Installation Guide (Windows Server 2022)

NEC Express Server
Express5800 Series

Express5800/R120i-1M, 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

Contents

Introduction

Thank you for purchasing our product.

When using the **EXPRESSBUILDER E8.10-010.05 (3.81.2)**, see this manual before installing Windows.

Please read carefully the instructions 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 2022	Windows Server 2022 Standard
	Windows Server 2022 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

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  zlib.h -- interface of the 'zlib' general purpose compression library
  version 1.2.2, October 3rd, 2004

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https://www.nec.com/

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NEC Express5800 Series

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 2022

Describes how to install Windows Server 2022.

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.

1. 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.**

Windows Server 2019

Product Key: XXX   X-XXXXX-XXXXX-XXXXX
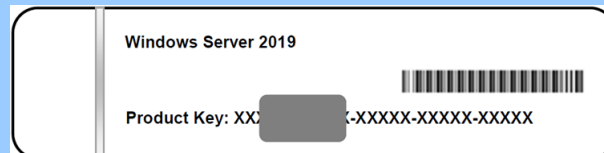
The label cannot be reissued if it is lost or stained. It is recommended to write down the product key and keep it with other accessories.

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/w2022/hyper-v/hyper-v-ws2022.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.

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

<u>Usage</u>

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 2022 *	Standard	✓	N/A	N/A	✓
	Datacenter	✓	N/A	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 at EXPRESSBUILDER		
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)	✓	✓
N8103-197 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 at EXPRESSBUILDER	
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)	✓
N8103-197 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**

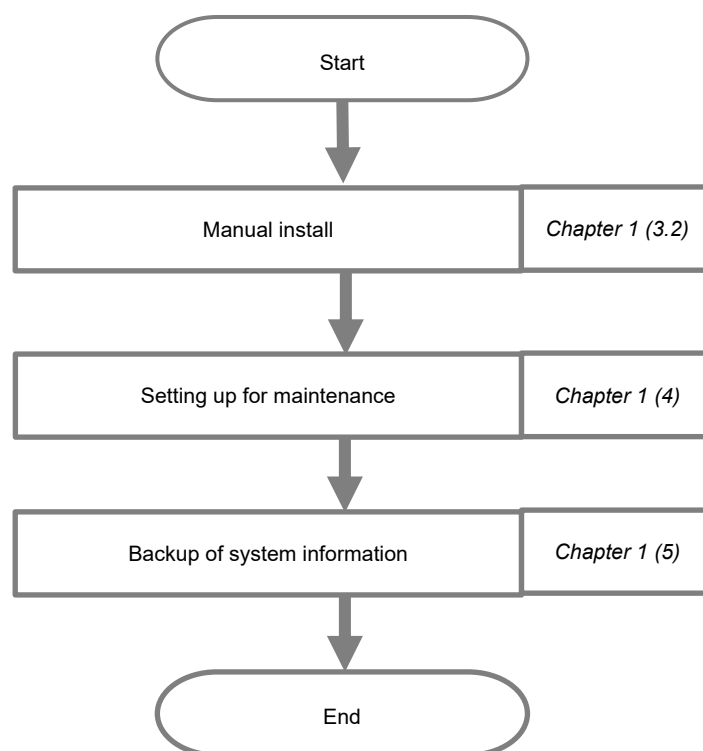|	R120h-1E	R120h-2E
N8104-171 Quad Port 1000BASE-T LOM Card	✓	✓
N8104-172 Quad Port 1000BASE-T LOM Card	✓	✓
N8104-173 Dual Port 10GBASE-T LOM Card	✓	✓
N8104-175 Dual Port 10GBASE-T LOM Card	✓	✓
N8104-176 Dual Port 10GBASE SFP+ LOM Card	✓	✓
N8104-177 Dual Port 25GBASE SFP+ LOM Card	✓	✓
N8104-178 Dual 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 10GBASE-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

2. Flow of Windows Installation

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

```
                    ┌──────────────────────┐
                   (        Start          )
                    └──────────┬───────────┘
                               │
                               ▼
        ┌──────────────────────────────┬─────────────────┐
        │        Manual install        │  Chapter 1 (3.2) │
        └──────────────┬───────────────┴─────────────────┘
                       │
                       ▼
        ┌──────────────────────────────┬─────────────────┐
        │   Setting up for maintenance  │  Chapter 1 (4)  │
        └──────────────┬───────────────┴─────────────────┘
                       │
                       ▼
        ┌──────────────────────────────┬─────────────────┐
        │  Backup of system information │  Chapter 1 (5)  │
        └──────────────┬───────────────┴─────────────────┘
                       │
                       ▼
                    ┌──────────────────────┐
                   (         End           )
                    └──────────────────────┘
```

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

3. Installing Windows Server 2022

3.1 Precautions of Windows Server 2022 Installation

Read the precautions explained this section before installing.

EB : Rapid Setup

OS : Manual Installation

BIOS setting			
—	—	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**
—	—	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**

—	—	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 Zone : Unspecified Time Zone

—	—	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

—	—	OS	**R120i-1M / R120i-2M, R120h-1M (2nd-Gen) / (3rd-Gen), R120h-2M (2nd-Gen) / (3rd-Gen)**
			    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)

—	—	OS	**R120i-1M / R120i-2M, R120h-1M (2nd-Gen) / (3rd-Gen), R120h-2M (2nd-Gen) / (3rd-Gen)**
			    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

—	—	OS	**R120i-1M/R120i-2M** When installing TPM, set the following settings. For details, see *Chapter 1 (1. System Utilities)* in *Maintenance Guide (Common).* **System Configuration > BIOS/Platform Configuration (RBSU) > Server Security > Advanced Security Options > Platform Certificate Support > [Enabled]** **System Configuration > BIOS/Platform Configuration (RBSU) > Server Security > Trusted Platform Module Options > Advanced Trusted Platform** Module **Options > TPM Visibility > [Visible]**
—	—	OS	**120h-1M / (2nd-Gen) / (3rd-Gen), R120h-2M / (2nd-Gen) / (3rd-Gen)** When installing TPM, set the following settings. For details, see *Chapter 1 (1. System Utilities)* in *Maintenance Guide (Common).* **System Configuration > BIOS/Platform Configuration (RBSU) > Server Security > Platform Certificate Support > [Enabled]** **System Configuration > BIOS/Platform Configuration (RBSU) > Server Security > Trusted Platform Module Options > TPM Visibility > [Visible]**
—	—	OS	**R120h-1E, R120h-2E, T120h** When installing TPM, set the following settings. For details, see *Chapter 1 (1. System Utilities)* in *Maintenance Guide (Common).* **System Configuration > BIOS/Platform Configuration (RBSU) > Server Security > Trusted Platform Module Options > TPM Visibility > [Visible]**
Hardware configuration			
			The following hardware configurations require special procedures.
—	—	OS	**Using RAID controller** Before you install Windows Server 2022, if using a RAID controller, configure the RAID system in advance according to the *Maintenance Guide*.
—	—	OS	**Installation When Multiple Logical Drives Exist** If you select wrong hard disk drive in Windows Server 2022 installation, the setup may erase existing data unexpectedly.
—	—	OS	**Reinstalling to a mirrored volume** When you install Windows Server 2022 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.
—	—	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.
—	—	OS	**DAT, LTO, and similar media** Do not set media that is unnecessary to installation during setup.
—	—	OS	**Reinstalling to dynamic disks** Because dynamic disks are not recommended for Windows OS, convert it to basic disk and then install again.

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 16MB or more in the system drive, and
    "installed memory size + 400 MB (installed memory size + 1,800 MB when the size is 4 TB or more)" or more in a drive other than the system drive.

    Edit the registry shown below by using the Registry Editor to specify the drive for collecting memory dump to top.

Key	:	HKEY_LOCAL_MACHINE\SYSTEM \CurrentControlSet\Control\Session Manager\Memory Management
Name	:	PagingFiles

    For example as following, installed memory size is 8GB(8,192MB) and specify paging file in C: drive and E: drive, and use a paging file of E: drive to collect memory dump.

    * Following value differs by specified paging file size.

Before edit	C:\pagefile.sys 16 16 E:\pagefile.sys 8592 8592 (* 8592 = 8192+ 400)

After edit	E:\pagefile.sys 8592 8592 C:\pagefile.sys 16 16

Be careful of following when edit this settings.

- Be careful to edit registry.
- The setting is applied after restarting the system.
- Paging file on dynamic volume can not be used to collect memory dump.
- Because only the top drive of registry is used to collect memory dump, you need to set "installed memory size + 400 MB (installed memory size + 1,800 MB when the size is 4 TB or more)" paging file or more for 1 drive.

    * Setting paging file divided as below is incorrect.
      Memory dump may not be collected.

        C: Paging file whose size is 16 MB
        D: Paging file whose size is "installed memory size x 0.5"
        E: Paging file whose size is "installed memory size x 0.5"
        F: Paging file whose size is 400 MB or 1,800MB

If you close setting screen of paging file with [OK] button, registry value above will be changed although you do not change settings.

Opening setting screen of paging file before editing registry or after editing it,
is unrelated.

When registry value is changed, you need to edit again manualy, and then need to restart system to reflect settings.

− **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 + 400 MB" ("installed memory size + 1,800 MB" when the installed memory size is 4TB 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	
— — OS	The system partition size can be calculated by using the following formula.

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	=	15,900 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 + 1,800MB (installed memory size is exceeding 4 TB)
Application size	=	as required by the application

Server Core

Size required to install the OS	=	10,700MB
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 + 1,800MB (installed memory size is exceeding 4 TB)
Application size	=	as required by the application

For example, if the installed memory size is 8 GB (8,192 MB), and application size is 100 MB, the partition size is calculated as follows:

    15,900MB + (8,192MB + 400MB) + 8,192MB + 400MB + 100MB
    = 33,184MB

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

- In Windows Server 2022, a recovery partition will be created after the system partition. The system partition can not be extended because there is no unallocated area behind the system partition.
  Install Windows OS within sufficient partition size.
- 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 + 1,800 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 Manual Installation**

Tips

When creating a partition, Windows OS creates the following partitions at the hard disk drive
- EFI System Partition (ESP)　　　　　: 100MB *1
- Microsoft Reserved Partition (MSR)　　: 16MB *2
- Recovery Partition　　　　　　　　　: 602MB *3

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

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

Free area

Recovery Partition : 602MB *3

System Partition

Microsoft Reserved Partition (MSR): 16MB *2

EFI System Partition (ESP): 100MB *1
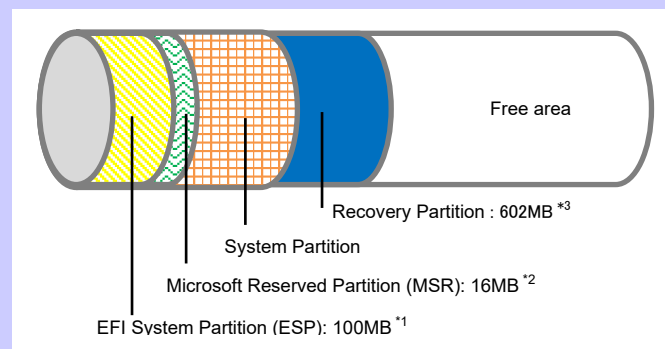
*1   May be 300MB in size depending on hard disk drive type.

*2   MSR is not displayed on **Disk Management**.

*3   Partition size differs according to used OS installation media.
      If you install by Backup DVD-ROM, the partition is created at 602MB.

Windows Server 2022 Hyper-V support

| — | — | OS | Refer to the following web site for information related to Windows Server 2022 Hyper-V.
https://www.58support.nec.co.jp/global/download/w2022/hyper-v/hyper-v-ws2022.html |

Using BitLocker

| — | — | OS | If using BitLocker, note the following. |

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

Important

If the recovery password is not entered, the OS cannot be started, and the content of the partition encrypted by BitLocker cannot be referenced any more. The recovery password 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.

