NEC ESMPRO ServerAgentService Ver. 2.3 Installation Guide (Linux)

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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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libesmtp.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.

Apache License

esmsmsrv.py (Esmpro-Selsrv package)

jsonpath-rw

python-ilorest-library

recordtype

MIT

pip

urlparse2

validictory

BSD License

jsonpatch

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

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

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

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You can download the latest version of NEC ESMPRO ServerAgentService from the URL.
http://www.58support.nec.co.jp/global/download/index.html

NEC ESMPRO ServerAgentService Ver. 2.3

1 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 7 (x86_64)
- Red Hat Enterprise Linux 8 (x86_64)
- Red Hat Enterprise Linux 9 (x86_64)
- Oracle Linux 7 (x86_64)
- Oracle Linux 8 (x86_64)

Management Software

Software which manages this product:

- NEC ESMPRO Manager (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.		
Syslog Monitoring and Report service	ESMamvmain	None
This process is monitoring syslog. Reports it in report method. It provides to reports it to a manager using TCP/IP.		
SNMP report service	ESMntagent	None
This process provides to reports it to a manager using SNMP.		

- Monitoring Thread

Function	Class	Source of Alert
Note	Default	
CPU Load	ESM_Processor	ESMCPUPERF
This thread is monitoring CPU load.	Utilization Rate : Load For 1 min Sample Interval (Seconds) : 10 Monitoring : Disable Fatal %t : 100 Reset (Error) : 97 Warning % : 95 Reset (Warning) : 92	
Physical Memory Used	ESM_PhysicalMemory	ESMMEMORYUSAGE
This thread is monitoring physical memory used.	Sample Interval (Seconds) : 60 Monitoring : Disable Fatal (MB) : 95% of Total Capacity Reset (Error) (MB) : 90% of Total Capacity Warning (MB) : 85% of Total Capacity Reset (Warning) (MB) : 80% of Total Capacity	
Virtual Memory Used	ESM_VirtualMemory	ESMMEMORYUSAGE
This thread is monitoring virtual memory used.	Sample Interval (Seconds) : 60 Monitoring : Disable Fatal (MB) : 95% of Total Capacity Reset (Error) (MB) : 90% of Total Capacity Warning (MB) : 85% of Total Capacity Reset (Warning) (MB) : 80% of Total Capacity	
Page File Used	ESM_PageFile	ESMMEMORYUSAGE
This thread is monitoring page file used.	Sample Interval (Seconds) : 60 Monitoring : Disable Fatal (MB) : 95% of Total Capacity Reset (Error) (MB) : 90% of Total Capacity Warning (MB) : 85% of Total Capacity Reset (Warning) (MB) : 80% of Total Capacity	

Function	Class	Source of Alert
Note	Default	
Storage	ESM_StorageThread	ESM STORAGE SERVICE
This thread is monitoring simple substance storage. iLO support model is not supported.	Sample Interval (Seconds) : 60 SMART Monitoring : Enable	
Filesystem	ESM_FileSystemThread	ESMFSSERVICE
This thread is monitoring filesystem.	Sample Interval (Seconds) : 60 Monitoring : Enable Fatal (MB) : 1% of Total Capacity Warning (MB) : 10% of Total Capacity	
CPU and Memory Degenerate	None	ESMCOMMONSERVICE
This thread is monitoring CPU and memory degenerate in start ESMcmn. iLO support model is not supported.		

・Esmpro-Selsrv package

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

NEC ESMPRO ServerAgentService Ver. 2.3

2 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.

1. 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".**

Important **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.**

1.1 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 9
- Red Hat Enterprise Linux 8
- Red Hat Enterprise Linux 7.3 errata kernel-3.10.0-514.6.1.el7 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>
1. check_pkg/ follower is copied for /tmp follower by the following example.
  # cp -ar {mount point}/../esmpro_sas/check_pkg/ /tmp
2. Move to the directory where check_packages.sh is stored.
  # cd {The directory in check_packages.sh}
3. Run the following command.
  # sh ./check_packages.sh -i {The directory in necessary packages}
```

Important

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

Tips	The necessary packages stored BaseOS/Packages and AppStream/Packages in Red Hat Enterprise Linux 9, Red Hat Enterprise Linux 8 and Oracle Linux 8 installation medium. Run the following command to the necessary packages is installed. # sh ./check_packages.sh -i {mount point}/BaseOS/Packages 1>/dev/null # sh ./check_packages.sh -i {mount point}/AppStream/Packages
Tips	The necessary packages stored /Packages in Red Hat Enterprise Linux 7 installation medium. Run the following command to the necessary packages is installed. # sh ./check_packages.sh -i {mount point}/Packages

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

	zip	(x86_64)	libcurl	(x86_64)

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

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 firewalld.** **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
```

```
# rpm -ivh python3*.rpm
```

