Installation Guide (Windows)

NEC Express Server
Express5800 Series

Express5800/R310g-E4
Express5800/R320g-E4
Express5800/R320g-M4
EXP320T, EXP320V

30.104.01-102.01
February 2019

Manuals

Attached as a book	
Safety Precautions and Regulatory Notices	Describes points of caution to ensure the safe use of this server. **Read these cautions before using this server.**
Included in EXPRESSBUILDER as an electric manual	
User's Guide	
Chapter 1: General Description	Overviews, names, and functions of the server components
Chapter 2: Preparations	Installation of additional options, connection of peripheral devices, and suitable location for this server
Chapter 3: Setup	System BIOS configurations and summary of EXPRESSBUILDER
Chapter 4: Appendix	Specifications
Installation Guide (Windows)	
Chapter 1: Installing Operating System	Installation of OS and drivers, and precautions for installation
Chapter 2: Installing Bundled Software	Installation of NEC ESMPRO, BMC Configuration, and other bundled software
Maintenance Guide (Windows)	
Chapter 1: Maintenance	Server maintenance, error messages, and troubleshooting
Chapter 2: Configuring and Upgrading the System	Changing hardware configuration, installing additional devices and setting up management tools
Chapter 3: Useful Features	The detail of system BIOS settings, SAS Configuration Utility, and EXPRESSBUILDER
Other manuals	
The detail of NEC ESMPRO, BMC Configuration, and other features.	

Contents

Conventions Used in This Document

Notations used in the text

In addition to safety-related symbols urging caution, three other types of notations are used in this document. These notations have the following meanings.

Important	Indicates critical items that must be followed when handling 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 the following drive. This drive is referred to as *optical disk drive* in this document.

- DVD Super MULTI drive

Hard disk drive

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

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

Removable media

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

- USB flash drive
- Flash FDD

Abbreviations of Operating Systems

Windows Operating Systems are referred to as follows.

Operating Systems which is being supported is different depending on product model.
See Chapter 1 (1.2 Supported Windows) in Installation Guide (Windows) for detailed information.

Notations in this document	Official names of OS
Windows Server 2016	Windows Server 2016 Standard
	Windows Server 2016 Datacenter

POST

POST described in this document refers to the following.

- Power On Self-Test

BMC

BMC described in this document refers to the following.

- Baseboard Management Controller

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Latest editions

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https://www.nec.com/

NEC Express5800 Series
Express5800/R310g-E4, R320g-E4, R320g-M4

1

Installing Operating System

This chapter describes how to install an operating system.

1. **Before Starting Setup**

   Describes the Service Packs and mass storage controllers that EXPRESSBUILDER supports.

2. **Setting Up the Operating System**

   Describes the flow of setting up the operating system.

3. **Setting Up Windows Server 2016**

   Describes how to set up Windows Server 2016.

4. **Setup for Solving Problems**

   Describes the features that must be set up in advance so that the server can recover from any trouble quickly and precisely.

5. **Windows OS Parameter File**

   Describes how to set up the operating system by using the parameter file.

6. **Backing Up System Information**

   Describes how to inherit system information when the device is replaced.

7. **Precautions for Using Hyper-V**

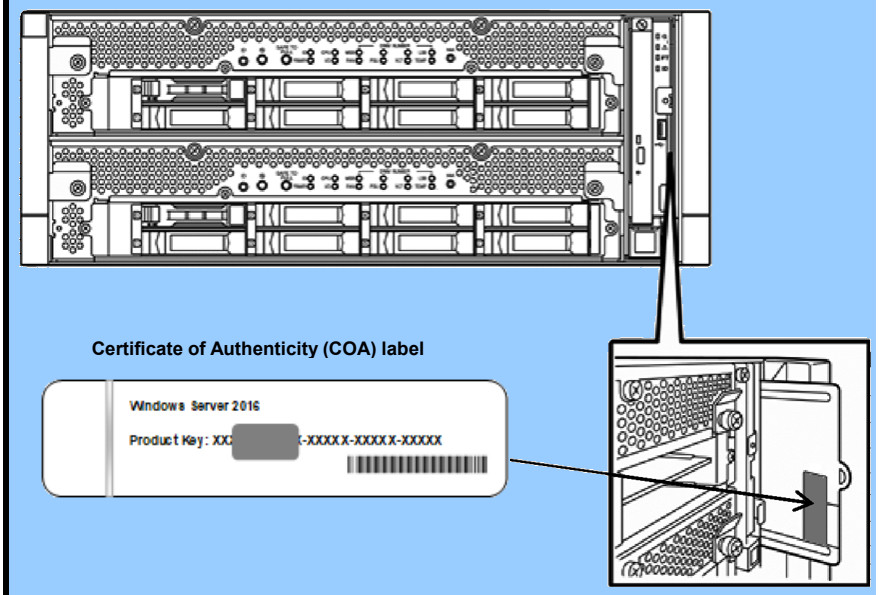
   This section describes precautions for using Hyper-V on Express5800/ft series.

1. Before Starting Setup

This section describes a supported Windows, Service Pack, and other options for installation.

Important

The product key on the Certificate of Authenticity (COA) label is necessary information when authenticate the license.



Scrape off with a coin or the like lightly the scratch that covers a part of the product key. When you scrape, be careful not to break the part that the product key is printed on.
The label cannot be reissued if it is lost or stained. It is recommended to write down the product key and keep it with other accessories.

1.1 Starting EXPRESSBUILDER

Use the attached EXPRESSBUILDER to re-install the OS.

To start EXPRESSBUILDER, insert the DVD into the server and power on the server, or press <Ctrl> + <Alt> + <Delete> keys to restart the server.

For details, see *Chapter 3* (*5. Details of EXPRESSBUILDER*) in the *Maintenance Guide*.

1.2 Supported Windows OS

EXPRESSBUILDER supports the following editions of Windows operating systems:

EB ・・・ Setup with EXPRESSBUILDER

OS ・・・ Setup with Windows Standard Installer

Express5800/R310g-E4, R320g-E4, R320g-M4 model

Windows OS		Boot mode		Setup	
		UEFI	Legacy	EB	OS
Windows Server 2016 *1, *2	Standard	✓	N/A	✓	✓
	Datacenter	✓	N/A	✓	✓

✓ : Supported

*1: Supported on the Desktop Experience only.
*2: “Nano Server” is not supported on Express5800 series servers.

1.3 Service Pack Support

The following combination of operating system installation discs and Service Packs are supported by EXPRESSBUILDER.

OS installation disc	No Service Pack	Applying Service Pack 1
Windows Server 2016	✓	N/A

✓ : Supported

1.4 Mass Storage Controllers Supported by EXPRESSBUILDER

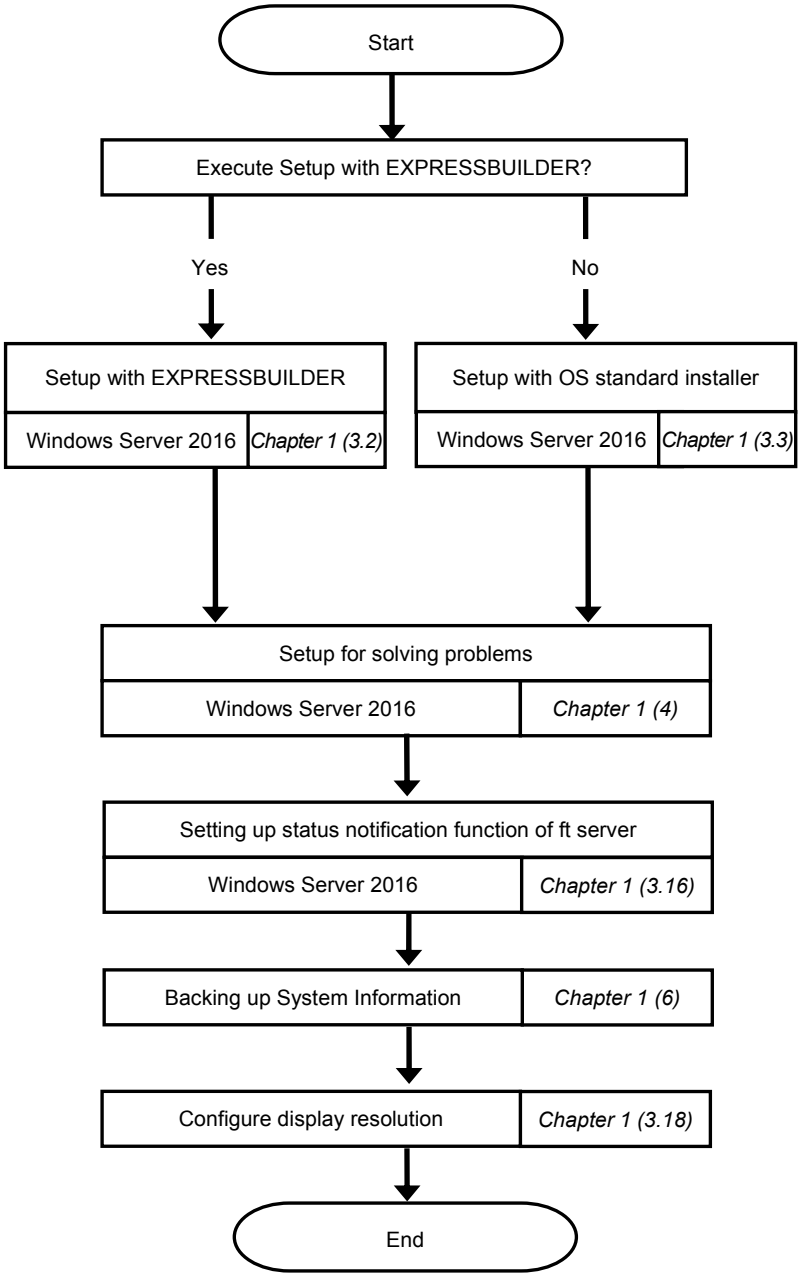
The table below lists the mass storage controllers supported by EXPRESSBUILDER.

	Windows Server 2016
Controller that can be installed by using EXPRESSBUILDER	
None	N/A
Other options	
N8803-040AF Fibre Channel 1ch board kit	✓
N8803-041 SAS board	✓

✓: Supported

2. Setting Up the Operating System

See the figure below to set up your OS installation.



3. Setting Up Windows Server 2016

Set up Windows Server 2016.

3.1 Before Starting Setup

3.1.1 Precautions

Read through the cautions explained here before starting setup.

EB : Setup with EXPRESSBUILDER

OS : Setup with Windows standard installer

BIOS settings		
EB	OS	Change Boot Mode to UEFI Mode. See *Chapter 3 (1. System BIOS) in Maintenance Guide* (Windows) for details. **Boot → Boot Mode → UEFI** **Note** The [Boot Mode] setting is set to [UEFI] when [Load Setup Defaults] in BIOS Setup Utility (SETUP) is executed.
EB	OS	At re-installation, open **Boot Option Priorities** in **BIOS Setup Utility** to make sure that the higher boot priority than **Windows Boot Manager** is specified for optical disk drive. **Example of correct setting** **[Boot]–[Boot Option Priorities]** - **Boot Option #1 [UEFI: Optical Disk Drive]** - **Boot Option #2 [Windows Boot Manager]** → The system is booted from the OS installation media. **Example of incorrect setting** **[Boot] - [Boot Option Priorities]** - **Boot Option #1 [Windows Boot Manager]** - **Boot Option #2 [UEFI: Optical Disk Drive]** →The system is not booted from the OS installation media. **Note** ・ **Be sure to insert OS installation disc into optical disk drive before running BIOS Setup Utility.** ・ **If Windows Boot Manager is not displayed in Boot Option Priorities, you need not to confirm the boot priority.**

Hardware configuration

The following hardware configurations require special procedures.

EB OS

LTO and similar media

Do not set media that is unnecessary to installation during setup.

EB OS

Setup when mass memory is installed

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

If you fail to secure the dump file size, use Windows standard installer for setup, and allocate the file space required for storing the dump file to other hard disk drives by performing 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 store the debug information (required dump file size) by referring to *Chapter 1 (4. Setup for Solving Problems)*.

If the hard disk drive does not have enough space to write the dump file, 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 size to install the OS and paging file, expand the partition size or add another hard disk drive.

If sufficient space cannot be secured for the paging file, perform either of the following after setting up Windows is complete.

— **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 the installed memory size + 400 MB or more in a drive other than the system drive.

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

Example of correct setting

C: No paging file exists
D: Paging file whose size is "installed memory size + 400 MB" or more

→ The paging file in drive D can be used for collecting memory dump because its size is "installed memory size + 400 MB" or more.

Example of incorrect setting 1

C: Paging file whose size is smaller than the installed memory size
D: Paging file whose size is "installed memory size + 400 MB" or more

→ The paging file in drive C is used for collecting memory dump, but collection may fail because the size of the paging file is smaller than the installed memory size.

Example of incorrect setting 2

C: Paging file whose size is "installed memory size × 0.5"
D: Paging file whose size is "installed memory size × 0.5"
E: Paging file whose size is 400 MB

→ The total paging file size in all drives is "installed memory size + 400 MB", but collection may fail because only the paging file in drive C is used for collecting memory dump.

Example of incorrect setting 3

C: No paging file exists
D: Paging file whose size is "installed memory size + 400 MB" or more (in dynamic volume)

→ Paging files in a dynamic volume cannot be used for collecting memory dump. Thus, collecting memory dump fails.

– **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.

<When specifying the file named "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:

- Pay strict attention to edit the registry.
- The setting is applied after restarting the system.
- Specify a drive that has free space of "installed memory size + 400 MB" 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 virtual memory. Specify the paging file size so that sufficient virtual memory can be allocated in the entire system.

System partition size

EB OS

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

OS size + paging file size + dump file size + application size + duplicated dump file size

OS size	= 15,200MB
Paging file size (recommended)	= installed memory size × 1.5
Dump file size	= installed memory size + 400MB
Application size	= as required by the application
Dedicated Dump File size (default)	=8,193MB

For example, if the installed memory size is 1 GB (1,024 MB) and application size is 100 MB, and Full Installation is selected, the partition size is calculated as follows:

15,200MB + (1,024MB × 1.5) + 1,024MB+ 400MB+ 100 MB + 8,193MB = 26,453MB

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 : 32,768 MB (32 GB) or more

*1 GB = 1,024 MB

Note

- The above paging file size is 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 installed memory and write debug information, the maximum size of the dump file is "size of installed memory + 400 MB".
- 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.

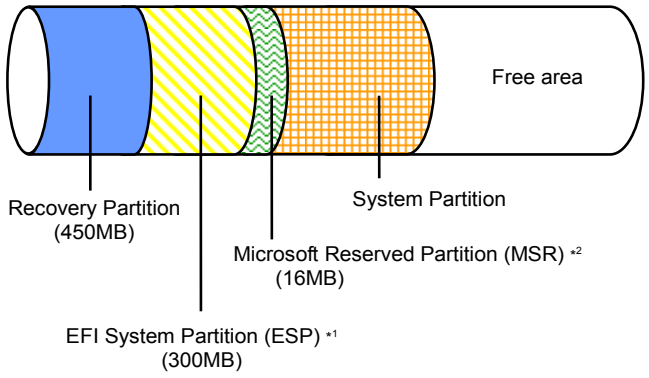
Tips

When new partition is created, Windows OS creates the following partitions at the top of hard disk drive.

- Recovery Partition : 450 MB
- EFI System Partition (ESP) : 100 MB *1
- Microsoft Reserved Partition (MSR) : 16 MB *2

528 MB is allocated for these three partitions out of the specified partition size. For example, when 61,440 MB is specified for partition size, the area available free area is calculated as follows:

61,440MB - (450MB + 100MB + 16MB) ＝ 60,874MB



*1 300 MB in size depending on hard disk drive type.

*2 MSR is not displayed on Disk Management

Windows Server 2016 Hyper-V support		
EB	OS	Refer to the following web site for information related to Windows Server 2016 Hyper-V. • http://www.58support.nec.co.jp/global/download/w2016/hyper-v/hyper-v-ws2016.html • *Chapter 1 (7. Precautions for Using Hyper-V)*
When compressing system drive		
EB	OS	Do not compress the root directory and the Windows directory. **Tips** The Windows Server 2016 directory is labeled as "Windows". If you compress the root directory and the Windows directory, operational stability cannot be ensured because the Windows File Protection (WFP) may replace an unassigned driver with a signed driver.
Support for Storage spaces and thin-provisioning in Windows Server 2016		
EB	OS	The server does not support this feature.
Device Guard feature and Credential Guard feature		
EB	OS	Device Guard feature and Credential Guard feature are not available for Express Server.

3.1.2 Preparation

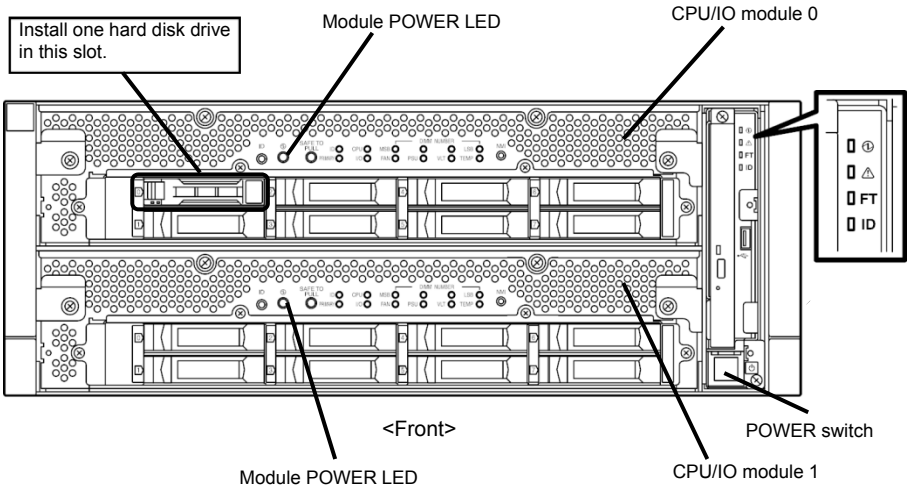
The following steps are required to prepare for re-installing an OS (setup with EXPRESSBUILDER or Windows standard installer):

1. When the module POWER LED on CPU/IO module is on, shut down the OS.
2. Unplug the power cord from outlet while the module POWER LED is blinking.
3. Perform the preparation process for the server as shown below.
   - Install CPU/IO modules 0 and 1.
   - Install one hard disk drive in slot 0 of CPU/IO module 0 only.
   - Disconnect all LAN cables.
   - Disconnect the cable for tape device from the connector on SAS board.
   - Disconnect the cable for device from the connector on Fibre Channel board.

Important **If the hard disk drive is not a new one, physically format it. See *Chapter 3 (3.3 Physical Formatting of the Hard Disk Drive)* in *Maintenance Guide* (Windows) for physical formatting.**

4. Confirm that the hard disk drive is installed correctly.

   Install only one hard disk drive in CPU/IO module 0.
   Do not install any hard disk drive in CPU/IO module 1.

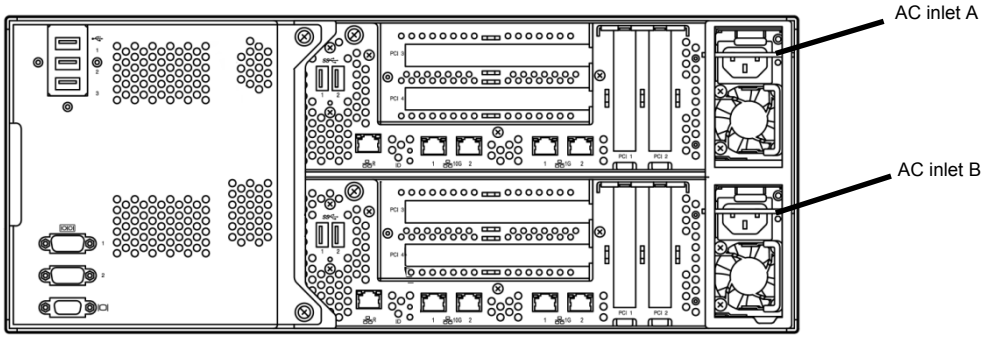


5. Connect power cords to the server in the following order.

   (1) Connect a power cord to AC inlet A.

   (2) Connect a power cord to AC inlet B.

   (3) Make sure that POWER LED on each module is blinking green.



<Rear>

Note If you disconnect the power cord, wait at least 30 seconds before connect it again.

3.1.3 Disabling OS Boot Monitoring Feature

The following steps are required for installing/re-installing Windows:

Important **The factory setting of [OS Boot Monitoring] is enabled. If you proceed without change, the setup fails.**

Tips For details of operations for BIOS Setup Utility and parameters for boot monitoring function, see *Chapter 3 (1. System BIOS)* in *Maintenance Guide (Windows)*.

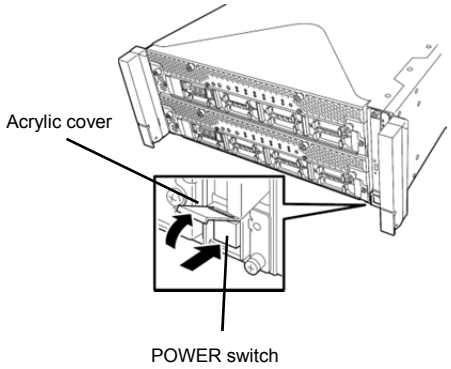
1. Turn on the display and peripherals connected to the server.

Note If the power cords are connected to a power controller like a UPS, make sure that it is powered on.

2. Remove the front bezel.
3. Press the POWER switch located on the front side of the server.

   Lift the acrylic cover, and press the POWER switch.

Important **Do not turn off the power before the "NEC" logo appears.**



After a while, the "NEC" logo will appear on the screen.

Tips

While the "NEC" logo is displayed on the screen, NEC Express5800/ft series performs a power-on self test (POST) to check itself. OS starts upon completion of POST.

For details, see *Chapter 3 (1.1 POST)* in *User's Guide*.

Note

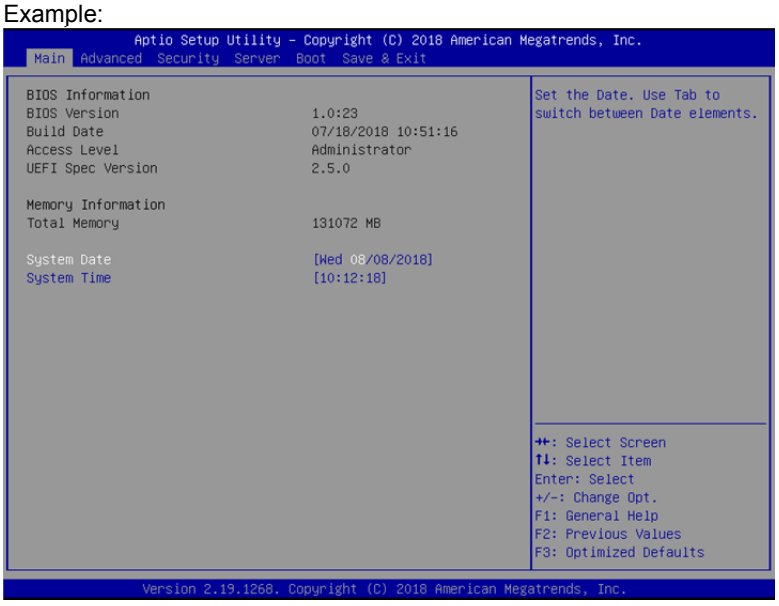
If the server finds errors during POST, it will interrupt POST and display the error message. See *Chapter 1 (6.2 POST Error Message)* in *Maintenance Guide (Windows)*.

4. When POST proceeds, the following message appears at lower left of the screen.

   `Press <F2> SETUP, ...` (The on-screen message depends on your system environment.)

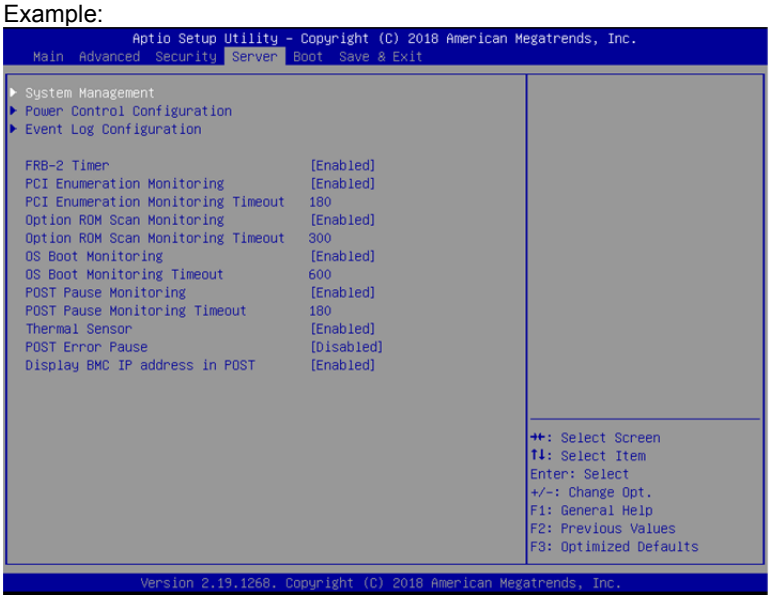
   If you press <**F2**>, SETUP will start after POST, and the Main menu appears.

   Example:



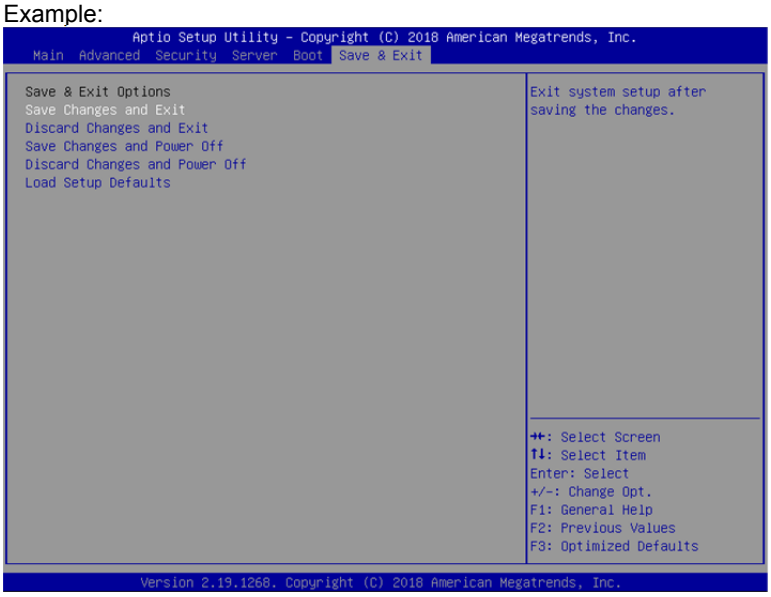
5. When you move the cursor onto **Server**, the **Server** menu appears.

   Example:



6. Move the cursor onto **OS Boot Monitoring** and press **Enter**.
7. Among the parameters, choose **Disabled** and press **Enter**.
8. Move the cursor onto **Save & Exit**, the **Save & Exit** menu appears.

   Example:



9. Select **Save changes and Exit**.

   On the confirmation window shown below, select **Yes** to save parameters and exit SETUP.

   System reboots when SETUP completes.

Save configuration and exit?
[Yes] No

Now **OS Boot Monitoring** function is disabled.

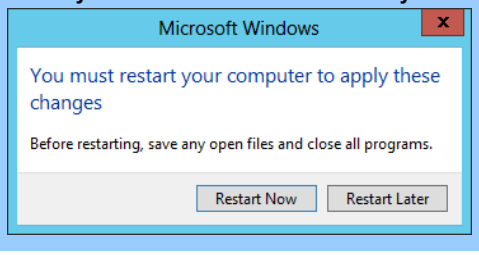
3.2 Setup with EXPRESSBUILDER

This section describes how to install Windows with EXPRESSBUILDER.

Important

- **Setup with EXPRESSBUILDER deletes all data of the hard disk drive depending on the settings. Pay attention to input parameters. You must be especially careful when configuring the following:**
  - **Partition Settings**

  Backing up user data, as needed, is recommended.
- **Before starting setup, be sure to disconnect hard disk drives that are not to be setup. Install those hard disk drives after setup has completed. Conducting setup with hard disk drives being connected may cause existing data to be erased unintentionally. It is recommended to make backup copy of user data before starting setup.**
- **Although some dialog boxes and popup windows are displayed during installing ft Server Control Software in Setup, do not operate from the keyboard and the mouse. Installation is continued automatically.**
  Do not operate especially although the following dialog is displayed. When installation is stopped with operation of a keyboard or a mouse, there is a possibility that OS does not start normally.