Using Microsoft(R) Secured-core			
—	—	OS	**R120i-1M, R120i-2M** 　When using Microsoft(R) Secured-core, set the following settings. 　For details, see *Chapter 1 (1. System Utilities)* in *Maintenance Guide (Common)*. 　**System Configuration > BIOS/Platform Configuration (RBSU) > Server Security > Microsoft(R) Secured-core Support > [Enabled]**
Support for NIC teaming in Windows Server 2022			
—	—	OS	The NIC teaming feature, which used to be provided by network interface card (NIC) vendors, is built into Windows Server 2022. In Windows Server 2022, this feature is also called "load balancing and failover (LBFO)". Refer to *Chapter 1 (3.6 Setup of Windows Server 2022 NIC Teaming (LBFO)* and specify any required settings.
Installing bundled software			
—	—	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.

3.2   Manual Installation

This section describes how to install Windows Server 2022 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.

3.2.1 Setup flow

```
                    Start

    3.1  Precautions of Windows Server 2022 Installation

    3.2  Manual Installation

    3.3  Standard Program Package Installation

    3.4  Setup of Device Drivers

    3.5  License Authentication

    3.6  Setup of Windows Server 2022 NIC Teaming(LBFO)

    3.7  Installing Applications

    4.  Setting up for Maintenance

    5.  Backup of system information

              End of Manual installation
```
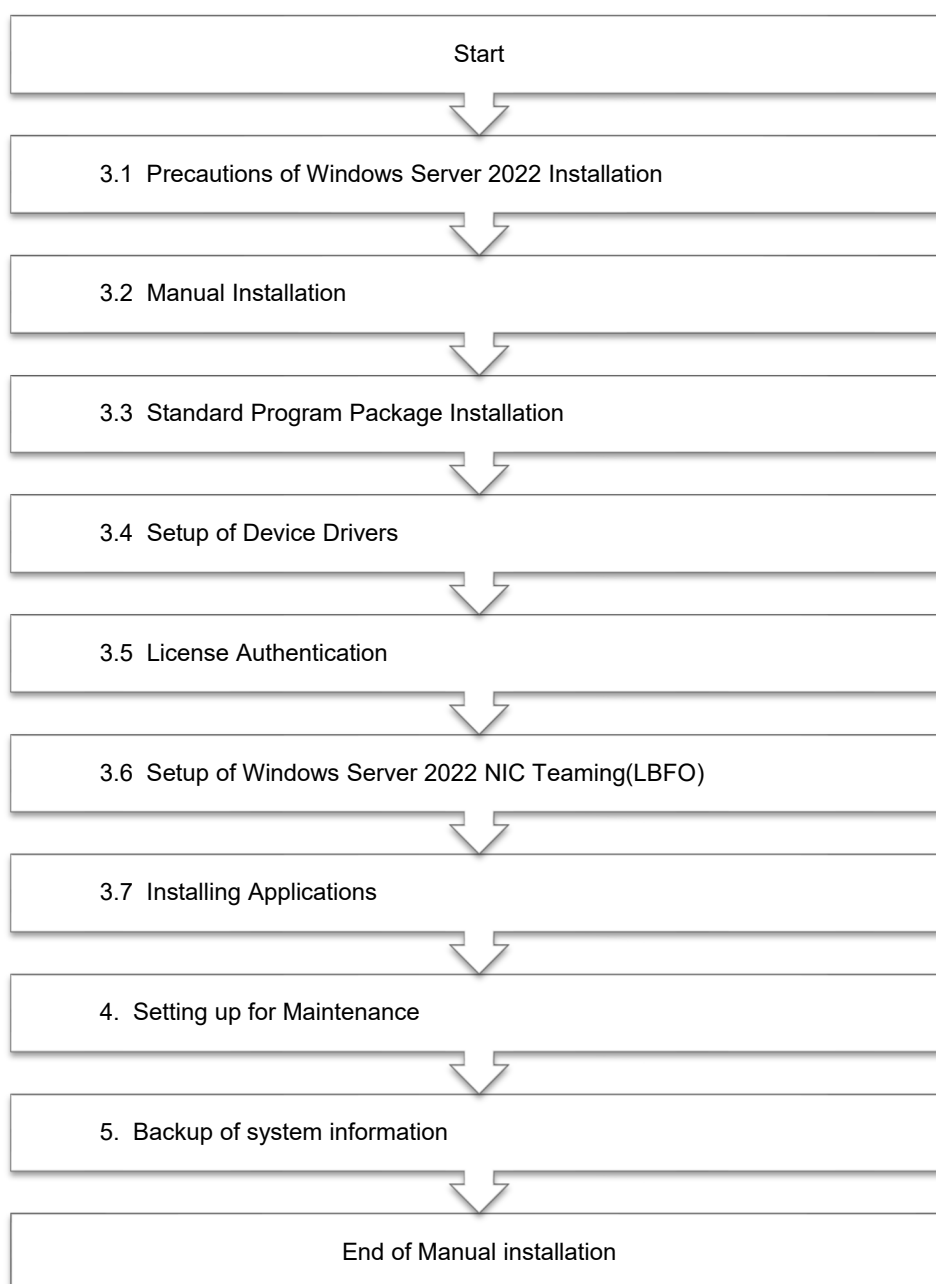
3.2.2 Requirements for Setup

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 2022 DVD-ROM*)

> ➢ Starter Pack

- **Starter Pack DVD** (Optional or downloading from our website)

  → The Starter Pack which supports Windows Server 2022 is "S8.10-010.05" or later.
  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

3.2.3 Installation procedure

Note	Read the precautions in *Chapter 1 (3.1 Precautions of Windows Server 2022 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

   he 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.

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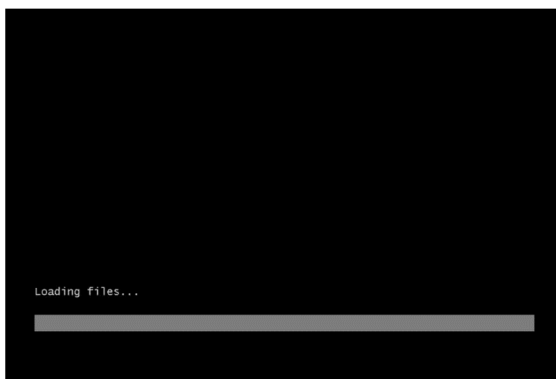
Note	If the Windows Setup screen (the screen in the next step) does not display, the <Enter> key was not properly pressed. Turn the system power on again, and then start again.

4. Click **Next**.
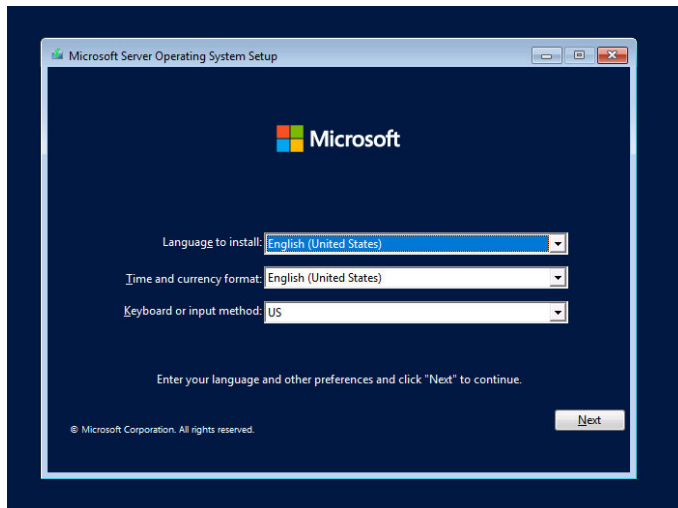
5. Click **Install now**.
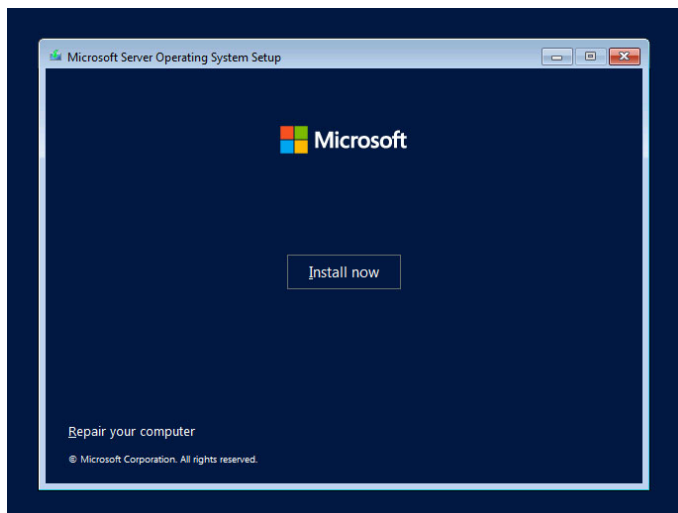
If the following message is displayed: Go to Step 6.

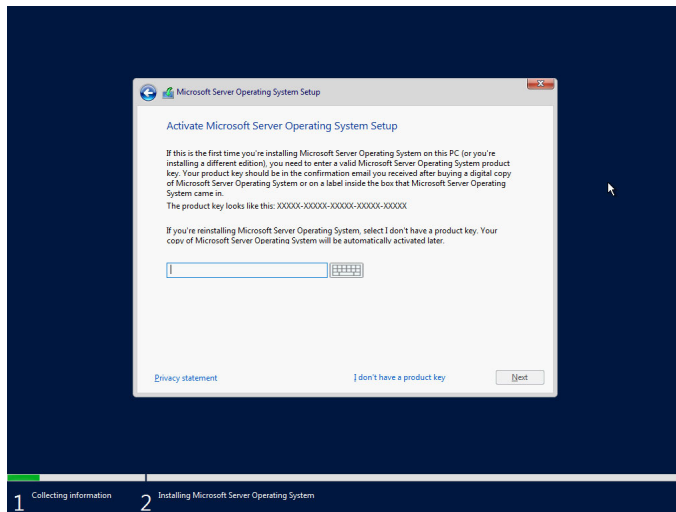If the following message is not displayed: Go to Step 8.