(*2) It is unnecessary in Red Hat Enterprise Linux 7.4 or earlier.

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)

Red Hat Enterprise Linux 7 x86_64				
Group	Package Name			
	libcom_err-devel	(x86_64)	perl-PathTools	(x86_64) (*1)
	libkadm5	(x86_64)	perl-Pod-Escapes	(noarch) (*1)
	libselinux-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) (*2)
Grp3	apr-util	(x86_64)	ruby-libs	(x86_64)
	krb5-devel	(x86_64)	sblim-indication_helper	(x86_64)
	libtirpc	(x86_64)	sblim-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	cim-schema	(noarch)	sblim-wbemcli	(x86_64)
	httpd-tools	(x86_64)	unzip	(x86_64)
	net-snmp	(x86_64)	wsmancli	(x86_64)
	openssl-devel	(x86_64)	python-ply	(noarch)
	openwsman-client	(x86_64)	python-six	(noarch)
	openwsman-server	(x86_64)	python-jsonpointer	(noarch)
	rpcbind	(x86_64)	python-setuptools	(noarch)
	sblim-cmpi-base	(x86_64)		

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

	zip	(x86_64)	libcurl	(x86_64)

Red Hat Enterprise Linux 8 x86_64				
Group	Package Name			
Grp1	libpkgconf	(x86_64)		
Grp2	pcre2-utf16	(x86_64)	pkgconf-m4	(noarch)
	pcre2-utf32	(x86_64)	pkgconf-pkg-config	(x86_64)

Red Hat Enterprise Linux 8 x86_64				
Group	Package Name			
	pkgconf	(x86_64)		
Grp3	libsepol-devel	(x86_64)	pcre2-devel	(x86_64)
	mariadb-connector-c-conf	(noarch)		
Grp4	apr	(x86_64)	perl-File-Path	(noarch) (*1)
	keyutils-libs-devel	(x86_64)	perl-interpreter	(x86_64) (*1)
	libcom_err-devel	(x86_64)	perl-IO	(x86_64) (*1)
	libkadm5	(x86_64)	perl-libs	(x86_64) (*1)
	libselinux-devel	(x86_64)	perl-macros	(x86_64) (*1)
	libverto-devel	(x86_64)	perl-parent	(noarch) (*1)
	lm_sensors-libs	(x86_64)	perl-PathTools	(x86_64) (*1)
	mariadb-connector-c	(x86_64)	perl-Scalar-List-Utils	(x86_64) (*1)
	net-snmp-libs	(x86_64)	perl-Socket	(x86_64) (*1)
	openslp	(x86_64)	perl-Text-Tabs+Wrap	(noarch) (*1)
	perl-Carp	(noarch) (*1)	perl-threads	(x86_64) (*1)
	perl-constant	(noarch) (*1)	perl-threads-shared	(x86_64) (*1)
	perl-Errno	(x86_64) (*1)	perl-Unicode-Normalize	(x86_64) (*1)
	perl-Exporter	(noarch) (*1)		
	Install the following package because it is the dependence of net-snmp after Red Hat Enterprise Linux 8.4.			
	perl-Encode	(x86_64) (*1)	perl-Pod-Simple	(noarch) (*1)
	perl-File-Temp	(noarch) (*1)	perl-Pod-Usage	(noarch) (*1)
	perl-Getopt-Long	(noarch) (*1)	perl-Storable	(x86_64) (*1)
	perl-HTTP-Tiny	(noarch) (*1)	perl-Term-ANSIColor	(noarch) (*1)
	perl-MIME-Base64	(x86_64) (*1)	perl-Term-Cap	(noarch) (*1)
	perl-podlators	(noarch) (*1)	perl-Time-Local	(noarch) (*1)
	perl-Pod-Escapes	(noarch) (*1)	perl-Text-ParseWords	(noarch) (*1)
	perl-Pod-Perldoc	(noarch) (*1)		
Grp5	apr-util	(x86_64)	ruby-libs-2.5	(x86_64)
	krb5-devel	(x86_64)	sblim-indication_helper	(x86_64)
	libwsman1	(x86_64)	sblim-sfcc	(x86_64)
	net-snmp-agent-libs	(x86_64)	tog-pegasus-libs	(x86_64)
	perl-Data-Dumper	(x86_64)	zlib-devel	(x86_64)
Grp6	cim-schema	(noarch)	python3-pip	(noarch)
	httpd-tools	(x86_64)	python3-pysocks	(noarch)
	net-snmp	(x86_64)	python3-setuptools	(noarch)
	net-tools	(x86_64)	python3-urllib3	(noarch)
	openssl-devel	(x86_64)	rpcbind	(x86_64)
	openwsman-client	(x86_64)	sblim-wbemcli	(x86_64)
	openwsman-server	(x86_64)	tar	(x86_64)
	python36	(x86_64)	tog-pegasus	(x86_64)
	python3-jsonpatch	(noarch)	unzip	(x86_64)
	python3-jsonpointer	(noarch)	wsmancli	(x86_64)
Grp7	sblim-cmpi-base	(x86_64)		