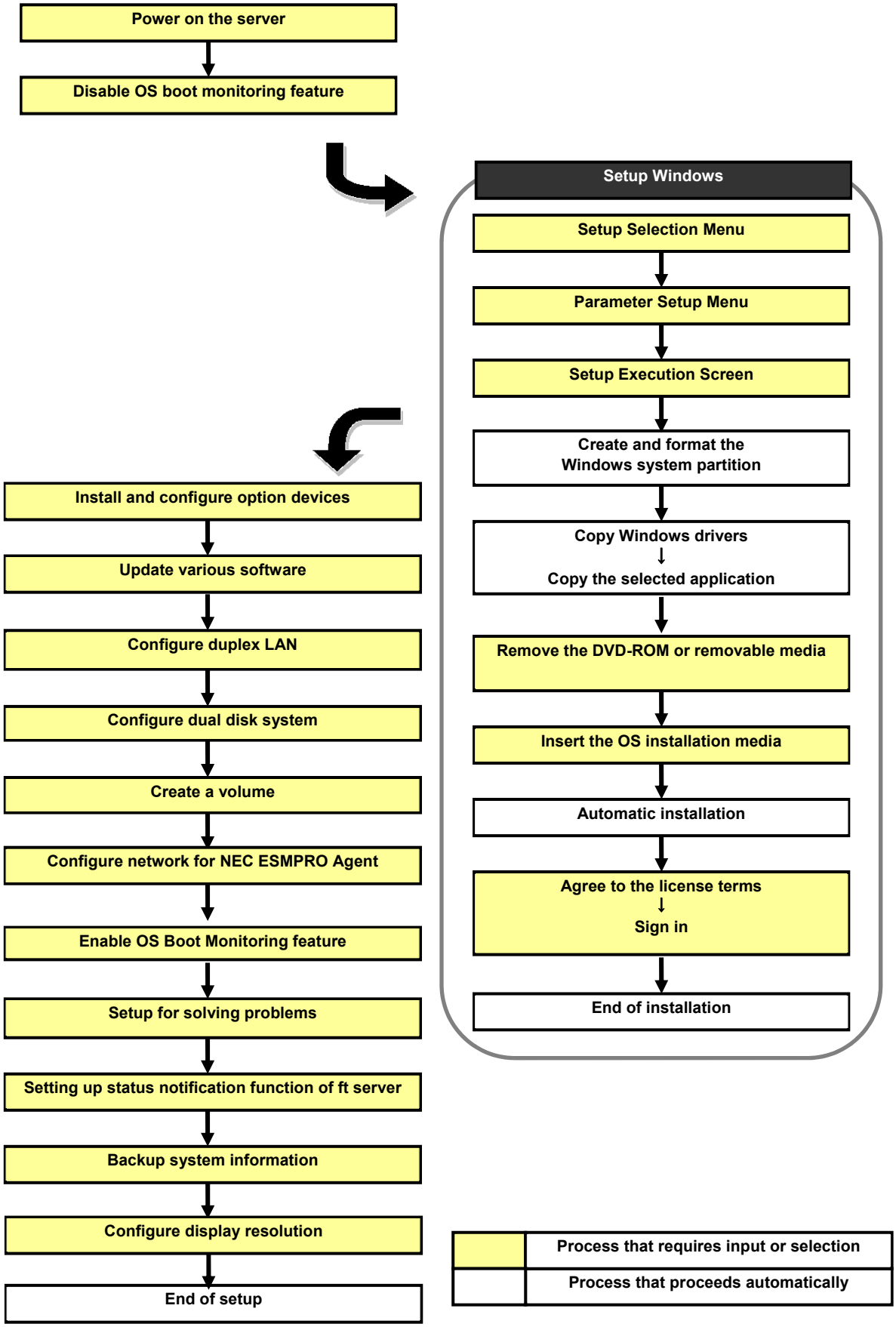
Note

Device Guard: virtualization-based security is disabled by using this setup. Do not enable Device Guard feature because this feature is not available for this server.

Tips

- Setup with EXPRESSBUILDER allows you to use a pre-specified parameter file or save the parameters specified in setup as a parameter file on a removable media.
- For details on creating a parameter file, see *Chapter 1 (5. Windows OS Parameter File)*.

3.2.1 Setup flow



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 2016 DVD-ROM*)
- **EXPRESSBUILDER DVD**
- Prepare if needed:

  Removable media for Windows OS parameter file

  ft Server Control Software update
  See *Chapter 1 (3.7.1 Applying ft Server Control Software Update Module)* for more information.

3.2.3 Before setting up

During Setup with EXPRESSBUILDER, parameters are specified through the wizard.

You can also save the parameters as one file (a parameter file) in removable media.

Note Read through the items in *Chapter 1 (3.1 Before Starting Setup)* prior to installing Windows.

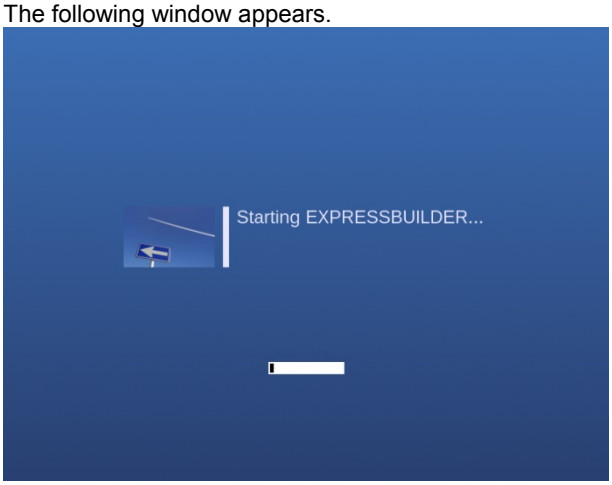
3.2.4 Setup procedure

1. Prepare for setup according to *Chapter 1 (3.1.2 Preparation)*.
2. Be sure to disable OS Boot Monitoring feature according to Chapter 1 (*3.1.3 Disabling OS Boot Monitoring Feature*).

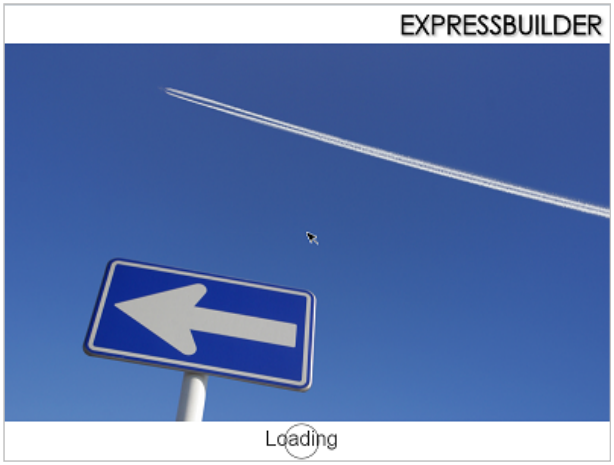
   Important **OS Boot Monitoring feature is enabled by the shipping default. Setup process will fail if this feature is enabled.**

3. Turn the display unit power on, and then turn the server power on.
4. Start EXPRESSBUILDER according to *Chapter 1 (1.1 Starting EXPRESSBUILDER)*.
5. When the following message appears, select **OS installation *** default *****.
   You can automatically advance to step 6, with no need for further input.

The following window appears.

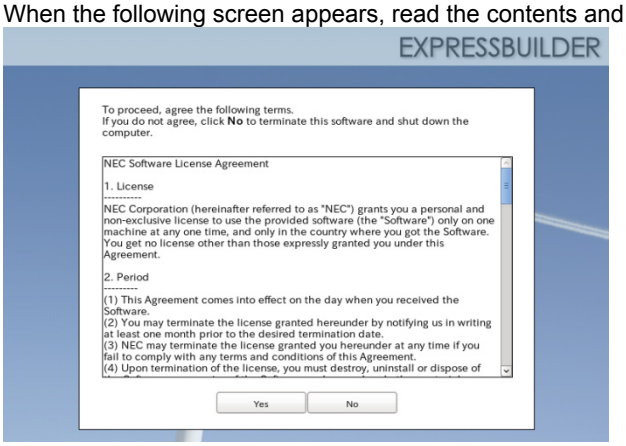


The server starts from EXPRESSBUILDER.

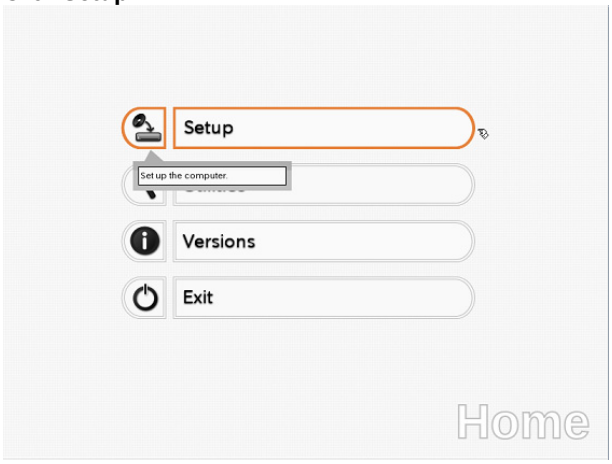


6. Select **English** on the language selection window, and then click **OK**.

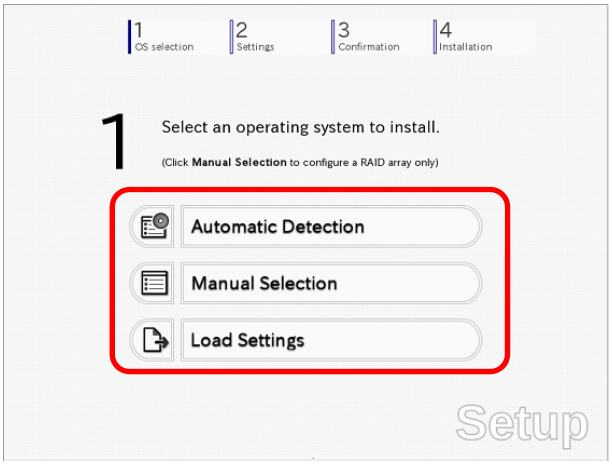
7. When the following screen appears, read the contents and click **Yes**.



8. Click **Setup**.



9. On the **OS selection** menu, select the OS to install or specify the parameter file.

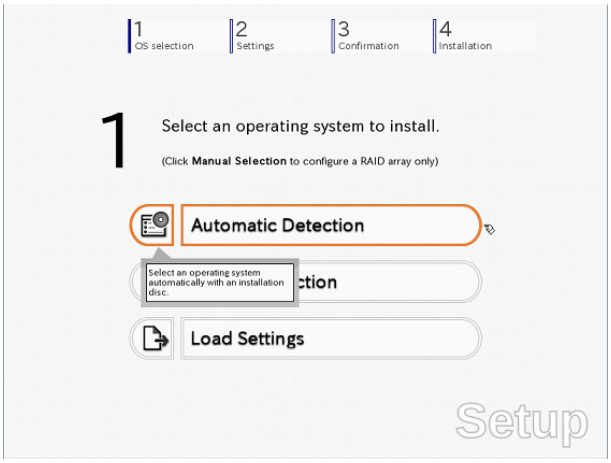


☐ When *not using* a parameter file : Select **Automatic Detection**, and then go to Step 10.
: Select **Manual Selection**, and then go to Step 11.

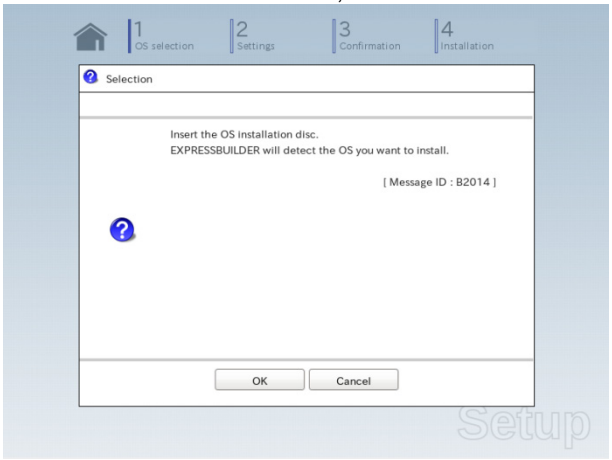
☐ When *using* a parameter file : Select **Load Settings**, and then go to Step 12.

10. When *not using* a parameter file, let the OS on the installation media be recognized by using the following procedure.

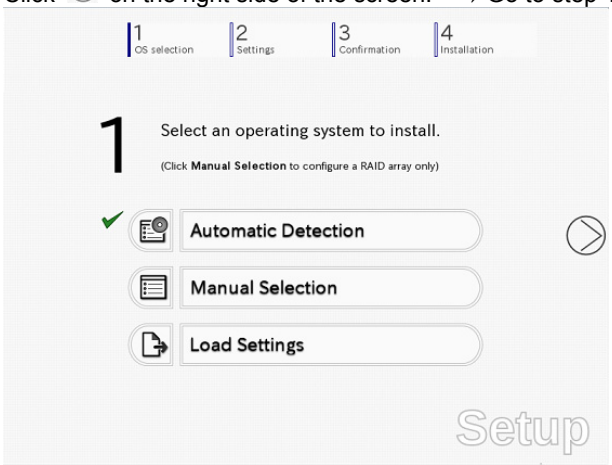
10-(1) Click **Automatic Detection**.



10-(2) Insert the OS installation media, and then click **OK**.

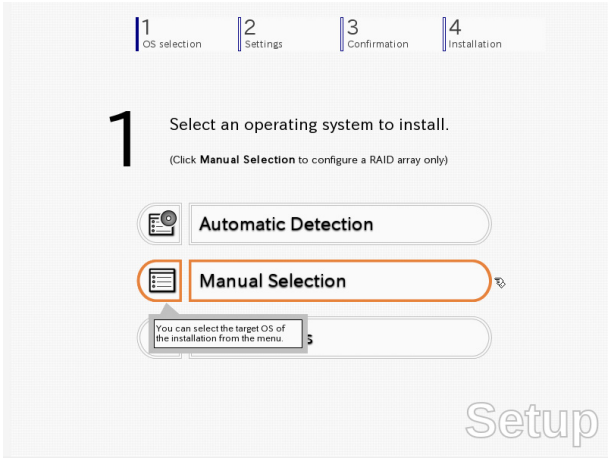


10-(3) Click on the right side of the screen. → Go to step 13.

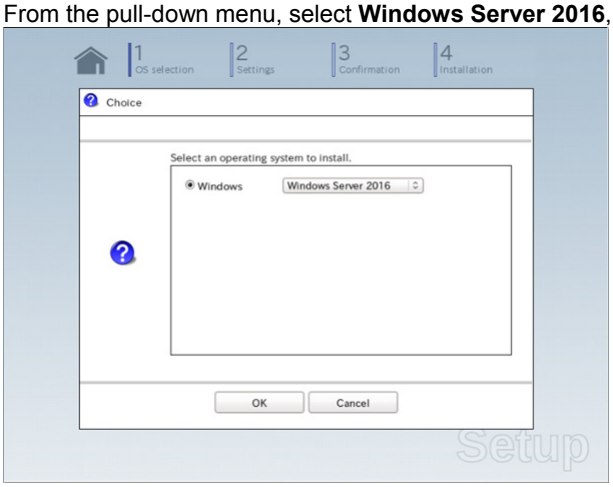


11. When *not using* a parameter file, select an OS by using the following procedure.

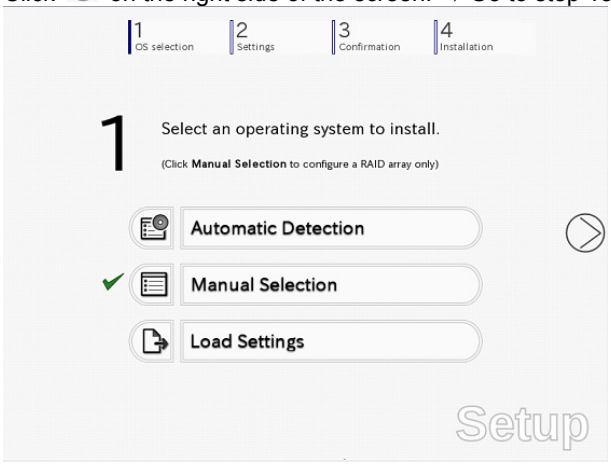
11-(1) Click **Manual Selection**.



11-(2) From the pull-down menu, select **Windows Server 2016**, and then click **OK**.

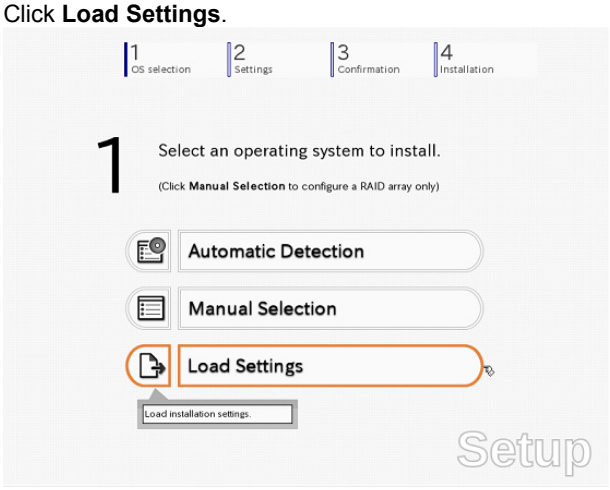


11-(3) Click on the right side of the screen. → Go to step 13.

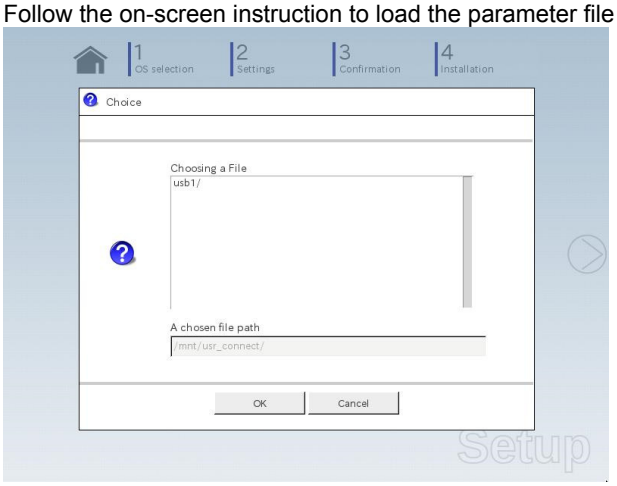


12. When *using* the parameter file, load the parameter file by using the following procedure.

12-(1) Click **Load Settings**.

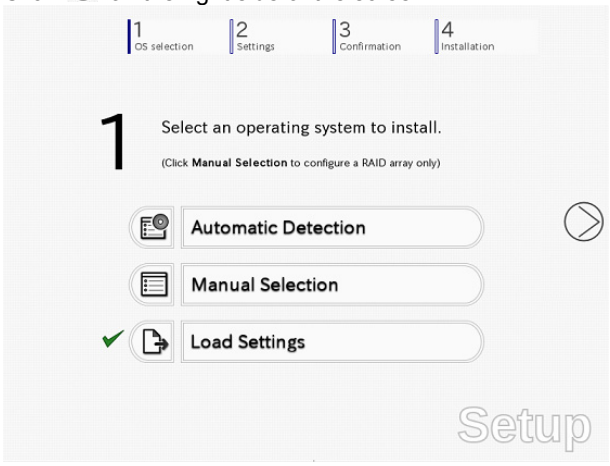


12-(2) Follow the on-screen instruction to load the parameter file (*.tre).



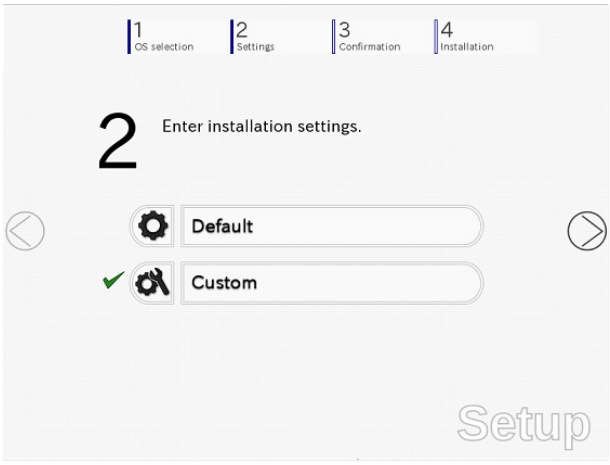
Tips For the removable media in which the parameter file is saved, see **"/mnt/usr_connect/usb*"** (* indicates a number).

12-(3) Click ⊘ on the right side of the screen.



12-(4) When the parameter file is correctly loaded, click on the right side of the screen.
→ Go to step 16.

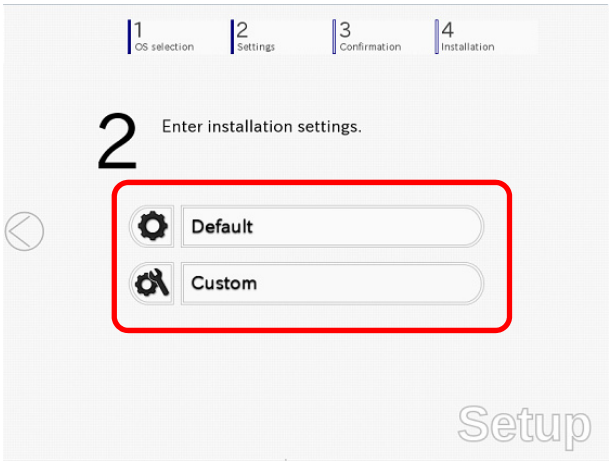
Click **Custom** to check and modify the setting in the wizard.
→ Go to step 15-(1).



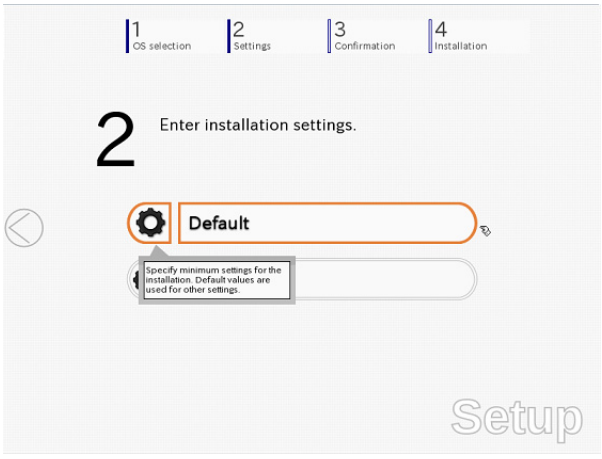
13. Specify the setup parameters by using either of the following methods:

☐ When selecting **Default** : Go to Step 14.

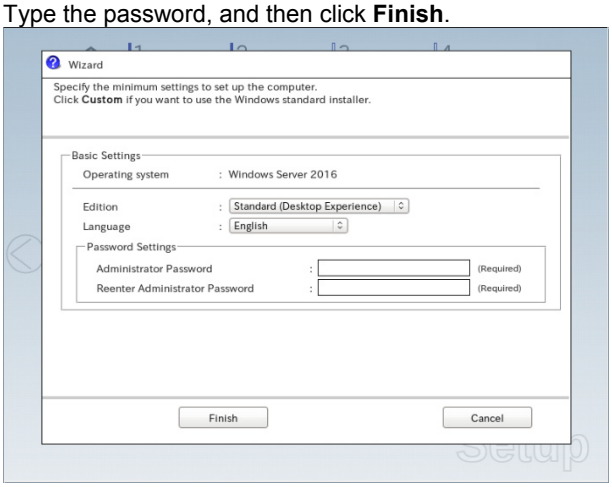
☐ When selecting **Custom** : Go to Step 15.



14. Click **Default**.



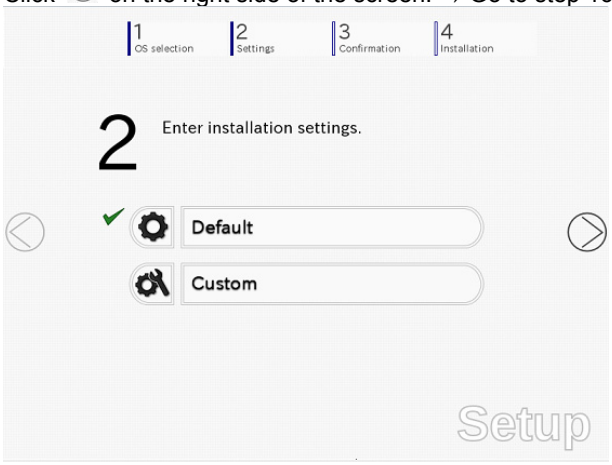
14-(1) Select the edition of the OS to install from the **Edition** list.
Type the password, and then click **Finish**.



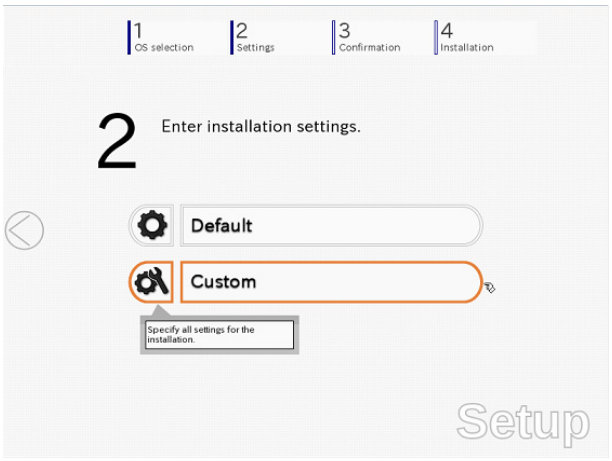
Note

Enter Administrator Password that satisfies the following conditions:
- Contains six or more characters
- Contains characters from at least three of the following categories: numbers, uppercase letters (A - Z), lowercase letters (a - z), and symbols.

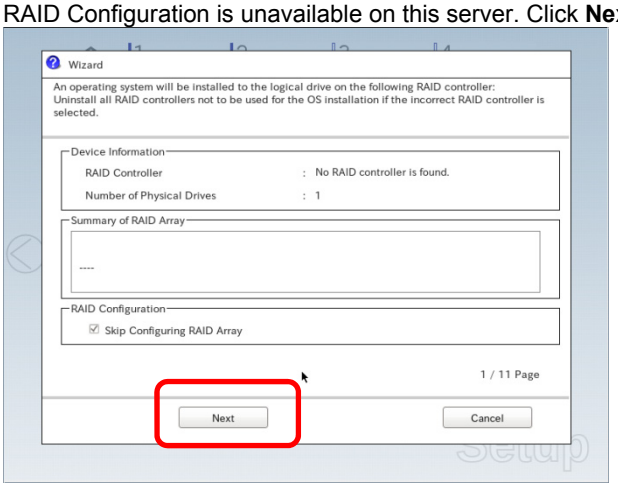
14-(2) Click on the right side of the screen. → Go to step 16.



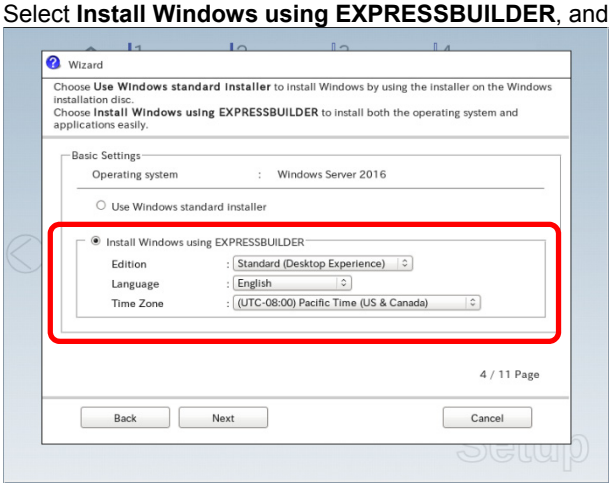
15. Click **Custom**.



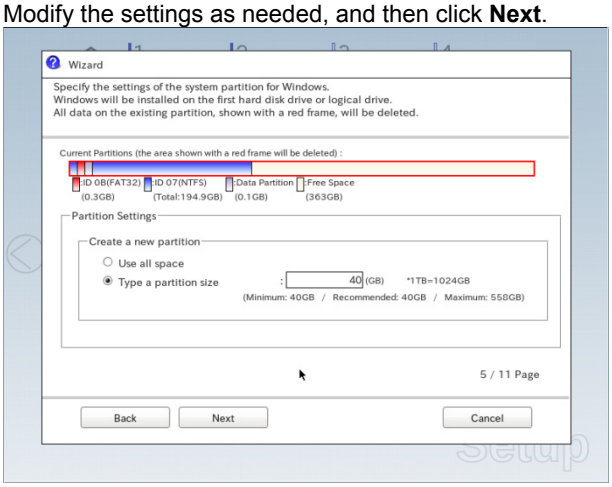
15-(1) RAID Configuration is unavailable on this server. Click **Next**.



15-(2) Check the settings specified for **Basic Settings**.
Select **Install Windows using EXPRESSBUILDER**, and then click **Next**.



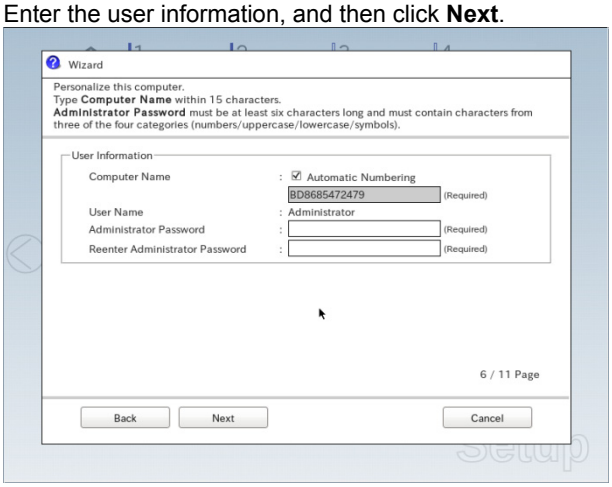
15-(3) Check the settings specified for **Partition Settings**.
Modify the settings as needed, and then click **Next**.



Important

- **Partition size**
  - **Specify a partition size larger than the minimum required for installing the operating system. (See *Chapter 1 (3.1 Before Starting Setup)*.)**
- **The entire contents of the destination hard disk drive will be erased.**

15-(4) Enter the user information, and then click **Next**.



Note

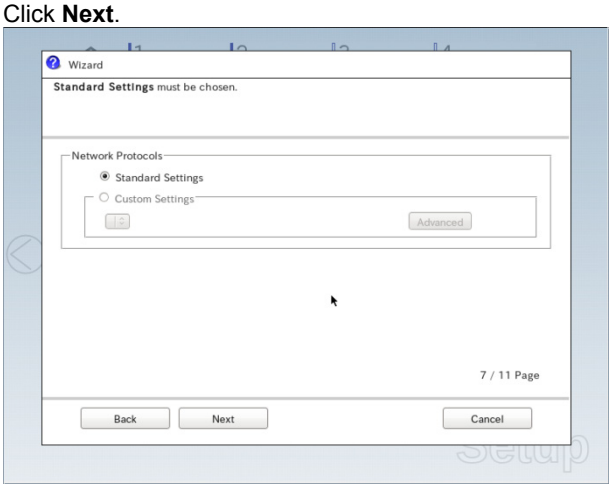
Enter Administrator Password that satisfies the following conditions:

- Contains six or more characters
- Contains characters from at least three of the following categories: numbers, uppercase letters (A - Z), lowercase letters (a - z), and symbols.

