

NEC ESMPRO ServerAgentService Ver. 2.1 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.

Important	Indicates critical items that must be followed when handling operating software.
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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Software consented to based on following license is included in this product.

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libesmtplib.dll (Esmpro-Expsrv package)

Net-SNMP

ESMntagent (Esmpro-Cmnsrv package)

libutil.so (Esmpro-Cmnsrv package)

MD5

amrpop.dll (Esmpro-Expsrv package)

In case of iLO support model, software consented to based on following license is included in installation modules of this product.

Refer to a file bundled by software for a license.

Software with * installs only in case of Red Hat Enterprise Linux 6.

Apache License

esmsmsrv.py (Esmpro-Selsrv package)

jsonpath-rw

packaging *

python-iloest-library

recordtype

MIT

appdirs *

pip

pyparsing *

setuptools *

six *

urlparse2

validictory

BSD License

decorator *

jsonpatch

jsonpointer *

packaging *

ply *

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

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

https://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.

You can download the latest version of NEC ESMPRO ServerAgentService from the URL.

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

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.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 except some models, or use the latest version.

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 or iLO 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.	
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.	

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	ESMCPUPEPERF
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 simple substance storage. iLO support model is not supported.		
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. iLO support model is not supported.		

• Esmpro-Selsrv package

Function	Process	Source of Alert
Note		
Hardware Log Monitoring Service	ESMsmsrv	ESMCOMMONSERVICE
This thread is monitoring 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).		

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.

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.

Important

- NEC ESMPRO ServerAgentService supported locale is "UTF-8" only.

Important

- When using NEC ESMPRO ServerAgentService service mode in iLO model, invalidate "Thermal Shutdown" on BIOS/Platform Configuration (RBSU). After a report, NEC ESMPRO ServerAgentService shutdown the server. When using NEC ESMPRO ServerAgentService Non-Service mode or uninstalling NEC ESMPRO ServerAgentService in iLO model, validate "Thermal Shutdown".
- Do not change the setting of Encryption when using iLO model. When Production is not set, express report of a hardware fault is not performed.

II. 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 "Starter Pack" or "EXPRESSBUILDER" or "Utility Disk" or "ZIP file", install it with reference to this chapter.

1.2 Setting before the installation

The setting before the installation is as follows.

Tips

In case of iLO support model, the following OS automatically configures the iLO inbox driver. The installation of the iLO driver is unnecessary.

- Red Hat Enterprise Linux 7.3 errata kernel-3.10.0-514.6.1.el7 or later
- Red Hat Enterprise Linux 6.9 or later

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.

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 Utility Disk : tools/lnx/esmpro_sas/check_pkg/

In case of the ZIP file : check_pkg/

```
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>
check_pkg/ follower is copied for /tmp follower by the following example.
# cp -ar {mount point}/../esmpro_sas/check_pkg/ /tmp
Move to the directory where check_packages.sh is stored.
# cd {The directory in check_packages.sh}
# sh ./check_packages.sh -i {The directory in necessary packages}
```

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

	zip	(x86_64)	libcurl	(x86_64)
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Because there is dependence in a package, install it in higher group order (Grp1 -> Grp2 -> Grp3).

Important

- 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. (CVE-2019-3816)

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>

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 firewallld.

Please refer to this chapter (3.1.4 Setting of access control) for the port NEC ESMPRO ServerAgentService uses.

1.2.1.1. iLO support model

(*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 6.8 or earlier.