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\ws2022**

7. Select the following driver from the displayed list of drivers, and click **Next**.
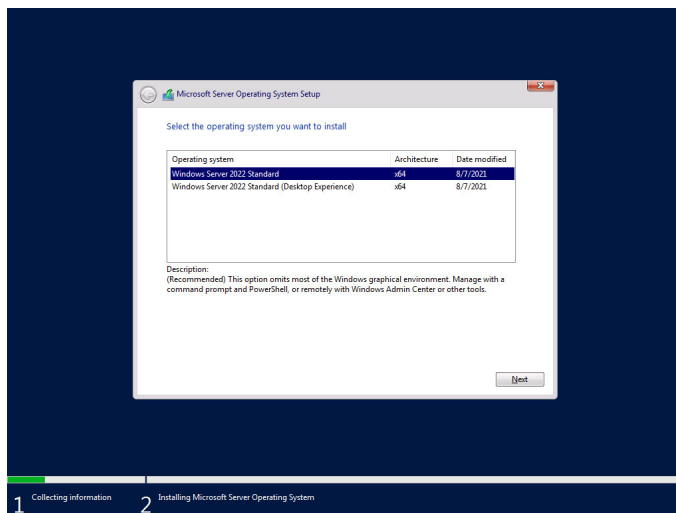
    HPE Smart Array S100i SR Gen10 SW RAID

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 2022 Standard or Windows Server 2022 Datacenter → Described as "Server Core" by this manual • Windows Server 2022 Standard (Desktop Experience) or Windows Server 2022 Datacenter (Desktop Experience) → Described as "Desktop Experience" by this manual

10.   Read the license terms carefully.

If you agree, check **I accept the Microsoft Software License Terms** and click **Next**.
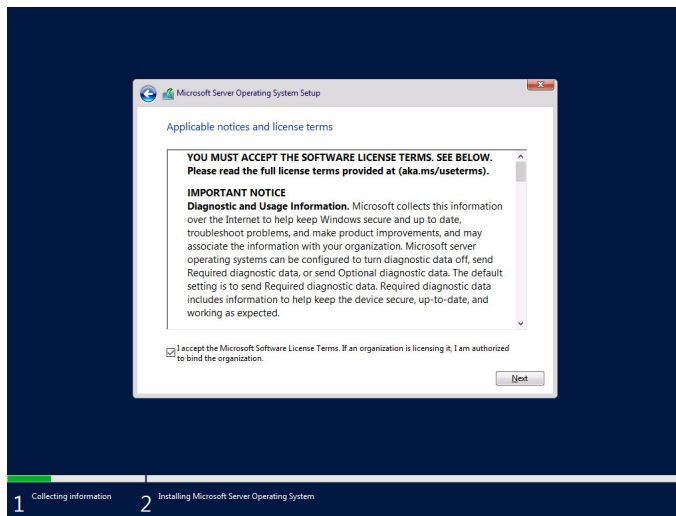
11.   Select **Custom: Install Microsoft Server Operating System only (advanced)**.
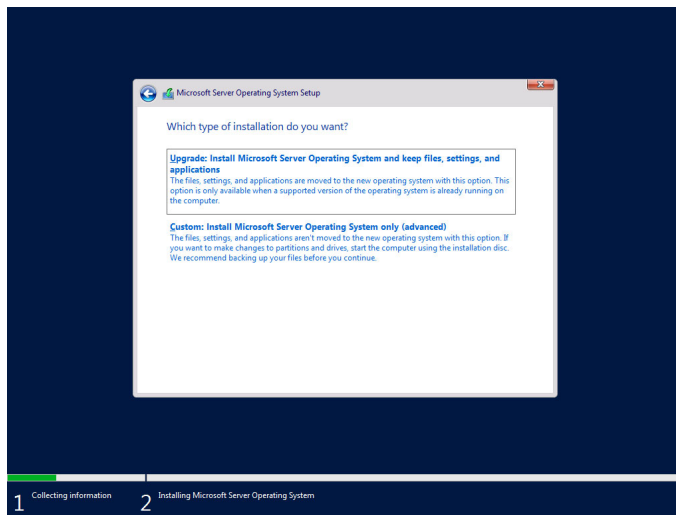
12.   The "Select Windows installation location" screen is displayed.

If the driver was loaded in steps 6 and 7, or if the onboard RAID controller is not in use,

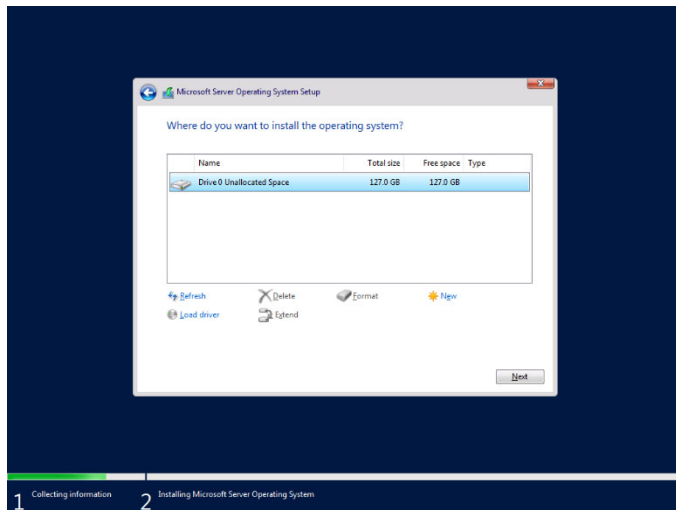proceed to step 15. If you select **Load driver** here, the following screen will be displayed.

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

*<Starter Pack DVD>:***\software\010\drivers\sw_raid1_driver\ws2022**

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

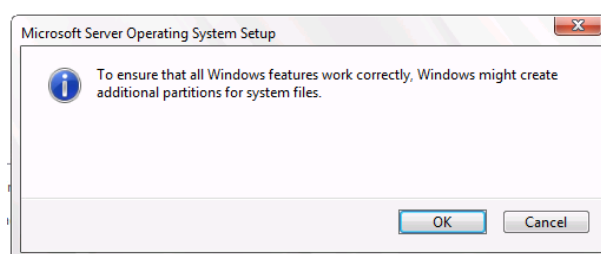**HPE Smart Array S100i SR Gen10 SW RAID**

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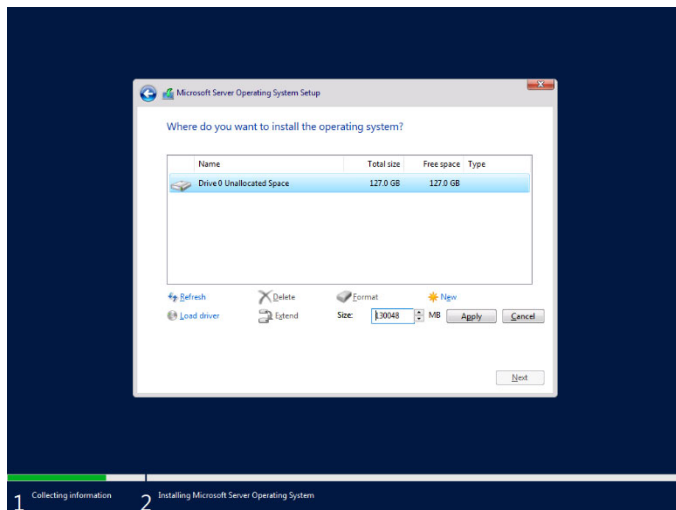
When the following window appears, click **OK**.

Note

After beginning the installation of Windows, a recovery partition is created automatically behind the system partition. The system partition can not be extended because there is no unallocated area behind the system partition.
Install Windows OS within sufficient partition size.

| Tips	When creating a partition, the OS creates the following partitions at top of the hard disk drive.
	  – EFI System Partition (ESP)
	  – Microsoft Reserved Partition (MSR)

17. Select the partition created in step 16, and then click **Format**.
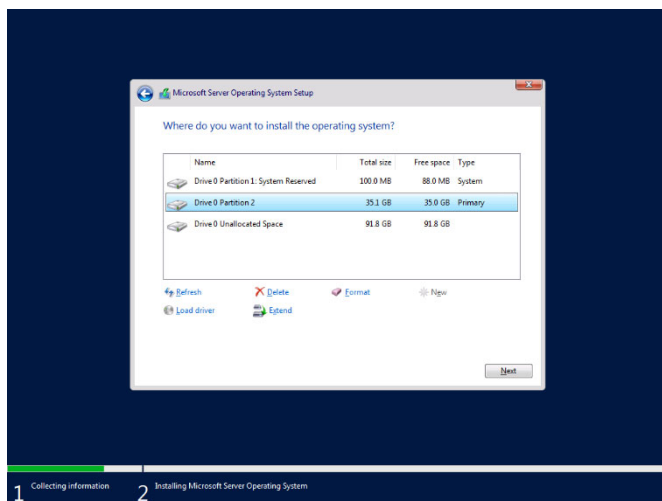
| Important	**When the following screen appears, read the message and click [OK].** **Carefully select the partition to be formatted because data in the partition will** **be erased.**
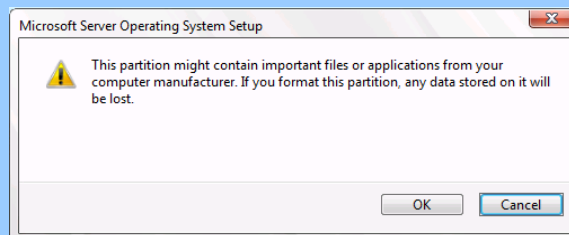
18. Select the created partition, and then click **Next**.

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

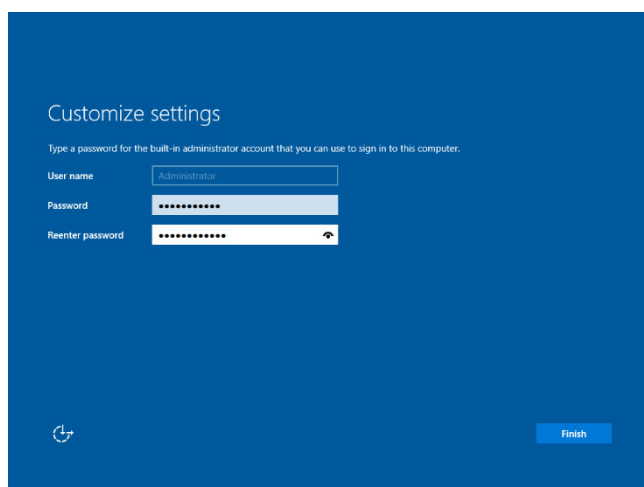When the following message appears, Windows installation starts automatically.
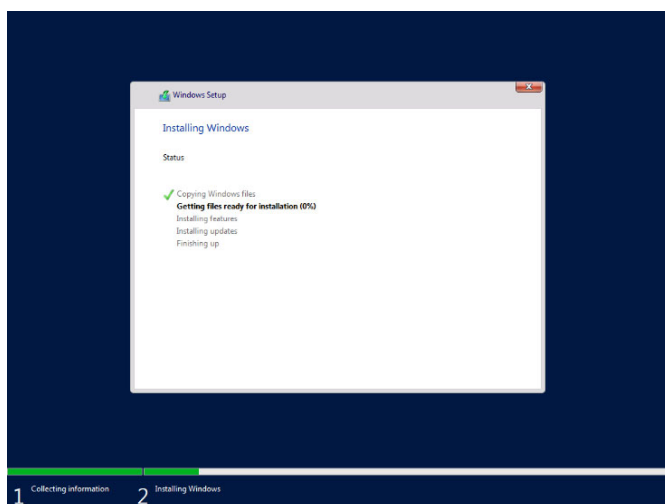
The server will automatically restart after Windows Server 2022 is installed.

You will proceed to Windows setup after restart.

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

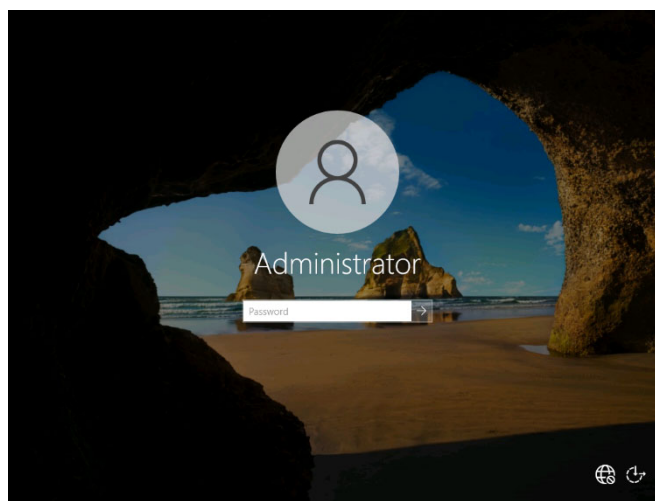**Desktop Experience**

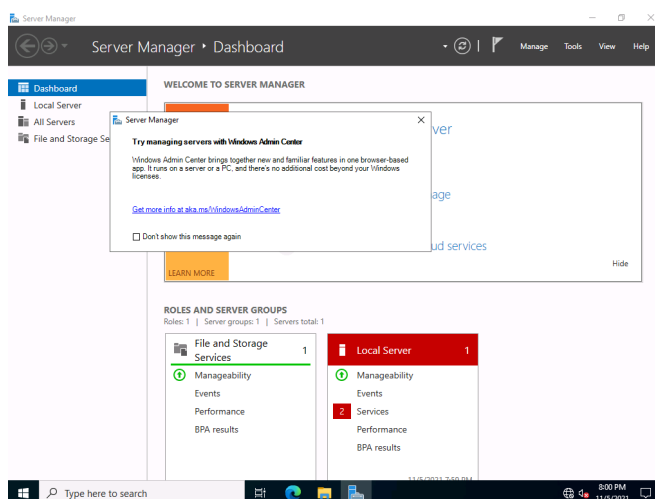Type a password and click **Finish**.