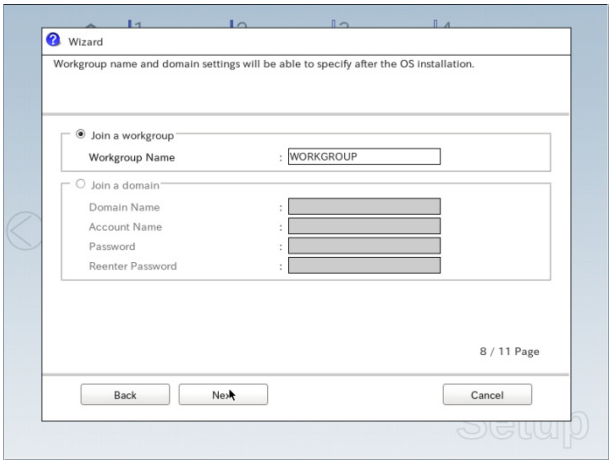
Tips

- The Computer name has been assigned by automatic assignment function. If you need to assign another computer name, remove the checkmark from "**Automatic Numbering**", and enter the desired computer name.
- If a parameter file is used for setup or if you return to a previous screen, •••••• is displayed in the Administrator password and Confirm Administrator password text boxes.

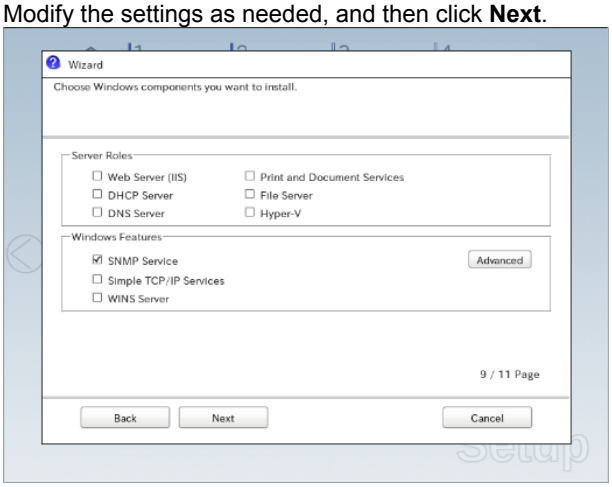
15-(5) **Network Protocols** cannot be set on this server.
Click **Next**.



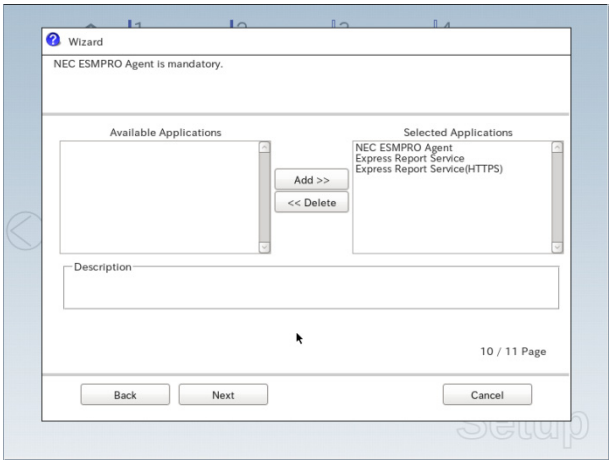
15-(6) Specifying domain or workgroup is unavailable on this server.
Click **Next**.



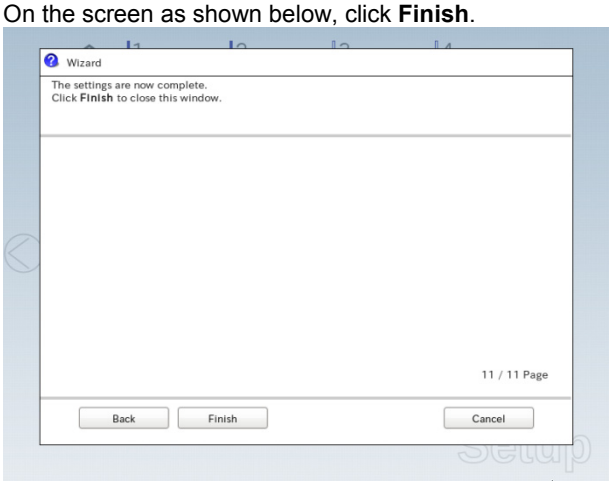
15-(7) Check the settings of Windows components.
Modify the settings as needed, and then click **Next**.



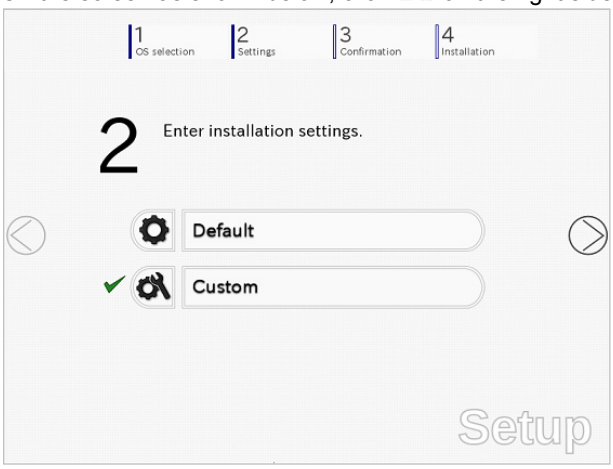
15-(8) Check the settings of applications.
Click **Next**.



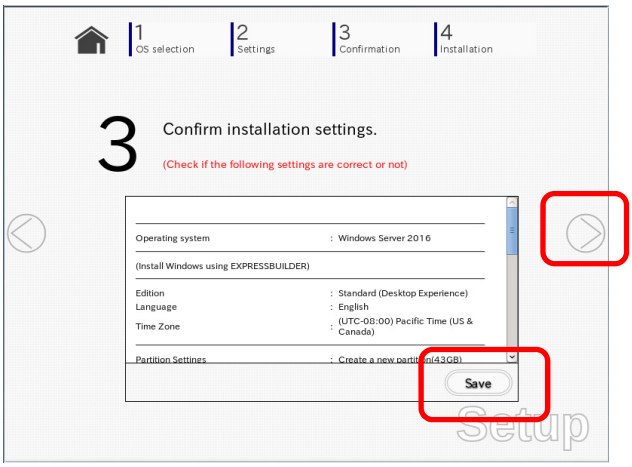
On the screen as shown below, click **Finish**.



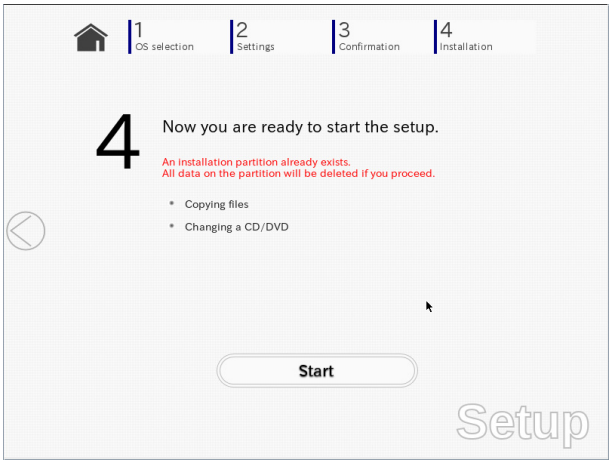
On the screen as shown below, click ⊘ on the right side of the screen.



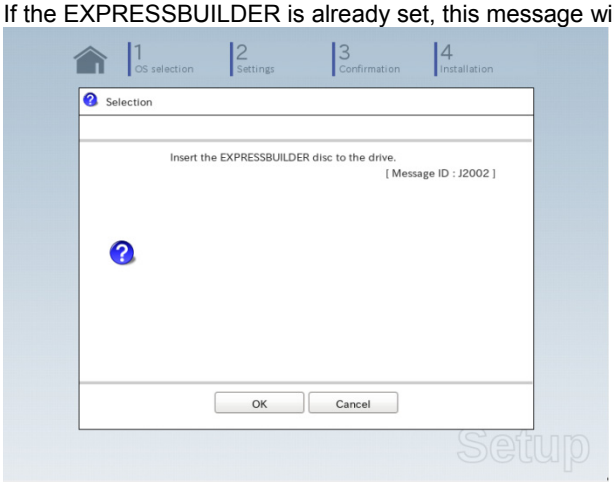
16. Check the settings. To save the settings, click **Save**.
Click ⊘ on the right side of the screen.



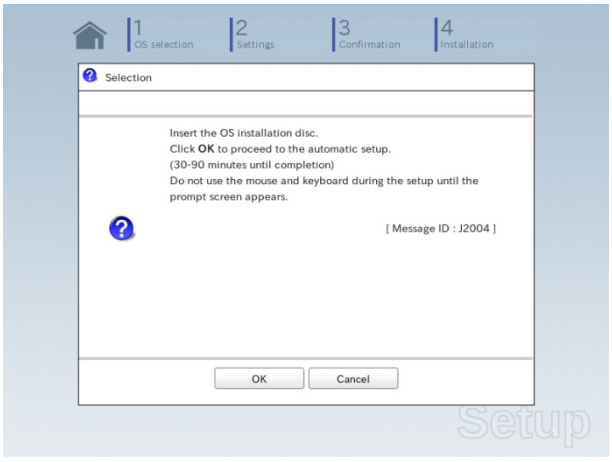
17. The setup process starts. Click **Start** to continue setup.



18. In case that you started from the EXPRESSBUILDER DVD, set the EXPRESSBUILDER to the optical disk drive, then click **OK**.
If the EXPRESSBUILDER is already set, this message will not be displayed.

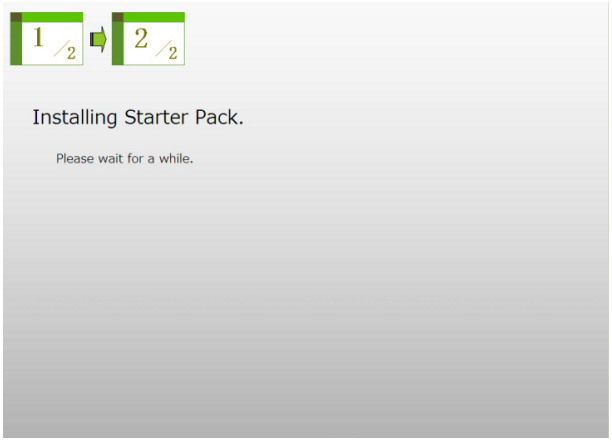


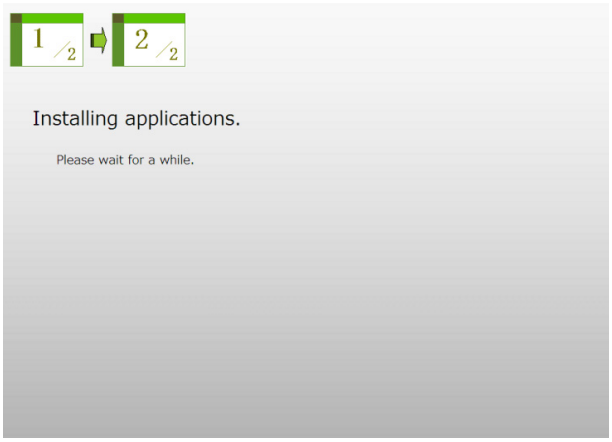
19. Insert the OS installation media into the optical disk drive, and then click **OK**.



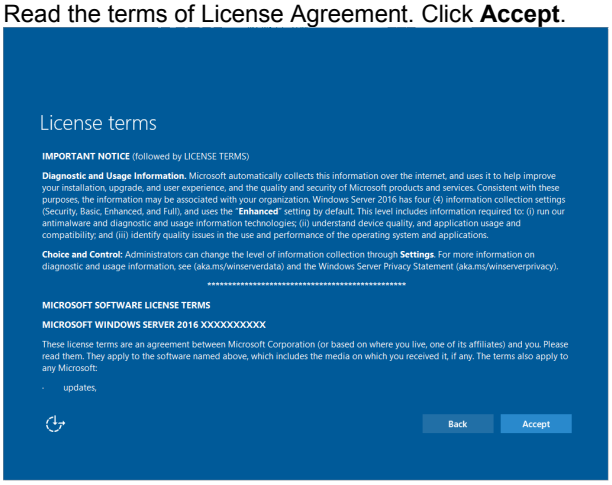
Windows Server 2016 is installed automatically.
Wait for completion (about 90 minutes) without performing any operation.

20. The Starter Pack and the selected applications are automatically installed. Wait until the process completes without performing any operation.

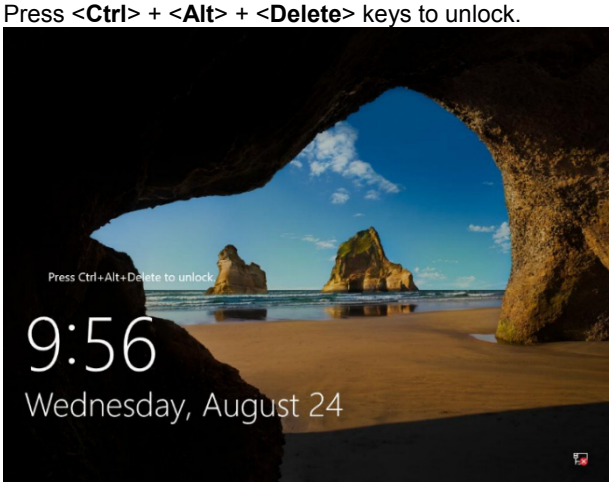




21. Read the terms of License Agreement. Click **Accept**.

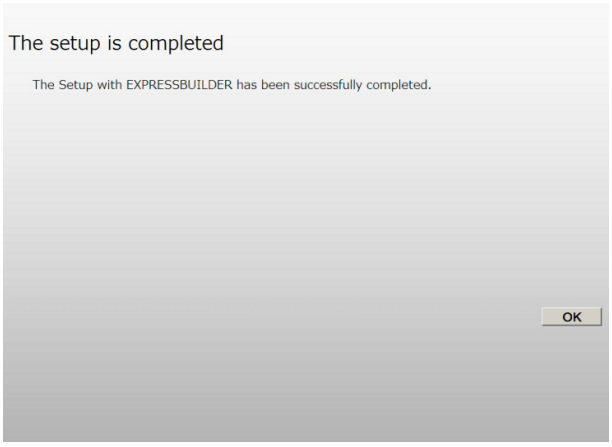


Press <**Ctrl**> + <**Alt**> + <**Delete**> keys to unlock.

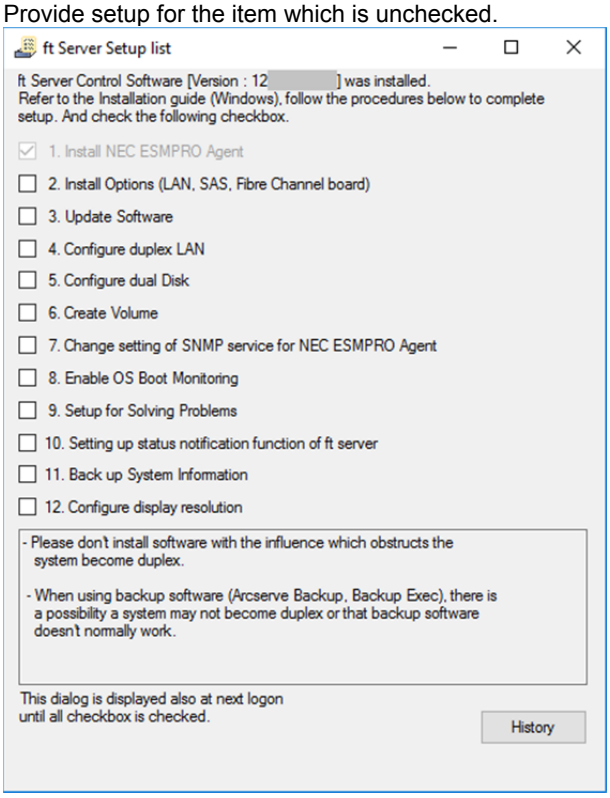


Type the password you have specified in step 14-(1) or 15-(4).

Click **OK**.



22. When **ft Server Setup list** appears, confirm the list items.
Provide setup for the item which is unchecked.



❑ Install Options (LAN, SAS, Fibre Channel Board)

If you have an option board that is not yet installed, install it according to *Chapter 2 (5.7 Installing/Removing/Replacing PCI Card)* in *Maintenance Guide (Windows)*.

❑ Update Software

See Chapter 1 (*3.7.1 Applying ft Server Control Software Update Module*).

❑ Configure duplex LAN

See *Chapter 1 (3.8 Duplex LAN Configuration)*.

❑ Configure dual Disk

See *Chapter 1 (3.9 Configuring Duplexed Disks)*.

❑ Create Volume

See *Chapter 1 (3.10 Creating Volume)*.

❑ Change setting of SNMP service for NEC ESMPRO Agent

As described in *Chapter 2 (1.1 NEC ESMPRO Agent (for Windows)),* setup SNMP service by referring to *NEC ESMPRO Agent Installation Guide (Windows)*.

❑ Enable OS Boot Monitoring

See *Chapter 1 (3.12 Enabling OS Boot Monitoring Feature)*.

❑ Setup for Solving Problems

See *Chapter 1 (4. Setup for Solving Problems)*.

Tips If necessary, perform license authentication procedure according to *Chapter 1 (3.13 License Authentication)*.

❑ Back up System Information

See *Chapter 1 (6. Backing Up System Information)*.

- ❑ Configure display resolution

  See *Chapter 1 (3.18 Caution when changing Power Options - (1) Procedure to configure display resolution)*.

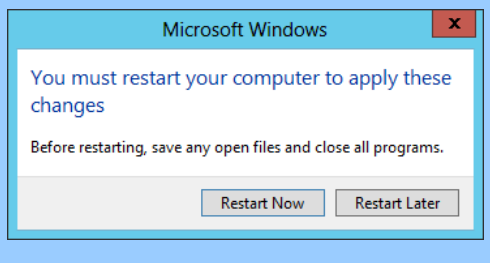
Setup with EXPRESSBUILDER is now complete.

3.3 Setup with Windows Standard Installer

This section describes how to install Windows with Windows Standard Installer.

Important

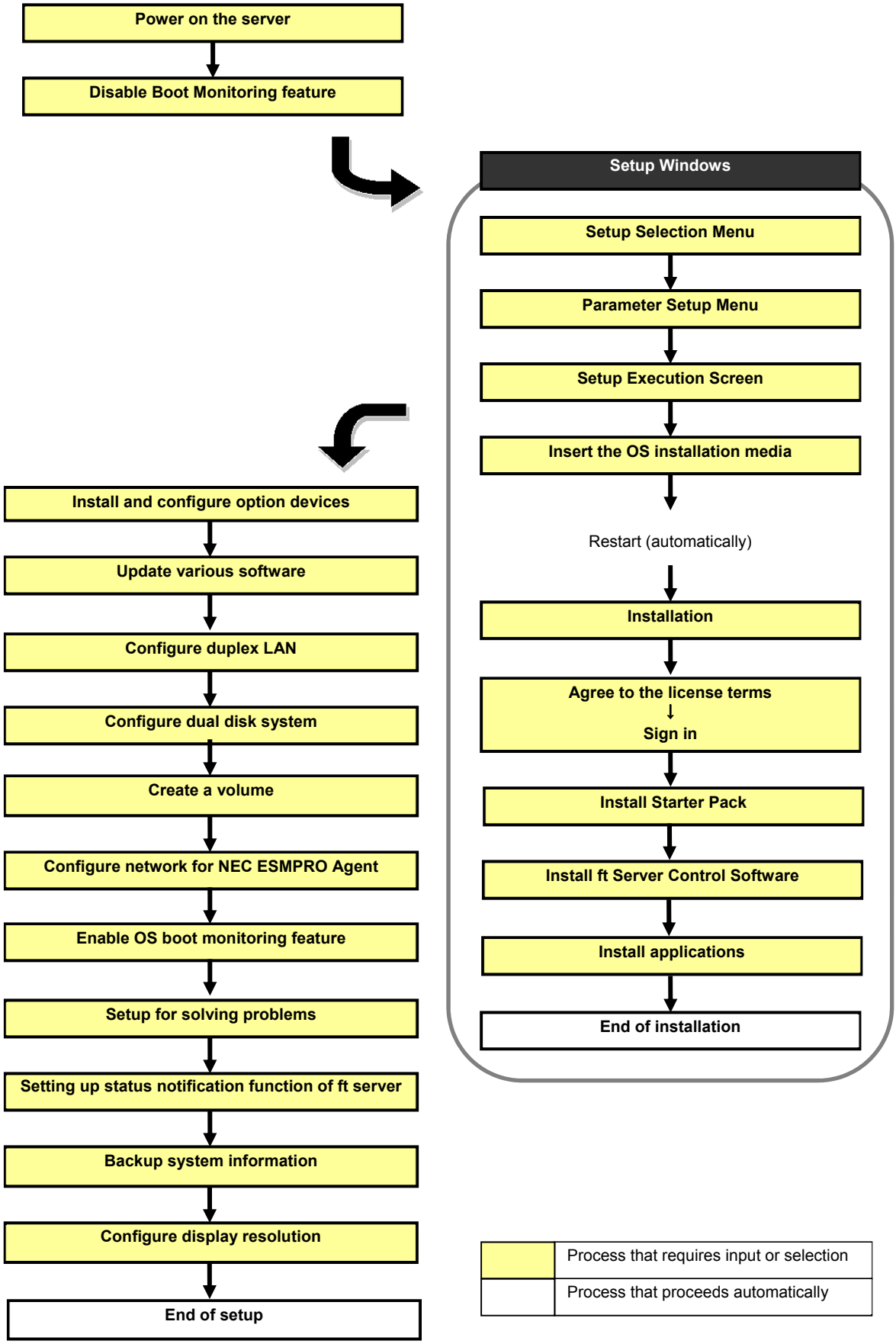
- **Setup with Windows standard Installer may erase all data in the hard disk drive depending on the settings. Pay attention to input parameters.**
  Backing up user data, as needed, is recommended.
- **Although some dialog boxes and popup windows are displayed during installing ft Server Control Software in Setup, do not operate from the keyboard and the mouse. Installation is continued automatically.**
  Do not operate especially although the following dialog is displayed. When installation is stopped with operation of a keyboard or a mouse, there is a possibility that OS does not start normally.



Tips

- Setup with Windows Standard Installer allows you to use a pre-specified parameter file or save the parameters specified in setup as a parameter file on a removable media.
- For details on creating a parameter file, see *Chapter 1* (*5. Windows OS Parameter File)*.

3.3.1 Setup flow



3.3.2 Requirements for Setup

Prepare the following media and instruction manuals before starting setup.

- Either of the following OS installation media
  - **NEC operating system installation media** (hereafter referred to as *Backup DVD-ROM*)
  - **Microsoft operating system installation media** (hereafter referred to as *Windows Server 2016 DVD-ROM*)
- **EXPRESSBUILDER DVD**
- Prepare if needed:

  Removable media for Windows OS parameter file

  ft Server Control Software update
  See *Chapter 1 (3.7.1 Applying ft Server Control Software Update Module)* for more information.

3.3.3 Before setting up

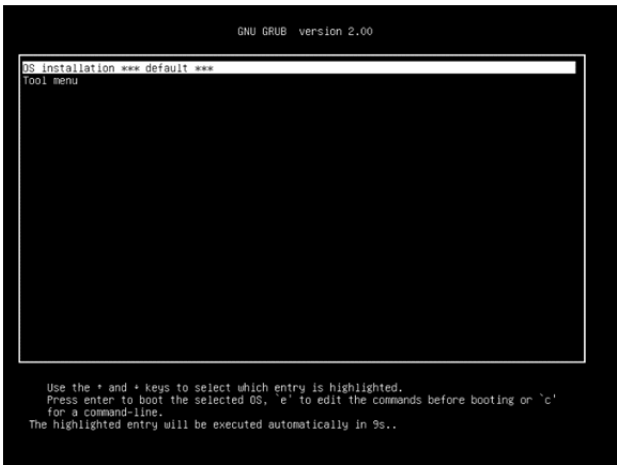
Before starting setup, read through *Chapter 1 (3.1 Before Starting Setup)* for successful setup.

3.3.4 Setup procedure

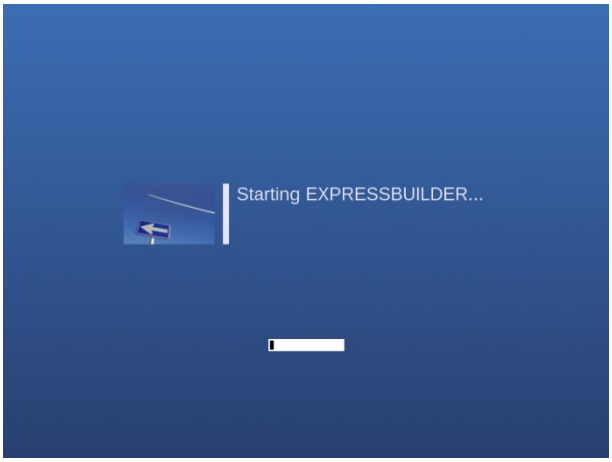
1. Prepare for setup *according to Chapter 1 (3.1.2 Preparation)*.
2. Be sure to disable OS Boot Monitoring feature according to Chapter 1 (*3.1.3 Disabling OS Boot Monitoring Feature*).

   Important **OS Boot Monitoring feature is enabled by the shipping default. Setup process will fail if this feature is enabled.**

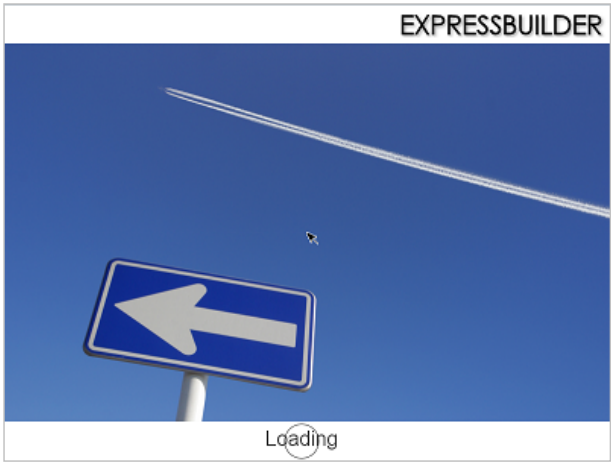
3. Power on the display unit, and then power on the server.
4. Start EXPRESSBUILDER according to *Chapter 1 (1.1 Starting EXPRESSBUILDER)*.
5. When the following message appears, select **OS installation *** default *****.
   You can automatically advance to step 6, with no need for further input.



The following window appears.

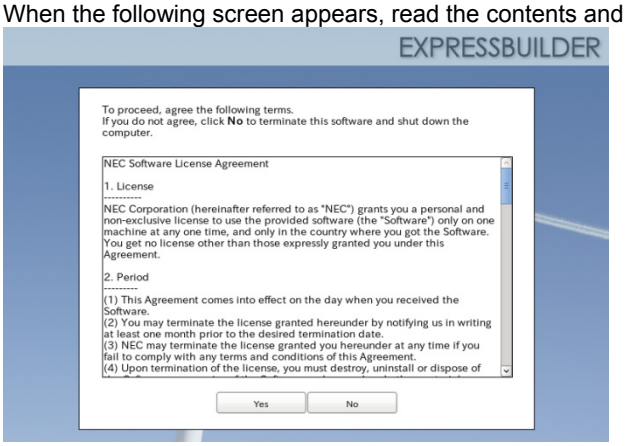


The server starts from EXPRESSBUILDER.

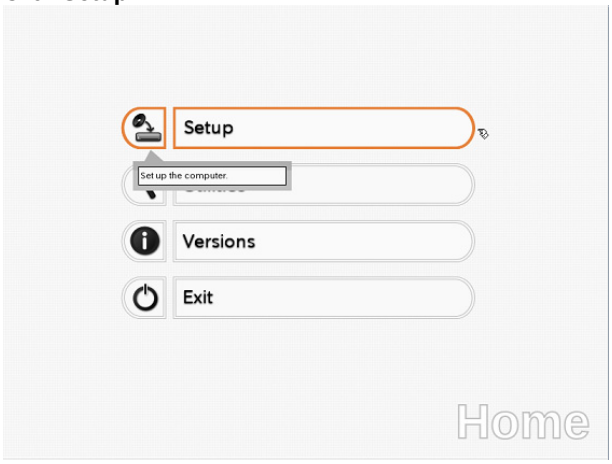


6. Select **English** on the language selection window, and then click **OK**.

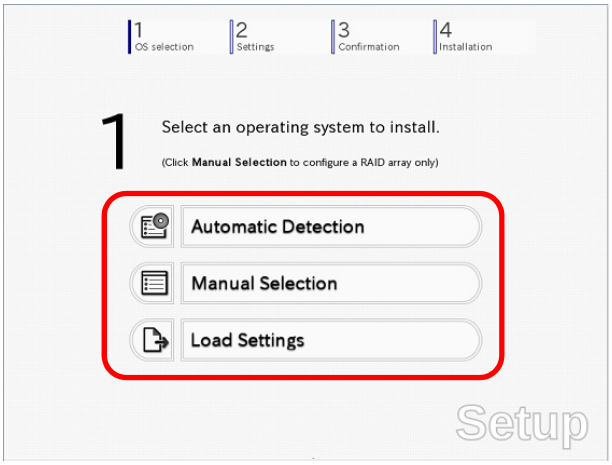
7. When the following screen appears, read the contents and click **Yes**.



