

NEC ESMPRO ServerAgentService Ver. 2.2 Installation Guide (Windows)

Chapter 1 General Description

Chapter 2 Installation

Chapter 3 Uninstallation

Chapter 4 Appendix

Contents

| | |
|------------------------------------------------------------------------------------------|----|
| Contents..... | 2 |
| Conventions Used in This Document | 4 |
| Notations used in the text..... | 4 |
| Abbreviations of Operating Systems | 5 |
| Trademarks | 6 |
| Open-source software | 7 |
| Warnings and Additions to This Document..... | 8 |
| Latest editions..... | 8 |
| Chapter 1 General Description | 9 |
| 1. Introduction..... | 10 |
| 2. System Requirements | 11 |
| Chapter 2 Installation..... | 12 |
| 1. Before Starting Installation | 13 |
| 1.1 Installation Method..... | 13 |
| 1.2 Settings Before Installation | 14 |
| 1.2.1 Installing of Starter Pack by IPMI model..... | 14 |
| 1.2.2 Installing of .NET Framework | 14 |
| 1.2.3 Setting of TCP/IP..... | 16 |
| 1.2.4 Installing of SNMP Service..... | 17 |
| 1.2.5 Settings of SNMP Service | 18 |
| 1.2.6 Monitoring RAID System..... | 20 |
| 1.2.7 Backup of System Event Log | 20 |
| 1.2.8 Monitoring function of Storage device | 20 |
| 2. Installation | 21 |
| 2.1 Service Mode and Non-Service Mode | 21 |
| 2.1.1 Service Mode | 21 |
| 2.1.2 Non-Service Mode | 21 |
| 2.1.3 Comparison of Service Mode and Non-Service Mode | 22 |
| 2.2 Start of the Setup Program | 23 |
| 2.2.1 Starting the Setup Program from Starter Pack..... | 23 |
| 2.2.2 Starting the Setup Program from EXPRESSBUILDER | 24 |
| 2.2.3 Starting the Setup Program from Download..... | 26 |
| 2.3 Execution of the Setup Program | 27 |
| 3. After Finishing Installation..... | 31 |
| 3.1 Operations Check | 31 |
| 3.2 Port Setting..... | 32 |
| 3.3 HTTPS Setting..... | 33 |
| 3.3.1 Setting Method | 33 |
| 3.3.2 Open a port | 37 |
| 3.3.3 NEC ESMPro Manager Setting..... | 37 |
| 3.4 Operations Check | 38 |
| 3.5 Monitoring PCIeSSD..... | 39 |
| Chapter 3 Uninstallation | 41 |
| 1. Before Starting Uninstallation | 42 |
| 1.1 Confirmation of .NET Framework..... | 42 |
| 1.2 Confirmation of Express Report Service / Express Report Service (HTTPS) | 42 |

| | | |
|------------|-----------------------------------------------|----|
| 2. | Uninstallation | 43 |
| 2.1 | On Full Install OS..... | 43 |
| 2.2 | On Server Core Install OS | 45 |
| 3. | After Finishing Uninstallation | 48 |
| 3.1 | Undo WinRM Settings..... | 48 |
| Chapter 4 | Appendix..... | 49 |
| 1. | Notes | 50 |
| 1.1 | Event Log..... | 50 |
| 1.2 | Monitoring Storage device / File system | 55 |
| 1.3 | I/O Device | 57 |
| 1.4 | Coexistence with Other Product..... | 57 |
| 1.5 | Report | 58 |
| 1.6 | OS Dependence | 59 |
| 1.7 | Others | 60 |
| 2. | Port Number / Protocol List | 64 |
| 3. | Services List | 65 |
| 4. | Starting and Stopping Services | 66 |
| 5. | License | 67 |

Conventions Used in This Document

Notations used in the text

Three types of notations are used in this document. These notations have the following meanings.

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

Abbreviations of Operating Systems

Windows Operating Systems are referred to as follows.

| Notations in this document | Official names of Windows |
|----------------------------|-----------------------------------|
| Windows Server 2019 | Windows Server 2019 Standard |
| | Windows Server 2019 Datacenter |
| | Windows Server 2019 Essentials |
| Windows Server 2016 | Windows Server 2016 Standard |
| | Windows Server 2016 Datacenter |
| | Windows Server 2016 Essentials |
| Windows Server 2012 R2 | Windows Server 2012 R2 Standard |
| | Windows Server 2012 R2 Datacenter |

Trademarks

EXPRESSCLUSTER, EXPRESSSCOPE and Universal RAID Utility are registered trademarks of NEC Corporation.

Microsoft, Windows, and Windows Server are registered trademarks or trademarks of Microsoft Corporation in the United States and other countries.

All other product, brand, or trade names used in this publication are the trademarks or registered trademarks of their respective trademark owners.

Open-source software

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

- **Apatch License**

- python-ilorest-library
 - jsonpatch-rw
 - recordtype

- **MIT License**

- urlparse2
 - validictory
 - six

- **Python Software Foundation License**

- Python2.7

- **Modified BSD License**

- jsonpatch
 - jsonpointer
 - ply3.8
 - decorator

See Chapter 4 (5 License) for the license.

Warnings and Additions to This Document

1. Unauthorized reproduction of the contents of this document, in part or in its entirety, is prohibited.
2. This document is subject to change at any time without notice.
3. Do not make copies or alter the document content without permission from NEC Corporation.
4. If you have any concerns, or discover errors or omissions in this document, contact your sales representative.
5. Regardless of article 4, NEC Corporation assumes no responsibility for effects resulting from your operations.
6. The sample values used in this document are not actual values.

Keep this document for future use.

Latest editions

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.

General Description

This chapter explains NEC ESMPRO ServerAgentService.

1. Introduction

2. System Requirements

Describes about the necessary system configuration.

***I*. Introduction**

Read this document so as to gain an adequate understanding of the contents.

The contents in this document are intended for users who fully understand features and operations of OS related to this utility.

If there is any unclear point, see Windows online help.

Software for monitoring the server. This works with NEC ESMPRO Manager. You can choose Service Mode or Non-Service Mode when installing this software. Service Mode resides as the OS service and Non-Service Mode does not use the OS service to reduce memory, CPU power and other OS resources.

For details of Service Mode and Non-Service Mode, see Chapter 2 (2.1 Service Mode and Non-Service Mode).

For details of NEC ESMPRO Manager, see "NEC ESMPRO Manager Installation Guide".

2. System Requirements

NEC ESMPRO ServerAgentService requires the following hardware and software.

- Hardware

- | | |
|------------------------------|------------------------------------------------|
| - Machine | Express5800 series |
| - Memory | Memory required for running OS + 200MB or more |
| - Free hard disk drive space | 50MB or more |

- Software

- | | |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| - OS | Windows Server 2019 Windows Server 2016 Windows Server 2012 R2 * OS that is supported by the machine (product) is different. Check the manual of the server. |
| - OS component | SNMP (Simple Network Management Protocol) .NET Framework 4 or later version by Microsoft support |

Important

- When monitoring NEC ESMPRO ServerAgentService by NEC ESMPRO Manager, use following one of NEC ESMPRO Manager.
 - NEC ESMPRO Manager included in EXPRESSBUILDER or newer version than that.
 - Latest version on the web (recommended).
- Nano Server installation option is not supported.

Tips

SNMP Service is not essential function by Non-Service Mode of NEC ESMPRO ServerAgentService. For details of Service Mode and Non-Service Mode, see Chapter 2 (2.1 Service Mode and Non-Service Mode).

Installation

This chapter explains installation of NEC ESMPRO ServerAgentService.

1. Before Starting Installation

Describes about necessary setting before installation.

2. Installation

Describes about installation procedure.

3. After Finishing Installation

Describes about necessary setting after installation.

1. Before Starting Installation

Be sure to read this page before installing NEC ESMPRO ServerAgentService.

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.
- When installing NEC ESMPRO ServerAgentService, make the system locale of Windows OS the same one as an OS language.

1.1 Installation Method

NEC ESMPRO ServerAgentService has the following installation method.

◆ Pre-installation

In Windows pre-installed model, NEC ESMPRO ServerAgentService is already installed.

To use follow a procedure of Chapter 2 (1.2.5 Settings of SNMP Service).

◆ Installation simultaneously with OS installation

You can install NEC ESMPRO ServerAgentService automatically when Windows OS is installed with EXPRESSBUILDER.

To use follow a procedure of Chapter 2 (1.2.5 Settings of SNMP Service).

◆ Individual installation

You can execute the setup program from EXPRESSBUILDER (or in case of Starter Pack by iLO model) and download.

To install NEC ESMPRO ServerAgentService, follow a procedure of Chapter 2 (1.2 Settings Before Installation).

1.2 Settings Before Installation

Install NEC ESMPRO ServerAgentService after some components are set.

1.2.1 Installing of Starter Pack by IPMI model

Starter Pack is installed by IPMI model from EXPRESSBUILDER or from Driver Set of Support Kit. Details of Starter Pack, see "Installation Guide" in EXPRESSBUILDER or "Supplemental Installation Guide" in Support Kit.

1.2.2 Installing of .NET Framework

Installation of .NET Framework 4 or later version are indispensable by NEC ESMPRO ServerAgentService.

The installing of .NET Framework is described below.

This procedure is unnecessary by the environment that .NET Framework 4.5.2 or later version is installed.

Follow a procedure after Chapter 2 (1.2.3 Setting of TCP/IP).

Tips

If uninstall .NET Framework after installation of NEC ESMPRO ServerAgentService, install .NET Framework again. Then uninstall and install NEC ESMPRO ServerAgentService.

◆ Installing of .NET Framework

1. Sign-in to the system with the administrator account.

2. Start of .NET Framework setup program.

- In the case of .NET Framework 4.5.2

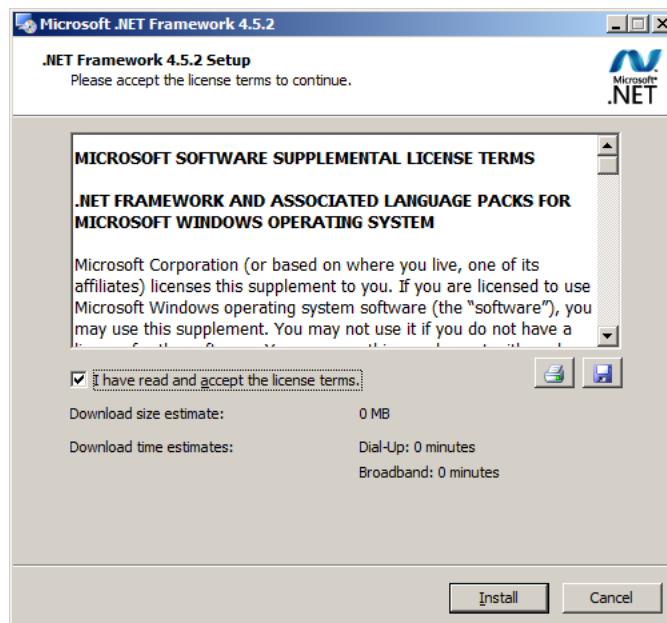
C:\Program Files (x86)\EXPRESSBUILDER\repository\<revision number>\win\dnetfw\NDP452-KB2901907-x86-x64-AIOS-ENU.exe

Tips

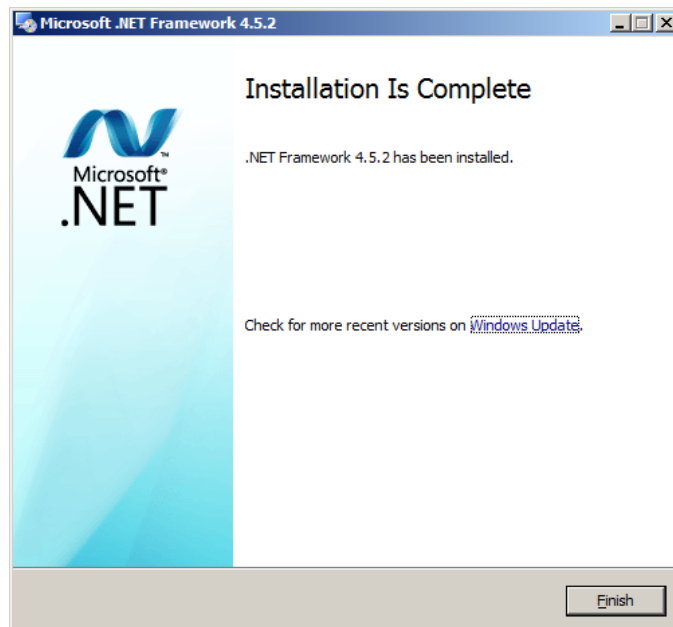
- When starting from EXPRESSBUILDER DVD, the setup program can be started from a "<revision number>\win\dnetfw\" follower.
- When starting from Starter Pack DVD, the setup program can be started from a "software\<revision number>\win\dnetfw\" follower.
- If you are installing on Server Core, you need to install follow the instructions below before you install .NET Framework.
 - Start /w ocsetup ServerCore-WOW64
 - Start /w ocsetup NetFx2-ServerCore
 - Start /w ocsetup NetFx2-ServerCore-WOW64

3. Check [I have read and accept the license terms.], and click [Install].

Start of installation.



