

NEC ESMPRO ServerAgentService Ver. 1.3 Installation Guide (Linux)

Chapter 1 Summary

Chapter 2 Installation and Upgrade

Chapter 3 Uninstallation

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Conventions Used in This Document

Notations used in the text

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

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

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Open-source software

Software consented to based on following license is included in this product.

GNU LESSER GENERAL PUBLIC LICENSE (LGPL)

libesmtplib.dll is included in Esmpro-Expsrv package.

Net-SNMP

ESMntagent is included in Esmpro-Cmnsrv package.

libutil.so is included in Esmpro-Cmnsrv package.

MD5

amrpop.dll is included in Esmpro-Expsrv package.

Software consented to based on following license is not included in this product, but use a function.

OpenSSL

amrset.dll included in Esmpro-Cmnsrv package uses libcrypto.so of openssl-devel package.

MIT License

libcimcli.so included in Esmpro-Provider package uses libpegclient.so and libpegcommon.so of tog-pegasus-libs package.

monitor.esr included in Esmpro-Cmnsrv package uses libxml2.so of libxml2 package.

Refer to chapter 4 (3.LICENSE) for the license.

Refer to "Open-source software that NEC ESMPRO ServerAgentService for Linux uses" showing in the next website.

http://www.express.nec.co.jp/linux/dload/esmpro/esm/private/license_en.html

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This document was created based on the information available at the time of its creation. The screen images, messages and procedures are subject to change without notice. Substitute as appropriate when content has been modified.

Summary

This chapter describes summary of NEC ESMPRO ServerAgentService.

1. Introduction

This section describes Introduction.

2. System Requirements

This section describes System Requirements.

3. Function summary

This section describes Function summary.

***1.* Introduction**

The installation of server management utility "NEC ESMPRO ServerAgentService" is described in this document.

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.

Read this book carefully to have you use this product definitely before using it.
You explain the contents with this book for the people whom the function of the Linux OS, an operation method are understood by enough.

2. System Requirements

NEC ESMPRO ServerAgentService requires the following hardware and software:

Hardware

Machine:

NEC Express5800 series

NEC Scalable Modular Server series (The target OS is only Red Hat Enterprise Linux 7)

Used memory:

65MB and more (Service Mode)

35MB and more (Non-Service Mode)

Free space of hard disk:

75MB and more

Software

Operating System:

Red Hat Enterprise Linux 6 (x86_64)

Red Hat Enterprise Linux 7 (x86_64)

Oracle Linux 7 (x86_64)

Management Software

Software which manages this product:

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)

Use the version or later of NEC ESMPRO Manager which is stored in NEC EXPRESSBUILDER for the managed component when you manage the managed component.

Tips

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>

3. 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. It not provides the Monitoring Service.

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"
```

3.1 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. ESM_Alive is supported from NEC ESMPRO ServerAgentService Ver.1.3.0-0 or later.	
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.	
Filesystem Information Provider	ESM_FileSystemThread
This provider provides the filesystem information.	

3.2 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 CIM Indication.		
Syslog Monitoring and Report service	ESMamvmain	None
This process is monitoring syslog. It records in a syslog, and 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		
CPU Load	ESM_Processor	ESMCPUPELF
This thread is monitoring CPU load.		
Physical Memory Used	ESM_PhysicalMemory	ESMMEMORYUSAGE
This thread is monitoring physical memory used.		
Virtual Memory Used	ESM_VirtualMemory	ESMMEMORYUSAGE
This thread is monitoring virtual memory used.		
Page File Used	ESM_PageFile	ESMMEMORYUSAGE
This thread is monitoring page file used.		
Storage	ESM_StorageThread	ESM STORAGE SERVICE
This thread is monitoring storage.		
Filesystem	ESM_FileSystemThread	ESMFSSERVICE
This thread is monitoring filesystem.		
CPU and Memory Degenerate	None	ESMCOMMONSERVICE
This thread is monitoring CPU and memory degenerate in start ESMcmn.		

- Esmpro-Selsrv package

Function	Process	Source of Alert
Note		
SEL Monitoring Service	ESMsmsrv	ESMCOMMONSERVICE
This thread is monitoring System Event Log (SEL). 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).		

Installation and Upgrade

This chapter describes installation of NEC ESMPRO ServerAgentService.

1. Before installation

This section describes how to set before installing NEC ESMPRO ServerAgentService.
It is not necessary to set it when you upgrade NEC ESMPRO ServerAgentService.

2. Installation and Upgrade

This section describes how to install and Upgrade NEC ESMPRO ServerAgentService.

3. After installation

This section describes how to set after installing NEC ESMPRO ServerAgentService.
It is not necessary to set it when you upgrade NEC ESMPRO ServerAgentService.

***I.* Before installation**

Read by all means before beginning installation of NEC ESMPRO ServerAgentService.

Log in to the system as the root user when you set this chapter.

It is not necessary to set it when you upgrade NEC ESMPRO ServerAgentService.

***I.I* Pattern of installation**

There are the following methods to start the use of NEC ESMPRO ServerAgentService.

Install NEC ESMPRO ServerAgentService individually.

After having installed the Linux OS using "the setup with the installer of the OS standard", install NEC ESMPRO ServerAgentService individually. Depending on storage of NEC ESMPRO ServerAgentService, install it according to the following procedures.

- When you install NEC ESMPRO ServerAgentService stored away by EXPRESSBUILDER DVD, install it with reference to this chapter

- When you install NEC ESMPRO ServerAgentService which you downloaded from Web, install it with reference to this chapter.

1.2 Setting before the installation

The setting before the installation is as follows.

1.2.1 Check for necessary packages

The following packages are needed to use NEC ESMPRO ServerAgentService.
Install a package of the architecture same as environment installing NEC ESMPRO ServerAgentService.
The package name is named by the next rule.

```
<package name>-<version>-<release>.<arch>.rpm
```

<Usage>

Execute check for necessary packages tool and the installation of a package is confirmed. 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. Refer to chapter 4 (2.2 Check for necessary packages tool) about an indicated message.

```
Log in to the system as the root user.
check_pkg/ follower is copied for /tmp follower by the following example.
# cp -ar {mount point}/../esmpo_sas/check_pkg/ /tmp
check_packages.sh moves to a stocked directory.
# cd {The directory in check_packages.sh}
<In case of check for necessary packages>
# sh ./check_packages.sh
<In case of install for necessary packages>
# sh ./check_packages.sh -i {The directory in necessary 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/esmpo_sas/check_pkg/

In case of the ZIP file downloaded from a web site : check_pkg/

When you use Express Report Service (HTTPS), install the next package.

	zip	(x86_64)	libcurl	(x86_64)
--	-----	----------	---------	----------

Because there is dependence in a package, install it in higher group order (Grp1 -> Grp2 -> Grp3).

(*1) For interdependence, you appoint package at the same time, and install it.

```
# rpm -ivh perl*.rpm
```

(*2) It is unnecessary in Red Hat Enterprise Linux 7.2 or earlier, and Oracle Linux 7.2 or earlier, and Red Hat Enterprise Linux 6.8 or earlier.