Important

The kernel-4.18.0-305.17.1 (or earlier) and kernel-4.18.0-305.el8.x86_64.rpm included with the Red Hat Enterprise Linux 8.4 installation medium does not have a serial port.
If you use dial-up reporting with Express Reporting Service, update to kernel-4.18.0-305.19.1 (or later).

Important

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

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

	zip	(x86_64)	libcurl	(x86_64)

Red Hat Enterprise Linux 9 x86_64				
Group	PackageName			
Grp1	libpkgconf	x86_64	mariadb-connector-c-config	noarch
Grp2	apr	x86_64	perl-Pod-Simple	noarch (*1)
	checkpolicy	x86_64	perl-Pod-Usage	noarch (*1)
	lm_sensors-libs	x86_64	perl-Scalar-List-Utils	x86_64 (*1)
	mariadb-connector-c	x86_64	perl-SelectSaver	noarch (*1)
	net-snmp-libs	x86_64	perl-Socket	x86_64 (*1)
	openslp	x86_64	perl-Storable	x86_64 (*1)
	perl-B	x86_64 (*1)	perl-Symbol	noarch (*1)
	perl-Carp	noarch (*1)	perl-Term-ANSIColor	noarch (*1)
	perl-Class-Struct	noarch (*1)	perl-Term-Cap	noarch (*1)
	perl-Data-Dumper	x86_64 (*1)	perl-Term-ReadLine	noarch (*1)
	perl-Encode	x86_64 (*1)	perl-Text-ParseWords	noarch (*1)
	perl-Errno	x86_64 (*1)	perl-Text-Tabs+Wrap	noarch (*1)
	perl-Exporter	noarch (*1)	perl-Time-Local	noarch (*1)
	perl-Fcntl	x86_64 (*1)	perl-constant	noarch (*1)
	perl-File-Basename	noarch (*1)	perl-if	noarch (*1)
	perl-File-Copy	noarch (*1)	perl-interpreter	x86_64 (*1)
	perl-File-Path	noarch (*1)	perl-libs	x86_64 (*1)
	perl-File-Temp	noarch (*1)	perl-mro	x86_64 (*1)
	perl-File-stat	noarch (*1)	perl-overload	noarch (*1)
	perl-Getopt-Long	noarch (*1)	perl-overloading	noarch (*1)
	perl-Getopt-Std	noarch (*1)	perl-parent	noarch (*1)
	perl-HTTP-Tiny	noarch (*1)	perl-podlators	noarch (*1)
	perl-IO	x86_64 (*1)	perl-subs	noarch (*1)
	perl-IPC-Open3	noarch (*1)	perl-vars	noarch (*1)
	perl-MIME-Base64	x86_64 (*1)	pkgconf	x86_64
	perl-POSIX	x86_64 (*1)	pkgconf-m4	noarch

