Installation Guide (Windows Server 2019)

NEC Express Server
Express5800 Series

Express5800/R120i-1M
Express5800/R120i-2M
Express5800/R120h-1M, R120h-1M (2nd-Gen), R120h-1M (3rd-Gen)
Express5800/R120h-2M, R120h-2M (2nd-Gen), R120h-2M (3rd-Gen)
Express5800/R120h-1E
Express5800/R120h-2E
Express5800/T120h
Express5800/R110j-1

EXPRESSBUILDER E8.10-010.08
Starter Pack S8.10-010.11

CBZ-002473-410-00

Contents

Introduction

Thank you for purchasing our product.

When using the EXPRESSBUILDER / Starter Pack version, see this manual before installing Windows.

Supported versions is as follows.

Supported versions		
EXPRESSBUILDER	**E8.10-010.08**	(3.90.7)
Starter Pack	**S8.10-010.11**	

Refer to download site of Starter Pack for precautions of firmware, drivers, software and so on for this system.

The latest Starter Pack information is available at following web site.

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

(Search by the model name from [Search by Model:] window)

Please read the instructions carefully and keep this document for your future reference.

Conventions Used in This Document

Notations used in the text

The symbols used in this document include the following:

Important	Indicates critical items that must be followed when handling hardware or operating software. If the procedures described are not followed, **hardware failure, data loss, and other serious malfunctions could occur**.
Note	Indicates items that must be confirmed when handling hardware or operating software.
Tips	Indicates information that is helpful to keep in mind when using this server.

Optical disk drive

This server is equipped with one of the following drives. These drives are referred to as *optical disk drive* in this document.

- **DVD-ROM drive**
- **DVD Super MULTI drive**

Hard disk drive

Unless otherwise stated, *hard disk drive* described in this document refer to the following.

- **Hard disk drive (HDD)**
- **Solid state drive (SSD)**

Removal Media

Unless otherwise stated, *removal media* described in this document refer to both of the following.

- **USB Memory**
- **Flash FDD**

Abbreviations of Operating Systems

Windows OS are referred to as follows.

See *Chapter 1 (1.2 Supported Windows OS)* for detailed information.

Notations in this document	Official names of Windows
Windows Server 2019	Windows Server 2019 Standard
	Windows Server 2019 Datacenter

About description of model names

The following models are supported by this document. If not mentioned especially, the contents is for all models.

When the contents differs by model, each contents are described with model name.

Supported model is as follows.

Express5800/R120i-1M Express5800/R120i-2M
Express5800/R120h-1M, R120h-1M (2nd-Gen), R120h-1M (3rd-Gen) Express5800/R120h-2M, R120h-2M (2nd-Gen), R120h-2M (3rd-Gen)
Express5800/R120h-1E Express5800/R120h-2E
Express5800/T120h
Express5800/R110j-1

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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.

The most recent version of this guide, as well as other related documents, is also available for download from the following website.

https://www.nec.com/

NEC Express5800 Series

1

Installing Windows

This manual explains the setup procedure for a physical environment.

Read through this chapter to set up the Windows correctly.

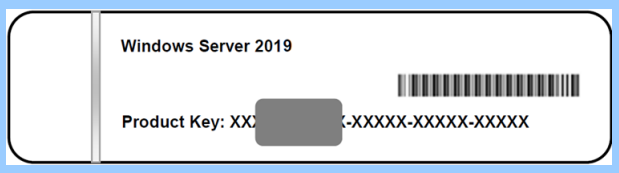
1. **Information of Windows Installation**
   Describes Supported Windows OS and mass storage controllers which is supported by EXPRESSBUILDER/Starter Pack.
2. **Flow of Windows Installation**
   Describes the flow chart of Windows installation.
3. **Installing Windows Server 2019**
   Describes how to install Windows Server 2019.
4. **Setting up for Maintenance**
   Describes the features that should be set up for maintenance in advance.
5. **Backup of system information**
   Describes how to back up the setting information of the system in advance of troubles.

I. Information of Windows Installation

This section describes the points of using EXPRESSBUILDER/Starter Pack to install Windows operating system.

Important

The product key on the Certificate of Authenticity (COA) label is necessary information when authenticate the license. Scrape off with a coin or the like lightly the scratch that covers a part of the product key. When you scrape, be careful not to break the part that the product key is printed on.



The label cannot be reissued if it is lost or stained. It is recommended to write down the product key and keep it with other accessories.

Refer to the following for the installation of virtual OS.

If your virtualization infrastructure is Hyper-V:

Refer to the following web site for the Hyper-V setting and the installation procedure of the guest OS and so on.

https://www.58support.nec.co.jp/global/download/w2019/hyper-v/hyper-v-ws2019.html

If your virtualization infrastructure is not Hyper-V:

Refer to the manual provided by virtualization infrastructure vendor to prepare the virtual environment.

Prepare a media or an ISO image of the OS to install.

1. Start the virtual machine from a media or an ISO image of the OS to install.
2. Follow the on-screen instruction to complete the OS installation.
3. Refer to the manual provided by virtualization infrastructure vendor to install the necessary services and applications.

1.1 Starting EXPRESSBUILDER

Use EXPRESSBUILDER to reconfigure RAID arrays or re-install the OS.

For details, see *Chapter 2* (*3. Details of EXPRESSBUILDER*) in *Maintenance Guide* or *Chapter 1* (*4. Details of EXPRESSBUILDER*) in *Maintenance Guide (Common)*.

Usage

Remove a CD/DVD and removable media from the server, restart the server and press <F10> key (EXPRESSBUILDER) during POST.

1.2 Supported Windows OS

You can install the following editions of Windows operating system.

EB : Rapid Setup

OS : Manual installation

Name of Windows OS		Boot mode		Installation method	
		UEFI	Legacy	EB	OS
Windows Server 2019 *	Standard	✓	N/A	✓	✓
	Datacenter	✓	N/A	✓	✓

✓ : Supported

* "Nano Server" is not supported.

1.3 Supported Mass Storage Controllers

The table below lists the controllers for this server, supported by EXPRESSBUILDER/Starter Pack.
If a controller not mentioned below is connected, set it up while referring to the instructions supplied with the controller.

(1) Express5800/R120i-1M, R120i-2M

	R120i-1M	R120i-2M
RAID controller supporting the installation of OS		
N8103-189 RAID Controller (RAID 0/1)	✓	✓
N8103-190 RAID Controller (2GB, RAID 0/1/5/6)	✓	✓
N8103-191 RAID Controller (4GB, RAID 0/1/5/6)	✓	✓
N8103-192 RAID Controller (RAID 0/1)	✓	N/A
N8103-193 RAID Controller (2GB, RAID 0/1/5/6)	✓	N/A
N8103-194 RAID Controller (4GB, RAID 0/1/5/6)	✓	N/A
N8103-195 RAID Controller (RAID 0/1)	✓	✓
N8103-201 RAID Controller (2GB, RAID 0/1/5/6)	✓	✓
N8103-237 RAID Controller (4GB, RAID 0/1/5/6)	✓	✓
N8103-238 RAID Controller (8GB, RAID 0/1/5/6)	✓	✓
N8103-239 480GB SSD Adapter for OS Boot (RAID 1)	✓	✓
Other options		
N8103-184/E184 SAS Controller	✓	✓
N8103-197 SAS Controller	✓	✓
N8190-163 Fibre Channel Controller (1ch)	✓	✓
N8190-164 Fibre Channel Controller (2ch)	✓	✓
N8190-165 Fibre Channel Controller (1ch)	✓	✓
N8190-166 Fibre Channel Controller (2ch)	✓	✓
N8190-171 Fibre Channel Controller (1ch)	✓	✓
N8190-172 Fibre Channel Controller (2ch)	✓	✓

✓: Supported

(2) Express5800/R120h-1M, R120h-2M (2nd-Gen) (3rd-Gen)

	R120h-1M	R120h-2M	R120h-1M (2nd-Gen)	R120h-2M (2nd-Gen)	R120h-1M (3rd-Gen)	R120h-2M (3rd-Gen)
RAID controller supporting the installation of OS						
Onboard RAID Controller	✓	✓	✓	✓	✓	✓
N8103-189 RAID Controller (RAID 0/1)	✓	✓	✓	✓	✓	✓
N8103-190 RAID Controller (2GB, RAID 0/1/5/6)	✓	✓	✓	✓	✓	✓
N8103-191 RAID Controller (4GB, RAID 0/1/5/6)	✓	✓	✓	✓	✓	✓
N8103-192 RAID Controller (RAID 0/1)	✓	N/A	✓	N/A	✓	N/A
N8103-193 RAID Controller (2GB, RAID 0/1/5/6)	✓	N/A	✓	N/A	✓	N/A
N8103-194 RAID Controller (4GB, RAID 0/1/5/6)	✓	N/A	✓	N/A	✓	N/A
N8103-195 RAID Controller (RAID 0/1)	✓	✓	✓	✓	✓	✓
N8103-201 RAID Controller (2GB, RAID 0/1/5/6)	✓	✓	✓	✓	✓	✓
N8103-239 480GB SSD Adapter for OS Boot (RAID 1)	N/A	N/A	N/A	N/A	✓	✓
Other options						
N8103-196 RAID Controller (2GB, RAID 0/1/5/6)	✓	✓	✓	✓	✓	✓
N8103-184/E184 SAS Controller	✓	✓	✓	✓	✓	✓
N8103-197 SAS Controller	✓	✓	✓	✓	✓	✓
N8190-163 Fibre Channel Controller (1ch)	✓	✓	✓	✓	✓	✓
N8190-164 Fibre Channel Controller (2ch)	✓	✓	✓	✓	✓	✓
N8190-165 Fibre Channel Controller (1ch)	✓	✓	✓	✓	✓	✓
N8190-166 Fibre Channel Controller (2ch)	✓	✓	✓	✓	✓	✓
N8190-171 Fibre Channel Controller (1ch)	✓	✓	✓	✓	✓	✓
N8190-172 Fibre Channel Controller (2ch)	✓	✓	✓	✓	✓	✓

✓ : Supported

(3) Express5800/R120h-1E, R120h-2E

	R120h-1E	R120h-2E
RAID controller supporting the installation of OS		
Onboard RAID Controller	✓	✓
N8103-189 RAID Controller (RAID 0/1)	N/A	✓
N8103-190 RAID Controller (2GB, RAID 0/1/5/6)	N/A	✓
N8103-191 RAID Controller (4GB, RAID 0/1/5/6)	N/A	N/A
N8103-192 RAID Controller (RAID 0/1)	✓	N/A
N8103-193 RAID Controller (2GB, RAID 0/1/5/6)	✓	N/A
N8103-194 RAID Controller (4GB, RAID 0/1/5/6)	N/A	N/A
N8103-195 RAID Controller (RAID 0/1)	✓	✓
N8103-201 RAID Controller (2GB, RAID 0/1/5/6)	✓	✓
Other options		
N8103-196 RAID Controller (2GB, RAID 0/1/5/6)	✓	✓
N8103-184/E184 SAS Controller	✓	✓
N8103-197 SAS Controller	✓	✓
N8190-163 Fibre Channel Controller (1ch)	✓	✓
N8190-164 Fibre Channel Controller (2ch)	✓	✓
N8190-165 Fibre Channel Controller (1ch)	✓	✓
N8190-166 Fibre Channel Controller (2ch)	✓	✓
N8190-171 Fibre Channel Controller (1ch)	✓	✓
N8190-172 Fibre Channel Controller (2ch)	✓	✓

✓ : Supported

(4) Express5800/T120h

	T120h
RAID controller supporting the installation of OS	
Onboard RAID Controller	✓
N8103-189 RAID Controller (RAID 0/1)	✓
N8103-190 RAID Controller (2GB, RAID 0/1/5/6)	✓
N8103-191 RAID Controller (4GB, RAID 0/1/5/6)	✓
N8103-192 RAID Controller (RAID 0/1)	N/A
N8103-193 RAID Controller (2GB, RAID 0/1/5/6)	N/A
N8103-194 RAID Controller (4GB, RAID 0/1/5/6)	N/A
N8103-195 RAID Controller (RAID 0/1)	✓
N8103-201 RAID Controller (2GB, RAID 0/1/5/6)	✓
Other options	
N8103-196 RAID Controller (2GB, RAID 0/1/5/6)	✓
N8103-184/E184 SAS Controller	✓
N8103-197 SAS Controller	✓
N8190-163 Fibre Channel Controller (1ch)	✓
N8190-164 Fibre Channel Controller (2ch)	✓
N8190-165 Fibre Channel Controller (1ch)	✓
N8190-166 Fibre Channel Controller (2ch)	✓
N8190-171 Fibre Channel Controller (1ch)	✓
N8190-172 Fibre Channel Controller (2ch)	✓

✓ : Supported

(5) Express5800/R110j-1

	R110j-1
RAID controller supporting the installation of OS at EXPRESSBUILDER	
Onboard RAID Controller	✓
N8103-192 RAID Controller (RAID 0/1)	✓
N8103-193 RAID Controller (2GB, RAID 0/1/5/6)	✓
Other options	
N8103-196 RAID Controller (2GB, RAID 0/1/5/6)	✓
N8103-184/E184 SAS Controller	✓
N8103-197 SAS Controller	✓
N8190-163 Fibre Channel Controller (1ch)	✓
N8190-164 Fibre Channel Controller (2ch)	✓
N8190-165 Fibre Channel Controller (1ch)	✓
N8190-166 Fibre Channel Controller (2ch)	✓
N8190-171 Fibre Channel Controller (1ch)	✓
N8190-172 Fibre Channel Controller (2ch)	✓

✓ : Supported

1.4 Supported Optional LAN board

The table below lists the optional LAN boards for this server, supported by Starter Pack.

(1) Express5800/R120i-1M, R120i-2M

	R120i-1M	R120i-2M
N8104-206 Quad Port 1000BASE-T LOM Card	✓	✓
N8104-207 Dual Port 10GBASE-T LOM Card	✓	✓
N8104-208 Dual Port 10/25GBASE SFP+ LOM Card	✓	✓
N8104-209 Quad Port 1000BASE-T Adapter	✓	✓
N8104-210 Dual Port 10GBASE-T Adapter	✓	✓
N8104-211 Dual Port 10/25GBASE SFP28 Adapter	✓	✓
N8104-212 Dual Port 10/25GBASE SFP28 Adapter	✓	✓
N8104-217 Dual Port 10GBASE-T LOM Card	✓	✓
N8104-219 Dual Port 10GBASE-T Adapter	✓	✓

✓: Supported

(2) Express5800/R120h-1M, R120h-2M (2nd-Gen) (3rd-Gen)

		R120h-1M	R120h-2M	R120h-1M (2nd-Gen)	R120h-2M (2nd-Gen)	R120h-1M (3rd-Gen)	R120h-2M (3rd-Gen)
N8104-171	Quad Port 1000BASE-T LOM Card	✓	✓	✓	✓	N/A	N/A
N8104-172	Quad Port 1000BASE-T LOM Card	✓	✓	✓	✓	✓	✓
N8104-173	Dual Port 10GBASE-T LOM Card	✓	✓	✓	✓	N/A	N/A
N8104-175	Dual Port 10GBASE-T LOM Card	✓	✓	✓	✓	✓	✓
N8104-176	Dual Port 10GBASE SFP+ LOM Card	✓	✓	✓	✓	N/A	N/A
N8104-177	Dual Port 25GBASE SFP+ LOM Card	✓	✓	✓	✓	N/A	N/A
N8104-178	Dual Port 1000BASE-T Adapter	✓	✓	✓	✓	✓	✓
N8104-179	Quad Port 1000BASE-T Adapter	✓	✓	✓	✓	✓	✓
N8104-180	Dual Port 1000BASE-T Adapter	✓	✓	✓	✓	✓	✓
N8104-181	Quad Port 1000BASE-T Adapter	✓	✓	✓	✓	✓	✓
N8104-182	Dual Port 10GBASE-T Adapter	✓	✓	✓	✓	✓	✓
N8104-183	Dual Port 10GBASE-T Adapter	✓	✓	✓	✓	✓	✓
N8104-184	Dual Port 10GBASE-T Adapter	✓	✓	✓	✓	✓	✓
N8104-185	Dual Port 10GBASE SFP+ Adapter	✓	✓	✓	✓	✓	✓
N8104-186	Dual Port 10GBASE SFP+ Adapter	✓	✓	✓	✓	✓	✓
N8104-187	Dual Port 25GBASE SFP28 Adapter	✓	✓	✓	✓	✓	✓
N8104-213	Dual Port 10GBASE-T LOM Card	N/A	N/A	N/A	N/A	✓	✓
N8104-215	Dual Port 10GBASE-T Adapter	N/A	N/A	N/A	N/A	✓	✓

✓ : Supported

(3) Express5800/R120h-1E, R120h-2E

	R120h-1E	R120h-2E
N8104-171 Quad Port 1000BASE-T LOM Card	✓	✓
N8104-172 Quad Port 1000BASE-T LOM Card	✓	✓
N8104-173 Dual Port 10GBASE-T LOM Card	✓	✓
N8104-175 Dual Port 10GBASE-T LOM Card	✓	✓
N8104-176 Dual Port 10GBASE SFP+ LOM Card	✓	✓
N8104-177 Dual Port 25GBASE SFP+ LOM Card	✓	✓
N8104-178 Dual Port 1000BASE-T Adapter	✓	✓
N8104-179 Quad Port 1000BASE-T Adapter	✓	✓
N8104-180 Dual Port 1000BASE-T Adapter	✓	✓
N8104-181 Quad Port 1000BASE-T Adapter	✓	✓
N8104-182 Dual Port 10GBASE-T Adapter	✓	✓
N8104-183 Dual Port 10GBASE-T Adapter	✓	✓
N8104-184 Dual Port 10GBASE-T Adapter	✓	✓
N8104-185 Dual Port 10GBASE SFP+ Adapter	✓	✓
N8104-186 Dual Port 10GBASE SFP+ Adapter	✓	✓
N8104-187 Dual Port 25GBASE SFP28 Adapter	✓	✓
N8104-193 Dual Port 1000BASE-T LOM Card	✓	✓
N8104-194 Dual Port 10GBASE-SR LOM Card	✓	✓
N8104-195 Dual Port 10GBASE-T LOM Card	✓	✓
N8104-215 Dual Port 1000BASE-T LOM Card	N/A	N/A

✓ : Supported

(4) Express5800/T120h

	T120h
N8104-178 Dual Port 1000BASE-T Adapter	✓
N8104-179 Quad Port 1000BASE-T Adapter	✓
N8104-180 Dual Port 1000BASE-T Adapter	✓
N8104-181 Quad Port 1000BASE-T Adapter	✓
N8104-182 Dual Port 10GBASE-T Adapter	✓
N8104-183 Dual Port 10GBASE-T Adapter	✓
N8104-184 Dual Port 10GBASE-T Adapter	✓
N8104-185 Dual Port 10GBASE SFP+ Adapter	✓
N8104-186 Dual Port 10GBASE SFP+ Adapter	✓
N8104-187 Dual Port 25GBASE SFP28 Adapter	✓
N8104-215 Dual Port 10GBASE-T Adapter	N/A

✓ : Supported

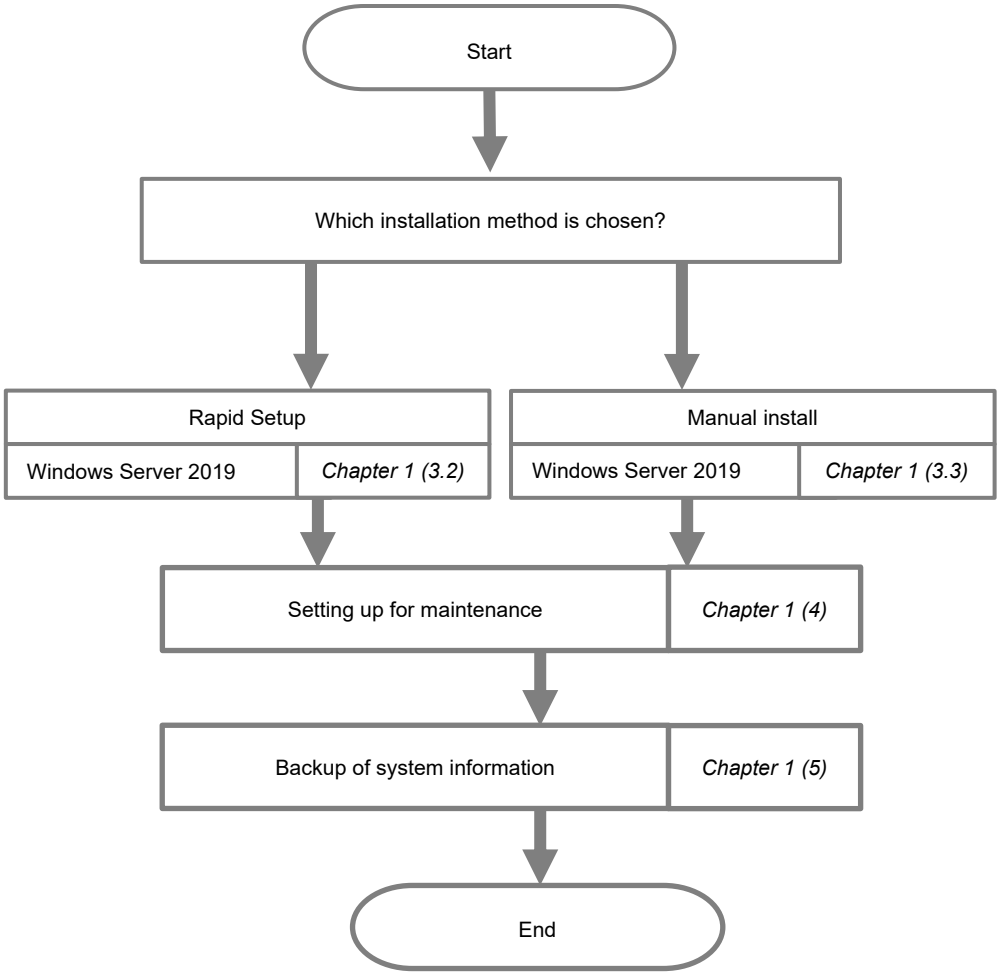
(5) Express5800/R110j-1

	R110j-1
N8104-171 Quad Port 1000BASE-T LOM Card	✓
N8104-172 Quad Port 1000BASE-T LOM Card	✓
N8104-173 Dual Port 10GBASE-T LOM Card	✓
N8104-176 Dual Port 10GBASE SFP+ LOM Card	✓
N8104-178 Dual Port 1000BASE-T Adapter	✓
N8104-179 Quad Port 1000BASE-T Adapter	✓
N8104-180 Dual Port 1000BASE-T Adapter	✓
N8104-181 Quad Port 1000BASE-T Adapter	✓
N8104-182 Dual Port 10GBASE-T Adapter	✓
N8104-183 Dual Port 10GBASE-T Adapter	✓
N8104-185 Dual Port 10GBASE SFP+ Adapter	✓
N8104-186 Dual Port 10GBASE SFP+ Adapter	✓
N8104-215 Dual Port 10GBASE-T Adapter	N/A

✓ : Supported

2. Flow of Windows Installation

Read a proper section to install Windows according to the following figure.



Important

- **After building environment, back up the setting information of the system in advance of any troubles.**
- **If the setup completed, apply Windows Update as needed to update the system to the most recent.**

3. Installing Windows Server 2019

3.1 Precautions of Windows Server 2019 Installation

Read the precautions explained this section before installing.

