Event re-reading**

when it changed addition and deletion, setting and close the setting screen of "Syslog Events Setting" of "Syslog Events Setting" among a "Report Setting" screen again.

8. Press [ok].
   [Syslog Events Setting] screen opens.

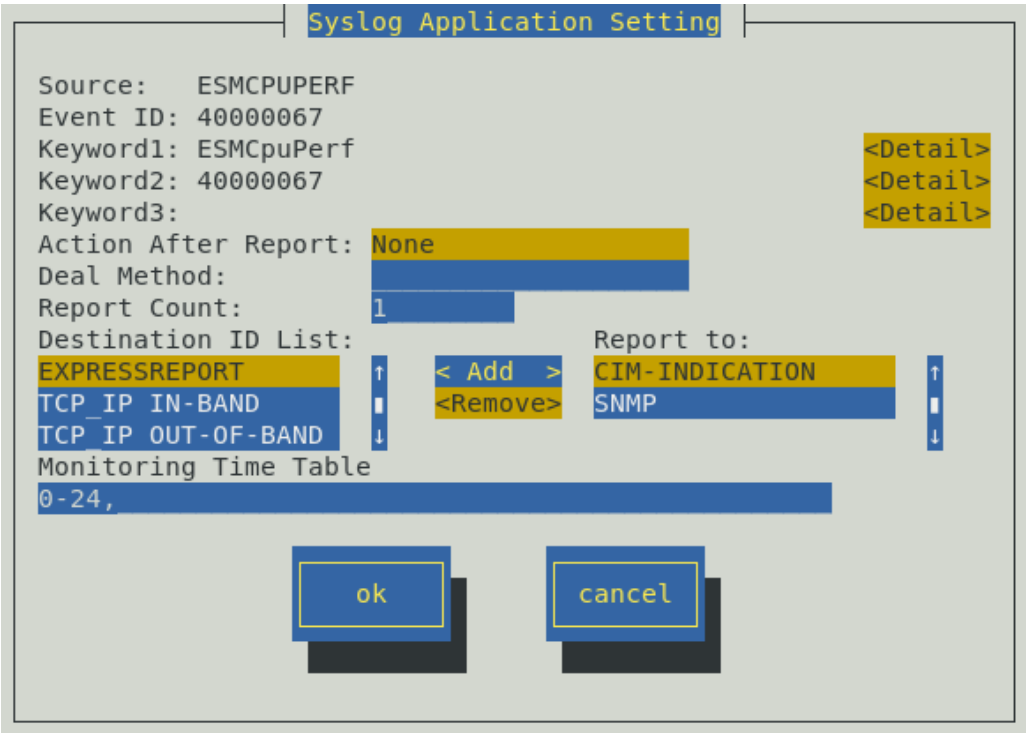


9. Press [Test]. The following window is indicated.



   Press [OK].A test message including [TEST - AlertManager] is recorded in syslog.
   When the watch space of the Syslog watch (default value for 300 seconds) is exceeded, the test message recorded in syslog is detected and SNMP is reported.

10. Press [Set...].
    [Syslog Application Setting] screen opens.



11. If “SNMP” was set as “Report to” in procedure 6, select "SNMP" from "Report to" and press <Remove>.
"SNMP" is deleted to "Report to".

12. Press [ok].
[Syslog Events Setting] screen opens, and press [close].

NEC ESMPRO ServerAgentService Ver. 2

4

OpenIPMI and Additional Features

This chapter explains introduction of OS Stall Monitoring by using OpenIPMI, and additional features of NEC ESMPRO ServerAgentService.

1. OS Stall Monitoring by using OpenIPMI

2. Configuration tool

3. About tools

1. OS Stall Monitoring by using OpenIPMI

This section explains OS Stall Monitoring by using OpenIPMI for BMC support model.

Important **This section is described setting example of the OS Stall Monitoring by OpenIPMI which is open source software (OSS) as reference. NEC assumes no liability or warranties relating to OpenIPMI which is OSS.**

Functions

You can monitor OS Stall condition by regularly updating watchdog timer (timer for software stall monitoring) mounted machine. In case there is no response due to OS stall or, timer is not updated or other reasons, Watchdog timer expires and the system reboot automatically.

Settings

You can set timeout period, update interval, action after timeout. The parameter is as follows.

Timeout Period: timeout

Period Value in which whether OS stall generation is judged. You can set it in number of seconds.
Default Value is 60 seconds. It is possible to be set from 10 seconds.
You can set it in /etc/sysconfig/ipmi.

Action after Timeout: action

You can select how to restore after timeout.
Default Value is reset. You can set it in /etc/sysconfig/ipmi.

none	It is not restored.
reset	Reset system and try to reboot.
power_off	System power is shut down.
power_cycle	First power OFF and power ON just after that.

Update Interval: interval

Interval value which timer update. You can set it in number of seconds.
Default Value is 10 seconds. It is possible to be set within 1-59 seconds.
You can set it in /etc/watchdog.conf

Important **By the system load situation of the machine, Even if OS is not a state of the stall, watchdog timer can not be updated, so there is a possibility that the time-out is generated. After it evaluates it in the state of a high load in the system requirements, set the stall monitoring.**

1.1 Red Hat Enterprise Linux 6 to 8

Supported OS

Red Hat Enterprise Linux 6 (RHEL6)
Red Hat Enterprise Linux 7 (RHEL7)
Red Hat Enterprise Linux 8 (RHEL8)

Settings

Stall Monitoring Setting

Log in to the system as the root user.

1. Install necessary packages in advance.

1.1. Install the following OpenIPMI packages.
RHEL6, RHEL7, RHEL8
- OpenIPMI-*.rpm
- ipmitool-*.rpm

2. Set OpenIPMI.

2.1. Refer to the following and modify /etc/sysconfig/ipmi by using editor.

```
----------------------------------------
IPMI_WATCHDOG=no
----------------------------------------
```

2.2. Set that OpenIPMI is possible to start automatically.
#chkconfig ipmi on

3. Set WDT Update program.

3.1. Referring to the following and create WDT Update program.
The file name is assumed to be "ResetWDT" in this case.

```
----------------------------------------
#!/bin/sh
sleep 60      <= You should change for your system.
/usr/bin/ipmitool raw 0x6 0x24 0x4 0x01 0xa 0x3e 0x08 0x07 > /dev/null 2>&1  *1
while true
do
/usr/bin/ipmitool raw 0x6 0x22 > /dev/null 2>&1
sleep 30      <= Update Interval. Set it with number of seconds. It is 30 seconds in this example.
done
----------------------------------------
```

*1 ipmitool parameter for "Set Watchdog Timer Commnand"
raw : Send RAW IPMI request and print response.
0x6 : NetFunction
0x24 : Command
0x4 : Timer Use (SMS/OS)
[2:0]
000b = reserved
001b = BIOS FRB2
010b = BIOS/POST
011b = OS Load
100b = SMS/OS
101b = OEM

Other = reserved
0x01 : Timer Actions (Hard Reset)
[7] reserved
[6:4] pre-timeout interrupt
000b = none
001b = SMI
010b = NMI/Diagnostic interrupt
011b = Messaging Interrupt
Other = reserved
[3] reserved
[2:0] timeout action
000b = no action
001b = Hard Reset
010b = Power Down
011b = Power Cycle
Other = reserved
0xa : Pre-timeout interval
0x3e : Timer Use Expiration flags clear
0x08 : Initial countdown value, lsbye (100ms/count)
0x07 : Initial countdown value, msbyte
180 seconds X 10 = 1800 (decimal) = 0x0708 (hex)

Important

By the system load situation of the machine, Even if OS is not a state of the stall, watchdog timer can not be updated, so there is a possibility that the time-out is generated. After it evaluates it in the state of a high load in the system requirements, set the stall monitoring.

Tips

For "Set Watchdog Timer Command" detail, refer to IPMI Specification.
http://www.intel.com/design/servers/ipmi/

3.2. Copy WDT Update program to /usr/sbin.

```
# install -p -m 755 ResetWDT /usr/sbin
```

3.3. Refer to the following and create WDT Update program script.
The file name is assumed to be "watchdog" in this case.

```
----------------------------------------
#! /bin/sh
#
# chkconfig: - 27 46
# description: software watchdog
#
# Source function library.

### BEGIN INIT INFO
# Provides: watchdog
# Required-Start:
# Should-Start: ipmi
# Required-stop:
# Default-Start: 2 3 5
# Default-stop:
# Short-Description: watchdog
# Description: software watchdog
### END INIT INFO

prog=/usr/sbin/ResetWDT

case "$1" in
```

```
        start)
            echo -n "Starting watchdog daemon: "
            ${prog} &
            echo
        ;;
    *)
        echo "Usage: watchdog {start}"
        exit 1
        ;;
esac
----------------------------------------
```

* Specify the path of WDT Update program in 'prog='

3.4. Copy WDT Update program script.

```
# install -p -m 755 watchdog /etc/init.d
```

3.5. Set that WDT Update program is possible to start automatically.

```
# chkconfig --add watchdog
# chkconfig watchdog on
```

Note

When you create the program and script on Windows, It is necessary to change code for Linux under use.

4. Restart the system.

```
# reboot
```

Disable Procedure

Log in to the system as the root user.

1. Set that WDT Update program is possible to stop automatically.
2. Restart the system.

Deletion Procedure

Log in to the system as the root user.

1. Set that WDT Update program is possible to stop automatically.
2. Delete WDT Update program and WDT Update program script.
3. Restart the system.

2. Configuration tool

NEC ESMPRO ServerAgentService provides configuration tool (this tool) to the /opt/nec/esmpro_sa/tools subordinates.

Note Because Monitoring Service is not installed in Non-Service Mode, cannot set.

1. NEC ESMPRO ServerAgentService Ver.1.0 or later is necessary to use this tool.
   It installs by all means NEC ESMPRO ServerAgentService Ver.1.0 or later and operates it.
2. Root authority is necessary to use this tool.
   Log in by all means in a user with the root authority.
3. It cannot use plural these tools at the same time.
   In addition, do not start Control Panel (ESMagntconf, ESMamsadm) of NEC ESMPRO ServerAgentService either.
4. Carry out either following to reflect the setting of this tool in NEC ESMPRO ServerAgentService.
   - Execute the following commands and reboot NEC ESMPRO ServerAgentService service.
     ```
     # /opt/nec/esmpro_sa/bin/ESMRestart
     ```
   - Execute the following commands and reboot the system.
     ```
     # reboot
     ```
5. This tool can carry out by a shell script, but attention is necessary for the following points.
   - Describe "#!/bin/bash" in the first line of the script file.
   - Save the script file in Linux newline code (LF).
   By the editor of Windows standards, a newline code is converted into Windows newline code (CR+LF) at the time of file preservation automatically.

esmamset command

By esmamset command, it can set the following.

1. Select SNMP community name.
2. Enable/Disable Manager Report (SNMP).
3. Add/Remove SNMP Trap Destination IP address.
4. Enable/Disable Manager (TCP_IP In-Band).
5. Add/Remove Manager (TCP_IP In-Band) IP address.
6. Port Number of Manager (TCP_IP In-Band).
7. Enable/Disable the shutdown function.
8. Monitoring interval of Syslog Monitoring.
9. Custom Monitoring Object of Syslog Monitoring.
10. File Monitoring Object of Syslog Monitoring.
11. Enable/Disable Manager Report (CIM-Indication)

esmsysrep command

By esmsysrep command, it can set the following.

1. Adding of Syslog Monitoring Event.
2. Setting of Syslog Monitoring Event.
3. Deleting of Syslog Monitoring Event.

2.1 esmamset command

Functions

By esmamset command, it can set the following.

1. Select SNMP community name.
2. Enable/Disable Manager Report (SNMP).
3. Add/Remove SNMP Trap Destination IP address.
4. Enable/Disable Manager (TCP_IP In-Band).
5. Add/Remove Manager (TCP_IP In-Band) IP address.
6. Port Number of Manager (TCP_IP In-Band).
7. Enable/Disable the shutdown function.
8. Monitoring interval of Syslog Monitoring.
9. Custom Monitoring Object of Syslog Monitoring.
10. File Monitoring Object of Syslog Monitoring.
11. Enable/Disable Manager Report (CIM-Indication)

Settings

The usage of esmamset command is as follows.
It is necessary restart of NEC ESMPRO ServerAgentService service to reflect the setting that you executed by esmamset command in working NEC ESMPRO ServerAgentService.

```
# cd /opt/nec/esmpro_sa/tools/
# ./esmamset [OPTION]
     :
# /opt/nec/esmpro_sa/bin/ESMRestart
```

```
Usage:
esmamset [-r <rackname>] [-c <community>]
        [--mi <second>] [--cmo <filename>] [--fmo <filename>]
        [-s ON|OFF] [-d <delip|ALLIP  ...>] [-a <addip ...>]
        [-t ON|OFF] [-i <ip>] [-p <port>]
        [-o ON|OFF]
        [-m ON|OFF]
        [-f <filename>]
        [-P]
        [-h]
```

[OPTION] Designation

[OPTION] appoints the following. It can appoint plural options at the same time.
If a blank is included in a value to set, add " (double quotation mark) to front and back.