8. Click **Setup**.



9. On the **OS selection** menu, select the OS to install or specify the parameter file.

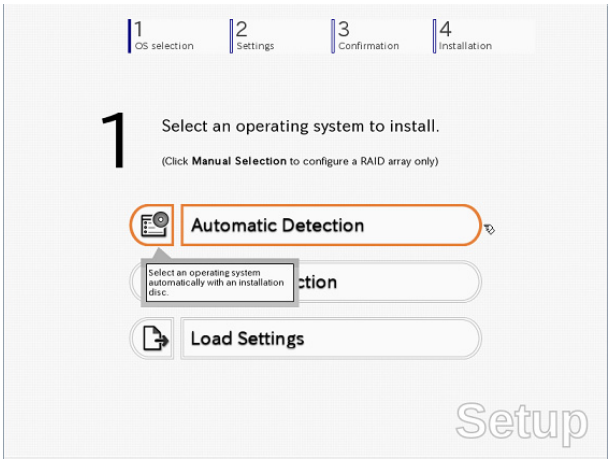


☐ When *not using* a parameter file : Select **Automatic Detection**, and then go to Step 10.
: Select **Manual Selection**, and then go to Step 11.

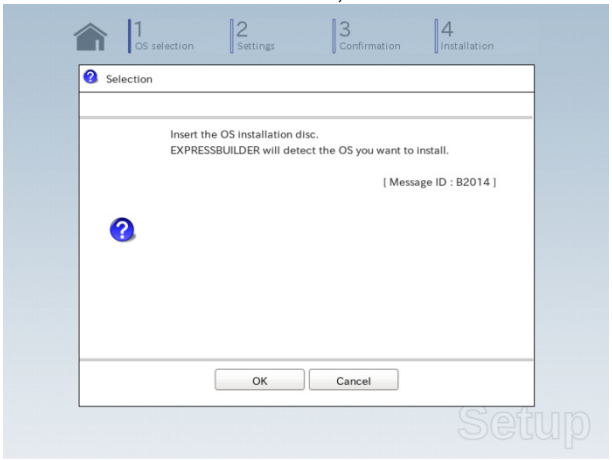
☐ When *using* a parameter file : Select **Load Settings**, and then go to Step 12.

10. When *not using* a parameter file, let the OS on the installation media be recognized by using the following procedure.

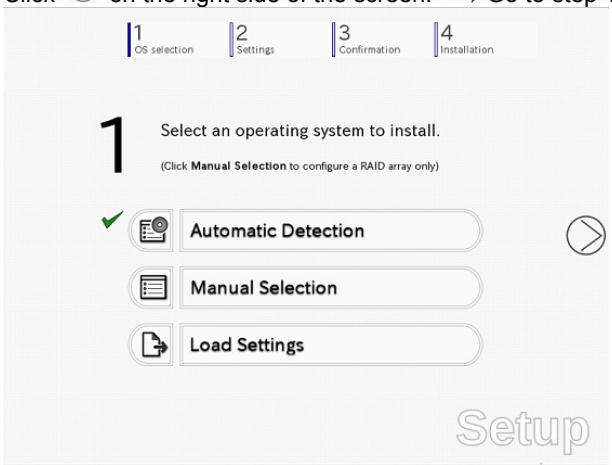
10-(1) Click **Automatic Detection**.



10-(2) Insert the OS installation media, and then click **OK**.

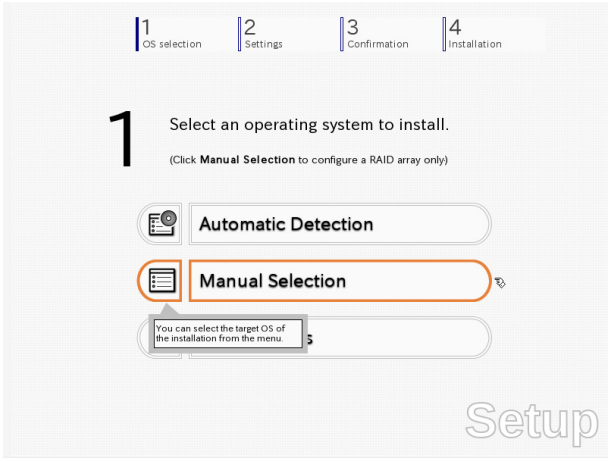


10-(3) Click on the right side of the screen. → Go to step 13.

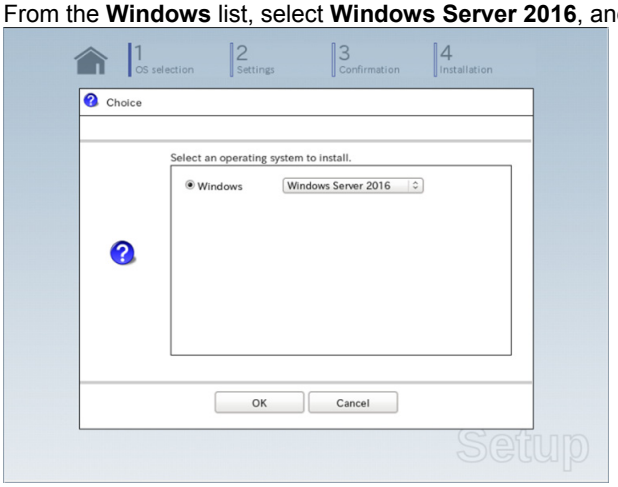


11. When *not using* a parameter file, select an OS by using the following procedure.

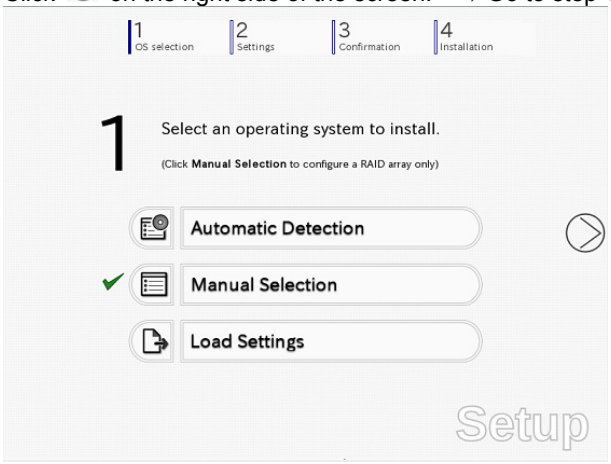
11-(1) Click **Manual Selection**.



11-(2) From the **Windows** list, select **Windows Server 2016**, and then click **OK**.

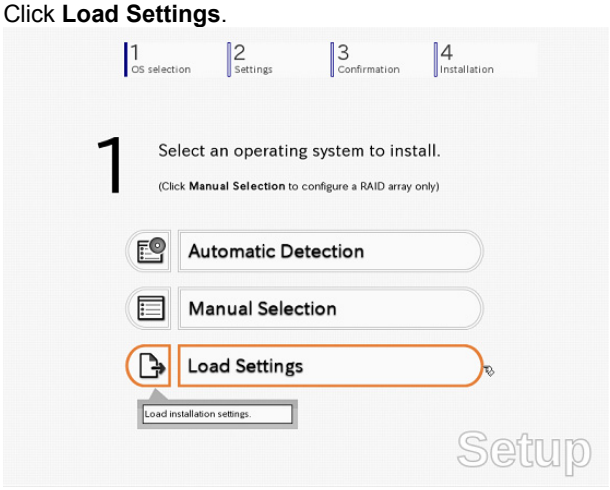


11-(3) Click ⊳ on the right side of the screen. → Go to step 13.

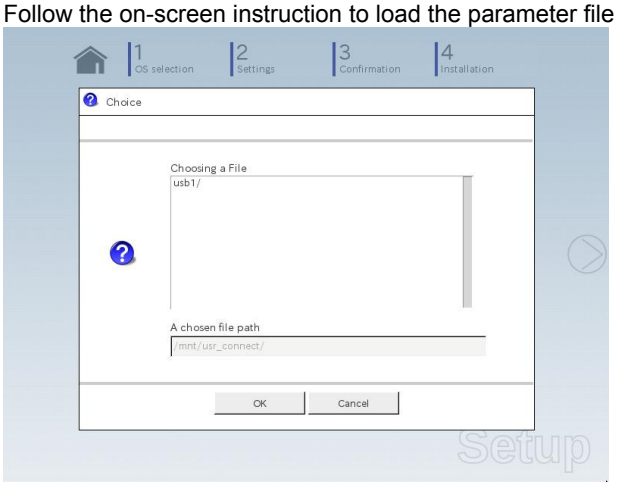


12. When *using* the parameter file, load the parameter file by using the following procedure.

12-(1) Click **Load Settings**.



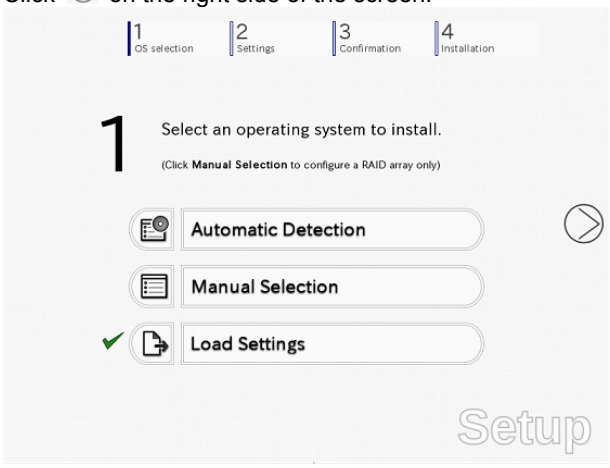
12-(2) Follow the on-screen instruction to load the parameter file (*.tre).



Tips

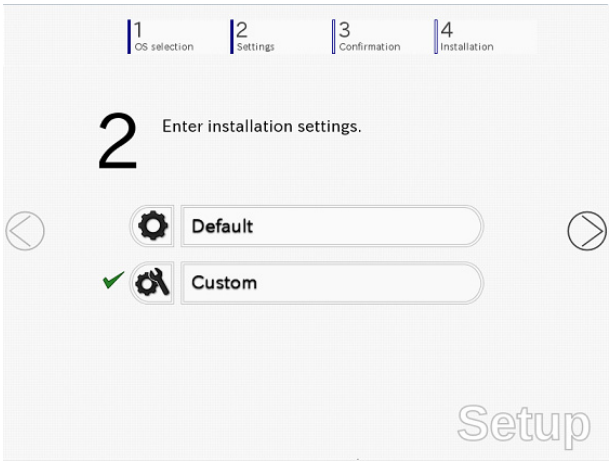
For the removable media in which the parameter file is saved, see **"/mnt/usr_connect/usb*"** (* indicates a number).

12-(3) Click ⊳ on the right side of the screen.

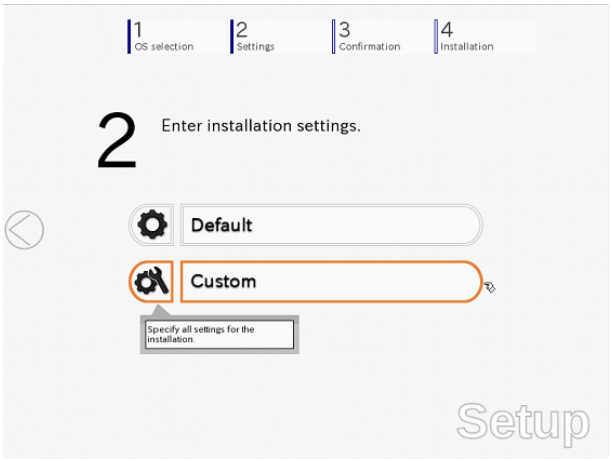


12-(4) When the parameter file is correctly loaded, click on the right side of the screen.
→ Go to step 14.

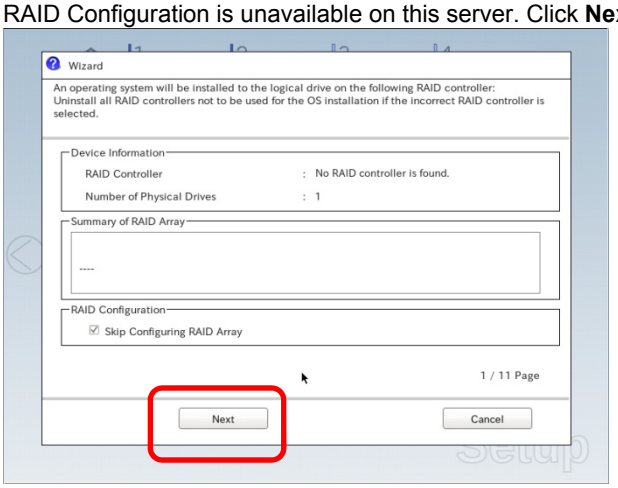
Click **Custom** to check and modify the setting in the wizard.
→ Go to step 13-(1).



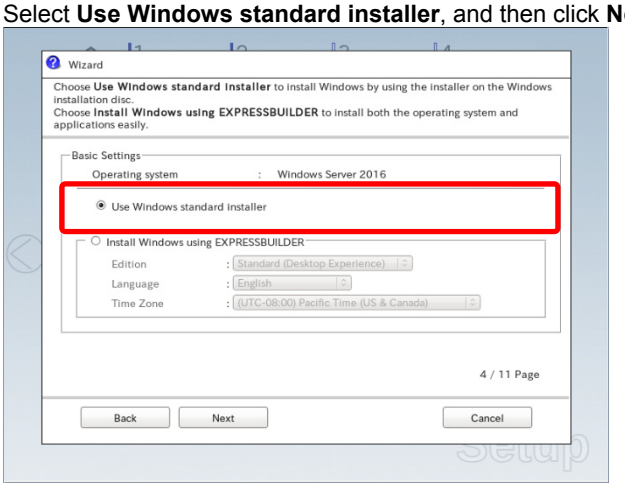
13. Click **Custom**.



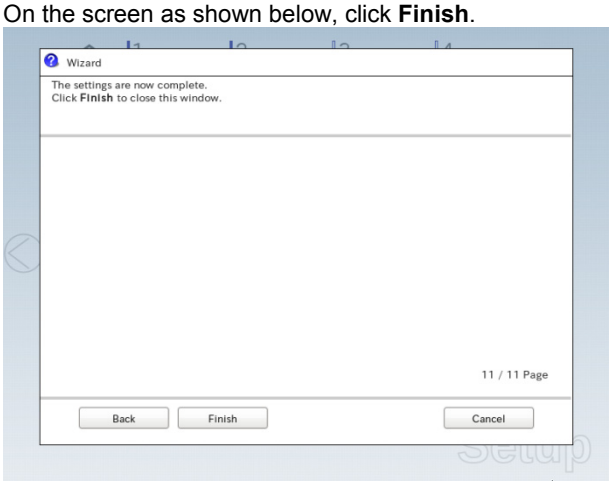
13-(1) RAID Configuration is unavailable on this server. Click **Next**.



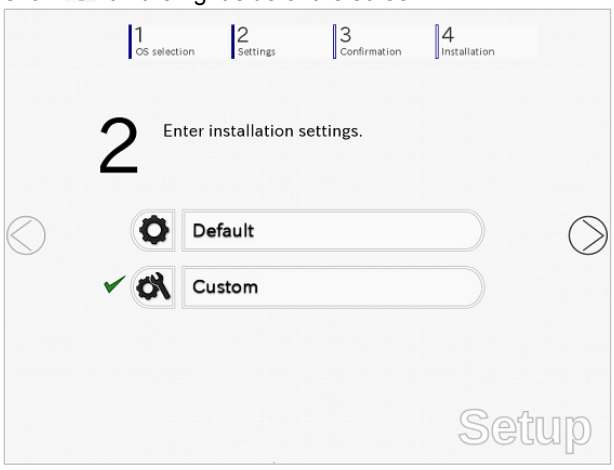
13-(2) Check the settings specified for **Basic Settings**.
Select **Use Windows standard installer**, and then click **Next**.



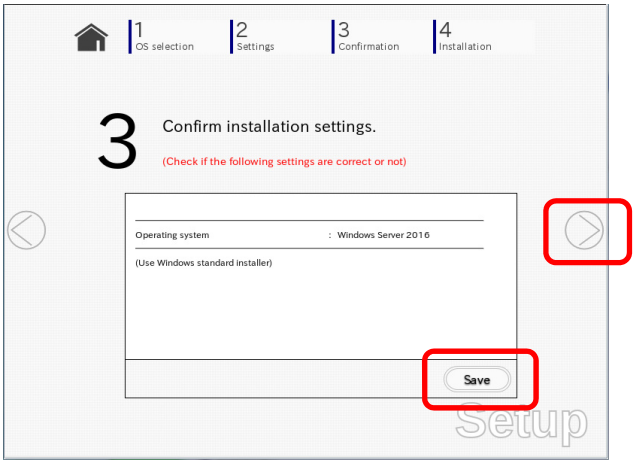
On the screen as shown below, click **Finish**.



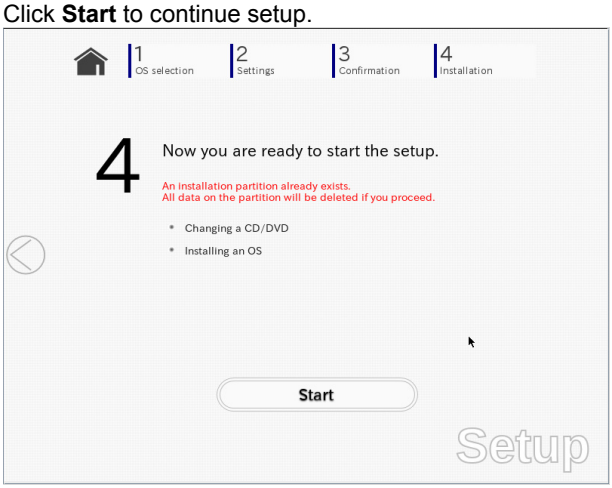
13-(3) Click ▷ on the right side of the screen.



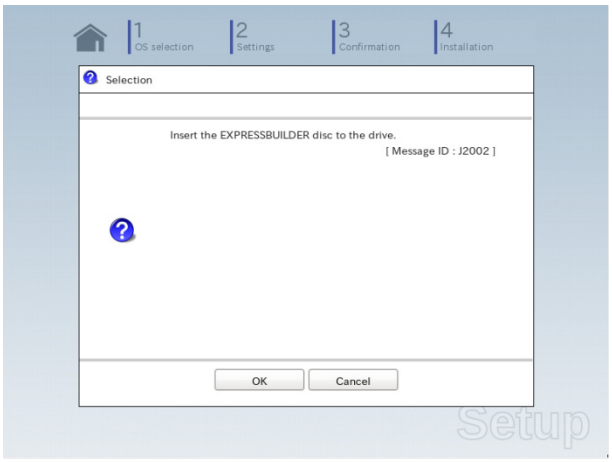
14. Check the parameter settings.To save the settings, click **Save**.
    Click ⊘ on the right side of the screen.



15. The setup process starts.
    Click **Start** to continue setup.



16. Insert the OS installation media into the disk drive, and then click **OK**.

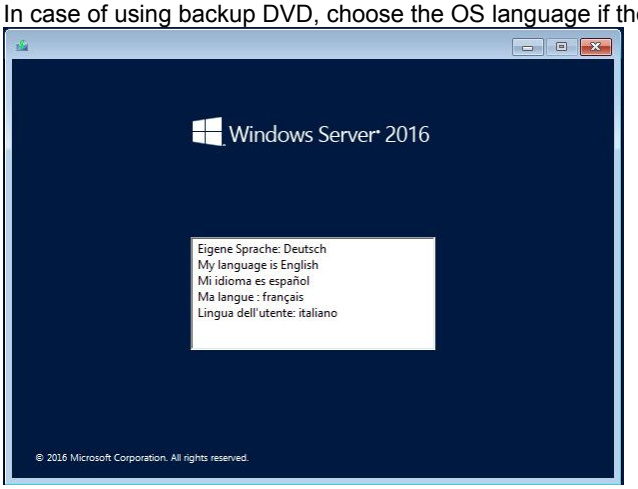


17. The server reboots automatically.

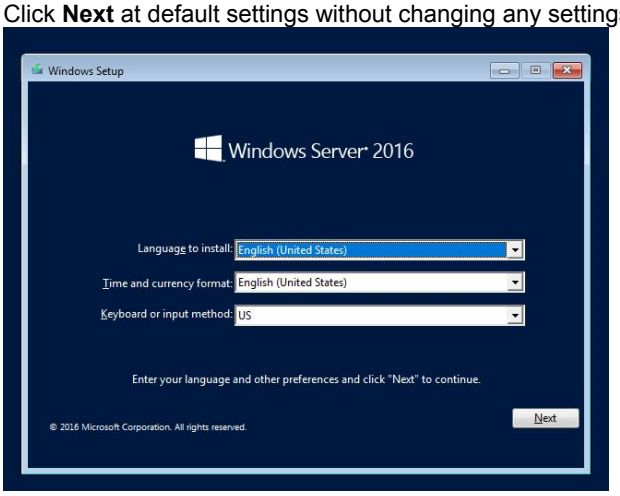
18. The system starts from the OS installation media.
    If an operating system is already installed on the hard disk drive, the message “Press any key to boot from CD or DVD…” is displayed on the top of the screen.
    Press <**Enter**> key to boot from OS installation media.
    The boot sequence proceeds and the message “Windows is loading files…” appears.

    Note If the Windows setup screen (see the next step) does not appear, <**Enter**> key is not pressed correctly.

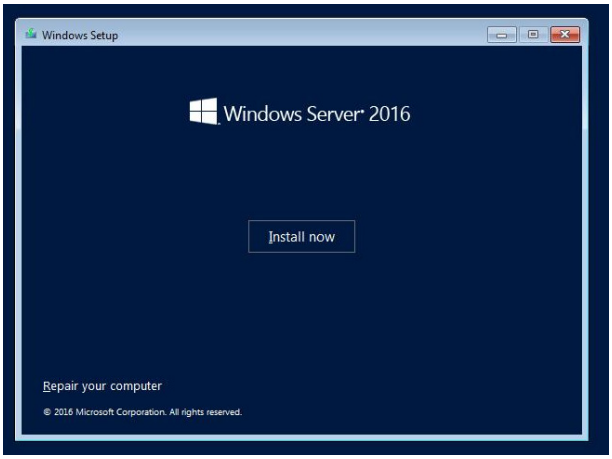
19. In case of using backup DVD, choose the OS language if the following screen appears.



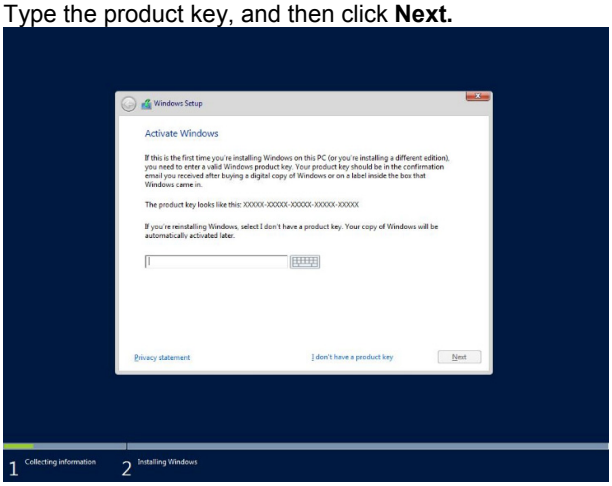
20. Click **Next** at default settings without changing any settings.



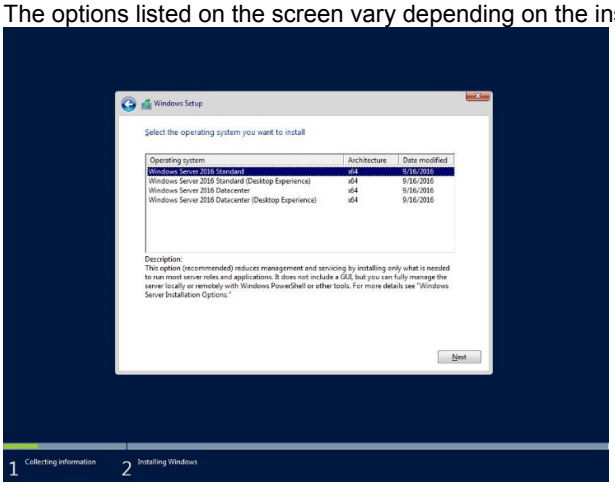
21. Click **Install now**.



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



23. Select the operating system to install, and then click **Next**.
The options listed on the screen vary depending on the installation media you are using.

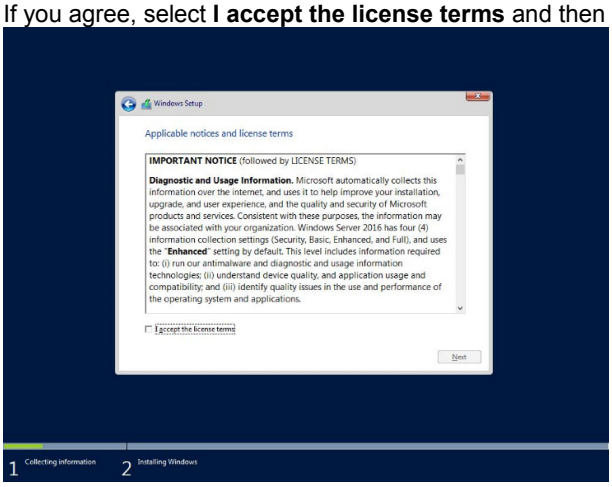


Tips

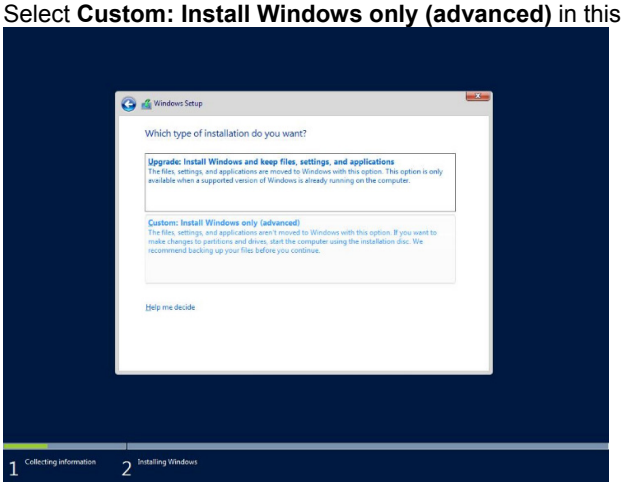
Read the message of the screen, and then choose an installation option.

- Windows Server 2016 Standard or Windows Server 2016 Datacenter
  → Described as “Server Core” by this manual
  Do not select this as it is not supported by this server.
- Windows Server 2016 Standard (Desktop Experience) or Windows Server 2016 Datacenter (Desktop Experience)
  → Described as “Desktop Experience” by this manual

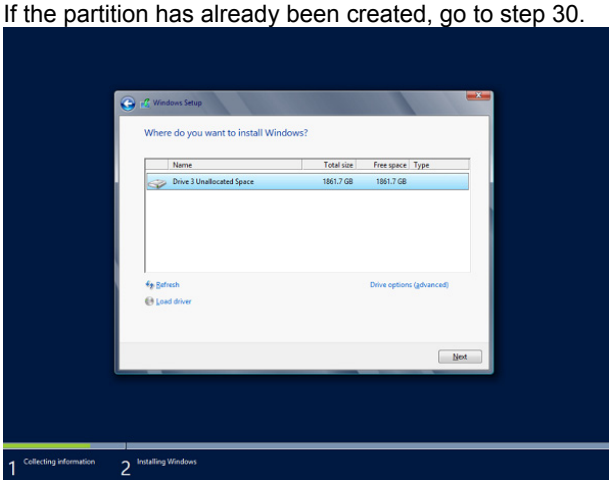
24. Confirm the content of the license agreement.
If you agree, select **I accept the license terms** and then click **Next**.



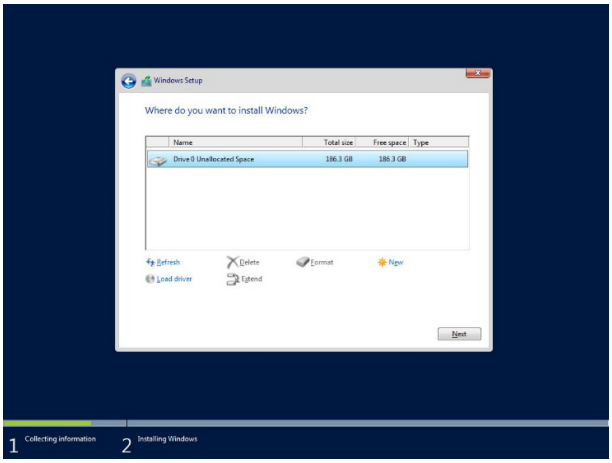
25. Select the installation type.
    Select **Custom: Install Windows only (advanced)** in this case.



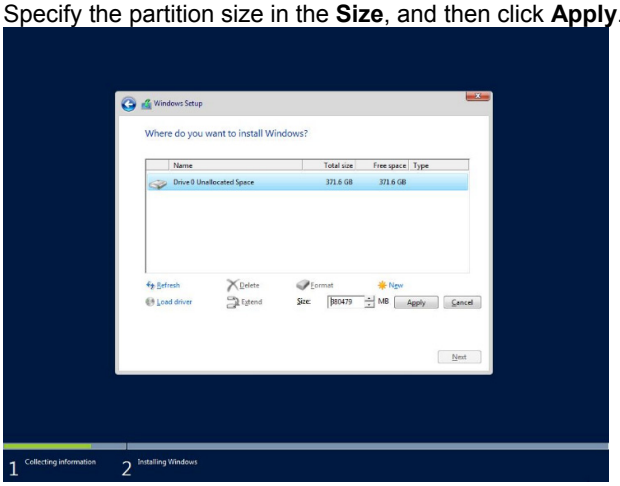
26. Create a partition to install OS.
    If you create the partition, click **Drive options (advanced)**.
    If the partition has already been created, go to step 30.