EB : Rapid Setup

OS : Manual Installation

BIOS setting			
—	EB	OS	Change **Boot Mode** to **UEFI Mode**. For details, see *Chapter 2 (1. System Utilities)* in *Maintenance Guide*. **System Configuration > BIOS/Platform Configuration (RBSU) > Boot Options > Boot Mode > UEFI Mode**
—	EB	OS	Select **Enabled** for x2APIC feature of processor. For details, see *Chapter 2 (1. System Utilities)* in *Maintenance Guide*. **System Configuration > BIOS/Platform Configuration (RBSU) > Processor Options > Processor x2APIC Support > Enabled**
—	EB	OS	**R120h-1M, R120h-2M, R120h-1E, R120h-2E, T120h** Change **time zone** to the **Unspecified Time Zone**. For details, see *Chapter 2 (1. System Utilities)* in *Maintenance Guide*. **System Configuration > BIOS/Platform Configuration (RBSU) > Date and time > Time Zone : Unspecified Time Zone**
—	EB	OS	**R120h-1M, R120h-2M, R120h-1E, R120h-2E, T120h** Change **time format** to the **Local Time**. For details, see *Chapter 2 (1. System Utilities)* in *Maintenance Guide*. **System Configuration > BIOS/Platform Configuration (RBSU) > Date and time > Time Format : Local Time**
—	EB	OS	**R120i-1M/R120i-2M, 120h-1M(2nd-Gen)/(3rd-Gen), R120h-2M(2nd-Gen)/(3rd-Gen), R110j-1** Change **time format** to the **Coordinated Universal Time (UTC)**. For details, see *Chapter 1 (1. System Utilities)* in *Maintenance Guide (Common)*. **System Configuration > BIOS/Platform Configuration (RBSU) > Date and time > Time Format : Coordinated Universal Time (UTC)**
—	EB	OS	**R120i-1M/R120i-2M, 120h-1M(2nd-Gen)/(3rd-Gen), R120h-2M(2nd-Gen)/(3rd-Gen), R110j-1** Change **time zone** to the **Set arbitrary time zone**. For details, see *Chapter 1 (1. System Utilities)* in *Maintenance Guide (Common)*. **System Configuration > BIOS/Platform Configuration (RBSU) > Date and time > Time Zone : Set arbitrary time zone**

— EB OS If your system has 64 or more logical CPU per 1 processor, set one of the following settings.
For details, see *Chapter 1 (1. System Utilities)* in *Maintenance Guide (Common)*.

If [Sub-NUMA Clustering] is [Disabled]

System Configuration > BIOS/Platform Configuration (RBSU) > Memory Options > Virtual NUMA > [Enabled]

If [Sub-NUMA Clustering] is [Enable SNC2 (2-clusters)] *

System Configuration > BIOS/Platform Configuration (RBSU) > Memory Options > Virtual NUMA > [Disabled]

* Sub-NUMA Clustering depends on hardware configuration.
For hardware configurations where this feature is not available, set according to the case of setting [Disabled].
For details, see *Chapter 1 (1. System Utilities)* in *Maintenance Guide (Common)*.

Hardware configuration

The following hardware configurations require special procedures.

— EB OS **Installation When Multiple Logical Drives Exist**
If you select wrong hard disk drive in Windows Server 2019 installation, the setup may erase existing data unexpectedly.
Refer to displayed disk capacity or partition size to find target hard disk drive.
If it is difficult to determine the hard disk drive, remove the hard disk drives other than OS installation destination before starting install OS.

— EB OS **Reinstalling to a mirrored volume**
When you install Windows Server 2019 in an environment with a mirrored volume created using Windows, disable mirroring before installing the operating system and enable it again after the installation. Use [Computer Management] – [Disk Management] to create, disable, or remove the mirrored volume.

— EB OS **Peripherals such as RDX**
Remove a RDX device before installing. Some peripherals need to be halted before installation. Refer to the manual provided with the peripherals for how to set a device appropriate to installation.

— EB OS **LTO and similar media**
Do not set media that is unnecessary to installation during setup.

— EB OS **Reinstalling to dynamic disks**
If the hard disk drive has been upgraded to a dynamic disk, the Windows cannot be reinstalled to it with the existing partitions. Install Windows with Manual Installation.

— EB OS **Setup when mass memory is installed**

If mass memory is installed in your system, the large size of paging file is required at installation, and the partition size for storing debug information (dump file) cannot be allocated.

If you fail to create the partition, allocate the required size to multiple disks according to the following steps.

1. Set the system partition size to a size sufficient to install the OS and paging file.
2. Specify another disk as the destination to save the debug information (required dump file size) according to *Chapter 1 (4. Setting up for Maintenance)*.

If the hard disk drive does not have enough free area to write the debug information, set the partition size to a size sufficient to install the OS and paging file, and then add another hard disk drive for the dump file.

Note

If the partition size for installing Windows is smaller than the recommended size, expand the partition size or add another hard disk drive.

If sufficient free area cannot be allocated for the paging file, perform either of the following after install Windows.

– **Specify a hard disk drive other than the system drive as the location to store the paging file for collecting memory dump**

Create a paging file of "installed memory size + 400 MB (installed memory size + 1,100 MB when the size is 4 TB or more)" or more in a drive other than the system drive.

The paging file that exists in the first drive (in the order of drive letter C, D, E, ...) is used as the temporary memory dump location.
Therefore, make sure that the size of the paging file that exists in the first drive is at least "installed memory size + 400 MB (installed memory size + 1,100 MB when the installed physical memory is 4 TB or more)".
Paging files in dynamic volumes are not used for dumping memory. The setting is applied after restarting the system.

Example of correct setting
C : No paging file exists **D : Paging file whose size is "installed memory size + 400 MB* " or more** → The paging file in drive D can be used for collecting memory dump because its size satisfies the requirement.

Example of incorrect setting 1
C : Paging file whose size is smaller than the installed memory size **D : Paging file whose size is "installed memory size + 400 MB* " or more** → The paging file in drive C is used for collecting memory dump, but collection may fail because the size of the paging file is smaller than the installed memory size.
Example of incorrect setting 2
C : Paging file whose size is "installed memory size x 0.5" **D : Paging file whose size is "installed memory size x 0.5** **E : Paging file whose size is 400 MB*** → The total paging file size in all drives is "installed memory size + 400 MB* ", but collection may fail because only the paging file in drive C is used for collecting memory dump.
Example of incorrect setting 3
C : No paging file exists **D : Paging file whose size is "installed memory size + 400 MB* " or more (in dynamic volume)** → Paging files in a dynamic volume cannot be used for collecting memory dump. Thus, collecting memory dump fails.

* This value is installed memory size +1,100 MB when the installed memory size is 4 TB or more

– **Specify a drive other than the system drive for "Dedicated Dump File".**

Create the registry shown below by using the Registry Editor and specify the name of Dedicated Dump File.

<For example: "dedicateddumpfile.sys" in drive D>

```
Key  : HKEY_LOCAL_MACHINE\SYSTEM
       \CurrentControlSet\Control\CrashControl
Name : DedicatedDumpFile
Type : REG_SZ
Data : D:\dedicateddumpfile.sys
```

Note the following when specifying Dedicated Dump File:

- The setting is applied after restarting the system.
- Specify a drive that has free space of “installed memory size + 400MB (installed memory size + 1,100 MB when the installed memory size is 4 TB or more)” or more.
- Dedicated Dump File cannot be placed in dynamic volumes.
- Dedicated Dump File is only used for collecting memory dump, and is not used as memory. Specify the paging file size so that sufficient virtual memory can be allocated in the entire system.

System partition size

— EB OS

The system partition size can be calculated by using the following formula.

Size required to install the OS + paging file size + dump file size + application size

Desktop Experience

Size required to install the OS	=	12,400 MB
Paging file size (recommended)	=	installed memory size + 400MB
Dump file size	=	installed memory size + 400MB (installed memory size is 4 TB or less)
	=	installed memory size + 1,100MB (installed memory size is exceeding 4 TB)
Application size	=	as required by the application

Server Core

Size required to install the OS	=	8,600MB
Paging file size (recommended)	=	installed memory size + 400MB
Dump file size	=	installed memory size + 400MB (installed memory size is 4 TB or less)
	=	installed memory size + 1,100MB (installed memory size is exceeding 4 TB)
Application size	=	as required by the application

For example, if the installed memory size is 2 GB (2,048 MB), and application size is 100 MB, the partition size is calculated as follows:

12,400MB + (2,048MB + 400MB) + 2,048MB + 400MB + 100MB
= 17,396MB

The above mentioned partition size is the minimum partition size required for system installation. Ensure that the partition size is sufficient for system operations.

The following partition sizes are recommended.

Desktop Experience : 32,768MB(32GB) or more
Server Core : 32,768MB(32GB) or more
*1GB = 1,024MB

Note

- The above paging file sizes are recommended for collecting debug information (dump file). The initial size of the Windows partition paging file must be large enough to store dump files.
  Make sure you set a sufficient paging file size. If the paging file is insufficient, there will be a virtual memory shortage that may result in an inability to collect correct debug information.
- Regardless of the sizes of internal memory and write debug information, the maximum size of the dump file is "installed memory size + 400 MB (installed memory size + 1,100 MB when installed memory size is 4 TB or more)".
- When installing other applications or other items, add the amount of space needed by the application to the partition.

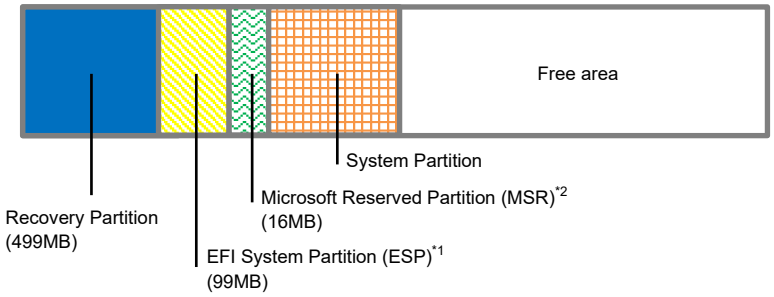
If the partition size for installing Windows is smaller than the recommended size, expand the partition size or add another hard disk drive.

When installing using Rapid Setup

The Windows OS creates three partitions at the head of the hard disk drive.

- Recovery Partition : 499MB
- EFI System Partition (ESP) : 99MB *1
- Microsoft Reserved Partition (MSR) : 16MB *2

614 MB of disk space is allotted to the two partitions at the head.



*1 May be 300MB in size depending on hard disk drive type.
*2 MSR is not displayed on **Disk Management**.

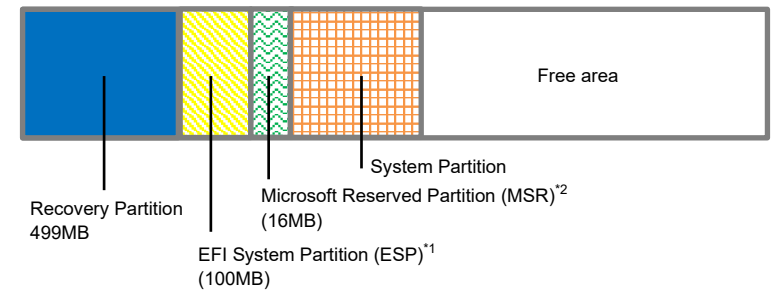
When installing using Manual Installation

When creating a partition, Windows OS creates the following partitions at the hard disk drive.

- Recovery Partition : 499MB
- EFI System Partition (ESP) : 100MB *1
- Microsoft Reserved Partition (MSR) : 16MB *2

For example, when 61,440MB is specified for partition size, the area available free area is calculated as follows:

61,440MB - (100MB + 16MB + 602MB) ＝ 60,722MB



*1 May be 300MB in size depending on hard disk drive type.
*2 MSR is not displayed on **Disk Management**.

Windows Server 2019 Hyper-V support

— EB OS Refer to the following web site for information related to Windows Server 2019 Hyper-V.
https://www.58support.nec.co.jp/global/download/w2019/hyper-v/hyper-v-ws2019.html

Using BitLocker

— EB OS If using BitLocker, note the following.

- Be sure to keep the recovery key secure. Do not keep it near a server running BitLocker.

Important

If the recovery key is not entered, the OS cannot be started, and the content of the partition encrypted by BitLocker cannot be referenced any more. The recovery key might be required at startup of the OS after the following:

- **Replacement of motherboard**
- **Change of BIOS setting**
- **Initialization of trusted platform module (TPM) ***

*** Depending on your system, it may not be supported. Refer to the Instruction Manuals about hardware.**

- To reinstall the operating system into a partition that is encrypted with BitLocker, delete the BitLocker-encrypted partition prior to reinstallation.

Support for NIC teaming in Windows Server 2019

— EB OS The NIC teaming feature, which used to be provided by network interface card (NIC) vendors, is built into Windows Server 2019. In Windows Server 2019, this feature is also called "load balancing and failover (LBFO)".

Refer to *Chapter 1 (3.8 Setup of Windows Server 2019 NIC Teaming (LBFO)* and specify any required settings.

Installing bundled software

— EB OS When you install software from **Applications** on Starter Pack menu, confirm each install procedure beforehand by referring to Installing Bundled Software in Installation Guide (Windows). Hardware setting may be required, be sure to confirm it.

Apply Windows Update

— EB OS If the setup completed, apply Windows Update as needed to update the system to the most recent.

Precautions of Starter Pack

— EB OS Refer to download site of Starter Pack for precautions of firmware, drivers, software and so on for this system.

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

(Search by the model name from [Search by Model:] window)

3.2 Rapid Setup

This section describes how to install Windows Server 2019 with Rapid Setup.

Important

- **Setup will delete all data of the hard disk drive.**
- **Disconnect hard disk drives from the RAID controller that is not to be setup.**

3.2.1 Setup flow

*1 Integrated Installation feature is only available on Desktop Experience.

*2 The setup procedure is described with Desktop Experience environment.

3.2.2 Requirements for Setup

Prepare the following media and instruction manuals before starting setup.

- Either of the following OS installation media
  - **NEC operating system installation media** (hereafter referred to as *Backup DVD-ROM*)
  - **Microsoft operating system installation media** (hereafter referred to as *Windows Server 2019 DVD-ROM*)
- Starter Pack
  - **Starter Pack DVD** (Optional or downloading from our website)

    → The Starter Pack which supports Windows Server 2019 is "S8.10-010.11".
    Download it from Web site.

3.2.3 Installation procedure

Installation with Rapid Setup is a wizard format that sets each item.

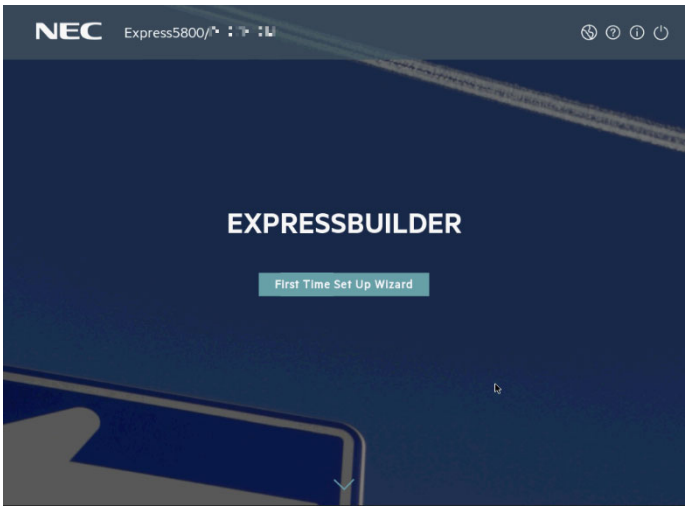
Please note that the installed Windows will be deleted.

Note

Read the precautions in *Chapter 1 (3.1 Precautions of Windows Server 2019 Installation)* in advance.

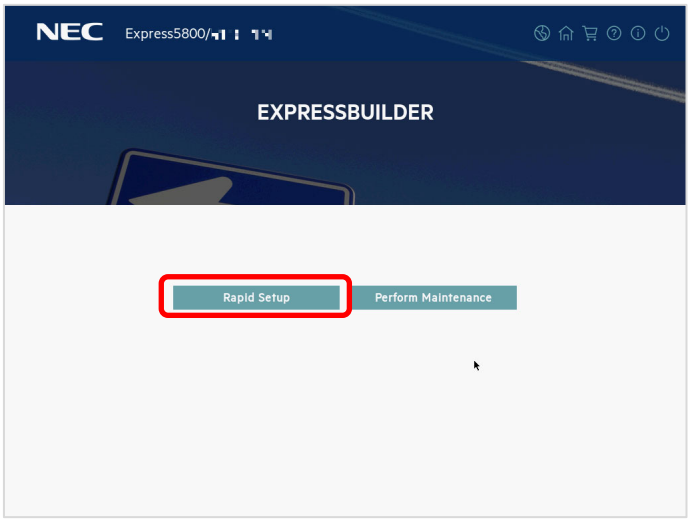
1. Turn on peripherals (such as a display), and then turn on the server.
2. To run EXPRESSBUILDER, press <F10> key during POST.

Only when running an OS for the first time, operating environment of EXPRESSBUILDER is set.
When the following screen appears, click "First Time Set Up Wizard".
When setting is completed, the process proceed to step 3.

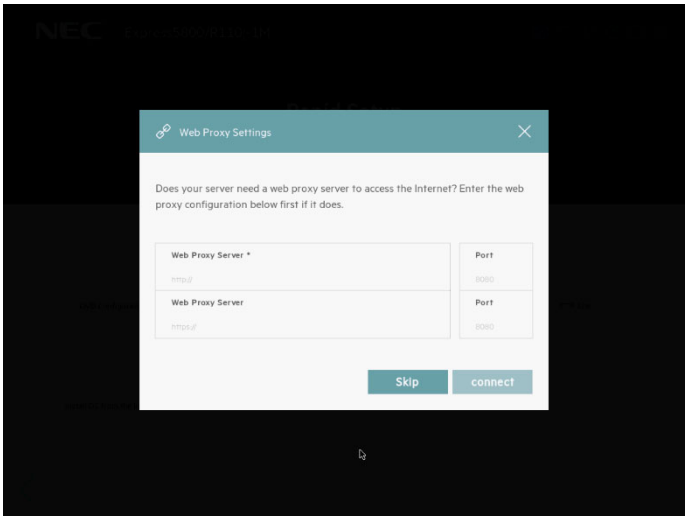


For details of EXPRESSBUILDER and "First Time Set Up Wizard", see *Chapter 2 (3.Deltails of EXPRESSBUILDER) in Maintenance Guide*.

3. The next screen is displayed, click **Rapid Setup**.



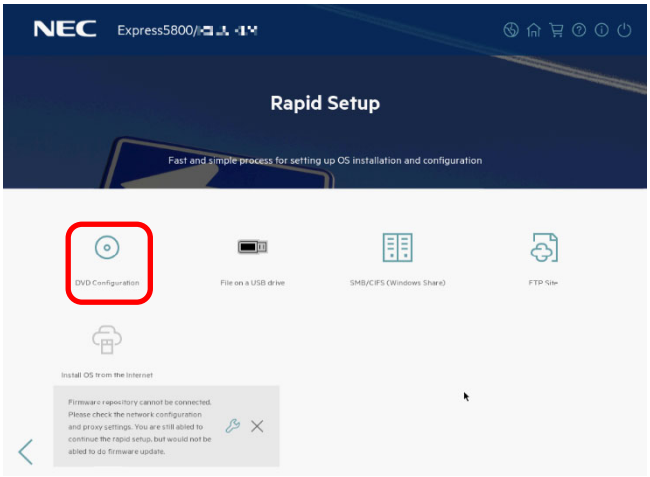
4. When the following dialog box appears, click **Skip**.



5. Select **DVD Configuration**.
When the message appears in the lower left of the screen, click "×" to close it.

Note

When choosing **DVD Configuration** or **File on a USB drive**, click ">" icon after setting the media.



Choose an OS installation source from the following types.

DVD Configuration	DVD-ROM
File on a USB drive	USB flash drive
SMB/CIFS (Windows Share)	Network sharing folder
FTP Site	This option is not available.
Install OS from the internet	This option is not available.

Each media supports the following file format.

File on a USB drive	Flat, ISO
SMB/CIFS (Windows Share)	Flat, ISO

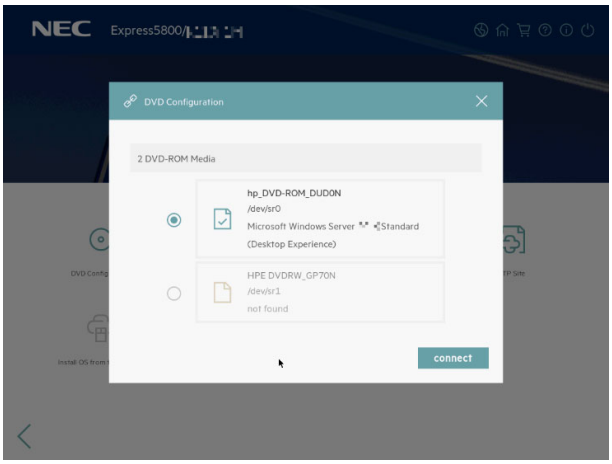
Flat: a standard folder/file structure

ISO: single ISO or UDF file

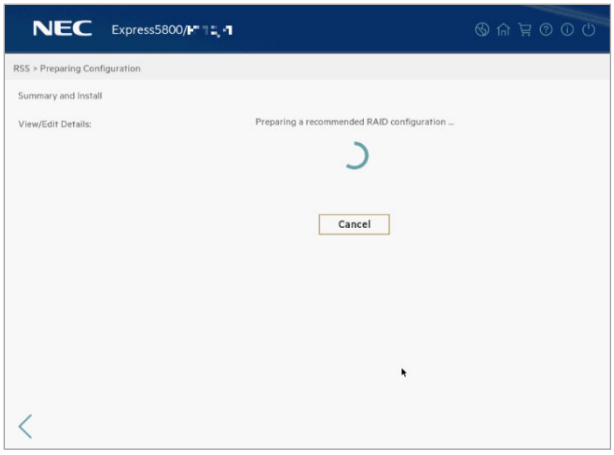
Choose an OS source media depending on the media type.

DVD Configuration	Automatically detects on OS installation media. If the detection fails, try again.
File on a USB drive	Choose OS installation file on USB flash drive connected. Supports only a USB drive formatted with FAT or exFAT format.
SMB/CIFS (Windows Share)	Set the network settings of network sharing that includes OS installation file, and then choose OS installation file after connecting the network sharing. ● Server Name/IP Address ● Share Name ● Domain Name ● Network Share User ● Network Share Password ● Confirm Password

When you select "DVD Configuration" and connected multiple optical disk drive, next screen is displayed.
Select the optical disk drive in which the OS installation media was inserted.
Click **connect** of the lower right of the screen.



6. Mounted RAID controller is automatically recognized. Wait until installation completes.

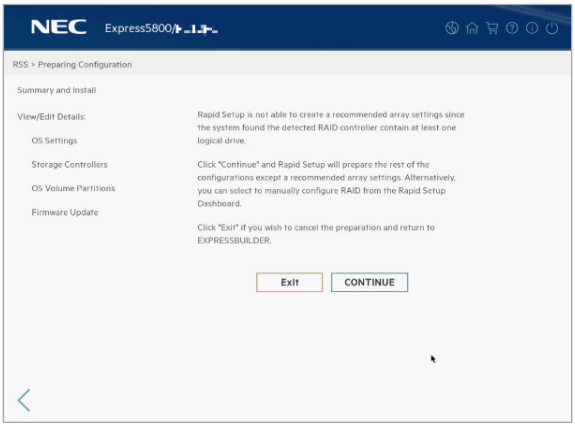


- When the RAID system is not configured.

  EXPRESSBUILDER configures RAID system automatically.
  RAID system configuration can be changed from "Storage controllers" setting screen of Step 7.

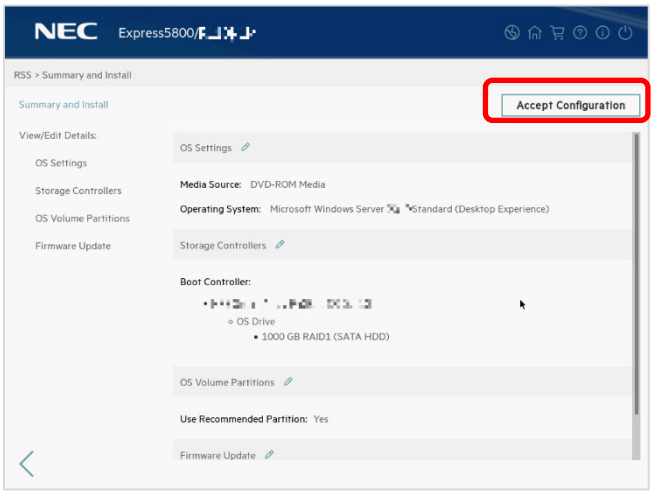
- When the RAID system is already configured.