4. Click [Finish].



The installation completed.

Restart the system. When installing the first time of .NET Framework.

1.2.3 Setting of TCP/IP

Set a static IP address for the server.

See Help from Windows for how to set TCP/IP.

1.2.4 Installing of SNMP Service

Installation of SNMP Service is indispensable by Service Mode of NEC ESMPRO ServerAgentService.
The installing of SNMP Service is described below.

Tips

- SNMP Service is not essential function by Non-Service Mode of NEC ESMPRO ServerAgentService. For details of Service Mode and Non-Service Mode, see Chapter 2 (2.1 Service Mode and Non-Service Mode).
- If uninstall SNMP Service after installation of NEC ESMPRO ServerAgentService, install SNMP Service again. Then uninstall and install NEC ESMPRO ServerAgentService.

◆ Windows Server OS

1. Click [Programs and Features] in [Control Panel].
2. Click [Turn Windows features on or off].
"Add Roles and Features Wizard" window appears.
3. Click [Features].
Click [Next], when [Features] cannot be clicked.
4. Check [SNMP Service] check box.
Click [Add Features]. When the dialogue of the confirmation to which the function is added is indicated.
5. Click [Next].
6. Click [Install].
Installing, it becomes more effective, it starts.
7. Click [Close].

Tips

In the case of Server Core installation, execute the following command.
"Dism /online /enable-feature /featurename:SNMP"

1.2.5 Settings of SNMP Service

Tips

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

At all except for server core installation, "◆ Setting preparation of SNMP Service" is unnecessary.
Follow the procedure of the next "◆ To change the settings of SNMP Service".

◆ Setting preparation of SNMP Service

The setting change of SNMP Service of the server that executes, Server Core installation is done from PC for Management by way of the network.

1. Connected preparation is done on the server side.

Execute the following command at the command prompt on the server.

```
"netsh advfirewall firewall set rule group="File and Printer Sharing" new enable=Yes"
```

2. Install SNMP Service on PC for Management.

(Operation by "PC for Management" after.)

About the method of installing SNMP Service, see Chapter 2 (1.2.4 Installing SNMP Service).

3. The session from PC for Management to the server is established.

Execute the following command at the command prompt on PC for Management side.

```
"Net use * ¥¥ <ServerName> ¥c$ /u: <UserName>"
```

Tips

- ServerName is a name of the server that executes Server Core installation.
- UserName is a name of the administrator account.

4. Click "Computer Management" in "Administrative Tools".
5. Right-click on the tree of the left pane, and click "Connect to another PC..."
6. The computer name of the server that executes Server Core installation is input to "Select Computer" box, and click "OK".

Connected to "Computer Management" of the server that executes Server Core installation.

◆ To change the settings of SNMP Service

1. Double-click [Services] at [Administrative Tools] in [Control Panel].
2. Click [SNMP Service] from the service list and then [Properties] in [Action] menu.
"SNMP Properties" dialog box appears.

Tips

- When a list of Windows service is opened when installing SNMP Service, [Traps] property sheet, [Agent] property sheet and [Security] property sheet of "SNMP Properties" dialog box are not indicated. When a property is not indicated right, close a list of Windows service and open a list of Windows service again.
- When not installing Feature Administrative Tools of SNMP Service, "SNMP Properties" dialog box is not indicated right. Add [SNMP Tool] from [Control Panel] [Programs and Features] - [Turn Windows features on or off] - [Features] - [Remote Server Administration Tools] - [Feature Administration Tools].

3. Enter "public" or an arbitrary name in [Community name] box of [Traps] property sheet and click [Add to list].

To change the community name of traps to be received from the default "*" in NEC ESMPRO Manager side, enter the same name as the community name newly set in NEC ESMPRO Manager side.

To receive trap from NEC ESMPRO ServerAgentService at NEC ESMPRO Manager, both community names must be the same.

4. Click [Add].
5. Click [Add...] in [Trap destinations]. After entering IP address of NEC ESMPRO Manager of the send destination in [Host name, IP or IPX address] box, click [Add].

When a designated IP address (or host name) is designated by setting of Manager Alert (TCP/IP) in the trap destination, the message to warn to overlap is indicated.

The alert overlaps by this setting, and is reported to NEC ESMPRO manager of a designated IP address (or host name).

6. Click [OK] Terminate the network setup.

1.2.6 Monitoring RAID System

Monitoring RAID system uses Universal RAID Utility or Smart Storage Administrator. For details, see the manual of each utility.

1.2.7 Backup of System Event Log

In case of IPMI model, SEL (System Event Log) of EXPRESSSCOPE Engine is cleared by installation of NEC ESMPRO ServerAgentService. When necessary, save the backup of SEL. See the manual of EXPRESSSCOPE Engine about the backup procedure of SEL.

1.2.8 Monitoring function of Storage device

For iLO model, use the management utility Smart Storage Administrator. See several manual of Smart Storage Administrator.

2. Installation

Start installing after the system starts completely. If installation is conducted right after the system startup, it may fail. Wait for a while and retry if the error message appears.

Tips

The version of installed NEC ESMPRO ServerAgentService can be confirmed by [NEC ESMPRO ServerAgentService] - [About NEC ESMPRO] from Start menu (or Apps Start window).

2.1 Service Mode and Non-Service Mode

Installation method of NEC ESMPRO ServerAgentService has a Mode of two kinds, "Service Mode" and "Non-Service Mode".

Tips

Mode selection is performed in installation program. To use another mode of NEC ESMPRO ServerAgentService, run uninstall once and run installation.

2.1.1 Service Mode

Installation mode of default. Mode to Install all feature of NEC ESMPRO ServerAgentService.

On preinstallation or Installation simultaneously with OS installation, Service Mode is chosen automatically.

Tips

If you want to monitor PCIeSSD install the mode of NEC ESMPRO ServerAgentService as a "Service Mode". See Chapter 2 (3.5 Monitoring PCIeSSD).

2.1.2 Non-Service Mode

The mode without Windows service program. The monitoring service and the report engine are not installed.

To choose Non-Service Mode, run setup program from [Applications].

2.1.3 Comparison of Service Mode and Non-Service Mode

[OS Component]

| | Service Mode | Non-Service Mode | Note |
|----------------|---------------|------------------|------|
| .NET Framework | Indispensable | Indispensable | |
| SNMP Service | Indispensable | Unnecessary | |

[Monitoring Function]

| | Service Mode | Non-Service Mode | Note |
|--------------------------------|--------------|------------------|-------------------------------------------|
| CPU load monitoring | Installed | Installed | Not reported in case of Non-Service Mode. |
| CPU/Memory Fallback monitoring | Installed | Not Install | |
| Memory usage monitoring | Installed | Installed | Not reported in case of Non-Service Mode. |
| File system monitoring | Installed | Installed | Not reported in case of Non-Service Mode. |
| Storage monitoring | Installed | Installed | Not reported in case of Non-Service Mode. |
| PCIeSSD Monitoring | Installed | Not Install | |
| S2D Disk Monitoring | Installed | Not Install | |

[Resident Service]

| | Service Mode | Non-Service Mode | Note |
|---------------------------------|---------------------|-----------------------|------------------------------------------------------------------|
| Start Monitor Service | Installed | Not Install | ESMCommonService |
| Monitoring hardware log Service | Installed | Not Install | ESM System Management Service |
| PCIeSSD monitoring Service | Installed | Not Install | ESMNVMemonitor |
| S2D Disk monitoring Service | Installed | Not Install | ESMS2DMonitor |
| Communication base Service | Installed | Not Install | Alert Manager Main Service Alert Manager Socket(S) Service |
| Express Report Service | Possible to install | Impossible to install | Alert Manager ALIVE(S) Service |
| Express Report Service (HTTPS) | Possible to install | Impossible to install | none |

Tips

In case of Non-Service Mode, the monitoring interval cannot be changed from NEC ESMPRO Manager.

2.2 Start of the Setup Program

Starting the Setup Program from Starter Pack (iLO model), EXPRESSBUILDER or download.

2.2.1 Starting the Setup Program from Starter Pack

Tips

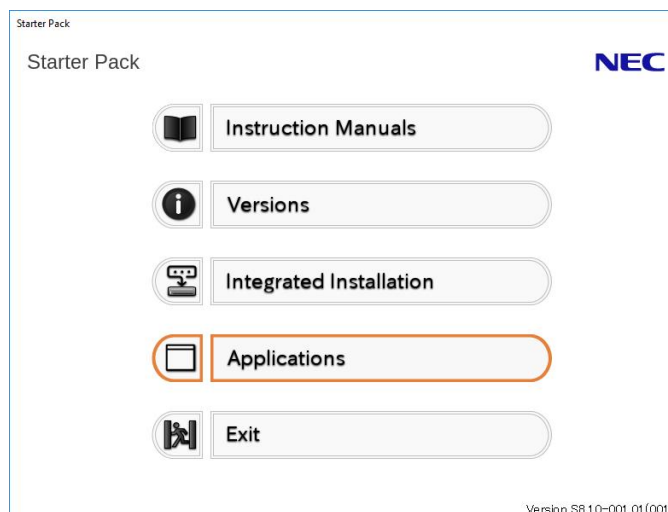
When upgrading NEC ESMPRO ServerAgentService using Starter Pack of the new version, start a setup program by a procedure in this chapter.

1. Sign-in to the system with the administrator account.
2. Starter Pack Menu is started.

Tips

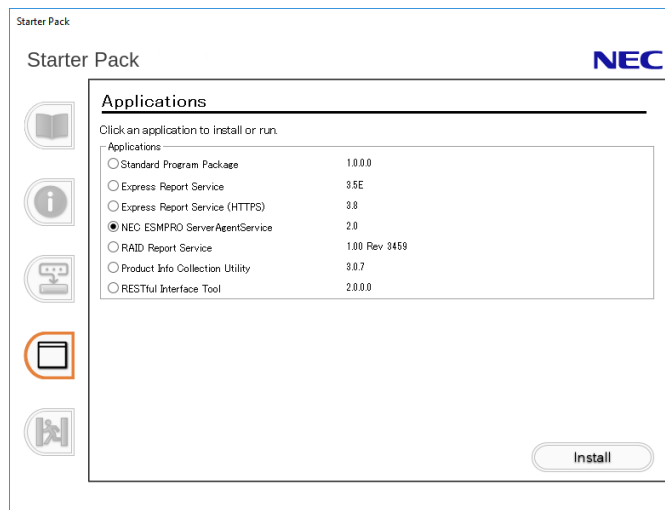
See "Maintenance Guide" for initiation method on Menu.

3. Click [Applications].



4. Click [NEC ESMPRO ServerAgentService] and then [Install].

Setup screen of NEC ESMPRO ServerAgentService starts.



2.2.2 Starting the Setup Program from EXPRESSBUILDER

Tips

On Server Core system, start the setup program with a procedure of "EXPRESSBUILDER Command Line Interface User's Guide".

1. Sign-in to the system with the administrator account.
2. EXPRESSBUILDER Autorun Menu is started.

The initiation method on the Autorun Menu is different depending on the models.

Tips

After installing Starter Pack in the server, a shortcut of "EXPRESSBUILDER" is created.

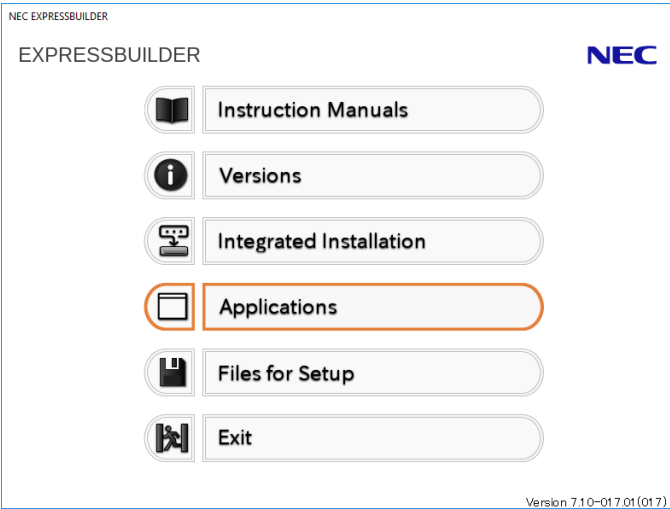
- The equipment by which EXPRESSBUILDER DVD isn't standard.