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

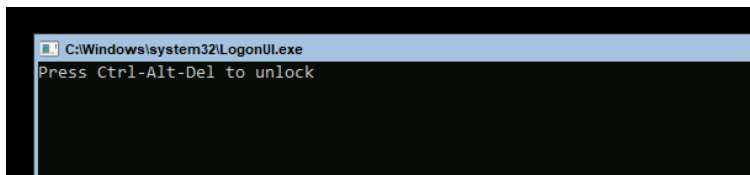Enter the password and press <Enter> key.

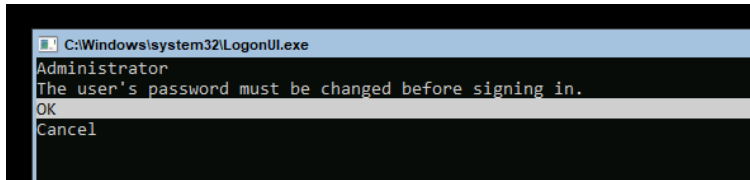Windows Server 2022 starts.

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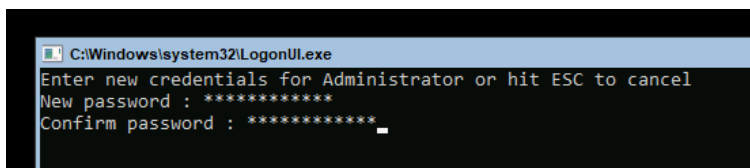
Press <Ctrl> + <Alt> + <Delete> keys to unlock.
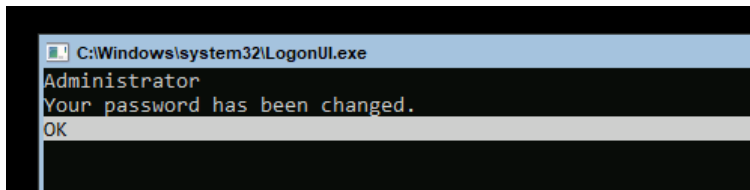

The password is needed to change. Choose **OK** and press <Enter> key.

Enter a new password and press <Enter> key.

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

Windows Server 2022 starts.
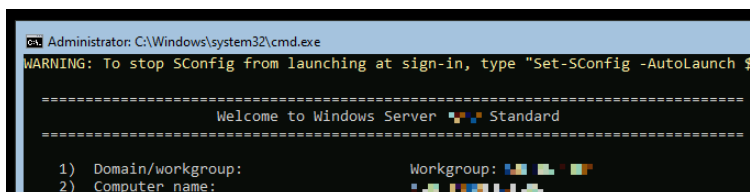
20. See *Chapter 1 (3.3 Standard Program Package Installation)* to install SPP.

21. Install drivers and specify detailed settings according to *Chapter 1 (3.4 Setup of Device Drivers)*.

22. Confirm if Windows is activated according to *Chapter 1 (3.5 License Authentication).*

23. See *Chapter 1 (3.6 Setup of Windows Server 2022 NIC Teaming (LBFO))* to setup a team as needed*.*

24. Install the applications as needed according to *Chapter 1 (3.7 Installing Applications)*.

25. Set the other OS settings according to *Chapter 1 (4. Setting up for Maintenance).*

26. See *Chapter 1 (5. Backup of system information)* to back up the system.

The Windows installation with Manual Installation is now complete.

3.3 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 booting "Starter Pack DVD" before applying Standard Program Package. If you mistake procedure, the system may not start.** ● **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.**

> When N8103-189/190/191/192/193/194/195/197/201/237/238 is installed to the server
>
> When the RAID controller is installed to the server,
> **\packages\cp051257.exe** on the DVD to install the driver.
> After that, restart the server.

3.3.1 Installing Standard Program Package on Desktop Experience

1. Sign-in to the Windows with an Administrators privilege.

2. Set the Starter Pack DVD to the drive.

3. Run the **start_up.bat** under the root folder on DVD.

4. Click **Integrated Installation** on the menu.
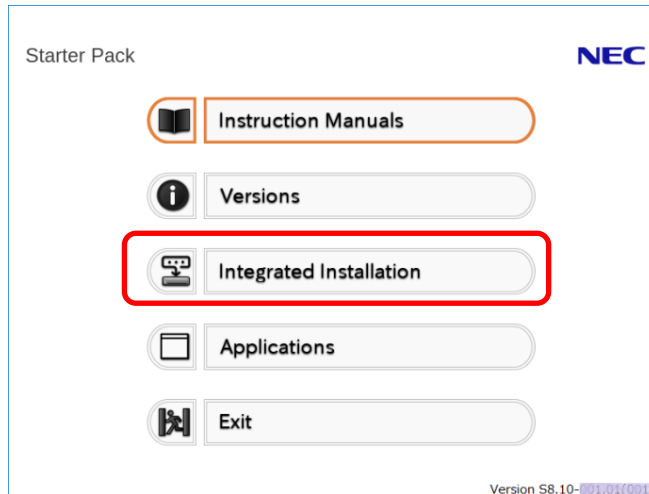
5. Choose **Standard Program Package** on the following screen, and then click **Install**.
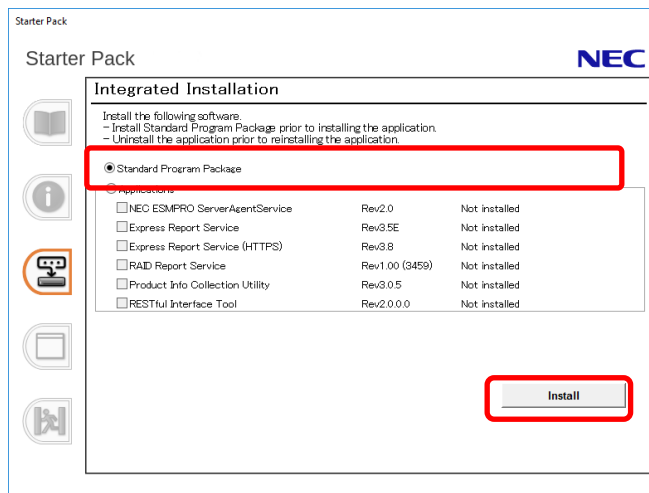
6. If you had updated firmware beforehand, click **OK** to start the installation of Standard Program
    Package.

    Wait until installation completes (about 5 to 15 minutes).

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

  > ✕
  >
  > An error occurred during installing the Standard Program Package.
  > To handle this error, refer to troubleshooting of Installation Guide
  > (Windows) according to your Starter Pack version.
  > (Code:)
  >
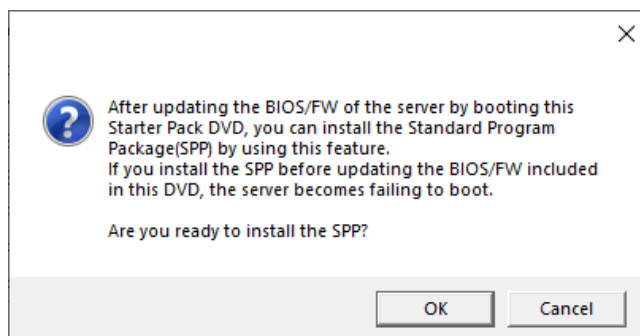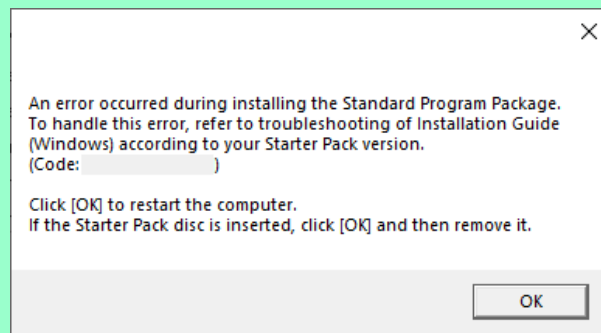 > Click [OK] to restart the computer.
  > If the Starter Pack disc is inserted, click [OK] and then remove it.
  >
  > OK

- 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**.

> Windows Script Host   ✕
>
> [SPP]Installing selected application was completed.
>
> OK
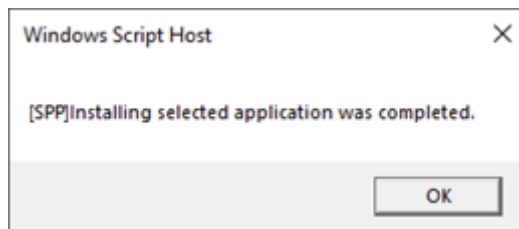
Note
If the following message displayed during installing the Standard Program Package, click **No** to continue process.

> 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.

8.   Windows Server 2022 restarts automatically.

Then, remove the Starter Pack DVD.

> Starter Pack   ✕
>
> ⚠️ Click [OK] to restart the computer. If the Starter Pack disc is
>   inserted, click [OK] and then remove it.
>
> OK

SPP installation is now complete.

3.3.2 Installing Standard Program Package on Server Core

1. Sign-in to the Windows with an Administrators privilege.

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:\software\010\win\seamless

   > *C:\Users\administrator>***cd /d D:\software\010\win\seamless**

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

   instcmd.vbs spp /s

   > *D:\software\010\win\seamless >***instcmd.vbs spp /s**

5. If you had updated firmware beforehand, click **OK** to start the installation of Standard Program Package.

   Wait until installation completes (about 5 to 15 minutes).

   > ×
   >
   > ? After updating the BIOS/FW of the server by booting this Starter Pack DVD, you can install the Standard Program Package(SPP) by using this feature.
   > If you install the SPP before updating the BIOS/FW included in this DVD, the server becomes failing to boot.
   >
   > Are you ready to install the SPP?
   >
   > [OK]   [Cancel]

Note

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

  > ×
  >
  > An error occurred during installing the Standard Program Package.
  > To handle this error, refer to troubleshooting of Installation Guide (Windows) according to your Starter Pack version.
  > (Code:)
  >
  > Click [OK] to restart the computer.
  > If the Starter Pack disc is inserted, click [OK] and then remove it.
  >
  > [OK]
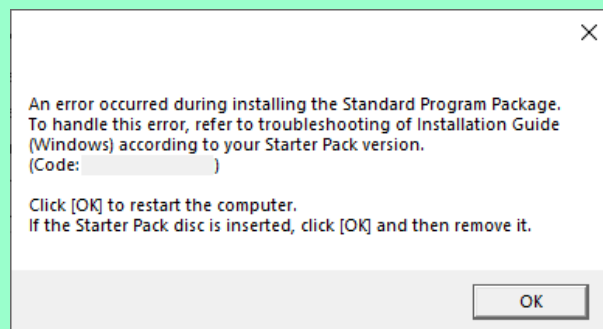
- iLO may be reset during applying Standard Program Package.