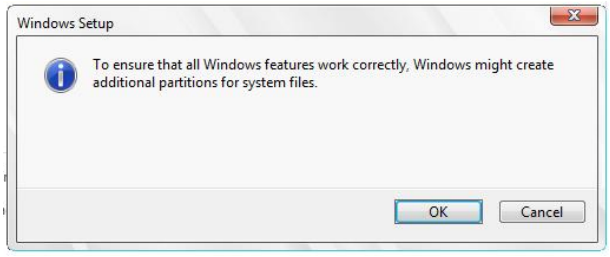
27. Click **New**.



28. Specify the partition size in the **Size**, and then click **Apply**.



Click **OK** in the screen below.



Tips

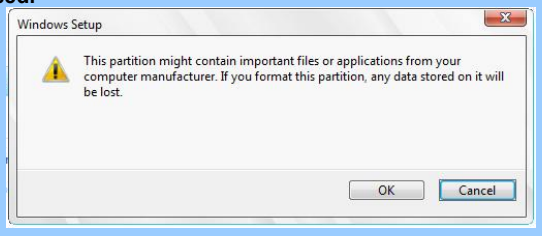
If you first create a partition, the following three partitions are created.

- Recovery partition
- EFI system partition (ESP)
- Microsoft reserved partition (MSR)

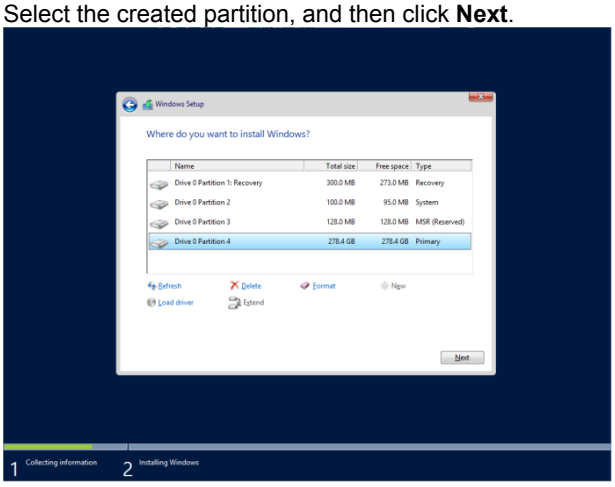
29. Select the partition created in step 28, and then click **Format**.

Important

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



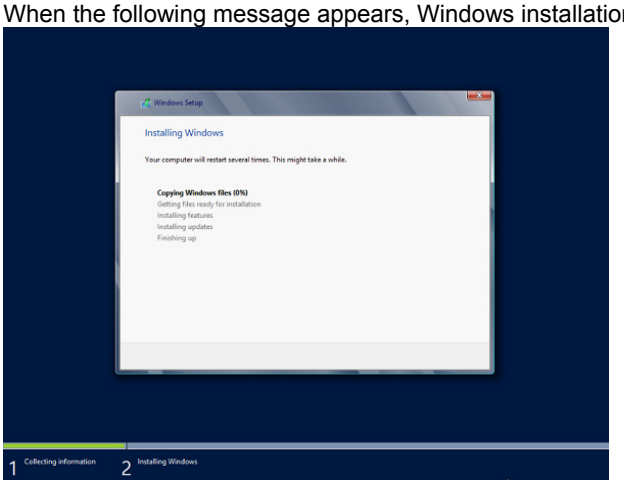
30. Select the created partition, and then click **Next**.



Important **If the four partitions, Recovery, System, MSR (reserved), and Primary are not displayed, the partitions are not created successfully. Delete the created partitions and then create the partitions again. If a data disk is connected with this server, be careful not to delete other partitions.**

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

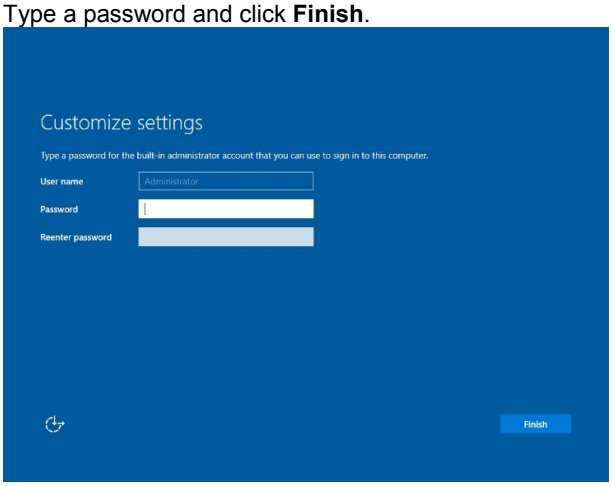
When the following message appears, Windows installation starts automatically.



The server will automatically restart after Windows Server 2016 is installed.
You can proceed to Windows setup after restart.

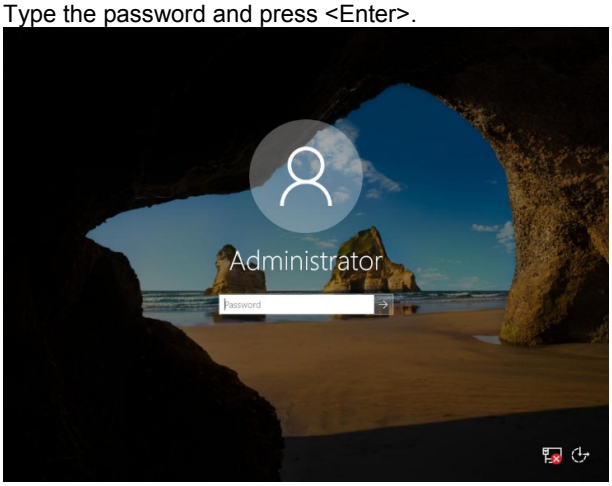
31. Set up in accordance with an OS selected in step 23.

31-(1) Type a password and click **Finish**.

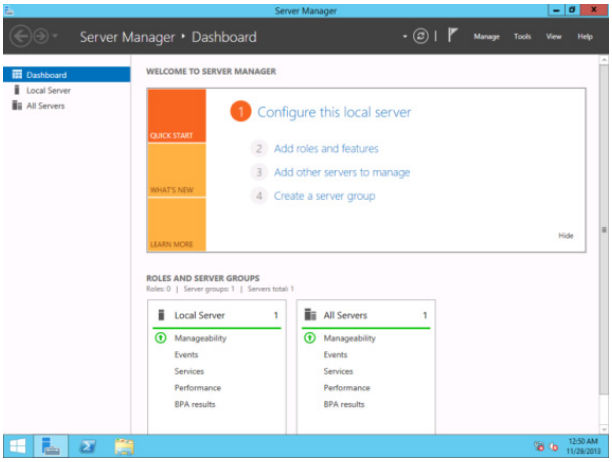


31-(2) Press <Ctrl> + <Alt> + <Delete> to unlock.

31-(3) Type the password and press <Enter>.



32. Windows Server 2016 starts.



33. Install Starter Pack by referring to *Chapter 1* (*3.4 Installing Starter Pack)*.

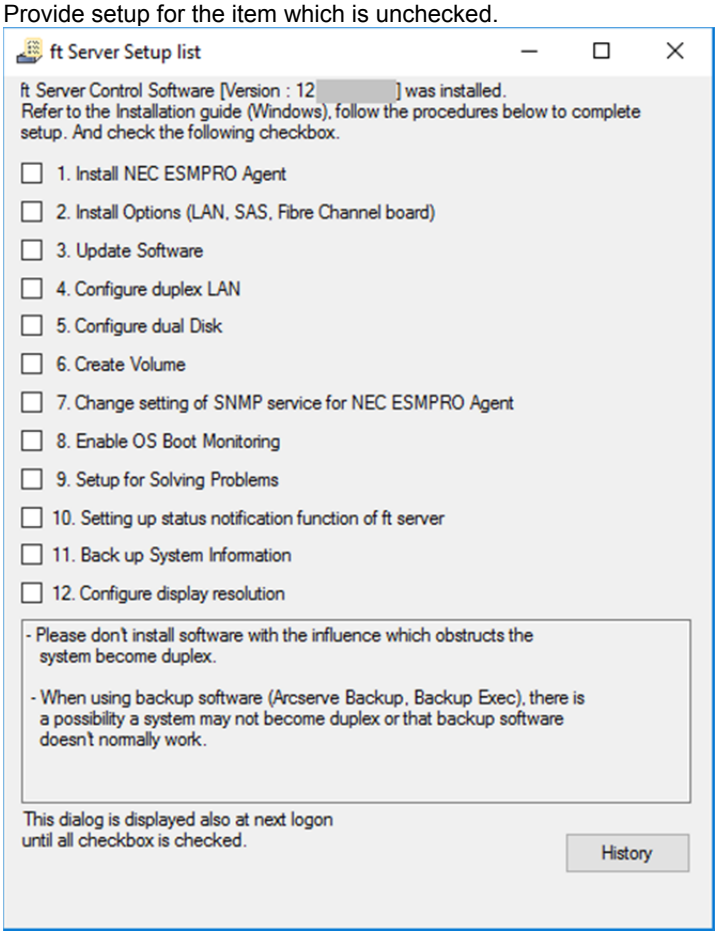
34. Install the ft Server Control Software according to Chapter 1 (*3.5 Installing ft Server Control Software*). When installation completes, Setup Checklist appears on screen.

35. Install the NEC ESMPRO Agent.

Tips

About installation of NEC ESMPRO Agent, see *Chapter 1 (3.6 Installing Applications)*.
NEC ESMPRO Agent is installed along with other applications when choosing "Applications" in "Integrated Installation" menu of EXPRESSBUILDER DVD.
When installing NEC ESMPRO Agent only, see *Chapter 2 (1.1 NEC ESMPRO Agent (for Windows)*).

36. When **ft Server Setup list** appears, confirm the list items.
Provide setup for the item which is unchecked.



❑ Install Options (LAN, SAS, Fibre Channel board)

If you have an option board that is not yet installed, install it according to *Chapter 2 (5.7 Installing/Removing/Replacing PCI Card)* in *Maintenance Guide (Windows)*.

❑ Update Software

See *Chapter 1 (3.7.1 Applying ft Server Control Software Update Module)*.

❑ Configure duplex LAN

See *Chapter 1 (3.8 Duplex LAN Configuration)*.

❑ Configure dual Disk

See Chapter 1 *(3.9 Configuring Duplexed Disks)*.

❑ Create Volume

See *Chapter 1 (3.10 Creating Volume)*.

❑ Change setting of SNMP service for NEC ESMPRO Agent

As described in *Chapter 2 (1.1 NEC ESMPRO Agent (for Windows)),* setup SNMP service by referring to *NEC ESMPRO Agent Installation Guide (Windows)*.

❑ Enable OS Boot Monitoring

See *Chapter 1 (3.12 Enabling OS Boot Monitoring Feature)*.

❑ Setup for Solving Problems

See *Chapter 1 (4. Setup for Solving Problems)*.

Tips If necessary, perform license authentication procedure according to *Chapter 1 (3.13 License Authentication)*.

- ❑ Back up System Information

  See *Chapter 1 (6. Backing Up System Information)*.

- ❑ Configure display resolution

  See *Chapter 1 (3.18 Caution when changing Power Options - (1) Procedure to configure display resolution)*.

Setup with Windows standard installer is now complete.

3.4 Installing Starter Pack

Starter Pack contains drivers customized for this server.
Be sure to apply Starter Pack before running the system.

Important

Also apply Starter Pack in the following cases.

- **If the mother board has been replaced:**
  (If a dialog box prompting you to restart appears after replacing the mother board, reboot the system according to messages and then apply Starter Pack.)
- **If the system has been restored using the restore process**
- **If the system has been restored using the backup tool**

Note

Device Guard: virtualization-based security is disabled by using this setup. Do not enable Device Guard feature because this feature is not available for this server.

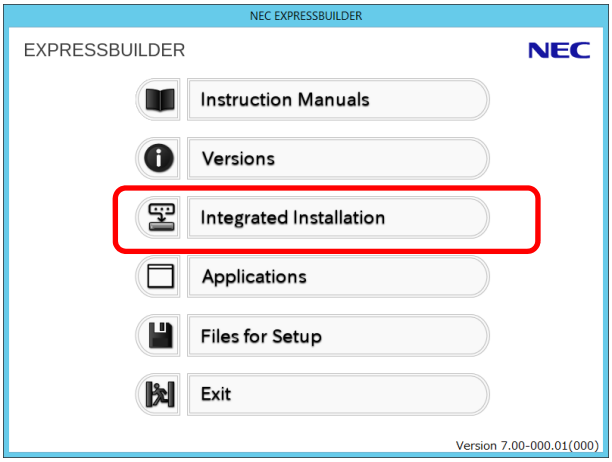
Tips

If the OS is installed by EXPRESSBUILDER without using Windows Standard Installer, Starter Pack is already installed.
If the hardware configuration is not changed, you do not need to apply Starter Pack again.

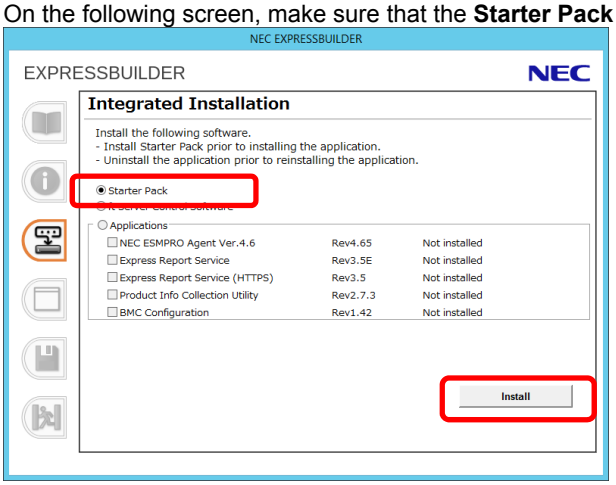
1. Sign-in to the system as the built-in administrator (or user with administrative privileges).

2. Insert EXPRESSBUILDER DVD into the optical disk drive.

3. Click **Integrated Installation** on the menu.
   When the menu does not automatically run, run **\autorun\dispatcher_x64.exe**.

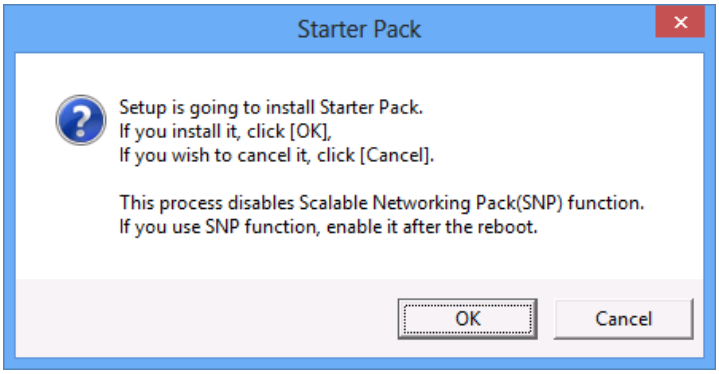


On the following screen, make sure that the **Starter Pack** option is selected, and then click **Install**.

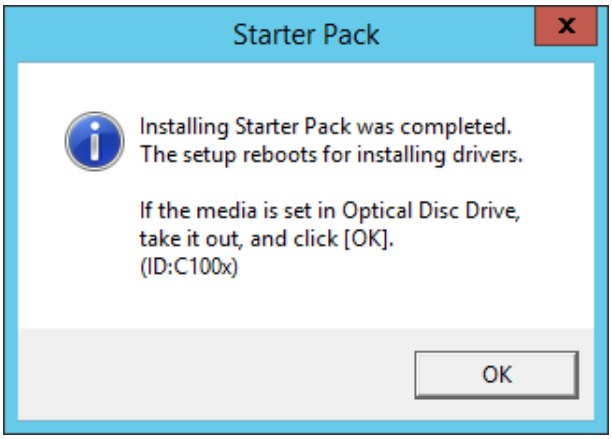


Tips If Starter Pack is already installed, the **ft Server Control Software** is selected by default. To install Starter Pack again, select the **Starter Pack**.

4. Read the message, and then click **OK**.
   Starter Pack installation starts.



5. The following message appears when Starter Pack installation is complete.
   Follow the instructions in the message, and remove EXPRESSBUILDER DVD.



6. Click **OK** to restart the system.

Installation of Starter Pack is now complete.

3.5 Installing ft Server Control Software

You must quit all programs including Microsoft management console.

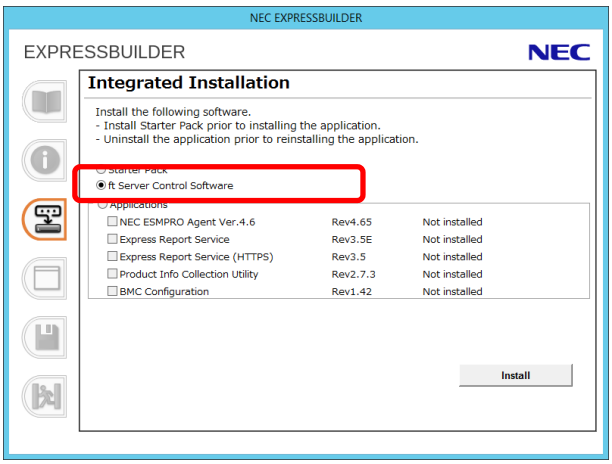
Important **ft Server Control Software does not support the overwrite installation feature (uninstallation and re-installation). If ft Server Control Software causes an error and restoration is needed, perform restoration using the data backed up before the error occurred.**

1. Install ft Server Control Software in the following procedure.

   When ft Server Control Software UPDATE media is not provided:

   (1) After signing in to the system as a user with the Administrative account, insert the EXPRESSBUILDER DVD into the optical disk drive of the server.

   (2) On the menu screen, click **Integrated Installation**, select **ft Server Control Software** on the menu, and then click **Install**.



   When ft Server Control Software UPDATE media is provided:

   Install ft Server Control Software from the UPDATE media according to *Instruction Manual* that comes with the media.

   Follow the instructions to proceed with the installation.

Note The message "**ft Server Control Software, Now Installing... Please Wait.**" is displayed during installation.
Do not use the keyboard or mouse while this message is being displayed.

2. When installation starts, a message "If there is a disc in the DVD drive, please remove it." will be displayed. If EXPRESSBUILDER DVD is set in optical disk drive, remove it.
3. The system is rebooted several times during the installation. After the system is rebooted, sign in again as the user logged in before rebooting.

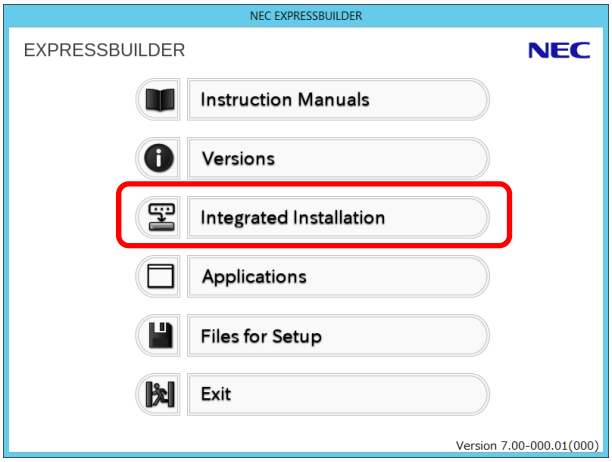
   Installation of the ft Server Control Software resumes after you signed in.
4. When the message "Installation is finished" is displayed, click **OK** to reboot the server.

Note Change the screen to check the message by using the taskbar, as the message may hide behind the screen.

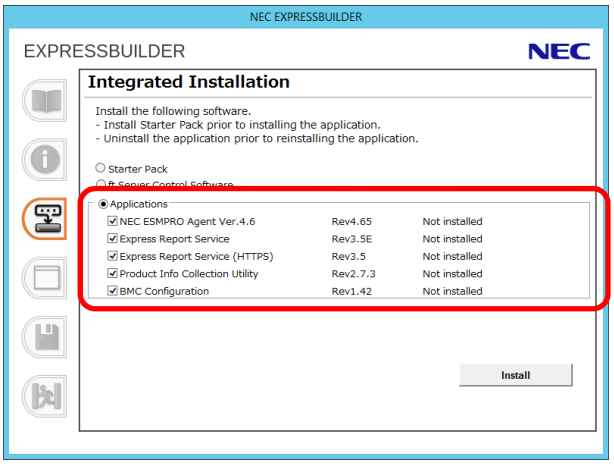
3.6 Installing Applications

Some applications stored in EXPRESSBUILDER can be installed collectively in a batch. When installing these applications individually, see *Chapter 2 (Installing Bundled Software)*.

1. Sign-in to Windows on the server as the Built-in Administrator (or an account having administrative privilege).
2. Insert the EXPRESSBUILDER DVD into the optical disk drive and run **\autorun\dispatcher_x64.exe**.
3. Click **Integrated Installation** on the menu.



4. On the following screen, select **Applications**, and select the check boxes corresponding to the applications to install, and then click **Install**.



Note

- Check boxes for available applications are selected by default.
- Applications which do not meet the requirements for installation are not installed. For details, see the information on the window and *Chapter 2 (Installing Bundled Software)*.

The selected applications are installed automatically.

5. When a message appears, click **OK**, and then remove the EXPRESSBUILDER disk from the optical disk drive.

Now installation of applications is completed.

3.7 Setup Various Software

3.7.1 Applying ft Server Control Software Update Module

If you use ft Server Control Software UPDATE media, refer to the installation procedure enclosed in the UPDATE media to apply the update.

Note

- Be sure to disable OS Boot Monitoring feature before updating ft Server Control Software according to *Chapter 1 (3.1.3 Disabling OS Boot Monitoring Feature)*. In addition, disconnect all the network cables from the server before starting update.
- Upon completion of update, set OS Boot Monitoring feature to **Enabled**.

3.7.2 Applying Security Patches and QFE

It is necessary to apply newest appliable security patch, when starting to use this server.
As of writing of this document (October 17, 2018), it is being confirmed that cumulative update October 9, 2018 (KB4462917) is applicable.
Before applying security patches and QFE newer than this, inquire to selling company whether it is appliable.

Important

As informed by Microsoft knowledge base, the registry settings are needed to enable protections against a new speculative execution side-channel vulnerability known as L1 Terminal Fault (L1TF) after cumulative update January 17, 2018 (KB4057142).

This system has utility for registry settings, the utility is able to use by the following procedure.

[Procedure]
(1) Sign in with an account that has Administrator role. And start Command Prompt.

(2) Input the following command to change directory.
cd %ProgramFiles%\ftsys\CustomerService\SupportTools

(3) Input the following command to set registry for protections against L1TF.

SpectreFixSettings.bat Enable
(The following message is displayed after input.)

Spectre-Meltdown Features ENABLED
Done

Important

When applying cumulative update which is newer than June 12 2018 (KB4284880), The servicing stack update (SSU) KB4132216 must be installed before it.

You can obtain SSU from Microsoft web site. Refer to Microsoft knowledge base for details.

KB4132216 - Servicing stack update for Windows 10 Version 1607: May 17, 2018 (https://support.microsoft.com/kb/4132216)

3.7.3 Applying Windows service pack

As for Windows service pack, use only the provided with the server. Do not apply any other service pack.

3.8 Duplex LAN Configuration

The Express5800/ft series builds a duplex LAN configuration by using "Stratus emb-I350 2-Port Gigabit Adapter" or "Stratus emb-X550 2-Port Copper 10 Gigabit Adapter (*)" mounted as standard on the CPU/IO module and the additional LAN card "Stratus I350 2-Port Gigabit Adapter" or "Stratus X550 2-Port Copper 10 Gigabit Adapter".

(*) Express5800/R310g-E4, R320g-E4 do not have this adapter.

3.8.1 Overview

Duplex LAN configuration is using Windows Server 2016 NIC teaming (LBFO).

Please refer to the technical site of Microsoft Corporation about details of LBFO.

When you create a new team, please use the team creation script for ft server.

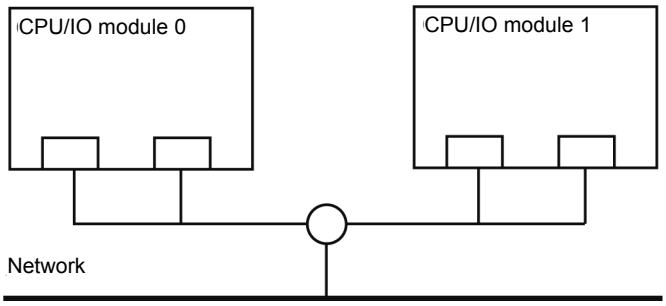
By using the team creation script, the MAC address of the system is set up.

3.8.2 Rules of Duplex Configuration on Express5800/ft series

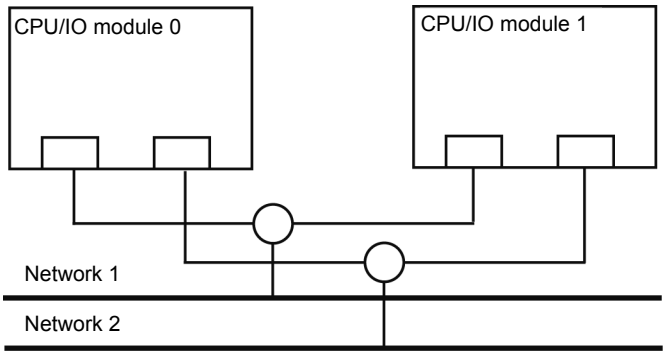
Ensure to make the setting of duplex network configuration on the server.

When building duplex configuration, be sure to use both adapters of CPU/IO module 0 and of 1.

Example1) Configure the duplex network which enhances the availability by using all adapters.



Example 2) Configure the duplex network which corresponds to multiple LAN connection.



3.8.3 Configuring Duplex LAN

The following explains how to configure duplex/dual LAN.

Important

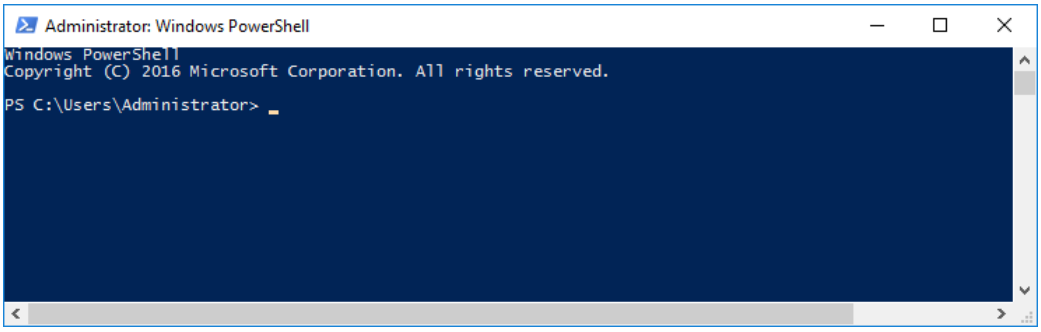
If configuring a duplex network, make sure that the CPU/IO module is set to duplex. If the CPU/IO module is in simplex status, the team properties of NIC teaming cannot be opened.
Use script for LBFO teaming settings. The script may fail if start it before completion of duplexing.
Make sure to configure the duplex network according to the following procedure while the CPU/IO module is in duplex status.

Note

- Because the configuration from the remote site may fail, you need to log on as an Administrator or a member of Administrators group.
- The screen images are subject to change because of the network driver version. Substitute as appropriate when content has been modified.

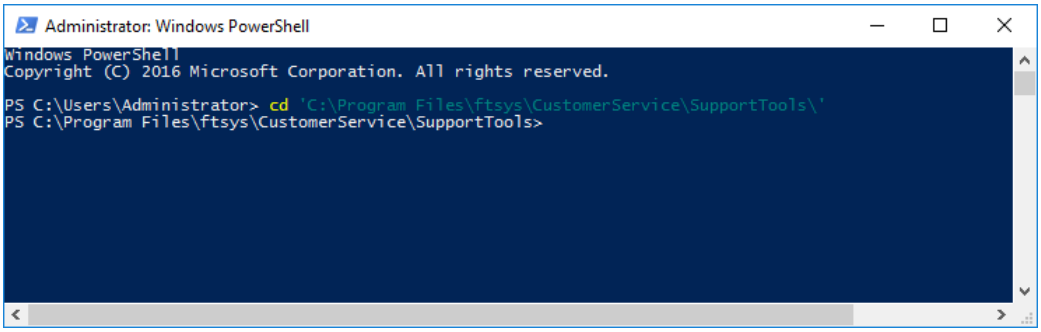
(1) Start Windows PowerShell.

1. Select **Start** – **Windows PowerShell**.



2. Enter the following command and change to the directory.

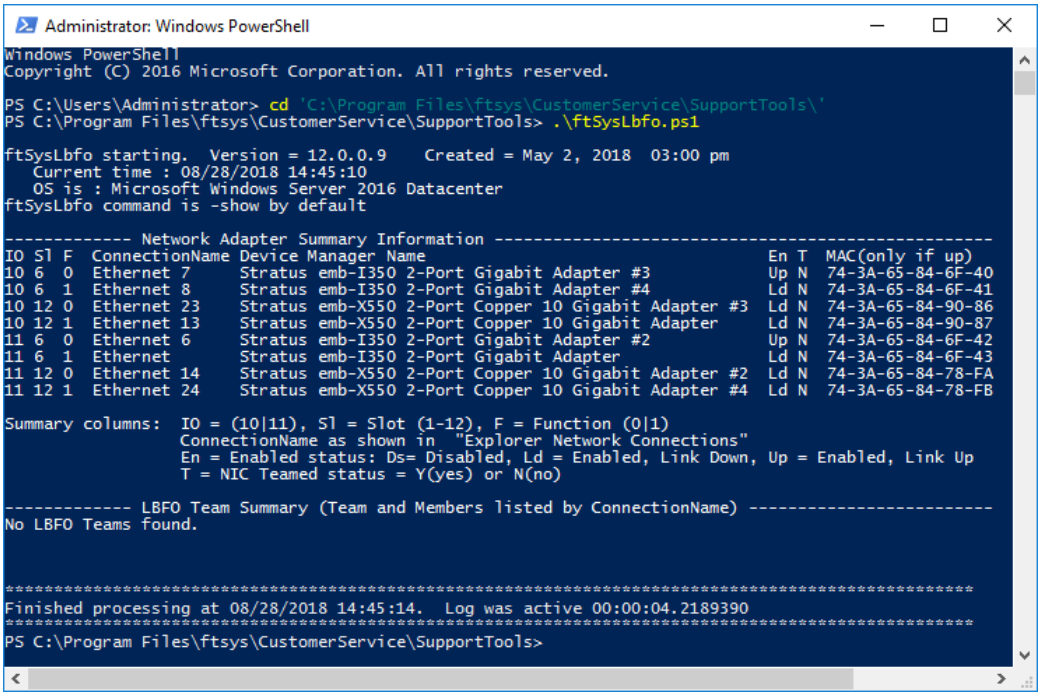
   > cd 'C:\Program Files\ftsys\CustomerService\SupportTools\'



3. Run team creation script(ftSysLbfo.ps1).

   Information on the network adapter is displayed.