Click NEC EXPRESSBUILDER from Windows Start Menu or run the shortcut on the desktop.

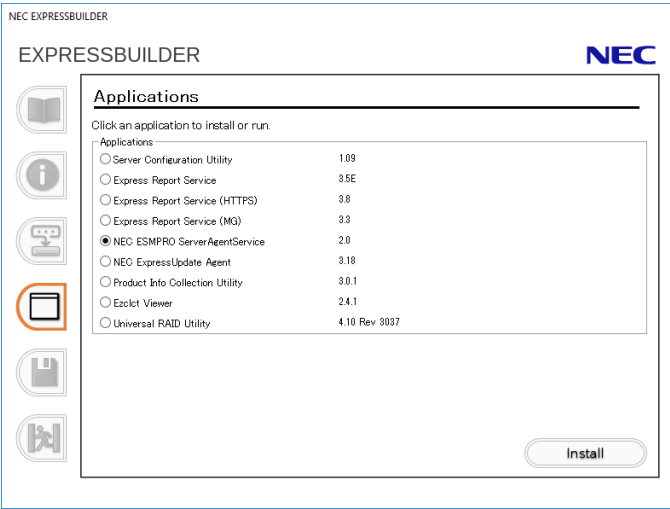
- The equipment by which EXPRESSBUILDER DVD is standard.

Insert EXPRESSBUILDER DVD into Optical disk drive.

3. Click [Applications].



4. Click [NEC ESMPRO ServerAgentService] and then [Install].
Setup screen of NEC ESMPRO ServerAgentService starts.



2.2.3 Starting the Setup Program from Download

Tips

Without uninstalling NEC ESMPRO ServerAgentService of the old version, you can upgrade it.

1. Sign-in to the system with the administrator account.

2. Unzip the downloaded setup program.

Save the downloaded "SAS22_E.zip" file in a folder of your choice, and unzip it. Use the shallow hierarchy (C:¥TEMP) for a folder. When the hierarchy of the folder is too deep, the setup program cannot unzip.

3. Double click the setup program "¥SAS22_E¥AGENT¥setup.exe".

Setup screen of NEC ESMPRO ServerAgentService starts.

Tips

- You may see a prompt for source (i.e. "Please insert the disk: 1") when performing a Minor Upgrade when you are upgrading with a CD image where the installer resides on a subfolder of the removable media. You should put the setup program (setup.exe) on the local disk.
- When installing from a drive on the network. A network drive must be allocated firstly and then double-click "SAS22_E¥AGENT¥setup.exe" to install.

2.3 Execution of the Setup Program

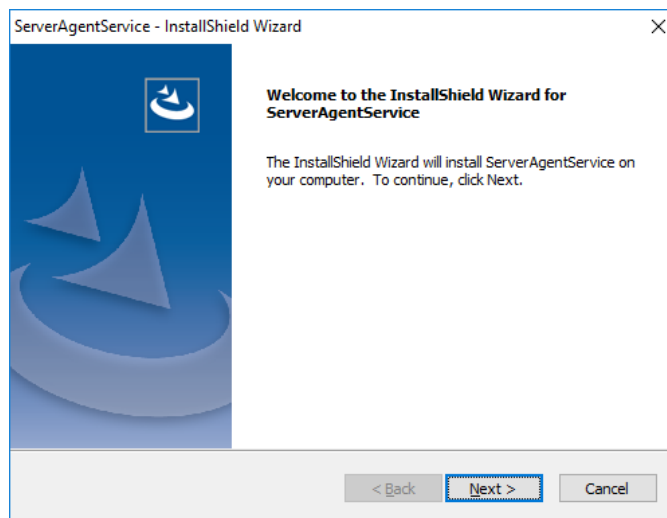
Install with directions of a screen of the setup program.

To change a destination folder and installation mode, choose Custom setup type on Setup Type screen.

Tips

When upgrading, setup.exe display the message box which confirms whether you want to continue upgrade. The message shown to a welcome window will be "Resuming the InstallShield Wizard for ServerAgentService". There is no operation until an end window is indicated.

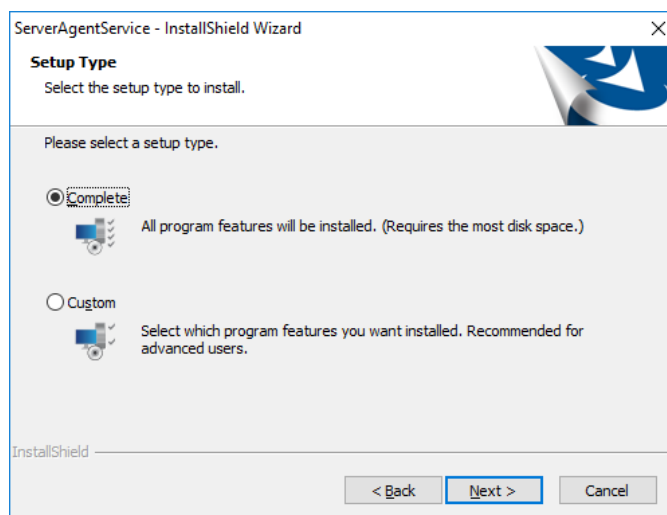
1. Click [Next].



2. Chose the setup type, and click [Next].

To install with default destination folder and installation mode, choose "Complete" setup type.

Skip to 5. To change a destination folder or installation mode, choose "Custom" setup type.



Tips

Default value of destination folder and installation mode as follows;

Destination folder : C:\ESM

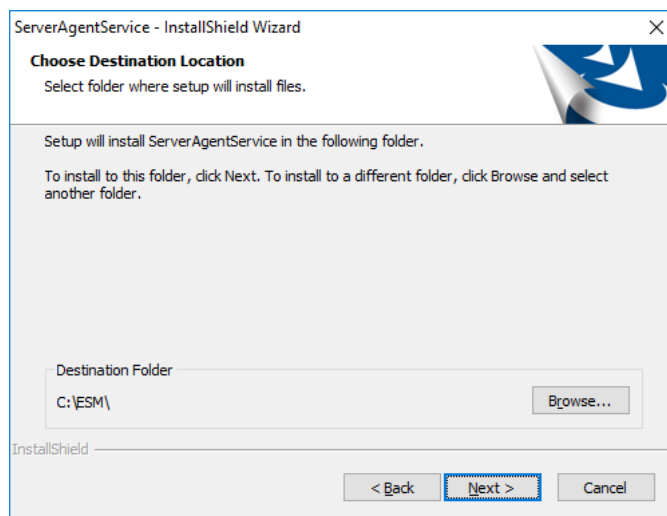
Installation mode : Service Mode

3. Choose Destination Location screen is indicated. If need, change the installation destination, and click [Next].

Tips

Do not choose following path as installation destination.

- A removable disk
- A network drive
- Path that includes multi-byte character like Japanese language
- Path that includes " ; " (Semicolon)



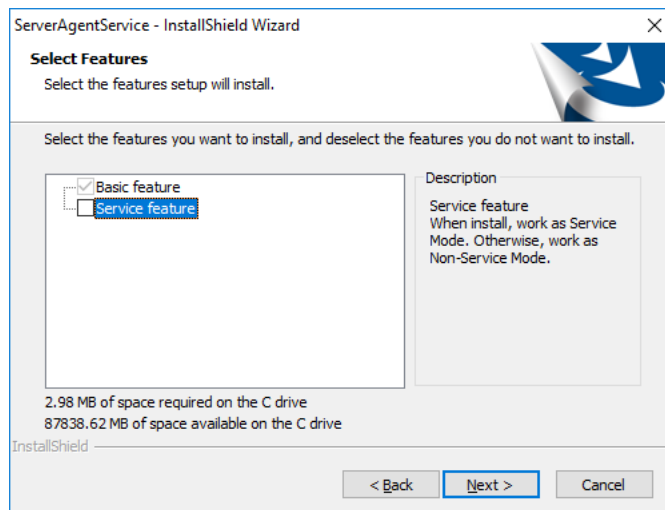
4. Select Feature screen is indicated. If need, change status of Service feature check box, and click [Next].

For Service Mode installation, put a tick on the check box.

For Non-Service Mode installation, remove a check of the check box.

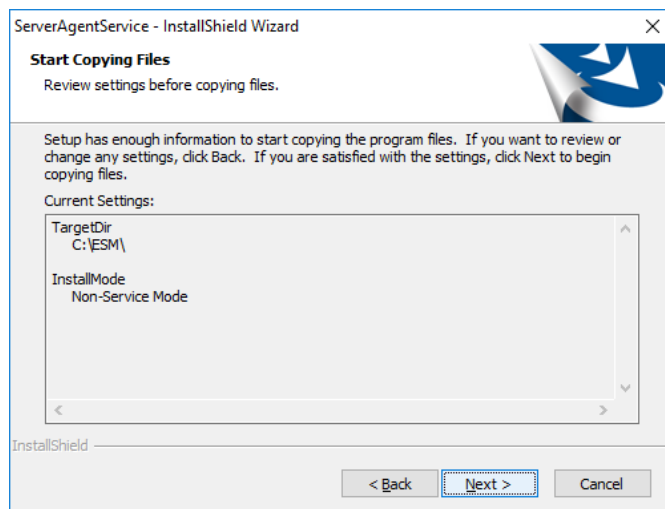
Tips

Basic feature check box is always on because it is an indispensable feature.

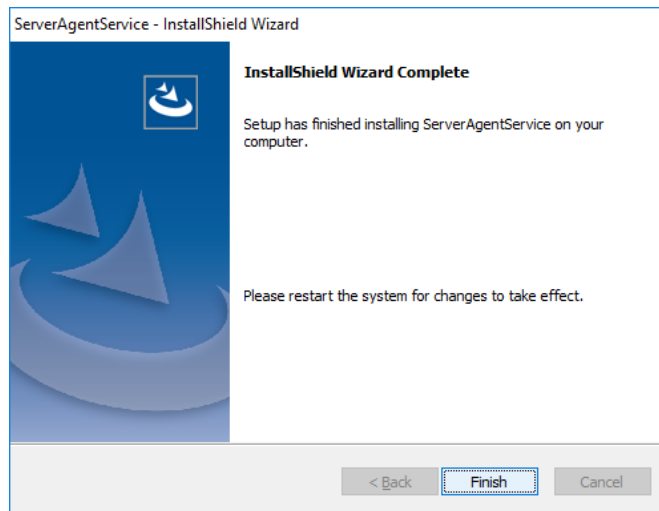


5. Click [Next].

Start of installation.



6. When the installation end window appears, click [Finish].



Installed NEC ESM PRO ServerAgentService becomes enabled after a restart the system.
The installation completed.

Tips

Depending on OS installing NEC ESM PRO ServerAgentService the message that "Windows Explorer has stopped working" might be displayed. However, installation was normally completed. There is no problem in system operation.

3. After Finishing Installation

Be sure to read this page after installing NEC ESMPRO ServerAgentService.

3.1 Operations Check

The setup program of NEC ESMPRO ServerAgentService enable Windows remote management (WinRM) and change settings. The setup program execute the following WinRM command in installation process.

```
winrm quickconfig -q  
winrm set winrm/config/service @{AllowUnencrypted="true"}  
winrm set winrm/config/service/auth @{Basic="true"}
```

In uninstallation process, the setup program does not change these settings. If you need, change settings to use by WinRM command.

3.2 Port Setting

A use port (5985/tcp) in WS-Man monitoring by NEC ESMRPO Manager is opened from after OS installation, but an accessible machine is restricted to only a machine in the local sub-net depending on installed OS or network environment. When monitoring in NEC ESMPRO Manager in the different sub-net, open WS-Man access from NEC ESMPRO Manager with the following procedure.

1. Double click [Administrative Tools]-[Windows Firewall with Advanced Security] in [Control Panel].
2. Click [Inbound Rules].
3. Select [Windows Remote Management (HTTP-In)], then Click [Properties] in the [Action] menu.

Windows Remote Management (HTTP-In) properties" window appears.

Tips

Depending on OS, [Windows Remote Management (HTTP-In)] is divided into plural by a network profile. Select rule for your network environment.

4. Select "Any IP address" in [Remote IP address] box of [Scope] property sheet.
When choosing [these IP addresses], add IP address of NEC ESMPRO Manager.
5. Click [OK].