(*3) It is unnecessary in Red Hat Enterprise Linux 7.4 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)		
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)	sblim-cmpi-base	(x86_64)
	krb5-devel	(x86_64)	sblim-sfcc	(x86_64)
	libtirpc	(x86_64)	zlib-devel	(x86_64)
	libwsman1	(x86_64)		
Grp6	cim-schema	(noarch)	rpcbind	(x86_64)
	compat-libstdc++-33	(x86_64)	sblim-indication_helper	(x86_64)
	httpd-tools	(x86_64)	sblim-wbemcli	(x86_64)
	openssl-devel	(x86_64)	unzip	(x86_64)
	openwsman-client	(x86_64)	wsmancli	(x86_64)
	openwsman-server	(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				
Group	Package Name			
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-macros	(x86_64) (*1)
	keyutils-libs-devel	(x86_64)	perl-parent	(noarch) (*1)
	libcom_err-devel	(x86_64)	perl-PathTools	(x86_64) (*1)
	libkadm5	(x86_64)	perl-Pod-Escapes	(noarch) (*1)
	libselenium-devel	(x86_64)	perl-podlators	(noarch) (*1)
	libverto-devel	(x86_64)	perl-Pod-Perldoc	(noarch) (*1)
	lm_sensors-libs	(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)
	perl-HTTP-Tiny	(noarch) (*1)	python-backports	(x86_64)
	perl-libs	(x86_64) (*1)	python-ipaddress	(noarch) (*3)
Grp3	apr-util	(x86_64)	ruby-libs	(x86_64)
	krb5-devel	(x86_64)	sbim-indication_helper	(x86_64)
	libtirpc	(x86_64)	sbim-sfcc	(x86_64)
	libwsman1	(x86_64)	tog-pegasus	(x86_64)
	net-snmp-agent-libs	(x86_64)	zlib-devel	(x86_64)
	net-tools	(x86_64)	python-backports-ssl_match_hostname	(noarch)
	perl-Data-Dumper	(x86_64)		
Grp4	chkconfig	(x86_64)	rpcbind	(x86_64)
	cim-schema	(noarch)	sbim-cmpi-base	(x86_64)
	dmidecode	(x86_64)	sbim-wbemcli	(x86_64)
	e2fsprogs	(x86_64)	sed	(x86_64)
	glibc	(x86_64)	slang	(x86_64)
	httpd-tools	(x86_64)	systemd	(x86_64)
	initscripts	(x86_64)	tar	(x86_64)
	libstdc++	(x86_64)	unzip	(x86_64)
	libxml2	(x86_64)	wsmancli	(x86_64)
	net-snmp	(x86_64)	python-ply	(noarch)
	NetworkManager	(x86_64)	python-six	(noarch)
	newt	(x86_64)	python-decorator	(noarch)
	openssl-devel	(x86_64)	python-jsonpointer	(noarch)
	openwsman-client	(x86_64)	python-setuptools	(noarch)

Red Hat Enterprise Linux 7 x86_64				
Group	Package Name			
	openwsman-server	(x86_64)		

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

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

1.2.1.2. BMC support model.

(*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)		
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)
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Red Hat Enterprise Linux 7 x86_64, Oracle Linux 7 x86_64				
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)
	libselenium-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)
	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)	wsmancli	(x86_64)

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

	zip	(x86_64)	libcurl	(x86_64)
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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 current setting of SELinux.
 - In case of disabled, displayed as follows.

```
# getenforce
Disabled
```

- In case of enable, displayed as follows.

```
# getenforce
Enforcing
```

- In case of displayed to warning, displayed as follows.

```
# getenforce
Permissive
```

In 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.
 - In case of Disabled, edit as follows.

```
SELINUX=disabled
```

5. Run the following command to restart the OS.
 - In case of Red Hat Enterprise Linux 6

```
# reboot
```

- In case of Red Hat Enterprise Linux 7 and Oracle Linux 7

```
# systemctl reboot
```

1.2.3 Install of Python 2.7

In case of iLO support model, this product uses the function of Python 2.7.

In case of Red Hat Enterprise Linux 7, this procedure is unnecessary.

In case of Red Hat Enterprise Linux 6, Python 2.6 is installed. But for this product to use Python 2.7, install it.

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

Tips

When this server can not be connected to network, download Python 2.7 by different machine.

<https://www.python.org/ftp/python/2.7.11/Python-2.7.11.tgz>

2. In order to install Python from command line, first download the Python by running the following:

```
# wget --no-check-certificate https://www.python.org/ftp/python/2.7.11/Python-2.7.11.tgz
# tar -xzf Python-2.7.11.tgz
# cd Python-2.7.11
```

Tips

The following package is needed for compile (make) to do Python 2.7.

When being not installed, install it.

The package which is needed when compiling, (gcc and dependent packages):

gcc, cloog-ppl, cpp, glibc-devel, glibc-headers, kernel-headers, libgomp, mpfr, ppl

The package which is needed when compiling Python 2.7:

bzip2-devel, gdbm-devel, keyutils-libs-devel, krb5-devel, libcom_err-devel, libkadm5, libselinux-devel, libsepol-devel, ncurses-devel, openssl-devel, readline-devel, sqlite-devel, zlib-devel

3. Python 2.7 is compiled and installed.

```
# ./configure --enable-shared --enable-unicode=ucs4 --prefix=/opt/nec/esmpo_sa/python-2.7
# make
# make altinstall
```

Tips

The meaning of the option designation to compile Python 2.7 is as follows by the configure command.