Red Hat Enterprise Linux 6 x86_64				
Group	Package Name			
Grp1	lm_sensors-libs	(x86_64)	perl-Pod-Escapes	(x86_64) (*1)
	perl	(x86_64) (*1)	perl-Pod-Simple	(x86_64) (*1)
	perl-libs	(x86_64) (*1)	perl-version	(x86_64) (*1)
	perl-Module-Pluggable	(x86_64) (*1)		
Grp2	bind-libs	(x86_64)	openslp	(x86_64)
	net-snmp-libs	(x86_64)		

Red Hat Enterprise Linux 6 x86_64				
Group	Package Name			
Grp3	bind-utils	(x86_64)	net-snmp	(x86_64)
	libsepol-devel	(x86_64)	tog-pegasus-libs	(x86_64)
Grp4	apr	(x86_64)	libkadm5	(x86_64) (*2)
	keyutils-libs-devel	(x86_64)	libselinux-devel	(x86_64)
	libcom_err-devel	(x86_64)	tog-pegasus	(x86_64)
	libgssglue	(x86_64)		
Grp5	apr-util	(x86_64)	OpenIPMI-libs	(x86_64)
	krb5-devel	(x86_64)	sblim-cmpi-base	(x86_64)
	libtirpc	(x86_64)	sblim-sfcc	(x86_64)
	libwsman1	(x86_64)	zlib-devel	(x86_64)
Grp6	cim-schema	(noarch)	openwsman-server	(x86_64)
	compat-libstdc++-33	(x86_64)	rpcbind	(x86_64)
	httpd-tools	(x86_64)	sblim-indication_helper	(x86_64)
	OpenIPMI	(x86_64)	sblim-wbemcli	(x86_64)
	openssl-devel	(x86_64)	unzip	(x86_64)
	openwsman-client	(x86_64)	wsmancli	(x86_64)

When you use Express Report Service (HTTPS), install the next package.

	zip	(x86_64)	libcurl	(x86_64)
--	-----	----------	---------	----------

Red Hat Enterprise Linux 7 x86_64, Oracle Linux 7				
Group	PackageName			
Grp1	libsepol-devel	(x86_64)	openslp	(x86_64)
	make	(x86_64)	pcre-devel	(x86_64)
	net-snmp-libs	(x86_64)		
Grp2	apr	(x86_64)	perl-libs	(x86_64) (*1)
	keyutils-libs-devel	(x86_64)	perl-macros	(x86_64) (*1)
	libcom_err-devel	(x86_64)	perl-parent	(noarch) (*1)
	libkadm5	(x86_64) (*2)	perl-PathTools	(x86_64) (*1)
	libselinux-devel	(x86_64)	perl-Pod-Escapes	(noarch) (*1)
	libverto-devel	(x86_64)	perl-podlators	(noarch) (*1)
	lm_sensors-libs	(x86_64)	perl-Pod-Perldoc	(noarch) (*1)
	OpenIPMI-modalias	(x86_64)	perl-Pod-Simple	(noarch) (*1)
	openssl	(x86_64)	perl-Pod-Usage	(noarch) (*1)
	perl	(x86_64) (*1)	perl-Scalar-List-Utils	(x86_64) (*1)
	perl-Carp	(noarch) (*1)	perl-Socket	(x86_64) (*1)
	perl-constant	(noarch) (*1)	perl-Storable	(x86_64) (*1)
	perl-Encode	(x86_64) (*1)	perl-Text-ParseWords	(noarch) (*1)
	perl-Exporter	(noarch) (*1)	perl-threads	(x86_64) (*1)
	perl-File-Path	(noarch) (*1)	perl-threads-shared	(x86_64) (*1)
	perl-File-Temp	(noarch) (*1)	perl-Time-HiRes	(x86_64) (*1)
	perl-Filter	(x86_64) (*1)	perl-Time-Local	(noarch) (*1)
	perl-Getopt-Long	(noarch) (*1)	tog-pegasus-libs	(x86_64)

Red Hat Enterprise Linux 7 x86_64, Oracle Linux 7				
Group	PackageName			
	perl-HTTP-Tiny	(noarch) (*1)		
Grp3	apr-util	(x86_64)	perl-Data-Dumper	(x86_64)
	krb5-devel	(x86_64)	ruby-libs	(x86_64)
	libtirpc	(x86_64)	sblim-indication_helper	(x86_64)
	libwsman1	(x86_64)	sblim-sfcc	(x86_64)
	net-snmp-agent-libs	(x86_64)	tog-pegasus	(x86_64)
	net-tools	(x86_64)	zlib-devel	(x86_64)
	OpenIPMI-libs	(x86_64)		
Grp4	cim-schema	(noarch)	openwsman-server	(x86_64)
	httpd-tools	(x86_64)	rpcbind	(x86_64)
	net-snmp	(x86_64)	sblim-cmpi-base	(x86_64)
	OpenIPMI	(x86_64)	sblim-wbemcli	(x86_64)
	openssl-devel	(x86_64)	unzip	(x86_64)
	openwsman-client	(x86_64)	wsmanci	(x86_64)

When you use Express Report Service (HTTPS), install the next package.

	zip	(x86_64)	libcurl	(x86_64)
--	-----	----------	---------	----------

1.2.2 Setting of SELinux

If setting of SELinux is not "Disabled", change to "Disabled".

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 system as the root user.
2. Run the following command to confirm baing 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
```

In the case of [enabled](#), execute the following command:

3. It open /etc/sysconfig/selinux by an editor and look for the following lines.

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

4. It 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. Run the following command to restart the OS.

- Case of Red Hat Enterprise Linux 6

```
# reboot
```

- Case of Red Hat Enterprise Linux 7 and Oracle Linux 7

```
# systemctl reboot
```

2. Installation and Upgrade

It explains a procedure to install and Upgrade NEC ESMPRO ServerAgentService.

Note The mode change of Service Mode and Non-Service Mode is not possible by the upgrading of NEC ESMPRO ServerAgentService. When you change a mode, please install NEC ESMPRO ServerAgentService again.

Tips The following messages are displayed when execute pp_install on the OS does not support.
This kernel is not supported.

Tips The following error message is displayed when you run an installation script of NEC ESMPRO ServerAgentService by the OS that does not install unzip package. Install unzip package then.
There is no unzip command.

1. Log in to the system as the root user.
2. Depending on storage of NEC ESMPRO ServerAgentService, install it according to the following procedures.

-
- When you install NEC ESMPRO ServerAgentService stored away by EXPRESSBUILDER DVD, refer to the following procedures.

Tips The following procedures explain "/dev/sr0", mounting as "/media/cdrom" in an origin of mount of the Laser Disk drive. When mounting is different, it read it for the following procedures appropriately, and work. In addition, optical disk drive may be mounted automatically by environment. In that case, it do not need the mount.
When you do not know a mount point, you can confirm it from the result of the mount command.
mount
/dev/sda2 on / type ext4 (rw)
... omission
/dev/sr0 on /media/disk type iso9660
(ro,nosuid,nodev,uhelper=udisks,uid=0,gid=0...
The type becomes the DVD which a device (/dev/sr0) of iso9660 was mounted behind, and the mount point is "/media/disk". The type may become udf.
iso9660 is file system of the optical disc media (CD or DVD).
Universal Disk Format (udf) is file system of the optical disc media.

- 1) Insert EXPRESSBUILDER DVD the optical disk drive.
- 2) Run the following command to make the directory of mount point.

```
# mkdir /media/cdrom
```

- 3) Run the following command to mount EXPRESSBUILDER DVD.

```
# mount -r -t iso9660 /dev/sr0 /media/cdrom
```

- 4) Move to the directory where NEC ESMPRO ServerAgentService is stored.

```
# cd /media/cdrom/{revision}/lnx/pp/esmpro_sas/
```

{revision} varies according to EXPRESSBUILDER version.

In the case of EXPRESSBUILDER Version 7.10-011.01, {revision} is 011.

- 5) Run the following command to install NEC ESMPRO ServerAgentService.

```
# sh ./pp_install -l en_US.UTF-8
```

Note

The mode change of Service Mode and Non-Service Mode is not possible by the upgrading of NEC ESMPRO ServerAgentService. When you change a mode, please install NEC ESMPRO ServerAgentService again.

Tips

Refer to chapter 4 (1.1 Setting before the installation) for setting before the installation of NEC ESMPRO ServerAgentService.

Argument of the pp_install	explanation
none (Service Mode)	All packages (Esmpro-Provider, Esmpro-strgfs-Provider, Esmpro-Cmnsrv, Esmpro-Selsrv, Esmpro-Expsrv) are installed. The process to be resident as service is installed.
-p OFF (Non-Service Mode)	Provider packages (Esmpro-Provider, Esmpro-strgfs-Provider) are installed. The process to be resident as service is not installed.

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"
```

- 6) Run the following command to eject EXPRESSBUILDER DVD from optical disk drive.

```
# cd / ; eject /media/cdrom
```

* When you cannot use eject command, it unmount, and, take EXPRESSBUILDER DVD out of optical disk drive by manual operation.