3.3 HTTPS Setting

NEC ESMPRO ServerAgentService uses HTTP or HTTPS for WS-Man communication with NEC ESMPRO Manager. When NEC ESMPRO ServerAgentService is installed, HTTP is used as the default value.

Considering the security, HTTPS is recommended. When you're using the machines on the secure environment (e.g. standalone or closed network), you can also use HTTP.

3.3.1 Setting Method

How to connect with NEC ESMPRO Manager using HTTPS is as the following one procedure.

Important

Using HTTPS for a connection with NEC ESMPRO Manager is recommended. Because if you used HTTP, username and the password of Basic authentication to use WS-Man communication would be flowed by plain text on the network.

Tips

CA-signed certificate is recommended to use.

During the HTTPS setting, the following event log is registered. However, there is no problem in system operation.

| | | |
|-------------|---|-------------------------------------------------------------------------------|
| Source | : | HttpEvent |
| Event ID | : | 15301 |
| Level | : | Warning |
| Description | : | SSL Certificate Settings created by an admin process for Port : 0.0.0.0:5986. |

| | | |
|-------------|---|-----------------------------------------------------------|
| Source | : | HttpEvent |
| Event ID | : | 15300 |
| Level | : | Warning |
| Description | : | SSL Certificate Settings deleted for Port : 0.0.0.0:5986. |

◆ The way to use a CA-Signed certificate

In case of using a CA-Signed certificate, you have to install the certificate with the way that a certificate authority indicated.

1. Get a CA-Signed certificate from a certificate authority.
2. Sign-in to the server of NEC ESMPRO ServerAgentService with the administrator account.
3. Store the CA-Signed certificate in %EsmDir%\%tool.
4. Run the command prompt by the administrator account.
5. Execute the following command.

```
cd %EsmDir%\%tool  
ESMHttps.bat -c certificate_file
```

◆ The way to use "keytool.exe"

Create a Self-Signed certificate on a PC for management in which NEC ESMPRO Manager was installed. After that set HTTPS setting on the server in which NEC ESMPRO ServerAgentService was installed. "keytool.exe" is bundled by NEC ESMPRO Manager.

1. Sign-in to the PC for management of NEC ESMPRO Manager with the administrator account.
2. Run the command prompt by the administrator account.
3. Execute the following command.

In case of Installing NEC ESMPRO Manager in C:\Program Files (x86)\ESMPRO on 64bit OS
"C:\Program Files (x86)\ESMPRO\ESMWEB\java\bin\keytool.exe" -genkey -
keystore -storepass -validity -keyalg RSA -keysize -storetype pkcs12 -ext EKU=serverAuth
-dname "CN=IP Address"

Example:

In case of the server's IP Address is 192.168.1.1.

"C:\Program Files (x86)\ESMPRO\ESMWEB\java\bin\keytool.exe" -genkey -
keystore C:\temp\esmpro.pfx -storepass secret -validity 3650 -keyalg RSA -keysize 2048
-storetype pkcs12 -ext EKU=serverAuth -dname "CN=192.168.1.1"

Tips

- In case of an example, esmpro.pfx is made in C:\temp. Make C:\temp folder beforehand.
- In case of on 32bit OS, paraphrase "Program Files (x86)" as "Program Files".

4. Sign-in to the server of NEC ESMPRO ServerAgentService with the administrator account.
5. Store the created certificate in %EsmDir%\tool.
6. Run the command prompt by the administrator account.
7. Execute the following command.

```
cd %EsmDir%\tool
ESMHttps.bat -c certificate_file password
```

Example:

```
ESMHttps.bat -c esmpro.pfx secret
```

◆ The way to use "makecert.exe"

"makecert.exe" is available by installing Windows SDK, and it is possible to use it. Create a Self-Signed certificate and set HTTPS setting by the following procedure.

Important Use "makecert.exe" of file version 6 or later.

Tips See the following site about makecert.exe.
- Makecert.exe (Certificate Creation Tool)
<https://docs.microsoft.com/ja-jp/windows/win32/seccrypto/makecert?redirectedfrom=MSDN>

1. Sign-in to the server of NEC ESMPRO ServerAgentService with the administrator account.
2. Store the makecert.exe in %EsmDir%\%tool.
3. Run the command prompt by the administrator account.
4. Execute the following command.

```
cd %EsmDir%\%tool
ESMHttps.bat -m IPAddress Validity (mm/dd/yyyy)
```

Example:

```
ESMHttps.bat -m 192.168.1.100 12/31/2040
```

3.3.2 Open a port

Open a port to use HTTPS connection.

1. Double click [Administrative Tools]-[Windows Firewall with Advanced Security] in [Control Panel].
2. Right-click [Inbound Rules] and click [New Rule].
3. Select [Port] and click [Next].
4. Select [TCP] and [Specific local ports], input 5986 in port number and click [Next].
5. Select [Allow the connection] and click [Next].
6. Select a profile that is used for a connection with NEC ESMPRO Manager from [Domain], [Private] or [Public].
7. Input [Name] and [Description] and click [Finish].

Example:

Name: NEC ESMPRO ServerAgentService (HTTPS)

Description: Inbound rule for NEC ESMPRO ServerAgentService to allow data transfer using HTTPS [TCP 5986]

3.3.3 NEC ESMPRO Manager Setting

If using Self-Signed certificate, change a setting of NEC ESMPRO Manager to allow Self-Signed certificate by WS-Man communication. If using a CA-Signed certificate, the following procedure is unnecessary.

1. Select [Login] of NEC ESMPRO Manager.
2. Select [Environment].
3. Select [Network] tab and click [Edit].
4. Select [WS-Man Communication]-[Self Signed Certificate]-[Allow] and click [Apply].

3.4 Operations Check

Confirm whether the setting of NEC ESMPRO ServerAgentService.

1. Run the command prompt by the administrator account on another server .
2. Execute the following command to set WinRM.

```
winrm quickconfig
winrm set winrm/config/Client @{AllowUnencrypted="true"}
winrm set winrm/config/Client/Auth @{Basic="true"}
winrm set winrm/config/Client @{TrustedHost="IPAddress"}
```

3. Execute the following command.

```
winrm identify -r:http://IPAddress:port -u:username -p:password
winrm e wmi/root/cimv2/Win32_ComputerSystemProduct -r:http://IPAddress:port -
u:username -p:password
winrm e wmi/root/ESMPRO/AS/ESM_GeneralInformation -r:http://IPAddress:port -
u:username -p:password
```

Tips

- When connecting HTTPS, designate HTTPS as "-r" instead of HTTP.
- The port is HTTP/5985 or HTTPS/5986.
- Input username and password of OS' sign-in account.
- When connecting a server that have been set HTTPS connection by Self-Signed certificate, add "skipCACheck" to the command as follows. WinRM identify -r:http://IPAddress:port -u:username -p:password -skipCACheck.

4. When an error occurred in the previous procedure, there is a possibility that setting of NEC ESMPRO ServerAgentService is wrong. Confirm the setting with the following.

* In case of using HTTPS for a connection of NEC ESMPRO Manager
Redo setting of a HTTPS connection with Chapter 2 (3.3 HTTPS Setting).

* In case of using HTTP for a connection of NEC ESMPRO Manager
Run the command prompt by the administrator account and execute the following command on the server in which NEC ESMPRO ServerAgentService was installed. If an error number and message are not shown the prompt, it is success.

```
winrm quickconfig  
winrm set winrm/config/service @{AllowUnencrypted="true"}
```

5. Execute the command of procedure 3 by the administrator account of a different server, and confirm whether it is possible to connect to the server you installed.

3.5 Monitoring PCIeSSD

PCIeSSD for IPMI model in your environment, you will be able to monitor configuration information (such as the model name) and life state of PCIeSSD. It can be an active monitoring in the following procedure.

1. Double click [Control Panel] - [Administrative Tools] - [Services].
2. Select "ESMNVMMeMonitor" from the list of services, and open the properties of the service.
3. ESMNVMMeMonitor Properties - [General] Change the "Startup Type" from "Manual" to "Automatic".
4. Start ESMNVMMeMonitor.
5. Click [OK], and close ESMNVMMeMonitor Properties.

Tips

To monitor PCIeSSD using NEC ESMPRO Manager is required to register with BMC (EXPRESSSCOPE engine). NEC ESMPRO Manager gets its configuration information and life state of PCIeSSD from BMC (EXPRESSSCOPE engine). Stopping ESMNVMMeMonitor to display information about PCIeSSD in NEC ESMPRO Manager, but does not update the life state. If you want to monitor the life state, start ESMNVMMeMonitor.

3.6 Monitoring S2D Disk

If you are using Storage Spaces Direct (S2D), you can monitor the failure of the disk unit of S2D. It can be an active monitoring in the following procedure.

1. Double click [Control Panel] - [Administrative Tools] - [Services].
2. Select "ESMS2DMonitor" from the list of services, and open the properties of the service.
3. ESMS2DMonitor Properties - [General] Change the "Startup Type" from "Manual" to "Automatic".
4. Start ESMS2DMonitor.
5. Click [OK], and close ESMNVMeMonitor Properties.

Tips

The S2D disk monitoring function will register event logs, report to NEC ESM PRO Manager, and carry out Express Reports when the "Usage" of the S2D disk mounted on the local server (node) is set to "Retired". The S2D disk monitoring function also works if the "Usage" is set to "Retired" when replacing the S2D disk during hardware maintenance. In order to halt such reports during maintenance that involves S2D disk "Usage" operations, temporarily stop the monitoring service (ESMS2DMonitor).

- Temporarily stop the monitoring service

1. Before maintenance, select [ESMS2DMonitor] from the list of services above and click "Stop" or "Pause" to stop the service.
2. After completing the maintenance, click "Start" or "Resume" to start the service.

Uninstallation

This chapter explains uninstallation of NEC ESMPRO ServerAgentService.

1. Before Starting Uninstallation

Describes about necessary setting before uninstallation.

2. Uninstallation

Describes about uninstallation procedure.

3. After Finishing Uninstallation

Describes about necessary setting after uninstallation.

***1.* Before Starting Uninstallation**

Be sure to read this page before uninstalling NEC ESMPRO ServerAgentService.

***1.1* Confirmation of .NET Framework**

Installation of .NET Framework 4 or later version are indispensable to uninstallation of NEC ESMPRO ServerAgentService. If uninstall .NET Framework after installation of NEC ESMPRO ServerAgentService, install .NET Framework again.

***1.2* Confirmation of Express Report Service / Express Report Service (HTTPS)**

When Express Report Service / Express Report Service (HTTPS) are installed, Express Report Service / Express Report Service (HTTPS) must be uninstalled prior to uninstalling of NEC ESMPRO ServerAgentService.

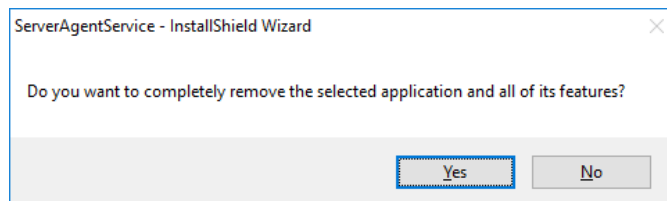
2. Uninstallation

Start uninstalling after the system starts completely. If uninstallation is conducted right after system startup, it may fail. Wait for a while and retry if error message appears.

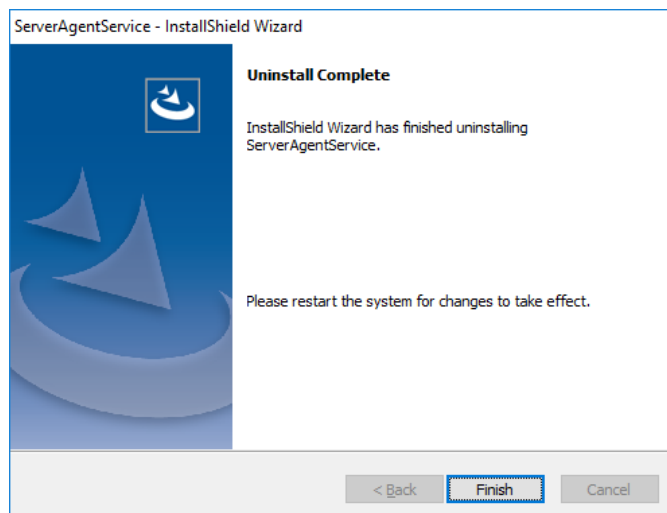
The uninstallation procedure of NEC ESMPRO ServerAgentService is common to Service Mode and Non-Service Mode.