--enable-shared :	To make sure that the service can use Python, a library is created.
--enable-unicode=ucs4 :	Unicode (ucs4) is supported.
--prefix :	Compiled Python can use this product only. Therefore an installation destination (/opt/nec/esmpo_sa/python-2.7) is designated. When this product is uninstalled, /opt/nec/esmpo_sa/python-2.7 is deleted.

Compiled Python 2.7 is checked in installation script (pp_install) by chapter 2 (2. Installation and Upgrade).

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 is displayed when execute pp_install on the OS does not support.

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

NEC ESMPRO ServerAgentService of a newest version is available from the following Web site.

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

Select a using model.

Tips

The following 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.
```

Tips

The following messages is displayed when you run an installation script of NEC ESMPRO ServerAgentService by necessary packages is not installed.

```
Necessary packages are not installed. Install a package of [ NG ].
```

Refer to chapter 2 (1.2.1 Check for necessary packages) and install necessary package.

Tips

The following any one of messages is displayed when you run an installation script of NEC ESMPRO ServerAgentService by a locale of a console is besides UTF-8.

```
- There is no ZIP file.
```

```
- Python Module Install Begin.
```

```
ERROR:install <Python Module Name> failed.
```

```
ERROR: install python module failed! So stop to install, exit.
```

Change the locale to UTF-8 and install.

2.1 Starter Pack

When you install NEC ESMPro ServerAgentService stored away by Starter Pack, refer to the following procedures.

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

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.

2. Insert Starter Pack the optical disk drive.
3. Run the following command to make the directory of mount point.

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

4. Run the following command to mount Starter Pack.

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

5. Move to the directory where NEC ESMPro ServerAgentService is stored.

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

{revision} varies according to Starter Pack version.

In case of Starter Pack Version S8.10-001.xx, {revision} is 001.

But, in case of 003 or 004, it will be the following directory.

001 : NEC Express5800/R120h-1M, R120h-2M

002 : NEC Express5800/R120h-1E, R120h-2E, T120h

6. 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"
```

7. Run the following command to eject Starter Pack from optical disk drive.

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

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

8. Run the following command to restart the OS.

- In case of Red Hat Enterprise Linux 6

```
# reboot
```

- In case of Red Hat Enterprise Linux 7

```
# systemctl reboot
```

With the above installation of NEC ESMPRO ServerAgentService is completion.

2.2 EXPRESSBUILDER

When you install NEC ESMPro ServerAgentService stored away by EXPRESSBUILDER, 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. Log in to the system as the root user.
2. Insert EXPRESSBUILDER the optical disk drive.
3. Run the following command to make the directory of mount point.

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

4. Run the following command to mount EXPRESSBUILDER.

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

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

6. 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"
```

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

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

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

8. Run the following command to restart the OS.

- In case of Red Hat Enterprise Linux 6

```
# reboot
```

- In case of Red Hat Enterprise Linux 7 and Oracle Linux 7

```
# systemctl reboot
```

With the above installation of NEC ESMPRO ServerAgentService is completion.

2.3 Utility Disk

When you install NEC ESMPRO ServerAgentService stored away by Utility Disk, 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. Log in to the system as the root user.
2. Insert Utility Disk the optical disk drive.
3. Run the following command to make the directory of mount point.

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

4. Run the following command to mount Utility Disk.

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

5. Move to the directory where NEC ESMPRO ServerAgentService is stored.

```
# cd /media/cdrom/tools/linux/esmpro_sas/
```

6. 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"
```

7. Run the following command to eject Utility Disk from optical disk drive.

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

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

8. Run the following command to restart the OS.

```
# systemctl reboot
```

With the above installation of NEC ESMPRO ServerAgentService is completion.

2.4 ZIP file

When you install NEC ESMPRO ServerAgentService stored away by ZIP file, refer to the following procedures.

1. Log in to the system as the root user.
2. Uncompress the ZIP file (lnx_esmsas-{Version}.x86_64.zip) 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.
```

3. Move to the directory where installation script of NEC ESMPRO ServerAgentService is stored.

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

4. 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"
```

5. Run the following command to restart the OS.

- In case of Red Hat Enterprise Linux 6

```
# reboot
```

- In 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.

Note

[Action After Report] is disable shutdown at [Temp Lower Error(EventID:C0000066, C0000070)] events, when BMC support model and ESMPRO/ServerAgentService Ver.2.0.9-0 or later.