- When you install NEC ESMPRO ServerAgentService which you downloaded from Web, refer to the following procedures.

- 1) Uncompress the ZIP file (lnx_esmsas-{Version}.x86_64.zip) which you downloaded in a directory of your choice.

Tips

Unzip while keeping directory composition.

```
pp install
x86_64/Esmpro-Cmnsrv-{version}.x86_64.rpm
x86_64/Esmpro-Expsrv-{version}.x86_64.rpm
x86_64/Esmpro-Provider-{version}.x86_64.rpm
x86_64/Esmpro-Selsrv-{version}.x86_64.rpm
x86_64/Esmpro-strgfs-Provider-{version}.x86_64.rpm
```

The following messages are displayed when directory composition does not right.

```
This kernel is not supported.
```

- 2) Move to the directory where installation script of NEC ESMPRO ServerAgentService is stored.

```
# cd {directory of your choice}
```

- 3) Run the following command to install NEC ESMPRO ServerAgentService.

```
# sh ./pp_install -l en_US.UTF-8
```

Note

The mode change of Service Mode and Non-Service Mode is not possible by the upgrading of NEC ESMPRO ServerAgentService. When you change a mode, please install NEC ESMPRO ServerAgentService again.

Tips

Refer to chapter 4 (1.1 Setting before the installation) for setting before the installation of NEC ESMPRO ServerAgentService.

Argument of the pp_install	explanation
none (Service Mode)	All packages (Esmpro-Provider, Esmpro-strgfs-Provider, Esmpro-Cmnsrv, Esmpro-Selsrv, Esmpro-Expsrv) are installed. The process to be resident as service is installed.
-p OFF (Non-Service Mode)	Provider packages (Esmpro-Provider, Esmpro-strgfs-Provider) are installed. The process to be resident as service is not installed.

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"
```

3. Run the following command to restart the OS.

- Case of Red Hat Enterprise Linux 6

```
# reboot
```

- Case of Red Hat Enterprise Linux 7 and Oracle Linux 7

```
# systemctl reboot
```

With the above installation of NEC ESMPRO ServerAgentService is completion.

3. After installation

After having finished installation of NEC ESMPRO ServerAgentService, read by all means.

Log in to the system as the root user when you set this chapter.

It is not necessary to set it when you upgrade NEC ESMPRO ServerAgentService, but confirm the connection with NEC ESMPRO Manager.

Note

Confirm the connection with NEC ESMPRO Manager is as follows.

1. Login to NEC ESMPRO Manager.
2. Click the component name which this server, and click the "Setting" tab.
3. Click <Check Connection> button, and check connection.

3.1 Setting after the installation

The setting after the installation is as follows.

3.1.1 Workaround of openwsmnd

The phenomenon that memory consumption of openwsmnd increased is confirmed by our test.

NEC ESMPRO ServerAgentService provides esmsas_openwsmnd_weekly script rebooting openwsmnd as workaround once a week and restrain a memory consumption amount used for openwsmnd.

1. Log in to the system as the root user.
2. Depending on storage of NEC ESMPRO ServerAgentService, install it according to the following procedures.

- When you install esmsas_openwsmnd_weekly script stored away by EXPRESSBUILDER DVD, refer to the following procedures.

Tips

The following procedures explain "/dev/sr0", mounting as "/media/cdrom" in an origin of mount of the Laser Disk drive. When mounting is different, it read it for the following procedures appropriately, and work. In addition, optical disk drive may be mounted automatically by environment. In that case, it do not need the mount.

When you do not know a mount point, you can confirm it from the result of the mount command.

```
# mount
/dev/sda2 on / type ext4 (rw)
... omission ....
/dev/sr0 on /media/disk type iso9660
(ro,nosuid,nodev,uhelper=udisks,uid=0,gid=0...
```

The type becomes the DVD which a device (/dev/sr0) of iso9660 was mounted behind, and the mount point is "/media/disk". The type may become udf.

iso9660 is file system of the optical disc media (CD or DVD).
Universal Disk Format (udf) is file system of the optical disc media.

- 1) Insert EXPRESSBUILDER DVD the optical disk drive.
- 2) Run the following command to make the directory of mount point.

```
# mkdir /media/cdrom
```

- 3) Run the following command to mount EXPRESSBUILDER DVD.

```
# mount -r -t iso9660 /dev/sr0 /media/cdrom
```

- 4) Copy esmsas_openwsman_weekly.tgz in a directory of your choice from EXPRESSBUILDER DVD. In the following procedures, make /tmp/esmsas directory and copy it.

```
# mkdir /tmp/esmsas  
# cd /media/cdrom/{revision}/lnx/pp/esmpro_sas/scripts/  
# cp esmsas_openwsman_weekly.tgz /tmp/esmsas
```

- 5) After having moved to any directory, uncompress esmsas_openwsman_weekly.tgz and install esmsas_openwsman_weekly script.

```
# cd /tmp/esmsas  
# tar xzvf esmsas_openwsman_weekly.tgz  
# sh ./esmsas_openwsman_weekly.sh -i
```

- 6) After having installed esmsas_openwsman_weekly script, move to a directory in one rank higher and delete the files which uncompress esmsas_openwsman_weekly.tgz.

```
# cd /  
# rm -rf /tmp/esmsas
```

- 7) Run the following command to eject EXPRESSBUILDER DVD from optical disk drive.

```
# cd / ; eject /media/cdrom
```

* When you cannot use eject command, it unmount, and, take EXPRESSBUILDER DVD out of optical disk drive by manual operation.

-
- When you install esmsas_openwsman_weekly script include in NEC ESMPRO ServerAgentService which you downloaded from Web, refer to the following procedures.

- 1) Uncompress the file which you downloaded in a directory of your choice. In the following procedures, make /tmp/esmsas directory and copy it.

```
# mkdir /tmp/esmsas
```

- 2) Move to the directory, uncompress `esmsas_openwsman_weekly.tgz` and install `esmsas_openwsman_weekly` script.

```
# cd /tmp/esmsas/scripts/  
# tar xzvf esmsas_openwsman_weekly.tgz  
# sh ./esmsas_openwsman_weekly.sh -i
```

- 3) Run the following command to delete directory which uncompress `esmsas_openwsman_weekly.tgz`.

```
# cd /  
# rm -rf /tmp/esmsas
```

3. With the above installation of `esmsas_openwsman_weekly` script is completion.

Tips

The methods to uninstall only `esmsas_openwsman_weekly` script are as follows.

```
# cd /opt/nec/esmpro_sa/tools/  
# sh ./esmsas_openwsman_weekly.sh -e
```

3.1.2 Creating password file of Basic Authentication

Case of Red Hat Enterprise Linux 6, create password file of Basic Authentication. The user who designates it by the command designates root, and a password inputs a password of root.

Case of Red Hat Enterprise Linux 7 and Oracle Linux 7, this procedure is unnecessary.

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

Note

When you appoint a user except root, please appoint an existing account of "uid=0" as a login user.

Tips

When changing the password of root, re-make a password file of BASIC authentication.

```
# htpasswd -c /etc/openwsman/simple_auth.passwd root
```

3.1.3 Restart of service

Case of Red Hat Enterprise Linux 6, restart `openwsmand` and `NEC ESMPRO ServerAgentService` to reflect setting to service.

Case of Red Hat Enterprise Linux 7 and Oracle Linux 7, this procedure is unnecessary.