Option	Explanation
-r <rackname>	Do not use it in NEC ESMPRO ServerAgentService.
-c <community>	It set SNMP Community. Specify the community name within 33 alphanumeric characters. When it appointed the community name which is not set in snmpd.conf, the setting revises snmpd.conf earlier because it is not changed.
--mi <second>	Specify the monitoring interval of Syslog Monitoring. Range is 10 to 3600 seconds.
--cmo <filename>	Set the monitoring object which does not include "/var/log/messages" character string with the absolute pass which becomes with less than 255 bytes of length of the pass. It becomes only a file output with a format same as a syslog.
--fmo <filename>	Set the monitoring object which does not include "/var/log/messages" character string with the absolute pass which becomes with less than 255 bytes of length of the pass.
-s ON|OFF	Enable/Disable Manager Report (SNMP).

Option	Explanation
	ON : Enable OFF : Disable
-d <delip ...>	It removes SNMP Trap Destination IP address. It leaves the half size space and can remove IP addresses more than two at the same time.
-d <ALLIP>	It removes all SNMP Trap Destination IP address.
-a <addip ...>	It adds SNMP Trap Destination IP address. It leaves the half size space and can add IP addresses more than two at the same time. It can appoint up to 255 IP addresses.
-t ON|OFF	Enable/Disable Manager (TCP_IP In-Band). ON : Enable OFF : Disable
-m ON|OFF	Enable/Disable Manager (CIM-Indication). ON : Enable OFF : Disable ※NEC ESMPRO ServerAgentService Ver.2.1.3-0 or later
-i <ip>	It set Manager (TCP_IP In-Band) IP address.
-p <port>	Port Number of Manager (TCP_IP In-Band). Open ports through your access limit to allow access to localhosts.
-o ON|OFF	Enable/Disable the shutdown setting. ON : Enable OFF : Disable
-f <filename>	It appoint a Placement File and do various setting according to the contents of mention in reading, a file. It mentions it later about Placement File. The return value repays 0 (success) to take it as success when it was able to read a Placement File even if option appointed in a Placement File is unjust.
-P	It is listed setting contents. It is necessary restart of NEC ESMPRO ServerAgentService service to reflect the setting that you executed by esmamset command in working NEC ESMPRO ServerAgentService.
-h	It display help (Usage :).

Placement File

It point to the text file that contents to appoint with [OPTION] were listed in. It has the same things when it appointed [OPTION] by it appoint a placement file with -f option, and reading it. The placement file lists it in a form of keyname "value". Put a blank (space or tab) between keyname and the double quote ("). In addition, be careful so that a newline code becomes Linux newline code (LF). At the time of text file stored in Windows newline code (CR+LF), it cannot read the contents of the placement file definitely. Refer to a list shown below for the explanation of keyname.

keyname(Capital letter)	Explanation
RACKNAME	Do not use it in NEC ESMPRO ServerAgentService.
COMMUNITY	It is the same as -c option.
SYSLOG-MONITOR-INTERVAL	It is the same as -mi option.
CUSTOM-MONITORING-OBJECT	It is the same as -cmo option.
FILE-MONITORING-OBJECT	It is the same as -fmo option.
SNMP	It is the same as -s option.
DELIP	It is the same as -d option.
ADDIP	It is the same as -a option.
IN-BAND	It is the same as -t option.
IN-BANDIP	It is the same as -i option.
IN-BANDPORT	It is the same as -p option.
SHUTDOWN	It is the same as -o option.
CIM-INDICATION	It is the same as -m option.

Return value

The return values of esmamset command are as follows.

Return value	Explanation
0	It succeeded in setting.

1	It failed in setting. Confirm appointed option.
2	It failed in setting. Install NEC ESMPRO ServerAgentService.
4	It failed in setting. A user logging in does not have the practice authority of the command.

Error Message

The error message is as follows.

Message	Explanation	Return value
`Usage:`	Display HELP information.	0
`%s: Setting succeed!`	Setting success, "%s" is name of appointed item.	0
`%s: Setting failed!`	Setting failed, "%s" is name of appointed item.	1
`System Error!`	System error outbreak.	1
`Usage:`	An option does not exist.	1
`Please input a valid rackname after "-r" option (length<=63).`	Cannot acquire a parameter of "-r" (rackname) or rackname exceeds max length (63 byte).	1
`Please input a valid community after "-c" option (length<=33).`	Cannot acquire a parameter of "-c" (community) or community exceeds max length (33 byte).	1
`[%s] was not found in snmpd.conf file! The community [%s] must be set in snmpd.conf file.`	There is not the input community in snmpd.conf. "%s" is the input community.	1
`Please input number range from 10 to 3600 after "--mi" option (Monitor Interval).`	Cannot acquire a parameter of "-mi" (Monitor Interval) or an appointed value is invalid.	1
`Please input a readable file's name after "--cmo" option with full path (length<=255). And cannot be set "/var/log/messages".`	Cannot acquire a parameter of "-cmo" (Custom Monitoring Object). It is necessary the full pass and reading authority of Custom Monitoring Object. Or filename exceeds max length (255 byte). And cannot be set "/var/log/messages".	1
`Please input a readable file's name after "--fmo" option with full path (length<=255). And cannot be set "/var/log/messages".`	Cannot acquire a parameter of "-fmo" (File Monitoring Object). It is necessary the full pass and reading authority of File Monitoring Object. Or filename exceeds max length (255 byte). And cannot be set "/var/log/messages".	1
`The filenames of "File Monitoring Object "(--fmo) and "Custom Monitoring Object "(--cmo) must be different.`	File Monitoring Object (-fmo) and Custom Monitoring Object (-cmo) have to appoint a different file.	1
`Please input ON or OFF after "-s" option (SNMP).`	Cannot acquire a parameter of "-s" (SNMP) or a value except ON/OFF is set.	1
`Please input valid IP address after "-d" option (SNMP).`	An IP address to delete is not appointed. It is failed by the acquisition of the parameter of "-d".	1
`Please input valid IP address after "-a" option (SNMP).`	An IP address to add is not appointed. It is failed by the acquisition of the parameter of "-a".	1
`Please input ON or OFF after "-t" option (TCP_IP In-Band).`	Cannot acquire a parameter of "-t" (TCP_IP In-Band) or a value except ON/OFF is set.	1
`Please input valid IP address`	Cannot acquire a parameter of "-i"	1

Message	Explanation	Return value
`after "-i" option (TCP_IP In-Band).`	(TCP_IP In-Band) or unjust IP address.	
`Please input a port number range from 6001 to 65535 after "-p" option (TCP_IP In-Band).`	Cannot acquire a parameter of "-p" (TCP_IP In-Band) or an appointed port number is different from a settable range (from 6001 to 65535).	1
`Please input ON or OFF after "-o" option (Shutdown Delay).`	Cannot acquire a parameter of "-o" (Shutdown Delay) or a value except ON/OFF is set.	1
`Please input a config file after "-f" option.`	Placement File is not appointed. It is failed by the acquisition of the parameter of "-f".	1
`Access %s failed!`	Cannot access a file, "%s" is name of Placement File.	1
`Skip the line in setting file, lineno=%d.`	Placement File has a problem. "%d" is line number of Placement File.	1
`Please install ESMPRO/ServerServerAgentService.`	NEC ESMPRO ServerAgentService is not installed.	2
`Please change to root user.`	It is not root user to execute this tool.	4

2.2 esmsysrep command

Functions

By esmsysrep command, it can set the following.

1. Adding of Syslog Monitoring Event.
2. Setting of Syslog Monitoring Event.
3. Deleting of Syslog Monitoring Event.

Settings

The usage of esmsysrep command is as follows.

It is necessary restart of NEC ESMPRO ServerAgentService service to reflect the setting that you executed by esmsysrep command in working NEC ESMPRO ServerAgentService.

```
# cd /opt/nec/esmpro_sa/tools/
# ./esmsysrep [ACTION] [SOURCE] [EVENT] [OPTION]
    :
# /opt/nec/esmpro_sa/bin/ESMRestart
```

```
Usage:
  esmsysrep --add -S <sourcename> -E <eventid> -K <keyword1> [OPTION]...
  esmsysrep --mod -S <sourcename> -E <eventid> [-K <keyword1>] [OPTION]...
  esmsysrep --del -S <sourcename> -E <eventid>
  esmsysrep --list
  esmsysrep --help

Action-selection option and specification:
--help    Show this help message
--list    all event id's information
--add     an event id
--mod     Change the configuration of event id
--del     Delete an event id

Common option and specification:
-S <sourcename>     Specify the source name
-E <eventid>       Specify the event id
-K,-1 <keyword1>    Specify the first keyword, and the argument of
                 -K will be used if -1 and -K are both specified.
                 It can't be omitted when --add is specified.

Other options(defaults in [ ] will be used if the options are not specified in
--add):
-2 <keyword2>      Specify the second keyword. [""]
-3 <keyword3>      Specify the third keyword. [""]
-s <ON|OFF>        Set ON/OFF of the SNMP report method. [ON]
-i <ON|OFF>        Set ON/OFF of the TCP/IP IN-BAND report method. [OFF]
-o <ON|OFF>        Set ON/OFF of the TCP/IP OUT-OF-BAND report method. [OFF]
-m <ON|OFF>        Set ON/OFF of the CIM-Indication report method. [OFF]
-t <trapname>      Set the trap name. [""]
-d <dealmethod>    Set the deal method. [""]
-w <watchtime>     Set the watch time. ["0-24"]
-c <reportcount>    Set the report count. [1]
-r <NONE|SHUTDOWN|REBOOT>    Set the action after a report. [NONE]
```

Command use example

```
# ./esmsysrep --add -S TESTSOURCE -E 80000123 -K test1234 -t "Report of TEST"
# /opt/nec/esmpro_sa/bin/ESMRestart
```

In the example above,
- It add event ID of "80000123" to source "TESTSOURCE" newly.
- When character string "test1234" is recorded, after NEC ESMPRO ServerAgentService service or the reboot of the system, detect it in syslog (/var/log/messages) by Syslog Monitoring function; it report event ID:80000123 in SNMP report.
- The trap name to display with AlertViewer becomes "Report of TEST".

[ACTION] Designation

It appoints the following options. It cannot omit it. In addition, it cannot appoint plural options at the same time.

Option	Explanation
`--add`	Adding of Syslog Monitoring Event.
`--mod`	Setting of Syslog Monitoring Event.
`--del`	Deleting of Syslog Monitoring Event. * Do not delete an event of the following source. "ESMCOMMONSERVICE", "ESMCPUPERF", "ESMMEMORYUSAGE", "ESMFSSERVICE", "ESM STORAGE SERVICE"
`--list`	Output Syslog Event List in CSV format (Comma Separated Value). "Source","EventID","KeyWord1","KeyWord2","KeyWord3","Manager","CIM-Indication","ALIVE(ALIVELevel)","TrapName","DealMethod","WatchTime","ReportCount","AfterReport"
`Source`	It displays "Source" in AlertViewer of NEC ESMPRO Manager.
`EventID`	It displays "Event ID" in AlertViewer of NEC ESMPRO Manager.
`KeyWord1`	It displays "KeyWord1" which is targeted for a report of Syslog Monitoring Event.
`KeyWord2`	It displays "KeyWord2" which is targeted for a report of Syslog Monitoring Event.
`KeyWord3`	It displays "KeyWord3" which is targeted for a report of Syslog Monitoring Event.
`Manager`	It displays Enable/Disable Manager (SNMP). ON : Enable OFF : Disable
`ALIVE (ALIVELevel)`	It displays Enable/Disable Manager (Express Report). ON : Enable OFF : Disable (It displays "ALIVELevel".)
`TrapName`	It displays "TrapName" in AlertViewer of NEC ESMPRO Manager.
`DealMethod`	It displays "DealMethod" in AlertViewer of NEC ESMPRO Manager.
`WatchTime`	It displays monitoring time.
`ReportCount`	It displays the outbreak number of times of the applicable event necessary for a report in the monitoring time with a number of 1 to 65535.
`AfterReport`	It displays an action after report. ("NONE", "SHUTDOWN" or "REBOOT")
`--help`	It display help (Usage :).

[SOURCE] Designation

It appoints the following options. It cannot omit it.

Option	Explanation
`-S <sourcename>`	It appoint a source name targeted for [ACTION] by the capital letter of the half size alphanumeric character.

[EVENT] Designation

It appoints the following options. It cannot omit it.

Option	Explanation
`-E <eventid>`	When a Syslog event is added, it appoint event ID targeted for ACTION with the hexadecimal eight columns. Specify Event ID by 8 alphanumeric characters (hexadecimal number) according to the following naming rule of event ID. The format of Event ID is "x0000yyy". (For example: 40000101,

Option	Explanation
	800002AB, C0000101) Select one as follows, and set it in "x": 4: Specifies events about information. The color of the icon displayed in AlertViewer is green. 8: Specifies events about warning. The color of the icon displayed in AlertViewer is yellow. C: Specifies events about abnormalities. The color of the icon displayed in AlertViewer is red. Set an arbitrary hexadecimal number to "yyy". Range is 0x001 to 0xFFF.