2.1 Full Install OS

1. Sign-in to the system with the administrator account.
2. Click [Programs and Features] or [Add or Remove Programs] from [Control Panel].
3. Select [NEC ESMPRO ServerAgentService] and click [Uninstall/Change] (or [Change/Remove]).
4. The window which confirms the execution of remove is indicated, click [Yes].
Uninstallation is start.



5. When the uninstallation end window appears, click [Finish].



The uninstallation completed. Restart the system is required.

Tips

- If uninstallation is conducted right after the system startup, it can fail. Wait for a while and retry if the error message appears. [AMIRTUpt.dll] file can remain solely in the installation folder. In this case, delete it manually. If files other than [AMIRTUpt.dll] also remain, do not delete them.
- Due to InstallShield failure, the error message "C:¥PROGRA~1¥INSTAL~1¥{6342F~1¥setup.exe" is indicated only at the first startup after uninstallation.
- Depending on OS uninstalling NEC ESMPRO ServerAgentService the message that "Windows Explorer has stopped working" might be displayed. However, uninstallation was normally completed. There is no problem in system operation.
- After uninstalling, the following file is sometimes left in "C:¥Windows¥SysWOW64¥wbem" (32-bit: ¥System32¥wbem). When you access to WMI information using a tool like wbemtest.exe, classes and name space still exist. However, there is no problem in system operation.
 - ESMCPU_v4.0.30319.mof
 - esmfs_v4.0.30319.mof
 - ESMGeneralInformation_v4.0.30319.mof
 - ESMReportSetting_v4.0.30319.mof
 - esmstrg_v4.0.30319.mof
 - ESMWorkstationMonitor_v4.0.30319.mof
 - ESMMemory_v4.0.30319.mof
- If fail to stop service(s) during uninstallation, try to run uninstallation after stopping the service(s). To stop service, you can use the sc.exe or the [Administrative tools]. When stopping service, also stop service dependent on the service.

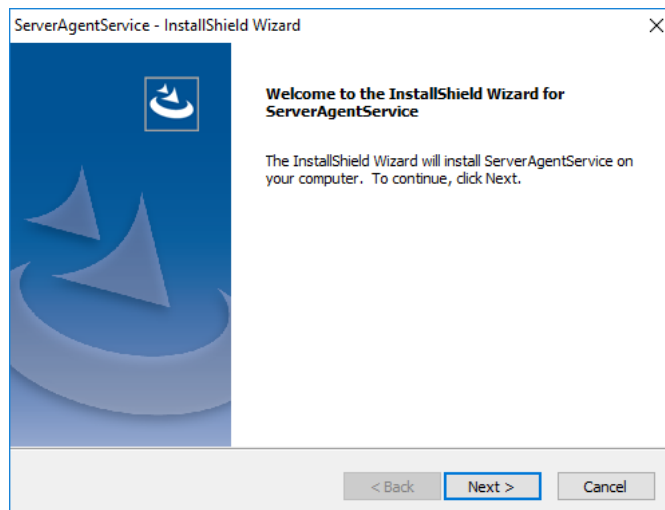
2.2 Server Core Install OS

The setup program is started from EXPRESSBUILDER by Server Core installation.

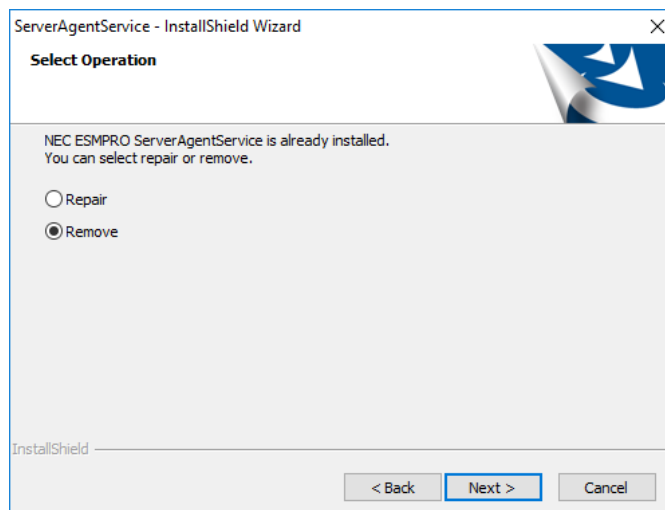
Tips

Uninstall NEC ESMPRO ServerAgentService using the setup program. About how to start the setup program, see Chapter 2 (2.2.3 Starting the Setup Program from Download).

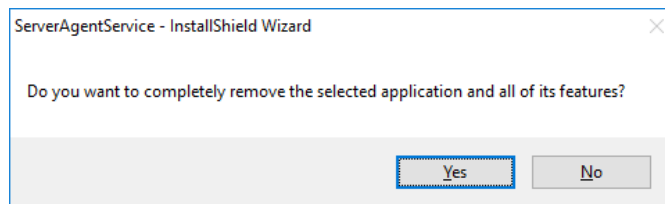
1. Sign-in to the system with the administrator account.
2. The setup program of NEC ESMPRO ServerAgentService is started with a procedure of EXPRESSBUILDER Command Line Interface User's Guide.
3. Click [Next].



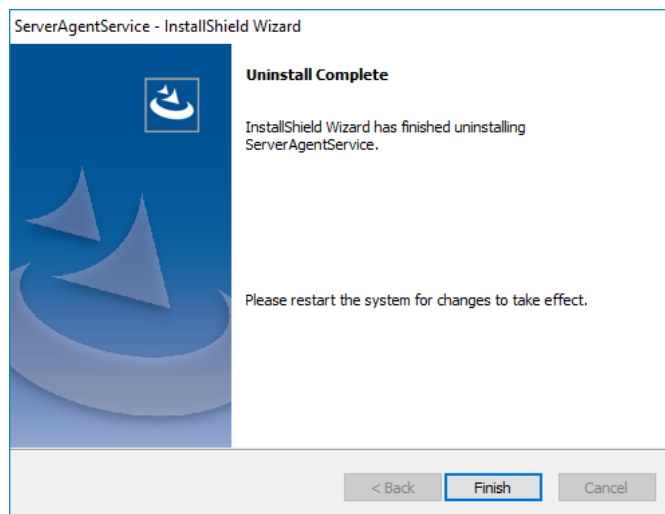
4. Chose a [Remove], and click [Next].



5. The window which confirms the execution of remove is indicated, click [Yes].
Uninstallation is start.



6. When the uninstallation end window appears, click [Finish].



The uninstallation completed. Restart the system is required.

Tips

- If uninstallation is conducted right after the system startup, it can fail. Wait for a while and retry if the error message appears, [AMIRTUpt.dll] file can remain solely in the installation folder. In this case, delete it manually. If files other than [AMIRTUpt.dll] also remain, do not delete them.
- Due to InstallShield failure, the error message "C:¥PROGRA~1¥INSTAL~1¥{6342F~1¥setup.exe" is indicated only at the first startup after uninstallation.
- Depending on OS uninstalling NEC ESMPRO ServerAgentService the message that "Windows Explorer has stopped working" might be displayed. However, uninstallation was normally completed. There is no problem in system operation.
- After uninstalling, the following file is sometimes left in "C:¥Windows¥SysWOW64¥wbem" (32-bit: ¥System32¥wbem). When you access to WMI information using a tool like wbemtest.exe, classes and name space still exist. However, there is no problem in system operation.
 - ESMCPU_v4.0.30319.mof
 - esmfs_v4.0.30319.mof
 - ESMGeneralInformation_v4.0.30319.mof
 - ESMReportSetting_v4.0.30319.mof
 - esmstrg_v4.0.30319.mof
 - ESMWorkstationMonitor_v4.0.30319.mof
 - ESMMemory_v4.0.30319.mof
- If fail to stop service(s) during uninstallation, try to run uninstallation after stopping the service(s). To stop service, you can use the sc.exe or the [Administrative tools]. When stopping service, also stop service dependent on the service.

3. After Finishing Uninstallation

3.1 Undo WinRM Settings

As described in Chapter 2 (3.1 Operations Check) of Installation, Even if NEC ESMPRO ServerAgentService is uninstalled, Windows Remote Management (WinRM) is practicable. If you don't use WinRM by other application, and when you'd like to stop using WinRM, carry out the following procedure.

◆ In case of WS-MAN communicate with HTTPS

1. Run the command prompt by the administrator account.
2. Execute the following command.

```
winrm delete winrm/config/listener?Address=*&Transport=HTTPS
```
3. Double click [Administrative Tools] - [Services] in [Control Panel].
4. To disable "WS-MAN service", change [Startup Type] to [Disabled] of [Windows Remote Management (WS-Management)].
5. Delete the rule of Windows Firewall established of Chapter 2 (3.3.2 Open a port).

◆ In case of WS-MAN communicate with HTTP

1. Run the command prompt by the administrator account.
2. Execute the following command.

```
winrm delete winrm/config/listener?Address=*&Transport=HTTP
```
3. Double click [Administrative Tools] - [Services] in [Control Panel].
4. To disable "WS-MAN service", change [Startup Type] to [Disabled] of [Windows Remote Management (WS-Management)].
5. Select [Windows Firewall] in [Control Panel], click [Allow a program or feature through Windows Firewall]. And turn off a check box [Windows Remote Management].

Appendix

1. Notes

Describes about notes.

2. Port Number / Protocol List

Describes about the port and the protocol.

3. Services List

Describes about the service list.

4. Starting and Stopping Services

Describes about the starting procedure and stopping procedure.

5. License

Describes about the license of the software.

/ . Notes

/ . / Event Log

◆ Event log (Application) which is registered during the installation of .Net Framework

During the installation of .Net Framework, the following event log is registered. However, there is no problem in system operation.

| | | |
|-------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Source | : | ASP.NET 4.0.30319.0 |
| Event ID | : | 1020 |
| Level | : | Warning |
| Description | : | Updates to the IIS metabase were aborted because IIS is either not installed or is disabled on this machine. To configure ASP.NET to run in IIS, please install or enable IIS and re-register ASP.NET using aspnet_regiis.exe /i. |

◆ Alert Manager WMI Service hang-up or ESMCommonService Start Failure event log (System)

The following log may be registered on the eventlog by the situation of the system - for example, you installed NEC ESMPRO Manager and NEC ESMPRO ServerAgentService on the same machine.

| | | |
|-------------|---|-----------------------------------|
| Source | : | Service Control Manager |
| Event ID | : | 7022 |
| Level | : | Error |
| Description | : | Alert Manager WMI Service hang-up |

ESMCommonService of NEC ESMPRO ServerAgentService may not start properly then. But "Automatic (Delayed Start)" and "automatic restart at failure" are set at ESMCommonService. When service shifts to a start state (running) by an automatic restart at failure, there is no problem in system operation.

◆ Event log (System) which is registered when connecting NEC ESMPRO Manager by HTTP connection

When connecting NEC ESMPRO Manager by HTTP connection, the following event log is registered.

| | | |
|-------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Source | : | Microsoft-Windows-WinRM |
| Event ID | : | 10120 |
| Level | : | Information |
| Description | : | The WinRM service has received an unsecure HTTP connection from 192.168.1.1. This is not a secure configuration. User Action Set AllowUnencrypted to False in WinRM configuration to ensure packets are encrypted on the wire. |

When this event log is registered, there is no problem in system operation. However, the system is not secure. If you construct a secure system and configure HTTPS connection, see Chapter 2 (3.3 HTTPS Setting). Then, this event log is not registered.

◆ Event log (Application) which is registered when communicating with NEC ESMPRO Manager

When connecting NEC ESMPRO manager under the environment of the logical processors beyond 64, the following event log is registered. However, there is no problem in system operation.

| | | |
|-------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Source | : | Microsoft-Windows-PerfNet |
| Event ID | : | 2006 |
| Level | : | Error |
| Description | : | Unable to read Server Queue performance data from the Server service. The first four bytes (DWORD) of the Data section contains the status code, the second four bytes contains the IOSB.Status and the next four bytes contains the IOSB.Information. |

The detailed information is described on Microsoft Product Support Services.

Check the contents.

[Article ID: 2607486]

<https://support.microsoft.com/en-us/help/2607486>

◆ Event log (system) of WinRM which is registered when doing shut down

When you shut down the machine in which NEC ESMPRO ServerAgentService was installed, the following event log is registered. However, there is no problem in system operation.

| | | |
|-------------|---|----------------------------------------------------------------|
| Source | : | Windows Remote Manager |
| Event ID | : | 10149 |
| Level | : | Warning |
| Description | : | The WinRM service is not listening for WS-Management requests. |

If you did not intentionally stop the service, execute the following command to see WinRM configuration:

```
winrm enumerate winrm/config/listener
```

When the WS-Management listener stopped, this event is registered. Windows Remote Manager service is stopped at shutdown, so this event is registered.