  EXPRESSBUILDER do not configure RAID system.
  When a message indicating that the recommended array configuration cannot be created, confirm the contents and proceed.



7. Click menu of left pane or edit button on the item you want to edit to confirm and modify details.

   After completion, click **Accept Configuration** to start installation.



Tips

When you configure RAID system from EXPRESSBUILDER, the system reboots automatically after clicking **Accept Configuration**.
After reboot, EXPRESSBUILDER starts automatially and resumes from the next procedure. Wait a moment without any operation.

Confirm the settings and specify any required settings.

OS Setting

- On the following "Operating System", specify settings for the OS installation.
  - Windows Server 2019 Standard (Desktop Experience) or Windows Server 2019 Datacenter (Desktop Experience)
    → Described as “Desktop Experience” by this manual
  - Windows Server 2019 Standard or Windows Server 2019 Datacenter
    → Described as “Server Core” by this manual
- Password can be used alphanumeric characters only.
  If a sign (such as "!") is included, an error message will appear.
- Set your time zone.
- You can enable the functions of Windows, if necessary.

Install the HyperV role on this system	The HyperV role can be Enabled.
Enable Windows Firewall	Windows Firewall can be Enabled.

Storage controller

- Choose the RAID controller of installation destination.

Partition of the OS volume

- Specify the any partition size, and then remove the choice of **Use Recommended Partition**. Enter the partition size of Basic data partition to installation destination (Unit: MB *), or specify it with percentage. The following partitions cannot be changed.
  - Recovery
  - EFI system partition
  - Microsoft reserved partition
- When choosing **Use Recommended Partition**, the OS is installed using all area of a hard disk drive.
- Select hard disk drive (logical drive) to install OS.

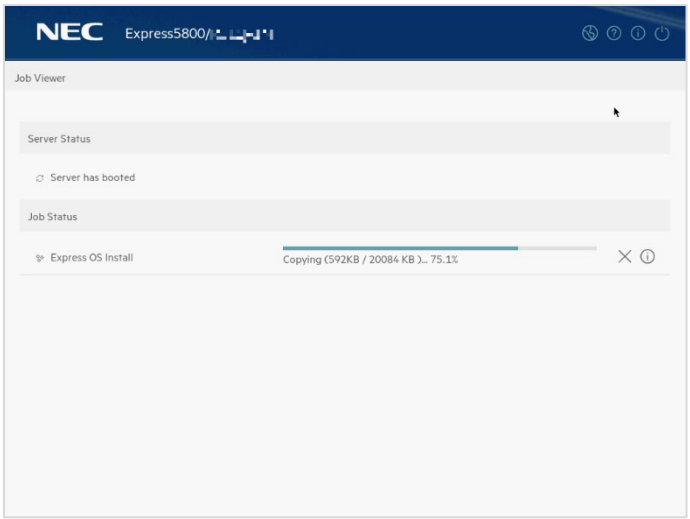
Important

You can confirm name of hard disk drives (e.g.: Logical Drive 1) from "Storage controllers" setting screen.
If you select wrong hard disk drive as OS destination drive(logical drive), existing data may be cleared unexpectedly.
Be careful when you select hard disk drive for installation.

Firmware Update

- This feature is the reservations in future.

8. When copying is complete, the system restart automatically.

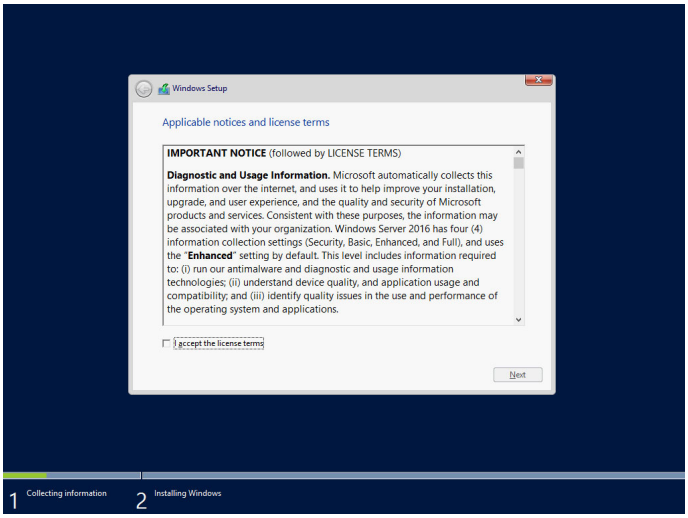


9. Confirm the license terms.

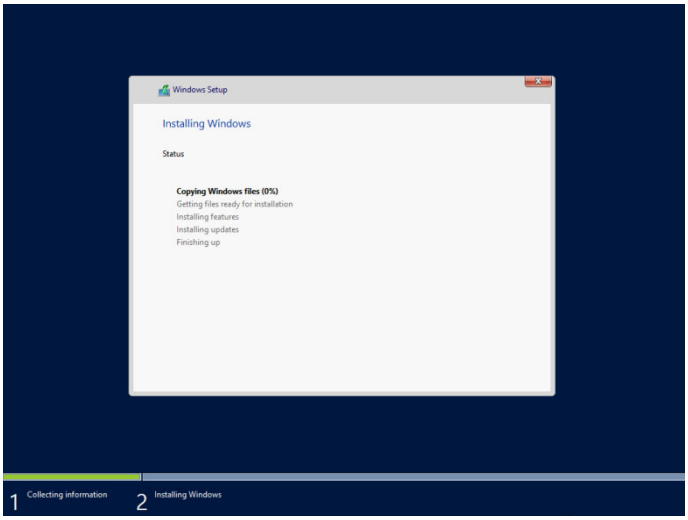
   Click **I accept the license terms if** you accept this license, and then click **Next**.

Tips

If a choosing installation OS screen appears, the inserted OS media is different from the setting of step 7. Retry the setting from the beginning.



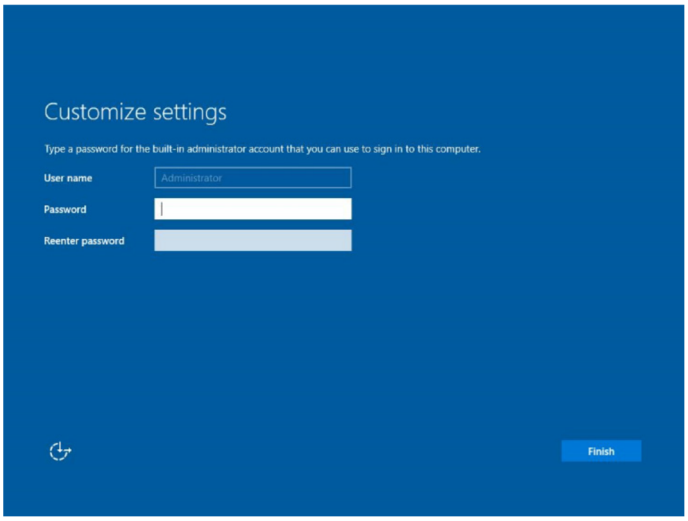
The following screen is displayed, and Windows installation automatically starts.



10. The following screen appears depending on the setting of Step 7.

Desktop Experience

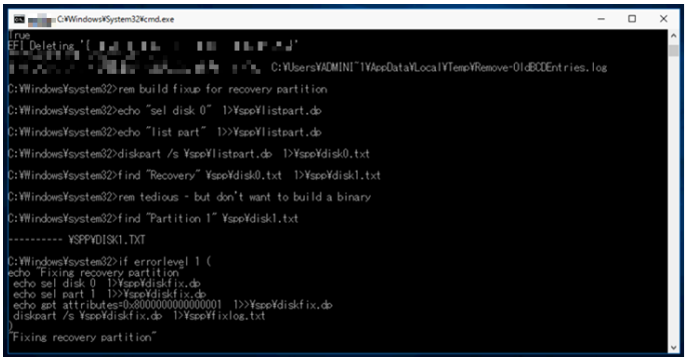
Type a password and click **Finish**.



Tips If you entered a password in step 7, this screen is not displayed.

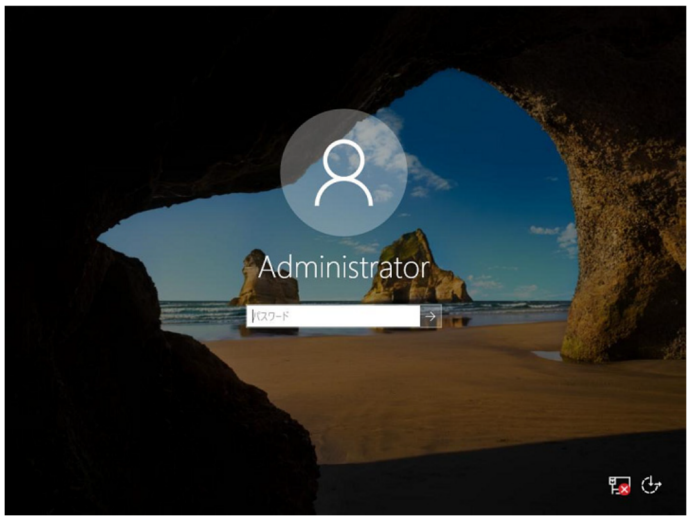
After signing in, installation automatically resumes.

After installation is complete, the system automatically restarts.

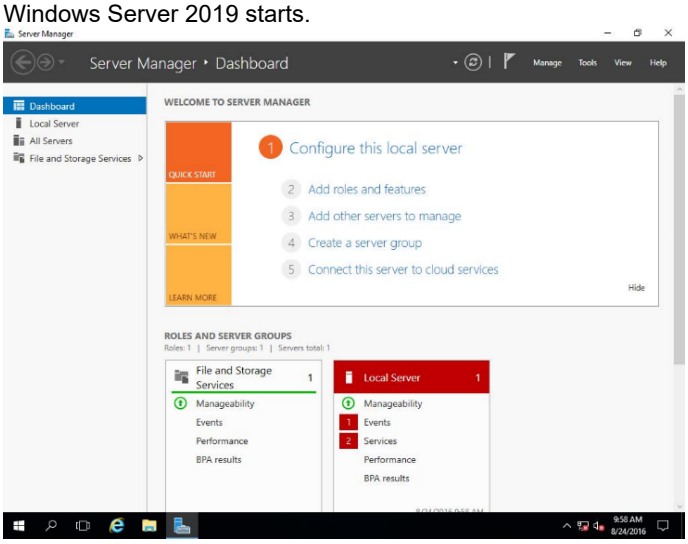


Press <Ctrl> + <Alt> + <Delete> key to unlock.

Enter the password and press <Enter> key.



Windows Server 2019 starts.

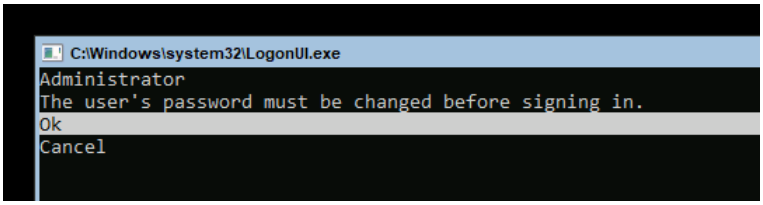


Server Core

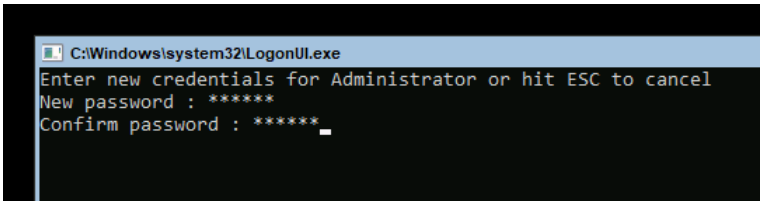
Press <Ctrl> + <Alt> + <Delete> keys to unlock.

Tips If you entered a password in step 7, this screen is not displayed.

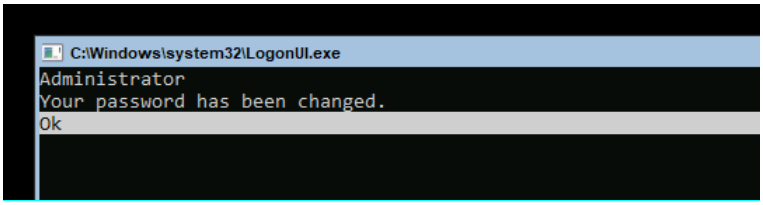
The password is needed to change. Choose **OK** and press <Enter> key.



Enter a new password and press <Enter> key.



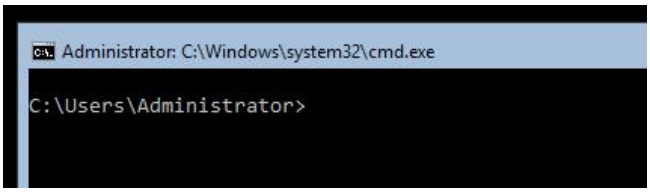
Choose **OK** and press <Enter> key after the following message is displayed.



The installation continues automatically.

When the installation finished, the system restarts automatically. Wait for a while.

After restarting, press <Ctrl> + <Alt> + <Delete> key to unlock.Windows Server 2019 starts.



11. See *Chapter 1 (3.4 Standard Program Package Installation)* to install SPP.
12. See *Chapter 1 (3.5 Setting for collecting specific event log)* to setup it.
13. Install drivers and specify detailed settings according to *Chapter 1 (3.6 Setup of Device Drivers)*.
14. Confirm if Windows is activated according to *Chapter 1 (3.7 License Authentication)*.
15. See *Chapter 1 (3.8 Setup of Windows Server 2019 NIC Teaming (LBFO))* to setup a team as needed.
16. Install the applications as needed according to *Chapter 1 (3.9 Installing Applications)*.
17. Set the other OS settings according to *Chapter 1 (4. Setting up for Maintenance)*.
18. See *Chapter 1 (5. Backup of system information)* to back up the system.

The Windows installation with Rapid Setup option is now complete.

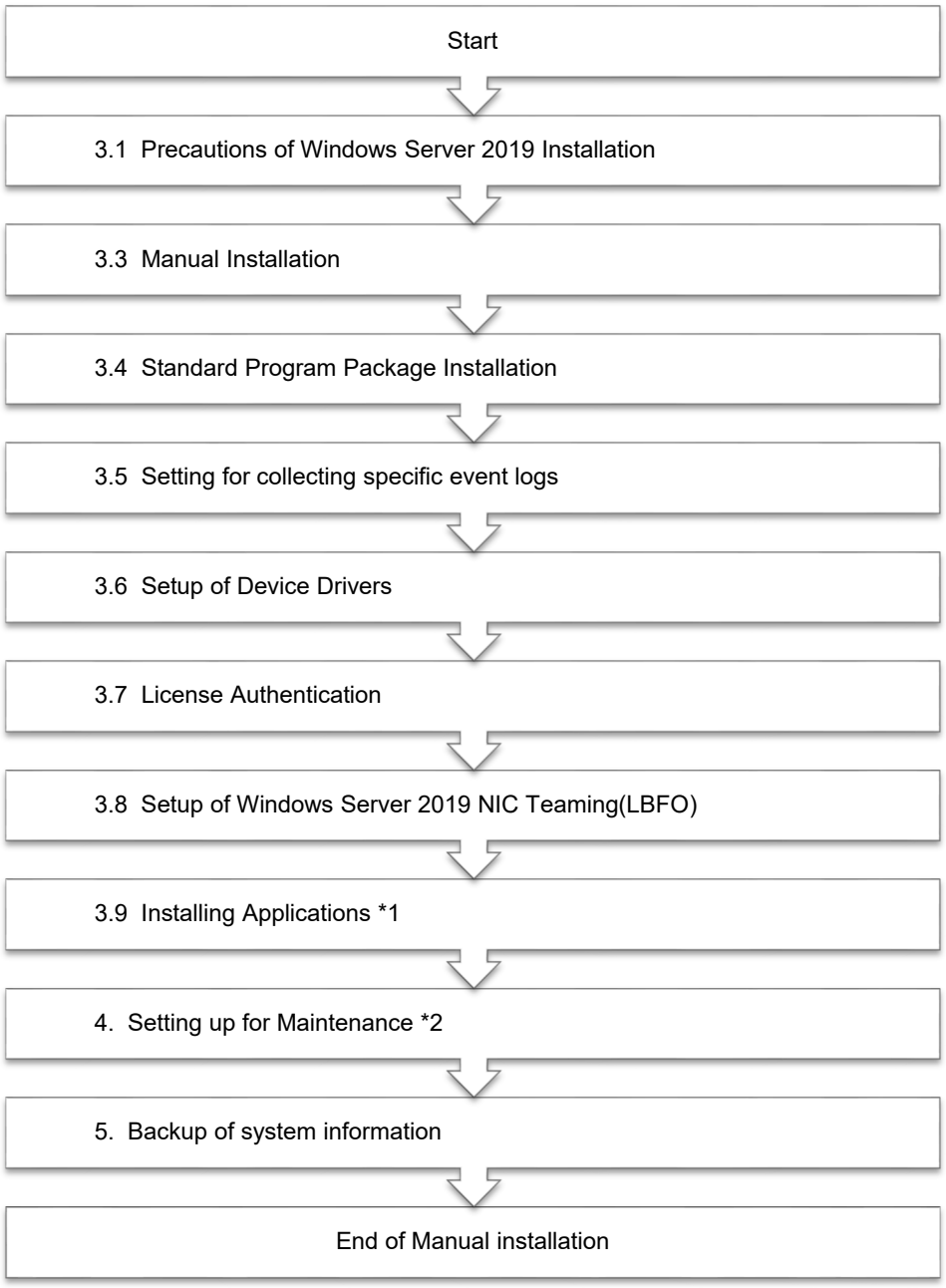
3.3 Manual Installation

This section describes how to install Windows Server 2019 with Manual option.

Important **Disconnect hard disk drives from the RAID controller that is not to be setup.**

Note "Manual Installation" installs OS without EXPRESSBUILDER.

3.3.1 Setup flow



*1 Integrated Installation feature is only available on Desktop Experience.

*2 The setup procedure is described with Desktop Experience environment.

3.3.2 Requirements for Setup

Prepare the following media and instruction manuals before starting setup.

- Either of the following OS installation media
  - **NEC operating system installation media** (hereafter referred to as *Backup DVD-ROM*)
  - **Microsoft operating system installation media** (hereafter referred to as *Windows Server 2019 DVD-ROM*)
- Starter Pack
  - **Starter Pack DVD** (Optional or downloading from our website)

    → The Starter Pack which supports Windows Server 2019 is "S8.10-010.11".
    Download it from Web site.

Note

If using the onboard RAID controller and the internal optical disk drive, the driver is loaded from a removable media device.
Copy and prepare the following files onto a removable media in advance.
<Starter Pack>:**\software\010\drivers\sw_raid1_driver**

3.3.3 Installation procedure

Note

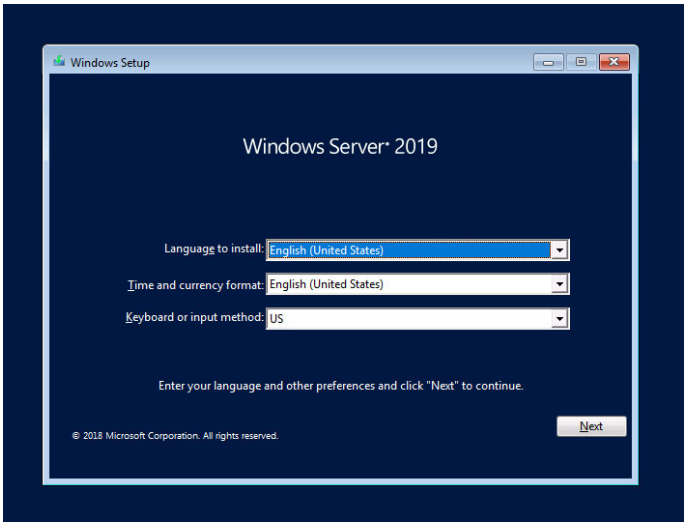
Read the precautions in *Chapter 1 (3.1 Precautions of Windows Server 2019 Installation)* in advance.

1. Turn on peripherals (such as a display), and then turn on the server.
   Insert OS installation media into the drive.
2. To run EXPRESSBUILDER, press <F11> key during POST.
   On the **One-Time Boot Menu**, select the optical disk drive in which the OS installation media was inserted.
3. The system starts from the OS installation media
   The message “Press any key to boot from CD or DVD…” is displayed on the upper of the screen.
   Press the <Enter> key to start from the media.

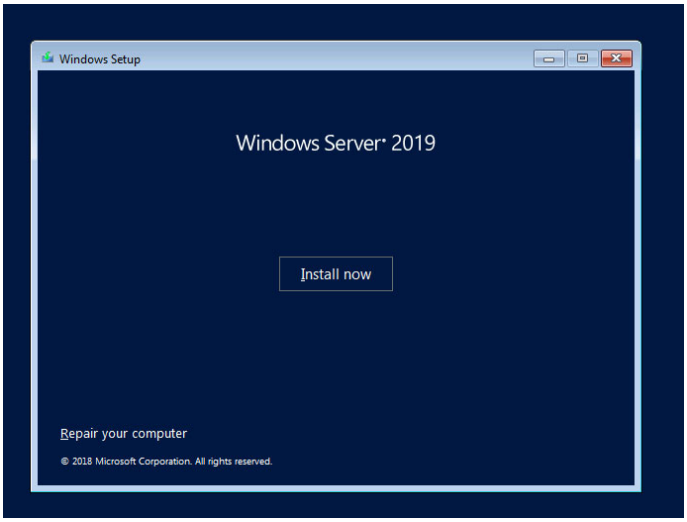
Note

If the Windows Setup screen (the screen in the next step) does not display, the <Enter> key was not properly pressed. Turn the system power on again, and then start again.

4. Click **Next**.

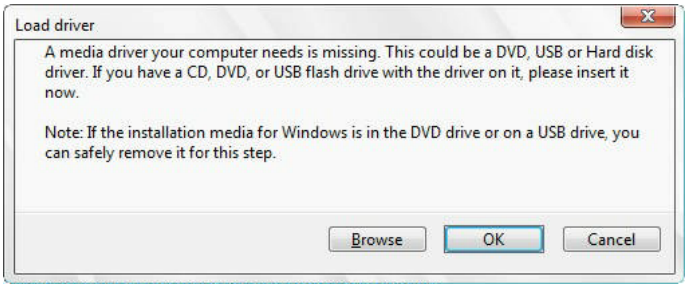


5. Click **Install now**.



If the following message is displayed: Go to Step 6.

If the following message is not displayed: Go to Step 8.



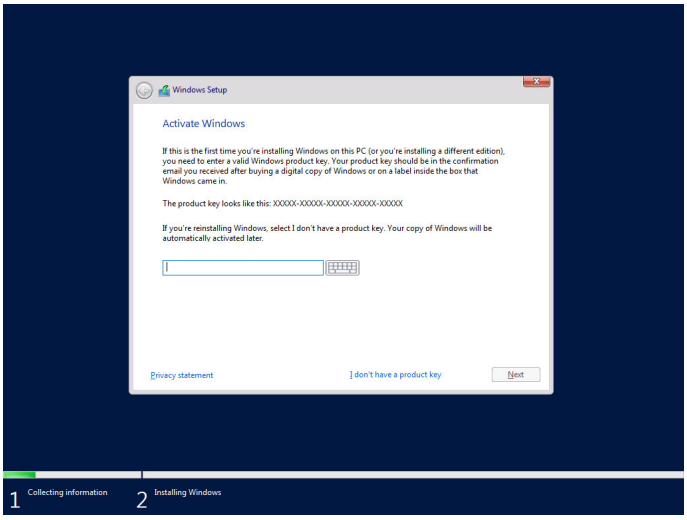
6. After connecting the removable media where the onboard RAID controller driver was copied, specify the path and click **OK**.