[OPTION] Designation

It appoints the following options. It can appoint plural options at the same time.
If a blank is included in a value to set, add " (double quotation mark) to front and back.

Option	Explanation
-K <keyword1> -1 <keyword1>	It set the keyword1. It can use it to 256 bytes. When it appointed -K and -1 at the same time, contents of -K are set. It cannot omit [ACTION] at the time of --add.
-2 <keyword2>	It set the keyword2. It can use it to 256 bytes. [ACTION] at the time of --add, a default is "" (blank).
-3 <keyword3>	It set the keyword3. It can use it to 256 bytes. [ACTION] at the time of --add, a default is "" (blank).
-s ON|OFF	Enable/Disable Manager Report (SNMP). ON : Enable OFF : Disable
-m ON|OFF	Enable/Disable Manager Report (CIM-Indication). ON : Enable OFF : Disable
-i ON|OFF	Enable/Disable Manager (TCP_IP In-Band). ON : Enable OFF : Disable
-o ON|OFF	Enable/Disable Manager (TCP_IP Out-of-Band). ON : Enable OFF : Disable
-t <trapname>	It set the trap name. It can use it to 79 bytes. [ACTION] at the time of --add, a default is "" (blank).
-d <dealmethod>	It set the dealmethod. It can use it to 507 bytes. [ACTION] at the time of --add, a default is "" (blank).
-w <watchtime>	It set watch time. When it appoint a plural number, it set it at comma (,) end. [ACTION] at the time of --add, a default is "0^24".
-c <reportcount>	It set the report count (1 to 65535). [ACTION] at the time of --add, a default is "1".
-r <NONE|SHUTDOWN| REBOOT>	It set the Action After Report. <action> sets any of the following. NONE SHUTDOWN REBOOT [ACTION] at the time of --add, a default is "NONE".

Return value

The return values of esmsysrep command are as follows.

Return value	Explanation
0	It succeeded in setting.
Other than 0	It failed in setting. Refer to error message (following chapter) for the details.

Error message

The error message is as follows.

Message	Explanation	Return value
Only root can execute the tool.	A login user does not have an execute	1

Message	Explanation	Return value
	authority.	
<process name>: error while loading shared libraries: <path of library> cannot open shared object file: No such file or directory	NEC ESMPRO ServerAgentService is not installed.	127
parameter error : [OPTION] is not specified.	When It cannot omit [OPTION], it is not specified.	1
parameter error : argument of [OPTION] is too long.	The character string of the parameter of [OPTION] is too long.	1
parameter error : argument of [OPTION] is too short.	The character string of the parameter of [OPTION] is too short.	1
parameter error : argument of [OPTION] is invalid.	The parameter of [OPTION] is invalid.	1
parameter error : option [OPTION] requires an argument.	The parameter of [OPTION] is not specified.	1
parameter error : invalid option [OPTION].	The option of [OPTION] is invalid.	1
parameter error : [OPTION].	[OPTION] is unjust.	1
Can't make all of the keywords empty.	All the keywords become the blank when they reflect setting of "--mod".	1
Can't access "<sourcename>", which isn't the object source of this tool.	Cannot set appointed sourcename with this tool.	1
ESMntserver service is not started.	ESMntserver service is not started.	1
Other program is accessing the syslog events setting.	Because other programs such as ESMamsadm access to Syslog Event Setting, cannot access it.	1
"<sourcename>/<eventid>" already exists.	Sourcename / Event ID which "--add" appointed has already existed.	1
"<sourcename>/<eventid>" doesn't exist.	Sourcename / Event ID which "--mod" or "--del" appointed does not exist.	1
Access "<sourcename>/<eventid>" failed.	[ACTION] is failed.	1

3. About tools

Log in to the system as the root user to use this tool.

3.1 Obstacle information collection tool (collectsa.sh)

Functions

Collect the information of this server to investigate the problem that occurred in this server or NEC ESMPRO ServerAgentService.

Usage

The usage of obstacle information collection tool is as follows.

1) Log in to the system as the root user.
2) Move to any directory.
3) Execute obstacle information collection tool.
   Input a password of root to gather the information of the CIM provider.
   The password input into gathered information is not included.

```
# /opt/nec/esmpro_sa/tools/collectsa.sh -auth
Enter password for root :
```

   collectsa.tgz is made in the current directory.
4) Contact us. According to the guidance in charge of us, provide collectsa.tgz.

Note

If the root password contains one of the ¥ spaces @ , run it with the following command:

```
# /opt/nec/esmpro_sa/tools/collectsa.sh
```

Tips

If the information collected by Obstacle information collection tool has a large number of directories or files below, or if the file size is large, it may take several hours to gather the information.

- /sys/ under directory
- /var/log/sa directory
  → System Activity Report

Tips

If the directory where Obstacle information collection tool runs is low, the collection process may not work properly and may be unintentional/stored in the directory.
Run Obstacle information collection tool in a directory with free space.

Tips

Collect partition information with obstacle information collection tool. Depending on your configuration, the CPU may be high. If necessary, collect with the "-nas" flag.

```
# /opt/nec/esmpro_sa/tools/collectsa.sh -auth -nas
```

When a problem occurs for movement of the obstacle information collection tool.

The case that obstacle information collection tool does not work definitely (not finished), you collect the information that has been collected, and, contact us.

1) Terminate obstacle information collection tool.
   1-1) Press <Ctrl> and <C> key in a terminal execute collectsa.sh.
   1-2) Check collectsa.sh was finished.

```
# ps aux | grep collectsa.sh |grep -v grep
```

   For example, collectsa.sh is execute in a background when it is displayed as follows.

```
root 11313 0.0 0.4 4196 1124 pts/0 T 14:46 0:00 /bin/bash ./collectsa.sh
```

1-3) When it is executing in a background, you terminate a process.

```
# kill -9 {pid}
[example] # kill -9 11313
```

2) Compress "collectsa" directory which was created in the current directory in tgz.

```
# tar czvf collectsa_dir.tgz collectsa/
```

3) Contact us. According to the guidance in charge of us, provide collectsa_dir.tgz.

3.2 Check for necessary packages tool (check_packages.sh)

Functions

Check the necessary packages of NEC ESMPRO ServerAgentService.
When the directory in which necessary packages was stocked can be prepared such as a mount does an OS installation medium, it's possible to install.

Usage

```
Log in to the system as the root user.

<In case of check for necessary packages>
  # cd {The directory in check_packages.sh}
  # sh ./check_packages.sh

<In case of install for necessary packages>
1. check_pkg/ follower is copied for /tmp follower by the following example.
  # cp -ar {mount point}/../esmpro_sas/check_pkg/ /tmp
2. Move to the directory where check_packages.sh is stored.
  # cd {The directory in check_packages.sh}
3. Run the following command.
  # sh ./check_packages.sh -i {The directory in necessary packages}
```

Important

The sblim-cmpi-base-1.6.4-13.el8.x86_64.rpm included with the Red Hat Enterprise Linux 8.1 installation medium has a problem with cimprovagt being segfaulted.
Therefore, it is not applicable to Check for necessary packages tool.
Install sblim-cmpi-base-1.6.4-14 or later.

Tips

The necessary packages stored BaseOS/Packages and AppStream/Packages in Red Hat Enterprise Linux 9, Red Hat Enterprise Linux 8 installation medium.
Run the following command to the necessary packages is installed.

```
# sh ./check_packages.sh -i {mount point}/BaseOS/Packages 1>/dev/null
# sh ./check_packages.sh -i {mount point}/AppStream/Packages
```

Tips

The necessary packages stored /Packages in Red Hat Enterprise Linux 7 installation medium.
Run the following command to the necessary packages is installed.

```
# sh ./check_packages.sh -i {mount point}/Packages
```

The check_packages.sh is different in a stocked directory depending on the media used for installation.
In case of EXPRESSBUILDER: {revision}/lnx/pp/esmpro_sas/check_pkg/
In case of Starter Pack: software/{revision}/lnx/pp/ esmpro_sas/check_pkg/
In case of the ZIP file downloaded from a web site: check_pkg/

Messages

Information

{package name}	({architecture}) package [{OK or NG}]

All packages are installed successfully.

Please install the package of [NG].

The package of [NG] will be installed.

Usage: {tool file name} [-i directory]
-i directory Install necessary packages those are not installed.
  Directory is rpm packages's directory.

Error

ERROR: Install {package name} failed, please confirm {log file name} for detail information.

ERROR: Install perl packages failed, please confirm {log file name} for detail information.

ERROR: Not found {directory in necessary packages} directory.

ERROR: Not found {package name}

ERROR: The file {list file name} is not exist. So exit.

ERROR: This architecture is not supported. So exit.

ERROR: This kernel is not supported. So exit.

NEC ESMPRO ServerAgentService Ver. 2

5 Notes

This chapter explains notes of NEC ESMPRO ServerAgentService.

1. NEC ESMPRO ServerAgentService

2. Red Hat Enterprise Linux

When it does not list Update and Service Pack of OS, a version in "Requirements", it becomes a target to depend on Update and SP, the version.

I. NEC ESMPRO ServerAgentService

It is instructions about NEC ESMPRO ServerAgentService or the OS not to limit distribution.

Specifications of NEC ESMPRO ServerAgentService

ESMamvmain sometimes becomes the CPU high load.

Requirements: NEC ESMPRO ServerAgentService all versions in Service Mode.

Description: NEC ESMPRO ServerAgentService achieves the function by doing rpc communication during each process in the local host.
When communication in the local host is blocked off, the function cannot be offered.
Therefore ESMamvmain service output an error message much in the inner log, and is sometimes a CPU high load.

Solution: Refer to Chapter 6 (Teach the port number that NEC ESMPRO ServerAgentService uses).

There is a case by which "Unknown" is expressed to a [Network] tree of NEC ESMPRO Manager.

Requirements: NEC ESMPRO ServerAgentService before version 2.0.5-0 [without 2.0.2-1]

Description: The following item of NEC ESMPRO Manager is expressed with "Unknown".

[Constitution Information]
- [Network]
  - network interface name
    - [General]
      - [Type] and [Ethernet Address]

Influence is only expressed to a [Network] tree of NEC ESMPRO Manager.
It does not influence the other functions.

Solution: Upgrade NEC ESMPRO ServerAgentService after version 2.0.6-0 or 2.0.2-1.
If NEC ESMPRO ServerAgentService cannot upgrade,
[Type] and [Ethernet Address] can be confirmed by ifconfig command.
*1 is network interface name , *2 is Type , *3 is Ethernet Address.

```
ens3f3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
*1      inet xxx.xxx.xxx.xxx netmask xxx.xxx.xxx.xxx broadcast xxx.xxx.xxx.xxx
        inet6 fe80::d5fa:4509:a43a:d95 prefixlen 64 scopeid 0x20<link>
        ether 1c:1b:0d:fa:7f:a2 txqueuelen 1000 (Ethernet)
              *3                                  *2
        RX packets 243570 bytes 20733215 (19.7 MiB)
        RX errors 0 dropped 1083 overruns 0 frame 0
        TX packets 8 bytes 624 (624.0 B)
        TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
        device memory 0xc5800000-c58fffff
```

A message of segfault or core file output occurs in syslog at the time of OS or NEC ESMPRO ServerAgentService stop.

Requirements: NEC ESMPRO ServerAgentService all versions, and NEC ESMPRO ServerAgentService is not registration in NEC ESMPRO Manager.

Description: A following message output occurs in syslog at the time of OS or NEC ESMPRO ServerAgentService stop.
"XXXXX" is different depending on the situations.

```
kernel: cimprovagt[XXXXX]: segfault at XXXXX ip XXXXX sp XXXXX error XXXXX
```

```
abrt[XXXXX]:Saved core dump of pid XXXXX to /var/opt/nec/pfc/core/cimprova
gt-XXXXX.core at /var/lib/Pegasus/cache/trace (XXXXX bytes)
```

It sometimes becomes slow at an OS shutdown by a retry and so on.It does not influence the

movement after a next OS or service start.

Solution: Upgrade NEC ESMPRO ServerAgentService after version 2.1.0-0.

If NEC ESMPRO ServerAgentService cannot upgrade, Register NEC ESMPRO ServerAgentService with NEC ESMPRO Manager.

When not using NEC ESMPRO Manager, modify the inner file.

1) Log in to the system as the root user.
2) Modify the /opt/nec/esmpro_sa/data/monitor.ini.

```
[CimAlert]
RetryCount=0
WaitTime=0
```

File system to be monitored by the file system monitoring thread.

Requirements: NEC ESMPRO ServerAgentService all versions in Service Mode.

Description: File system to be free space monitoring of the file system monitoring thread is a file system that matches the following.

```
Capacity   : 100MB or more
Drive Type : Fixed
Type       : ext2, ext3, ext4, xfs
```

When you unmount the file system, there is time to misdetection of the information of the file system.