Red Hat Enterprise Linux 9 x86_64				
Group	PackageName			
	perl-PathTools	x86_64 (*1)	python3-audit	x86_64
	perl-Pod-Escapes	noarch (*1)	python3-libsemanage	x86_64
	perl-Pod-Perldoc	noarch (*1)	python3-setools	x86_64
Grp3	apr-util	x86_64 (*1)	python3-policycoreutils	noarch
	apr-util-bdb	x86_64 (*1)	ruby-libs-3.0	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-libs	x86_64
	pkgconf-pkg-config	x86_64		
Grp4	cim-schema	noarch	python3-pip	noarch
	httpd-tools	x86_64	python3-ply	noarch
	net-snmp	x86_64	rpcbind	x86_64
	net-tools	x86_64	sblim-wbemcli	x86_64
	openssl-devel	x86_64	tar	x86_64
	openwsman-server	x86_64	tog-pegasus	x86_64
	policycoreutils-python-utils	noarch	unzip	x86_64
	python3-jsonpatch	noarch	wsmancli	x86_64
	python3-jsonpointer	noarch		
Grp5	sblim-cmpi-base	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
```

```
# rpm -ivh apr*.rpm
```

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

(*3) For interdependence in Red Hat Enterprise Linux 7.7, you appoint package at the same time, and install it.

```
# rpm -ivh OpenIPMI*.rpm
```

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)

Red Hat Enterprise Linux 7 x86_64, Oracle Linux 7 x86_64				
Group	PackageName			
	libselinux-devel	(x86_64)	perl-Pod-Escapes	(noarch) (*1)
	libverto-devel	(x86_64)	perl-podlators	(noarch) (*1)
	lm_sensors-libs	(x86_64)	perl-Pod-Perldoc	(noarch) (*1)
	OpenIPMI-modalias	(x86_64) (*3)	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) (*3)		
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) (*3)	sblim-wbemcli	(x86_64)
	openssl-devel	(x86_64)	unzip	(x86_64)
	openwsman-client	(x86_64)	wsmancli	(x86_64)

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

	zip	(x86_64)	libcurl	(x86_64)

Red Hat Enterprise Linux 8 x86_64 , Oracle Linux 8 x86_64				
Group	PackageName			
Grp1	libpkgconf	(x86_64)		
Grp2	pcre2-utf16	(x86_64)	pkgconf-m4	(noarch)
	pcre2-utf32	(x86_64)	pkgconf-pkg-config	(x86_64)
	pkgconf	(x86_64)		
Grp3	libsepol-devel	(x86_64)	pcre2-devel	(x86_64)
	mariadb-connector-c-config	(noarch)		
Grp4	apr	(x86_64)	perl-File-Path	(noarch) (*1)

Red Hat Enterprise Linux 8 x86_64 , Oracle Linux 8 x86_64				
Group	PackageName			
	keyutils-libs-devel	(x86_64)	perl-interpreter	(x86_64) (*1)
	libcom_err-devel	(x86_64)	perl-IO	(x86_64) (*1)
	libkadm5	(x86_64)	perl-libs	(x86_64) (*1)
	libselinux-devel	(x86_64)	perl-macros	(x86_64) (*1)
	libverto-devel	(x86_64)	perl-parent	(noarch) (*1)
	lm_sensors-libs	(x86_64)	perl-PathTools	(x86_64) (*1)
	mariadb-connector-c	(x86_64)	perl-Scalar-List-Utils	(x86_64) (*1)
	net-snmp-libs	(x86_64)	perl-Socket	(x86_64) (*1)
	openslp	(x86_64)	perl-Text-Tabs+Wrap	(noarch) (*1)
	perl-Carp	(noarch) (*1)	perl-threads	(x86_64) (*1)
	perl-constant	(noarch) (*1)	perl-threads-shared	(x86_64) (*1)
	perl-Errno	(x86_64) (*1)	perl-Unicode-Normalize	(x86_64) (*1)
	perl-Exporter	(noarch) (*1)		
	Install the following package because it is the dependence of net-snmp after Red Hat Enterprise Linux 8.4.			
	perl-Encode	(x86_64) (*1)	perl-Pod-Simple	(noarch) (*1)
	perl-File-Temp	(noarch) (*1)	perl-Pod-Usage	(noarch) (*1)
	perl-Getopt-Long	(noarch) (*1)	perl-Storable	(x86_64) (*1)
	perl-HTTP-Tiny	(noarch) (*1)	perl-Term-ANSIColor	(noarch) (*1)
	perl-MIME-Base64	(x86_64) (*1)	perl-Term-Cap	(noarch) (*1)
	perl-podlators	(noarch) (*1)	perl-Time-Local	(noarch) (*1)
	perl-Pod-Escapes	(noarch) (*1)	perl-Text-ParseWords	(noarch) (*1)
	perl-Pod-Perldoc	(noarch) (*1)		
Grp5	apr-util	(x86_64)	ruby-libs-2.5	(x86_64)
	krb5-devel	(x86_64)	sblim-indication_helper	(x86_64)
	libwsman1	(x86_64)	sblim-sfcc	(x86_64)
	net-snmp-agent-libs	(x86_64)	tog-pegasus-libs	(x86_64)
	OpenIPMI-libs	(x86_64)	zlib-devel	(x86_64)
	perl-Data-Dumper	(x86_64)		
Grp6	cim-schema	(noarch)	openwsman-server	(x86_64)
	httpd-tools	(x86_64)	rpcbind	(x86_64)
	net-snmp	(x86_64)	sblim-wbemcli	(x86_64)
	net-tools	(x86_64)	tar	(x86_64)
	OpenIPMI	(x86_64)	tog-pegasus	(x86_64)
	openssl-devel	(x86_64)	unzip	(x86_64)
	openwsman-client	(x86_64)	wsmancli	(x86_64)
Grp7	sblim-cmpi-base	(x86_64)		

Important

The kernel-4.18.0-305.17.1 (or earlier) and kernel-4.18.0-305.el8.x86_64.rpm included with the Red Hat Enterprise Linux 8.4 installation medium does not have a serial port.
If you use dial-up reporting with Express Reporting Service, update to kernel-4.18.0-305.19.1 (or later).

Important

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

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

	zip	(x86_64)	libcurl	(x86_64)

1.2.2 Setting of SELinux

If setting of SELinux is as follows.

Tips

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

1. Log in to the 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
```