If you want enable shutdown at [Temp Lower Error(EventID:C0000066, C0000070)], please refer to chapter 4(1.1.15 [Action After Report] is disable shutdown at [Temp Lower Error] events for BMC support model).

Tips

openwsmand is calling pam_pwcheck.so by a definition of a PAM setting file (/etc/pam.d/openwsman).

```
##PAM-1.0
auth    required pam_unix.so      nullok
auth    required pam_nologin.so
account required pam_unix.so
*password required pam_pwcheck.so nullok
password required pam_unix.so      nullok use_first_pass use_authtok
session required pam_unix.so      none
```

However, when pam_pwcheck.so does not exist, communication with NEC ESMPRO Manager is the timing which occurred, and the following log is recorded in /var/log/secure.

```
openwsmand: PAM unable to dlopen(/usr/lib64/security/pam_pwcheck.so):
/usr/lib64/security/pam_pwcheck.so: cannot open shared object file: No such file or
directory
openwsmand: PAM adding faulty module: /usr/lib64/security/pam_pwcheck.so
```

When not using pwcheck.so, delete pwcheck.so from a PAM setting file.

Execute OS restart or the following command to make setting reflected.

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

3.1 Setting after the installation

The setting after the installation is as follows.

3.1.1 Workaround of openwsmand

The phenomenon that memory consumption of openwsmand increased is confirmed by our test. NEC ESMPRO ServerAgentService provides esmsas_openwsman_weekly script rebooting openwsmand as workaround once a week and restrain a memory consumption amount used for openwsmand.

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_openwsman_weekly script stored away by Starter Pack, 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 Starter Pack 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 Starter Pack.

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

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

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

{revision} varies according to model.

001 : NEC Express5800/R120h-1M, R120h-2M

- 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 Starter Pack from optical disk drive.

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

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

- When you install esmsas_openwsman_weekly script stored away by EXPRESSBUILDER, 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 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.

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

- 4) Copy `esmsas_openwsman_weekly.tgz` in a directory of your choice from EXPRESSBUILDER. 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 from optical disk drive.

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

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

- When you install `esmsas_openwsman_weekly` script stored away by Utility Disk, 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.

- 8) Insert Utility Disk the optical disk drive.
- 9) Run the following command to make the directory of mount point.

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

- 10) Run the following command to mount Utility Disk.

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

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

```
# mkdir /tmp/esmsas  
# cd /media/cdrom/tools/lnx/esmpro_sas/scripts/  
# cp esmsas_openwsman_weekly.tgz /tmp/esmsas
```

- 12) 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
```

- 13) 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
```

- 14) Run the following command to eject Utility Disk from optical disk drive.