  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.
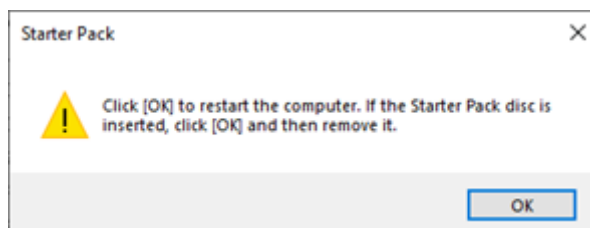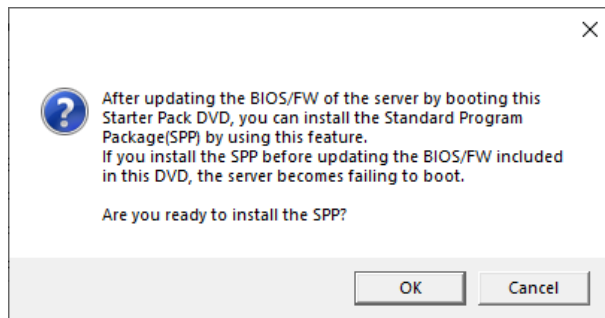
6.   Click **OK**.

Windows Script Host   ✕

[SPP]Installing selected application was completed.

OK
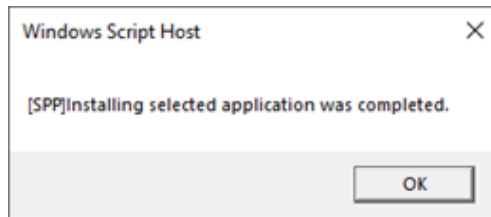
7.   After removing the Starter Pack DVD, restart Windows Server 2022 manually.

SPP installation is now complete.

3.4   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.

3.4.1   Installing the LAN drivers

(1) LAN drivers

The drivers are installed by Standard Program Package.

Important	**Wake On LAN (WOL) is supported by onboard network adapters and N8104-171/172/173/175/193/194/195/206/207/208/213/217 only. Wake On LAN is available after installing the LAN driver.** **For Wake On LAN of R120h-1E / R120h-2E / T120h onboard network adapters and N8104-172/175/193/194/195/206/208/213/217, when using Wake On LAN see *Chapter 1 (3.4.2 Setting up LAN drivers - (3) Setting up Wake on LAN)*. BIOS settings, check *Maintenance Guide*.**

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

If you install the LAN boards after installing Standard Program Package, install Standard Program Package again according to *Chapter 1 (3.3 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.

- **Network adapters for the standard configuration**

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)**

- **If connecting with an optional LAN board**:

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**.
   Do not check the **Delete the driver software of this device** checkbox.
3. Select **Scan hardware change** from **Control**.

3.4.2 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.

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

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.

(3) **Setting up Wake on LAN**

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

    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.

-   For the Wake On LAN of the N8104-213/217, setting change in the BIOS.

    The **Enable PME on shutdown** in the **Advanced** of network adapter is not a Wake On LAN setting and should not be changed.

(4) **Important notes on using SET (Switch Embedded Teaming) in a Hyper-V environment.**

- When N8104-173/182/185 is use with SET (Switch Embedded Teaming), following steps below to set **Encapsulated Task Offload** to disable in beforehand.

    1. Start **Device Manager**.
    2. Open **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 **Encapsulated Task Offload** to show Value.
    4. Change the value to **Disabled** by the down-arrow button.
    5. Click **OK**, and then restart the system.
        Setup is now complete.

(5) **Important notes on using NIC Teaming (LBFO).**

- When R120h-1M / R120h-1M (2nd-Gen) / R120h-2M / R120h-2M (2nd-Gen) / R120h-1E / R120h-2E / T120h onboard network adapters and N8104-171/172/178/179/180/181/193/206/209 is use with NIC Teaming (LBFO), following steps below to set disable **ARP Offload** and **NS Offload** in beforehand.
    1. Start **Device Manager**.
    2. Open **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, set value of **ARP Offload** and **NS Offload** to **Disabled**.
    4. Click **OK**, and then restart the system.
        Setup is now complete.

3.4.3 Using Graphics Accelerator

For installation with the 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 (3.3 Standard Program Package Installation)*.

3.4.4 Using SAS Controller (N8103-184/E184)

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

3.4.5 Using SAS Controller (N8103-197)

For installation with the 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\cp051257.exe** on the DVD to install the driver.
3. After installing driver, restart the server.

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

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

If you install the RAID controller (N8103-189/190/191/192/193/194/195/201/237/238) 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\cp051257.exe** on the DVD to install the driver.

3. After installing driver, restart the server.

3.4.7 **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.

3.4.8 **Using Fibre Channel Controller (N8190-163/164/165/166/171/172)**

For installation with the Manual installation, the drivers are installed by Standard Program Package. If you
install the Fibre Channel Controller (N8190-163/164/165/166/171/172) after installing

Standard Program Package, install Standard Program Package again according to C*hapter 1 (3.3 Standard
Program Package Installation)*.

3.5   License Authentication

To use Windows Server 2022, you need finish the license authentication procedure.

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

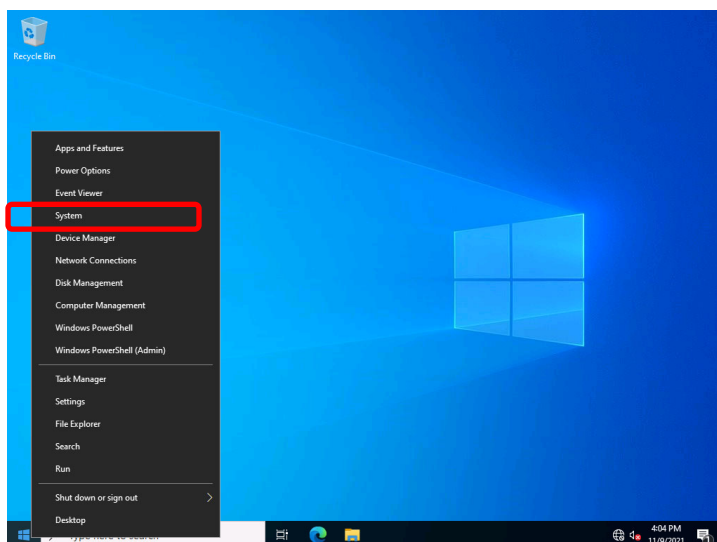| Note	To activate Windows Server 2022, enter the Product Key written on the COA (Certificate of Authenticity) label. The COA label of Windows Server 2022 is attached to the operating system media package.
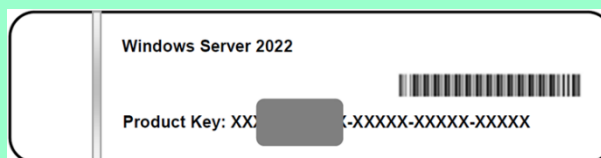
3.5.1   Desktop Experience

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**.
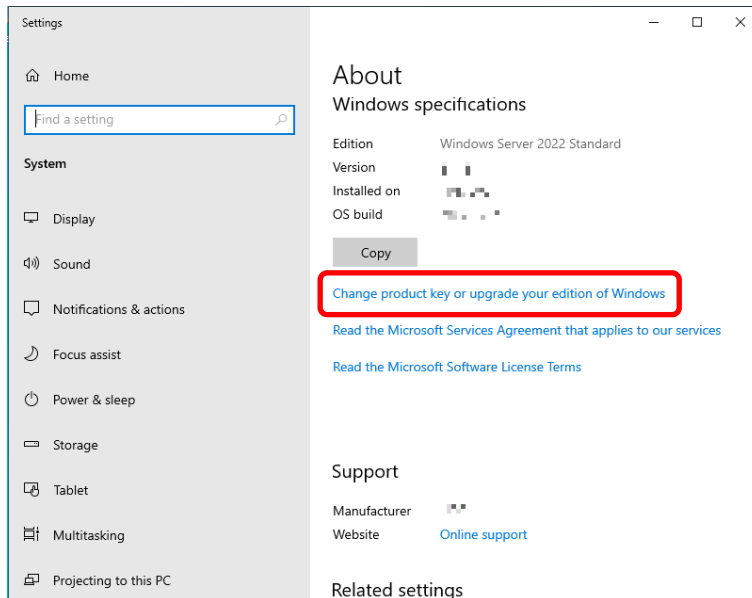
3.   Perform license authentication.
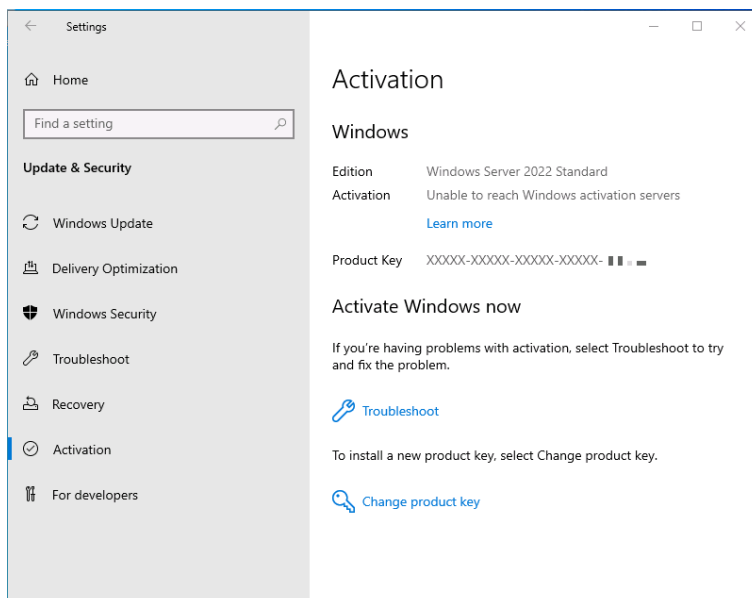
When connected to the Internet:

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.
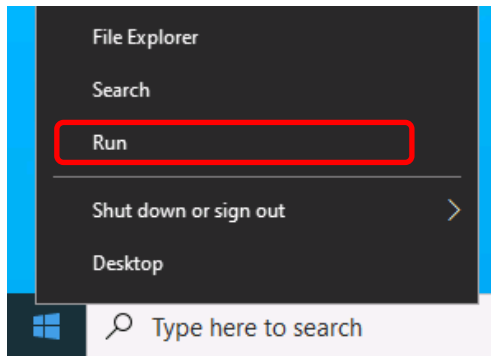
Windows Server 2022 DVD-ROM:

Product key is <u>already entered</u>:   Go to Step 8.