```
# service openwsmand restart  
# /opt/nec/esmpro_sa/bin/ESMRestart
```

Note

Because Monitoring Service is not installed in Non-Service Mode, service cannot reboot.

3.1.4 Setting of access control

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

```
# cat /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 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 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 are as follows.

```
# iptables -I INPUT -p tcp --dport 5986 -s <IP address of NEC ESMPRO
Manager> -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
```

- 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 are as follows.

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

- 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 are as follows.

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

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

- SAS uses internal ports

Function	Port	Note
rpcbind	111/tcp	
	111/udp	
NEC ESMPRO ServerAgentService	Auto-assignment	

* Cannot change the port number of rpcbind.

* The open examples of the port using iptables are as follows.

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

- Between tog-pegasus and openwsmand

Function	Port	Note
tog-pegasus	5988/tcp	HTTP
openwsmand	5986/tdp	HTTPS

* 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.

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

```
# service iptables save
```

3.2 Settings of BMC (EXPRESSSCOPE Engine)

When you register NEC ESMPRO ServerAgentService with NEC ESMPRO Manager by "Auto Registration" or "Manual Registration", enable BMC (EXPRESSSCOPE Engine) to monitoring this server (hardware). If BMC (EXPRESSSCOPE Engine) is not enable, can not monitor hardware. Therefore NEC ESMPRO Manager cannot display the sensor information such as temperature, the voltage, the fan of system. And it is not reported to NEC ESMPRO Manager even if a state of the hardware changes.

In addition, Authentication Key is necessary to Auto Registration or Manual Registration. Set Authentication Key beforehand in BMC (Management Software) of EXPRESSSCOPE Engine 3.

3.2.1 BMC (PEF/ ESMPRO Management/Alert)

1. Login to EXPRESSSCOPE Engine 3.
Input the user name / password of the following default and log in.
Default of IP address: 192.168.1.1
Default of user name: Administrator
Default of password: Administrator



NEC Empowered by Innovation

Server Name: | Japanese | English | Help

EXPRESSSCOPE 3
ENGINE

User Name

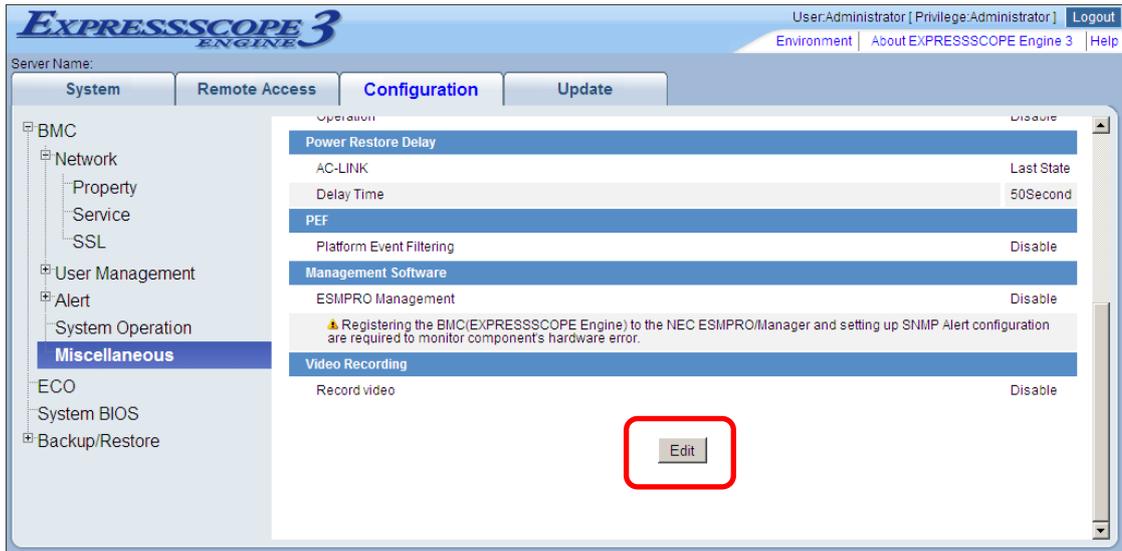
Password

Secure Mode Non Secure Mode

Login

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2. Select "Miscellaneous" in "Configuration" tab. Click <Edit> button in "ESMPRO Management".