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

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

-
- When you install esmsas_openwsman_weekly script stored away by ZIP file, 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
```

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

In 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.

In 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

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

In 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 ESM PRO 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/tcp	← →	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 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 firewall are as follows.

Stop the service (iptables or firewall) 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 ESM PRO 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 ESM PRO 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/red-hat-enterprise-linux/>

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/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/red-hat-enterprise-linux/>

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/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 firewall are as follows.

Stop the service (iptables or firewall) 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 firewall are refer to the following website.

Product Documentation for Red Hat Enterprise Linux

<https://access.redhat.com/documentation/en/red-hat-enterprise-linux/>

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/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 ESM PRO 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 ESM PRO ServerAgentService	Auto-assignment	

Function	Port	Note
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/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

3.2 Settings of NEC ESMPRO Manager

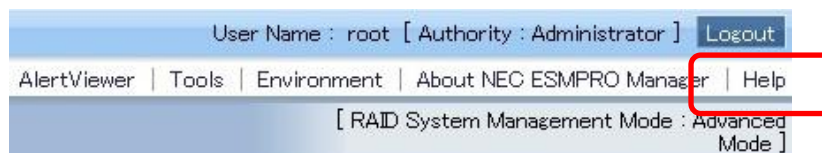
Register NEC ESMPRO ServerAgentService with NEC ESMPRO Manager by "Auto Registration" or "Manual Registration" to monitoring this server (hardware).

A screen image is sometimes different in the version of NEC ESMPRO Manager.

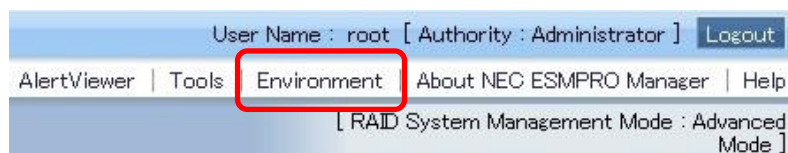
1. Login to NEC ESMPRO Manager.



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.
When you communicate at iLO and HTTPS in iLO support model, select "Allow" in "Self Signed Certificate" in Communication with iLO.
Click <Apply> button in this tab.

Environment [RAID System Mana

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

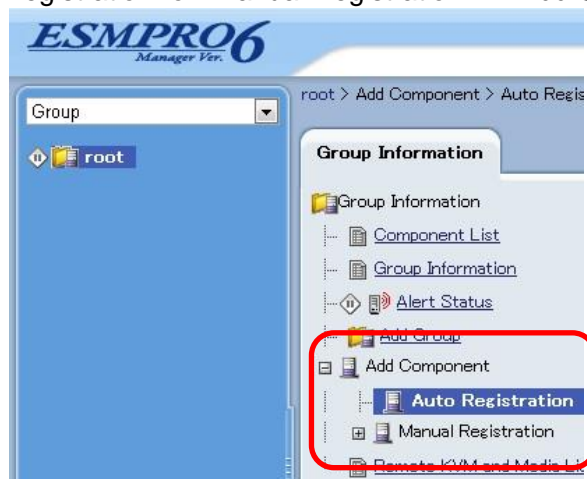
Item Name	Setup Value
SNMP/ICMP Communication	
Packet Resend Count	3 number of times
No-response Timeout 1 (1 - 65535 seconds) [required]	4 seconds
No-response Timeout 2 (1 - 65535 seconds) [required]	4 seconds
No-response Timeout 3 (1 - 65535 seconds) [required]	4 seconds
No-response Timeout 4 (1 - 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
Communication with iLO	
No-response Timeout (1 - 15 seconds) [required]	3 seconds
Command Send Retry Count (0 - 10 number of times) [required]	0 number of times
Communication Protocol	<input checked="" type="radio"/> HTTPS <input type="radio"/> HTTP
Self Signed Certificate	<input checked="" type="radio"/> Allow <input type="radio"/> Not Allowed
<input type="button" value="Apply"/> <input type="button" value="Cancel"/> <input type="button" value="Default"/>	

Tips


When Self Signed Certificate is set to Not Allowed in WS-Man Communication, 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]
:
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
```

4. Register WS-Man(NEC ESM PRO ServerAgentService) and BMC or iLO by "Auto Registration" or "Manual Registration" in "Add Component" of "root".



3.2.1 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 ESMPRO Agent)	
Discovery	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
SNMP Community Name [required]	<input type="text" value="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
 "BMC(EXPRESSSCOPE Engine)" is target for EXPRESSSCOPE Engine1/2/3/3ft/2SP/3SP,EM Card (SIGMABLADE), BMC(ECO CENTER), BMC(many core server). The case except other than the above and "iLO" and "vPro", please select "BMC(Other)".	
Features NEC ExpressUpdate	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Authentication Key [required]	<input type="text"/> <input type="button" value="Add"/>
iLO	
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"/>
BMC (Other)	
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"/>
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"/>

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

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"/>

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	<input type="radio"/> Enable <input checked="" type="radio"/> 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	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
User Name/Password	<input type="text"/> / <input type="text"/> <input type="button" value="Add"/>

4. BMC or iLO is added.

BMC (EXPRESSSCOPE Engine)	
Discovery	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
<p> "BMC(EXPRESSSCOPE Engine)" is target for EXPRESSSCOPE Engine1/2/3/3ft/2SP/3SP,EM Card(SIGMABLADE), BMC(ECO CENTER), BMC(many core server). The case except other than other than the above and "iLO" and "vPro", please select "BMC(Other)".</p>	
Features NEC ExpressUpdate	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Authentication Key [required]	<input type="text"/> <input type="button" value="Add"/>
iLO	
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"/>
BMC (Other)	
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"/>

<BMC(EXPRESSSCOPE Engine) support model>

Disable search in iLO and BMC(Other).

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

<iLO support model>

Disable search in BMC (EXPRESSSCOPE Engine) and BMC(Other).

Enable search in iLO. Input "User Name/Password", and click <Add> button.

<BMC(Other) support model>

Disable search in BMC (EXPRESSSCOPE Engine) and iLO.

Enable search in BMC(Other). Input "User Name/Password", and click <Add> button.

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

Run Discovery

Important

- **The way to delete CIM-Indication Report Setting**
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`
- 3) 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.