Product key is <u>not entered</u>:   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.
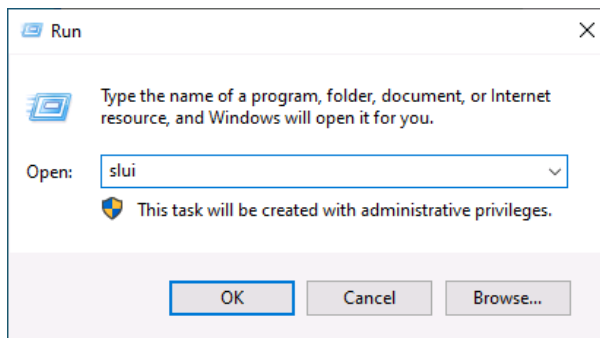

7.   Change the product key. On the next screen, type the product key.

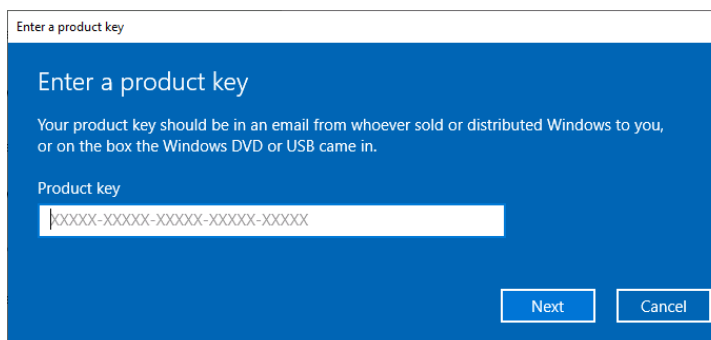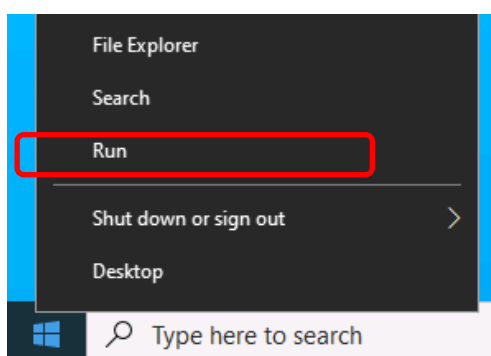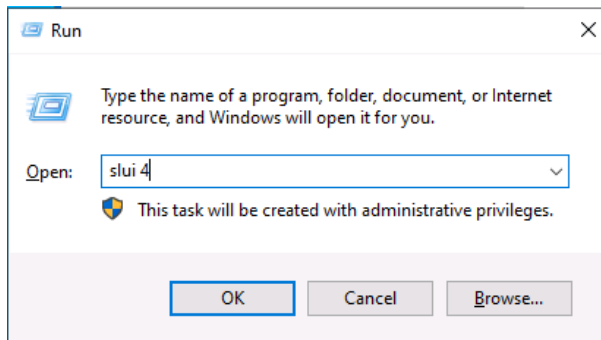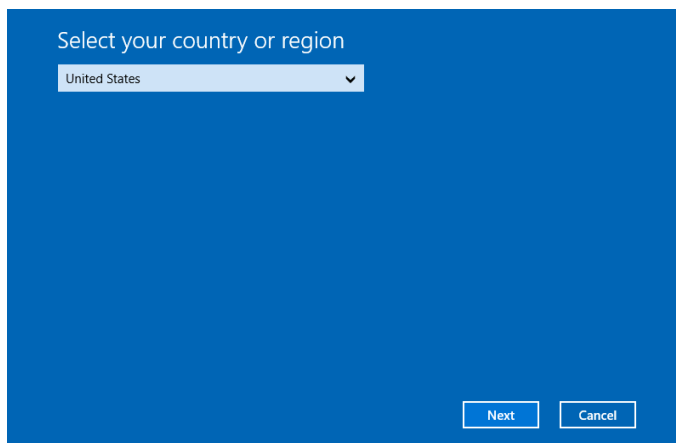8.   Right-click the lower left of the screen, and click **Run** from the menu displayed.

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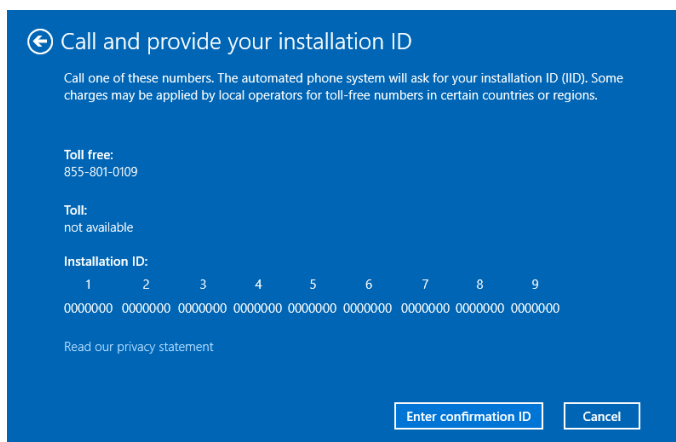
11. Call the Microsoft license activation hotline and then tell your installation ID.

Type the confirmation ID, and then click **Activate Windows**.
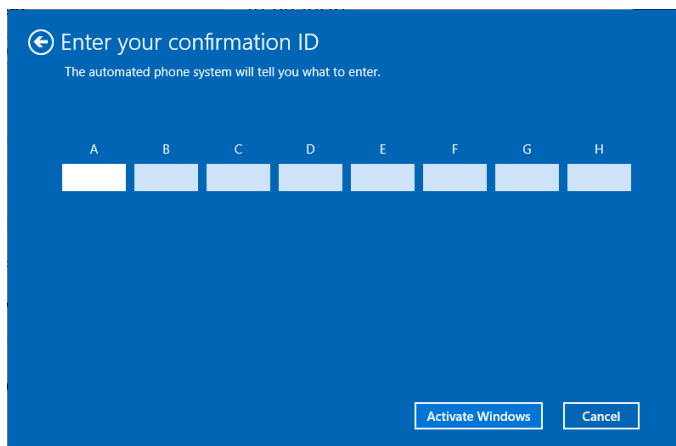
The authentication is now complete.