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
```

   - In case of enforcing, edit as follows.

```
SELINUX=enforcing
```

   - In case of permissive, edit as follows.

```
SELINUX=permissive
```

5. If enforcing, run the following command.

```
# semanage permissive -a pegasus_t
```

Tips

When the semanage command is not found, install the policycoreutils-python-utils package.

Tips

When the audit package is installed, It executes the following command and displays actions SELinux denies.

```
# ausearch -m AVC,USER_AVC,SELINUX_ERR,USER_SELINUX_ERR -ts today
```

When the setroubleshoot-server package is installed, it executes the following command, and it is possible to confirm it from syslog.

```
# grep "SELinux is preventing" /var/log/messages
```

6. Run the following command to restart the OS.

```
# systemctl reboot
```

2. Installation and Upgrade

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

Important

The kernel-4.18.0-305.17.1 (or earlier) and kernel-4.18.0-305.el8.x86_64.rpm included with the Red Hat Enterprise Linux 8.4 installation medium does not have a serial port.
If you use dial-up reporting with Express Reporting Service, update to kernel-4.18.0-305.19.1 (or later).

Important

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

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.

Note

Service is stopped by an upgrade of NEC ESMPRO ServerAgentService. When introducing a process monitoring product, handle so as not to measure during an upgrade.

Note

When Federal Information Processing Standard (FIPS) mode is enabled, it installs NEC ESMPRO ServerAgentService in the following procedure.

1) Check the verify level of the rpm package.

```
# rpm --eval "%{_pkgverify_level}"
all / signature / digest
```

2) Set the verify level of the rpm package to none.

- If /etc/rpm/macros.verify does not exist, do the following:

```
# echo "%_pkgverify_level none" > /etc/rpm/macros.verify
# cat /etc/rpm/macros.verify
%_pkgverify_level none
```

- If /etc/rpm/macros.verify exists, add the following lines in a text editor such as vi:

```
%_pkgverify_level none
```

3) Check the verify level of the rpm package.