Requirements: NEC ESMPRO ServerAgentService all versions in Service Mode.

Description: File system monitoring thread, to get the file system information Check the mount point for each monitoring interval. If the mount point is unmounted in monitoring, monitoring thread can not get a healthy file system information.

Solution: Stop temporarily file system monitoring thread before unmount.

When you restart NEC ESMPRO ServerAgentService in the following step 4) and step 7), Monitoring function that NEC ESMPRO ServerAgentService other than a file system monitoring is providing is all restart.

<Setting Method>

1) Log in to the system as the root user.
2) Back up the file named "/opt/nec/esmpro_sa/data/class.xml".
3) Delete the description of up to <Class> to </ Class> of ESM_FileSystemThread from "/opt/nec/esmpro_sa/data/class.xml".
4) Restart NEC ESMPRO ServerAgentService by the following commands.

```
# /opt/nec/esmpro_sa/bin/ESMRestart
```

5) The file system you will unmount/mount.
6) Restore the files that were backed up in step 2).
7) Restart NEC ESMPRO ServerAgentService by the following commands.

```
# /opt/nec/esmpro_sa/bin/ESMRestart
```

* NEC ESMPRO ServerAgentService Ver.2.2.7-0 or earlier, a shared memory sometimes increases. Use Esmpro-strgfs-Provider-2.2.3-1 package or NEC ESMPRO ServerAgentService Ver.2.3.0-0 or later, or please be careful not to leave the condition for a long time after performing step 4).

For free space monitoring threshold of unmount the file system.

Requirements: NEC ESMPRO ServerAgentService all versions in Service Mode.

Description: File system monitoring thread is free space threshold of the drive where you unmount/mount during operation, are subject to set the initial value when it out of the monitored during the unmount.

Solution: When unmount/mount operation of the file system, please temporarily stop the file system monitoring thread.

When you restart NEC ESMPRO ServerAgentService in the following step 4) and step 7), Monitoring function that NEC ESMPRO ServerAgentService other than a file system monitoring is providing is all restart.

<Setting Method>

1) Log in to the system as the root user.
2) Back up the file named "/opt/nec/esmpro_sa/data/class.xml".
3) Delete the description of up to <Class> to </ Class> of ESM_FileSystemThread from "/opt/nec/esmpro_sa/data/class.xml".

4) Restart NEC ESMPRO ServerAgentService by the following commands.

```
# /opt/nec/esmpro_sa/bin/ESMRestart
```

5) The file system you will unmount/mount.
6) Restore the files that were backed up in step 2).
7) Restart NEC ESMPRO ServerAgentService by the following commands.

```
# /opt/nec/esmpro_sa/bin/ESMRestart
```

* NEC ESMPRO ServerAgentService Ver.2.2.7-0 or earlier, a shared memory sometimes increases. Use Esmpro-strgfs-Provider-2.2.3-1 package or NEC ESMPRO ServerAgentService Ver.2.3.0-0 or later, or please be careful not to leave the condition for a long time after performing step 4).

USB floppy disk drive becomes a free space threshold setting target.

Requirements: Linux OS.

Description: When you mount a USB floppy disk, you may drive type becomes "Fixed". Drive to be displayed in the [NEC ESMPRO ServerAgentService setting] - [File System], it will display the file system of the drive type is "Fixed", the state of the free space for the capacity of the floppy disk is less than 100MB is not monitoring, you can not also change the threshold.

ESMamvmain sometimes becomes the high load.

Requirements: NEC ESMPRO ServerAgentService all versions in Service Mode.

Description: ESMamvmain service provides Syslog Monitoring function. When the file which becomes targeted for monitoring such as syslog (/var/log/messages) has many notes, ESMamvmain service becomes the high load, too.

Solution: Restrain the note of the file which becomes targeted for monitoring.

At the time of the system or service start, ESMsmsrv service sometimes stops.

Requirements: NEC ESMPRO ServerAgentService all versions in Service Mode.

Description: NEC ESMPRO ServerAgentService acquires information of the hardware using OpenIPMI driver from Baseboard Management Controller (BMC).
When software accessing BMC any place other than NEC ESMPRO ServerAgentService exists, competition occurs, and ESMsmsrv service sometimes stops. In addition, competition becomes easy to occur to become the movement to access all SDR data when time and the Sensor Data Record (SDR) which ServerAgentService started for the first time are updated.
We confirm that competition occurs by processing and processing of ipmiutil when NEC ESMPRO ServerAgentService accesses all SDR in the device which there are a lot of sensors. ESMsmsrv service stops then, but the handling of ipmiutil is completed. Therefore the competition does not occur when next ESMsmsrv service starts.
When software accessing BMC any place other than NEC ESMPRO ServerAgentService is used, you would like enough evaluations after enforcement to start use.

Solution: Execute the following commands and reboot service of NEC ESMPRO ServerAgentService.

```
# /opt/nec/esmpro_sa/bin/ESMRestart
```

When NMI button is pushed, a message is sometimes recorded in a syslog.

Requirements: BMC support model and NEC ESMPRO ServerAgentService all versions in Service Mode.

Description: When NMI button is pushed, by a handling of ESMsmsrv timing, a message may be recorded in a syslog.

```
ESMsmsrv: ###ERR###RPC###: RPC: Program not registered.
```

Solution: Phenomenon to occur when a system stops with NMI button, movement at the time of the next OS start does not have the influence.

When it is cleared SEL by other products, SEL cannot sometimes report it.

Requirements: NEC ESMPRO ServerAgentService all versions in Service Mode.

Description: NEC ESMPRO ServerAgentService confirms whether there is not a record of new SEL every one minute.
When it is cleared SEL for next one minute before confirming it by other products after NEC ESMPRO ServerAgentService confirmed, SEL which NEC ESMPRO ServerAgentService does not read is

cleared and cannot report it.

Solution: Be careful not to clear SEL from other products.

It is instructions about rpcbind and tog-pegasus and network service.

Requirements: NEC ESMPRO ServerAgentService all versions.

Description: It uses a function of rpcbind and tog-pegasus and network service in NEC ESMPRO ServerAgentService. When a stop and reboot of rpcbind and tog-pegasus and network service were performed during NEC ESMPRO ServerAgentService use, NEC ESMPRO ServerAgentService cannot work normally.

Solution: Execute the following command so that NEC ESMPRO ServerAgentService restarts.

```
# /opt/nec/esmpro_sa/bin/ESMRestart
```

There is time when the message of NEC ESMPRO ServerAgentService is recorded in a syslog at the time of the system or service stop.

Requirements: NEC ESMPRO ServerAgentService all versions in Service Mode.

Description: There is time when the following messages are recorded in a syslog at the time of the system or NEC ESMPRO ServerAgentService stop. The part of "XXXXX" represents alphanumeric characters.

```
{PROCESS NAME}: ###ERR###RPC###: RPC XXXXX
```

PROCESS NAME : ESMntserver, ESMamvmain, ESMsmsrv, ESMcmn, ESMntagent, cimprovagt
XXXXX eg. : Port mapper failure, Success

```
kernel: cimprovagt[XXXXX]: segfault at XXXXX ip XXXXX sp XXXXX error XXXXX
```

```
abrt[XXXXX]:Saved core dump of pid XXXXX to /var/opt/nec/pfc/core/cimprova
gt-XXXXX.core at /var/lib/Pegasus/cache/trace (XXXXX bytes)
```

Solution: There is not the influence for a monitor function of NEC ESMPRO ServerAgentService.

There is time when SNMP report delay at the time of OS start occurs.

Requirements: NEC ESMPRO ServerAgentService all versions in Service Mode.

Description: When the phenomenon of the report object occurred when there is not ready for the report at the time of OS start, it does re-try processing. There is time when it is reported after a re-try (5 minutes) when reported at the time of OS start by the timing when the phenomenon of the report object occurs.

Solution: Confirm the message which is displayed after the above for 5 minutes to AlertViewer after OS started.

When report means of SNMP is not effective, there is the thing that SNMP report is transmitted.

Requirements: NEC ESMPRO ServerAgentService all versions in Service Mode.

Description: When the phenomenon of the report object occurred when there is not ready for the report at the time of OS start, it does re-try processing. When trap report ahead IP was set by a re-timing working to try it to handle a report regardless of report means (ON/OFF) of SNMP, report means of SNMP reports the re-try processing even at the time of OFF.

Solution: When you do not want to let you report it, set it after passing after OS start more than 5 minutes.

There is time when a message output or displayed in syslog for the run time of the obstacle information collection tool (collectsa.sh).

Description: When you run the obstacle information collection tool (collectsa.sh), following message is displayed in syslog.

```
BUG: scheduling while atomic: kipmi0
```

There is processing to gather information using ipmitool in collectsa.sh, and a message is recorded when the known problem of the ipmi driver occurs. Because the exclusive control method of the ipmi driver has a problem, depending on the movement situation and the phenomenon outbreak timing of the system, the fatal problems such as kernel panics may occur during use. Because this malfunction

is revised in a kernel-2.6.32-504.el6 or later, examine kernel update.

- System logs include a message similar to "kernel: BUG: scheduling while atomic: kipmi0"
https://access.redhat.com/solutions/691403

- BUG: scheduling while atomic in acpi_ipmi
https://access.redhat.com/solutions/656603

```
kernel: process 'sysctl' is using deprecated sysctl (syscall)
  net.ipv6.neigh.vswif0.base_reachable_time; Use
  net.ipv6.neigh.vswif0.base_reachable_time_ms instead.
kernel: process 'cp' is using deprecated sysctl (syscall)
  net.ipv6.neigh.vswif0.base_reachable_time; Use
 net.ipv6.neigh.vswif0.base_reachable_time_ms instead.
kernel: process 'cp' is using deprecated sysctl (syscall)
  net.ipv6.neigh.default.retrans_time; Use
  net.ipv6.neigh.default.retrans_time_ms instead.
```

It is the warning indicating the kernel parameter being changed. It is the message indicating having accessed the kernel parameter of the old name. It is not an error of the system, and it does not affect the system.

```
kernel: ACPI Error: No handler for Region [OEM2] (ffff88105999d780) [IPMI]
(20090903/evregion-319)
kernel: ACPI Error: Region IPMI(7) has no handler (20090903/exfldio-295)
kernel: ACPI Error (psparse-0537): Method parse/execution failed
[¥_SB_.PMI0._PMM] (Node ffff88105999f470), AE_NOT_EXIST
```

It is caused by the fact that it is copy all files (include a subdirectory) of /sys/bus subordinates including "/sys/bus/acpi/devices/ACPI000D:00/power1_average". It is the message indicating the power supply management capability through the IPMI domain of the ACPI table not being available. It is not an error of the system, and it does not affect the system.

```
kernel: netlink: 12 bytes leftover after parsing attributes.
```

Data handed to a kernel by snmpd are the messages indicating 12byte being longer than a rule. It is not an error of the system, and it does not affect the system.

```
kernel: CPUFREQ: ondemand sampling_rate_max sysfs file is deprecated - used
by: cp
kernel: CPUFREQ: Per core ondemand sysfs interface is deprecated -
sampling_rate_max
kernel: CPUFREQ: Per core ondemand sysfs interface is deprecated -
sampling_rate_min
kernel: CPUFREQ: Per core ondemand sysfs interface is deprecated - sampling_rate
kernel: CPUFREQ: Per core ondemand sysfs interface is deprecated - up_threshold
kernel: CPUFREQ: Per core ondemand sysfs interface is deprecated -
ignore_nice_load
kernel: CPUFREQ: Per core ondemand sysfs interface is deprecated -
powersave_bias
```

It is the message indicating having accessed the planned file abolished in the future of sys/devices/system/cpu/cpu0/cpufreq/ondemand/ subordinates. It is not an error of the system, and it does not affect the system.

```
kernel: mbox_read: Bad State
kernel: mbox_read: Bad State
```

It is the message indicating having accessed the file of the /sys/class/scsi_host/hostX subordinates whom lpfc driver made. It is not an error of the system, and it does not affect the system.

A report with WebSAM AlertManager needs registry registration to cooperate.

Requirements: NEC ESMPRO ServerAgentService all versions.

Description: When you let the event that you added by the setting of Syslog Monitoring Event cooperate with NEC ESMPRO Manager in WebSAM AlertManager, register the following registry with the machine which installed NEC ESMPRO Manager.

Solution: Set the following keys, a name and data with the registry editor.
It is alert type that "xxxx" sets newly.

Set below as alert type (xxxx).
* The report source name established by Syslog Monitoring
  For a report source name to be changed to alert type by Syslog Monitoring.
* The following alert type
  AM.

Read HKEY_LOCAL_MACHINE¥SOFTWARE¥Wow6432Node¥NEC for HKEY_LOCAL_MACHINE¥SOFTWARE¥NEC in 64bit OS.

```
[HKEY_LOCAL_MACHINE¥SOFTWARE¥NEC¥NVBASE¥AlertViewer¥AlertType¥xxxx]
"WavDefault"="Server.wav"
"AniDefault"="Default.bmp"
"Image"="Default.bmp"
"SmallImage"="Default.bmp"
```

A name, the right side is data the left side of a go board of "=" (an equal sign) (both, character string type).