3. Select the following setting in PEF and Management Software.

PEF

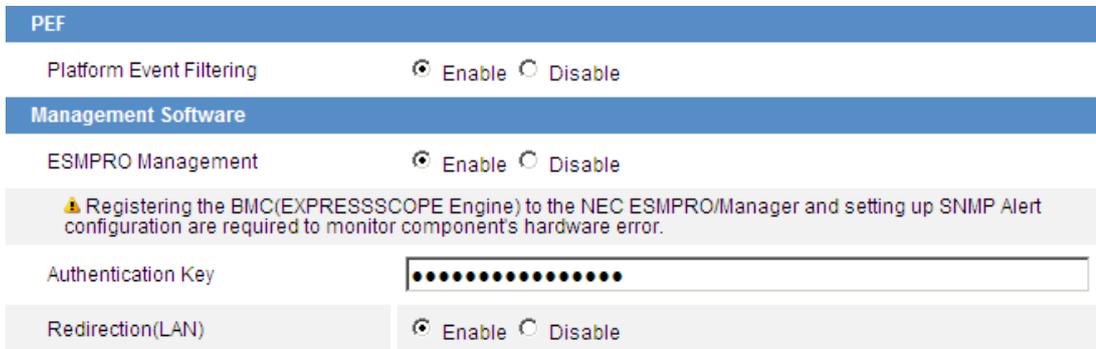
Platform Event Filtering : Enable

Management Software

ESMPRO Management : Enable

Authentication Key : Any

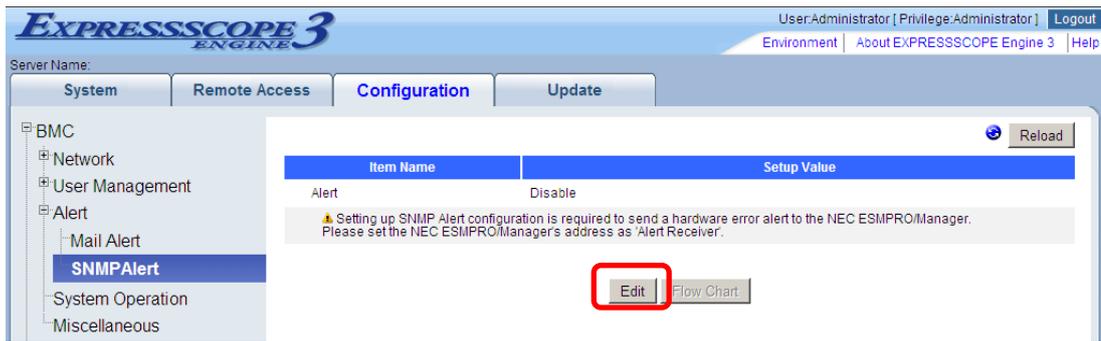
Redirection(LAN) : Enable



4. Click <Apply> button. The configuration information is set in the BMC.



5. Select "SNMP Alert" of "Alert" in "Configuration" tab. Click <Edit> button in "Alert".

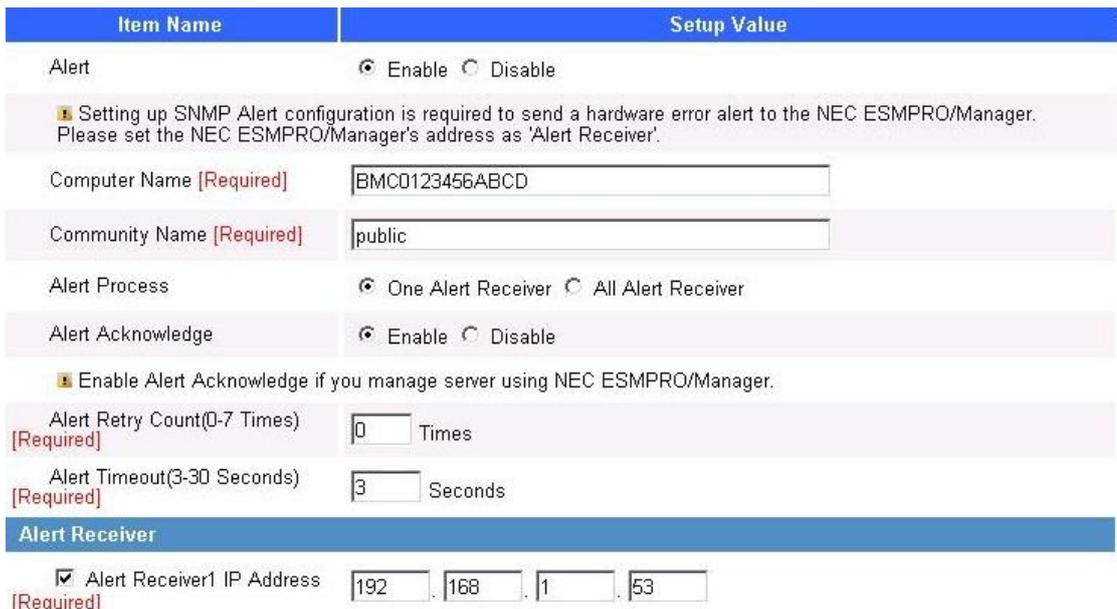


6. Select "Enable" in "Alert".



7. Item of the SNMP Alert is displayed, select the following setting.

- Alert : Enable
- Computer Name : Any
- Community Name : Any
- Alert Acknowledge : Enable
- Alert Receiver 1 IP Address : IP address of the management PC on which
NEC ESMPRO Manager is installed.



8. Click <Apply> button. The configuration information is set in the BMC.



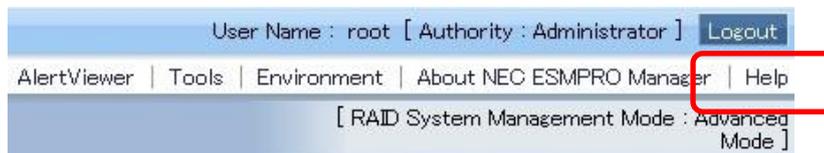
3.3 Settings of NEC ESMPRO Manager

Register NEC ESMPRO ServerAgentService with NEC ESMPRO Manager by "Auto Registration" or "Manual Registration" to monitoring this server (hardware).

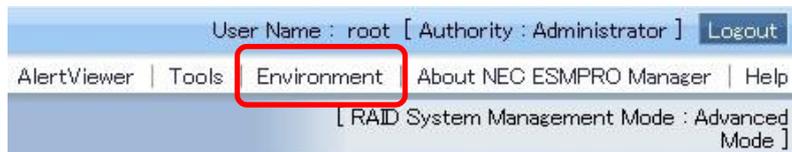
1. Login to NEC ESMPRO Manager.



For details, see NEC ESMPRO Manager online help.



2. Select "Environment"



3. Select "Allow" in "Self Signed Certificate" in WS-Man Communication of "Network" tab. Click <Apply> button in this tab.

Environment [RAID System Management Mode : Advanced Mode]

User Accounts Access Control **Network** Option Auto Registration Setting

Item Name	Setup Value
SNMP/ICMP Communication	
Packet Resend Count	3 number of times
No-response Timeout 1 (1 - 65535 seconds) [required]	4 seconds
No-response Timeout 2 (1 - 65535 seconds) [required]	4 seconds
No-response Timeout 3 (1 - 65535 seconds) [required]	4 seconds
No-response Timeout 4 (1 - 65535 seconds) [required]	4 seconds
Communication with Remote Console/Remote Drive	
No-response Timeout (20 - 1800 seconds) [required]	60 seconds
Communication with BMC	
No-response Timeout (1 - 15 seconds) [required]	5 seconds
Command Send Retry Count (0 - 10 number of times) [required]	5 number of times
Send Source Port (1025 - 65535) [required]	47117
Direct Connection Setting	
Port Number	Serial Port1
WS-Man Communication	
Self Signed Certificate	<input checked="" type="radio"/> Allow <input type="radio"/> Not Allowed
Apply Cancel Default	

Tips

When Self Signed Certificate is set to Not Allowed, openwsman uses it as a certificate in Certificate Authority by appointing it in `ssl_cert_file` and `ssl_key_file` at [server] section of `/etc/openwsman/openwsman.conf`.

```
[server]
:
ipv4 = yes
ipv6 = yes

ssl port = 5986
ssl cert file = /etc/openwsman/servercert.pem
ssl key file = /etc/openwsman/serverkey.pem
digest password file = /etc/openwsman/digest_auth.passwd
basic_password_file = /etc/openwsman/simple_auth.passwd
```

- Register NEC ESM PRO ServerAgentService and BMC (EXPRESSSCOPE Engine) by "Auto Registration" or "Manual Registration" in "Add Component" of "root".



3.3.1 Auto Registration

Item Name	Setup Value
Destination Group	root
Discovery Range	
Discovery Mode	<input checked="" type="radio"/> IP Address Range Discovery <input type="radio"/> Network Address Discovery
Start Address [required]	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
End Address [required]	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
SNMP (NEC ESM PRO Agent)	
Discovery	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
SNMP Community Name [required]	public
WS-Man	
Discovery	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
User Name/Password [required]	<input type="text"/> / <input type="text"/> <input type="button" value="Add"/>
RAID system (Universal RAID Utility)	
Discovery	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
NEC ExpressUpdate (ExpressUpdate Agent)	
Discovery	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
BMC (EXPRESSSCOPE Engine)	
Discovery	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Features NEC ExpressUpdate	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Authentication Key [required]	<input type="text"/> <input type="button" value="Add"/>
Intel(R) vPro(TM) Technology	
Discovery	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
User Name/Password [required]	<input type="text"/> / <input type="text"/> <input type="button" value="Add"/>
<input type="button" value="Run Discovery"/>	

1. The IP address of "IP Address Range Discovery" sets it so that BMC and NEC ESMPRO ServerAgentService are included.

Discovery Range

Discovery Mode IP Address Range Discovery Network Address Discovery

Start Address **[required]** . . .

End Address **[required]** . . .

Note

If you register the "Management Controller" management for a server which has EXPRESSSCOPE Engine SP3 (2BMC model), you should specify the search range which includes both BMC IP addresses of Master and Standby.

2. Disable search in SNMP (NEC ESMPRO Agent).

SNMP (NEC ESMPRO Agent)

Discovery Enable Disable

3. Enable search in WS-Man. The root (User Name) and Password of monitoring target server is input to WS-Man, and click <Add> button.

WS-Man

Discovery Enable Disable

User Name/Password /

4. Enable search in BMC (EXPRESSSCOPE Engine). Input "Authentication Key", and click <Add> button.

BMC (EXPRESSSCOPE Engine)

Discovery Enable Disable

Features NEC ExpressUpdate Enable Disable

Authentication Key **[required]**

5. Click <Run Discovery> button, and register NEC ESMPRO ServerAgentService and BMC.

3.3.2 Manual Registration

Item Name	Setup Value
Component Name [required]	<input type="text"/>
Alias	<input type="text"/>
Group	root ▾
Connection Type	<input checked="" type="radio"/> LAN <input type="radio"/> Direct <input type="radio"/> Modem
Common Setting	
OS IP Address [required]	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
SNMP (NEC ESM PRO Agent)/ WS-Man	
Management	<input checked="" type="radio"/> Registration <input type="radio"/> Unregistration
Management Type	<input checked="" type="radio"/> SNMP <input type="radio"/> WS-Man
SNMP Community Name(Get)	public
SNMP Community Name(Set)	<input type="text"/>
RAID system management	
Management	<input checked="" type="radio"/> Registration <input type="radio"/> Unregistration
NEC ExpressUpdate	
Updates via NEC ExpressUpdate Agent	<input checked="" type="radio"/> Registration <input type="radio"/> Unregistration
Updates via Management Controller	<input checked="" type="radio"/> Registration <input type="radio"/> Unregistration
BMC (EXPRESSSCOPE Engine)/ vPro (Common)	
Management	<input checked="" type="radio"/> Registration <input type="radio"/> Unregistration
Management Type	<input checked="" type="radio"/> BMC <input type="radio"/> vPro
Authentication Key [required]	<input type="text"/>
BMC (EXPRESSSCOPE Engine)/ vPro (LAN)	
Current IP Address	<input checked="" type="radio"/> IP Address 1 <input type="radio"/> IP Address 2
Failover	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
IP Address1 [required]	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
Subnet Mask1 [required]	255 . 255 . 255 . 0
IP Address2	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
Subnet Mask2	255 . 255 . 255 . 0
<input type="button" value="Add"/>	