```
# rpm --eval "%{_pkgverify_level}"
none
```

4) Install NEC ESMPRO ServerAgentService.

5) Return the verification level of the rpm package that you changed in step 2).

- If /etc/rpm/macros.verify did not exist in step 2), delete the created file.

```
# rm /etc/rpm/macros.verify
rm: remove regular file '/etc/rpm/macros.verify'? y
```

- If /etc/rpm/macros.verify existed in step 2), delete the following lines in a text editor such as vi:

```
% pkgverify level none
```

6) Check that the verify level of the rpm package is the same as in step 1).

```
# rpm --eval "%{_pkgverify_level}"
all / signature / digest
```

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.

Tips

The following messages is displayed when you run an installation script of NEC ESMPRO ServerAgentService by Federal Information Processing Standard (FIPS) mode is enabled.
Example:.

```
# sh ./pp_install
Python Module Install Begin.
Python Module Install End successfully.

ESMPRO ESMRest Package Install Begin.
Verifying... ################################## [100%]
Preparing... ################################## [100%]
ERROR: Command [/bin/rpm -ivh
/tmp/EXPRESSBUILDER7_00000000_00000000000000000/x86_64/esmrest-
1.0.0-0.x86_64.rpm] failed! So stop to install, exit.
```

<< Processing does not proceed after this >>

Kill the installation process to press <Ctrl> + <C> key, and follow the steps in "When Federal Information Processing Standard (FIPS) mode is enabled" in [Note] above.

Tips

The following messages is displayed when you run an installation script of NEC ESMPRO ServerAgentService by tog-pegasus is not started.

```
  Error: tog-pegasus(cimserver) is not running.
```

When the following file exists, it deletes.

```
  # rm -f /var/lib/Pegasus/repository/root#interop/instances/CIM I
  ndicationSubscription.instances.rollback
```

Start the tog-pegasus.

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

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.

```
# 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.

```
# 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/lnx/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.

```
# 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.

Important

The kernel-4.18.0-305.17.1 (or earlier) and kernel-4.18.0-305.el8.x86_64.rpm included with the Red Hat Enterprise Linux 8.4 installation medium does not have a serial port. If you use dial-up reporting with Express Reporting Service, update to kernel-4.18.0-305.19.1 (or later).

Important

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

Note

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

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

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

The first time tog-pegasus is started, the certificate-related files are always updated because the certificate and trust store locations have not been created.
If the certificate file was updated before the message was output (tog-pegasus starts for the first time), the contents may be overwritten (erased).
NEC ESMPRO ServerAgentService installation script starts tog-pegasus, because registers ESMPRO provider, if tog-pegasus is not started.
After starting tog-pegasus for the first time, update the certificate file again.

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.
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.

Tips

The systemd is used to store the following unit files:

```
/usr/lib/systemd/system/esmsas_openwsman_weekly.service
```

```
/usr/lib/systemd/system/esmsas_openwsman_weekly.timer
```

Enable and start the timer unit with the following command.

```
# /usr/bin/systemctl enable esmsas_openwsman_weekly.timer
# /usr/bin/systemctl start esmsas_openwsman_weekly.timer
```

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 Setting of access control

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

```
# cat /proc/sys/net/ipv4/ip_local_port_range
```

The open examples of the port using firewalld are refer to the following website.
Product Documentation for Red Hat Enterprise Linux
https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/

Red Hat Enterprise Linux 9
+- Configuring firewalls and packet filters
+- 1. Using and configuring firewalld
Red Hat Enterprise Linux 8
+- Securing networks
+- 9. Using and configuring firewalld
Red Hat Enterprise Linux 7
+- Security Guide
+- 5. Using Firewalls

- 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)

Function	SAS	Direction	Manager	Note
Report to Manager (SNMP)	Auto-assignment	→	162/udp	SNMP Trap
Report to Manager (TCP/IP in Band, TCP/IP Out-of-Band)	Auto-assignment	→ ←	31134/tcp	
Express Report Service (Via Forward Manager)	Auto-assignment	→ ←	31136/tcp	
Express Report Service (HTTPS Via Forward Manager)	Auto-assignment	→ ←	31138/tcp	

* The port number of openwsmand is set in "ssl_port" at [server] section of /etc/openwsman/openwsman.conf.
* The port number(6736) of "CIM Indication Sending events" is a default value. It is set in "port number" at [Alert Receive Setting] - [CIM-Indication Setting] of AlertViewer in NEC ESMPRO Manager.
* The upper direction shows the direction at start-up, and the lower shows the return.
* For the setting of the port number for Report to Manager (TCP/IP in Band, Out-of-Band) is used as a report method.