3.5.2 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 2022 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                                          57
```

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.

3.6   Setup of Windows Server 2022 NIC Teaming (LBFO)

Set up the network adapter teaming feature as shown below.

3.6.1 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.

3.6.2 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.

3.6.3 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.

3.6.4 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 the team must be connected to the same subnet.

- 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 Hyper-V environments, binding a teaming adapter to the virtual switch is deprecated.

  Please use SET(Switch Embedded Teaming) when you use teaming in combination with a virtual switch.

Refer to the following website for the latest information.

https://www.58support.nec.co.jp/global/download/w2022/index.html

- [Technical Information] - [NIC Teaming (LBFO)]

3.7 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.
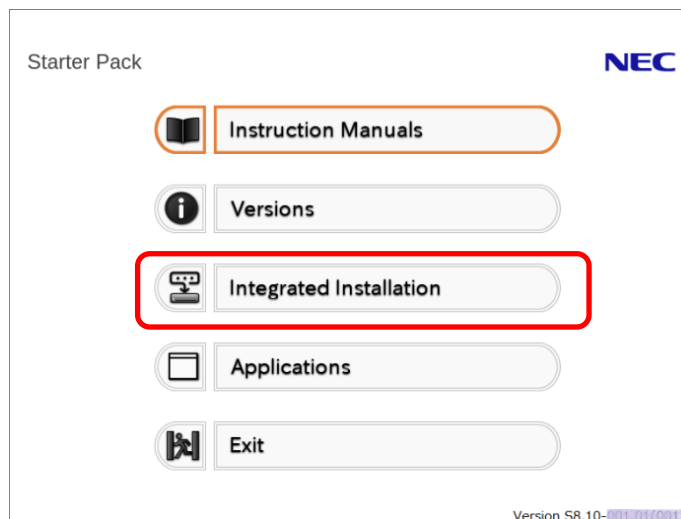
5. On the following screen, choose the check boxes corresponding to the applications you want to install, and then click **Install**. The chosen applications are automatically installed.
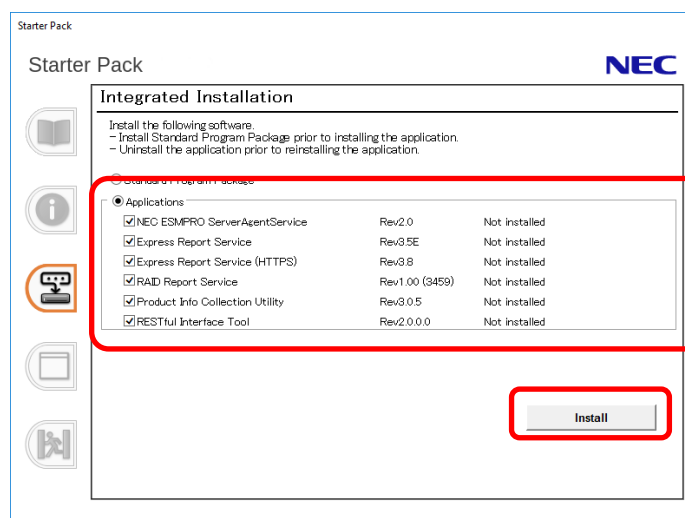
Note

- 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.
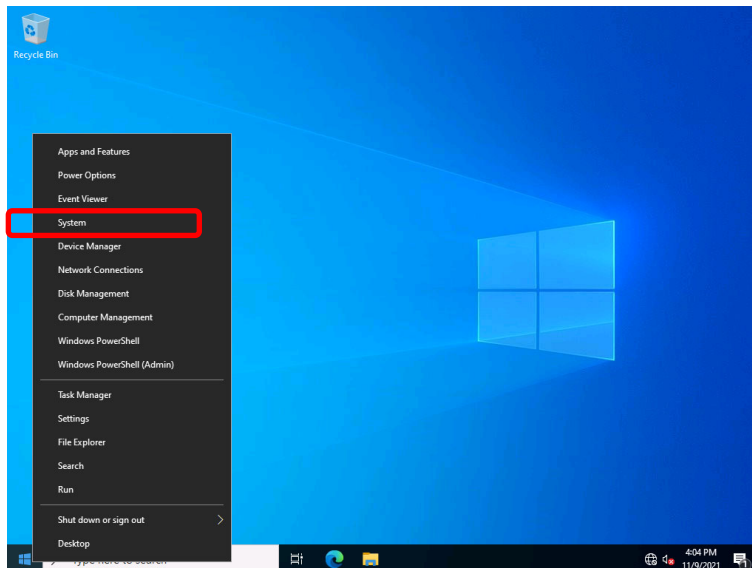
2. Click **Advanced system settings**.
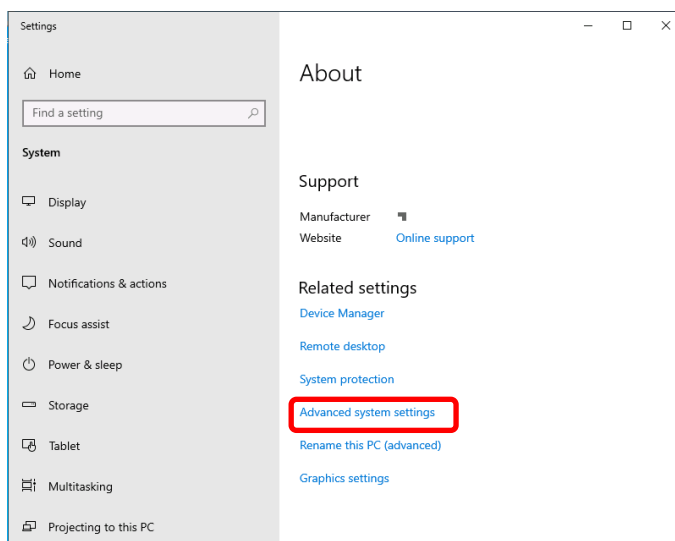
3.   In **Startup and Recovery**, click **Settings…**.
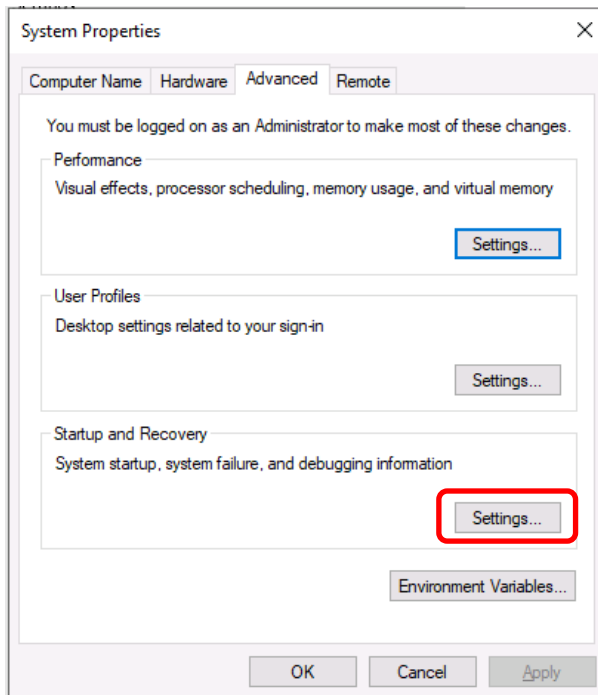
4.   Type a file name to store the debug information in the **Dump file** text box, and then click **OK**.
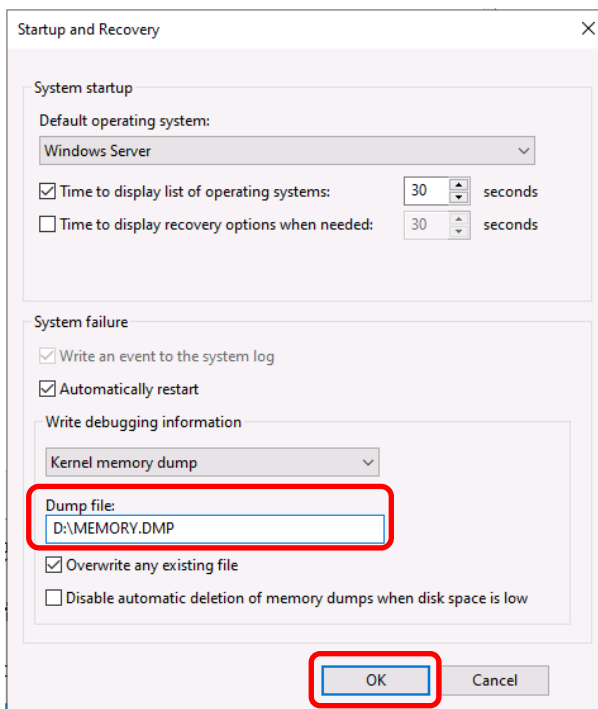
Note the following when specifying a dump file:

- We recommend specifying Kernel memory dump for Write debugging information.
- Specify a drive that has free space of "installed memory size + 400 MB"("installed memory size + 1,800 MB" when the installed memory size is 4TB or more) or more.
- 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.

5.   In **Performance**, click **Settings**.
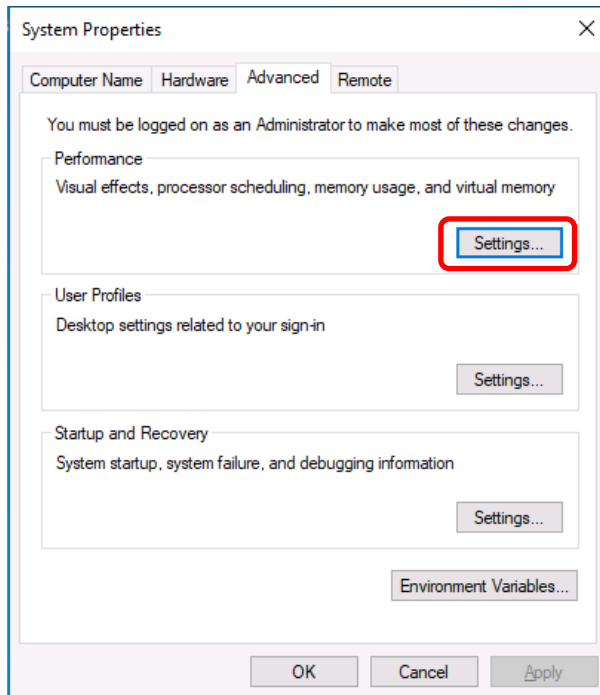
6.   Click the **Advanced** tab on the **Performance Options** window.
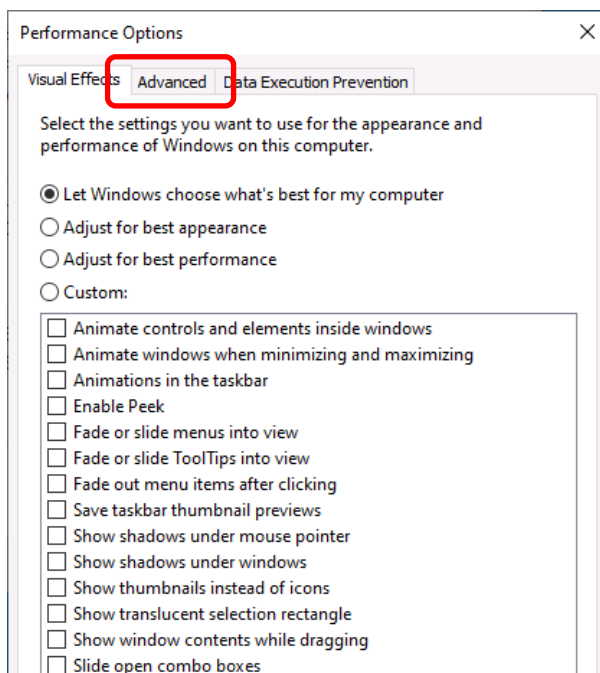
7.   In **Virtual memory**, click **Change…**.
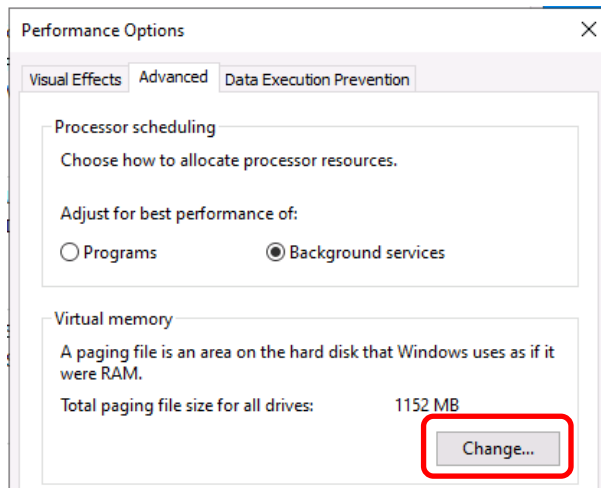
8.   Clear the **Automatically manage paging file size for all drives** check box,
     and then click **Custom size**.
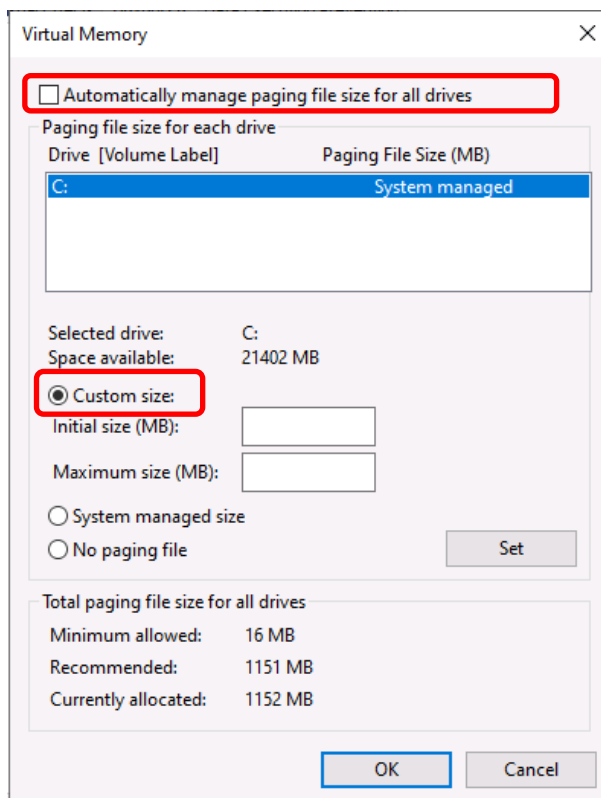
9.   In **Paging file size for each drive**, enter the value equal or larger than the recommended value for

Initial size, and the value larger than **Initial size** for **Maximum size**, and then click **Set**.
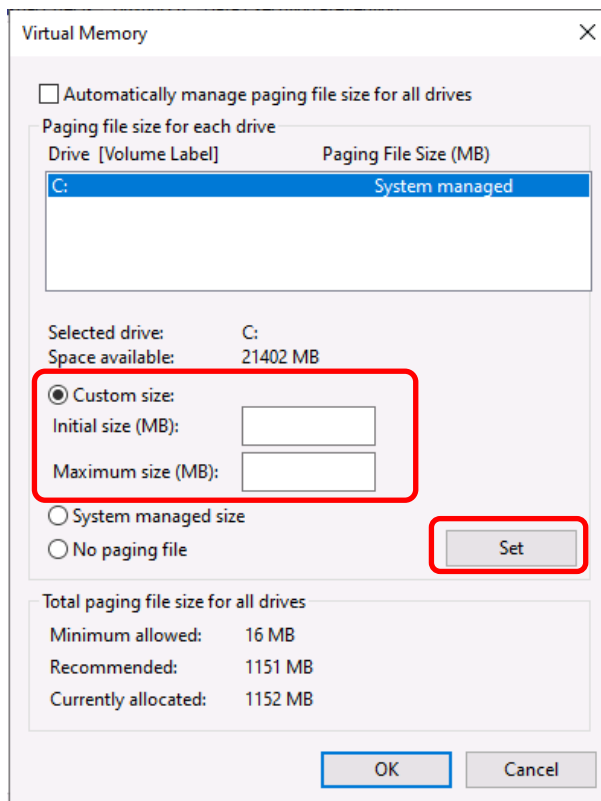
Note the following when specifying a paging file size:

● 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
+ 1,800MB 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 2022 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.

10.   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.
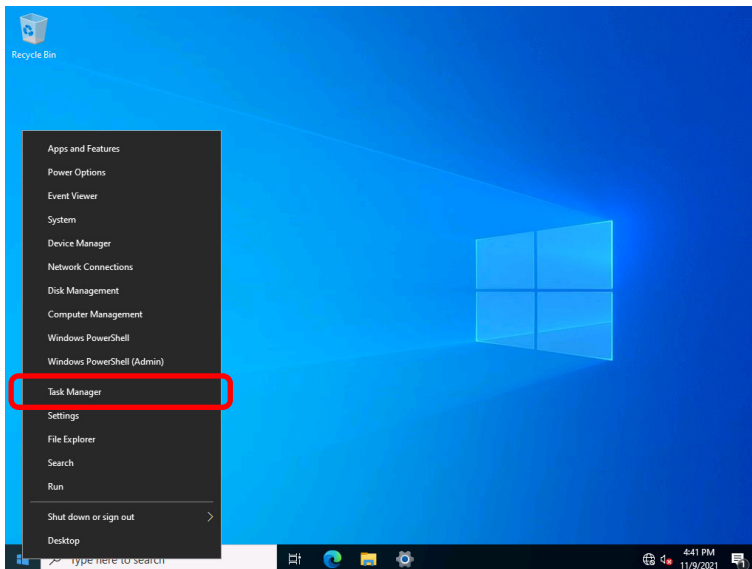
2.   Click **More details**.
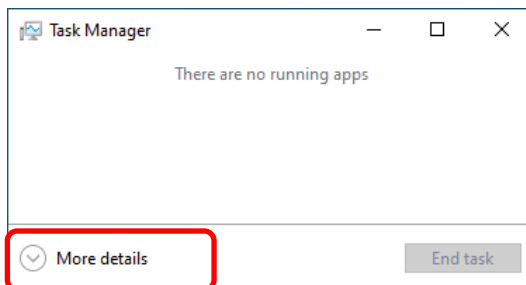
3.   Click the **Processes** tab.

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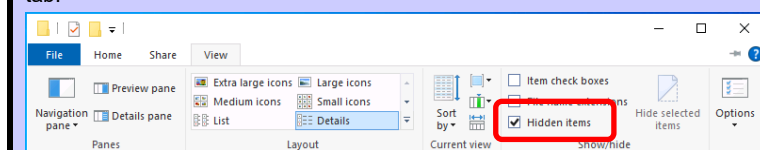
Get the user-mode process dump file from the folder shown in step 5.

5. Backup of system information

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

- Back up system settings contained in system utility.

  See *User's Guide (2. Description on System Utility)* for details of system utility.

- Back up detail information of iLO 5.

  See *" iLO 5 User's Guide"* for details of procedure.

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NEC Express5800 Series

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.

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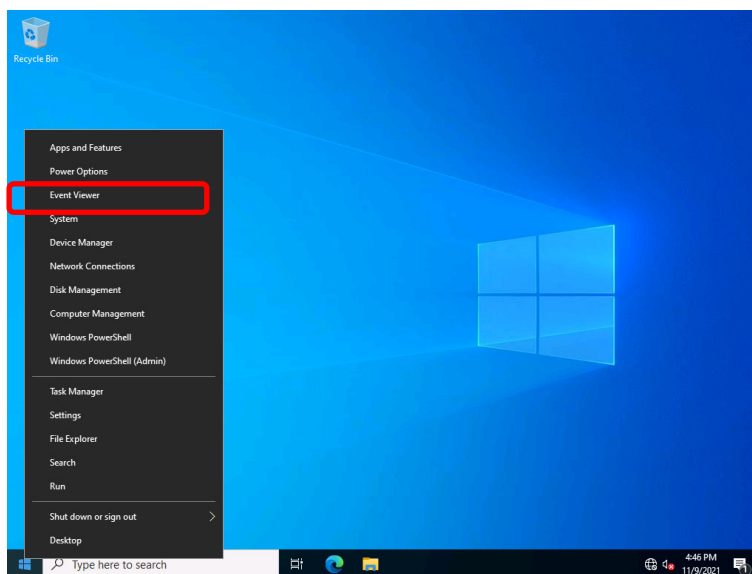
2.　Select the type of log in **Windows Logs**.

Application records events related to running applications.

Security records events related to security.

System records events that occur in Windows system components.
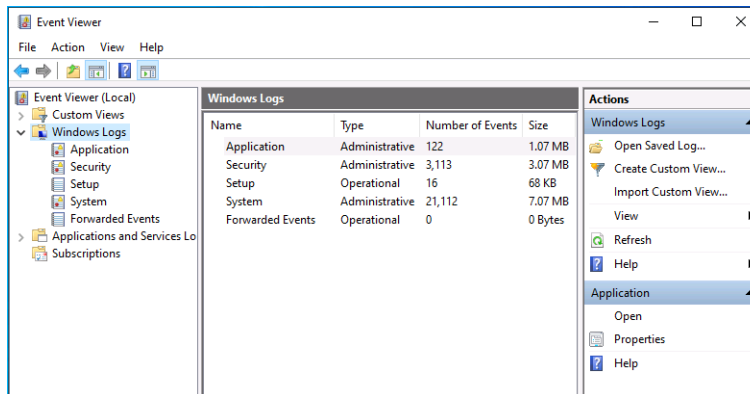
3.　Click **Save All Events As...** from **Action** menu.
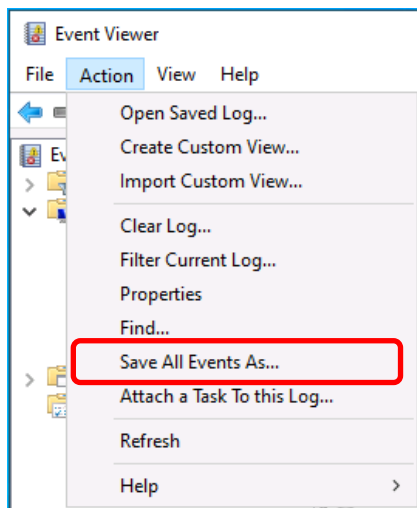
4.　Type the file name of the archived log in **File name**.

5.　Select the type of the log file you want to save in **Save as type**, and then click **Save**.

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.
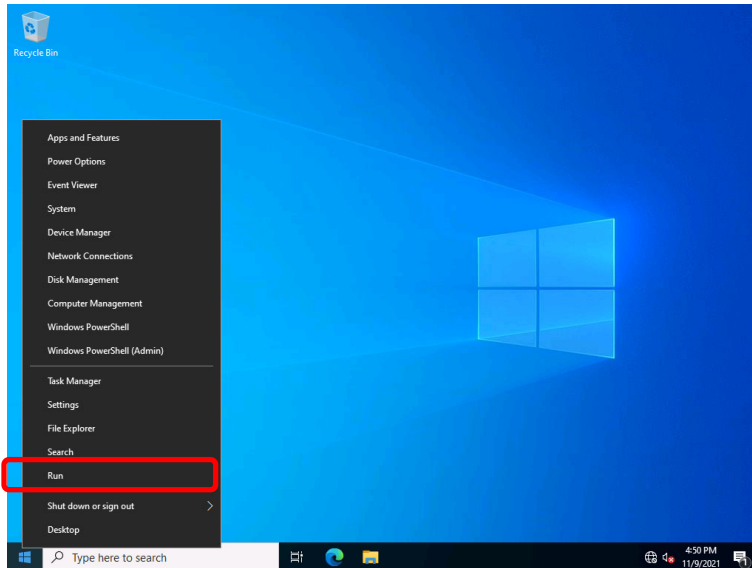
2. Type `msinfo32.exe`, and then press <Enter> key.
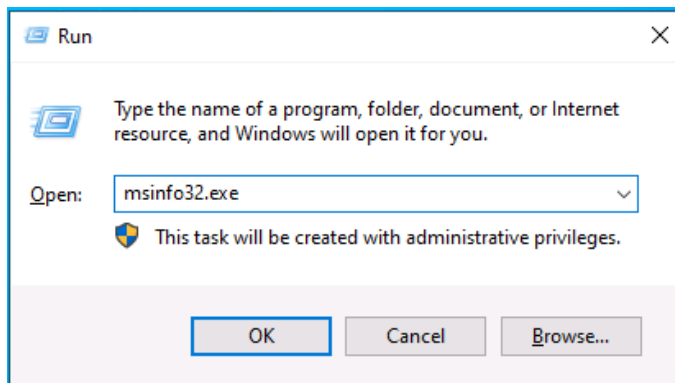
System Information starts.

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**

An error occurred during installing the Standard Program Package.
To handle this error, refer to troubleshooting of Installation Guide
(Windows) according to your Starter Pack version.
(Code:)

Click [OK] to restart the computer.
If the Starter Pack disc is inserted, click [OK] and then remove it.

OK
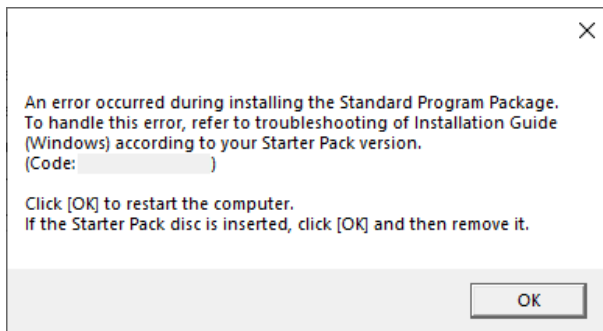
→   According to your environment, individual installation of firmware and drivers may be required before applying Standard Program Package.
Refer to Chapter 1 (3.3 Standard Program Package Installation) for details.
When the problem does not solve, collect log by following procedure to request survey 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\gatherlog.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 (3.4 Setup of Device Drivers)* and *Chapter1 (3.3 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 2022

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 on-board 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 on-board RAID controller:

    ```
    drvload D:\software\010\drivers\sw_raid1_driver\ws2022\SmartDQ.inf
    ```

Tips	● When the server configures an on-board 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\ws2022\SmartDQ.inf

●   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.

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Appendix

1. **List of Windows Event Logs**

   Shows a list of Windows event logs.

1. List of Windows Event Logs