   >.\ftSysLbfo.ps1



Important

If run the team creation script immediately after starting the system, the following message may be output.

'Make sure ftSysMad.exe is running and try again.'

Team creation script(ftSysLbfo.ps1) gets information from ftSys Maintenance and Diagnostics(MAD) service, but the service can not respond to the information request for about 10 minutes immediately after system startup, so the above message will be displayed.
If this message is displayed, make sure duplex status in the ftServer utility and run the script again.

[How to Check]
In ftServer Utility, Open [ft Server] - [CPU Module] - [CPU Module(ID:0)] in the tree pane on the left side of the window.
Wait until other than "Unknown" is displayed in status.
If [CPU Module(ID:0)] does not appear under [CPU Module], restart ftServer utility.
If displayed 'Unknown' in status, press F5 to refresh.

[In addition]
If 'ftSys Maintenance and Diagnostics(MAD)' service is stopped due to some kind of trouble, the status display of ft server utility will remain 'Unknown' even if the above [How to Check] is executed. In that case, check the status of 'ftSys Maintenance and Diagnostics(MAD)' on the 'Service' list.
If the service is in a stopped state, start it, wait about two minutes, and then carry out [How to Check] again.

4. Select the adapters to include in the team, and run the -create option.

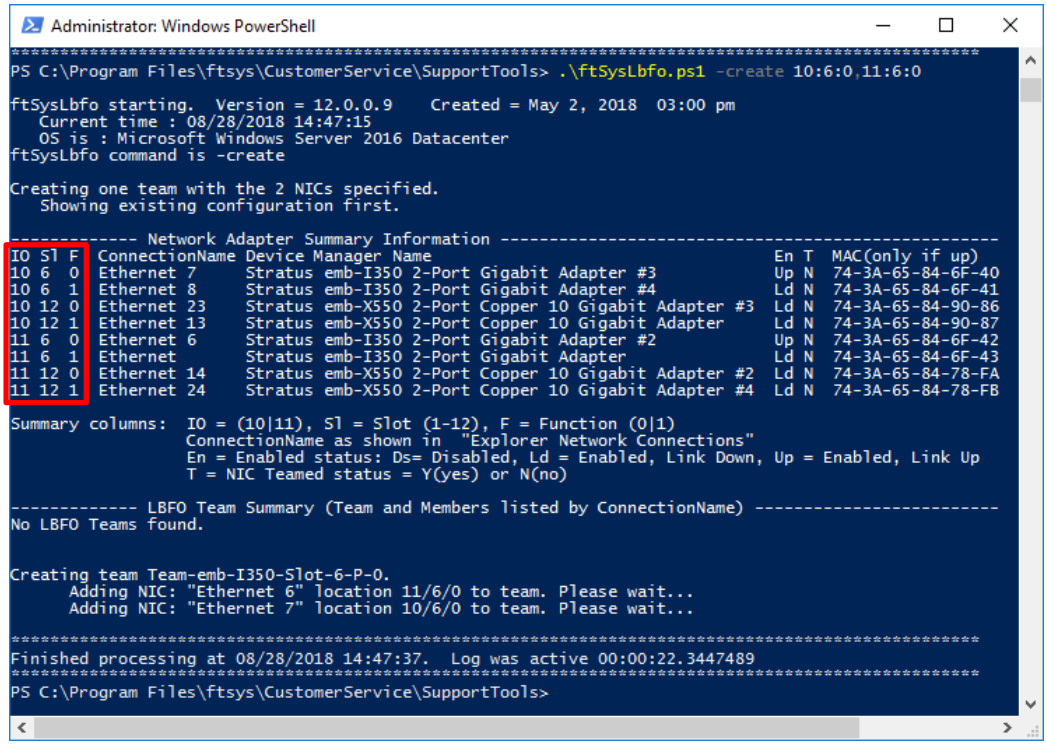
   Refer the red frame in the ‘Network Adapter Summary Information’ and specify it in the format of "IO:Sl:F".

   Example) When teaming with Ethernet 7 and Ethernet 6, specify "10: 6: 0, 11: 6: 0".

   >.\ftSysLbfo.ps1 –create 10:6:0,11:6:0

   When teaming with four adapters, specify adapters of the same "Sl(Slot)" and "F(function)" from each module such as "10:6:0,10:6:1,11:6:0,11:6:1".

   >.\ftSysLbfo.ps1 –create 10:6:0,10:6:1,11:6:0,11:6:1



Note

Check "IO" and "Sl(Slot)" of adapters to be included in the team.
Use adapters of the same "Sl(Slot)" and “F(function)” from each module.
Create a team with the adapter of IO10 and IO11.

IO: 10 (PCI module #0 side)
11 (PCI module #1 side)

Slot: 6 (onboard 1G LAN)
1 (PCI slot1)
2 (PCI slot2)
3 (PCI slot3) *R320g-M4 model
4 (PCI slot4) *R320g-M4 model
12 (onboard 10G LAN) *R320g-M4 model

Function: 0 (Port #0 side)
1 (Port #1 side)

Example:

Team 0
IO10 Sl6 Function 0 (Port #0 side) -> “10:6:0”
IO11 Sl6 Function 0 (Port #0 side) -> ”11:6:0”

Team 1
IO10 Sl6 Function 1 (Port #0 side) -> “10:6:1”
IO11 Sl6 Function 1 (Port #0 side) -> ”11:6:1”

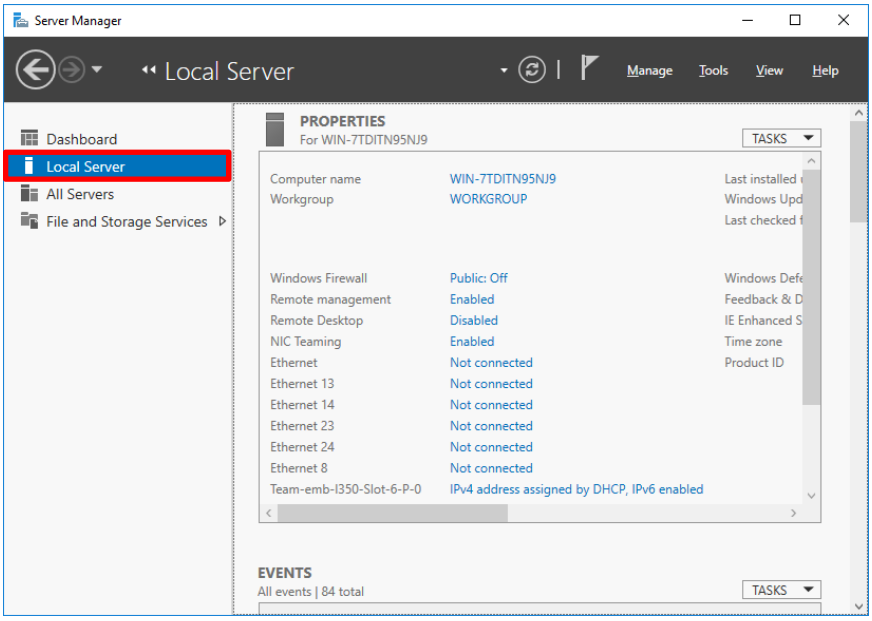
Creating a new team is now complete. The teams is created with default settings.

. Teaming mode:Switch Independent, Load balancing mode:Dynamic, Stanby adapter:None

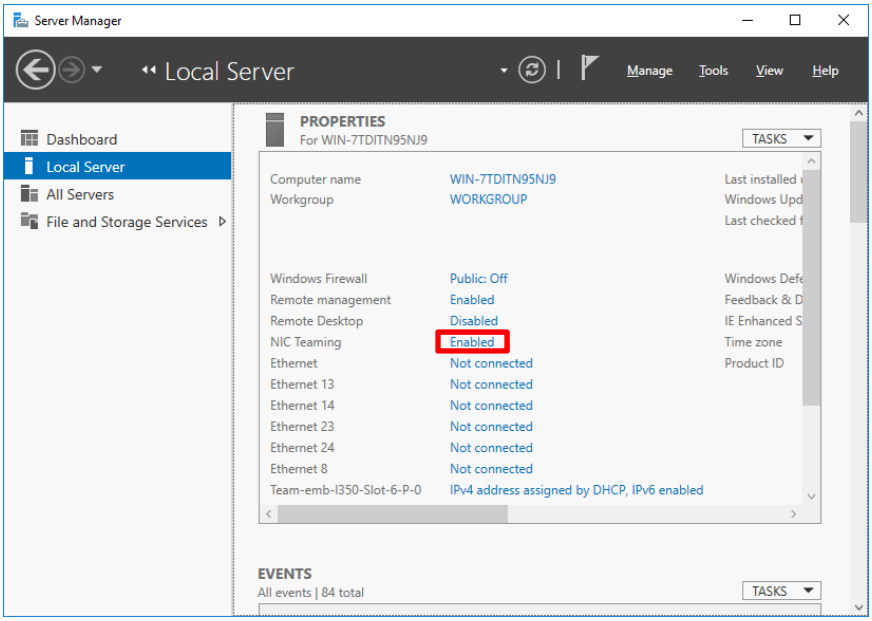
If you change the teaming mode etc., please do the following procedure.

(2) Edit team

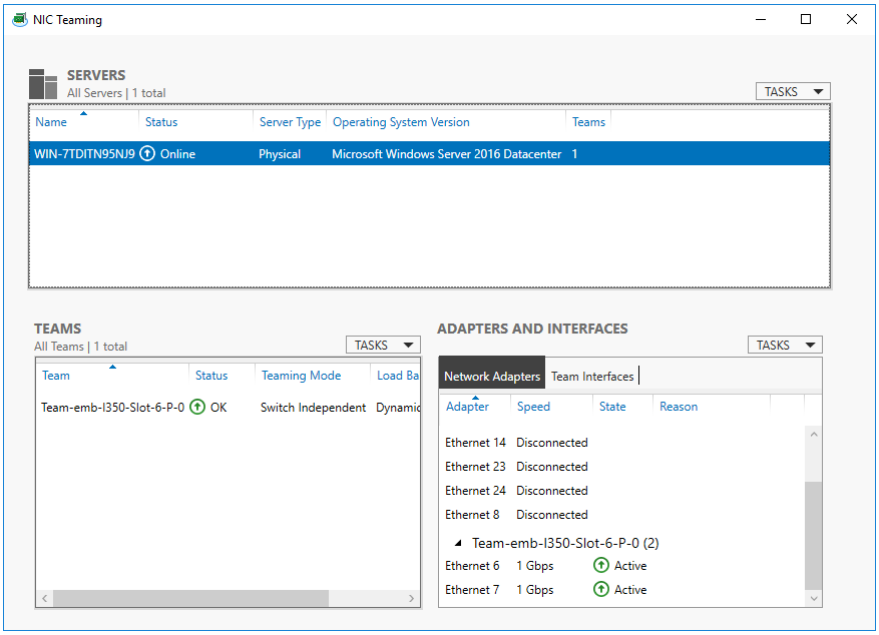
1. Select **Start** – **Server Manager**.
2. Select **Local Server**.



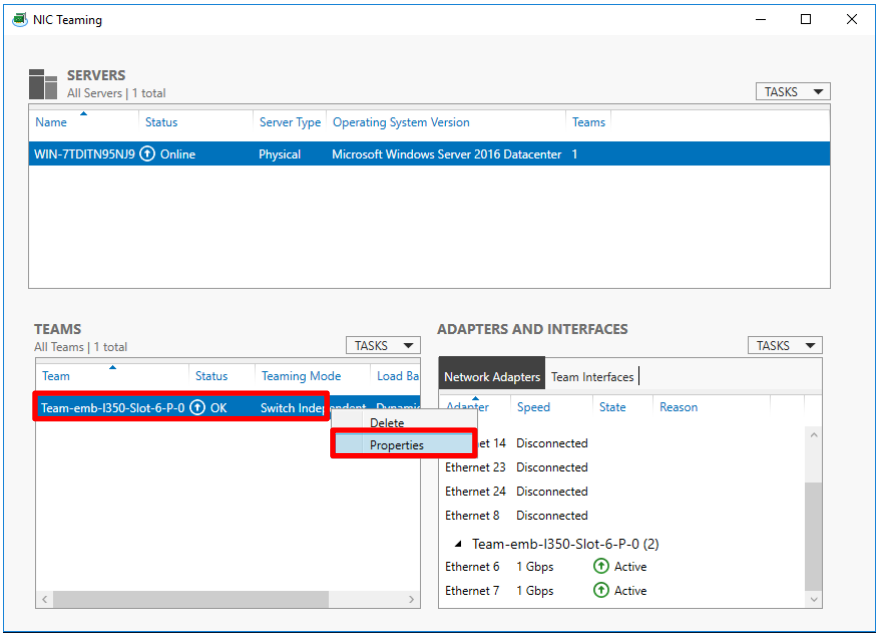
3. In the Properties window, click **Enabled** or **Disabled** for **NIC Teaming**.



4. The NIC teaming setup tool will launch.



5. Open the properties of the team you want to edit.



6. Click **Additional properties**.
   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.

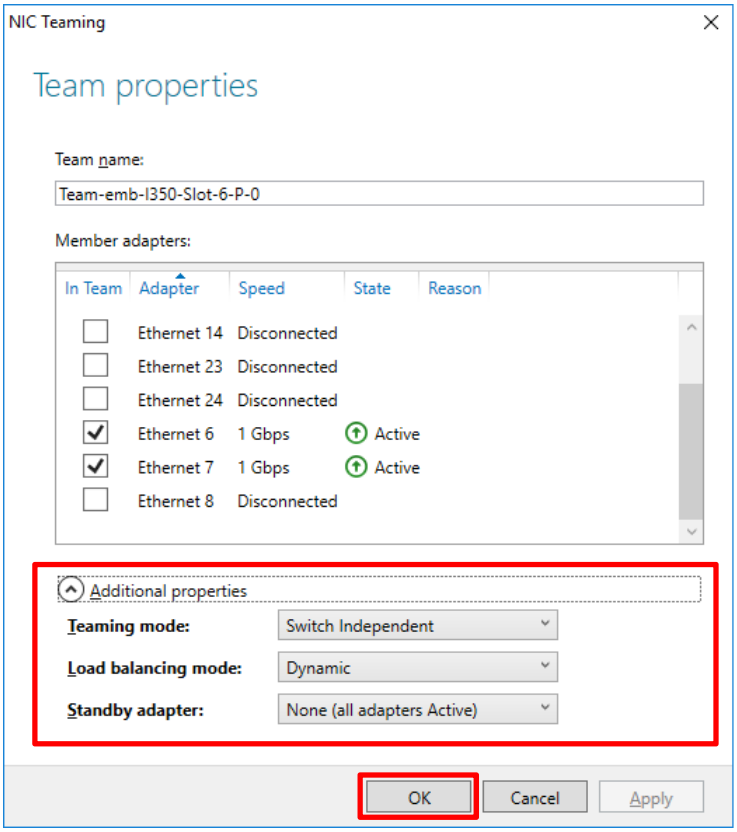
Important **Select other than Static Teamin for teaming mode when connecting 100Mbps or 10Mbps.**
If select Static Teaming and connect with 100Mbps or 10Mbps, network communication may be disabled when the module degraded.

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.



3.9 Configuring Duplexed Disks

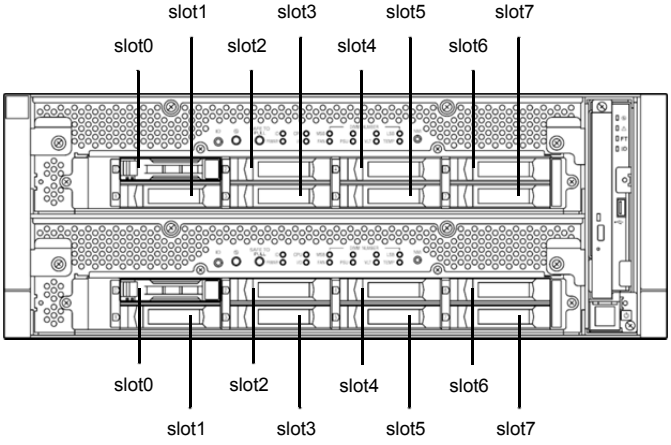
Express5800/ft series secures data by setting dual disk configuration using RDR (Rapid Disk Resync) function. Be sure to make dual disk settings according to the procedure described below.

Important

- **Set dual disk configuration by the RDR (Rapid Disk Resync) function.**
- **To use RDR (Rapid Disk Resync) function, sign in to a built-in Administrator account.**
- **CPU/IO module has a processor function part and IO function part, and monitors and manages each part. The IO function part is referred to as PCI module in this section.**
- **All hard disk drives installed in built-in slots need to be duplexed. S*ee Chapter 1 (3.9.1 Setting Dual Disk Configuration by RDR (Rapid Disk Resync) function)* and duplex the hard disk drives in each slot.**

3.9.1 Setting Dual Disk Configuration by RDR (Rapid Disk Resync) function

The server sets dual configuration for each disk by the RDR function of the ft Server Control Software.
By setting RDR, as the following figure and table show, dual configuration is set between the disks of the corresponding slots, and these disks are recognized as one virtual disk by OS (such as Disk Management and Device Manager).



Slots corresponding to the mirroring process

Corresponding slot
PCI module 10 Slot 0 ⇔ PCI module 11 Slot 0
PCI module 10 Slot 1 ⇔ PCI module 11 Slot 1
PCI module 10 Slot 2 ⇔ PCI module 11 Slot 2
PCI module 10 Slot 3 ⇔ PCI module 11 Slot 3
PCI module 10 Slot 4 ⇔ PCI module 11 Slot 4
PCI module 10 Slot 5 ⇔ PCI module 11 Slot 5
PCI module 10 Slot 6 ⇔ PCI module 11 Slot 6
PCI module 10 Slot 7 ⇔ PCI module 11 Slot 7

* In the table above, PCI module names correspond as follows:
PCI module (for CPU/IO module 0) - PCI module 10
PCI module (for CPU/IO module 1) - PCI module 11

Note

- RDR can only be set on the basic disk inserted into the built-in slot of NEC Express5800/ft series. It cannot be set on the dynamic disk. When using a dynamic disk, set RDR to a basic disk and after that, convert to a dynamic disk.
- Use a basic disk as the system disk. Only a data disk can be used for a dynamic disk.
- For the disk on which RDR is set, use the products with the same model number.
- Configure the RDR settings in the same way not only when the OS is installed but also when the disk is added to the PCI module.
- Create partitions only after the duplication of the hard disk drives are configured.

Dual disk configuration procedure differs depending on the procedure whether it is for the system disk (slot 0) or the data disk (slot 1 to slot 7).

Tips

To configure the dual disk of the system disk, see *(1) System Disk Dual Configuration Procedure* below.

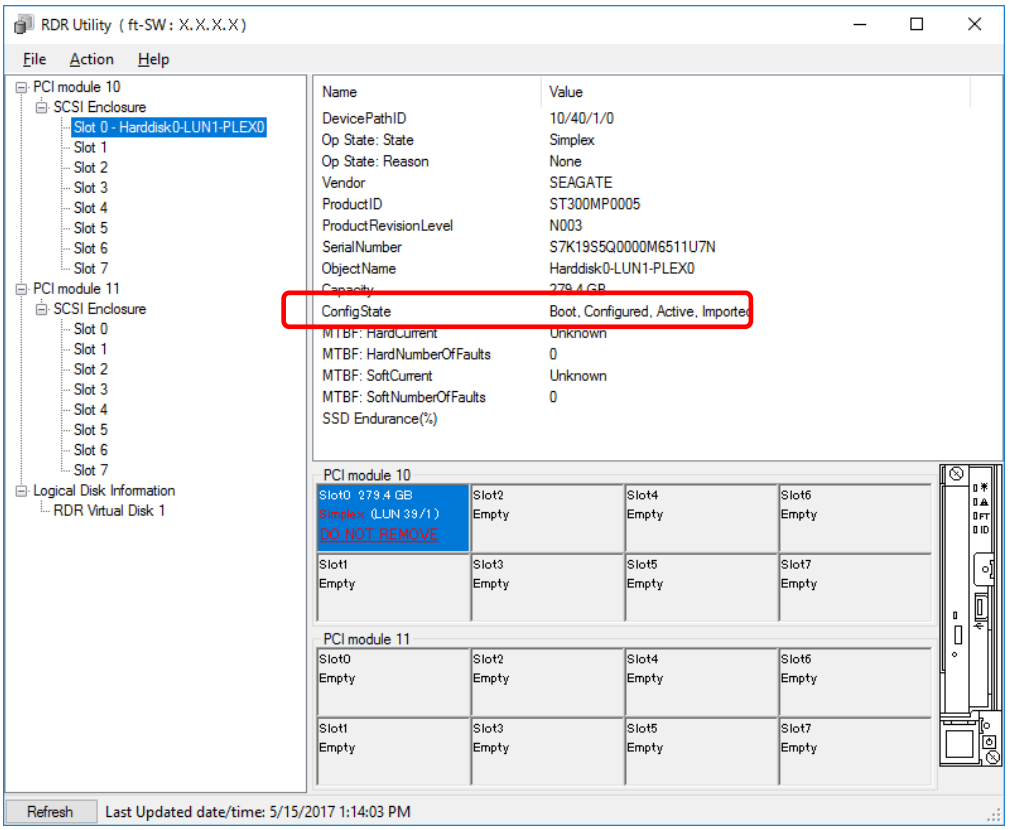
To configure the dual disk of the data disk, see *(2) Data Disk Dual Configuration Procedure* below.

(1) System Disk Dual Configuration Procedure

Configure the dual disk of the system disk with the following procedure.

Click **Start** – **RDR** – **RDR Utility** to start RDR Utility.

1. On the left pane of the RDR Utility, select **Slot 0** of **PCI module 10** and confirm that "**ConfigState**" on the right pane shows "**Boot, Configured, Active, Imported**".



Tips

- For details of RDR Utility, see Chapter 2 (1.2 Disk Operations Using the RDR (Rapid Disk Resync) Function) in the Maintenance Guide *(Windows)*.
- The display of RDR Utility does not refresh automatically. From the menu, go to **Action** and click **Refresh** or press **F5** key every time you conduct disk-related operations such as connecting/disconnecting disks or configuring the RDR.
- On RDR Utility, PCI module names appear as follows.
  - PCI module (CPU/IO module 0) − PCI module 10
  - PCI module (CPU/IO module 1) − PCI module 11

2. Insert the disk for the dual configuration to the Slot 0 of PCI module 11.

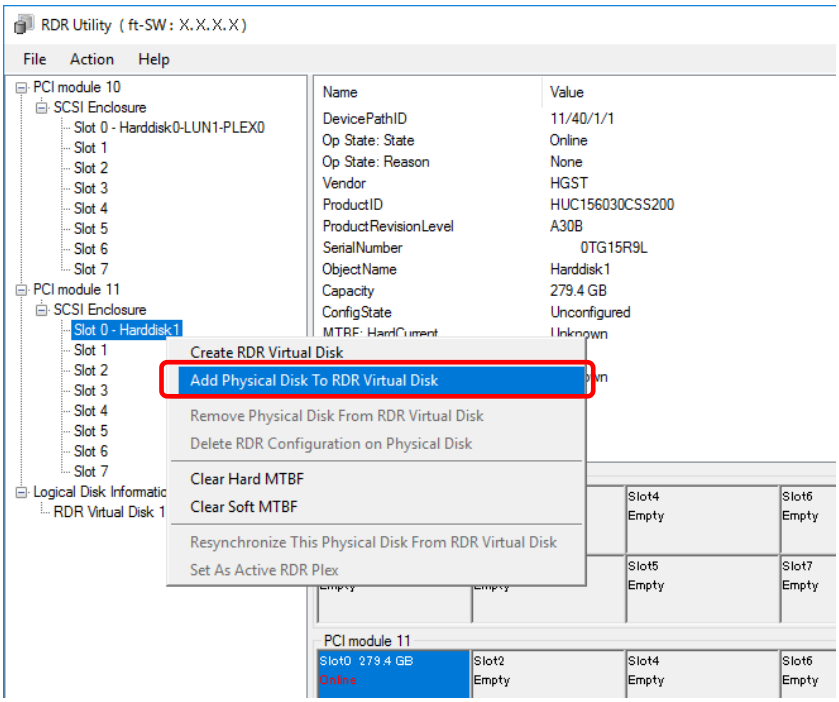
Important

For a disk to be inserted, use a new or physically formatted disk which has the same capacity as the synchronization source. If such a disk is not used, disks are not duplicated successfully.

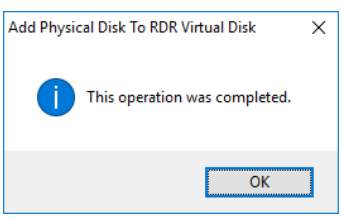
As for physical format, see *Chapter 3 (3.3 Physical Formatting of the Hard Disk Drive)* in *Maintenance Guide (Windows)*.

When a disk is inserted, a popup window asking for rebooting the system may be displayed, but there is no need to reboot it. Select **Restart Later** and close the popup window.

3. On the left tree of RDR Utility, right-click **Slot 0** disk of **PCI module 11** and click **Add Physical Disk To RDR Virtual Disk**.



4. Click **OK**.



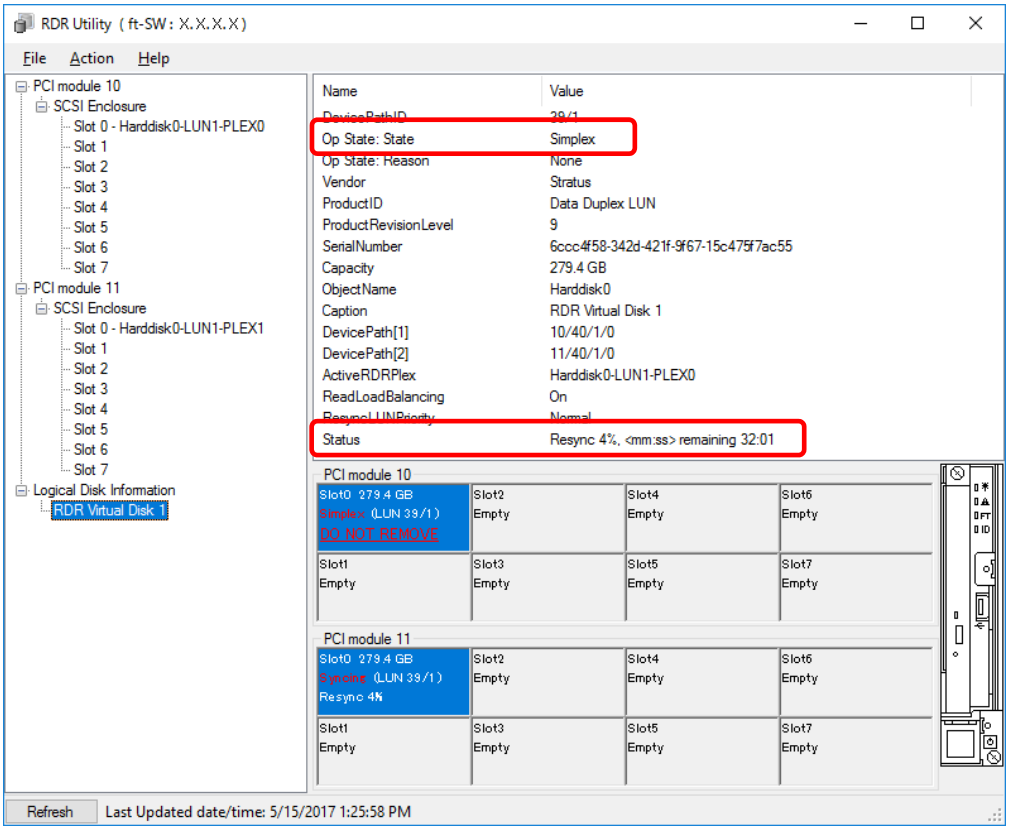
5. Verify that disk synchronization has started and the status of the DISK ACCESS LED and RDR Utility display changes as the following table.

Synchronizing

	DISK ACCESS LED	RDR Utility	
		Op State: State	Status
Source disk	Blinking amber and green	Simplex	–
Destination disk	Blinking amber and green	Syncing	–
RDR Virtual Disk	–	Simplex	Resync x % (x = 0, 4, 8, ..., 96)

Tips

- DISK ACCESS LED is lit green when hard disk drive is accessed.
  If access is made while synchronization is in progress (LED is blinking amber), it seems that the green and amber LEDs are lit alternately.
- The time required for synchronization varies depending on the partition size on the disk. For a 279 GB partition, it takes about 160 minutes.