◆ Event log (Application) which is registered during the Setup

During the installation of NEC ESMPRO ServerAgentService, the following event log is registered. However, there is no problem in system operation.

| | | |
|-------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Source | : | WMI |
| Event ID | : | 63 |
| Level | : | Warning |
| Description | : | <p>A provider, xxxx, Version=y.y.y, Culture=neutral, PublicKeyToken=zzzz, has been registered in the Windows Management Instrumentation namespace root¥ESMPRO¥AS to use the LocalSystem account. This account is privileged and the provider may cause a security violation if it does not correctly impersonate user requests.</p> <p>xxxx : provider name</p> <p>yyyy : provider version</p> <p>zzzz : PublicKeyToken</p> |

If the Remote Desktop Services, formerly Terminal Services, of Windows OS is installed, during uninstallation of NEC ESMPRO ServerAgentService the same event log is registered. However, there is no problem in system operation.

When WMI provider which runs under Local System account is registered, this event occur. Some of WMI providers included in NEC ESMPRO ServerAgentService run under Local System account. Therefore, these events are registered.

◆ Monitors hardware log (SEL)

Monitors hardware log (SEL) by NEC ESMPRO ServerAgentService uses Windows Management Instrumentation (WMI) Service. Therefore when WMI Service stopped or restarted, NEC ESMPRO ServerAgentService cannot monitor any more.

When WMI Service stopped or restarted, the following event is registered with event log (Application).

| | | |
|-------------|---|----------------------------------------|
| Source | : | Application Error |
| Event ID | : | 1000 |
| Level | : | Error |
| Description | : | Faulting application name: svchost.exe |

When WMI Service stopped or restarted, restart the system. Or restart of ESM System Management Service from Control Panel, then "Administrative Tools", then Services.

(NEC ESMPRO ServerAgentService reconnects to WMI Service by restarting ESM System Management Service)

◆ Report monitoring event

- The alert function is based on the event information registered in the event log of the system.

Thus, set the event log process on the event viewer to [Overwrite events as needed] or [Archive the log when full, do not overwrite events]. The monitoring event is not alerted in the setting other than that.

- The event registered in the monitoring event tree of Alert Manager setting tool is not alerted to the manager if Alert Manager Main Service does not operate. Even when the service is operating, if the enabled/disabled flag of each alerting ways is disabled, the event is not alerted.

The alert enabled/disabled flag is set by selecting [Base Setting] - [Report] Properties from [Setting] of Alert Manager. Also the event occurred before Event log Service started at the time of system startup cannot be alerted.

- You can set the time to the shutdown by selecting [Base Setting] - [Other] of Alert Manager setting tool.

The initial value is 20 seconds.

When you set smaller value than this, the alert cannot be performed at the time of shutdown.

- When an alert failure occurs at the time of alerting of monitoring target event, an error message is logged in the event log. If newly log the error message which occurs at the time of alerting as a monitoring target event, the error at the time of alerting will be alerted again.

As a result, large number of alerts will be sent when recovering the failure. This leads to the increase of system load and the degradation of the performance. Do not register the events especially which are produced by the following alert function services as the monitoring target.

- Alert Manager Main Service
- Alert Manager Socket(S) Service
- (Alert Manager ALIVE(S) Service)*

(*) Alert Manager ALIVE(S) Service is the service registered only when Express Report Service or NEC ESMPRO Manager is installed.

- On Manager Alert (SNMP) in alert report function, the length of messages should be up to 511 bytes.

When reporting a message with the length longer than 512 bytes, the 512th and the later message do not appear on the alert viewer. Check the 512th and the later message on the event viewer on the machine that sends the report.

If you want to display all the messages later than the 512th, use Manager Alert (TCP/IP In-Band).

1.2 Monitoring Storage device / File system

Tips

For iLO model, the storage monitoring function of NEC ESMPRO ServerAgentService will not be installed. The described note in this section are precautions on the model where the storage monitoring function is installed.

◆ SATA Optical disk drive

In the case of using LSI Embedded MegaRAID, information of SATA Optical disk drive does not displayed of [Information of server state/constitution] of NEC ESMPRO Manager.

◆ Information displayed in "Resource" of SCSI controller

Incorrect information appear in the [Resource] window displayed from [SCSI Controller] of [Information of server state/constitution] of NEC ESMPRO Manager.

Check the information of resource using "Device Manager" and "System Information (winmsd.exe)" of OS.

◆ Storage Devices other than SCSI/IDE Device

NEC ESMPRO ServerAgentService does not monitor storage devices other than SCSI/IDE devices (e.g., USB device).

◆ Configuration changes to the file system monitoring and storage monitoring

To change the settings, NEC ESMPRO Manager (Ver. 6.05 or later) is required. And set by NEC ESMPRO Manager monitoring interval, hard disk drive pre-failure prediction monitoring enable / disable, file system free space threshold monitoring does not take effect immediately if you change. Setting configuration changes after you have changed in the next monitoring interval of monitoring function of each is enabled.

◆ **Monitoring the failures of the tape device is desired**

NEC ESMPRO ServerAgentService does not monitor the failures of the tape device. If want to conduct monitoring, use backup software or tape monitoring application. Using the event monitoring function of NEC ESMPRO ServerAgentService allows you to monitor the event log of backup software or applications.

◆ **Network drive is not displayed of [Information of server state/constitution] of NEC ESMPRO Manager**

The drive connected to network is not displayed under the file system tree in [Information of server state/constitution] of NEC ESMPRO Manager.

◆ **Changing mode of Hard disk drive pre-failure prediction**

Turning on/off the mode of hard disk drive pre-failure prediction, all hard disk drives work in the same mode in either case. Cannot set the mode of each hard disk drive individually.

◆ **Displays the status of the file system free space as " icon : ? (Unknown) "**

When changing the file system configuration (volume addition or deletion etc), the status of the drive may be displayed as " icon: ? (Unknown) ". This display indicates that free space monitoring is not covered, and does not indicate that there is a problem with the drive.

◆ **File system information of media insertion**

When you insert media such as a DVD or a floppy disk, NEC ESMPRO Manager as the file system information of [Information server state/constitution] to display information such as volume label and capacity information. So "GB" the smallest unit of information capacity, there is a case to display, "0.0GB" capacity of the media such as a floppy disk capacity is small.

◆ **File system free-space monitoring capacity less than 100MB**

In NEC ESMPRO ServerAgentService, capacity does not support free-space monitoring the file system of less than 100MB. Free space monitoring configuration of such a file system, is "disabled (not monitor)" and from the beginning.

1.3 I/O Device

◆ Serial Port

For the models supporting serial ports, note the following. NEC ESMPRO ServerAgentService has multiple features that use serial ports. When using these features, the ports can become insufficient. The serial ports available for each feature are as follows.

- UPS : COM1-10
 - APCU : COM1-2
 - (ALIVE Maintenance)* : COM1-9
- (*) Alive Maintenance uses Remote Access Service.

The available serial ports when using Remote Access Service for Manager Report (TCP/IP Out-of-Band) are as follows.

- Manager Report: COM1-10

Among those above, only the following combination can share the serial ports.

- Alive Maintenance + Remote Access Service used by a user

When one of the features uses the line, the other feature cannot be used.

Tips

Manager Report (TCP/IP Out-of-Band), which uses Remote Access Service, can be unable to notify failure information when sharing other serial port. Ensure not to share serial ports.

1.4 Coexistence with Other Product

◆ Using with AMS (Agentless Management Service)

If you configure SNMP Service for NEC ESMPRO ServerAgentService on the environment on which AMS (Agentless Management Service) is running, several HW events are sent to NEC ESMPRO Manager as SNMP traps from AMS and iLO. In this case, NEC ESMPRO Manager receives two snmp traps for one HW event. So, see one of these two snmp traps.

◆ File System monitoring cannot be inherited on the system using EXPRESSCLUSTER

If a failover occurs, the settings of the threshold for the empty space monitoring function and the enable / disable of monitoring of the operating sever are not inherited to the standby server. Make sure to reset the threshold and the enable / disable of monitoring on the standby server.

◆ Using with Oracle Products

When Oracle product is installed, the startup of SNMP Service can be changed to "Manual". In such a case, restore it to "Automatic" and configure the appropriate settings according to the instructions of Oracle product.

◆ Exclusion of the virus check

Processing may be delayed by virus scanning. Exclude "%ESMDIR%" folder and NEC ESMPRO ServerAgentService processes from the virus scan regardless of the version. See Chapter 4 (3. Services List) about NEC ESMPRO ServerAgentService process.

◆ Common module folder

In the related product of NEC ESMPRO Manager and NEC ESMPRO ServerAgentService, the product installed first makes a folder of a common module in its installation folder. If you want to move the folder of a common module, you will need to uninstall all of the related products temporarily.

1.5 Report

◆ Detail information of alert

Detail information of some alert displayed on the alert viewer can be shown as "Unknown".

◆ General client report

"General client report" cannot be used.

Though no error appears even if you enable this method, it does not work.

◆ Display of Report Settings

When installed on the same machine NEC ESMPRO Manager and NEC ESMPRO ServerAgentService, [Report Settings] will be displayed only to the [Start] menu on NEC ESMPRO Manager.

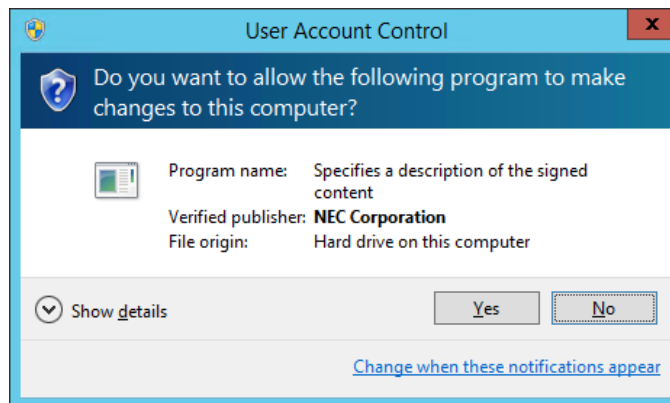
1.6 OS Dependence

◆ Notes on Server Core Installation

- "Manager (TCP/IP Out-of-Band)" method cannot be used.
- On Windows Server 2016 or later, a screen of "Combobox", "Radiobutton," and "Checkbox" of Alert Manager setting tool (amsadm.exe) is not indicated right. But you can set all of parameters correctly, and use all Alert Reporting function.

◆ User Account Control

User Account Control is turned on, if you start NEC ESMPRO ServerAgentService Control Panel or collect.exe program, [User Account Control] dialog box will appear. Click [Continue] to start the program.



◆ Notes on host OS of Virtualization environment

When NEC ESMPRO ServerAgentService detects dangerous trouble information continuous to operate, OS is shutdown in the setting of default. (If it is installed as Non-Service Mode, OS is not made shutdown)

The shutdown not anticipated from Guest OS was generated because the service console shutdown without shutting down Guest OS in the environment to operate Guest OS in the virtualization environment.

Invalidate the shutdown function by the report from NEC ESMPRO ServerAgentService, and shutdown from Guest OS by manual at the failure when the normal termination of Guest OS is valued.

[Setup steps of shutdown function by report]

1. Sign-in to the system with the administrator account.
2. Click [Report Settings] in start menu.
Displays Alert Manager.
3. Click [Setting]-[Base Setting].
4. Confirms "Shutdown Delay" item of [Other] is the invalid (red).
When being valid (green), click an icon and change it to invalid (red).
5. Click [OK] Setting Terminate.

1.7 Others

◆ Update .NET Framework

NEC ESMPRO ServerAgentService works on the .NET Framework 4 or after version. Support for Microsoft .NET Framework 4, 4.5 and 4.5.1 end on January 12, 2016. So, you need update .NET Framework to Microsoft support version.

Access the following article to check the .NET Framework lifecycle policy of Microsoft.

- Lifecycle FAQ—.NET Framework

<https://support.microsoft.com/en-us/help/17455/lifecycle-policy-faq-microsoft-net-framework>

◆ Delete of 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. Sign-in to the server of NEC ESMPRO ServerAgentService with the administrator account.
2. Run the command prompt by the administrator account.
3. Execute the following command.

```
%EsmDir%tool¥ESMDelCim.bat
```

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.

◆ Fail registration by WS-Man with NEC ESMPRO Manager Ver. 6.00

If registration by WS-Man of NEC ESMPRO Manager Ver. 6.00 is fail, confirm Windows remote management (WinRM) settings.