For the key to alert type (~¥AlertType¥xxxx) that you added, you set the following access privileges.

```
Administrators        Full control
Everyone              Read Only
SYSTEM                Full control
ESMPRO User Group(*)  Full control
```

(*) ESMPRO User Group is a group name to manage the user with ESMPRO which you appointed at the time of NEC ESMPRO Manager Installation. It is the group name that a user appoints at the time of installation, but it is stored to the following registry.

```
[HKEY_LOCAL_MACHINE¥SOFTWARE¥NEC¥NVBASE]
Name: LocalGroup
```

Specifications of packages in Linux OS

syslog may receive segfault or core output messages about cimprovagt when os is stopped.

Requirements: Linux OS.

Description: The following message about cimprovagt may be recorded in syslog when os is stopped.
XXXXX varies depending on the situation.

```
kernel: cimprovagt[XXXXX]: segfault at XXXXX ip XXXXX sp XXXXX error XXXXX
```

```
abrt[XXXXX]:Saved core dump of pid XXXXX to /var/opt/nec/pfc/core/cimprova
gt-XXXXX.core at /var/lib/Pegasus/cache/trace (XXXXX bytes)
```

Solution: This phenomenon occurs only when the OS is stopped, and does not affect the operation of the next OS startup.

Memory consumption of NEC ESMPRO ServerAgentService sometimes increases.

Requirements: Red Hat Enterprise Linux 6. Even other OS's occur.

Description: When dlopen function loads two times of dynamic libraries and fails in loading of dynamic libraries, (32 + file name) byte memory leak occurs. When it succeeds in load two times of dynamic libraries, or when it fails in first loading of dynamic libraries, the memory leak occurs neither.
It confirm that memory increases because it do not leave the memory which the snmp_sess_init

function of the libsnmp.so library included in the net-snmp-libs package secured by our evaluation open. A process and once and ten times, 100 times of result of a measurement (as for the unit, KB) is as follows that it use the snmp_sess_init function when it report it and use.

Process	1 times	Increment (KB)	10 times	Increment (KB)	50 times	Increment (KB)	100 times
ESMntagent	3636	876	4512	12	4524	16	4540
ESMamvmain	3320	212	3532	0	3532	4	3536
ESMcmn	5940	0	5940	0	5940	20	5960

Dozens of percent of increase is seen by ten times from this result, but it is with a little increase after it and confirms that memory consumption is not the phenomenon that continues increasing at the same size. However, please leave the memory open in end run when the memory consumption of the process becomes big.

Correction: Execute the following command so that NEC ESMPRO ServerAgentService re-starts.

```
# /opt/nec/esmpro_sa/bin/ESMRestart
```

The display of NEC ESMPRO Manager

About display of the hard disk drive information.

Requirements: Linux OS.

Description: The hard disk drive information displaying with [Constitution Information]-[Storage] is based on information of /proc/scsi/scsi, and there is time when the information that is different from real hardware is displayed. In Serial-ATA disk drive, Vendor contains character string called 'ATA' according to specifications of T10 SCSI/ATA translation.

```
Host: scsi0 Channel: 00 Id: 00 Lun: 00
Vendor: ATA Model: SSDSA2SH064G1GC Rev: 445C
Type: Direct-Access ANSI SCSI revision: 05
```

About display used capacity of the physical memory, the virtual memory and the page file.

Requirements: NEC ESMPRO ServerAgentService all versions.

Description: Used capacity of the physical memory, the virtual memory and the page file displaying with [Constitution Information] - [System] - [Memory] calculates contents of "/proc/meminfo" as follows.

Used capacity of the physical memory = MemTotal - MemFree

Used capacity of the virtual memory = (MemTotal - MemFree) + (SwapTotal - SwapFree)

Used capacity of the page file = SwapTotal - SwapFree

This value includes Buffers and Cached. Therefore, a high value might be indicated by the situation of the system.

By system environment, there is time when UUID/GUID is different.

Requirements: Linux OS.

Description: The GUID displaying with [Server Status] acquires dmidecode command, UUID/GUID displaying with [Constitution Information]-[Hardware]-[Field Replaceable Unit]-[System Management] acquires from SMBIOS Information.

A version of dmidecode judges a version of SMBIOS in the case of after 2.10. There is the handling of that a version replaces a UUID to byte order in the case of 2.6 SMBIOS. By the influence, there is time when UUID/GUID is different.

Example)

A value of SMBIOS Ver2.6

```
12345678 ABCD EFGH IJKL MNOPQRSTUVWX
```

It work part-time at a 4bytes 2bytes 2bytes unit, and the part of the wave underline is changed.

```
78563412 CDAB GHEF IJKL MNOPQRSTUVWX
```

2. Red Hat Enterprise Linux

It is instructions about Red Hat Enterprise Linux.

Specifications of packages in Linux OS

Certificate file is updated the first time tog-pegasus is started.

Requirements: Red Hat Enterprise Linux

Description: When tog-pegasus starts, run /usr/share/Pegasus/scripts/generate-certs, and if the certificate and trust store locations have not been created, output the following message to syslog to update the certificate file (*).

```
generate-certs: Generating RSA private key, 2048 bit long modulus
generate-certs: unable to write 'random state'
generate-certs: e is 65537 (0x10001)
generate-certs: Generating RSA private key, 2048 bit long modulus
generate-certs: unable to write 'random state'
generate-certs: e is 65537 (0x10001)
generate-certs: Signature ok
generate-certs: subject=/C=UK/ST=Berkshire/L=Reading/O=The Open
Group/OU=The OpenPegasus Project/CN=test-host
generate-certs: Getting CA Private Key
generate-certs: unable to write 'random state'
```

* /etc/pki/ca-trust/source/anchors/localhost-pegasus.pem
  /etc/pki/ca-trust/extracted/openssl/ca-bundle.trust.crt
  /etc/pki/ca-trust/extracted/pem/tls-ca-bundle.pem
  /etc/pki/ca-trust/extracted/pem/email-ca-bundle.pem
  /etc/pki/ca-trust/extracted/pem/objsign-ca-bundle.pem
  /etc/pki/ca-trust/extracted/java/cacerts

The first time tog-pegasus is started, the certificate-related files are always updated because the certificate and trust store locations have not been created.

If the certificate file was updated before the message was output (tog-pegasus starts for the first time), the contents may be overwritten (erased).

NEC ESMPRO ServerAgentService installation script starts tog-pegasus, because registers ESMPRO provider, if tog-pegasus is not started.

Solution: After starting tog-pegasus for the first time, update the certificate file again.

Using openwsmand increases the dentry.

Requirements: Red Hat Enterprise Linux

Description: NEC ESMPRO Manager uses openwsmand with NEC ESMPRO ServerAgentService for WS-Man-managed HTTPS connections. In this process, the directory (directory file information, inode information, etc.) may increase.
Therefore, memory usage appears to be high when viewed with the free command.
dentry is a mechanism that continues to be retained, but when there is less free memory, the dentry is freed as needed, and the freed memory can be used for another purpose.
As for the memory management of Linux OS, it is a normal state.

If you want to reduce the increase in dentry due to the use of openwsmand, take the following actions:

Solution: If nss-softokn-3.14.3-12 or later, perform the following steps:

1) Add "Environment-NSS_SDB_USE_CACHE-YES" to [Service] of /usr/lib/systemd/system/openwsmand.service.

```
[Service]
Type=forking
ExecStart=/usr/sbin/openwsmand -S
ExecStartPre=/etc/openwsman/owsmantestcert.sh
PIDFile=/var/run/wsmand.pid
Environment=NSS_SDB_USE_CACHE=YES
```

2) Reload the service to reflect the fix.
```
# systemctl daemon-reload
```

3) Restart openwsmand.
```
# systemctl restart openwsmand.service
```

4) Restart NEC ESMPRO ServerAgentService.
```
# /opt/nec/esmpro_sa/bin/ESMRestart
```

pcscd logs are repeatedly logged in syslog

Requirements: Red Hat Enterprise Linux

Description: pcscd is a resource manager that coordinates communications with smart card readers and smart cards and cryptographic tokens that are connected to the system.

```
pcscd: 00000000 utils.c:53:GetDaemonPid() Can't open
/var/run/pcscd/pcscd.pid: No such file or directory
```

This message is "pcscd can't find a file to check for duplicate pcscd startup."
When pcscd starts for the first time, this file does not exist, so it is output only once when pcscd starts, but it is a message that does not matter even if it is output.
The "--auto-exit" option specified by default in pcscd stops pcscd after 60 seconds of no transmission or reception after pcscd starts.
NEC ESMPRO Manager uses openwsmand with NEC ESMPRO ServerAgentService for WS-Man-managed HTTPS connections.
In this process, a repeated message may be logged because pcscd starts and stops with the "--auto-exit" option in pcscd.

Solution: To do this, do one of the following:

- Remove the "--auto-exit" option and leave pcscd up and on.

1) Edit pcscd.service.
```
# vi /usr/lib/systemd/system/pcscd.service
```

Delete "--auto-exit" on the ExecStart line.

```
[Service]
ExecStart=/usr/sbin/pcscd --foreground --auto-exit
          ↓
ExecStart=/usr/sbin/pcscd --foreground
```

2) Reload the service to reflect the fix.
```
# systemctl daemon-reload
```

- If the smart card reader and smart card are not used, do not auto-start the socket of pcscd and pcscd.

1) Stop pcscd socket and pcscd.
```
# systemctl stop pcscd.socket
# systemctl stop pcscd.service
```

2) Do not auto-start pcscd socket and pcscd.

```
# systemctl disable pcscd.socket
# systemctl disable pcscd.service
```

3) Delete pcscd socket.

```
# rm /var/run/pcscd/pcscd.comm
```

There is a problem that the contents of the file can be read, when openwsman-server was used.(CVE-2019-3816)

Requirements: Red Hat Enterprise Linux

Description: When openwsman-server was used, there is a problem that the contents of the file can be read from the remote host by whom a connection is possible in TCP port 5986.
Please refer to the following knowledge for details.
https://access.redhat.com/security/cve/cve-2019-3816
https://access.redhat.com/errata/RHSA-2019:0638

Solution: Please refer to a knowledge and handle.
When you can not handle, restrict the server which can be connected to TCP port 5986 to NEC ESMPRO Manager server and localhost using iptables.service or firewalld.
Please refer to Chapter 6 (Teach the port number that NEC ESMPRO ServerAgentService uses.) for the port NEC ESMPRO ServerAgentService uses.

rpcbind does not sometimes start.

Requirements: Red Hat Enterprise Linux 7.3

Description: If ipv6 disabled, rpcbind does not start.
Please refer to the following knowledge for details.
rpcbind fails to start with IPv6 disabled
https://access.redhat.com/solutions/2798411
How do I disable or enable the IPv6 protocol in Red Hat Enterprise Linux?
https://access.redhat.com/solutions/8709

NEC ESMPRO ServerAgentService communicates between multiple processes for functionality, and communication between processes requires rpcbind. If rpcbind is not running, NEC ESMPRO ServerAgentService service or control panel (ESMagntconf, ESMamsadm) cannot be started.

At this time, the following message is output to syslog.

```
systemd: rpcbind.socket failed to listen on sockets: Address family not
supported by protocol
systemd: Failed to listen on RPCbind Server Activation Socket.
systemd: Dependency failed for RPC bind service.
systemd: Dependency failed for ESMPRO/ServerAgentService ESMntserver Daemon..
systemd: Job ESMntserver.service/start failed with result 'dependency'.
systemd: Job rpcbind.service/start failed with result 'dependency'.
systemd: Starting RPCbind Server Activation Socket.
{ProcessName}: ###ERR### Please check
/opt/nec/esmpro_sa/work/ESMntserver.ready or fopen is failed(errno:2)
```

{ProcessName} = ESMamvmain, ESMcmn, ESMntagent, ESMsmsrv

Solution: Please refer to a knowledge and handle.
rpcbind fails to start with IPv6 disabled
https://access.redhat.com/solutions/2798411
How do I disable or enable the IPv6 protocol in Red Hat Enterprise Linux?
https://access.redhat.com/solutions/8709

openwsmand service sometimes stops.

Requirements: Red Hat Enterprise Linux

Description: When accessing the CIM provider via openwsmand from more than one process, it's being confirmed that openwsmand service sometimes stops by our evaluation open. NEC ESMPRO

Manager accesses the CIM provider via openwsmand. This phenomenon is registration with more than one NEC ESMPRO Manager, or occurs by the wsman command and other processes by a server on NEC ESMPRO ServerAgentService side.

```
systemd: openwsmand.service: main process exited, code=killed, status=6/ABRT
systemd: Unit openwsmand.service entered failed state.
systemd: openwsmand.service failed.
```

Correction: When registering with more than one NEC ESMPRO Manager, please register with only one of NEC ESMPRO Manager.
When using the wsman command, the following wbemcli command is used.
Example) Carry out without line break.

```
# wbemcli ei -nl -t http://root:{password of
root}@localhost:5988/root/ESMPRO/AS:ESM_Processor
```

When other processes are accessing the CIM provider via openwsmand, please consider to suspend a relevant process.