3.2.2 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 ESMPRO 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)" / "iLO" / "BMC (Other)" / "vPro" (Common)	
Management	<input checked="" type="radio"/> Registration <input type="radio"/> Unregistration
Management Type	<input checked="" type="radio"/> BMC <input type="radio"/> iLO <input type="radio"/> BMC(Other) <input type="radio"/> vPro
 "BMC(EXPRESSSCOPE Engine)" is target for EXPRESSSCOPE Engine1/2/3/3ft/2SP/3SP,EM Card (SIGMABLADE), BMC(ECO CENTER), BMC(many core server). The case except other than other than the above and "iLO" and "vPro", please select "BMC(Other)".	
Authentication Key [required]	<input type="text"/>
"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "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"/>
IP Address2	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
	<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"/>

2. 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="password"/>
Communication Protocol	<input type="radio"/> HTTP <input checked="" type="radio"/> HTTPS
Port Number [required]	<input type="text" value="5986"/>

3. Registration in ""BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC(Other)" / "vPro" (LAN)",

<BMC (EXPRESSSCOPE Engine) support model>

Select BMC. Input "Authentication Key".

"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (Common)	
Management	<input checked="" type="radio"/> Registration <input type="radio"/> Unregistration
Management Type	<input checked="" type="radio"/> BMC <input type="radio"/> iLO <input type="radio"/> BMC(Other) <input type="radio"/> vPro
<p> "BMC(EXPRESSSCOPE Engine)" is target for EXPRESSSCOPE Engine1/2/3/3ft/2SP/3SP,EM Card (SIGMABLADE), BMC(ECO CENTER), BMC(many core server). The case except other than the above and "iLO" and "vPro", please select "BMC(Other)".</p>	
Authentication Key [required]	<input type="text"/>

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

"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "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"/>
IP Address2	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>

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.


<iLO support model>

Select iLO. Input "User Name" and "Password".

"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (Common)

Management ☒ Registration ☐ Unregistration

Management Type ☐ BMC ☒ iLO ☐ BMC(Other) ☐ vPro

 "BMC(EXPRESSSCOPE Engine)" is target for EXPRESSSCOPE Engine1/2/3/3ft/2SP/3SP,EM Card (SIGMABLADE), BMC(ECO CENTER), BMC(many core server).
The case except other than other than the above and "iLO" and "vPro", please select "BMC(Other)".

User Name **[required]**

Password **[required]**

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

"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (LAN)

IP Address1 **[required]** . . .


<BMC(Other) support model>

Select BMC(Other). Input "User Name" and "Password".

"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (Common)

Management ☒ Registration ☐ Unregistration

Management Type ☐ BMC ☐ iLO ☒ BMC(Other) ☐ vPro

 "BMC(EXPRESSSCOPE Engine)" is target for EXPRESSSCOPE Engine1/2/3/3ft/2SP/3SP,EM Card (SIGMABLADE), BMC(ECO CENTER), BMC(many core server).
The case except other than other than the above and "iLO" and "vPro", please select "BMC(Other)".

User Name **[required]**

Password **[required]**

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

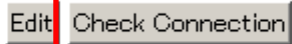
"BMC (EXPRESSSCOPE Engine)" / "iLO" / "BMC (Other)" / "vPro" (LAN)

IP Address1 **[required]** . . .

- Click <Add> button, and register NEC ESM PRO ServerAgentService and BMC or iLO.



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



Important

- The way to delete CIM-Indication Report Setting**
If you delete the managed component from NEC ESM PRO Manager, CIM-Indication Report Setting of NEC ESM PRO ServerAgentService is deleted automatically.

But CIM-Indication Report Setting is not deleted in the following case.
- When the management PC on which NEC ESM PRO 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`
- 3) 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.

3.3 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.

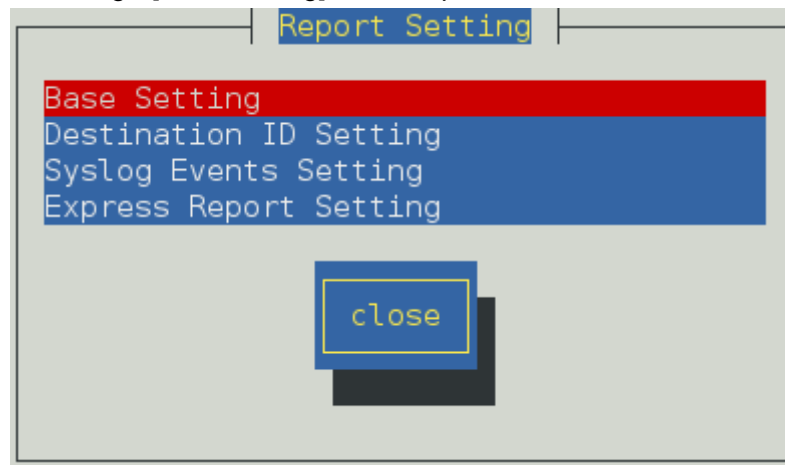
1. Log in to the system as the root user.
2. Run the following command to move to the directory where ESMamsadm is stored.