1. Input the required items.

Component Name [required]	<input type="text"/>
Alias	<input type="text"/>
Group	root ▾
Connection Type	<input checked="" type="radio"/> LAN <input type="radio"/> Direct <input type="radio"/> Modem
Common Setting	
OS IP Address [required]	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>

- Registration in "SNMP (NEC ESMPRO Agent)/WS-Man", and select WS-Man in Management Type. The root (User Name) and Password of monitoring target server is input to WS-Man. Communication Protocol is HTTPS, and Port Number is 5986.

SNMP (NEC ESMPRO Agent)/ WS-Man	
Management	<input checked="" type="radio"/> Registration <input type="radio"/> Unregistration
Management Type	<input type="radio"/> SNMP <input checked="" type="radio"/> WS-Man
User Name [required]	<input type="text"/>
Password [required]	<input type="text"/>
Communication Protocol	<input type="radio"/> HTTP <input checked="" type="radio"/> HTTPS
Port Number [required]	<input type="text" value="5986"/>

- Registration in "BMC (EXPRESSSCOPE Engine)/vPro (LAN)", select BMC. Input "Authentication Key".

BMC (EXPRESSSCOPE Engine)/ vPro (Common)	
Management	<input checked="" type="radio"/> Registration <input type="radio"/> Unregistration
Management Type	<input checked="" type="radio"/> BMC <input type="radio"/> vPro
Authentication Key [required]	<input type="text"/>

- Input IP address of BMC in IP Address1 of "BMC (EXPRESSSCOPE Engine)/vPro (LAN)".

BMC (EXPRESSSCOPE Engine)/ vPro (LAN)	
Current IP Address	<input checked="" type="radio"/> IP Address 1 <input type="radio"/> IP Address 2
Failover	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
IP Address1 [required]	<input type="text" value="."/> <input type="text" value="."/> <input type="text" value="."/> <input type="text" value="."/>
Subnet Mask1 [required]	<input type="text" value="255"/> <input type="text" value="."/> <input type="text" value="255"/> <input type="text" value="."/> <input type="text" value="255"/> <input type="text" value="."/> <input type="text" value="0"/>
IP Address2	<input type="text" value="."/> <input type="text" value="."/> <input type="text" value="."/> <input type="text" value="."/>
Subnet Mask2	<input type="text" value="255"/> <input type="text" value="."/> <input type="text" value="255"/> <input type="text" value="."/> <input type="text" value="255"/> <input type="text" value="."/> <input type="text" value="0"/>

Note

If the managed component is a server which has EXPRESSSCOPE Engine SP3 (2BMC model), you should enter the IP address of the management LAN port for the Master BMC to the IP Address1, you should enter the IP address of the management LAN port for the Standby BMC to the form.

- Click <Add> button, and register NEC ESMPRO ServerAgentService and BMC.



- Click the component name which registered. Click <Check Connection> button, and check connection with NEC ESMPRO ServerAgentService and BMC.



3.4 Setting of Manager (SNMP)

It is necessary to set report means in "Report Setting" to report it from NEC ESMPRO ServerAgentService to NEC ESMPRO Manager after having rebooted a system. Refer to NEC ESMPRO ServerAgentService Users Guide for the setting method of other report means.

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

Tips This setting is needed for the syslog monitoring system. Also, this setting is needed for the function which cooperate with other product, so be sure to set.

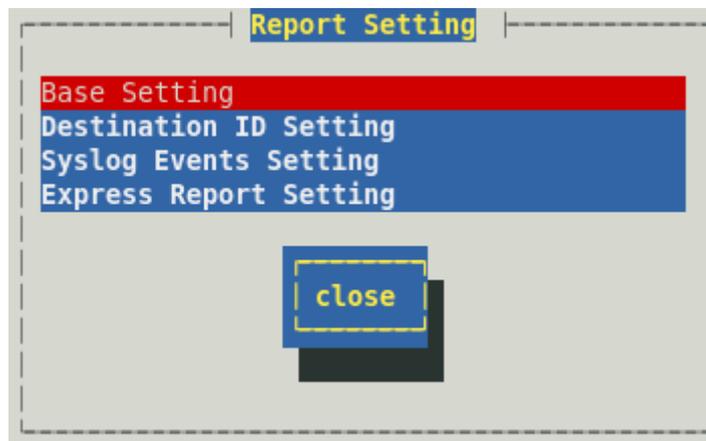
1. Log in to the system as the root user.
2. Run the following command to move to the directory where ESMamsadm is stored.

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

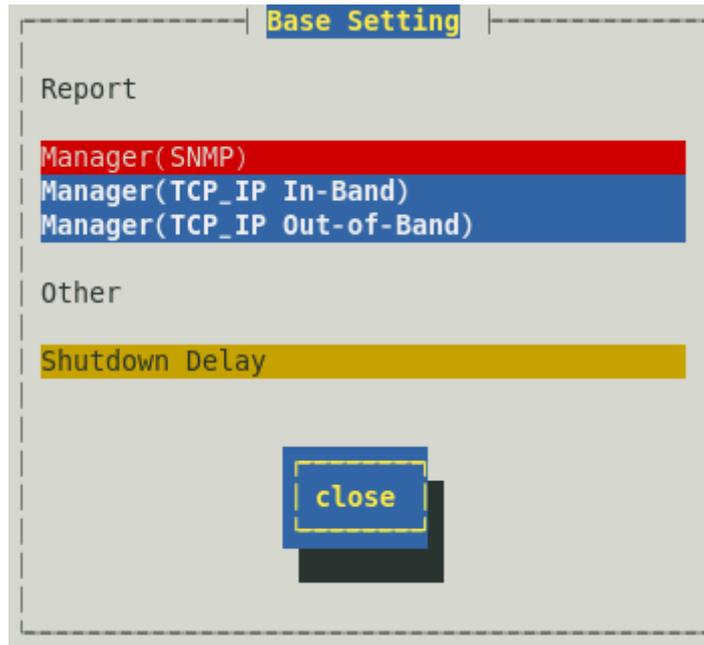
3. Run the following command to start Control Panel (ESMamsadm). [Report Setting] screen opens.

```
# ./ESMamsadm
```

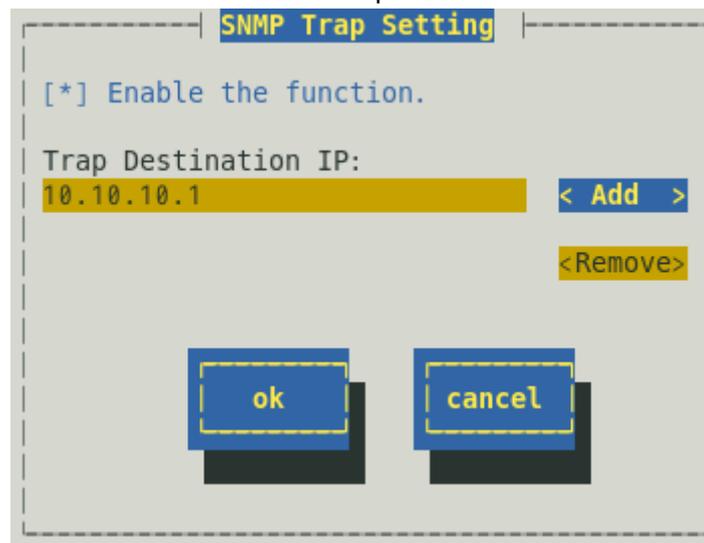
4. Select "Base Setting". [Base Setting] screen opens.