Solution: Execute the following command so that openwsmand service starts.

```
# systemctl start openwsmand.service
```

Restart NEC ESMPRO ServerAgentService by the following commands.

```
# /opt/nec/esmpro_sa/bin/ESMRestart
```

Problem occurs to an exchange with OpenIPMI (kipmi0 process) and hardware/firmware, and movement of NEC ESMPRO ServerAgentService is affected.

Requirements: Red Hat Enterprise Linux 6.
Description: NEC ESMPRO ServerAgentService in Service Mode accesses Baseboard Management Controller (BMC) via OpenIPMI (kipmi0) and offers a monitoring system.
Problem sometimes occurs to an exchange with OpenIPMI (kipmi0 process) and hardware/firmware, and it includes the following influence.

- SEL monitor service (ESMsmsrv) can not normally move because can not access any more BMC, and an event is not sometimes output by syslog.
- The kipmi0 kernel helper thread sometimes goes to 100% CPU usage.Once there, it remains at 100% until the next reboot. After a reboot, things return to normal and then, at a random time later, it goes to 100% again.
-

Evasion: There is no handle in NEC ESMPRO ServerAgentService.
Confirm the following reference information.

Solution: kipmi kernel helper thread kipmi0 is generating high CPU load
https://access.redhat.com/solutions/21322

When SELinux is enabled, and when it executes that the obstacle information collection tool (collectsa.sh), the message records in a syslog.

Requirements: Red Hat Enterprise Linux 6.
Description: The obstacle information collection tool (collectsa.sh) collects the files of /proc subordinates.
When SELinux is enabled, access to /proc subordinates is limited, and plural messages are recorded in a syslog.

```
SELinux is preventing cp ...
```

Solution: Files set a limit to access are not collected with this tool, but the movement of the OS does not have influence.

NEC ESMPRO ServerAgentService Ver. 2

6 FAQ

This chapter is FAQ of NEC ESMPRO ServerAgentService.

Fail in registration or connection check from NEC ESMPRO Manager, or NEC ESMPRO ServerAgentService does not start.

Confirm registered setting.

Confirm a server name, IP address registered with NEC ESMPRO Manager. Confirm it whether "the machine name" of a server registered or "IP address" does not overlap with a "machine name" "IP address" of the server which you are going to register. When these are piled up, you cannot register.

Confirm the version of NEC ESMPRO Manager.

Confirm whether the version of NEC ESMPRO Manager is the version which corresponds to the version of NEC ESMPRO ServerAgentService.

NEC ESMPRO ServerAgentService Ver.1.0 is NEC ESMPRO Manager Ver.6.06 or later (Windows)
NEC ESMPRO ServerAgentService Ver.1.1 is NEC ESMPRO Manager Ver.6.08 or later (Windows)
NEC ESMPRO ServerAgentService Ver.1.3 is NEC ESMPRO Manager Ver.6.08 or later (Windows)
NEC ESMPRO ServerAgentService Ver.2 is NEC ESMPRO Manager Ver.6.20 or later (Windows)

When monitoring a management target server from NEC ESMPRO Manager, use software that comes bundled with the server, or use the version newer than that.

When the version of NEC ESMPRO ServerAgentService is not supported, upgrade NEC ESMPRO Manager. The latest version is recommended.
You can download the latest version of NEC ESMPRO Manager from the URL.

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

ESMPRO
- NEC ESMPRO Manager

Confirm whether it's the setting which allow Self Signed Certificate.

Choose the [Environment] in the screen upper right in NEC ESMPRO Manager, and confirm whether the [Self Signed Certificate] in the WS-Man communication of a [Network] tab is "Allow".

Confirm whether Communication Protocol is HTTPS.

When registering in NEC ESMPRO Manager, confirm whether it's the following setting.

- The [Management] in SNMP (NEC ESMPRO Agent) / WS-Man is set as "registration".
- [Management Type] chooses "WS-Man".
- [Communication Protocol] chooses "HTTPS".
- [UserName/Password] input root (User Name) and Password.

Confirm the setting of the access limit.

When it watches NEC ESMPRO ServerAgentService from NEC ESMPRO Manager, when an access limit is effective, make setting to admit access for the following ports.

```
openwsmand      5986/udp
```

Refer to the following item.

Teach the port number that NEC ESMPRO ServerAgentService uses.

Confirm the contents of the /etc/hosts.deny, /etc/hosts.allow files.

Confirm the setting contents of /etc/hosts.deny and /etc/hosts.allow file. When you set the principle prohibition in /etc/hosts.deny, make setting to admit access for tog-pegasus, openwsmand, rpcbind and snmpd in /etc/hosts.allow file.

Refer to the following item.

Teach the port number that NEC ESMPRO ServerAgentService uses.

<The past case>

"ALL : ALL" was written in /etc/hosts.deny, and there was no description which rpcbind permits

127.0.0.1(localhost) in /etc/hosts.allow.

<Handling of the past case>

Write in /etc/hosts.deny "rpcbind : 127.0.0.1" and permit local access of rpcbind.

Or write "ALL : 127.0.0.1" and permit all local access.

After that restart NEC ESMPRO ServerAgentService by the following commands.

```
# /opt/nec/esmpro_sa/bin/ESMRestart
```

Confirm that rpcbind starts.

Check that running of rpcbind.

```
# ps ax | grep rpcbind
```

- When rpcbind starts, it is not necessary to do anything.
- When rpcbind does not start, change start setting of rpcbind as follows, start rpcbind and restart NEC ESMPRO ServerAgentService.

```
# /sbin/chkconfig --level 35 rpcbind on
# /etc/init.d/rpcbind start
# /opt/nec/esmpro_sa/bin/ESMRestart
```

Because rpcbind starts in Red Hat Enterprise Linux 7 depending on ESMntserver, the setting is unnecessary.

Confirm that tog-pegasus starts.

Check that running of tog-pegasus(cimserver).

```
# ps ax | grep cimserver
```

- When tog-pegasus starts, it is not necessary to do anything.
- When tog-pegasus does not start, change start setting of tog-pegasus as follows, start tog-pegasus and restart NEC ESMPRO ServerAgentService.

  In case of Red Hat Enterprise Linux 6

```
# /sbin/chkconfig --level 35 tog-pegasus on
# /etc/init.d/tog-pegasus start
# /opt/nec/esmpro_sa/bin/ESMRestart
```

  In case of Red Hat Enterprise Linux 7 or later

```
# systemctl is-enabled tog-pegasus.service
# systemctl start tog-pegasus.service
# /opt/nec/esmpro_sa/bin/ESMRestart
```

Confirm the setting situation of SELinux.

If setting of SELinux is follows.

Tips

> When you use other than "Disabled", warning or error of the security violation occurs by software and may not work normally. You understand security context of SELinux enough, and please change setting.

1) Log in to the service console as the root user account.
2) Confirm current setting of SELinux.
   - Case of disabled, displayed as follows.

```
# getenforce
Disabled
```

   - Case of enable, displayed as follows.

```
# getenforce
Enforcing
```

   - Case of displayed to warning, displayed as follows.

```
# getenforce
Permissive
```

3) Open /etc/sysconfig/selinux by an editor and look for the following lines.

```
SELINUX=<current setting>
```

4) Edit the line mentioned above and save a file.
   - Case of Disabled, edit as follows.

```
SELINUX=disabled
```

- Case of Enforcing, edit as follows.
  SELINUX=enforcing
- Case of Permissive, edit as follows.
  SELINUX=permissive

5) If enforcing, run the following command.
   # semanage permissive -a pegasus_t
6) Restart the system.
   # systemctl reboot

Confirm whether self-signed certificate of openwsman is made.

Selfsigned certificate is needed for openwsman to move.
Confirm whether the following file (self-signed certificate) is made.

```
/etc/openwsman/servercert.pem
/etc/openwsman/serverkey.pem
```

When the file does not exist, make the self-signed certificate with the following command.

1) In case of Red Hat Enterprise Linux 8 or later,
   "default_bits" of /etc/openwsman/ssleay.cnf is changed to 2048 from 1024.
   before : default_bits = 1024
   after : default_bits = 2048
2) Make the self-signed certificate.
   # /etc/openwsman/owsmangencert.sh

When the file does exist, confirm the expiration date of the self-signed certificate with the following command.

```
# openssl x509 -enddate -noout -in /etc/openwsman/servercert.pem
```

When the selfsigned certificate is expired, update the self-signed certificate with the following command.

[In case of all except for Red Hat Enterprise Linux 6]

```
# /etc/openwsman/owsmangencert.sh --force
# systemctl restart openwsmand.service
```

[In case of Red Hat Enterprise Linux 6]

```
# /etc/openwsman/owsmangencert.sh --force
# service openwsmand restart
```

When executing the owsmangencert.sh, input of information can be asked, so input according to the item. When making the item a blank, '.' is input. "server name" will be required item(required), so input the host name of the this machine (eg.ssl.domain.tld; required!!!).

Confirm whether openwsmand is the setting which starts automatically.

- In case of Red Hat Enterprise Linux 6

  Confirm the setting of runlevel 3 and 5 in openwsmand

  ```
  # /sbin/chkconfig --list openwsmand
  openwsmand 0:off 1:off 2:off 3:off 4:off 5:off 6:off
  ```

  - In case of on, there are no problems with setting.
  - In case of off, change setting of openwsmand, and restart server.

    ```
    # /sbin/chkconfig -level 35 openwsmand on
    ```

- In case of Red Hat Enterprise Linux 7 or later

  Confirm the setting of openwsmand.

  ```
  # systemctl is-enabled openwsmand.service
  enabled
  ```

  - In case of enabled, there are no problems with setting.
  - In case of disabled, changes setting of openwsmand, and restart server.

    ```
    # systemctl enable openwsmand.service
    ln -s '/usr/lib/systemd/system/ openwsmand.service'
    '/etc/systemd/system/multi-user.target.wants/ openwsmand.service'
    ```

```
# systemctl start openwsmand.service
```

Confirm whether password file of Basic Authentication is made.

A password file in Basic Authentication is needed for openwsman to move in Red Hat Enterprise Linux6.
Confirm whether the password file (/etc/openwsman/simple_auth.passwd) is made.
In case of all except for Red Hat Enterprise Linux 6, it's unnecessary.
When being not made, make it by the following command.
The user designates root and a password inputs a password of root.

```
# htpasswd -c /etc/openwsman/simple_auth.passwd root
New password:
Re-type new password:
Adding password for user root
```

Confirm whether a package necessary of NEC ESMPRO ServerAgentService is installed by a right order.

Confirm whether a package necessary of NEC ESMPRO ServerAgentService is installed by a right order.
When tog-pegasus package and sblim-cmpi-base package were installed using yum, it is not installed by a right order.
Please refer to an installation guide(Chapter2 1.2.1 Check for necessary packages) for an installation order of the package.

An ESMntserver message is recorded to a syslog, and the start of OS takes time.

The possibility that the port which rpcbind is not started as for the cause that the following message is displayed or NEC ESMPRO ServerAgentService uses is not thrown open is thought about.

```
###ERR### Please check /opt/nec/esmpro_sa/work/ESMntserver.ready or fopen is
failed (errno:2)
```

Confirm the following.
- The rpcbind started.
- It confirms contents of /etc/sysconfig/iptables.
  There is setting to admit communication to loopback interface to be used in the communication between the programs in the system, or please confirm it. When it does not use access control, it does not have any problem.
  Example) `-A INPUT -i lo -j ACCEPT`
- It confirms contents of /etc/hosts.deny and /etc/hosts.allow.
  For /etc/hosts.allow, it confirms whether there is setting to admit loop-back address.
  Example) `ALL: localhost`

Question about Control Panel (ESMagntconf, ESMamsadm).

Control Panel cannot start.

When the following messages are recorded in a syslog, demand from 127.0.0.1 (localhost) for rpcbind is refused. Because Control Panel uses a function of rpcbind, check contents of /etc/hosts.allow and /etc/hosts.deny.

```
rpcbind: connect from 127.0.0.1 to <Action>: request from unauthorized host
<Process Name>: ###ERR###RPC###: RPC: Port mapper failure - RPC: Authentication
error
```

<The past case>
"ALL : ALL" was written in /etc/hosts.deny, and there was no description which rpcbind permits 127.0.0.1(localhost) in /etc/hosts.allow.
<Handling of the past case>
Write in /etc/hosts.deny "rpcbind : 127.0.0.1" and permit local access of rpcbind.

Or write "ALL : 127.0.0.1" and permit all local access.
After that restart NEC ESMPRO ServerAgentService in ESMRestart command.

```
# /opt/nec/esmpro_sa/bin/ESMRestart
```

Control Panel cannot start.

It is necessary to carry it out for start of the Control Panel in root user. Confirm the practice authority of a user logging in.