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

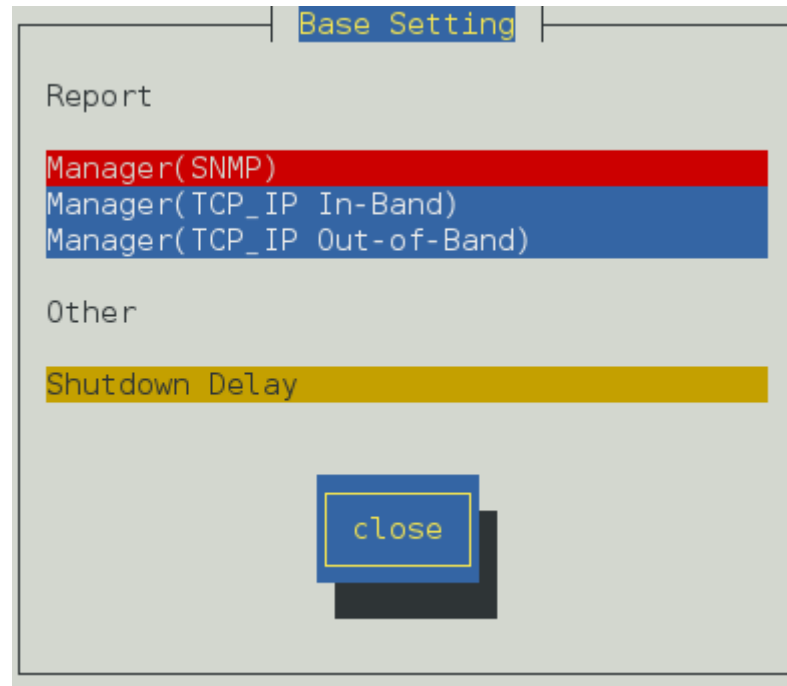
3. Run the following command to start Control Panel (ESMamsadm). [Report Setting] screen opens.

```
# ./ESMamsadm
```

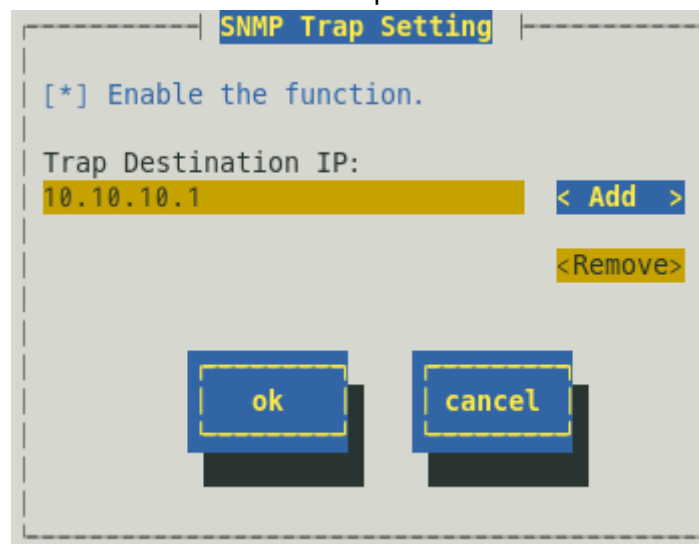
4. Select "Base Setting". [Base Setting] screen opens.



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.

3.4 Setting of Express Report Service

Refer to Express Report Service Setup Guide (Linux/VMware) stored away by EXPRESSBUILDER or Starter Pack, or following Web site for the setting method of the Express Report Service.

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

ESMPRO > Express Report Service (Linux)

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.

I. Uninstallation

It explains a procedure to uninstall NEC ESMPRO ServerAgentService.

1. Log in to the system as the root user.
2. In 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.
You skip uninstallation of the package which is not installed.