   <Removable media>:**\sw_raid1_driver\ws2016_ws2019**

7. Select the following driver from the displayed list of drivers, and click **Next**.

   HPE Smart Array S100i SR Gen10 SW RAID

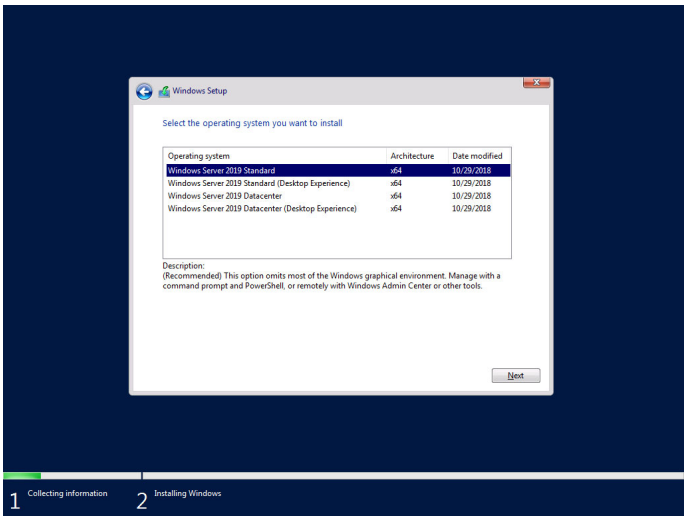
8. Type the product key, and then click **Next**.



Tips

If you are using Backup DVD-ROM, this screen does not appear.

9. Choose an operating system you want to install and click **Next**.



Options are displayed depending on the installation media you are using.

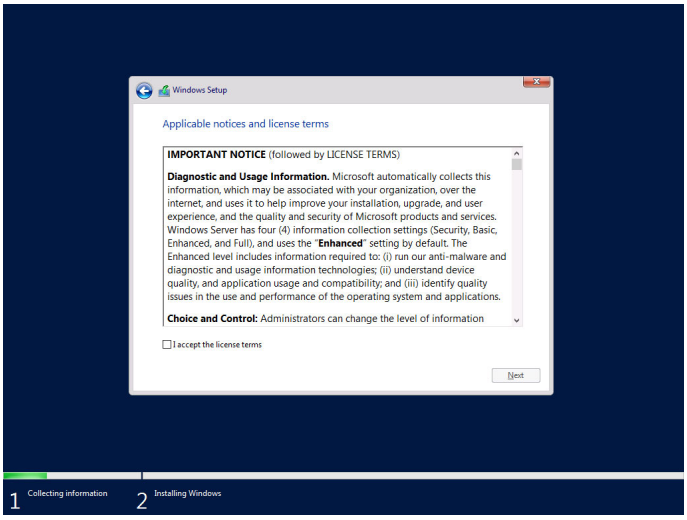
Tips

Read the message of the screen, and then choose an installation option.

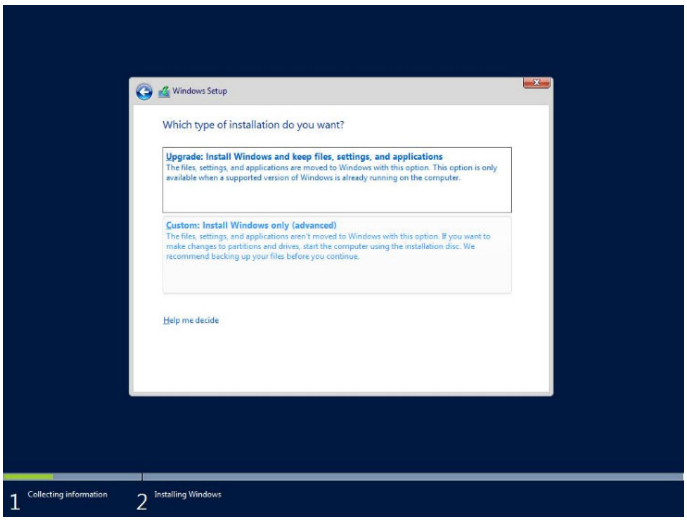
- Windows Server 2019 Standard or Windows Server 2019 Datacenter
  → Described as “Server Core” by this manual
- Windows Server 2019 Standard (Desktop Experience) or Windows Server 2019 Datacenter (Desktop Experience)
  → Described as “Desktop Experience” by this manual

10. Read the license terms carefully.

    If you agree, check **I accept the license terms** and click **Next**.

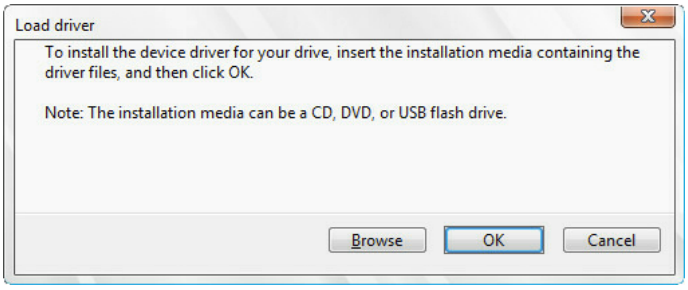


11. Select **Custom: Install Windows only (advanced)**.



12. The “Where do you want to install Windows?” screen is displayed.

    If the driver was loaded in steps 6 and 7, or if the onboard RAID controller is not in use, proceed to step 15. If you select **Load driver** here, the following screen will be displayed.



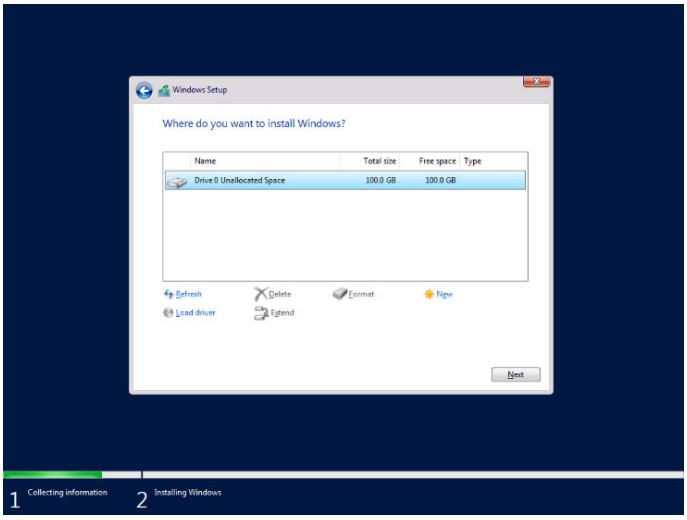
13. After setting the Starter Pack DVD in the USB-DVD drive, assign a file directory, and click **OK**.

    <Starter Pack DVD>:**\software\010\drivers\sw_raid1_driver\ws2016_ws2019**

14. Select the following driver from the displayed list of drivers, and click **Next**.

    HPE Smart Array S100i SR Gen10 SW RAID

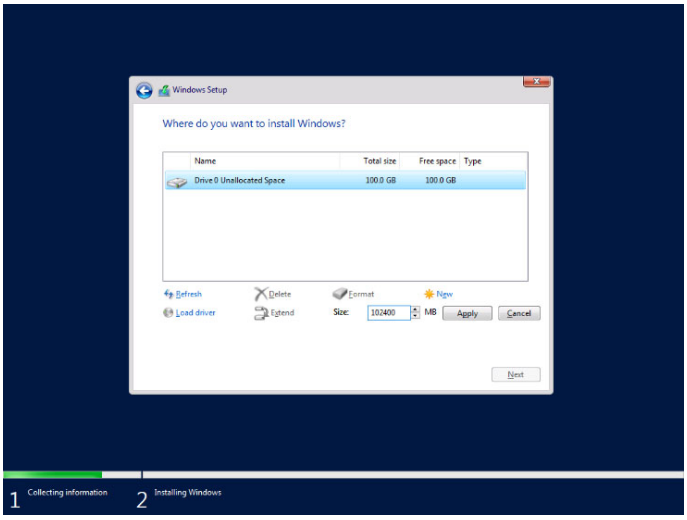
15. Click **New**.



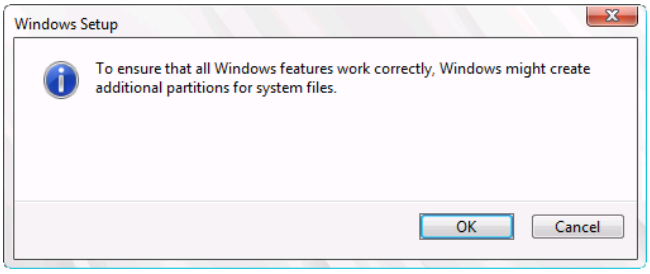
Tips

If **New** is not displayed on the screen, click **Drive options (advanced)**.

16. Specify the partition size in the text box, and the click **Apply**.



When the following window appears, click **OK**.



Tips

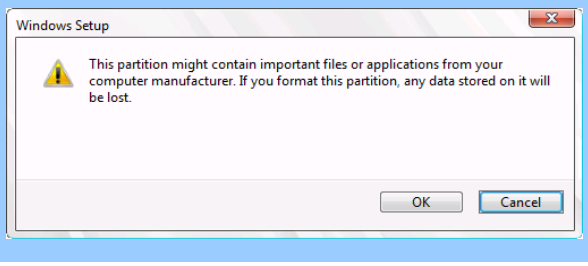
When creating a partition, the OS creates the following partitions at top of the hard disk drive.

- Recovery Partition
- EFI System Partition (ESP)
- Microsoft Reserved Partition (MSR)

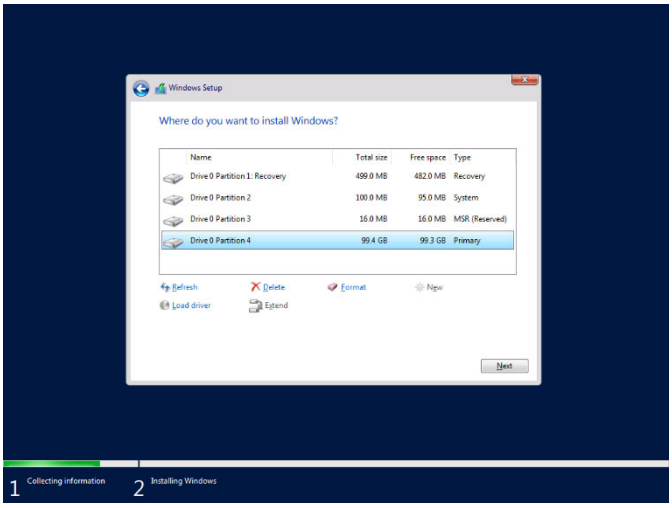
17. Select the partition created in step 16, and then click **Format**.

Important

When the following screen appears, read the message and click [OK]. Carefully select the partition to be formatted because data in the partition will be erased.



18. Select the created partition, and then click **Next**.

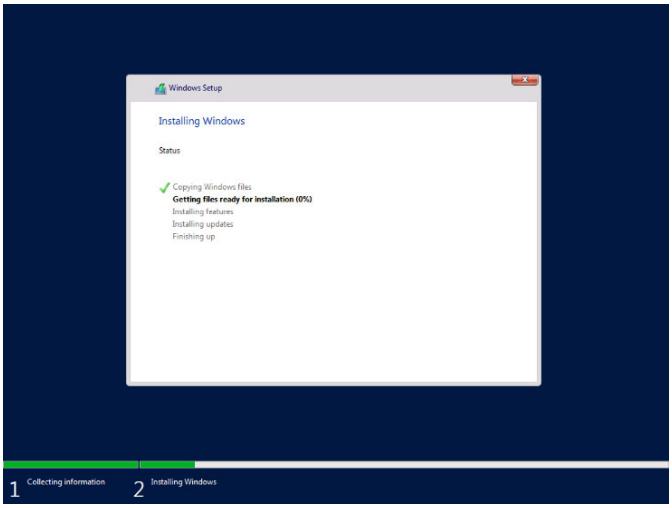


Tips

The number of partitions displayed differs depending on the hardware configuration.

If Starter Pack DVD is in the drive, change it to the OS disk, and then click **Refresh**.

When the following message appears, Windows installation starts automatically.



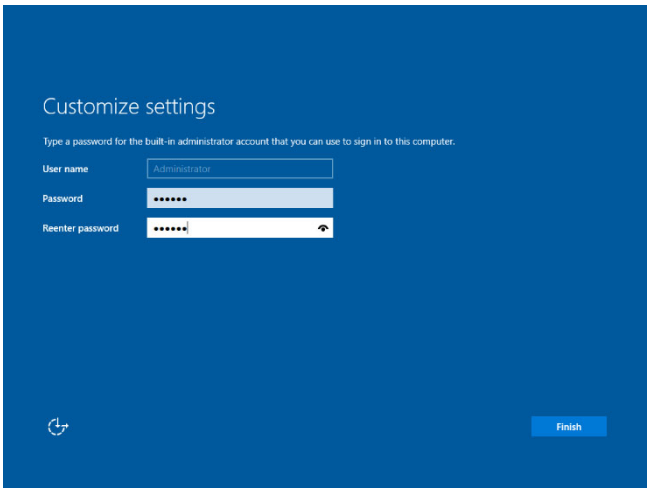
The server will automatically restart after Windows Server 2019 is installed.

You will proceed to Windows setup after restart.

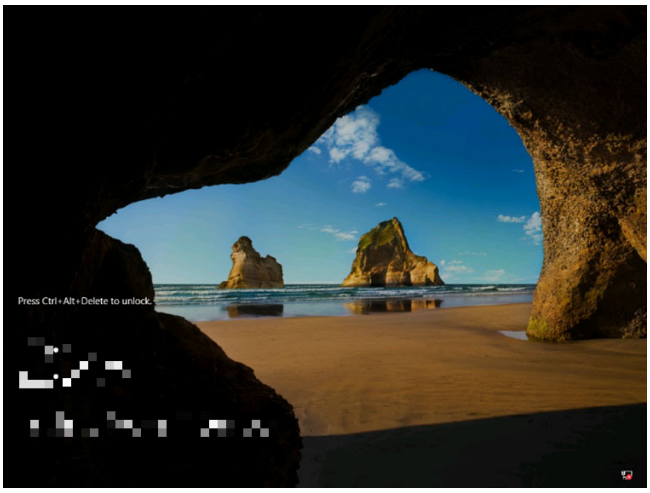
19. Set user settings according to operating system chosen in step 9.

Desktop Experience

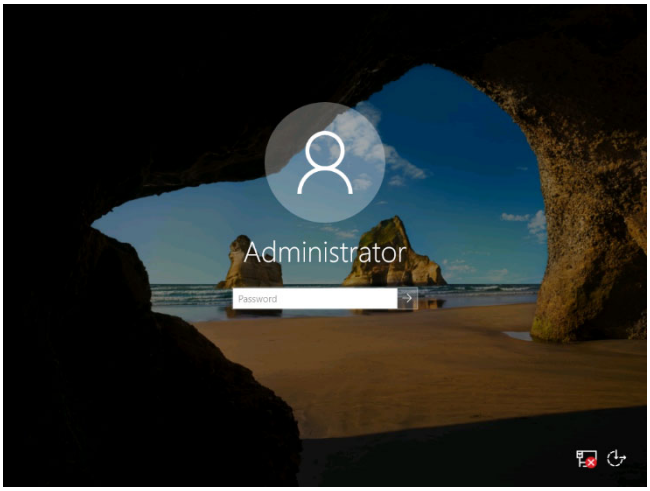
Type a password and click **Finish**.



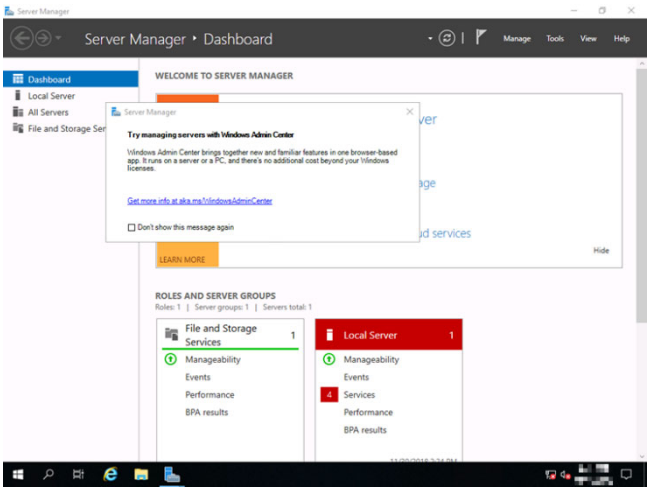
Press <Ctrl> + <Alt> + <Delete> keys to unlock.



Enter the password and press <Enter> key.



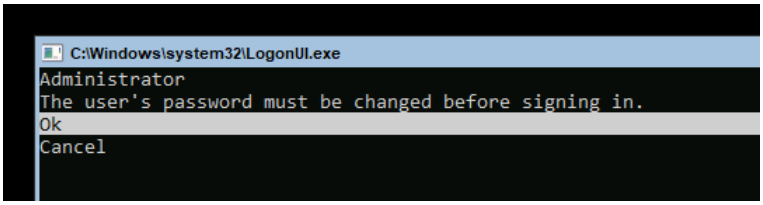
Windows Server 2019 starts.



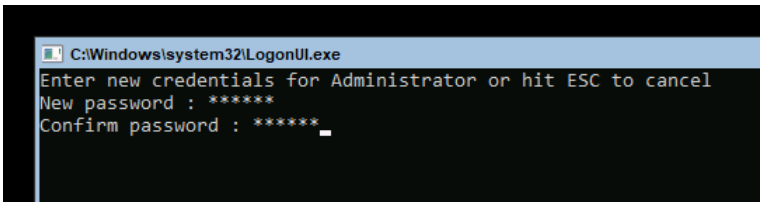
Server Core

Press <Ctrl> + <Alt> + <Delete> keys to unlock.

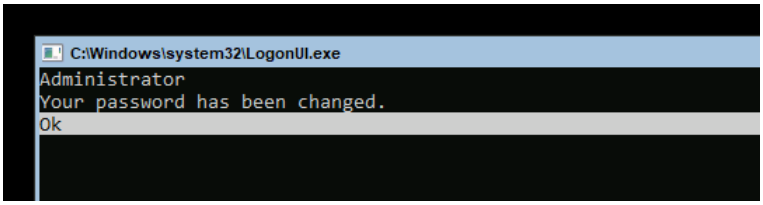
The password is needed to change. Choose **OK** and press <Enter> key.



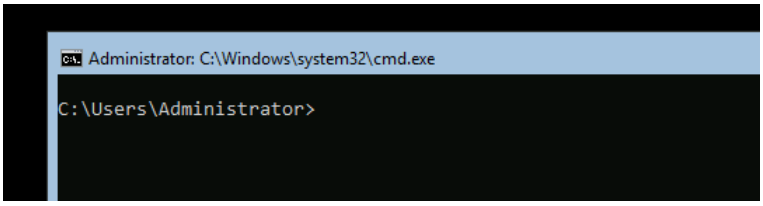
Enter a new password and press <Enter> key.



Choose **OK** and press <Enter> key after the following message is displayed.



Windows Server 2019 starts.



20. See *Chapter 1 (3.4 Standard Program Package Installation)* to install SPP.
21. See *Chapter 1 (3.5 Setting for collecting specific event logs)* to set it.
22. Install drivers and specify detailed settings according to *Chapter 1 (3.6 Setup of Device Drivers)*.
23. Confirm if Windows is activated according to *Chapter 1 (3.7 License Authentication).*
24. See *Chapter 1 (3.8 Setup of Windows Server 2019 NIC Teaming (LBFO))* to setup a team as needed.
25. Install the applications as needed according to *Chapter 1 (3.9 Installing Applications)*.
26. Set the other OS settings according to *Chapter 1 (4. Setting up for Maintenance).*
27. See *Chapter 1 (5. Backup of system information)* to back up the system.

The Windows installation with Manual Installation is now complete.

3.4 Standard Program Package Installation

Standard Program Package (SPP) contains drivers customized for this server.

Make sure to install Standard Program Package before running the server system.
System reboot is required after applying Standard Program Package.

This program can apply using iLO remote console and iLO virtual media.

Important

Make sure to update firmware by before applying Standard Program Package. If you mistake procedure, the system may not start.
For details, see *Chapter 1 (3.4.1 Before the installation)*.

3.4.1 Before the installation

Confirm the next contents before applying Standard Program Package.
Sign-in to the Windows with an Administrators privilege.

(1) Installing these drivers individually

(2) Delete Folders

(3) Updating firmware

(1) Installing these drivers individually

When you use these options, refer to the following procedure to install these drivers individually from "Starter Pack DVD" before installing SPP. SPP may be stopped with error if you do not install the driver beforehand.

Although the message indicated that the latest version has already been installed may be displayed, proceed with the installation. After that, restart the server.

Devices/Options	Driver application modules in the Starter Pack DVD
When N8103-189/190/191/192/193/194/195/196/197/201/237/238 is installed to the server	**\packages\cp059500.exe**

(2) Delete Folders

If **C:\cpqsystem** exists, delete that folder.

(3) Updating firmware

Important

If BitLocker function is enabled, disable it once to update firmware.
If you update with enable setting, recovery key may be required when OS boots. Set it enabled after *(3) Updating firmware* processes.

1. Stop the ESMPRO/ServerAgentService service.
   If ESMPRO/ServerAgentService is installed, stop following services before updating firmware.

   - Desktop Experience
     Stop following services from **Administrative Tools** - **Services**.
     - ESMCommonService
     - ESM System Management Service

   - Server Core
     Run the following command.
     net stop ESMCommonService
     net stop ESMSystemManagementService

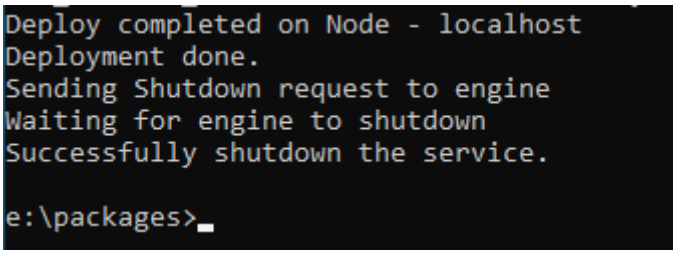
2. Set the Starter Pack DVD to the drive.

3. From the command prompt, type the following command.
   In the example below, the optical disk drive is the D drive.
   cd /d D:\packages

4. Type the following command, and then press <Enter> key.
   clean-cache.bat /y

5. Type the following command, and then press <Enter> key.
   Start the firmware update.
   Wait for the update to complete (about 20 to 30 minutes).
   smartupdate.bat /s /romonly /ignore_tpm /ignore_warnings

6. The message **"Deployment done."** or **"No applicable component found."** appears in the command prompt, the command prompt returns to waiting for input.
   After removing the Starter Pack DVD, restart Windows Server 2019 manually.



   If the message "Deployment done." or "No applicable component found." does not appear in the command prompt, failed to update firmware. Refers to *chapter 2 (2.1 Problem of OS)*.

The update is now complete.