5. Select "Manager(SNMP)". [SNMP Trap Setting] screen opens.



6. Select "< Add >" and add IP address of "Trap Destination IP".



7. Select "ok", saved and [SNMP Trap Setting] screen closes.
8. Select "close", [Base Setting] screen closes.
9. Select "close", [Report Setting] screen closes.

3.5 Setting of Express Report Service

Refer to Express Report Service Setup Guide (Linux/VMware) stored away by EXPRESSBUILDER DVD for the setting method of the Express Report Service.

Note

Because Monitoring Service is not installed in Non-Service Mode, cannot set to the Express Report Service.

Uninstallation

This chapter describes uninstallation of NEC ESMPRO ServerAgentService.

1. Uninstallation

This section describes how to uninstall NEC ESMPRO ServerAgentService.

1. Uninstallation

It explains a procedure to uninstall NEC ESMPRO ServerAgentService.

1. Log in to the system as the root user.
2. Case of workaround of openwsmand, uninstall esmsas_openwsman_weekly script.

```
# cd /opt/nec/esmpro_sa/tools/  
# sh ./esmsas_openwsman_weekly.sh -e
```

3. Run the following command to uninst all in order of next.

- Case of Service Mode.

```
# rpm -e Esmpro-Selsrv  
# rpm -e Esmpro-Expsrv  
# rpm -e Esmpro-Cmnsrv  
# rpm -e Esmpro-strgfs-Provider  
# rpm -e Esmpro-Provider
```

- Case of Non-Service Mode.

```
# rpm -e Esmpro-strgfs-Provider  
# rpm -e Esmpro-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"
```

4. Run the following command to restart the OS.

- Case of Red Hat Enterprise Linux 6

```
# reboot
```

- Case of Red Hat Enterprise Linux 7 and Oracle Linux 7

```
# systemctl reboot
```

With the above uninstallation of NEC ESMPRO ServerAgentService is completion.

Appendix

1. The contents which an installation script sets

This section describes about the installation script of NEC ESMPRO ServerAgentService.

2. About tools

This section describes about tools.

3. LICENSE

This section describes about the license of the software which NEC ESMPRO ServerAgentService uses.

1. The contents which an installation script sets

In the installation script of NEC ESMPRO ServerAgentService, execute the following setting.

1.1 Setting before the installation

The setting before the installation is as follows.

1.1.1 Setting of sblim-sfcb

Case of Red Hat Enterprise Linux 6, check that runlevel 3 and 5 of sblim-sfcb.

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

- sblim-sfcb is not installed when sblim-sfcb is not displayed, do not change the setting of sblim-sfcb.
- Case of on, change the setting of sblim-sfcb, and stop sblim-sfcb.

```
# /sbin/chkconfig --level 35 sblim-sfcb off
# service sblim-sfcb stop
```

- Case of off, do not change the setting of sblim-sfcb.

Case of Red Hat Enterprise Linux 7 and Oracle Linux 7, check that enabled of sblim-sfcb.

```
# systemctl is-enabled sblim-sfcb.service
Enabled
```

- sblim-sfcb is not installed when "Failed to get unit file state for sblim-sfcb.service: No such file or directory" is displayed, do not change the setting of sblim-sfcb.
- Case of enabled, change the setting of sblim-sfcb, and stop sblim-sfcb.

```
# systemctl disable sblim-sfcb.service
rm '/etc/systemd/system/multi-user.target.wants/sblim-sfcb.service'
# systemctl stop sblim-sfcb.service
```

- Case of disabled, do not change the setting of sblim-sfcb.

1.1.2 Setting of sblim-sfcc

Case of Red Hat Enterprise Linux 6, create symbolic link of sblim-sfcc library.

```
# ln -s /usr/lib64/libcimcClientXML.so.0 /usr/lib64/libcimcClientXML.so
# ln -s /usr/lib64/libcimcclient.so.0 /usr/lib64/libcimcclient.so
# ln -s /usr/lib64/libcmpisfcc.so.1 /usr/lib64/libcmpisfcc.so
```

Tips

When a link is made, the following messages are displayed, but do not have any problem.

In: creating symbolic link `/usr/lib64/libcimClientXML.so': File exists

In: creating symbolic link `/usr/lib64/libcimclient.so': File exists

In: creating symbolic link `/usr/lib64/libcmpisfcc.so': File exists

1.1.3 Setting of openwsman.conf

Enable SSL access; enable (delete # of the head of a line) `ssl_port` in `[server]` of `/etc/openwsman/openwsman.conf`. The `cim_client_frontend` do not change from a default setting and assume it XML.

Before:

```
[server]
:
ipv4 = yes
ipv6 = yes

#ssl_port = 5986
:

[cim]
default_cim_namespace = root/cimv2

# set to SfcblLocal for local connection with sfcbl CIMOM running on same system
# cim_client_frontend = SfcblLocal
cim_client_frontend = XML
```

After:

```
[server]
:
ipv4 = yes
ipv6 = yes

ssl_port = 5986
:

[cim]
default_cim_namespace = root/cimv2

# set to SfcblLocal for local connection with sfcbl CIMOM running on same system
# cim_client_frontend = SfcblLocal
cim_client_frontend = XML
```

1.1.4 Setting of access.conf

Permission remote and local access to Common Information Model Object Manager (CIMOM). Edit `/etc/Pegasus/access.conf`.

Before:

```
#####  
#  
# Pegasus PAM Access Rules:  
# 1. The Remote host user access rule:  
#   By default, ONLY the pegasus user can use remote network HTTP/S  
#   service:  
#  
# -: ALL EXCEPT pegasus:wbemNetwork  
#  
# 2. The Local host user access rule:  
#   By default, ONLY the pegasus and root users can use pegasus local  
#   HTTP/S service:  
#  
# -: ALL EXCEPT pegasus root:wbemLocal
```

After:

```
#####  
#  
# Pegasus PAM Access Rules:  
# 1. The Remote host user access rule:  
#   By default, ONLY the pegasus user can use remote network HTTP/S  
#   service:  
#  
# +: ALL :wbemNetwork  
#  
# 2. The Local host user access rule:  
#   By default, ONLY the pegasus and root users can use pegasus local  
#   HTTP/S service:  
#  
# +: ALL :wbemLocal
```

1.1.5 Setting of CIM Server

Enable HTTP connection and remote access to CIM Server.

```
# /usr/sbin/cimconfig -p -s enableHttpConnection=true  
# /usr/sbin/cimconfig -p -s enableRemotePrivilegedUserAccess=true
```

1.1.6 Setting of tog-pegasus

Case of Red Hat Enterprise Linux 6, check that runlevel 3 and 5 of tog-pegasus.

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

- Case of on, do not change the setting of tog-pegasus. Restart the tog-pegasus.

```
# service tog-pegasus restart
```

- Case of off, change the setting of tog-pegasus, and start the tog-pegasus.

```
# /sbin/chkconfig --level 35 tog-pegasus on  
# service tog-pegasus start
```

Case of Red Hat Enterprise Linux 7 and Oracle Linux 7, check that enabled of tog-pegasus.

```
# systemctl is-enabled tog-pegasus.service  
enabled
```

- Case of enabled, do not change the setting of tog-pegasus. Restart the tog-pegasus.

```
# systemctl restart tog-pegasus.service
```

- Case of disabled, change the setting of tog-pegasus, and start the tog-pegasus.

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

1.1.7 Setting of rpcbind

Case of Red Hat Enterprise Linux 6, check that runlevel 3 and 5 of rpcbind.