- In 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  
# rpm -e esmrest      (iLO support model)
```

- In 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.

- In case of Red Hat Enterprise Linux 6

```
# reboot
```

- In 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

In 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.

- In case of on, change the setting of sblim-sfcb, and stop sblim-sfcb.

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

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

In 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.

- In 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
```

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

1.1.2 Setting of sblim-sfcc

In 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/libcimcClientXML.so': File exists

In: creating symbolic link `/usr/lib64/libcimcclient.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

In 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
```

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

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

- In 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
```

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

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

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

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

- In 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

In 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
```

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

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

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

1.1.8 Setting of snmpd

In 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
```

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

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

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

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

- In case of enabled, do not change the setting of snmpd.

- In 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

BMC support model only.

In 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
```

- In case of on, do not change the setting of ipmi.

- In case of off, change the setting of ipmi, and reboot.

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

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

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

- In case of enabled, do not change the setting of ipmi.

- In 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

In case of Red Hat Enterprise Linux 6, append "method" at the end of

"Linux_OperatingSystem" Class to allow NEC ESMPRO 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

In 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

In 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
```

- In case of enabled, do not change the setting of NetworkManager-wait-online.
- In 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 self signed certificate of openwsman

Tips

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

```
[server]
:
ssl_cert_file = /etc/openwsman/servercert.pem
ssl_key_file = /etc/openwsman/serverkey.pem
```

Note

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

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

Note

When you overwrite by a new self signed certificate, add "--force" to an argument.

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

Create self signed certificate of openwsman. When a certificate is stored, it do not make making (do not overwrite).

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

Note

The expiration date of self signed certificate `esmsasgencert.sh` create is 365 days.

```
cat <<EOF |openssl req -days 365 $@ -config $CNFFILE ¥
-new -x509 -nodes -out $CERTFILE ¥
-keyout $KEYFILE
```

The expiration date can be confirmed by the following command.

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

When exceeding the expiration date, self signed certificate of openwsman do update and openwsmand service is restarted.

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

- In case of Red Hat Enterprise Linux 7 and Oracle Linux 7

```
# systemctl restart openwsmand.service
```

- In case of Red Hat Enterprise Linux 6

```
# service openwsmand restart
```

Tips

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

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

#####
/etc/openwsman/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/openwsman/ssleay.cnf with
    /dev/urandom. Please understand the implications of replacing
the RANDFILE.
```

1.1.14 Setting of openwsmand

In case of Red Hat Enterprise Linux 6, check that runlevel 3 and 5 of openwsmand.

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

- In case of on, do not change the setting of openwsmand.

- In case of off, change the setting of openwsmand, and start openwsmand.

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

In case of Red Hat Enterprise Linux 7 and Oracle Linux 7, check that enabled of openwsmand.

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

- In case of enabled, do not change the setting of openwsmand.

- In case of disabled, change the setting of openwsmand, and start openwsmand.

```
# 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
```


1.1.15 [Action After Report] is disable shutdown at [Temp Lower Error] events.

[Action After Report] is disable shutdown at [Temp Lower Error(EventID:C0000066, C0000070)] events,
when BMC support model and ESMPRO/ServerAgentService Ver.2.0.9-0 or later.

If you want enable shutdown at [Temp Lower Error(EventID:C0000066, C0000070)], execute the following procedure.

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
4. Select "Syslog Events Setting".
 [Syslog Events Setting] screen opens.
5. Select the [ESMCOMMONSERVICE] from "Source", using < ↑ > or < ↓ > key.
6. Select "OFF" from "Operation on source". Set using <space> key.
7. Select [C0000066] from "Event ID", using < ↑ > or < ↓ > key.
8. Press [Set...] and [Syslog Application Setting] screen opens.
9. Select [Shutdown] for which you want to modify the setting from
 "Action After Report", using < ↑ > or < ↓ > key.
10. Press [ok].
11. Select [C0000070] from "Event ID", using < ↑ > or < ↓ > key,
 and do procedure 7 to procedure 10.
12. Press [close].

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

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 Utility Disk : tools/lnx/esmpro_sas/check_pkg/

In case of the ZIP file : check_pkg/

```
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>
check_pkg/ follower is copied for /tmp follower by the following example.
# cp -ar {mount point}/../esmpro_sas/check_pkg/ /tmp
Move to the directory where check_packages.sh is stored.
# cd {The directory in check_packages.sh}
# sh ./check_packages.sh -i {The directory in necessary packages}
```

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.

3. LICENSE

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Version 2, June 1991

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NEC ESMPRO ServerAgentService Ver.2.1
Installation Guide (Linux)

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