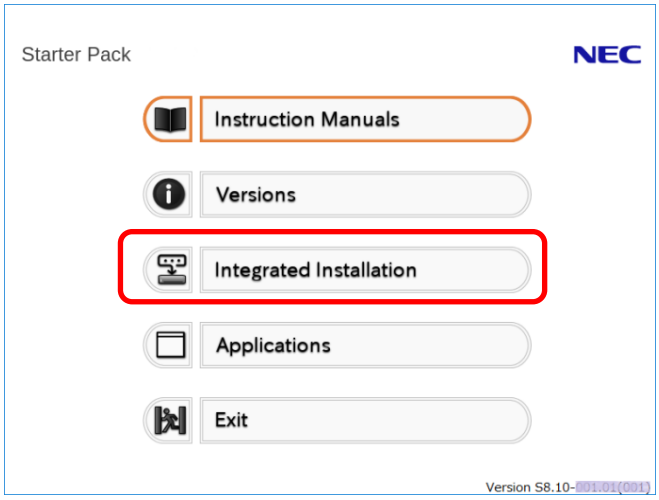
3.4.2 Installing Standard Program Package on Desktop Experience

1. Sign-in to the Windows with an Administrators privilege.
2. Stop the ESMPRO/ServerAgentService service.

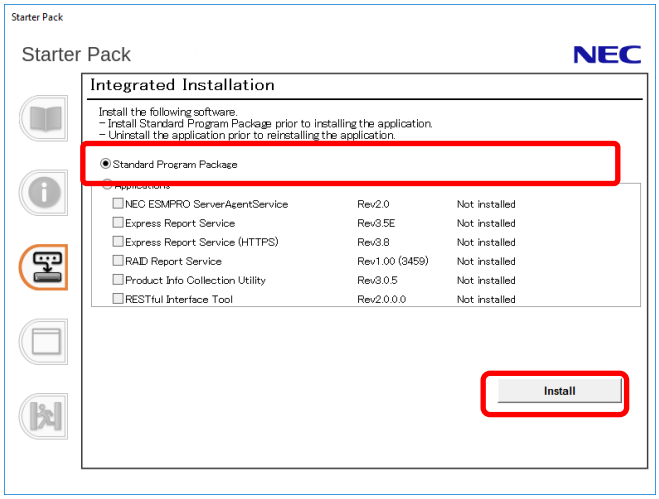
   If ESMPRO/ServerAgentService is installed, stop following services before applying Standard Program Package.

   Stop following services from Administrative Tools - Services.

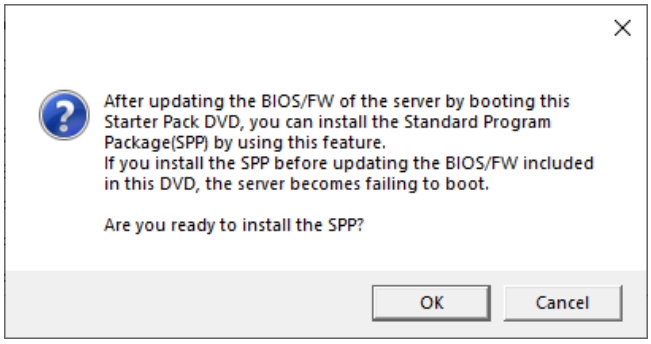
   - ESMCommonService
   - ESM System Management Service
3. Set the Starter Pack DVD to the drive.
4. Run the **start_up.bat** under the root folder on DVD.
5. Click **Integrated Installation** on the menu.



6. Choose **Standard Program Package** on the following screen, and then click **Install**.

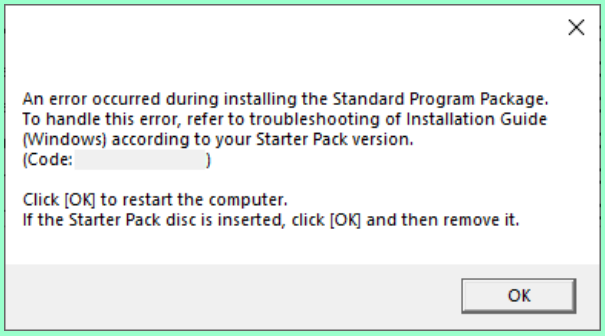


7. If the firmware update in *Chapter 1 (3.4.1 Before the installation)* has been completed, click **OK** to start the installation of Standard Program Package.
Wait until installation completes (about 5 to 5 minutes).



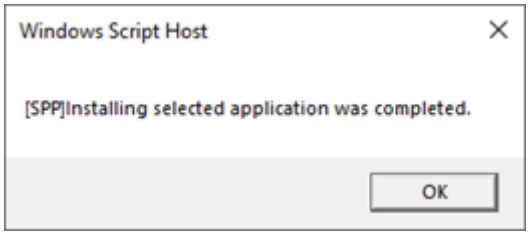
Note

- After installing a standard program package, the following message displays and refers to *chapter 2 (2.1 Problem of OS)*.



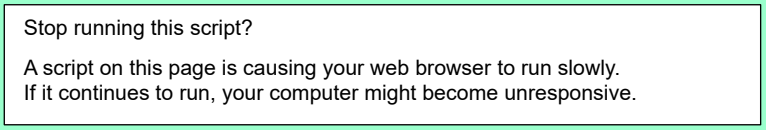
- iLO may be reset during applying Standard Program Package.
If iLO is reset, iLO remote console and iLO virtual media is disconnected.
When iLO remote console and iLO virtual media is disconnected, connect again after 30 seconds or more.

8. Click **OK**.



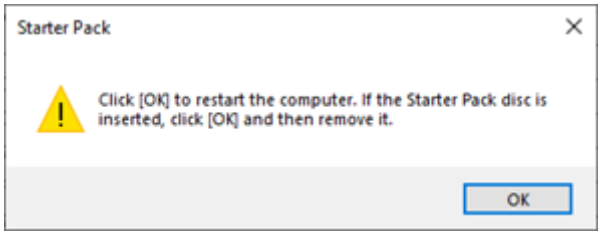
Note

If the following message displayed during installing the Standard Program Package, click **No** to continue process.



9. Windows Server 2019 restarts automatically.

   Then, remove the Starter Pack DVD.



SPP installation is now complete.

3.4.3 Installing Standard Program Package on Server Core

1. Sign-in to the Windows with an Administrators privilege.
2. Stop the ESMPRO/ServerAgentService service.

   If ESMPRO/ServerAgentService is installed, stop following services before applying Standard Program Package.

   Run the following command.

   net stop ESMCommonService

   net stop ESMSystemManagementService
3. Set the Starter Pack DVD to the drive.
4. From the command prompt, type the following command.

   In the example below, the optical disk drive is the D drive.

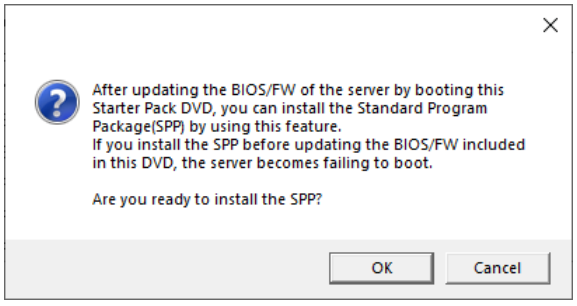
   cd /d D:\software\010\win\seamless

   ```
   C:\Users\administrator>cd /d D:\software\010\win\seamless
   ```
5. Type the following command, and then press <Enter> key.

   instcmd.vbs spp /s

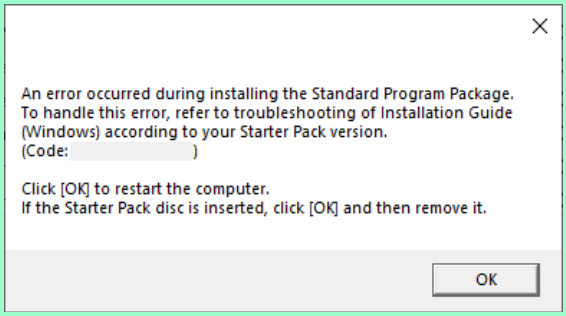
   ```
   D:\software\010\win\seamless >instcmd.vbs spp /s
   ```
6. If the firmware update in *Chapter 1 (3.4.1 Before the installation)* has been completed, click **OK** to start the installation of Standard Program Package.

   Wait until installation completes (about 15 to 25 minutes).



Note

- After installing a standard program package, the following message displays and refers to *chapter 2 (2.1 Problem of OS)*.

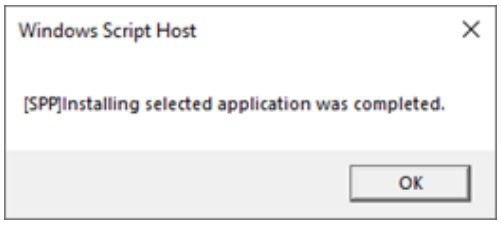


- iLO may be reset during applying Standard Program Package.

  If iLO is reset, iLO remote console and iLO virtual media is disconnected.

  When iLO remote console and iLO virtual media is disconnected, connect again after 30 seconds or more.

7. Click **OK**.



8. After removing the Starter Pack DVD, restart Windows Server 2019 manually.

SPP installation is now complete.

3.5 Setting for collecting specific event logs

Note

Run following (1) or (2) method, or Apply KB4490481 or later Cumulative Update. This symptom had been repaired by Windows Server 2019 Cumulative Update. Refer to Microsoft web site "Windows 10 and Windows Server 2019 update history" for latest Cumulative Update.

(1) Desktop Experience

Sign-in to the account with an Administrators privilege for following settings.

1. Press <Windows logo> + <R> key to start **Run**.
2. Type "gpedit.msc", and then press <Enter> key. Local Group Policy Editor is displayed.
3. Click **Computer Configuration** > **Administrative Templates** > **System** on the left pane.
4. Right-click **Enable Persistent Time Stamp** on the right pane, and then click **Edit**.
5. Check **Enable** on Enable Persistent Time Stamp screen.
6. Click **Apply**, and then confirm the contents and click **OK**.

The setting is now complete. Close Local Group Policy Editor.

(2) Server Core

Sign-in with the built-in Administrators privilege to Windows Server system which can recognize the Server Core Environment that have applied SPP by above procedure, for the following settings.

1. Press <Windows logo> + <R> key to start **Run**.
2. Type "mmc.exe", and then press <Enter> key. Console window is displayed.
3. Click **Add/Remove Snap-in …** of **File**.
4. Select **Group Policy Object Editor**, and click **Add**.
5. Click **Browse...** of Select Group Policy Object window, and select **Another Computer**.
6. Input IP address or computer name, and click **OK**.
7. Click **OK** on Add or Remove Snap-ins window.
8. Click <*Server Core Environment*> **Policy** > **Computer Configuration** > **Administrative Templates** > **System** on the left pane of Console window.
9. Right-click **Enable Persistent Time Stamp** on the right pane, and then click **Edit**.
10. Check **Enabled** on Enable Persistent Time Stamp screen.
11. Click **Apply**, and then confirm the contents and click **OK**.

The setting is now complete.
Save settings as needed, and close Console window.

3.6 Setup of Device Drivers

Install and set up device drivers provided for the standard configuration of the server.
For details regarding the installation and setup of a driver for an optional device, refer to the manual supplied with the optional device.

3.6.1 Installing the LAN drivers

(1) LAN drivers

The drivers are installed by Standard Program Package.

Important

Wake On LAN (WOL) is supported by standard network adapters and N8104-171/172/173/175/193/194/195/206/207/208/213/217 only.
When using Wake On LAN see *Chapter 1 (3.6.2 Setting up LAN drivers - (3) Setting up Wake on LAN).*

Note

- To change the LAN driver settings, sign in to the system from a local console using an administrator's account. Remotely changing the settings by using the operating system's remote desktop feature is not supported.
- Choose the **Internet Protocol (TCP/IP)** check box when specifying an IP address.

(2) Optional LAN board

This server supports the following optional LAN boards.

R120i-1M R120i-2M	N8104-206/207/208/209/210/211/212/217/219
R120h-1M R120h-1M (2nd-Gen) R120h-2M R120h-2M (2nd-Gen)	N8104-171/172/173/175/176/177/178/179/180/181/182/183/184/185/186/187
R120h-1M (3rd-Gen) R120h-2M (3rd-Gen)	N8104-172/175/178/179/180/181/182/183/184/185/186/187/213/215
R120h-1E R120h-2E	N8104-171/172/173/175/176/177/178/179/180/181/182/183/184/185/186/187/193/194/195
T120h	N8104-178/179/180/181/182/183/184/185/186/187
R110j-1	N8104-171/172/173/176/178/179/180/181/182/183/185/186

If you install the LAN boards after installing Standard Program Package, install Standard Program Package again according to *Chapter 1 (3.4 Standard Program Package Installation)*.

(3) Network adapter name

After installing the LAN drivers, the following network adapter names will be displayed on the Device Manager.

- **Standard network adapters**

R120h-1M R120h-1M (2nd-Gen) R120h-2M R120h-2M (2nd-Gen)	**HPE Ethernet 1Gb 4-port 331i Adapter #xx(*1)**
R120h-1E R120h-2E	**HPE Ethernet 1Gb 2-port 368i Adapter #xx(*1)**
T120h	**HPE Ethernet 1Gb 4-port 369i Adapter #xx(*1)**
R110j-1	**HPE Ethernet 1Gb 2-port 332i Adapter #xx(*1)**

- **Optional LAN boards:**

N8104-171	HPE Ethernet 1Gb 4-port 331FLR Adapter #xx(*1)
N8104-172	HPE Ethernet 1Gb 4-port 366FLR Adapter #xx(*1)
N8104-173	HPE FlexFabric 10Gb 2-port 533FLR-T Adapter #xx(*1)
N8104-175	HPE Ethernet 10Gb 2-port 562FLR-T Adapter #xx(*1)
N8104-176	Port1：HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter #xx(*1) Port2：HPE Ethernet 10Gb 562SFP+ Adapter #xx(*1)
N8104-177	HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter #xx(*1)
N8104-178	HPE Ethernet 1Gb 2-port 332T Adapter #xx(*1)
N8104-179	HPE Ethernet 1Gb 4-port 331T Adapter #xx(*1)
N8104-180	HPE Ethernet 1Gb 2-port 361T Adapter #xx(*1)
N8104-181	HPE Ethernet 1Gb 4-port 366T Adapter #xx(*1)
N8104-182	HPE Ethernet 10Gb 2-port 530T Adapter #xx(*1)
N8104-183	HPE Ethernet 10Gb 2-port 521T Adapter #xx(*1)
N8104-184	HPE Ethernet 10Gb 2-port 562T Adapter #xx(*1)
N8104-185	HPE Ethernet 10Gb 2-port 530SFP+ Adapter #xx(*1)
N8104-186	Port1：HPE Ethernet 10Gb 2-port 562SFP+ Adapter #xx(*1) Port2：HPE Ethernet 10Gb 562SFP+ Adapter #xx(*1)
N8104-187	HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter #xx(*1)
N8104-193	HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter #xx(*1)
N8104-194	HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter #xx(*1)
N8104-195	HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter #xx(*1)
N8104-206	Intel(R) Ethernet Network Adapter I350-T4 for OCP NIC 3.0 #xx(*1)
N8104-207	Marvell FastLinQ Ethernet 10Gb 2-port BaseT QL41132HQRJ OCP3 Adapter #xx(*1)
N8104-208	Intel(R) Ethernet Network Adapter E810-XXV-2 for OCP 3.0 #xx(*1)
N8104-209	Intel(R) Ethernet Server Adapter I350-T4 #xx(*1)
N8104-210	Marvell FastLinQ Ethernet 10Gb 2-port BaseT QL41132HLRJ Adapter #xx(*1)

N8104-211	Marvell FastLinQ Ethernet 10/25Gb 2-port SFP28 QL41232HLCU Adapter #xx(*1)
N8104-212	Intel(R) Ethernet Network Adapter E810-XXV-2 #xx(*1)
N8104-213	HPE Ethernet 10Gb 2-port 535FLR-T Adapter #xx(*1)
N8104-215	HPE Ethernet 10Gb 2-port 535T Adapter #xx(*1)
N8104-217	Broadcom NetXtreme E-Series Dual-port 10GBASE-T Ethernet OCP 3.0 Adapter #xx(*1)
N8104-219	Broadcom P210tep NetXtreme-E Dual-port 10GBASE-T Ethernet PCIe Adapter #xx(*1)

*1: If there are adapters with the same name, a different identification number will be assigned to *xx*.

Tips

The ID for N8104-173/177/182/183/185/187/207/210/211 might be a number of two or more digits. This is due to the LAN driver specifications and not an error. This number cannot be changed.

Tips

The network adapter name displayed in the device manager may be different from the one listed above.

In this case, the correct network adapter name can be displayed by following the procedure below.

1. Start **Device Manager**.
2. Open **Network Adapters**, right click on the relevant adapter, and select **Uninstall Device**.
3. When **Delete the driver software of this device** checkbox is displayed, do not surely put a check.
4. Select **Uninstall**.
5. Select **Scan hardware change** from **Control**.

3.6.2 Setting up LAN drivers

(1) Setting link speed

The transfer rate and duplex mode of the network adapter must be the same as those of the switching hub. Follow the procedure below to specify the transfer rate and duplex mode.

Important

If you are using a network adapter for N8104-213/215/217/219, changing the setting is not supported of "Speed & Duplex".
Use int the "Auto Negotiation" of default value.

Tips

If you are using a network adapter for N8104-177/185/187, the network adapter settings can be set to "10 Gbps Full Duplex" or "25 Gbps Full Duplex", and the connected switching hub settings can be set to "Auto Negotiation".

1. Open the **Device Manager**.
2. Expand **Network Adapters**, and then double-click the name of the network adapter you want to configure.

   The properties of the network adapter will be displayed.

3. On the **Advanced** tab, set the **Speed & Duplex** values to the same as those of the switching hub.

Tips

When using the N8104-177/183/187/207/210/211, **Link control** set to **Driver controlled**. *When **Link control** is **Preboot controlled**, link speed setting of BIOS take a priority.

4. Click **OK** in the **Network Adapter Properties** dialog box.
5. Restart the system.

The link speed setting is now complete.

(2) Configuring Flow Control

Flow Control is a feature to stop transmitting frames temporarily by sending a pause frame to the destination device when the receive buffer is about to run out. When it receives a pause frame, it regulates the transmission. Configure the Flow Control following the procedure below

Tips

The settings of Flow Control of the network adapter should match those of the destination device. For example, if Flow Control in the destination device is set as Enabled, that in the network adapter should be set as Enabled.
The default value of Flow Control is may become disabled, so if Flow Control in the destination device is set as Enabled, enable the network adapter.

1. Open the **Device Manager**.
2. Expand **Network Adapters**, and then double-click the name of the network adapter you want to configure.

   The properties of the network adapter will be displayed.
3. Open **Advanced** tab, click **Flow Control** to show Value.
4. The Value can be changed by the down-arrow button.
5. Click **OK**, and then restart the system.

The Flow Control setting is now complete.

Important

If you want to enable and use Flow Control for N8104-208/212, make sure to set "NDIS QoS" to "Disabled".

Tips

For N8104-208/212, it is recommended to set the **Receive Buffer** value to **4096**.

(3) Setting up Wake on LAN

- When using R120h-1E / R120h-2E / T120h standard network adapters and N8104-172/175/193/194/195/206/208 with the server, follow the procedure below to set it.

Tips

> Ensure that when using Wake On LAN to boot the system with N8104-206, the magic packet should be received only when the system is shut down and the power is off. If the magic packet is received while the system is running, even after the system is shut down and the power is turned off, the system cannot be powered on by receiving the magic packet.

1. Open the **Device Manager**.
2. Expand **Network Adapters**, and then double-click the name of the network adapter you want to configure.
   The properties of the network adapter will be displayed.
3. Open **Advanced** tab, click **Enable PME** to show Value.
4. Change the value to **Enabled** by the down-arrow button.
5. Click **OK**, and then restart the system.
   Setup is now complete.

- When using R120h-1M / R120h-1M (2nd-Gen) / R120h-2M / R120h-2M (2nd-Gen) / R110j-1 standard network adapters and N8104-171/173/207/213/217 with the server, Wake On LAN must be configured in the BIOS.
  For information on changing settings in the BIOS, refer to the maintenance guide for each server.
  The **Enable PME on shutdown** in the **Advanced** of N8104-213/217 is not a Wake On LAN setting and should not be changed.

3.6.3 Using Graphics Accelerator

For installation with the Rapid Setup or Manual installation, the drivers are installed by Standard Program Package.

If you install the Graphics Accelerator driver after installing Standard Program Package, install Standard Program Package again according to *Chapter 1 (3.4 Standard Program Package Installation)*.

3.6.4 Using SAS Controller (N8103-184/E184)

The driver for SAS controller N8103-184/E184 is automatically installed by Windows Plug-and-Play.

3.6.5 Using SAS Controller (N8103-197)

For installation with the Rapid Setup or Manual installation, the drivers are installed by Standard Program Package.

If you install the SAS controller (N8103-197) after installing Standard Program Package, install driver by following steps.

1. Insert the Starter Pack DVD into the optical disk drive.
2. Run the **\packages\cp059500.exe** on the DVD to install the driver.
3. After installing driver, restart the server.

3.6.6 Using RAID Controller (N8103-189/190/191/192/193/194/195/196/201/237/238)

For installation with the Rapid Setup or Manual installation, the drivers are installed by Standard Program Package.

If you install the RAID controller (N8103-189/190/191/192/193/194/195/196/201/237/238) after installing Standard Program Package, install driver by following steps.

1. Insert the Starter Pack DVD into the optical disk drive.
2. Run the **\packages\cp059500.exe** on the DVD to install the driver.
3. After installing driver, restart the server.

3.6.7 Using 480GB SSD Adapter for OS Boot (N8103-239)

The driver for the 480GB SSD Adapter for OS Boot (N8103-239) is automatically installed by Windows Plug-and-Play.

3.6.8 Using Fibre Channel Controller (N8190-163/166/171/172)

For installation with the Rapid Setup or Manual installation, the drivers are installed by Standard Program Package.

If you install the Fibre Channel controller (N8190-163/166/171/172) after installing Standard Program Package, install Standard Program Package again according to *Chapter 1 (3.4 Standard Program Package Installation)*.

If the total number of CPU threads is less than 8 on a server, downgrade driver following procedure.

1. Insert the Starter Pack DVD into the optical disk drive.
2. Run the **\software\010\drivers\fc1_driver\ws2019\cp054530.exe** on the DVD to install the driver.
3. After installing driver, restart the server.

3.6.9 Using Fibre Channel Controller (N8190-165/166)

For installation with the Rapid Setup or Manual installation, the drivers are installed by Standard Program Package.

If you install the Fibre Channel controller (N8190-165/166) after installing Standard Program Package, install Standard Program Package again according to *Chapter 1 (3.4 Standard Program Package Installation)*.

3.7 License Authentication

To use Windows Server 2019, you need finish the license authentication procedure.

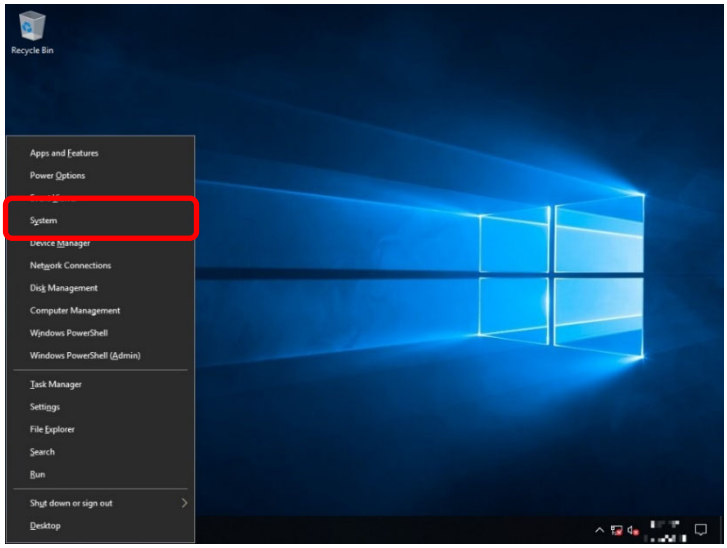
Confirm if the license is authenticated or not in the next step.