Important

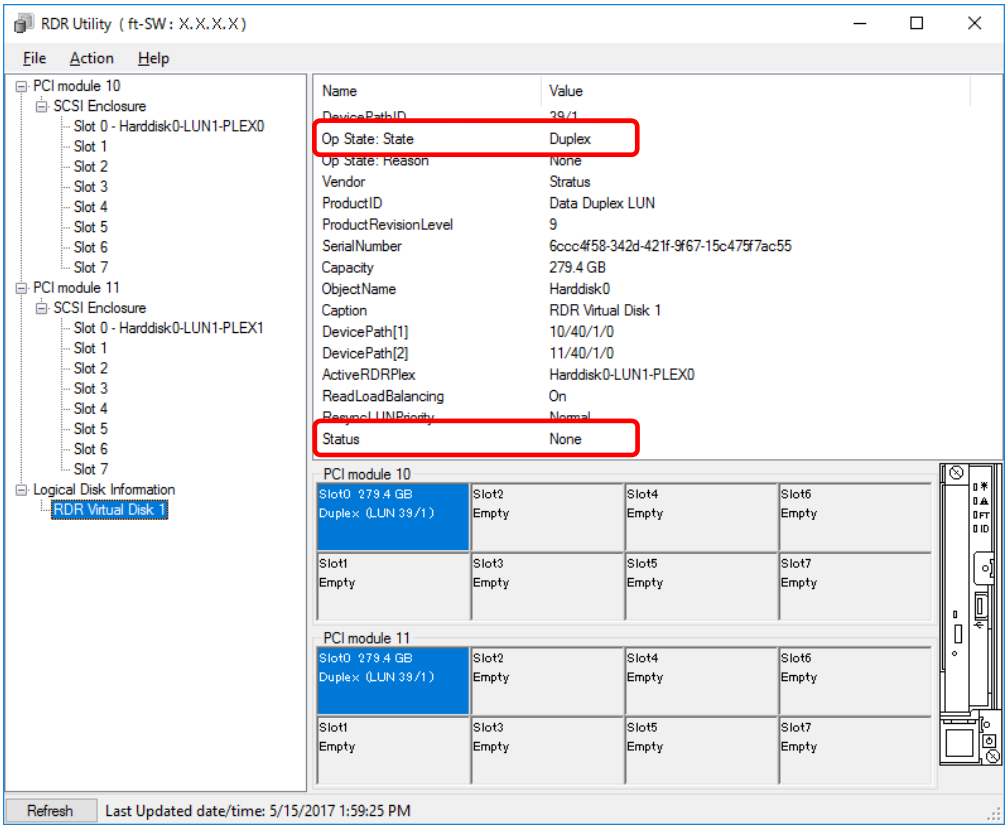
- **It is not recommended to reboot the system before the synchronization is completed. If the system is rebooted before it is completed, the synchronization process restarts from the beginning and whole area of all partitions need to be synchronized.**
- **When the system is halted without shutting down OS properly due to forced shutdown or others, the entire area of the partition on the synchronized disks will be resynchronized after the system is restarted.**

Synchronization completed

	DISK ACCESS LED	RDR Utility	
		Op State: State	Status
Source disk	unlit (Lights green when accessing the disk drive)	Duplex	–
Destination disk	unlit (Lights green when accessing the disk drive)	Duplex	–
RDR Virtual Disk	–	Duplex	None

Tips

DISK ACCESS LED is lit green only when hard disk drive is accessed.
If no access is made, the LED seems to be unlit.



(2) Data Disk Dual Configuration Procedure

Follow the procedure below to configure dual data disk for the slots 1 to 7.

Note

The following shows how to configure dual disk for the slot 1. If you want to configure the dual disk for slot 2 to slot 7, read "slot 1" as the slots you want to make dual configuration and perform the procedure.

1. Insert a disk for the dual configuration into the Slot 1 of PCI module 10.

   If a disk is already mounted, this procedure is not necessary.

Important

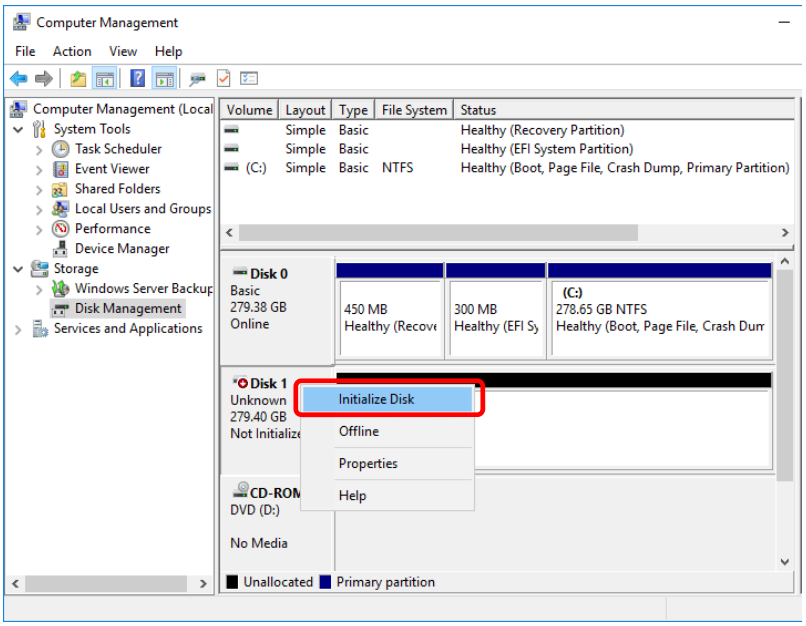
For a disk to be inserted, use a new or physically formatted disk. If such a disk is not used, disks are not duplexed successfully.

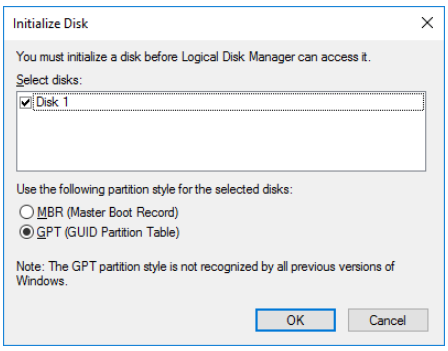
As for physical format, see *Chapter 3 (3.3 Physical Formatting of the Hard Disk Drive)* in *Maintenance Guide (Windows)*.

When a disk is inserted, a popup window asking for rebooting the system may be displayed, but there is no need to reboot it. Select **Restart Later** and close the popup window.

2. From **Start**, select **Windows Administrative Tools** and start **Computer Management**. On the tree in the left pane, click **Disk Management**.

   If the inserted disk is indicated as Offline in the right pane, right-click the disk and make it online. After that, If the inserted disk is indicated as Not Initialized, right-click the disk again and initialize it.





When a disk is initialized, a popup window asking for rebooting the system may be displayed, but there is no need to reboot it. Select **Restart Later** and close the popup window.

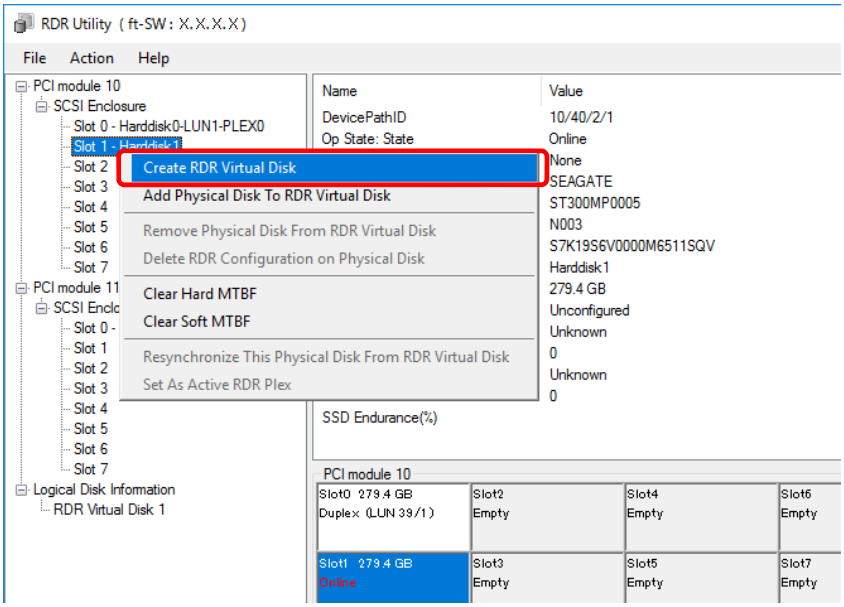
3. Click **Start** – **RDR** – **RDR Utility** to start RDR Utility.

Tips

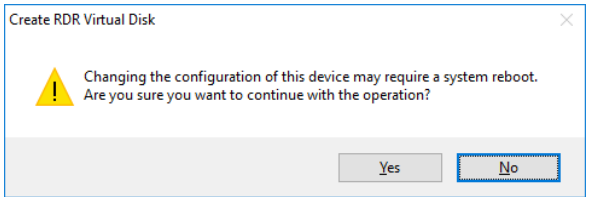
- If the inserted disk does not appear on the tree, from the menu of RDR Utility, select **Action** and click **Refresh** or press <**F5**> to update the display after a while.
- The display of RDR Utility is not updated automatically. Therefore, update it every time after you perform disk operations described below.

4. On the left pane of the RDR Utility, right click on the **Slot 1** disk of **PCI module 10** and select **Create RDR Virtual Disk**.

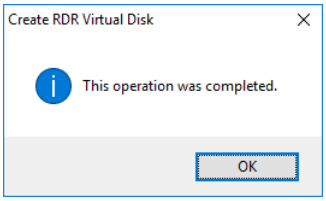
   Depending on the disk condition, RDR setting may take some time and RDR Utility may pause for a few minutes. There is no error, so wait until the process is completed.



5. Click Yes.



6. Click OK.



Important

- **If RDR is specified to a disk which contains the system partition or partition which cannot be unmounted such as setting the paging file, pop-up message of Step 6 does not appear.**

  Because pop-up message that reboot of the system is needed appears, click Close or OK. The system will be automatically rebooted 2 minutes later. Go on to Step 7 after the system is rebooted.

  In addition, when the system does not reboot automatically but there is no change in setting of RDR, reboot the system manually.

- **Disk may become offline when RDR is set. In this case, use "Disk Management" to make it online.**

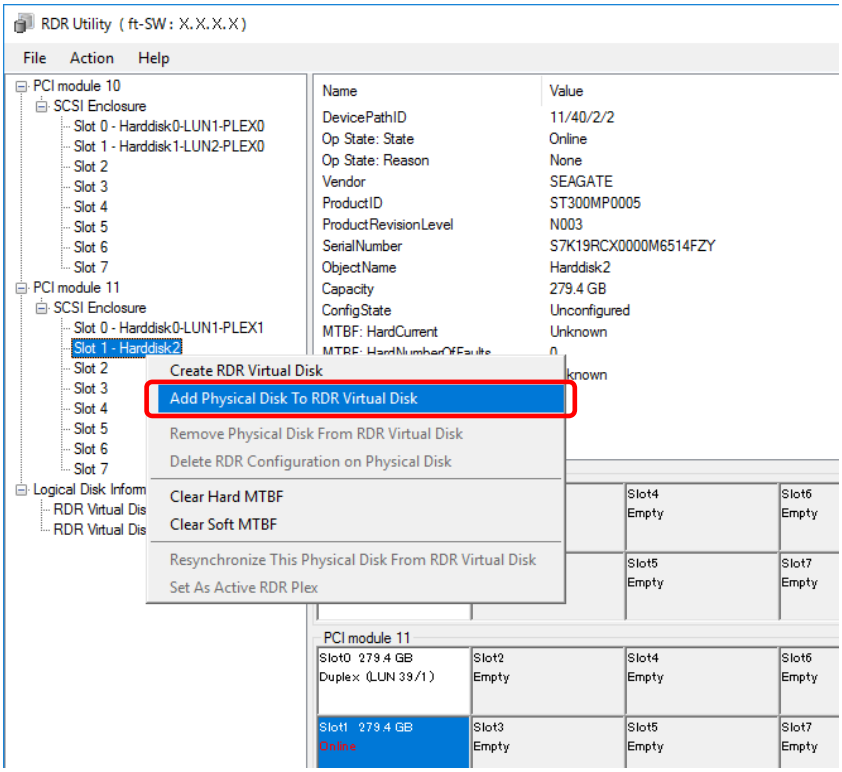
7. Insert the disk to set dual configuration into the Slot 1 of PCI module 11.
If a hard disk drive is already mounted, this procedure is not necessary.

Important **For a disk to be inserted, use a new or physically formatted disk which has the same capacity as the synchronization source. If such a disk is not used, disks are not duplicated successfully.**

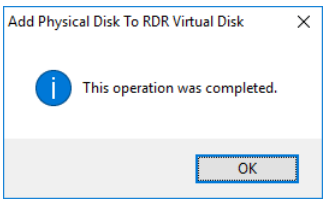
As for physical format, see *Chapter 3(3.3 Physical Formatting of the Hard Disk Drive)* in *Maintenance Guide (Windows)*.

When a disk is inserted, a popup window asking for rebooting the system may be displayed, but there is no need to reboot it. Select **Restart Later** and close the popup window.

8. Right-click the **Slot 1** of the **PCI module 11** from the left pane of RDR Utility, and then click **Add Physical Disk To RDR Virtual Disk**.



9. Click **OK**.



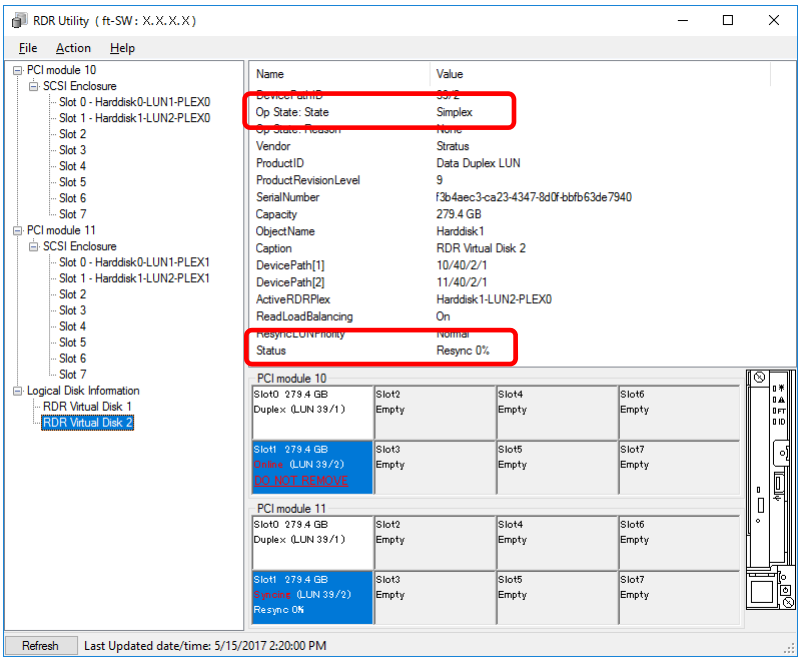
10. Verify that disk synchronization has started and the status of the DISK ACCESS LED and RDR Utility display changes as the following table.

Synchronizing

	DISK ACCESS LED	RDR Utility	
		Op State: State	Status
Source disk	Blinking amber and green	Simplex (partition exists)	–
	Green (Blinking)	Online (no partition exists)	
Destination disk	Blinking amber and green	Syncing	–
RDR Virtual Disk	–	Simplex	Resync x % (x=0,4,8,・・・96)

Tips

- DISK ACCESS LED is lit green when hard disk drive is accessed.
  If access is made while synchronization is in progress (LED is blinking amber), it seems that the green and amber LEDs are lit alternately.
- The time required for synchronization varies depending on the partition size on the disk.
  For a 279 GB partition, it takes about 160 minutes. When no partition exists on the disk, synchronization is completed immediately after the RDR is set, and **Op State: State** changes to **Duplex**.
  However, when the dynamic disk is used, the time required for synchronization depends on the disk size regardless of whether or not a partition exists. For a 300 GB disk, it takes about 160 minutes.



Important

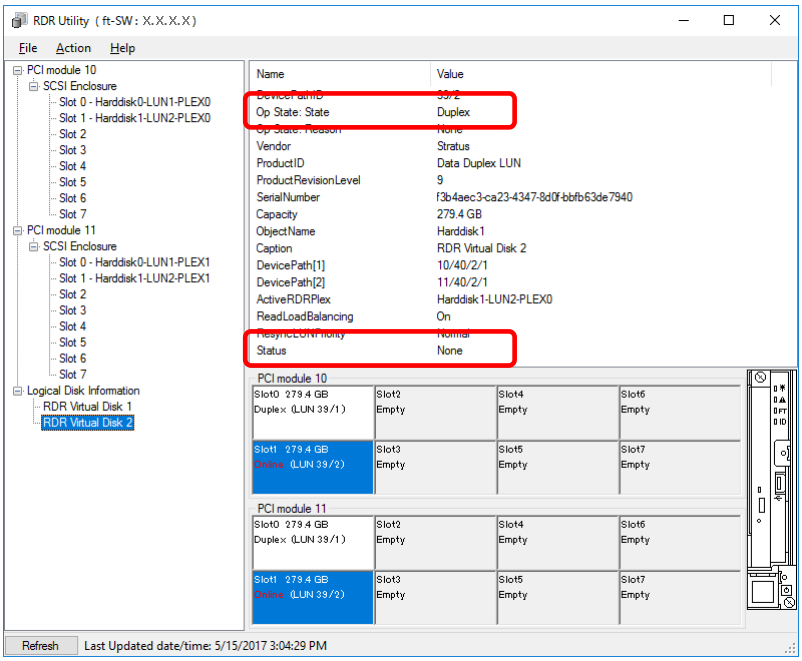
- **It is not recommended to reboot the system before the synchronization is completed. If the system is rebooted before it is completed, the synchronization process restarts from the beginning and whole area of all partitions need to be synchronized.**
- **When the system is halted without shutting down Windows properly due to forced shutdown or others, the entire area of the partition on the synchronized disks will be resynchronized after the system is restarted.**

Synchronization completed

	DISK ACCESS LED	RDR Utility	
		Op State: State	Status
Source disk	unlit (Lights green when accessing the disk drive)	Duplex or Online	–
Destination disk	unlit (Lights green when accessing the disk drive)	Duplex or Online	–
RDR Virtual Disk	–	Duplex	None

Tips

DISK ACCESS LED is lit green only when hard disk drive is accessed.
If no access is made, the LED seems to be unlit.

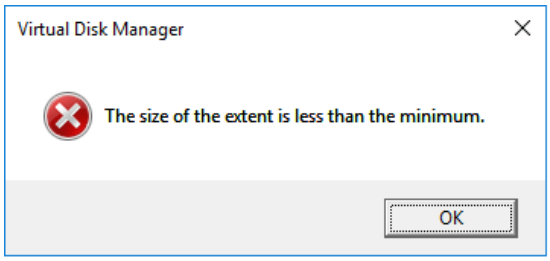


3.10 Creating Volume

For NEC Express5800/ft series, you need to set mirroring for each disk by the RDR function. If you created a new partition or volume on the disk that has been set RDR and dual configuration, the area is mirrored automatically. You do not need to perform mirroring for each partition or volume.

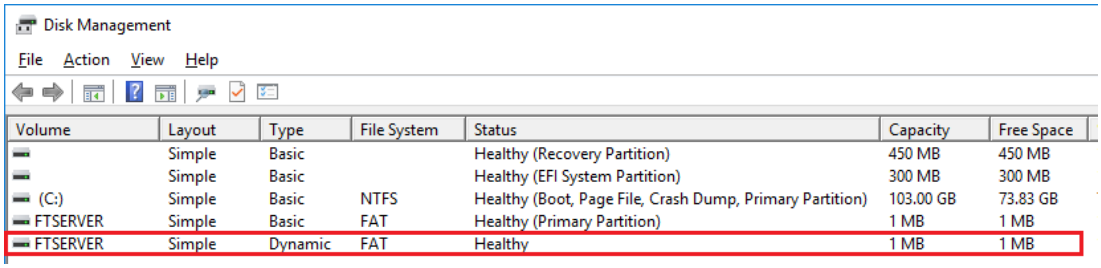
There are notices as follows about Creating Volume.

- When setting RDR, there are cases a FAT volume whose name is FTSERVER, is created with the size of 1MB, then it is displayed on **Disk Management**. And, the drive character is sometimes assigned to this volume. There is no problem with deleting that volume. After converting a disk with RDR setting to a dynamic disk, when this volume exists and you are going to make a new volume on the dynamic disk, the following error message is displayed and you can't make a volume.



Please perform following procedure to make a volume on the dynamic disk.

1. Right-click the left bottom of screen, and click **Disk Management** from the menu displayed.
2. Convert a target disk with RDR setting to a dynamic disk.
3. Right-click and delete a FAT volume, whose name is FTSERVER and whose Type is Dynamic, with the size of 1MB in displayed volumes on the upper row of the screen. (Refer to red frame in the following example.) If some volumes exist, delete those all.



Volume	Layout	Type	File System	Status	Capacity	Free Space
	Simple	Basic		Healthy (Recovery Partition)	450 MB	450 MB
	Simple	Basic		Healthy (EFI System Partition)	300 MB	300 MB
(C:)	Simple	Basic	NTFS	Healthy (Boot, Page File, Crash Dump, Primary Partition)	103.00 GB	73.83 GB
FTSERVER	Simple	Basic	FAT	Healthy (Primary Partition)	1 MB	1 MB
FTSERVER	Simple	Dynamic	FAT	Healthy	1 MB	1 MB

4. By operation of 3, it returns to a basic disk, so convert to a dynamic disk once again.
5. Make a new volume.

- A mirrored volume (RAID-1) or RAID-5 volume cannot be used on a dynamic disk.When a mirrored volume (RAID-1) or RAID-5 volume was built on a dynamic disk, the System FT LED and Safe To Pull LED indicating the status of the ft server may not be displayed correctly, and information of duplex and simplex status of the PCI module may not be output to the event log properly. If you are going to use a dynamic disk, convert only a data disk to a dynamic disk and build as a simple volume, spanned volume, or striped volume.

3.11 Installing Bundled Software for the Server

NEC ESMPRO Agent and NEC ESMPRO Manager are contained in EXPRESSBUILDER.

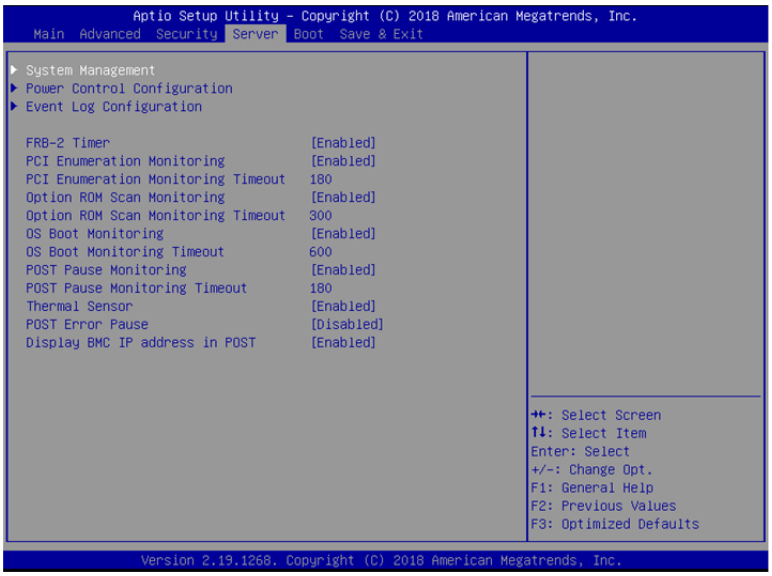
Make sure that the installed utilities are shown on **Start** menu. If you did not install these utilities during setup with EXPRESSBUILDER, install them individually by according to *Chapter 2* (*Installing Bundled Software*).

3.12 Enabling OS Boot Monitoring Feature

Enables OS Boot Monitoring feature.

Set OS Boot Monitoring feature to **Enabled** on BIOS SETUP according to *Chapter 1 (3.1.3 Disabling OS Boot Monitoring Feature)*. Then, specify the timeout time for **OS Boot Monitoring Timeout** parameter appropriately.

Tips Specify the timeout time in seconds. Default setting is 600 seconds (10 minutes).

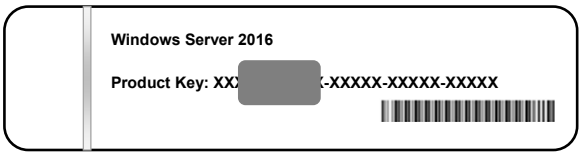


3.13 License Authentication

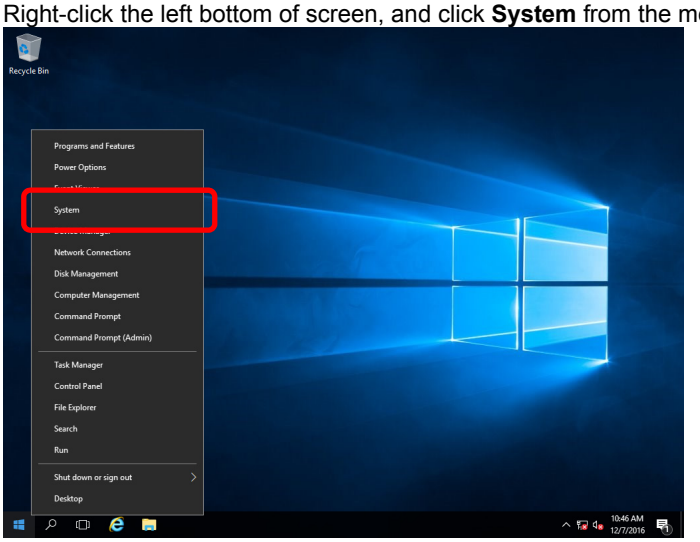
You need to activate Windows Server 2016 to use it. Follow the steps below to check if your operating system has been activated and perform the activation as needed.

Note

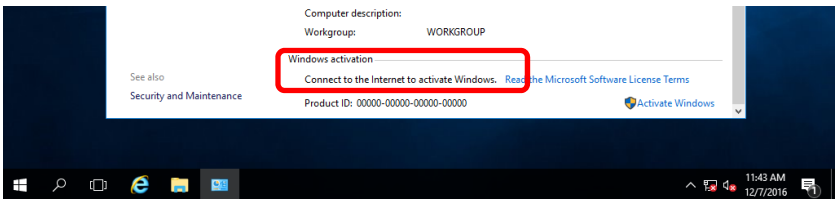
To activate Windows Server 2016, enter the Product Key written on the COA (Certificate of Authenticity) label. The COA label of Windows Server 2016 is attached to the operating system media package.



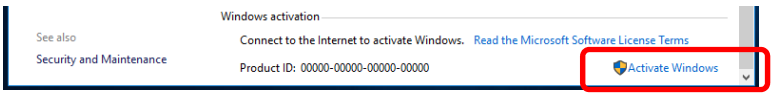
1. Right-click the left bottom of screen, and click **System** from the menu displayed.



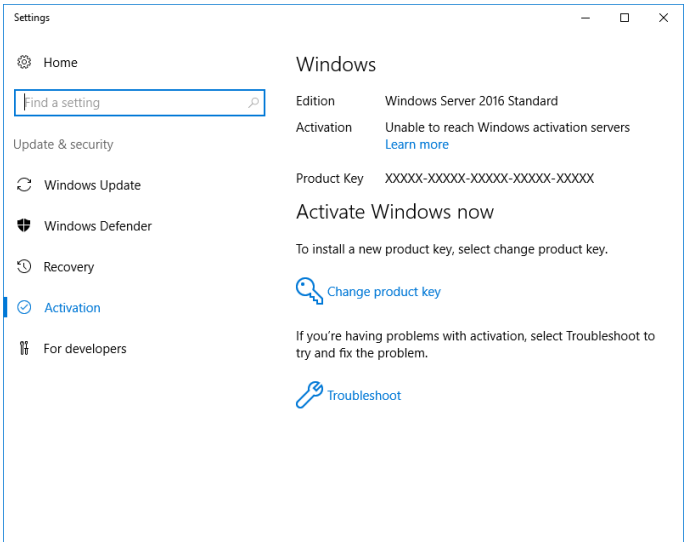
2. Check Windows license authentication.
   - ☐ If "Windows is activated." is displayed:
     You do not need to perform this procedure.
   - ☐ If "Connect to the internet to activate windows." is displayed:
     Go to Step 3.



3. Click **Activate Windows**.



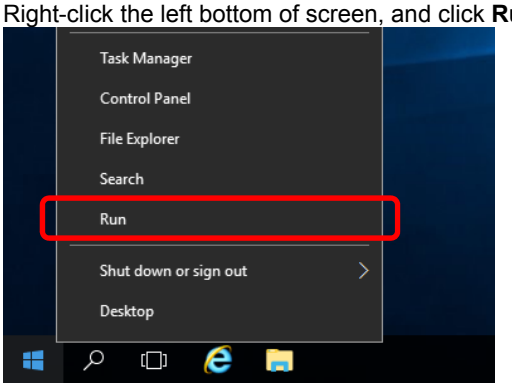
4. Perform license authentication.



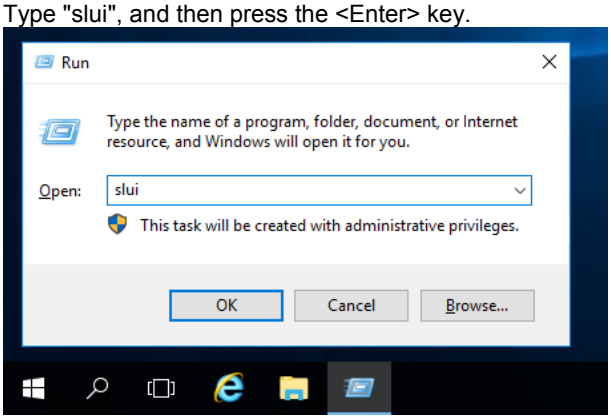
☐ When connected to Internet:
Click **Change product key**.
Complete license authentication process according to the message.
☐ When not connected to the Internet:
Go to Step 5.