1. Sign-in to the server of NEC ESMPRO ServerAgentService with the administrator account.

2. Run the command prompt by the administrator account.

3. Execute the following command.

```
winrm quickconfig -q
```

4. Execute the following command.

```
winrm get winrm/config/service
```

5. Confirm the following value is "true" or not.

- Basic value under auth

6. If value to confirm is "false", execute the following command.

```
winrm set winrm/config/service @{AllowUnencrypted="true"}
```

7. Execute the following command.

```
winrm get winrm/config/service
```

8. Confirm the following value.

- AllowUnencrypted

9. By which to use HTTP or HTTPS to connect with NEC ESMPRO Manager, execute the following WinRM command to use NEC ESMPRO ServerAgentService.

- If you use HTTPS to connect with NEC ESMPRO Manager;

See Chapter2 (3.3 HTTPS Setting).

```
winrm set winrm/config/service @{AllowUnencrypted="false"}
```

- If you use HTTP to connect with NEC ESMPRO Manager;

```
winrm set winrm/config/service @{AllowUnencrypted="true"}
```

◆ Monitoring component's hardware from NEC ESMPRO Manager

Registering BMC or iLO to NEC ESMPRO Manager and setting up SNMP Alert configuration are required to monitor component's hardware error.

◆ Failed in the Auto Registration of NEC ESMRPO ServerAgentService by NEC ESMPRO Manager

See Chapter 2 (3.4 Operations Check), confirm setting of NEC ESMPRO ServerAgentService.

◆ Monitoring S2D Disk

The S2D disk monitoring function will register event logs, report to NEC ESMPRO Manager, and carry out Express Reports when the "Usage" of the S2D disk mounted on the local server (node) is set to "Retired". The S2D disk monitoring function also works if the "Usage" is set to "Retired" when replacing the S2D disk during hardware maintenance. In order to halt such reports during maintenance that involves S2D disk "Usage" operations, temporarily stop the monitoring service (ESMS2DMonitor).

- Temporarily stop the monitoring service

1. Before maintenance, select [ESMS2DMonitor] from the list of services above and click "Stop" or "Pause" to stop the service.
2. After completing the maintenance, click "Start" or "Resume" to start the service.

◆ Restart after Hardware trouble occurs

When abnormality of Hardware is detected, OS is shutdown.

When OS is restarted without action/recovering trouble after shutdown, shutdown is done just after the restart.

◆ When Performing Duplex System Management

To perform duplex system management by EXPRESSCLUSTER, install NEC ESMPRO ServerAgentService on a local disk on both the operating and standby servers. The installation procedure for NEC ESMPRO ServerAgentService is same as a normal installation, except that install on two servers.

2. Port Number / Protocol List

NEC ESMPRO ServerAgentService uses the following port numbers and communication protocols.

To use NEC ESMPRO ServerAgentService with Windows Firewall enabled, open the required ports.

[NEC ESMPRO Manager <-> NEC ESMPRO ServerAgentService]

| Function | NEC ESMPRO Manager | Direction | NEC ESMPRO ServerAgentService | Remarks |
|-------------------------------------------------------|----------------------------|-----------|-------------------------------|-------------|
| Auto Registration Server Monitoring (WS-MAN/HTTP) | Auto-assignment | -> | 5985/tcp | HTTP |
| | | <- | | |
| Auto Registration Server Monitoring (WS-MAN/HTTPS) | Auto-assignment | -> | 5986/tcp | HTTPS |
| | | <- | | |
| SNMP report to Manager | 162/udp | <- | Auto-assignment | SNMP-trap |
| TCP/IP report to Manager | 31134/tcp | <- -> | Auto-assignment | |
| CIM-Indication report to Manager | 6736/tcp (configurable) | <- | Auto-assignment | |
| (CIM-Indication report setting)* | Ping (ICMP) | -> <- | - | Ping (ICMP) |

(*) WS-Man is used for CIM-Indication setting. But Ping communication is needed.

[Express Report Service <-> Mail Server]

| Function | NEC ESMPRO ServerAgentService | Direction | Main Server | Remarks |
|----------------------------------------|-------------------------------|-----------|-------------|---------|
| Express Report Service (Internet Mail) | Auto-assignment | -> | 25/tcp | SMTP |
| | | <- | | |
| | | <- | 110/tcp | (POP3)* |
| | | -> | | |

(*) Only when "POP before SMTP" is used.

[Express Report Service <-> Web Server]

| Function | NEC ESMPRO ServerAgentService | Direction | Web Server | Remarks |
|--------------------------------|-------------------------------|-----------|------------|----------|
| Express Report Service (HTTPS) | Auto-assignment | -> | 443/tcp | (HTTPS)* |
| | | <- | | |

(*) If HTTPS port (443) is closed, Change the firewall setting, open port 443, set up the connection state of https.

- In case of two-way protocol, upper arrow shows that connection starts, and lower arrow shows that connection turns.
- The port number used by TCP/IP report to Manager or Express Report Service can be changed in set screen of report.
- In case of port number unknown, unused port is used to start connection.

3. Services List

NEC ESMPRO ServerAgentService uses the following services.

| Services | Process name | Start-up | Function | Remarks |
|---------------------------------|---------------|---------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alert Manager Main Service | AMVMain.exe | Automatic (Delayed Start) | Manage Various trouble reports. | |
| Alert Manager Socket(S) Service | amvscks.exe | Manual | Report to Manager by using TCP/IP. | When either of "Manager (TCP/IP In-Band) and Manager (TCP/IP Out-of-Band)" is set to valid (green) at Base Setting Window, the service is started. When both settings are set to invalid (red), the service is stop. |
| ESMCommonService | ESMCommon.exe | Automatic (Delayed Start) | Enable NEC ESMPRO monitoring function. | |
| ESM System Management Service | esmsmsrv.exe | Automatic | Monitors hardware log | IPMI model and iLO model. |
| ESMNVMemonitor | esmnvme.exe | Manual | Monitors configuration information and lifespan state of PCIeSSD. | Only IPMI model. |
| ESMS2DMonitor | esms2d.exe | Manual | Monitors failures of disk unit of S2D. | |

4. Starting and Stopping Services

To stop or start services, perform the following procedure.

On some model of server, some service cannot exist.

Non-Service Mode does not register service.

| [order] | [stopping services] | [starting services] |
|---------|------------------------------------|------------------------------------|
| 1. | ESMCommonService | ESMCommonService |
| 2. | ESM System Management Service | ESM System Management Service |
| 3. | (ESMNVMeMonitor)*1 | (ESMNVMeMonitor)*1 |
| 4. | (ESMS2DMonitor)*2 | (ESMS2DMonitor)*2 |
| 5. | (Alert Manager ALIVE(S) Service)*3 | SNMP Service |
| 6. | Alert Manager Main Service | (Alert Manager ALIVE(S) Service)*3 |
| 7. | Alert Manager Socket(S) Service | Alert Manager Main Service |
| 8. | SNMP Service | Alert Manager Socket(S) Service |

(*1) PCIeSSD in your environment, but only if you are starting ESMNVMeMonitor.

(*2) S2D in your environment, but only if you are starting ESMS2DMonitor.

(*3) Alert Manager ALIVE(S) Service is the service registered only when Express Report Service or NEC
ESMPRO Manager is installed.

5. License

Apache License

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s)

with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and
limitations under the License.

decorator

Copyright (c) 2005-2017, Michele Simionato
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in bytecode form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

jsonpatch

Copyright (c) 2011 Stefan Kögl <stefan@skoegl.net>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES

OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

jsonpatch-rw

Copyright 2013- Kenneth Knowles

Licensed under the Apache License, Version 2.0 (the "License"); you may
not use this file except in compliance with the License. You may obtain
a copy of the License at

::

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

jsonpointer

Copyright (c) 2011 Stefan Kögl All rights reserved. Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met: 1. Redistributions of source code must
retain the above copyright notice, this list of conditions and the following disclaimer. 2. Redistributions in binary form
must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution. 3. The name of the author may not be used to endorse or
promote products derived from this software without specific prior written permission. THIS SOFTWARE IS
PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

OpenPegasus

OpenPegasus is subject to one or more of the following copyrights:

Copyright (c) 2000, 2004 BMC Software.
Copyright (c) 2003, 2008 EMC Corporation.
Copyright (c) 2000-2011 Hewlett-Packard Development Company, L.P.
Copyright (c) 2000-2011 IBM Corp.
Copyright (c) 2005-2011 Inova Development Inc.
Copyright (c) 2000, 2003 Michael Day.
Copyright (c) 2008 Novell.
Copyright (c) 2006, 2007 Symantec Corporation.
Copyright (c) 2000-2008 The Open Group.
Copyright (c) 2000, 2002 Tivoli Systems.
Copyright (c) 2004, 2005 VERITAS Software Corporation.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

ply

PLY (Python Lex-Yacc) Version 3.11

[[Build Status]](<https://travis-ci.org/dabeaz/ply.svg?branch=master>)](<https://travis-ci.org/dabeaz/ply>)

Copyright (C) 2001-2018
David M. Beazley (Dabeaz LLC)
All rights reserved.

Redistribution and use in source and binary forms, with or without

modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the David Beazley or Dabeaz LLC may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Python Software Foundation ライセンス

A. HISTORY OF THE SOFTWARE

=====

Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations, which became Zope Corporation. In 2001, the Python Software Foundation (PSF, see

<https://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation was a sponsoring member of the PSF.

All Python releases are Open Source (see <http://www.opensource.org> for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

| Release | Derived from | Year | Owner | GPL- compatible? (1) |
|----------------|-----------------|-----------|------------|-------------------------|
| 0.9.0 thru 1.2 | | 1991-1995 | CWI | yes |
| 1.3 thru 1.5.2 | 1.2 | 1995-1999 | CNRI | yes |
| 1.6 | 1.5.2 | 2000 | CNRI | no |
| 2.0 | 1.6 | 2000 | BeOpen.com | no |
| 1.6.1 | 1.6 | 2001 | CNRI | yes (2) |
| 2.1 | 2.0+1.6.1 | 2001 | PSF | no |
| 2.0.1 | 2.0+1.6.1 | 2001 | PSF | yes |
| 2.1.1 | 2.1+2.0.1 | 2001 | PSF | yes |
| 2.1.2 | 2.1.1 | 2002 | PSF | yes |
| 2.1.3 | 2.1.2 | 2002 | PSF | yes |
| 2.2 and above | 2.1.1 | 2001-now | PSF | yes |

Footnotes:

(1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.

(2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

=====

PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
7. Nothing in this License Agreement shall be deemed to create any

relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0

BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").

2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.

3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

5. This License Agreement will automatically terminate upon a material

breach of its terms and conditions.

6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at <http://www.pythonlabs.com/logos.html> may be used according to the permissions granted on that web page.

7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.

2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet

using the following URL: <http://hdl.handle.net/1895.22/1013>".

3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.

4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be

bound by the terms and conditions of this License Agreement.

ACCEPT

CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam,
The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its
documentation for any purpose and without fee is hereby granted,
provided that the above copyright notice appear in all copies and that
both that copyright notice and this permission notice appear in
supporting documentation, and that the name of Stichting Mathematisch
Centrum or CWI not be used in advertising or publicity pertaining to
distribution of the software without specific, written prior
permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO
THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND
FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE
FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES
WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN
ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT
OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Additional Conditions for this Windows binary build

This program is linked with and uses Microsoft Distributable Code,
copyrighted by Microsoft Corporation. The Microsoft Distributable Code
includes the following files:

msvcr90.dll

msvcp90.dll

msvcm90.dll

If you further distribute programs that include the Microsoft
Distributable Code, you must comply with the restrictions on

distribution specified by Microsoft. In particular, you must require distributors and external end users to agree to terms that protect the Microsoft Distributable Code at least as much as Microsoft's own requirements for the Distributable Code. See Microsoft's documentation (included in its developer tools and on its website at microsoft.com) for specific details.

Redistribution of the Windows binary build of the Python interpreter complies with this agreement, provided that you do not:

- alter any copyright, trademark or patent notice in Microsoft's Distributable Code;
- use Microsoft's trademarks in your programs' names or in a way that suggests your programs come from or are endorsed by Microsoft;
- distribute Microsoft's Distributable Code to run on a platform other than Microsoft operating systems, run-time technologies or application platforms; or
- include Microsoft Distributable Code in malicious, deceptive or unlawful programs.

These restrictions apply only to the Microsoft Distributable Code as defined above, not to Python itself or any programs running on the Python interpreter. The redistribution of the Python interpreter and libraries is governed by the Python Software License included with this file, or by other licenses as marked.