- 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.

- 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.

- Interprocess communication in the local host

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

* Cannot change the port number of rpcbind and tog-pegasus.
* The port number of openwsmand is set in "ssl_port" at [server] section of
  /etc/openwsman/openwsman.conf.

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).
Refer to NEC ESMPRO Manager Setup Guide for instructions.

NEC ESMPRO Manager can download the latest version from the following website:
http://www.58support.nec.co.jp/global/download/index.html
ESMPRO > 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.

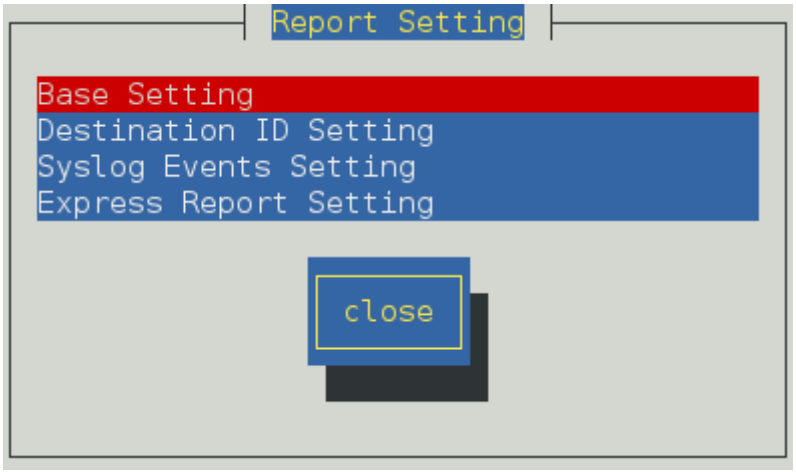
2. Run the following command to move to the directory where ESMamsadm is stored.

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

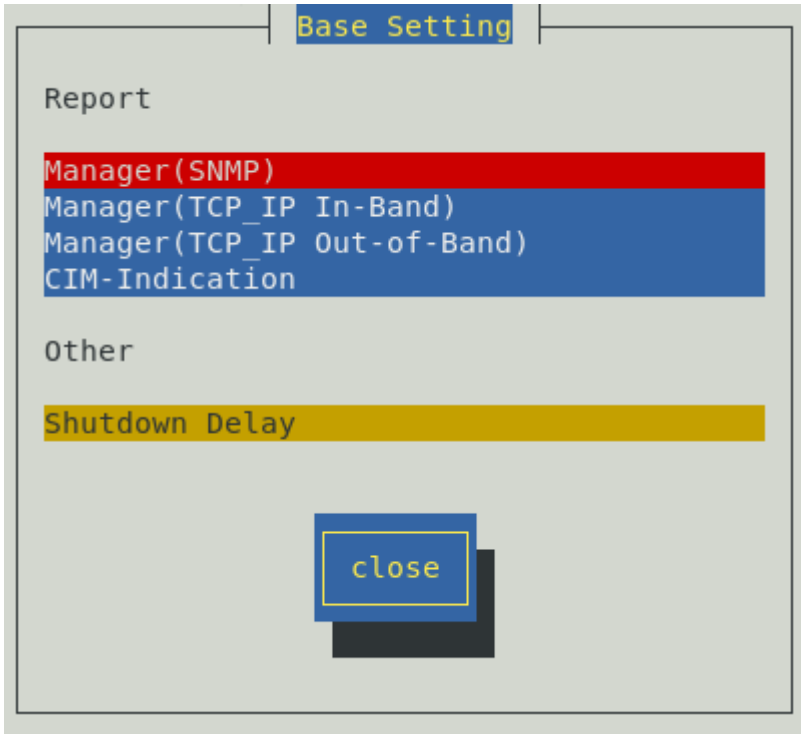
3. Run the following command to start Control Panel (ESMamsadm). [Report Setting] screen opens.

```
# ./ESMamsadm
```