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

- Case of on, do not change the setting of rpcbind.
- Case of off, change the setting of rpcbind, and start rpcbind.

```
# /sbin/chkconfig --level 35 rpcbind on  
# service rpcbind start
```

Case of Red Hat Enterprise Linux 7 and Oracle Linux 7, do not change the setting of rpcbind.

1.1.8 Setting of snmpd

Case of Red Hat Enterprise Linux 6, check that runlevel 3 and 5 of snmpd.

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

- Case of on, do not change the setting of snmpd.
- Case of off, change the setting of snmpd, and start snmpd.

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

```
# service snmpd start
```

Case of Red Hat Enterprise Linux 7 and Oracle Linux 7, check that enabled of snmpd.

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

- Case of enabled, do not change the setting of snmpd.
- Case of disabled, change the setting of snmpd, and start snmpd.

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

1.1.9 Setting of ipmi

Case of Red Hat Enterprise Linux 6, check that runlevel 3 and 5 of ipmi.

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

- Case of on, do not change the setting of ipmi.
- Case of off, change the setting of ipmi, and reboot.

```
# /sbin/chkconfig --level 35 ipmi on
# reboot
```

Case of Red Hat Enterprise Linux 7 and Oracle Linux 7, check that enabled of ipmi.

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

- Case of enabled, do not change the setting of ipmi.
- Case of disabled, change the setting of ipmi, and reboot.

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

1.1.10 Setting of "Linux_OperatingSystem" Class

Case of Red Hat Enterprise Linux 6, append "method" at the end of "Linux_OperatingSystem" Class to allow NEC ESM PRO Manager to shutdown and reboot by remote control ("Linux_OperatingSystem" Class is in "/usr/share/sblim-cmpi-

```
base/Linux_Base.registration")
```

Before:

```
# Classname Namespace ProviderName ProviderModule ProviderTypes ...
Linux_Processor root/cimv2 OSBase_ProcessorProvider cmpiOSBase_Processor...
Linux_UnixProcess root/cimv2 OSBase_UnixProcessProvider cmpiOSBase_UnixP...
Linux_ComputerSystem root/cimv2 OSBase_ComputerSystemProvider cmpiOSBase...
Linux_OperatingSystem root/cimv2 OSBase_OperatingSystemProvider
                        cmpiOSBase_OperatingSystemProvider instance ~~~~~
Linux_OperatingSystemStatisticalData root/cimv2 OSBase_OperatingSystemSt...
Linux_BaseBoard root/cimv2 OSBase_BaseBoardProvider cmpiOSBase_BaseBoard...
:
```

After:

```
# Classname Namespace ProviderName ProviderModule ProviderTypes ...
Linux_Processor root/cimv2 OSBase_ProcessorProvider cmpiOSBase_Processor...
Linux_UnixProcess root/cimv2 OSBase_UnixProcessProvider cmpiOSBase_UnixP...
Linux_ComputerSystem root/cimv2 OSBase_ComputerSystemProvider cmpiOSBase...
Linux_OperatingSystem root/cimv2 OSBase_OperatingSystemProvider
                        cmpiOSBase_OperatingSystemProvider instance method
Linux_OperatingSystemStatisticalData root/cimv2 OSBase_OperatingSystemSt...
Linux_BaseBoard root/cimv2 OSBase_BaseBoardProvider cmpiOSBase_BaseBoard...
:
```

1.1.11 Register with tog-pegasus

Case of Red Hat Enterprise Linux 6, re-register sblim-cmpi-base with tog-pegasus.

```
# cd /usr/share/sblim-cmpi-base
# ./provider-register.sh -t pegasus -n root/cimv2 -r Linux_Base.registration
-m Linux_Base.mof -d
# ./provider-register.sh -t pegasus -n root/cimv2 -r Linux_Base.registration
-m Linux_Base.mof
```

1.1.12 Setting of NetworkManager-wait-online.service

Case of Red Hat Enterprise Linux 7 and Oracle Linux 7, check that enabled of NetworkManager-wait-online.

```
# systemctl is-enabled NetworkManager-wait-online.service
enabled
```

- Case of enabled, do not change the setting of NetworkManager-wait-online.
- Case of disabled, change the setting of NetworkManager-wait-online, and start the NetworkManager-wait-online.

```
# systemctl enable NetworkManager-wait-online.service
ln -s '/usr/lib/systemd/system/ NetworkManager-wait-online.service'
```

```
'/etc/systemd/system/multi-user.target.wants/NetworkManager-wait-
online.service'
# systemctl start NetworkManager-wait-online.service
```

1.1.13 Creating selfsigned certificate of opensman

Tips

When there is a selfsigned certificate or a certificate signed in Certificate Authority, opensman uses it as a certificate by appointing it in `ssl_cert_file` and `ssl_key_file` at `[server]` section of `/etc/opensman/opensman.conf`.

```
[server]
:
ipv4 = yes
ipv6 = yes

ssl port = 5986
ssl cert file = /etc/opensman/servercert.pem
ssl_key_file = /etc/opensman/serverkey.pem
```

Note

`owsmangencert.sh` uses a random number to make a server certificate of opensman. Execute `owsmangencert.sh`, but cancel it, and change `RANDFILE (/dev/random)` in `/etc/opensman/ssleay.cnf` to `/dev/urandom` when it is not input "Country Name".

```
RANDFILE = /dev/urandom
```

Note

When you overwrite by a new selfsigned certificate, add `--force` to an argument.

```
# /etc/opensman/owsmangencert.sh --force
```

Create selfsigned certificate of opensman. When a certificate is stored, it do not make making (do not overwrite).

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

Tips

When it starts `opensmand` without making a server certificate, the following messages are displayed.

```
FAILED: Starting opensman server
There is no ssl server key available for opensman server to use.
Please generate one with the following script and start the
opensman service again:
```

```
#####
```

```
/etc/opensman/owsmangencert.sh
```

```
=====
```

```
NOTE: The script uses /dev/random device for generating some
random bits while generating the server key.
```

```
If this takes too long, you can replace the value of "RANDFILE"
in /etc/opensman/ssleay.cnf with
/dev/urandom. Please understand the implications of replacing
the RNADFILE.
```

1.1.14 Setting of opensmand

Case of Red Hat Enterprise Linux 6, check that runlevel 3 and 5 of opensmand.

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

- Case of on, do not change the setting of opensmand.
- Case of off, change the setting of opensmand, and start opensmand.

```
# /sbin/chkconfig --level 35 opensmand on
# service opensmand start
```

Case of Red Hat Enterprise Linux 7 and Oracle Linux 7, check that enabled of opensmand.

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

- Case of enabled, do not change the setting of opensmand.
- Case of disabled, change the setting of opensmand, and start opensmand.

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

2. About tools

Log in by all means in root user to use the tool.

2.1 The 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 collectsa.sh is as follows.

- 1) Log in to the system as the root user.
- 2) Move to any directory.
- 3) Execute collectsa.sh.

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.

When a problem occurs for movement of the obstacle information collection tool (collectsa.sh).

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

- 1) Terminate collectsa.sh.

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.

2.2 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.
check_pkg/ follower is copied for /tmp follower by the following example.
# cp -ar {mount point}/../esmpo_sas/check_pkg/ /tmp
check_packages.sh moves to a stocked directory.
# cd {The directory in check_packages.sh}
<In case of check for necessary packages>
# sh ./check_packages.sh
<In case of install for necessary packages>
# sh ./check_packages.sh -i {The directory in necessary packages}
```

The check_packages.sh is stored in an installation media of NEC ESMPRO ServerAgentService Ver. 1.3.0-0 or later.

The check_packages.sh is different in a stocked directory depending on the media used for installation.

In case of EXPRESSBUILDER: {revision}/lnx/pp/esmpo_sas/check_pkg/

In case of the ZIP file downloaded from a web site: check_pkg/

List of 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.

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NEC ESMPRO ServerAgentService Ver.1.3
Installation Guide (Linux)

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