Example :
```
[root@localhost bin]#     The Control Panel can start.
[admin@localhost bin]$    The Control Panel cannot start.
```

Control Panel cannot start.

The required package varies according to distribution and a version. You confirm a required package of NEC ESMPRO ServerAgentService, and the package which NEC ESMPRO ServerAgentService needs for movement confirm whether it is installed. The required package of NEC ESMPRO ServerAgentService shows it for a document of NEC ESMPRO ServerAgentService.

Question about the service of NEC ESMPRO ServerAgentService.

NEC ESMPRO ServerAgentService cannot start.

When the following messages are recorded in a syslog, demand from 127.0.0.1 (localhost) for rpcbind is refused. Because Control Panel uses a function of rpcbind, check contents of /etc/hosts.allow and /etc/hosts.deny.

```
rpcbind: connect from 127.0.0.1 to <Action>: request from unauthorized host
<Process Name>: ###ERR###RPC###: RPC: Port mapper failure - RPC: Authentication
error
```

<The past case>
"ALL : ALL" was written in /etc/hosts.deny, and there was no description which rpcbind permits 127.0.0.1(localhost) in /etc/hosts.allow.
<Handling of the past case>
Write in /etc/hosts.deny "rpcbind : 127.0.0.1 " and permit local access of rpcbind.
Or write "ALL : 127.0.0.1" and permit all local access.
After that restart NEC ESMPRO ServerAgentService in ESMRestart command.

```
# /opt/nec/esmpro_sa/bin/ESMRestart
```

The procedure to start and stop service of NEC ESMPRO ServerAgentService.

Log in to the system as the root user, and execute ESMRestart command.
[When you stop it]
Appoint "stop" in argument, and execute ESMRestart command.

```
# /opt/nec/esmpro_sa/bin/ESMRestart stop
```

[When you start it]
Appoint "start" in argument, and execute ESMRestart command.

```
# /opt/nec/esmpro_sa/bin/ESMRestart start
```

[When you restart it]
Execute ESMRestart command.

```
# /opt/nec/esmpro_sa/bin/ESMRestart
```

Teach the information about a function and specifications of NEC ESMPRO ServerAgentService.

Being disabled or when not installing NetworkManager, what kind of influence is there?

In case of all except for Red Hat Enterprise Linux 6, it's using NetworkManager-wait-online.service to make start service of NEC ESMPRO ServerAgentService, after a network has started.
Being invalid or when not installing NetworkManager, NetworkManager-wait-online.service can not use.
Therefore when service of NEC ESMPRO ServerAgentService has started before a network starts at the time of an OS start, there is time when NEC ESMPRO ServerAgentService does not reach a report destination.

Should I use necessary packages of NEC ESMPRO ServerAgentService taken it from distributor?

The function is sometimes affected, so use the package a distributor offers for Necessary package of NEC ESMPRO ServerAgentService.

<The past case>
The version of the openssl package to which a distributor is offered was openssl-1.0.1e, but when openssl-1.1.0c was compiled(make) and installed, openwsmand was stopped.
The phenomenon by which NEC ESMPRO ServerAgentService can not normally work occurred by the influence.

The cause was that the SSLv23_server_method function openwsmand is using was deleted in openssl-1.1.0c.

/var/log/wsmand.log Excerpt

```
Jan  6 15:59:02 [9526] Using SSL
Jan  6 15:59:02 [9526] Initializing http server
Jan  6 15:59:02 [9526] set_ssl: cannot find SSLv23_server_method
```

Teach the exclusion relevant file of the virus check.

The version of NEC ESMPRO ServerAgentService does not matter, and a scan, please be inapplicable in the Syslog monitoring target file and the installation directory (/opt/nec/esmpro_sa) subordinates.

Installation directory (/opt/nec/esmpro_sa) subordinates:

There was the example that a file of NEC ESMPRO ServerAgentService was detected by a past inquiry as zip bomb by a scan of the virus measures software. The cause of the detection is because there is much number of the folder and the files after the thawing of the file in installation directory subordinates and does not have any problem.

In addition, when virus measures are soft and carry out an on access scan, file access becomes slow, and time suffers from the data acquisition and may be detected with server access inability.

Syslog monitoring target file:

Status of the fsnotify_mark process virus measure software is using was sometimes D(The sleep state which interrupts and is impossible).

ex.) ps -axlw

```
F   UID   PID  PPID PRI  NI    VSZ   RSS WCHAN  STAT TTY        TIME COMMAND
1     0   231     2   -   -     0     0 -      -    ?         0:00 [fsnotify_mark]
1     0     -     -  20   0     -     - synchr D    -          0:00 -
```

There was a case which can not access any more a Syslog Monitoring target file by this influence.

The cause is corrected in 3.10.0-327.29.1.el7 in a kernel(fsnotify).

Teach whether NEC ESMPRO ServerAgentService can change the locale to record to the syslog.

NEC ESMPRO ServerAgentService is not support other than default locale. Therefore, you can not change the locale other than default locale.
The default locale is UTF-8 (Red Hat Enterprise Linux 6 or later).

When a clock was put forward or back by timezone(eg.daylight saving time) , please tell me about influence.

There is not the influence in NEC ESMPRO ServerAgentService.
An alert in time of the past cannot be indicated in a Alert Viewer of NEC ESMPRO Manager.

When a clock was put forward or back by manually, please tell me about influence.

- Put forward a clock of OS.
  CIM Indication can not be reported at maximum-duration 1 hour.
  Solution is check connection of NEC ESMPRO Manager.

- Put back a clock of OS.
  An alert in time of the past cannot be indicated in a Alert Viewer of NEC ESMPRO Manager.

- Put forward a clock of iLO.
  There is not the influence.

- Put back a clock of iLO.
  IML event is re-detected every 30 seconds.
  Solution is IML clear.

- Put forward or back a clock of BMC.
  There is not the influence.

Teach the port number that NEC ESMPRO ServerAgentService uses.

NEC ESMPRO Manager (Manager) and NEC ESMPRO ServerAgentService (SAS) use the following ports. If an access limit is placed between Manager and SAS, or if the access limit is enabled on your system, open the following ports. Refer to the following files for the port range.

```
/proc/sys/net/ipv4/ip_local_port_range
```

- Between SAS and Manager

Function	SAS	Direction	Manager	Note
Server Monitoring (WS-Man)	5986/udp	← →	Auto-assignment	openwsmand (HTTPS)
CIM Indication Setting	-	← →	ICMP	ping(ICMP) Connection confirm.
CIM Indication Subscription	5989/tcp	← →	Auto-assignment	tog-pegasus (HTTPS)
CIM Indication Sending events	Auto-assignment	→ ←	6736/tcp	tog-pegasus (HTTPS)
Report to Manager (SNMP)	Auto-assignment	→	162/udp	SNMP Trap
Report to Manager (TCP/IP in Band, TCP/IP Out-of-Band)	Auto-assignment	→ ←	31134/tcp	
Express Report Service (Via Forward Manager)	Auto-assignment	→ ←	31136/tcp	
Express Report Service (HTTPS Via Forward Manager)	Auto-assignment	→ ←	31138/tcp	

* The port number of openwsmand is set in "ssl_port" at [server] section of /etc/openwsman/openwsman.conf.
* The port number(6736) of "CIM Indication Sending events" is a default value.
  It is set in "port number" at [Alert Receive Setting] - [CIM-Indication Setting] of AlertViewer in NEC ESMPRO Manager.
* The upper direction shows the direction at start-up and the lower shows the return.
* For the setting of the port number for Report to Manager (TCP/IP in Band, Out-of-Band) is used as a report method.
* The open examples of the port using iptables or firewalld are as follows.
  Stop the service (iptables or firewalld) which is not used.
  + The open examples of the port using iptables are as follows.
    When you use an opening example of the port using iptables, installation of iptables and

iptables-services (RHEL7/OL7) are necessary beforehand.

```
# iptables -I INPUT -p tcp --dport 5986 -s <IP address of NEC ESMPRO Manager>
-j ACCEPT
# iptables -I INPUT -p icmp -j ACCEPT
# iptables -I OUTPUT -p icmp -j ACCEPT
# iptables -I INPUT -p tcp --dport 5989 -s <IP address of NEC ESMPRO Manager>
-j ACCEPT
# iptables -I OUTPUT -p tcp --dport 6736 -j ACCEPT
# iptables -I OUTPUT -p udp --dport 162 -j ACCEPT
# iptables -I OUTPUT -p tcp --dport 31134 -j ACCEPT
# iptables -I OUTPUT -p tcp --dport 31136 -j ACCEPT
# iptables -I OUTPUT -p tcp --dport 31138 -j ACCEPT
# service iptables save
```

+ The open examples of the port using firewalld are refer to the following website.
  Product Documentation for Red Hat Enterprise Linux
  https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/
    Red Hat Enterprise Linux 9
      +- Configuring firewalls and packet filters
        +- 1. Using and configuring firewalld
    Red Hat Enterprise Linux 8
      +- Securing networks
        +- 9. Using and configuring firewalld
    Red Hat Enterprise Linux 7
      +- Security Guide
        +- 5. Using Firewalls

* The open examples of the port using TCP Wrappers are refer to the following website.
  Product Documentation for Red Hat Enterprise Linux
  https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/
    Red Hat Enterprise Linux 6
      +- Security Guide
        +- 2. Securing Your Network
          +- 2.6. TCP Wrappers and xinetd
    Red Hat Enterprise Linux 5
      +- Deployment Guide
        +- VII. Security And Authentication
          +- 48. Securing Your Network
            +- 48.5. TCP Wrappers and xinetd

- Between SAS and Mail Server

Function	SAS	Direction	Mail Server	Note
Express Report Service (Internet Mail)	Auto-assignment	→ ←	25/tcp	SMTP
		→ ←	110/tcp	POP3

* The upper direction shows the direction at start-up, and the lower shows the return.
* You can change the port to use than Report Setting window.
* The open examples of the port using iptables or firewalld are as follows.
  Stop the service (iptables or firewalld) which is not used.
  + The open examples of the port using iptables are as follows.
    When you use an opening example of the port using iptables, installation of iptables and iptables-services (RHEL7/OL7) are necessary beforehand.

```
# iptables -I OUTPUT -p tcp --dport 25 -j ACCEPT
# iptables -I OUTPUT -p tcp --dport 110 -j ACCEPT
# service iptables save
```

  + The open examples of the port using firewalld are refer to the following website.

Product Documentation for Red Hat Enterprise Linux
https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/
Red Hat Enterprise Linux 9
+- Configuring firewalls and packet filters
+- 1. Using and configuring firewalld
Red Hat Enterprise Linux 8
+- Securing networks
+- 9. Using and configuring firewalld
Red Hat Enterprise Linux 7
+- Security Guide
+- 5. Using Firewalls

* The open examples of the port using TCP Wrappers are refer to the following website.
Product Documentation for Red Hat Enterprise Linux
https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/
Red Hat Enterprise Linux 6
+- Security Guide
+- 2. Securing Your Network
+- 2.6. TCP Wrappers and xinetd
Red Hat Enterprise Linux 5
+- Deployment Guide
+- VII. Security And Authentication
+- 48. Securing Your Network
+- 48.5. TCP Wrappers and xinetd

- Between SAS and HTTPS Server

Function	SAS	Direction	HTTPS Server	Note
Express Report Service (HTTPS)	Auto-assignment	→ ←	443/tcp	HTTPS

* The upper direction shows the direction at start-up, and the lower shows the return.
* You can change the port to use than Report Setting window.
* The open examples of the port using iptables or firewalld are as follows.
Stop the service (iptables or firewalld) which is not used.
+ The open examples of the port using iptables are as follows.
When you use an opening example of the port using iptables, installation of iptables and iptables-services (RHEL7/OL7) are necessary beforehand.

```
# iptables -I OUTPUT -p tcp --dport 443 -j ACCEPT
# service iptables save
```

+ The open examples of the port using firewalld are refer to the following website.
Product Documentation for Red Hat Enterprise Linux
https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/
Red Hat Enterprise Linux 9
+- Configuring firewalls and packet filters
+- 1. Using and configuring firewalld
Red Hat Enterprise Linux 8
+- Securing networks
+- 9. Using and configuring firewalld
Red Hat Enterprise Linux 7
+- Security Guide
+- 5. Using Firewalls

* The open examples of the port using TCP Wrappers are refer to the following website.
Product Documentation for Red Hat Enterprise Linux
https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/
Red Hat Enterprise Linux 6
+- Security Guide
+- 2. Securing Your Network
+- 2.6. TCP Wrappers and xinetd
Red Hat Enterprise Linux 5

+- Deployment Guide
  +- VII. Security And Authentication
    +- 48. Securing Your Network
      +- 48.5. TCP Wrappers and xinetd

NEC ESMPRO ServerAgentService uses the following internal ports. When it does packet filtering setting using iptables, it admits the access to these.