This copy of Python includes a copy of bzip2, which is licensed under the following terms:

This program, "bzip2", the associated library "libbzip2", and all documentation, are copyright (C) 1996-2010 Julian R Seward. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, jseward@bzip.org
bzip2/libbzip2 version 1.0.6 of 6 September 2010

This copy of Python includes a copy of Berkeley DB, which is licensed under the following terms:

```
/*-
 * $Id: LICENSE,v 12.9 2008/02/07 17:12:17 mark Exp $
 */
```

The following is the license that applies to this copy of the Berkeley DB software. For a license to use the Berkeley DB software under conditions other than those described here, or to purchase support for this software,

please contact Oracle at berkeleydb-info_us@oracle.com.

=====

/*

* Copyright (c) 1990,2008 Oracle. All rights reserved.

*

* Redistribution and use in source and binary forms, with or without

* modification, are permitted provided that the following conditions

* are met:

* 1. Redistributions of source code must retain the above copyright

* notice, this list of conditions and the following disclaimer.

* 2. Redistributions in binary form must reproduce the above copyright

* notice, this list of conditions and the following disclaimer in the

* documentation and/or other materials provided with the distribution.

* 3. Redistributions in any form must be accompanied by information on

* how to obtain complete source code for the DB software and any

* accompanying software that uses the DB software. The source code

* must either be included in the distribution or be available for no

* more than the cost of distribution plus a nominal fee, and must be

* freely redistributable under reasonable conditions. For an

* executable file, complete source code means the source code for all

* modules it contains. It does not include source code for modules or

* files that typically accompany the major components of the operating

* system on which the executable file runs.

*

* THIS SOFTWARE IS PROVIDED BY ORACLE ``AS IS" AND ANY EXPRESS OR

* IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED

* WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR

* NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL ORACLE BE LIABLE

* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR

* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF

* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR

* BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,

* WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE

* OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN

* IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

*/

/*

* Copyright (c) 1990, 1993, 1994, 1995

* The Regents of the University of California. All rights reserved.

*

* Redistribution and use in source and binary forms, with or without

* modification, are permitted provided that the following conditions

* are met:

* 1. Redistributions of source code must retain the above copyright

* notice, this list of conditions and the following disclaimer.

* 2. Redistributions in binary form must reproduce the above copyright

* notice, this list of conditions and the following disclaimer in the

* documentation and/or other materials provided with the distribution.

* 3. Neither the name of the University nor the names of its contributors

* may be used to endorse or promote products derived from this software

* without specific prior written permission.

*

* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND

* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE

* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS

* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)

* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT

* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY

* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF

* SUCH DAMAGE.

*/

/*

* Copyright (c) 1995, 1996

* The President and Fellows of Harvard University. All rights reserved.

*

* Redistribution and use in source and binary forms, with or without

* modification, are permitted provided that the following conditions

* are met:

* 1. Redistributions of source code must retain the above copyright

* notice, this list of conditions and the following disclaimer.

* 2. Redistributions in binary form must reproduce the above copyright

* notice, this list of conditions and the following disclaimer in the

* documentation and/or other materials provided with the distribution.

* 3. Neither the name of the University nor the names of its contributors

* may be used to endorse or promote products derived from this software

* without specific prior written permission.

*

* THIS SOFTWARE IS PROVIDED BY HARVARD AND ITS CONTRIBUTORS ``AS IS" AND

* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

* ARE DISCLAIMED. IN NO EVENT SHALL HARVARD OR ITS CONTRIBUTORS BE LIABLE
* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
* SUCH DAMAGE.

*/

=====

/***

* ASM: a very small and fast Java bytecode manipulation framework

* Copyright (c) 2000-2005 INRIA, France Telecom

* All rights reserved.

*

* Redistribution and use in source and binary forms, with or without

* modification, are permitted provided that the following conditions

* are met:

* 1. Redistributions of source code must retain the above copyright

* notice, this list of conditions and the following disclaimer.

* 2. Redistributions in binary form must reproduce the above copyright

* notice, this list of conditions and the following disclaimer in the

* documentation and/or other materials provided with the distribution.

* 3. Neither the name of the copyright holders nor the names of its

* contributors may be used to endorse or promote products derived from

* this software without specific prior written permission.

*

* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"

* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE

* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR

* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF

* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS

* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN

* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)

* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF

* THE POSSIBILITY OF SUCH DAMAGE.

*/

This copy of Python includes a copy of openssl, which is licensed under the following terms:

LICENSE ISSUES

=====

The OpenSSL toolkit stays under a double license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit.

See below for the actual license texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues related to OpenSSL please contact openssl-core@openssl.org.

OpenSSL License

```
/* =====  
 * Copyright (c) 1998-2018 The OpenSSL Project. All rights reserved.  
 *  
 * Redistribution and use in source and binary forms, with or without  
 * modification, are permitted provided that the following conditions  
 * are met:  
 *  
 * 1. Redistributions of source code must retain the above copyright  
 * notice, this list of conditions and the following disclaimer.  
 *  
 * 2. Redistributions in binary form must reproduce the above copyright  
 * notice, this list of conditions and the following disclaimer in  
 * the documentation and/or other materials provided with the  
 * distribution.  
 *  
 * 3. All advertising materials mentioning features or use of this  
 * software must display the following acknowledgment:  
 * "This product includes software developed by the OpenSSL Project  
 * for use in the OpenSSL Toolkit. (http://www.openssl.org/)"  
 *  
 * 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to  
 * endorse or promote products derived from this software without  
 * prior written permission. For written permission, please contact  
 * openssl-core@openssl.org.  
 *  
 * 5. Products derived from this software may not be called "OpenSSL"  
 * nor may "OpenSSL" appear in their names without prior written  
 * permission of the OpenSSL Project.  
 *
```

```

* 6. Redistributions of any form whatsoever must retain the following
*
*   acknowledgment:
*
*   "This product includes software developed by the OpenSSL Project
*   for use in the OpenSSL Toolkit (http://www.openssl.org/)"
*
*
* THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS" AND ANY
* EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
* PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL THE OpenSSL PROJECT OR
* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
* LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
* OF THE POSSIBILITY OF SUCH DAMAGE.
*
* =====
*
* This product includes cryptographic software written by Eric Young
* (eay@cryptsoft.com).  This product includes software written by Tim
* Hudson (tjh@cryptsoft.com).
*
*
*/

Original SSLeay License
-----

/* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)
*
* All rights reserved.
*
*
* This package is an SSL implementation written
* by Eric Young (eay@cryptsoft.com).
* The implementation was written so as to conform with Netscapes SSL.
*
*
* This library is free for commercial and non-commercial use as long as
* the following conditions are aheared to.  The following conditions
* apply to all code found in this distribution, be it the RC4, RSA,
* lhash, DES, etc., code; not just the SSL code.  The SSL documentation
* included with this distribution is covered by the same copyright terms
* except that the holder is Tim Hudson (tjh@cryptsoft.com).
*

```



```

* Copyright remains Eric Young's, and as such any Copyright notices in
* the code are not to be removed.
* If this package is used in a product, Eric Young should be given attribution
* as the author of the parts of the library used.
* This can be in the form of a textual message at program startup or
* in documentation (online or textual) provided with the package.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
*
* 1. Redistributions of source code must retain the copyright
*    notice, this list of conditions and the following disclaimer.
*
* 2. Redistributions in binary form must reproduce the above copyright
*    notice, this list of conditions and the following disclaimer in the
*    documentation and/or other materials provided with the distribution.
*
* 3. All advertising materials mentioning features or use of this software
*    must display the following acknowledgement:
*
*    "This product includes cryptographic software written by
*      Eric Young (eay@cryptsoft.com)"
*
*    The word 'cryptographic' can be left out if the routines from the library
*    being used are not cryptographic related :-).
*
* 4. If you include any Windows specific code (or a derivative thereof) from
*    the apps directory (application code) you must include an acknowledgement:
*
*    "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"
*
* THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND
* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED.  IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
* SUCH DAMAGE.
*
* The licence and distribution terms for any publically available version or
* derivative of this code cannot be changed.  i.e. this code cannot simply be
* copied and put under another distribution licence
* [including the GNU Public Licence.]
*/

```

This copy of Python includes a copy of Tcl, which is licensed under the following terms:

This software is copyrighted by the Regents of the University of California, Sun Microsystems, Inc., Scriptics Corporation, ActiveState Corporation and other parties. The following terms apply to all files associated with the software unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute, and license this software and its documentation for any purpose, provided that existing copyright notices are retained in all copies and that this notice is included verbatim in any distributions. No written agreement, license, or royalty fee is required for any of the authorized uses. Modifications to this software may be copyrighted by their authors and need not follow the licensing terms described here, provided that the new terms are clearly indicated on the first page of each file where they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. THIS SOFTWARE IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the U.S. government, the Government shall have only "Restricted Rights" in the software and related documentation as defined in the Federal Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2). If you are acquiring the software on behalf of the Department of Defense, the software shall be classified as "Commercial Computer Software" and the Government shall have only "Restricted Rights" as defined in Clause 252.227-7013 (b) (3) of DFARs. Notwithstanding the foregoing, the authors grant the U.S. Government and others acting in its behalf

permission to use and distribute the software in accordance with the terms specified in this license.

This copy of Python includes a copy of Tk, which is licensed under the following terms:

This software is copyrighted by the Regents of the University of California, Sun Microsystems, Inc., and other parties. The following terms apply to all files associated with the software unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute, and license this software and its documentation for any purpose, provided that existing copyright notices are retained in all copies and that this notice is included verbatim in any distributions. No written agreement, license, or royalty fee is required for any of the authorized uses. Modifications to this software may be copyrighted by their authors and need not follow the licensing terms described here, provided that the new terms are clearly indicated on the first page of each file where they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. THIS SOFTWARE IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the U.S. government, the Government shall have only "Restricted Rights" in the software and related documentation as defined in the Federal Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2). If you are acquiring the software on behalf of the Department of Defense, the software shall be classified as "Commercial Computer Software" and the Government shall have only "Restricted Rights" as defined in Clause 252.227-7013 (b) (3) of DFARs. Notwithstanding the foregoing, the authors grant the U.S. Government and others acting in its behalf

permission to use and distribute the software in accordance with the terms specified in this license.

This copy of Python includes a copy of Tix, which is licensed under the following terms:

Copyright (c) 1993-1999 loi Kim Lam.

Copyright (c) 2000-2001 Tix Project Group.

Copyright (c) 2004 ActiveState

This software is copyrighted by the above entities and other parties. The following terms apply to all files associated with the software unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute, and license this software and its documentation for any purpose, provided that existing copyright notices are retained in all copies and that this notice is included verbatim in any distributions. No written agreement, license, or royalty fee is required for any of the authorized uses.

Modifications to this software may be copyrighted by their authors and need not follow the licensing terms described here, provided that the new terms are clearly indicated on the first page of each file where they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. THIS SOFTWARE IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the U.S. government, the Government shall have only "Restricted Rights" in the software and related documentation as defined in the Federal Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2). If you are acquiring the software on behalf of the Department of Defense, the software shall be classified as "Commercial Computer Software" and the

Government shall have only "Restricted Rights" as defined in Clause 252.227-7013 (c) (1) of DFARs. Notwithstanding the foregoing, the authors grant the U.S. Government and others acting in its behalf permission to use and distribute the software in accordance with the terms specified in this license.

Parts of this software are based on the Tcl/Tk software copyrighted by the Regents of the University of California, Sun Microsystems, Inc., and other parties. The original license terms of the Tcl/Tk software distribution is included in the file docs/license.tcltk.

Parts of this software are based on the HTML Library software copyrighted by Sun Microsystems, Inc. The original license terms of the HTML Library software distribution is included in the file docs/license.html_lib.

python-iloorest-library

Copyright and License

::

Copyright 2016 Hewlett Packard Enterprise Development LP

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software

distributed under the License is distributed on an "AS IS" BASIS,

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and

limitations under the License.

recordtype

Copyright 2011 True Blade Systems, Inc.

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software

distributed under the License is distributed on an "AS IS" BASIS,

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and

limitations under the License.

six

Copyright (c) 2010-2018 Benjamin Peterson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

urlparse2

Copyright (c) 2012 Matthew Hooker & Jeremy Avnet & Matt Chisholm

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

validictory

Copyright (c) 2013 James Turk

Contains code from jsonschema 0.2, copyright 2008 Ian Lewis, Yusuke Muraoka

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

NEC ESMPRO ServerAgentService Ver. 2.2
Installation Guide (Windows)

NEC Corporation
7-1 Shiba 5-Chome, Minato-Ku
Tokyo 108-8001, Japan

© NEC Corporation 2020

The contents of this manual may not be copied or altered without the prior written permission of NEC Corporation.