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

All Windows OS   "System Log"

ID	Source	Level	Message (Description)
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 XXXXXXXXXXXXXXXXX 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"

ID	Source	Level	Message (Description)
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 XXXXXXXXXXXXXXXXX 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	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"

ID	Source	Level	Message (Description)
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"

ID	Source	Level	Message (Description)
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 2022   "System Log"

ID	Source	Level	Message (Description)
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		This event does not affect system operation.

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

Windows Server 2022   "System Log"

ID	Source	Level	Message (Description)
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 N8104-213/215217/219, 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		This event does not affect system operation.
27	e1i68x64	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	e1rexpress	Warning	xxxxx #x 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	i40ei68	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	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.
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 2022   "System Log"

ID	Source	Level	Message (Description)
27	ixi68x64	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.
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	i40ei68	Warning	xxxxx #xx 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 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 2022　"System Log"

ID	Source	Level	Message (Description)
89	icea	Error	xxxxx #xx PROBLEM: An unknown error occurred when loading the DDP package. Entering Safe Mode. ACTION: Restart the Adapter. If the problem persists, 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.
	When installing an OS, starting system, or applying Standard Program Package		This event does not affect system operation.
91	icea	Error	xxxxx #xx PROBLEM: The DDP package signature is not valid and cannot be loaded. Entering Safe Mode. 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.
	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\RaidPort0.
	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.

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

Windows Server 2022   ”System Log”

ID	Source	Level	Message (Description)
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.

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.
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.
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. But, this event may be registered in large numbers, and this can be suppress in the following method: - Avoid intentionally disconnecting cables - Do not mount the SFP+/SFP28 module (N8104-189/190) in unused slots - Do not connect DA cable with unconnected opposite side

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

Windows Server 2022   "System Log"

ID	Source	Level	Message (Description)
280	Microsoft-Windows-Hyper-V-VmSwitch	Warning	VMS Utilization Plan Vport QueuePairs adjusted from requested number (xx) to actual (xx). Reason:The number requested exceeds the maximum QPs per VPort supported by physical NIC. NIC Name:/DEVICE/{xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx} (Friendly Name: xxxxx #xx). * x is a different depending on the LAN board.
	When you create a virtual switch using the Switch Embedded Teaming (SET) feature. When virtual switches using the Switch Embedded Teaming (SET) feature is setting to a virtual machine and the virtual machine or Hyper-V host is rebooted.		This event does not affect system operation.
1284	icea	Error	xxxxx #xx PROBLEM: DDP package failed. Possible Solution: Update to latest base driver and DDP package. * 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.
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.
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.
10016	Microsoft-Windows-DistributedCOM	Warning	The application-specific permission settings do not grant Local Launch permission for the COM Server application with CLSID {**********************************} and APPID {**********************************} to the user ********************* SID (**********************) from address LocalHost (Using LRPC) running in the application container Unavailable SID (Unavailable). This security permission can be modified using the Component Services administrative tool.
	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 2022   "System Log"

ID	Source	Level	Message (Description)
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.

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

Windows Server 2022   "Application Event Log"

ID	Source	Level	Message (Description)
86	Microsoft-Windows-Certificate ServicesClient-CertEnroll	Error	SCEP Certificate enrollment initialization for XXXXXXXX via https://IFX-KeyId-5d0815951f5f60638a69e7252f3ec4becd7554b2.microsoftaik.azure.net/templates/Aik/scep
	When starting system.		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 2022   "Applications and Services Logs"

ID	Source	Level	Message (Description)
21	Microsoft-Windows-AppModel-Runtime	Error	CreateAppContainerProfile failed for AppContainer onecore\ds\security\gina\profile\profext\appcontainer.cpp Line:1862 Usermode Font Driver Host microsoft.windows.fontdrvhost with error 0x8007000A.
	When installing an OS		This event does not affect system operation if it is not recorded repeatedly.
66	Microsoft-Windows-AppModel-Runtime	Error	Failed with 0x57 retrieving AppModel Runtime status for package Windows for user *********.
	When installing an OS		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	Microsoft-Windows-AppReadiness	Error	Failed with 0x57 retrieving AppModel Runtime status for package Windows for user *********.
	When installing an OS		This event does not affect system operation if it is recorded only on the first startup and 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-002473-299-00	December 2022	The first edition