Note

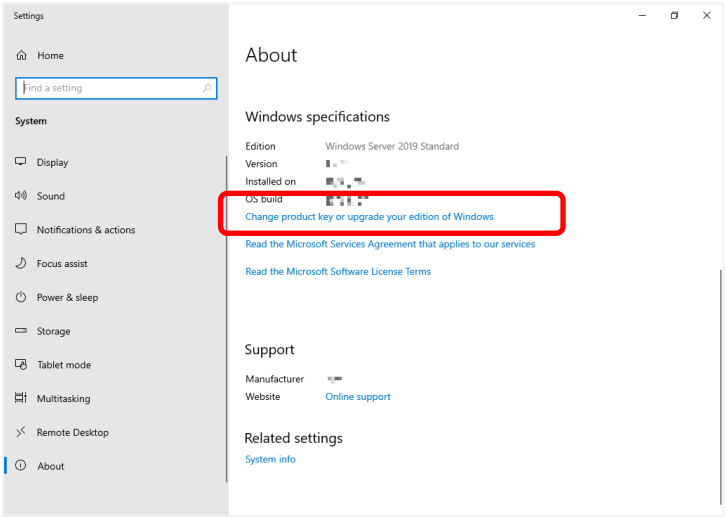
To activate Windows Server 2019, enter the Product Key written on the COA (Certificate of Authenticity) label. The COA label of Windows Server 2019 is attached to the operating system media package.

3.7.1 Desktop Experience

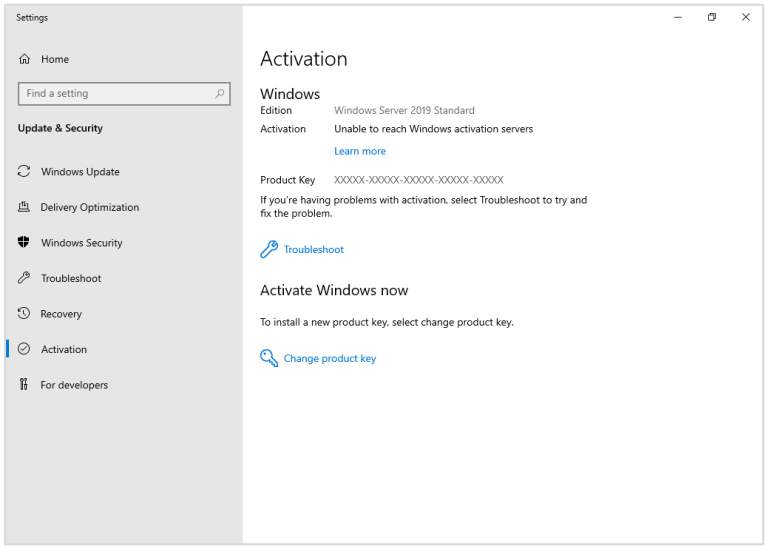
1. Right-click the lower left of the screen, and click **System** from the menu displayed.



2. Click **Change product key or upgrade your edition of Windows**.



3. Perform license authentication.



When connected to the Internet:

Click **Change product key**.

Complete license authentication process according to the message.

When not connected to the Internet:

Go to Step 4.

4. Perform the license authentication by phone.

Go to the appropriate step according to OS installation media you are using.

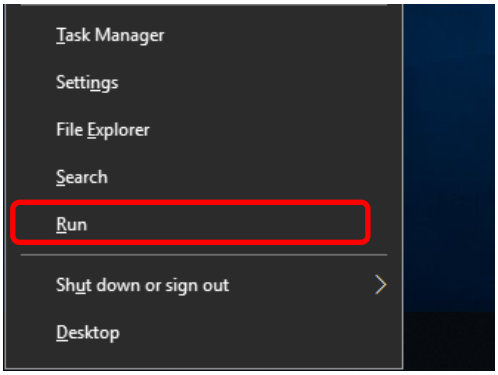
Backup DVD-ROM: Go to Step 5.

Windows Server 2019 DVD-ROM:

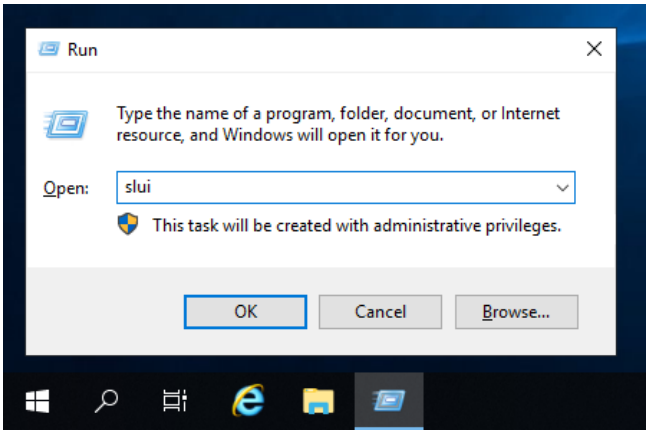
Product key is already entered: Go to Step 8.

Product key is not entered: Go to Step 5.

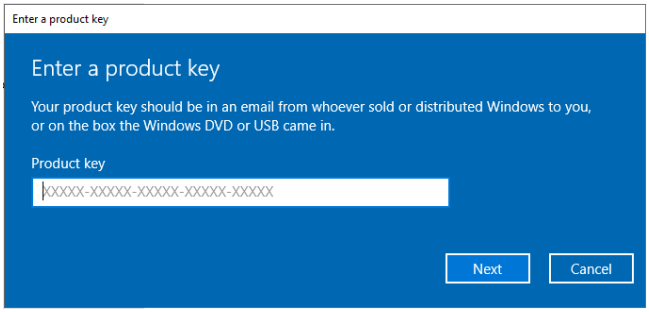
5. Right-click the lower left of the screen, and click **Run** from the menu displayed.



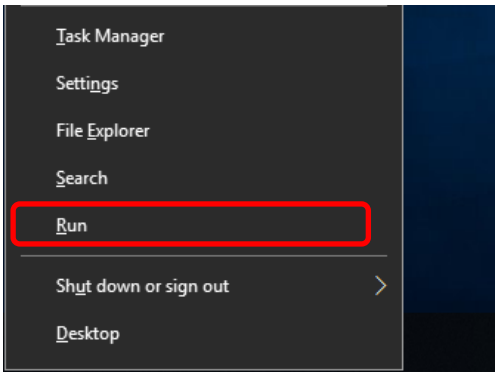
6. Type "slui", and then press <Enter> key.



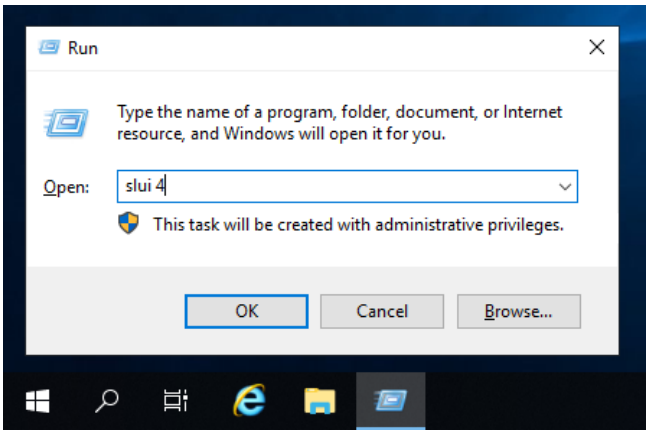
7. Change the product key. On the next screen, type the product key.



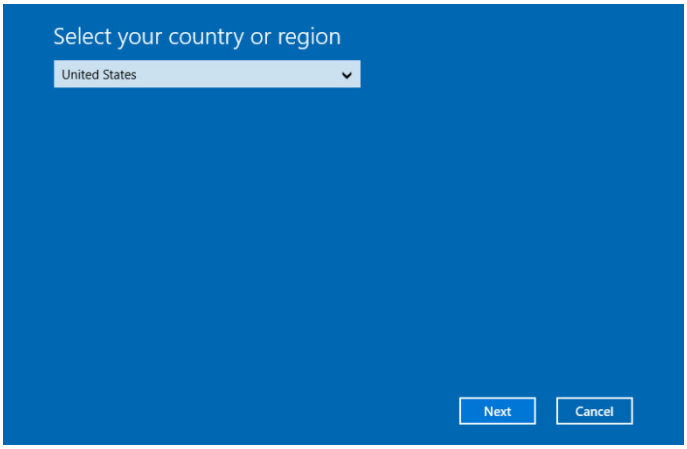
8. Right-click the lower left of the screen, and click **Run** from the menu displayed.



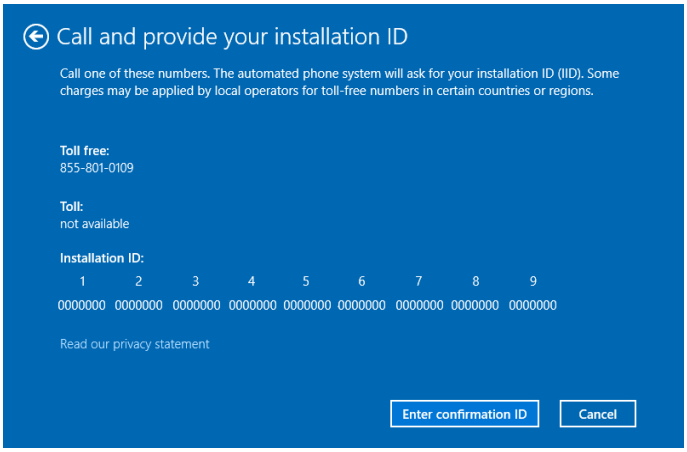
9. Type "slui 4", and then press <Enter> key.



10. On the next screen, choose your country, and then click **Next**.

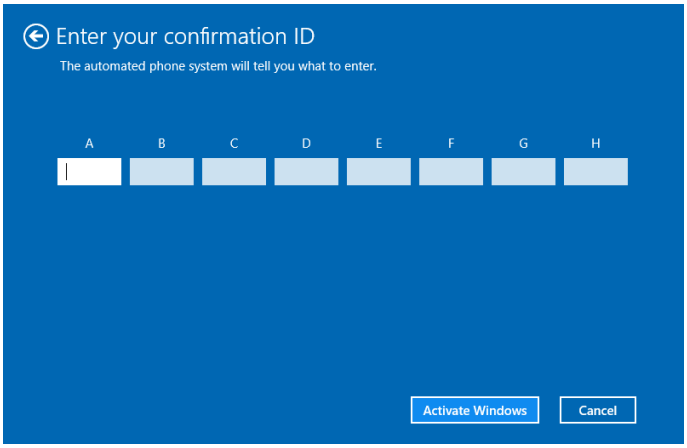


Get the installation ID required for license activation.



11. Call the Microsoft license activation hotline and then tell your installation ID.

Type the confirmation ID, and then click Activate Windows.



The authentication is now complete.

3.7.2 Server Core

1. Confirm if your license is activated.

   At the command prompt, type the following command, and then press <Enter> key.

   ```
   C:¥Users¥administrator>slmgr –dli
   ```

   When license authentication is required, go to the next step.

   When your license is already authenticated, you can skip the next and the subsequent steps.

2. Change the product key.

   Using Backup DVD-ROM:

   Type the following command, and then press <Enter> key.

   ```
   C:¥Users¥administrator>slmgr -ipk <Product key on COA label>
   ```

   Using Windows Server 2019 DVD-ROM:

   You do not need to change the product key.

   Go to the next step

3. Perform license authentication.

   The server connects to the Internet:

   License authentication is performed via the Internet.

   Type the following command, and then press <Enter> key.

   ```
   C:¥Users¥administrator>slmgr –ato
   ```

   This completes authentication.

   The server does not connect to the Internet:

   Use telephone for license authentication.

   Type the following command to get an Install ID for authentication, and then press <Enter> key.

   ```
   C:\Users\administrator>slmgr -dti
   ```

   Acquire the installation ID required for license activation.

   Refer to the file `%systemroot%\system32\sppui\phone.inf` to confirm the telephone number of Microsoft Licensing Center.

   Call Microsoft Licensing Center and tell them your Install ID.

   Type the confirmation ID you have received in the following command line, and then press <Enter> key.

   ```
   C:\Users\administrator>slmgr -atp <Confirmation ID>
   ```

   The authentication is now complete.

3.8 Setup of Windows Server 2019 NIC Teaming (LBFO)

Set up the network adapter teaming feature as shown below.

3.8.1 Launching the NIC teaming setup tool

1. Launch **Server Manager**.
2. Select **Local Server**.
3. In the **Properties** window, click **Enable** or **Disable** for **NIC teaming**.

   The NIC teaming setup tool will launch.

Tips

The NIC teaming setup tool can also be launched by opening the **Run** dialog box, typing "`lbfoadmin /server .`", and then pressing <Enter> key.

3.8.2 Creating a team

Create a team by using the NIC teaming setup tool.

1. In the **Servers** section, select the name of the server to set up.

   If there is only one server connected, the name of the server is selected automatically.
2. In the **Teams** section, under **Tasks**, select **New Team**. The **New Team** wizard then starts.
3. Type the name of the team to create, and then select the network adapter to include in the team from the **Member adapters** list.
4. Click **Additional properties**.
5. Specify the required settings, and then click **OK**.

   Teaming mode

Static Teaming	Configures static aggregation between the NIC and switches.
Switch Independent	Configures teaming on the NIC side without depending on the switch settings.
LACP	Configures dynamic aggregation between the NIC and switches.

   Load balancing mode

Address Hash	Distributes the load based on IP addresses and port numbers.
Hyper-V Port	Distributes the load to each of the virtual switch ports used by the virtual machines.
Dynamic	• Distributes the load based on IP addresses and port numbers in sending. • Distributes the load same to "Hyper-V Port" in receiving.

   Standby adapter

   Select one adapter to be set to standby mode from the adapters in the team.

   Setting all adapters to active mode is also possible.

   Primary team interface

   Any VLAN ID can be specified for the primary team interface.

3.8.3 Removing a team

Remove a team by using the NIC teaming setup tool.

1. In the **Servers** section, select the name of the server to set up.
   If there is only one server connected, the name of the server is selected automatically.
2. In the Teams section, select the team to remove**.**
3. In the Teams section, under **Tasks**, select **Delete**.
4. The message box to confirm appears, then click Delete team.

3.8.4 Notes and restrictions

- NIC teaming on a guest OS is not supported.
- Teaming of virtual NICs on the host OS is not supported in the Hyper-V environment.
- When STP (Spanning Tree Protocol) is enabled on network switch ports to which network adapters of the team are connected, network communications may be disrupted. Disable STP, or configure "PortFast" or "EdgePort" to the ports.
  * About setting the network switch of the connection destination, see the manual of the network switch.
- All NICs in a team must connect to the same subnet through a network switch.
- Teaming of different speed NICs is not supported.
- Teaming of different vendor's NICs is not supported.
- When teaming is configured in a Network Load Balancing (NLB) environment, you should select multicast mode on the NLB cluster.
- When a team is removed, the following error message may be logged in the system event log.
  You can safely ignore this error message.

Level	Error
Source	Microsoft-Windows-NDIS
Event ID	10317
Task Category	PnP
Message	Miniport Microsoft Network Adapter Multiplexor Driver, {xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx}, had event Network Interface deleted while PNP Device still exists. Note that this event is provided for informational purpose and might not be an error always (Eg: In case of vSwitch which was recently un-installed or a LBFO team was removed)

- In a Windows Server Failover Cluster environment, heartbeat interruption or failover may occur if you configure Active-Standby teaming. To avoid this, you should configure multiple NICs in Active Mode in a team so that all the NICs do not fail simultaneously.

- In a Hyper-V environment, the following warning message may appear when a teaming adapter is bound to a virtual switch. There is no problem for the operation unless this message is output multiple times at one time.

Level	Warning
Source	Microsoft-Windows-MsLbfoSysEvtProvider
Event ID	16945
Message	MAC conflict: A port on the virtual switch has the same MAC as one of the underlying team members on Team Nic Microsoft Network Adapter Multiplexor Driver

- The hostname must be 15 characters or less. If it exceeds 16 characters, NIC Teaming will not function correctly.

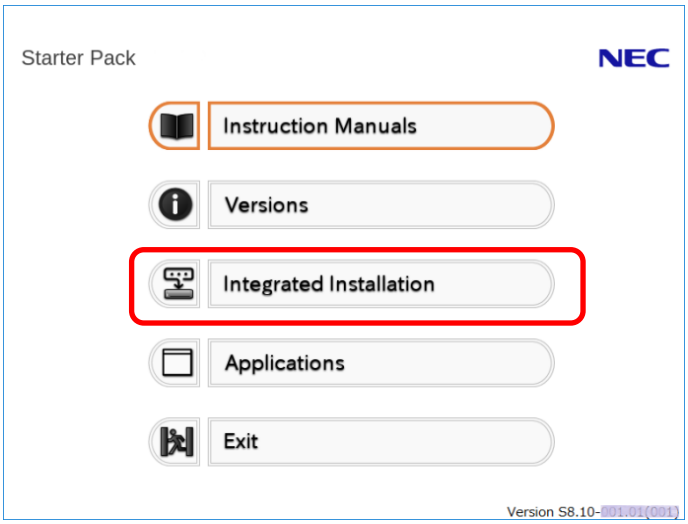
Refer to the following website for the latest information.
https://www.58support.nec.co.jp/global/download/w2019/index.html
- [Technical Information] - [NIC Teaming (LBFO)]

3.9 Installing Applications

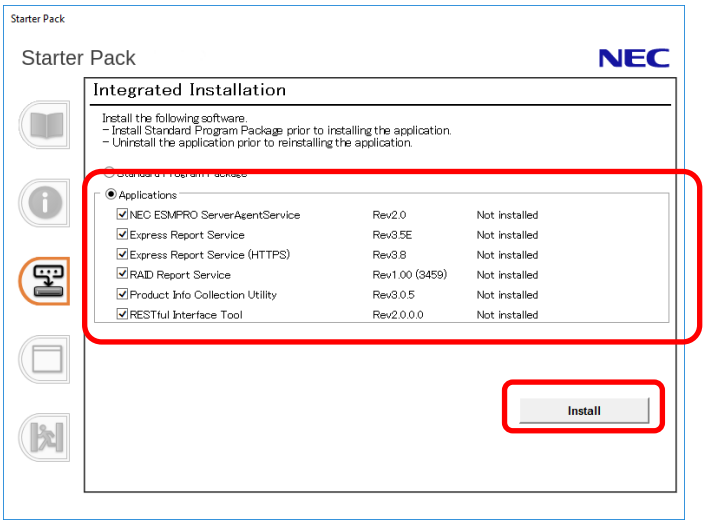
Some applications included in Starter Pack can be installed easily by performing the procedures described below. When installing these applications individually, see *the manual of each applications*. This feature is **only available on Desktop Experience**.
System reboot is required after installing applications.
Application can install using iLO remote console and iLO virtual media.

Tips This function supports clean installation of applications only. If you re-install installed application, refer to *the manual of each applications*.

1. Sign-in to the Windows with an Administrators privilege.
2. Insert the Starter Pack DVD into the optical disk drive.
3. Run the **start_up.bat** under the root folder on DVD.
4. Click **Integrated Installation** on the menu.



5. On the following screen, choose the check boxes corresponding to the applications you want to install, and then click **Install**. The chosen applications are automatically installed.



Note

- Applications available for installation are chosen by default.
- If your system environment does not satisfy the prerequisite for an application, you cannot install it. For details, see the on-screen information and *the manual of each applications.*
- To collect product information using a device information collection utility, RESTful interface tool needs to be installed. If it is not installed, some logs required for the maintenance may not be gathered.
- If the following message displayed during installing applications, click **No** to continue process.

> Stop running this script?
>
> A script on this page is causing your web browser to run slowly.
> If it continues to run, your computer might become unresponsive.

6. When a message indicating restart appears, click **OK** to restart the server.
7. See *the manual of each Applications* to install the bundled software or confirm that the software is appropriate to your operating environment.

Now installation of applications is complete.

4. Setting up for Maintenance

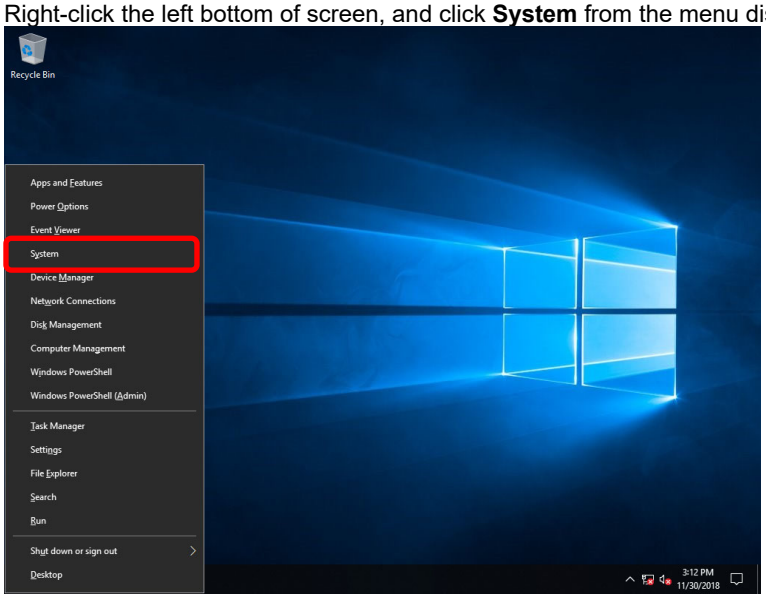
We recommend setting up the following features for maintenance.

4.1 Specifying Memory Dump Settings (Debug Information)

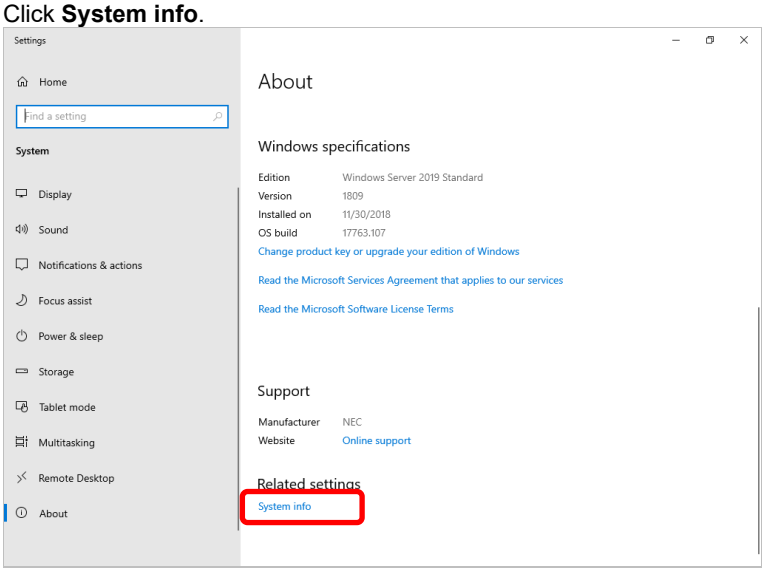
This section explains the procedures for collecting a memory dump (debug information) in the server.

Important **When you restart the system to save the memory dump, a message informing you that the system is short of virtual memory might appear. Ignore this message and proceed with the restart. If you reset or restart the system again, the memory dump might not be saved normally.**

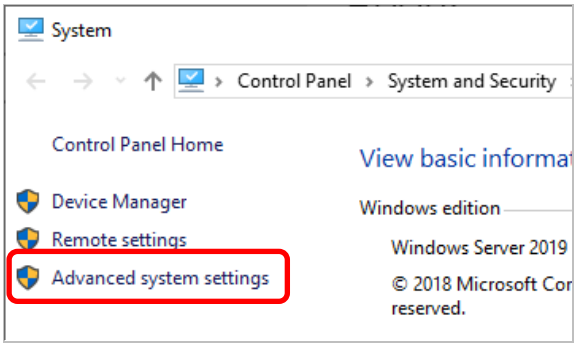
1. Right-click the left bottom of screen, and click **System** from the menu displayed.