- Interprocess communication in the local host

Function	Port	Note
NEC ESMPRO ServerAgentService	Auto-assignment	
Rpcbind	111/tcp	
	111/udp	
tog-pegasus	5988/tcp	HTTP
	5989/tcp	HTTPS
openwsmand	5986/tcp	HTTPS

* Cannot change the port number of rpcbind and tog-pegasus.
* The port number of openwsmand is set in "ssl_port" at [server] section of /etc/openwsman/openwsman.conf.
* The open examples of the port using iptables are as follows.
  When you use an opening example of the port using iptables, installation of iptables and iptables-services (RHEL7/OL7) are necessary beforehand.

```
# iptables -A INPUT -i lo -j ACCEPT
# service iptables save
```

* The open examples of the port using TCP Wrappers are refer to the following website.
  Product Documentation for Red Hat Enterprise Linux
  https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/
  Red Hat Enterprise Linux 6
    +- Security Guide
      +- 2. Securing Your Network
        +- 2.6. TCP Wrappers and xinetd
  Red Hat Enterprise Linux 5
    +- Deployment Guide
      +- VII. Security And Authentication
        +- 48. Securing Your Network
          +- 48.5. TCP Wrappers and xinetd

Teach the function of the service(process) of NEC ESMPRO ServerAgentService.

Refer to chapter 1 "2. Function Summary".

Is the storage monitoring of RAID constitution possible?

A storage monitoring function of NEC ESMPRO ServerAgentService is support only for simple substance constitution, and the storage monitoring of RAID constitution is not possible. The storage monitoring of RAID constitution supports only a report function using Syslog Monitoring function by introducing RAID management utility.

Link Up/Down of NIC is not reported.

NEC ESMPRO ServerAgentService can not detect Link Up/Down of a NIC because a network is not being monitoring. When a syslog (/var/log/messages) has a recorded message from the system in Link Up/Down of NIC, it can report it by adding Syslog Monitoring Event. But it may not be reported because Link is in condition not to be able to use a network at the age of being downed.

Where is a MIB definition file located?

A definition file of ESMPRO MIB(.1.3.6.1.4.1.119.2.2.4.4) NEC ESMPRO ServerAgentService is expanding is stocked in EXPRESSBUIDER or Starter pack bundled to equipment in spite of OS classification (Windows, Linux, VMware.).

```
EXPRESSBUILDER:{revision}/lnx/pp/esmpro_sas/MIBS
Starter Pack: software/{revision}/lnx/pp/ esmpro_sas/MIBS
```

Teach the Details of the SNMP Trap of NEC ESMPRO ServerAgentService.

Sent SNMP Trap is only an event about a Syslog Monitoring event.

```
Enterprise ID : .1.3.6.1.4.1.119.2.2.4.4.18.3
Specific ID  : 1
Generic ID  : 6
```

If you would like to specify an event uniquely, please judge from VARIABLES included in SNMP Trap.

Teach information about the report of NEC ESMPRO ServerAgentService.

[Component] of an alert is displayed as {unknown server} on AlertViewer.

If you delete the managed component from NEC ESMPRO Manager, CIM-Indication Report Setting of NEC ESMPRO ServerAgentService is deleted automatically.

But CIM-Indication Report Setting is not deleted in the following case.

- When the management PC on which NEC ESMPRO Manager is installed was removed without deleting the managed component from NEC ESMPRO Manager.
- When you delete the managed component from NEC ESMPRO Manager without being able to communicate with NEC ESMPRO ServerAgentService.

If CIM-Indication Report Setting of NEC ESMPRO ServerAgentService is not deleted, the following matters occur.

- If CIM-Indication Report occurs, the unnecessary packets is sent.
- [Component] of an alert is displayed as {unknown server} on AlertViewer.

* Coping method

1) Log in to the system as the root user.
2) Subscription is indicate by the following command.

```
# cimsub –ls
```

If Subscription where "ESMPRO/SM" is included in FILTER exists, delete by the following command.

```
# cimsub -ra -n <NAMESPACE> -F <FILTER> -H <HANDLER>
```

This procedure delete all CIM-Indication Report Setting of NEC ESMPRO ServerAgentService.
When NEC ESMPRO ServerAgentService has been registered with different NEC ESMPRO Manager, execute "Check Connection" on NEC ESMPRO Manager.
CIM-Indication Report Setting of NEC ESMPRO ServerAgentService is created by executing "Check Connection" on NEC ESMPRO Manager.

AgentAddress in the SNMP trap NEC ESMPRO ServerAgentService sends.

NEC ESMPRO ServerAgentService includes the IP address that it acquired by the following processing in the AgentAddress field and transmits a message.

1) Get host name by gethostname() function of system call.
2) Get IP Address of host name that it acquired that is 1) according first by gethostbyname() function of system call.

   gethostbyname() acquisition data of the function relates to a definition of /etc/hosts.
   When the host name acquired by 1) in /etc/hosts does not exist, or an acquired IP address acquires the IP address used for communication using socket communication of UDP in a case of a local host (127.0.0.1), and it's embedded as an IP address of a TRAP sender.

An alert viewer of NEC ESMPRO Manager searches for information on the server registered with oneself (IP address) based on the IP address embedded in a AgentAddress field of a SNMP trap, and indicates the host name with which I agree first.
Therefore when not agreeing with a search, when agreeing with information on "unclear server" and another server, the host name of another server is indicated.

In the case of "server1", host name of above 1) lists the example which what kind of IP address acquires by contents of /etc/hosts.

[Example 1] IP address of the origin of TRAP transmission using socket communication of UDP.
127.0.0.1 server1 localhost.localdomain localhost
10.1.2.1 server1
10.1.2.2 server2

[Example 2] The transmission former IP address of the trap is 10.1.2.1.
10.1.2.1 server1
127.0.0.1 server1 localhost.localdomain localhost
10.1.2.2 server2

[Example 3] The transmission former IP address of the trap is 10.1.2.1.
127.0.0.1 localhost.localdomain localhost
10.1.2.1 server1
10.1.2.2 server2

[Example 4] IP address of the origin of TRAP transmission using socket communication of UDP.
127.0.0.1 localhost.localdomain localhost
10.1.2.2 server2

Teach the message which NEC ESMPRO ServerAgentService records in a syslog.

Refer to "Report Message" of Alert Trap List for the message which NEC ESMPRO ServerAgentService records in a syslog.

<Example>
```
Sep 13 07:46:26 test-host ESMsmsrv: SRC:ESMCommonService, ID:80000065, MSG:The
temperature has been exceeded the upper threshold (Warning).  Sensor Number: 3
Location: system board 1   Temperature: 42 degrees C   Threshold: 42 degrees C
```

The correspondence of the message mentioned above and Alert Trap List is as follows.
SRC:ESMCommonService = Source Name
ID:80000065 = Event ID
MSG:The temperature has... = Report Message

Teach facility and the priority of the message which NEC ESMPRO ServerAgentService records in a syslog

Facility and Priority of the ABC are as follows.
NEC ESMPRO ServerAgentService
Information facility : user priority : info
Warning facility : user priority : warning
Error facility : user priority : err

Show the item with the need to set again when you changed setting.

Change the password of the root user of NEC ESMPRO ServerAgentService machine.

- The item which changes setting of NEC ESMPRO ServerAgentService
  In case of Red Hat Enterprise Linux 7 or later, There is not the item changing setting.
  In case of Red Hat Enterprise Linux 6, Remake a password file of Basic Authentication.
- The item which changes setting of NEC ESMPRO Manager

When it watches a server in WS-Man, change the password of WS-Man in Connection Setting of NEC ESMPRO Manager, and check connection.

Change the password of the Administrator of NEC ESMPRO Manager machine.

- The item which changes setting of NEC ESMPRO ServerAgentService
  There is not the item changing setting.
- The item which changes setting of NEC ESMPRO Manager
  There is not the item changing setting.

Change the IP address of NEC ESMPRO ServerAgentService machine.

- The item which changes setting of NEC ESMPRO ServerAgentService
  Overwrite a self-signed certificate.
  ```
  # /etc/openwsman/owsmangencert.sh --force
  ```
  Restart openwsmand service and NEC ESMPRO ServerAgentService.
  - Restart openwsmand service.
    Red Hat Enterprise Linux 7 or later :
    ```
    # systemctl restart openwsmand.service
    ```
    Red Hat Enterprise Linux 6 :
    ```
    # /etc/init.d/openwsmand  restart
    ```
  - Restart NEC ESMPRO ServerAgentService.
    ```
    # /opt/nec/esmpro_sa/bin/ESMRestart
    ```

- The item which changes setting of NEC ESMPRO Manager
  Change IP address in Connection Setting of NEC ESMPRO Manager, and check connection.

  When you use Remote Wake Up function in SNMP, change MAC Address and IP Broadcast Address in Remote Wake Up Setting of NEC ESMPRO Manager.

Change the IP address of NEC ESMPRO Manager machine.

- The item which changes setting of NEC ESMPRO ServerAgentService
  When you appoint IP address of NEC ESMPRO Manager in Manager (SNMP/TCP_IP), change report setting using Control Panel (ESMamsadm) with refer to the following section of chapter 2 or 3.
  2.1.1 Base Setting of Manager (SNMP)
  3.1.1 Address Setting of Manager (TCP_IP In-Band)
  3.1.2 Address Setting of Manager (TCP_IP Out-of-Band)
  In addition, change the setting of the following file when you limit the access by the IP address.
  ```
  /etc/hosts.allow
  /etc/hosts.deny
  ```
- The item which changes setting of NEC ESMPRO Manager
  Restart services of NEC ESMPRO Manager as follow, or restart NEC ESMPRO Manager machine, and check connection.
  Refer to the following manual included with NEC ESMPRO Manager to stop and start the complete service in the order described here.
  - NEC ESMPRO Manager Ver. 6 Installation Guide (Windows)
    Chapter 4　Appendix
    3. Services
    Order of starting or stopping services

Change the host name of NEC ESMPRO ServerAgentService machine.

- The item which changes setting of NEC ESMPRO ServerAgentService
  Overwrite a self-signed certificate.
  ```
  # /etc/openwsman/owsmangencert.sh --force
  ```
  Restart openwsmand service and NEC ESMPRO ServerAgentService.
  - Restart openwsmand service.
    Red Hat Enterprise Linux 7 or later :
    ```
    # systemctl restart openwsmand.service
    ```
    Red Hat Enterprise Linux 6 :
    ```
    # /etc/init.d/openwsmand  restart
    ```

- Restart NEC ESMPRO ServerAgentService.

```
# /opt/nec/esmpro_sa/bin/ESMRestart
```

- The item which changes setting of NEC ESMPRO Manager

If you change the Component Name, it changes in Connection Setting of NEC ESMPRO Manager.
In addition, this operation is not required. When there is not a problem in old Component Name, the change of Component Name is unnecessary.

Change the host name of NEC ESMPRO Manager machine.

- The item which changes setting of NEC ESMPRO ServerAgentService

When you appoint IP address of NEC ESMPRO Manager in Manager (SNMP/TCP_IP), change report setting using Control Panel (ESMamsadm) with refer to the following section of chapter 2 or 3.

2.1.1 Base Setting of Manager (SNMP)
3.1.1 Address Setting of Manager (TCP_IP In-Band)
3.1.2 Address Setting of Manager (TCP_IP Out-of-Band)

In addition, change the setting of the following file when you limit the access by the IP address.

```
/etc/hosts.allow
/etc/hosts.deny
```

- The item which changes setting of NEC ESMPRO Manager

Delete the line of "SM_NAME=xxxx" in <NEC ESMPRO Manager install folder>¥ESMWEB¥wbserver¥webapps¥esmpro¥WEB-INF¥service¥options.txt
And, restart services of NEC ESMPRO Manager as follow, or restart NEC ESMPRO Manager machine, and check connection.
Refer to the following manual included with NEC ESMPRO Manager to stop and start the complete service in the order described here.

- NEC ESMPRO Manager Ver. 6 Installation Guide (Windows)
  Chapter 4 Appendix
    3. Services
      Order of starting or stopping services

Change the MAC address of NEC ESMPRO ServerAgentService machine (including the exchange of the network board).

- The item which changes setting of NEC ESMPRO ServerAgentService

There is not the item changing setting.

- The item which changes setting of NEC ESMPRO Manager

When it is used Remote Wake Up function of NEC ESMPRO Manager, change MAC Address and IP Broadcast Address in Remote Wake Up Setting of NEC ESMPRO Manager.

Change the MAC address of NEC ESMPRO Manager machine (including the exchange of the network board).

- The item which changes setting of NEC ESMPRO ServerAgentService

There is not the item changing setting.

- The item which changes setting of NEC ESMPRO Manager

There is not the item changing setting.

Change the community name of SNMP.

- The item which changes setting of NEC ESMPRO ServerAgentService

1) Edit SNMP configuration file (/etc/snmp/snmpd.conf) and change the community name.
2) Change the community name in "SNMP Community" of "SNMP Trap" of Control Panel (ESMagntconf).
3) Restart SNMP Service and NEC ESMPRO ServerAgentService, or system restart.

- The item which changes setting of NEC ESMPRO Manager

There is not the item changing setting.

NEC ESMPRO ServerAgentService Ver.2
User's Guide (Linux)

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