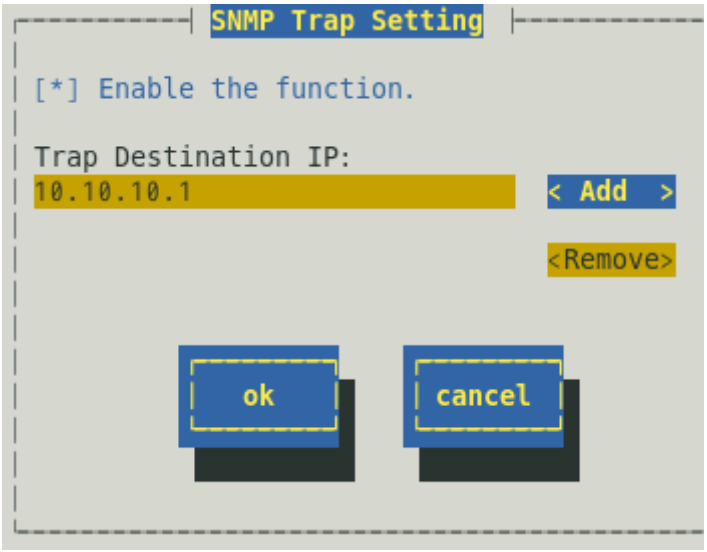
4. Select "Base Setting". [Base Setting] screen opens.



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.

NEC ESMPRO ServerAgentService Ver. 2.3

3

Uninstallation

This chapter describes uninstallation of NEC ESMPRO ServerAgentService.

1. Uninstallation

This section describes how to uninstall NEC ESMPRO ServerAgentService.

1. Uninstallation

It explains a procedure to uninstall NEC ESMPRO ServerAgentService.

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

2. 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.

```
# systemctl reboot
```

With the above uninstallation of NEC ESMPRO ServerAgentService is completion.

NEC ESMPRO ServerAgentService Ver. 2.3

4 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

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 of 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 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 SfcbLocal for local connection with sfcb CIMOM running on same system
# cim_client_frontend = SfcbLocal
cim_client_frontend = XML
```

After:

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

ssl_port = 5986
  :

[cim]
default_cim_namespace = root/cimv2

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

1.1.3 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
```

1.1.4 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
```

1.1.5 Setting of tog-pegasus

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
```

1.1.6 Setting of snmpd

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
```

1.1.7 Setting of ipmi

BMC support model only.
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
```

1.1.8 Setting of NetworkManager-wait-online.service

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
```

1.1.9 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

In case of Red Hat Enterprise Linux 9, Red Hat Enterprise Linux 8 and Oracle Linux 8, check if the default_bits (key length) of ssleay.cnf is 2048. For 1024, change to 2048.

```
[ req ]
default_bits          = 2048
```

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
```

In case of Red Hat Enterprise Linux 9, Red Hat Enterprise Linux 8 and Oracle Linux 8, the default_bits (key size) in /etc/openwsman/ssleay.cnf is changed to 2048 from 1024.

```
[ req ]
default_bits          = 2048
```

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

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

1.1.10 Setting of openwsmand

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
```

1.1.11 [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.

Note

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

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

Tips

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

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

Tips

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

Tips

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

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

When a problem occurs for movement of the obstacle information collection tool (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>
```
1. check_pkg/ follower is copied for /tmp follower by the following example.
  # cp -ar {mount point}/../esmpro_sas/check_pkg/ /tmp
2. Move to the directory where check_packages.sh is stored.
  # cd {The directory in check_packages.sh}
3. Run the following command.
  # sh ./check_packages.sh -i {The directory in necessary packages}
```

Important

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

Tips

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

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

Tips

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

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

List of messages

Information

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

All packages are installed successfully.

Please install the package of [NG].

The package of [NG] will be installed.

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

Error

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

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

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

ERROR: Not found {package name}

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

ERROR: This architecture is not supported. So exit.

ERROR: This kernel is not supported. So exit.

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