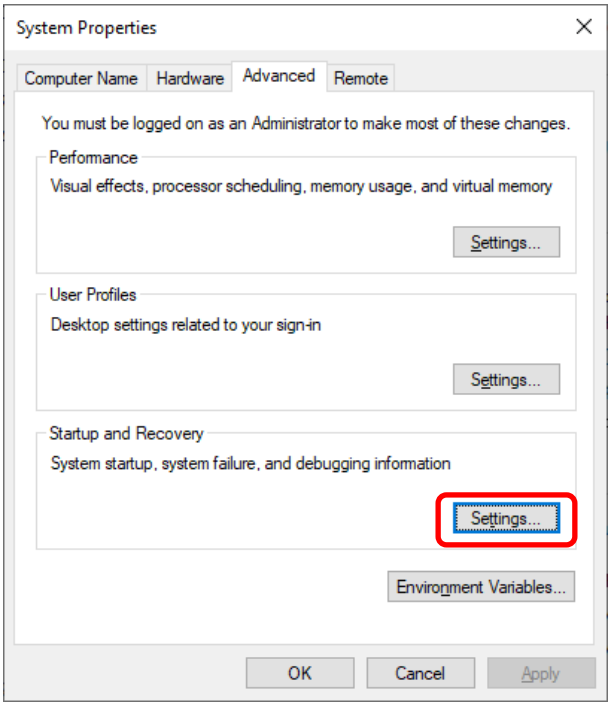
2. Click **System info**.



3. Click **Advanced system settings**.

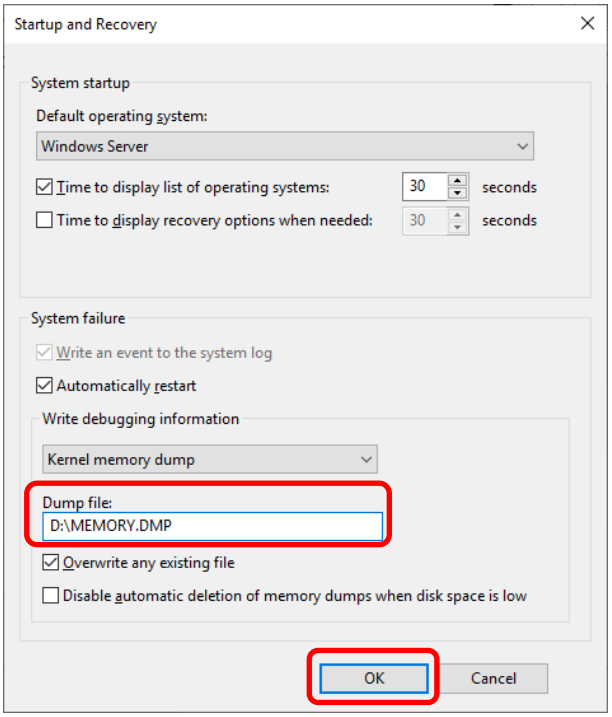


4. In **Startup and Recovery**, click **Settings…**.



5. Type a file name to store the debug information in the **Dump file** text box, and then click **OK**.

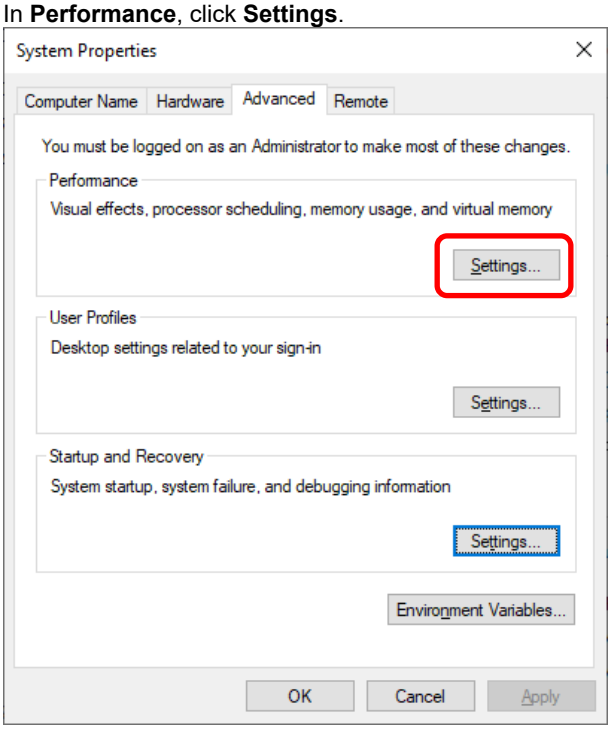
   E.g., Write the debug information in drive D with the file name "MEMORY.DMP".



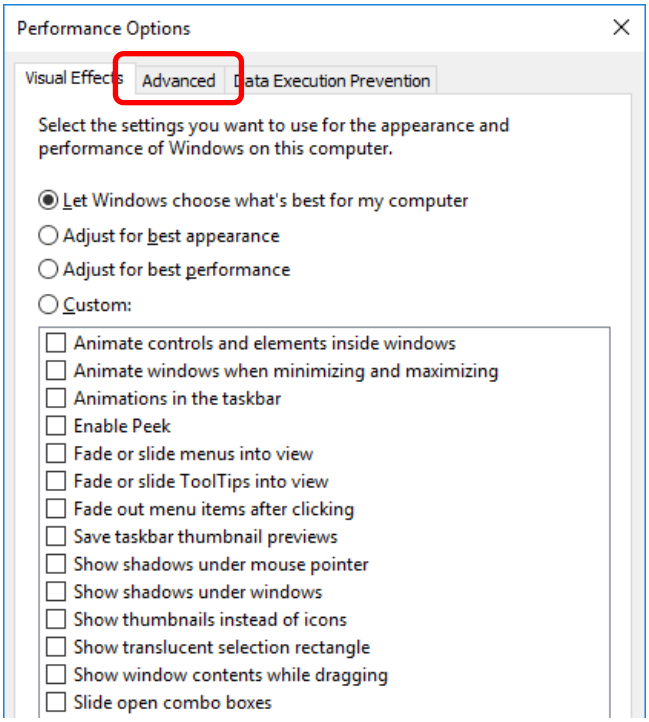
Note the following when specifying a dump file:

- We recommend specifying Kernel memory dump for Write debugging information.
- Specify a drive that has a free space of at least "the memory capacity mounted on the server 400 MB".
- The size of the debug information (memory dump) changes if DIMM is added. Make sure that the free space of the drive to store the debug information (memory dump) is sufficient.

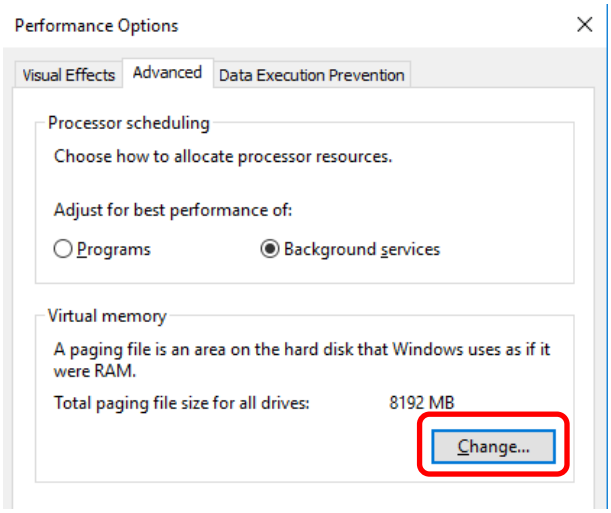
6. In **Performance**, click **Settings**.



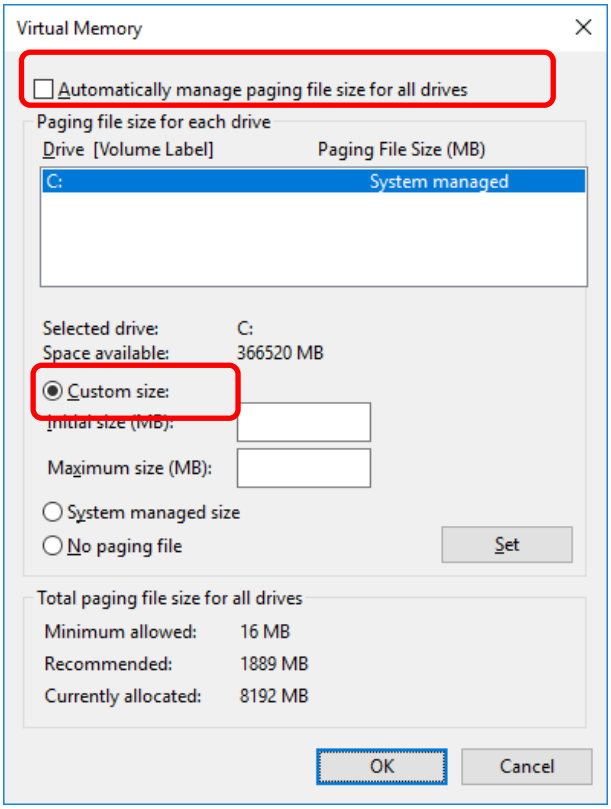
7. Click the **Advanced** tab on the **Performance Options** window.



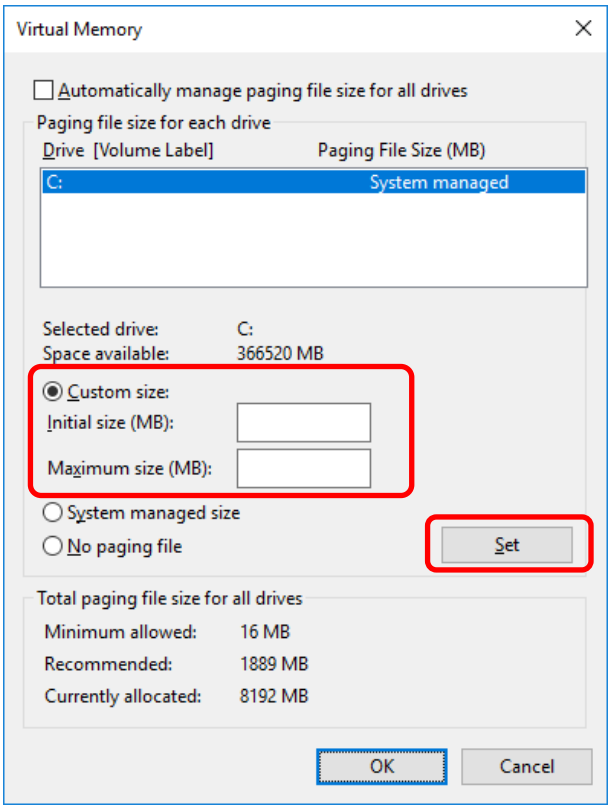
8. In **Virtual memory**, click **Change…**.



9. Clear the **Automatically manage paging file size for all drives** check box, and then click **Custom size**.



10. In **Paging file size for each drive**, enter the value equal or larger than the recommended value for **Initial size**, and the value larger than **Initial size** for **Maximum size**, and then click **Set**.



Note the following when specifying a paging file size:

- The paging file is used to collect debug information (dump file). The boot volume must have a paging file of its initial size ("total size of physical memory" + 400 MB (total size of physical memory + 1,100MB when the total size is 4 TB or more) is enough to store the dump file. Make sure to specify a sufficient paging file size.
- See "System Partition Size" in *Chapter 1 (3.1 Precautions of Windows Server 2019 Installation)* for recommended value.
- When DIMM is added, re-specify the paging file according to the increased memory size.
- If an error occurs in setting the paging file to a drive exceeding 2TB, close [Virtual memory] and [Performance Options], and then set in the following way.

  ex. Setting the paging file in drive C with 4096 MB as Initial size, 8192MB as Maximum size.

  1. Start command prompt as Administrator and execute the following command.

     ```
     wmic computersystem set AutomaticManagedPagefile=false
     wmic pagefileset delete
     ```

  2. Restart the Windows system.
  3. Start command prompt as Administrator and execute the following command.

     ```
     wmic pagefileset create name="C:\pagefile.sys"
     wmic pagefileset set InitialSize=4096, MaximumSize=8192
     ```

  4. Restart the Windows system.

11. Click **OK**.

    If a message to restart Windows appears, restart the system according to on-screen message.

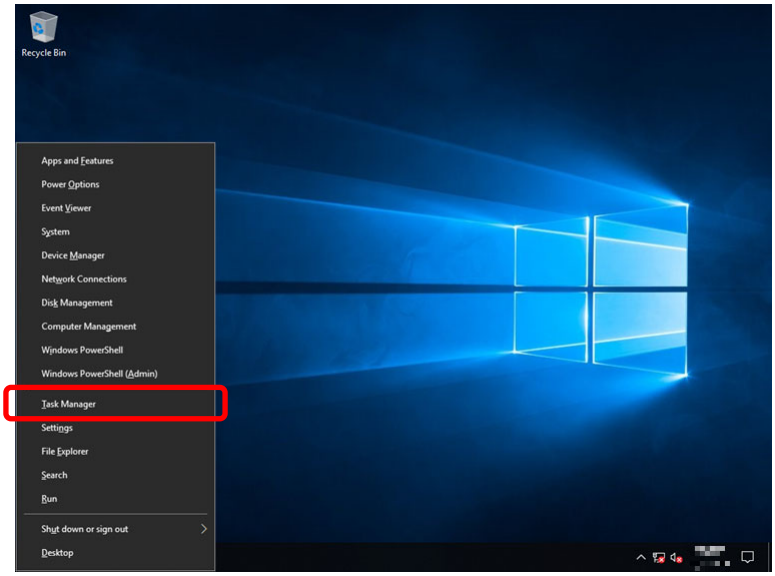
Specification of the memory dump settings is now complete.

4.2 How to Create a User-mode Process Dump File

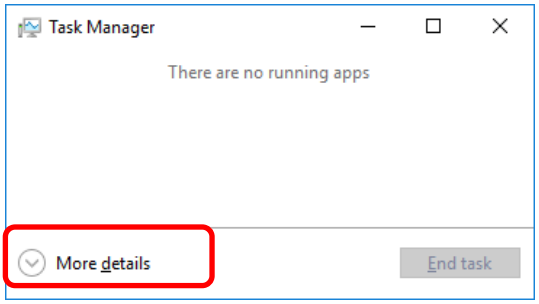
The user-mode process dump file records information when an application error occurs.

If an application error occurs, get user-mode process dump information using the following procedures without closing the pop-up window that reported the error:

1. Right-click an empty area of the taskbar and then click **Task Manager** or press <Ctrl> + <Shift> + <Esc> keys to start Task Manager.



2. Click **More details**.



3. Click the **Processes** tab.

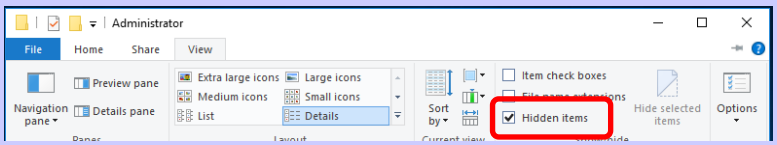
4. Right-click the name of the process that you want to get dump information for, and then click **Create Dump File**.

5. A dump file for the process is created in the following folder:

   C:\Users\(user name)\AppData\Local\Temp

Tips

If the folder is not displayed, open Explorer, select **Hidden items** in the **View** tab.



Get the user-mode process dump file from the folder shown in step 5.

5. Backup of system information

After environment building, back up the setting information of the system in advance of any troubles.

- Back up RBSU settings contained in system utility.
  For details, see *Chapter 1 (Backup and Restore of RBSU Settings) in Maintenance Guide (Common)*.

- Back up detail information of iLO 5.
  See *" iLO 5 User's Guide"* for details of procedure.

NEC Express5800 Series

2 Maintenance

This chapter explains maintenance of server, and what actions are to be taken in case of trouble when operating this server.

1. **Failure Information**
   Describes how to collect the failure information. See this section in case of a failure.

2. **Troubleshooting**
   Describes how to troubleshoot the server. See this section if you suspect a failure.

3. **Windows System Recovery**
   Describes Windows recovery setup. See this section if the Windows is corrupt.

1. Failure Information

If the server does not work normally, you can collect failure information by using the following way.

The failure information to be described is to be collected only at the request of your sales representative.

The collection procedure is described with Desktop Experience environment.

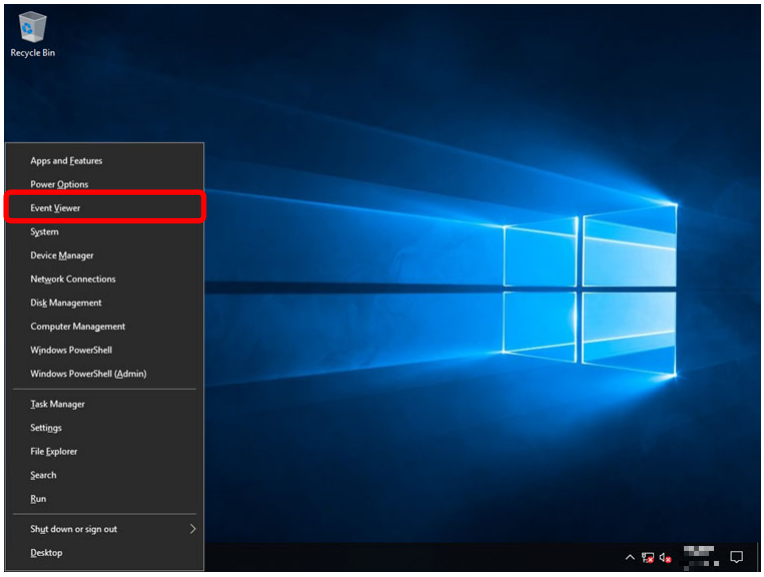
Important **Do not reset during dumping memory or restarting the server even if the message of virtual memory shortage appears.**

1.1 Collecting Event Logs

To collect the various event logs of the server, follow the steps below.

Tips If a STOP error, system error, or stall occurs, restart the system and then follow the steps below.

1. Right-click the left bottom of screen, and click **Event Viewer** from the menu displayed.

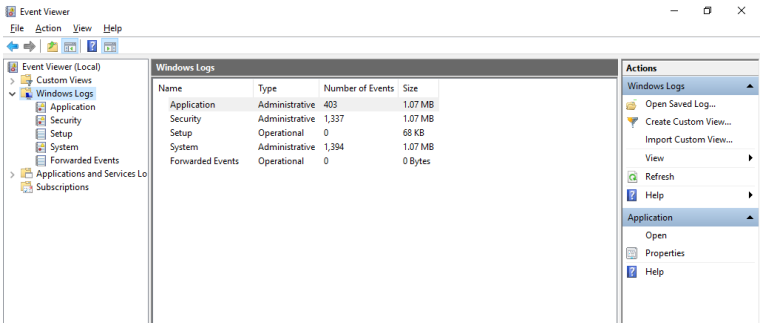


2. Select the type of log in **Windows Logs**.

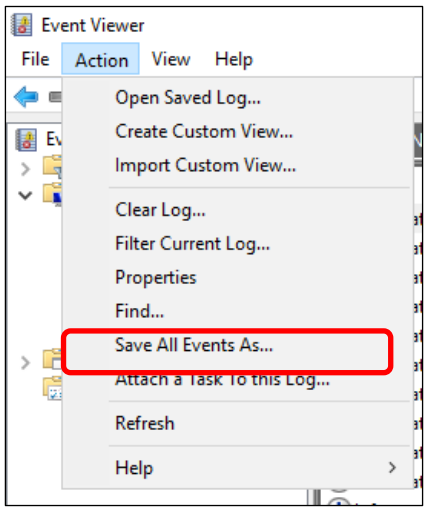
   Application records events related to running applications.

   Security records events related to security.

   System records events that occur in Windows system components.



3. Click **Save All Events As...** from **Action** menu.



4. Type the file name of the archived log in **File name**.
5. Select the type of the log file you want to save in **Save as type**, and then click **Save**.
6. "Display Information" dialog box is displayed.

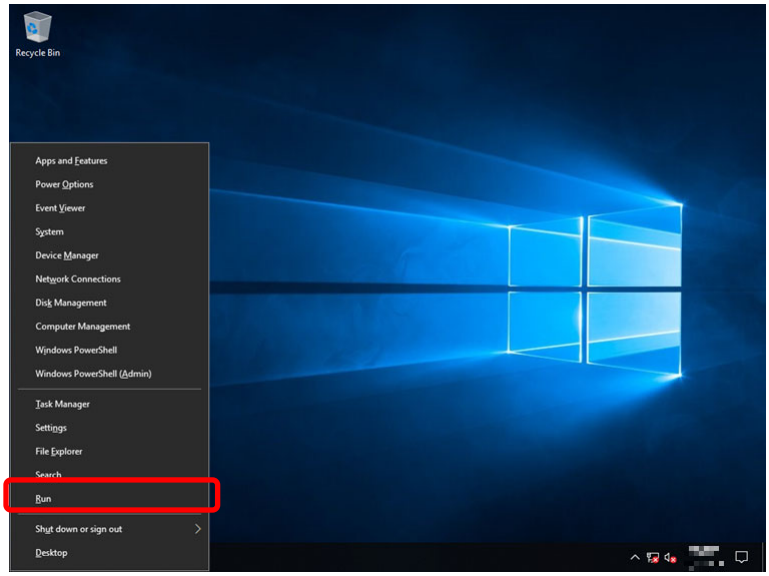
   To refer the saved event log on another system, select "Display information for these languages:" and click **OK**.

1.2 Collecting Configuration Information

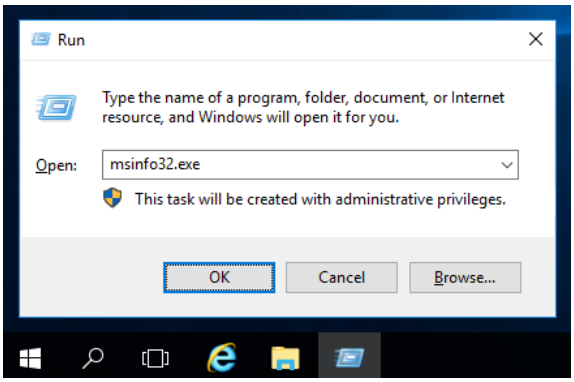
This section describes how to collect hardware information or configuration.

Tips If a STOP error, system error, or stall occurs, restart the system and then follow the steps below.

1. Right-click the left bottom of screen, and click **Run** from the menu displayed.



2. Type **msinfo32.exe**, and then press <Enter> key.



System Information starts.

3. Click **Export** from **File** menu.
4. Type a file name to save in **File Name**, and then Click **Save**.

1.3 Collecting User-Mode Process Dump

The user-mode process dump is the failure information related to application errors.

For details, see *Chapter 1 (4.2 How to Create a User-Mode Process Dump File)*.

1.4 Collecting Memory Dump

If an error occurs, the dump file will be saved to get necessary information. You can specify any location for saving the diagnostic information. For details, see *Chapter 1 (4.1 Specifying Memory Dump Settings (Debug Information))*.

Consult with your sales representative before dumping the memory. Dumping the memory while the server is in operating normally will affect the system operation.

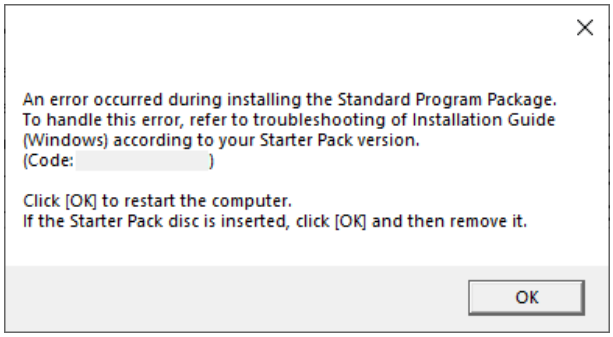
Important **Do not reset during dumping memory or resetting the server even if the message of virtual memory shortage appears.**

2. Troubleshooting

If this system does not operate as intended, check it according to the contents of your document before sending it for repair. If an item in the checklist corresponds with a problem you are experiencing, follow the processing instructions. The other contents check Maintenance Guide.

2.1 Problem of OS

[?] **Unable to apply Standard Program Package**



→ According to your environment, individual installation of firmware and drivers may be required before applying Standard Program Package.
Refer to *Chapter 1 (3.4.1 Before the installation)* for details.
When the problem does not solve, collect log by following procedure to request survey through the supplier.

1. Sign-in to the Windows with an Administrators privilege.
2. Set the Starter Pack DVD to the drive.
3. Run the **\packages\gatherlogs.bat** on the DVD.
4. Collect genelated Zip file.

[?] **Unable to update firmware**

→ According to your environment, individual installation of drivers may be required before updating firmware.Refer to *Chapter 1 (3.4.1 Before the installation)* for details.
When the problem does not solve, collect log by following procedure to request survey through the supplier.

1. Sign-in to the Windows with an Administrators privilege.
2. Set the Starter Pack DVD to the drive.
3. Run the **\packages\gatherlogs.bat** on the DVD.
4. Collect genelated Zip file.

3. Windows System Recovery

Recover the Windows system by using the following instructions if the system does not work normally.

Note

- After recovering Windows, install drivers and the Starter Pack referring to *Chapter 1 (3.6 Setup of Device Drivers)* and *Chapter1 (3.4 Standard Program Package Installation)*.
- If the Windows system cannot find hard disk drives, you cannot recover the Windows system.

3.1 Recovery of Windows Server 2019

If the Windows does not start normally, you can recover it using the feature of the Windows installation media. To run this feature, start the installation media, and then choose **Repair your computer** in the setup wizard. We recommend that this option is performed by the system administrator.

If the RAID controller driver is required, take the following steps:

Note

When the server configures an onboard RAID controller and an internal optical disk drive, load the driver from a removable media.
Copy the following folder from Starter Pack DVD to a removable media in advance.
<*Starter Pack*>:**\software\010\drivers\sw_raid1_driver**

1. After turning on the server or restarting the server, insert the OS installation media into the server.
2. Press <F11> key during POST to start Boot Menu.
   In **One-Time Boot Menu**, select the optical disk drive to which OS installation media is set by Step 1, and then exit the menu.
3. When the message "Press any key to boot from CD or DVD..." appears on the upper of the screen, press <Enter> key to boot from the media.
   While boot-up proceeds, the message "Loading files..." appears.
4. Choose **Repair your computer** in the setup wizard.
5. Click **Troubleshoot**.
6. Click **Command Prompt**.
7. After setting Starter Pack DVD to the drive, run the following command to load the driver:
   ("D:" means a drive name of DVD and this name depends on your system)

   For onboard RAID controller:

   drvload D:\software\010\drivers\sw_raid1_driver\ws2016_ws2019\SmartDQ.inf

   When the server configures an onboard RAID controller and an internal optical disk drive, load the driver from a removable media. ("E:" means a drive name of removable media and this name depends on your system)

   drvload E:\sw_raid1_driver\ws2016_ws2019\SmartDQ.inf

Tips

The volume label for each drive can be checked from the display result of the dir command.

Example: **dir C:**

8. Exit the command prompt.

The driver installation is completed.

NEC Express5800 Series

3

Appendix

1. **List of Windows Event Logs**

   Shows a list of Windows event logs.

I. List of Windows Event Logs

ID	Source	Level	Message (Description)
	Timing when an event is logged		Action

All Windows OS "System Log"

1	VDS Basic Provider	Error	Unexpected failure. Error code : 32@01000004
	At the time of a USB Device connection		When it's at the time of a USB Device connection, it's no problem.
10	Smart Update Manager System Log	Warning	The description for Event ID 10 from source Smart Update Manager System Log cannot be found. Either the component that raises this event is not installed on your local computer or the installation is corrupted. You can install or repair the component on the local computer. If the event originated on another computer, the display information had to be saved with the event. The following information was included with the event: Disabling blocked firewall rules
	When applying Standard Program Package		This event may be registered when Firefall is enabled, but this does not affect system operation.
11	Elxfc	Error	The driver detected a controller error on Device\RaidPortX. (X is any number)
	When applying Standard Program Package		This event does not affect system operation.
51	Cdrom	Warning	Error detected on the device \Device\CdRom0 during the paging operation.
	When installing an OS		This event may be registered in the event viewer, but this does not affect system operation.
56	Application Popup	Error	The description for Event ID 56 from source Application Popup cannot be found. Either the component that raises this event is not installed on your local computer or the installation is corrupted. You can install or repair the component on the local computer. If the event originated on another computer, the display information had to be saved with the event. The following information was included with the event: PCI XXXXXXXXXXXXXXXX The message resource is present but the message was not found in the message table. * A different number replaces X depending on the connection status of LAN controller.
	When installing an OS, starting system, or applying Starter Pack		When multiple LAN controller are loaded it is registered, but does not affect system operation.

ID	Source	Level	Message (Description)
	Timing when an event is logged		Action

All Windows OS ”System Log”

56	Application Popup	Error	The description for Event ID 56 from source Application Popup cannot be found. Either the component that raises this event is not installed on your local computer or the installation is corrupted. You can install or repair the component on the local computer. If the event originated on another computer, the display information had to be saved with the event. The following information was included with the event: SCSI XXXXXXXXXXXXXXXX The message resource is present but the message was not found in the message table. * A different number replaces X depending on the connection status of RAID controller and SAS controller.
	When installing an OS, starting system, or applying Starter Pack		When multiple RAID controller or SAS controller are loaded it is registered, but does not affect system operation.
129	SmartDQa	Warning	Reset was issued to the device \Device\RaidPort(x). (x is any number)
	While the system is running		If this message has been registered as a log during heavy I/O, there is no problem since the OS has succeeded in retry. Continue using.
129	SmartPqi	Warning	Reset was issued to the device \Device\RaidPort(x). (x is any number)
	While the system is running		Even if the message is registered in the log, there is no problem because the OS has successfully completed the retry. You don't need any changes.
157	Disk	Warning	Disk x is suddenly removed.
	When creating a RAID		If you create new RAID on Windows, this event can be registered, but this does not affect the system operation.
1407	ESMCommonService	Error	This is the event which occurred between this system start-up and the last system stop or system shutdown. Date : YYYY-MM-DD hh:mm:ss Event Class : 0x11 Event Code : 0x0A Status : Critical Description : xxxxx Connectivity status changed to xxxxx for adapter in slot x, port x
	When starting system, or applying Standard Program Package		This event does not affect system operation.。

ID	Source	Level	Message (Description)
	Timing when an event is logged		Action

All Windows OS ”System Log”

1407	ESMCommonService	Error	This is the event which occurred between this system start-up and the last system stop or system shutdown. Date : YYYY-MM-DD hh:mm:ss Event Class : 0x11 Event Code : 0x0C Status : Critical Description : Redundancy status changed to xxxxx by adapter in slot x, port x
	When starting system, or applying Standard Program Package		This event does not affect system operation.
1407	ESMCommonService	Error	This is the event which occurred between this system start-up and the last system stop or system shutdown. Date : YYYY-MM-DD hh:mm:ss Event Class : 0x11 Event Code : 0x0D Status : Critical Description : All links are down in adapter xxxxx in slot x
	When starting system, or applying Standard Program Package		This event does not affect system operation.
4367	Agentless Management Service	Error	Description of Event ID 4367, IML Class Code 17, Event Code 13: All links are down in adapter xxxxx in slot xCheck the connection to the adapter and validate the connectivity from the server to any external device, including the cabling. If no problems are found, the adapter or other connectivity device may need replacement.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
4367	Agentless Management Service	Error	Description of IML Event ID 4367, Class Code 17, Event Code 12: Redundancy status changed to decreased by adapter in slot x, port xIf redundancy decreased, check the connection to the adapter and validate the connectivity from the server to any external device, including the cabling. If no problems are found, the adapter or other connectivity device may need replacement
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
4367	Agentless Management Service	Error	Description of IML Event ID 4367, Class Code 17, Event Code 10: xxxxx Connectivity status changed to Link Failure for adapter in slot x, port xIf the connection is lost, then check the physical connection from the server to its destination device such as interconnect, blade, switch etc, including any cables. Refer to the NIC issues flowchart in the Troubleshooting Guide for more information.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.

ID	Source	Level	Message (Description)
	Timing when an event is logged		Action

All Windows OS ”System Log”

7000	Service Control Manager	Error	QLogic Fibre Channel Service service failed to start due to the following error: the system cannot find the file specified
	Applying Standard Program Package		This event does not affect system operation.
37130	ESMCommonService	Error	Date : YYYY-MM-DD hh:mm:ss Event Class : 0x11 Event Code : 0x0A Status : Critical Description : xxxxx Connectivity status changed to xxxxx for adapter in slot x, port x
	When starting system, or applying Standard Program Package		This event does not affect system operation.
37132	ESMCommonService	Error	Date : YYYY-MM-DD hh:mm:ss Event Class : 0x11 Event Code : 0x0C Status : Critical Description : Redundancy status changed to xxxxx by adapter in slot x, port x
	When starting system, or applying Standard Program Package		This event does not affect system operation.
37133	ESMCommonService	Error	Date : YYYY-MM-DD hh:mm:ss Event Class : 0x11 Event Code : 0x0D Status : Critical Description : All links are down in adapter xxxxx in slot x
	When starting system, or applying Standard Program Package		This event does not affect system operation.

ID	Source	Level	Message (Description)
	Timing when an event is logged		Action

Windows Server 2019 ”System Log”

2	bnxtnd	Warning	xxxxx #xx : The network link is down. Check to make sure the network cable is properly connected. * x is a different display name depending on the LAN board.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
4	b57nd60a	Warning	Broadcom NetXtreme Gigabit Ethernet #xx: The network link is down. Check to make sure the network cable is properly connected.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
4	l2nd	Warning	xxxxx #xx : The network link is down. Check to make sure the network cable is properly connected. * x is a different display name depending on the LAN board.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
4	l2nd2	Warning	xxxxx #xx : The network link is down. Check to make sure the network cable is properly connected. * x is a different display name depending on the LAN board.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
4	q57nd60a	Warning	xxxxx #xx : The network link is down. Check to make sure the network cable is properly connected. * x is a different display name depending on the LAN board.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
9	bxfcoe	Warning	The SAN link is down for port WWN XX:XX:XX:XX:XX:XX:XX:XX.. Check to make sure the network cable is properly connected. (X is any number)
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
9	qefcoe	Warning	The SAN link is down for port WWN XX:XX:XX:XX:XX:XX:XX:XX. Check to make sure the network cable is properly connected. (X is any number)
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
23	bnxtnd	Error	xxxxx #xx : Firmware returned failure status. * x is a different display name depending on the LAN board.
	About N8104-213/215/217/219, when changing the link speed setting with the LAN cable and switching hub not connected, or when you restart the system in the state after changing the settings applying Standard Program Package		This event does not affect system operation.

ID	Source	Level	Message (Description)
	Timing when an event is logged		Action

Windows Server 2019 ”System Log”

24	e1rexpress	Error	xxxxx #xx PROBLEM: Unable to start the network adapter. ACTION: Install the latest driver from "http://www.intel.com/support/go/network/adapter/home.htm". * x is a different display name depending on the LAN board.
	Starting system		If this event is registered, there may be a communication failure. Please ensure that you perform either of the following steps to resolve the issue: ・Restart the system. ・Refer to the following steps to disable and enable the network adapter: 1. Open the Device Manager. 2. Expand Network Adapters. 3. Right-click the network adapter displayed in the message, and select Disable device. When the confirmation screen for disabling appears, please select Yes. 4. Right-click the network adapter displayed in the message again, and select Enable device. 5. Perform steps 3 to 4 for network adapters with the same name.
26	bnxtnd	Warning	xxxxx #xx : Adapter Incompatible speed selection between Port 1 and Port 2. Reported link speeds are correct and might not match Speed and Duplex setting. * x is a different display name depending on the LAN board.
	About N8104-213/215/217/219, when changing the link speed setting with the LAN cable and switching hub not connected, or when you restart the system in the state after changing the settings applying Standard Program Package		This event does not affect system operation.
27	e1rexpress	Warning	xxxxx #xx Network link is disconnected. * x is a different display name depending on the LAN board.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
27	e1iexpress	Warning	xxxxx #xx Network link is disconnected. * x is a different display name depending on the LAN board.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
27	ixgbs	Warning	xxxxx #xx Network link is disconnected. * x is a different display name depending on the LAN board.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.

ID	Source	Level	Message (Description)
	Timing when an event is logged		Action

Windows Server 2019 ”System Log”

27	ixgbi	Warning	xxxxx #xx Network link is disconnected. * x is a different display name depending on the LAN board.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
27	i40ea	Warning	xxxxx #xx Network link is disconnected. * x is a different display name depending on the LAN board.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
27	i40eb	Warning	xxxxx #xx Network link is disconnected. * x is a different display name depending on the LAN board.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
27	i40ei65	Warning	The description for Event ID 27 from source i40ei65 cannot be found. Either the component that raises this event is not installed on your local computer or the installation is corrupted. You can install or repair the component on the local computer.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
27	icea	Warning	xxxxx #xx Network link is disconnected. * x is a different display name depending on the LAN board.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
38	l2nd2	Warning	xxxxx #xx : NDIS-Miniport is not compatible(older or newer) with bus driver. Hence only basic L2 functionality is available. * "x" depends on the system environment.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
56	qebdrv	Warning	NTPNP_PCIxxxx: RDMA has been implicitly disabled due to RDMA interface incompatibility between NDIS Miniport (ver x.xx.xx.x) and VBD (ver x.xx.x.x) drivers. VBD driver upgrade is required. * "x" depends on the system environment.
	When applying Standard Program Package		This event does not affect system operation.
57	qebdrv	Warning	NTPNP_PCIxxxx: RDMA has been implicitly disabled due to RDMA interface incompatibility between NDIS Miniport (ver x.xx.xx.x) and VBD (ver x.xx.x.x) drivers. NDIS Miniport upgrade is required. * "x" depends on the system environment.
	When applying Standard Program Package		This event does not affect system operation.

ID	Source	Level	Message (Description)
	Timing when an event is logged		Action

Windows Server 2019 ”System Log”

69	i40ea	Warning	HPE Ethernet xGb x-port xxxx Adapter The driver for the device detected a newer version of the NVM image than expected. Please install the most recent version of the network driver. * "x" depends on the system environment.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
69	i40eb	Warning	HPE Ethernet xGb x-port xxxx Adapter The driver for the device detected a newer version of the NVM image than expected. Please install the most recent version of the network driver. * "x" depends on the system environment.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
69	i40ei65	Warning	The description for Event ID 69 from source "i40ei65" cannot be found. Either the component that raises this event is not installed on your local computer or the installation is corrupted. You can install or repair the component on the local computer.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
101	i40eb	Warning	HPE Ethernet xGb x-port xxxx Adapter PROBLEM: Flow Control disabled on this interface. For RDMA traffic, it is recommended that flow control be enabled end to end on all network interfaces and switches to avoid performance degradation from dropped packets. ACTION: Enable link level flow control or priority flow control for network direct port 445 on this interface. * "x" depends on the system environment.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation. After Standard Program Package is applied, this log will no longer be registered.
101	icea	Warning	Intel(R) Ethernet Network Adapter E810-XXV-2 xxxxx PROBLEM: Flow Control disabled on this interface. For RDMA traffic, it is recommended that flow control be enabled end to end on all network interfaces and switches to avoid performance degradation from dropped packets. ACTION: Enable link level flow control or priority flow control for network direct port 445 on this interface. * "x" depends on the system environment.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation. After Standard Program Package is applied, this log will no longer be registered.
129	SmartDQa	Warning	Reset was issued to the device \Device\RaidPort(x). (x is any number)
	While the system is running		If this message has been registered as a log during heavy I/O, there is no problem since the OS has succeeded in retry. Continue using.

ID	Source	Level	Message (Description)
	Timing when an event is logged		Action

Windows Server 2019 ”System Log”

129	SmartPqi	Warning	Reset was issued to the device \Device\RaidPort(x). (x is any number)
	While the system is running		Even if the message is registered in the log, there is no problem because the OS has successfully completed the retry. You don't need any changes.
134	Microsoft-Windows-Time-Service	Warning	NtpClient was unable to set a manual peer to use as a time source because of DNS resolution error on 'time.windows.com,0x1'. NtpClient will try again in 15 minutes and double the reattempt interval thereafter. The error was: No such host is known. (0x80072AF9)
	While the system is running		This event does not affect system operation if it is not recorded after connecting to the internet.
157	Disk	Warning	Disk x is suddenly removed.
	When creating a RAID		If you create new RAID on Windows, this event can be registered, but this does not affect the system operation.
219	Kernel-PnP	Warning	The driver \Driver\q57nd60a failed to load for the device PCI\VEN_xxxx&DEV_xxxx&SUBSYS_xxxxxxxxxxxx. * x is a different display name depending on the LAN board.
	When installing an OS with Rapid Setup		This event does not affect system operation.
225	Kernel-PnP	Warning	The application YYY with process id XXX stopped the removal or ejection for the device ZZZ. * ZZZ : Instance name of the device YYY : Name of the process that was using the device XXX : ID of the process that was using the device
	When applying Standard Program Package		This event does not affect system operation.
260	Microsoft-Windows-Hyper-V-VmSwitch	Error	Failed to move RSS queue xx from VMQ xx of switch xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx (Friendly Name: xx), ndisStatus = -1071448015 .
	When starting system, or starting virtual machine		This event does not affect system operation.
262	icea	Error	Intel(R) Ethernet Network Adapter E810-XXV-2 xxx PROBLEM: Module is not present. Possible Solution(s): Manually set the speed/duplex or use Intel(R) Ethernet Port Configuration Tool to change the port option. If the problem persists, use a cable/module that is found in the supported modules and cables list for this device. * "x" depends on the optional LAN board environment.
	When SFP+/SFP28 module (N8104-189/190) or DA cable disconnected from optional LAN board (N8104-208/212).		Confirm the SFP+/SFP28 module (N8104-189/190) or DA cable.

ID	Source	Level	Message (Description)
	Timing when an event is logged		Action

Windows Server 2019 ”System Log”

272	icea	Error	Intel(R) Ethernet Network Adapter E810-XXV-2 xxx PROBLEM: A parallel fault was detected. Possible Solution: Change link partner connection and configuration. * x is a different display name depending on the LAN board.
	When SFP+/SFP28 module (N8104-189/190) or DA cable is connected to the LAN board (N8104-208/212) and the network link is down. Applying Standard Program Package.		This event does not affect system operation.
7023	Service Control Manager	Error	"xxxxxxxx service terminated with the following error: A device attached to the system is not functioning."
	When running an OS for the first time		This event does not affect system operation if it is recorded only on the first startup and not recorded repeatedly.
7023	Service Control Manager	Error	The Spooler service terminated with the following error: Ran out of memory
	When installing an OS		There is no problem when it occurs at following conditions. 1. Occurs once during OS installation, and it does not register continuously. 2. After sign-in to the system, the service started normally.
7030	Service Control Manager	Error	The Printer Extensions and Notifications service is marked as an interactive service. However, the system is configured to not allow interactive services. This service may not function properly.
	When running an OS for the first time		This event does not affect system operation if it is recorded only on the first startup and not recorded repeatedly.
10010	Microsoft-Windows-DistributedCOM	Error	The server {XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX} did not register with DCOM within the required timeout.
	While the system is running		This event does not affect system operation.
10149	Microsoft-Windows-WinRM	Warning	The WinRM service is not listening for WS-Management requests.
	When restarting an OS		There is no problem to ignore it when WinRM event 10148 (The WinRM service is not listening for WS-Management requests.) is registered after soon.
10400	Microsoft-Windows-NDIS	Warning	The network interface "xxxxx" has begun resetting. There will be a momentary disruption in network connectivity while the hardware resets. Reason: The network driver detected that its hardware has stopped responding to commands. This network interface has reset xx time(s) since it was last initialized. * x is a different display name depending on the LAN board.
	When applying Standard Program Package		This event does not affect system operation.

ID	Source	Level	Message (Description)
	Timing when an event is logged		Action

Windows Server 2019 ”System Log”

10400	Microsoft-Windows-NDIS	Warning	The network interface "xxxxx" has begun resetting. There will be a momentary disruption in network connectivity while the hardware resets. Reason: The network driver detected that its hardware has stopped responding to commands. This network interface has reset xx time(s) since it was last initialized. * x is a different display name depending on the LAN board.
	When starting system or configuration changes with N8104-175/184 connected LAN cable and switching hub.		This event does not affect system operation. If you want to avoid this event, please follow the steps below to disable NDIS QoS for N8104-175/184. 1. Open the Device Manager. 2. Expand Network Adapters, double-click the network adapter displayed in the message. The properties of the network adapter will be displayed. 3. Open Advanced tab, click NDIS QoS to show Value. 4. Change the value to Disabled. 5. Click OK, and then restart the system.

ID	Source	Level	Message (Description)
	Timing when an event is logged		Action

Windows Server 2019 ”Application Event Log”

86	Microsoft-Windows-Certificate ServicesClient-CertEnroll	Error	SCEP Certificate enrollment initialization for XXXXXXXX via https://STM-KeyId-1adb994ab58be57a0cc9b900e7851e1a43c08660.microsoftaik.azure.net/templates/Aik/scep
	When running an OS.		This event does not affect system operation. This event may be registered on the system that TPM is installed and has no connectivity to the internet.
1015	Microsoft-Windows-Security-SPP	Error	Detailed HRESULT. Returned hr=0xC004F022, Original hr=0x********
	When restarting an OS		This event does not affect system operation if it is not recorded repeatedly after activating the Windows.
3007	EvntAgnt	Warning	Error opening event log file Parameters. Log will not be processed. Return code from OpenEventLog is 87.
	When SNMP is effective		Every restarting it's registered, it's no problem.
3007	EvntAgnt	Warning	Error opening event log file State. Log will not be processed. Return code from OpenEventLog is 87.
	When SNMP is effective		Every restarting it's registered, it's no problem.
8198	Microsoft-Windows-Security-SPP	Error	License Activation (slui.exe) failed with the following error code: hr=0x******** Command-line arguments: RuleId=******************************
	When restarting an OS		This event does not affect system operation if it is not recorded repeatedly after activating the Windows.

ID	Source	Level	Message (Description)
	Timing when an event is logged		Action

Windows Server 2019 ”Applications and Services Logs”

1	Microsoft-Windows-SMBWitnessClient	Error	Witness Client initialization failed with error (The system cannot find the file specified.)
	When installing an OS		This event does not affect system operation if it is recorded only on the first startup and not recorded repeatedly.
69	Microsoft-Windows-AppModel-Runtime	Error	Failed with 0x490 modifying AppModel Runtime status for package ********** for user ********* (current status = 0x0, desired status = 0x20).
	When running an OS for the first time		This event does not affect system operation if it is recorded only on the first startup and not recorded repeatedly.
200	Microsoft-Windows-DeviceSetupManager	Warning	A connection to the Windows Update service could not be established.
	While the system is running		This event does not affect system operation if it is not recorded after connecting to the internet.
201	Microsoft-Windows-DeviceSetupManager	Warning	A connection to the Windows Metadata and Internet Services (WMIS) could not be established.
	While the system is running		This event does not affect system operation if it is not recorded after connecting to the internet.
202	Microsoft-Windows-DeviceSetupManager	Warning	The Network List Manager reports no connectivity to the internet.
	While the system is running		This event does not affect system operation if it is not recorded after connecting to the internet.
215	AppReadiness	Error	'ART:UserFirstLogon' failed for <user>. Error:'Illegal operation attempted on a registry key that has been marked for deletion.' (0 seconds)
	When installing an OS		This event does not affect system operation if it is not recorded repeatedly.
360	Microsoft-Windows-User Device Registration	Warning	Windows Hello for Business provisioning will not be launched. Device is AAD joined (AADJ or DJ++): Not Tested User has logged on with AAD credentials: No Windows Hello for Business policy is enabled: Not Tested Windows Hello for Business post-logon provisioning is enabled: Not Tested Local computer meets Windows hello for business hardware requirements: Not Tested User is not connected to the machine via Remote Desktop: Yes User certificate for on premise auth policy is enabled: Not Tested Machine is governed by none policy.
	When restarting an OS		There is no problem when it occurs at the environment that is not registered to Microsoft Azure AD.

Revision Record

Document Number	Date	Notes
CBZ-002473-410-00	March 2025	The first edition