5. Perform License Authentication via telephone.
Go to the next step, which differs depending on the installation media you used.
☐ Backup DVD-ROM : Go to Step 6.
☐ Windows Server 2016 DVD-ROM
– Product key has been input : Go to Step 9.
– Product key has not been input : Go to Step 6.

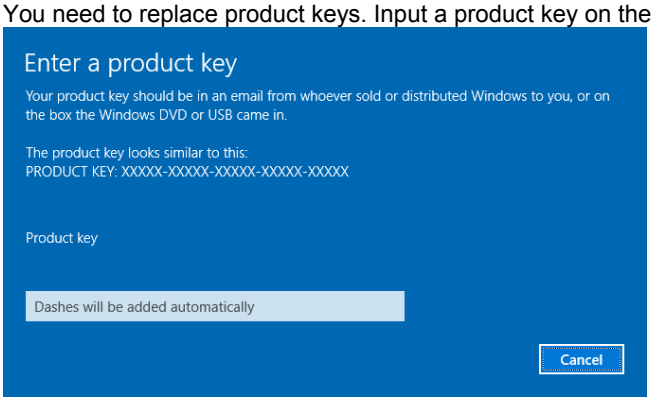
6. Right-click the left bottom of screen, and click **Run** from the menu displayed.



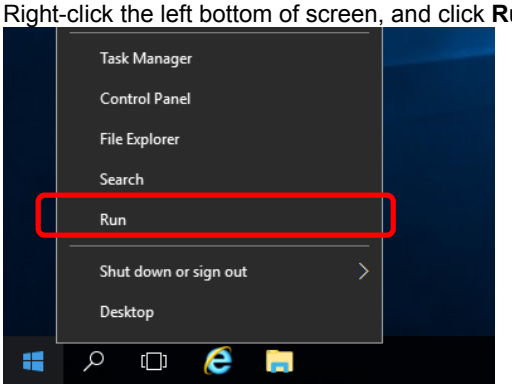
7. Type "slui", and then press the <Enter> key.



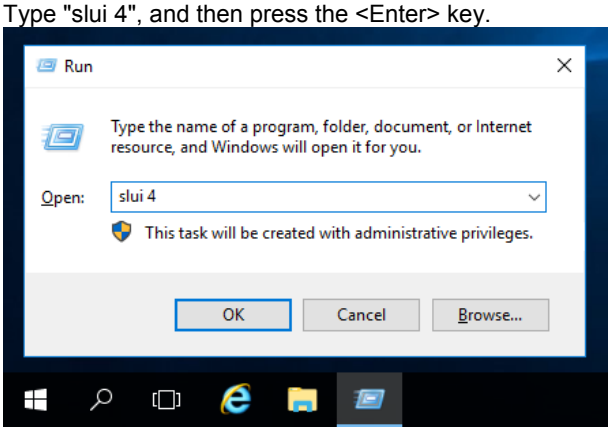
8. You need to replace product keys. Input a product key on the following screen.



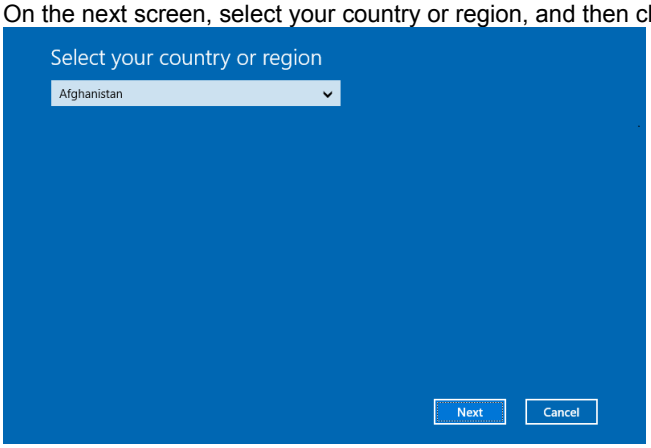
9. Right-click the left bottom of screen, and click **Run** from the menu displayed.



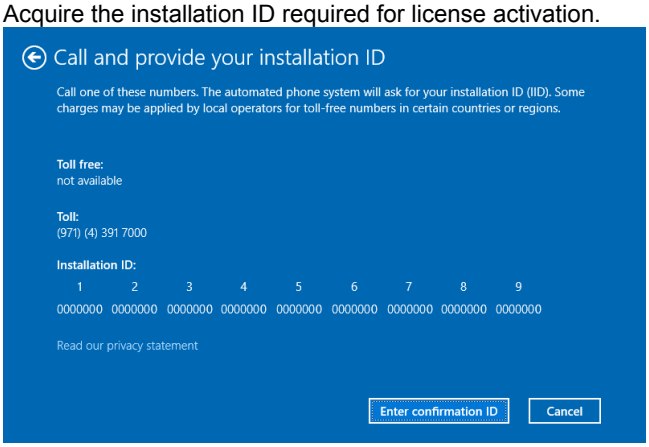
10. Type "slui 4", and then press the <Enter> key.



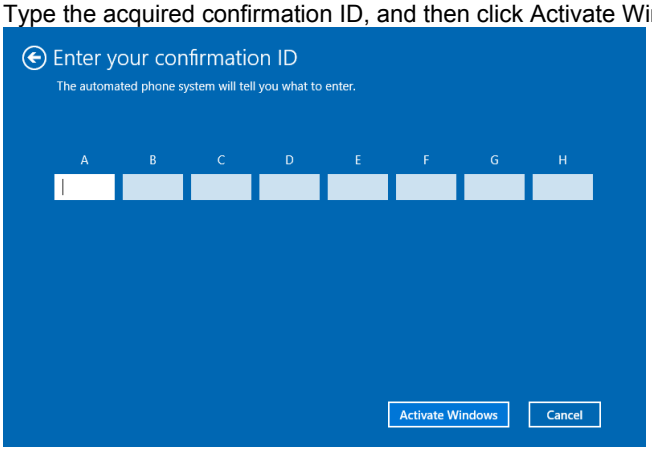
11. On the next screen, select your country or region, and then click Next.



Acquire the installation ID required for license activation.



12. Call the Microsoft license activation hotline and then tell your installation ID.
Type the acquired confirmation ID, and then click Activate Windows.



This completes authentication.

3.14 Confirming the ft Server Control Software Version

Perform the procedure when you need to check the ft Server Control Software version of the current system before adding devices to NEC Express5800/ft series or updating ft Server Control Software.

Confirm the version following the steps below, and take a note of the displayed version number.

Version: ___.___.__________._____

1. Sign in to the system with an account that has administrator privilege.
2. Open **Control Panel** from the **Start** menu.
3. Open **Programs and Features**.

   If the **Programs and Features** icon is not displayed, open **Programs** and click **Programs and Features**.
4. Check the version of **ft Server Control Software** from the list of programs.

3.15 Setting TCP/IP Timeout

Timeout values of TCP/IP are changed at setup by adding the following registries on Express5800/ft series.

HKLM\System\CurrentControlSet\Services\Tcpip\Parameters

Value: TcpMaxDataRetransmissions

Type: REG_DWORD

Default: 8

This setting is required if Hyper-V is enabled. Refer to *Chapter 1 (7.1 System Down Time Caused by Duplexing CPU Module*) and change value according to the memory size and model.

If you are not using Hyper-V on your server, this setting is not required. To restore the factory-set value, run the following batch file with administrator account, and restart the server.

C:\Program Files\NEC\HAS_SW\SUPPORT

SetTcpMaxDR_OsDef.bat

To restore the factory-set value, run the following batch file with administrator account, and restart the server.

C:\Program Files\NEC\HAS_SW\SUPPORT

ResetTcpMaxDR_FtDef.bat

3.16 Setting up status notification function of ft server

Express5800/ft server monitors duplexing status of ft server with ESMPS service, and outputs the status to event log. Change the settings for monitoring ft server status depending on your server operation.

Note

When you change setting by the following procedure, ESMPS service is restarted. At two cases, system event log of ESMFTPolicy is registered with ESMPS starting.

1. When endurance of SSD is in critical range, the event of ID:1103/1113 is registered.

2. When module or PCI module is simplex state, the event of ID:2050 is registered.

3.16.1 Event log registration setting while SSD needs to be replaced

ESMPS service monitors endurance of SSD installed on ft server. It register the following event which is reported to the system administrator by Express Report Service / Express Report Service (HTTPS), when the endurance is short (less than 10%).

Source	ID	Level	Content
ESMFTPolicy	1103	Warning	Endurance of indicated device (SSD) on PCI (ID:10) is in critical range.
	1104	Error	Endurance of indicated device (SSD) on PCI (ID:10) reached impossible of use.
	1113	Warning	Endurance of indicated device (SSD) on PCI (ID:11) is in critical range.
	1114	Error	Endurance of indicated device (SSD) on PCI (ID:11) reached impossible of use.

After that, it register reminder event at every 24hour until SSD is exchanged. Default setting is the following event which is not reported to the system administrator by Express Report Service / Express Report Service (HTTPS), because it suppress communication fee and avoid system load of collecting logs.

Source	ID	Level	Content
ESMFTPolicy	1203	Warning	Endurance of indicated device (SSD) on PCI (ID:10) is in critical range.
	1204	Error	Endurance of indicated device (SSD) on PCI (ID:10) reached impossible of use.
	1213	Warning	Endurance of indicated device (SSD) on PCI (ID:11) is in critical range.
	1214	Error	Endurance of indicated device (SSD) on PCI (ID:11) reached impossible of use.

Along your policy, reminder event which is registered until SSD is exchanged is able to set the following.

- In case to be reported to the system administrator by Express Report Service / Express Report Service (HTTPS) at every 24hours is required, select process number 1 in the step 3 at the following procedures (Procedures to change continuous notification setting of alert status of ESMPS service) and execute "Target event of Express Reporting Service".
- In case to do not register event log at all, execute process number 2 in the step 3 at the following procedure.
- To revert the setting to its default, select process number 1 in the step 3 below and execute "Non-Target event of Express Reporting Service".

Note

If you do not use SSD, endurance of disk will not be monitored, thus you do not need to change this setting.

(Procedures to change continuous notification setting of alert status of ESMPS service)

1. Sign in with an account that has Administrator role.
2. Execute ESMPS_AlertRemind.BAT in C:\Program Files\ftsys\Utility, and press any key to continue the process after the message shown below is displayed.

```
This batch file changes the setting of the status notification function
of the ft server. When stopping change, please click a close box [x]
in the upper right of this window.

Press any key to continue...
```

3. Input desired process number (1～6) (*1) following the message.
4. ESMPS service will be restarted to reflect the setting.
   Press any key after the message shown below is displayed to back to the message display in step 3.

```
Enable SSD AlertRemind setting has been completed.

Press any key to continue…
```

5. When setting is completed, execute process number 7 to quit the batch.
   It is not necessary to restart the system to apply this module.

*1: The following process is executed by the input number.
(Colored gray line is unrelated to alert of SSD endurance.)

Number	Process
1	When SSD needs to be replaced: Change to "Register to event every day"
2	When SSD needs to be replaced: Change to "Register to event only once"
3	When CPU simplex status continues: Change to "Register to event every day"
4	When CPU simplex status continues: Change to "Register to event only once"
5	When PCI simplex status continues: Change to "Register to event every day"
6	When PCI simplex status continues: Change to "Register to event only once"
7	Exit this batch

3.16.2 Event log registration setting while module continues simplex status

ESMPS service is set to register that module continues simplex status to event log every day to prevent system failure caused by malfunctions of multiple parts.

Though it is not recommended for stable duplexing operation of the system, if you want to change the setting not to register to the event log every day, but to "Register to event only once", execute process number 4(When CPU simplex status continues: Change to "Register to event only once") and process number 6(When PCI simplex status continues: Change to "Register to event only once") in the step 3 in Procedure to change continuous notification setting of alert status of ESMPS service below.

To revert the setting to its default, execute process number 3 and 5 in the step 3 below.

(Procedure to change continuous notification setting of alert status of ESMPS service)

1. Sign in with an account that has Administrator role.
2. Execute ESMPS_AlertRemind.BAT in C:\Program Files\ftsys\Utility, and press any key to continue the process after the message shown below is displayed.

```
This batch file changes the setting of the status notification function
of the ft server. When stopping change, please click a close box [x]
in the upper right of this window.

Press any key to continue...
```

3. Input desired process number (1～6) (*1) following the message.
4. ESMPS service will be restarted to reflect the setting.
   Press any key after the message shown below is displayed to back to the message display in step 3.

```
Disable CPU AlertRemind setting has been completed.

Press any key to continue...
```

5. When setting is completed, execute process number 7 to quit the batch.
   It is not necessary to restart the system to apply this module.

*1: The following process is executed by the input number.
(Colored gray line is unrelated to alert of module status.)

Number	Process
1	When SSD needs to be replaced: Change to "Register to event every day"
2	When SSD needs to be replaced: Change to "Register to event only once"
3	When CPU simplex status continues: Change to "Register to event every day"
4	When CPU simplex status continues: Change to "Register to event only once"
5	When PCI simplex status continues: Change to "Register to event every day"
6	When PCI simplex status continues: Change to "Register to event only once"
7	Exit this batch

3.17 Checklist Display Function at Installation

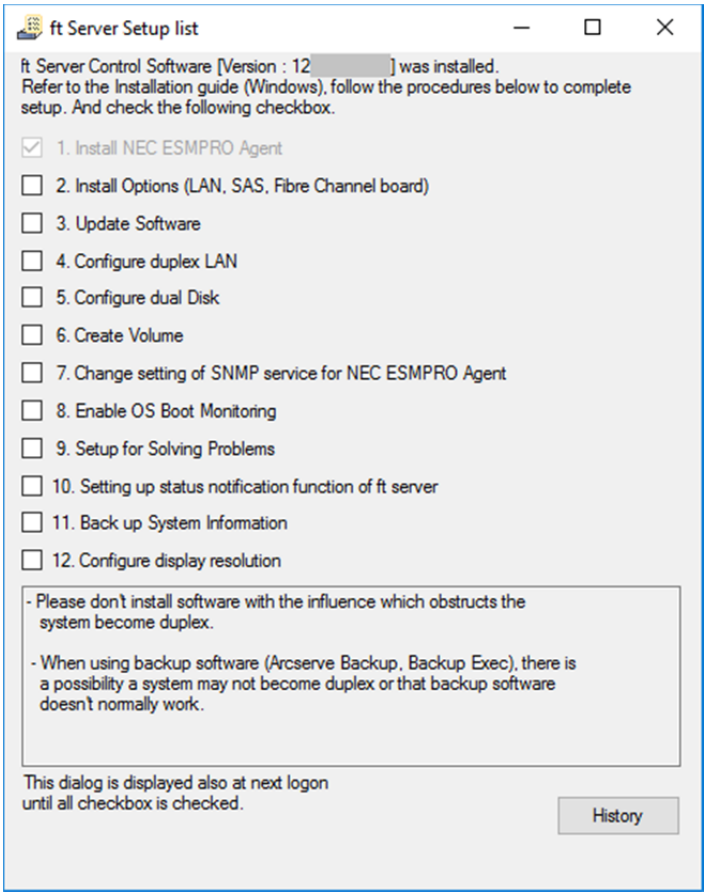
The server has a feature that displays Setup Checklist during installation to support configuration work. This feature starts after ft Server Control Software is installed at re-installation.

Using this checklist, you can proceed to setup work while viewing the items required for setup.

(1) Displaying setup list

When you sign in the system with built-in Administrator account, **ft Server Setup list** automatically appears. The checklist appears every time you sign in the system unless you specify not to display at next sign in.

The first line of dialog shows the version of ft Server Control Software.
The version number depends on the time of shipment and software upgraded status.



Setup Check List

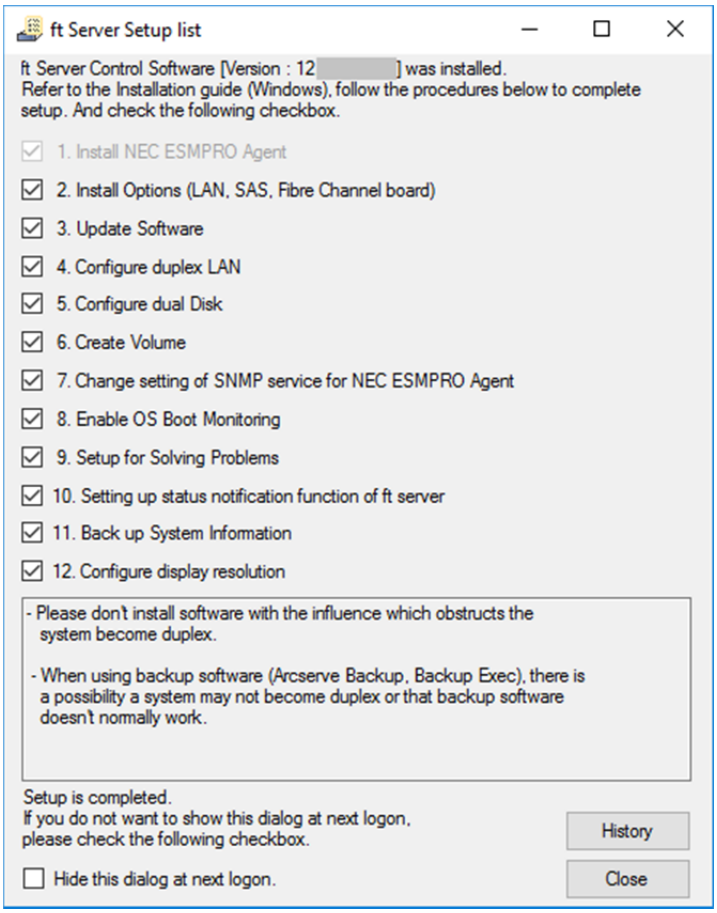
The following item is checked automatically, and if installation of it is finished, it is dimmed.

1. Install NEC ESMPRO Agent

For the other items, click the checkbox to check it when you have finished setup of relevant item.

If you put a mouse onto check item, a help window that shows the page where detailed information is described in User's Guide or Installation Guide.

If all items are checked, a checkbox "Hide this dialog at next logon" appears at bottom of dialog. If you do not want to display this checklist, click the checkbox and close dialog.



When all items are checked:

This checklist is not displayed during update of ft Server Control Software.

(2) Re-displaying setup checklist

If you want to open the dialog again, sign in the system with built-in Administrator account, and run the following file.

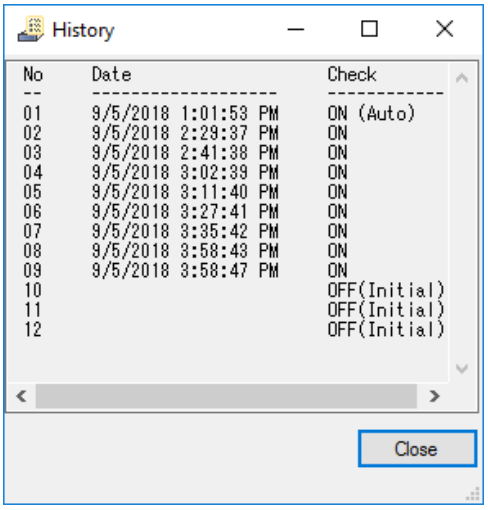
C:\Program Files\NEC\HAS_SW\ftServerSetuplist

ftServerSetupList.exe

Only the user having built-in Administrator account can open this checklist, and can start only one at a time.

(3) Displaying check history

Click the **History** button to confirm the date and time each item was checked.



Check history

Check column displays:

ON:	Item that was checked
ON (Auto):	Item that was checked automatically
OFF (Initial):	Item that is not checked yet
OFF:	Item that was checked once but unchecked later

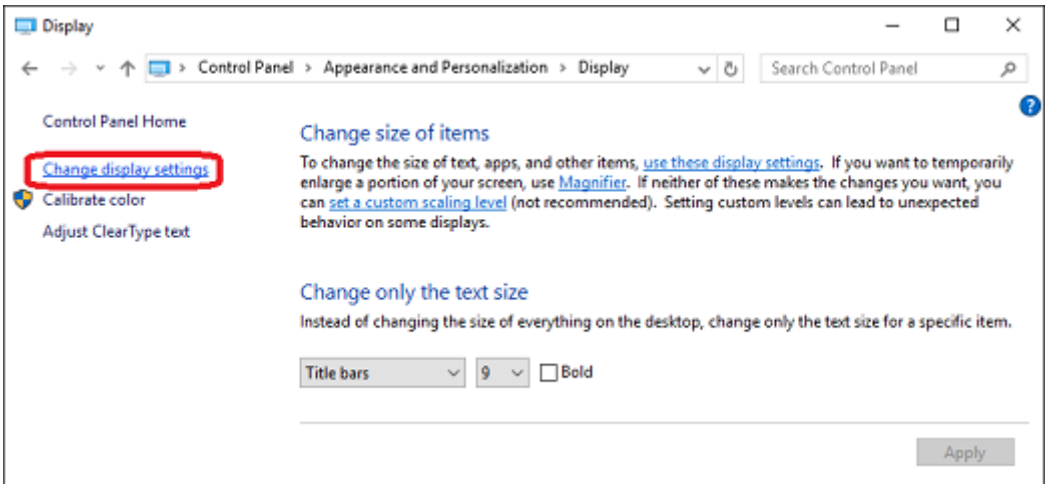
3.18 Caution when changing Power Options

On this server, the display may be unable to recover from the state of blank screen after setting the display to switch off after a certain time. For this reason, the display's power is configured not to switch off automatically by default (re-installing from EXPRESSBUILDER).
When changing the settings to turn off the power of the display automatically after a certain period of time, be sure to set the display resolution to any value other than the initial one in the **Change display settings** window in advance, and then change the power options. Once changing the display's resolution settings, it is not necessary to change the settings again even if after restarting the system. If the display connected to this server is changed, set the display resolution, again.

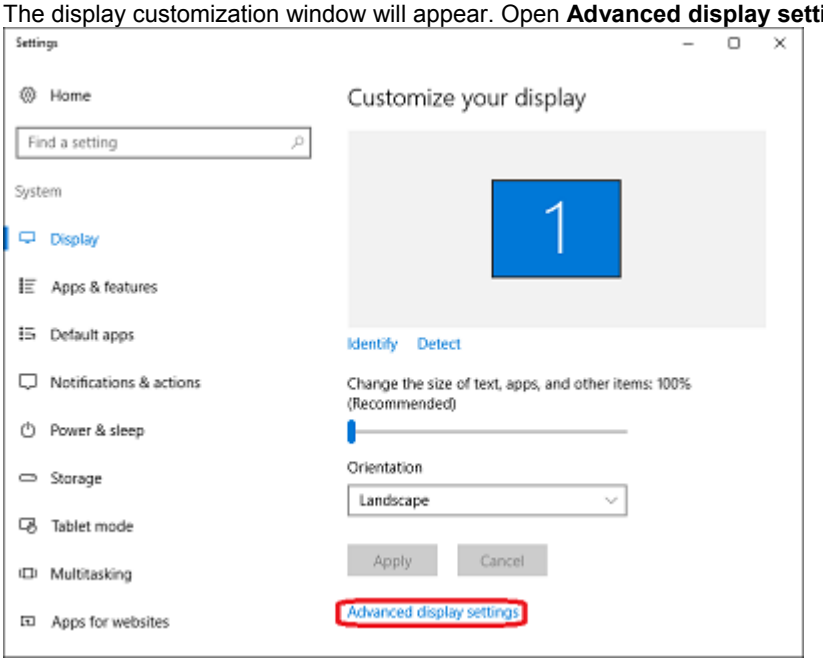
Tips If the display is already unable to recover from the state of blank screen, see *Chapter 1 (8.7 Problem of OS Operation)* in Maintenance Guide.

(1) Procedure to configure display resolution

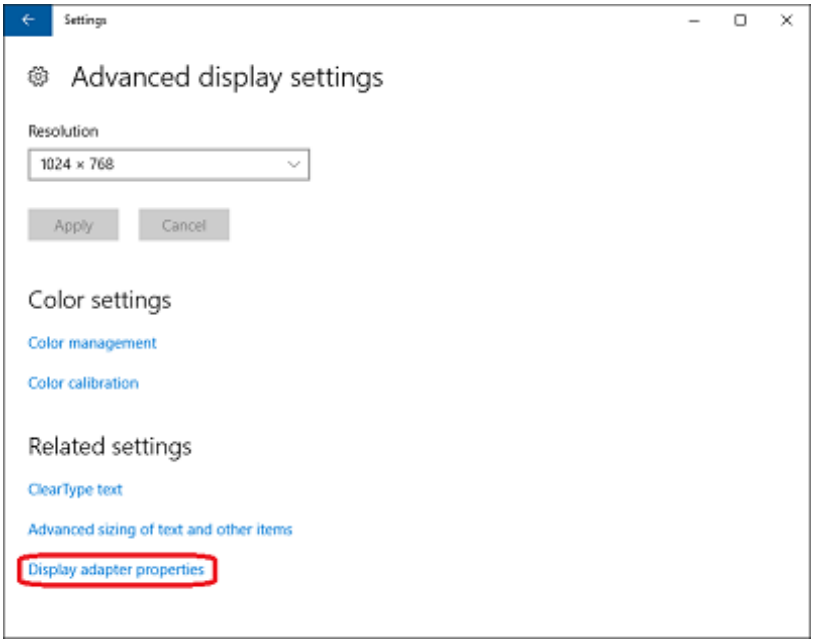
1. Sign in to an account with administrator priveledges.
2. Open the **Control Panel** from the **Start** menu.
3. Select **Appearance and Personalization**.
4. Select **Display**.
5. Select **Change display settings** from the left panel.



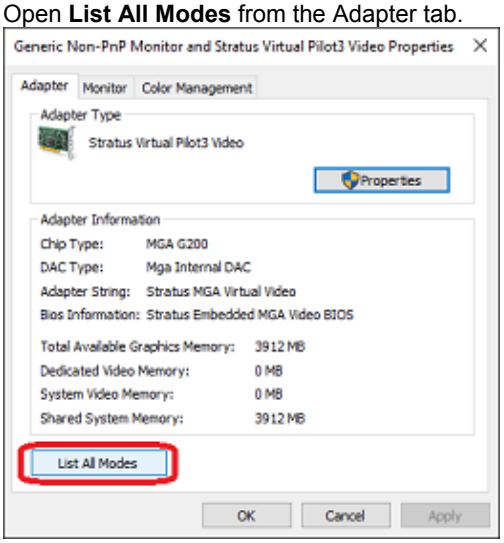
6. The display customization window will appear. Open **Advanced display settings**.



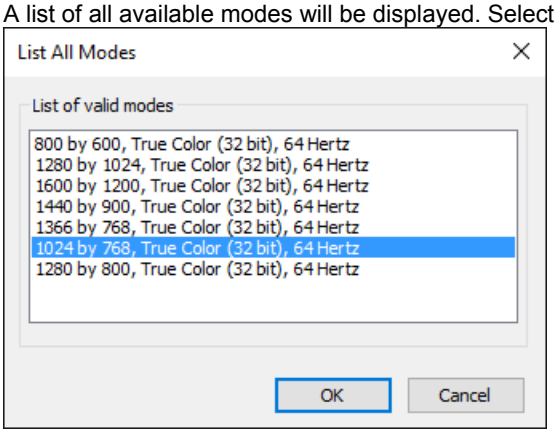
7. Open **Display adapter properties** from Related settings at the bottom of Advanced display settings screen.



8. Open **List All Modes** from the Adapter tab.



9. A list of all available modes will be displayed. Select an item suitable for the display to be used.

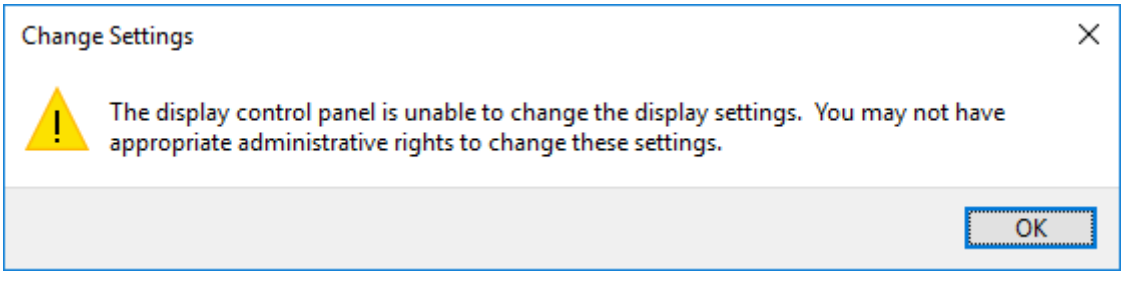


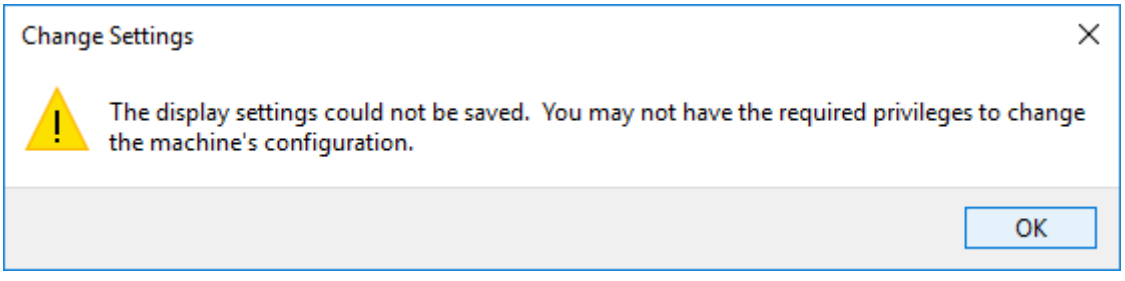
Even if you do not need to change the setting from the one currently selected, select other mode once to change the setting, and then re-select the set value to be used from the valid mode list for the setting.

The refresh rate of each resolution in the list of valid modes is 64 Hz, but the actual configured value will be 60 Hz.

Also, if changing the display resolution, which is connection to main body, for the first time, it may appear warning pop up message pertaining to admin privileges like the following.

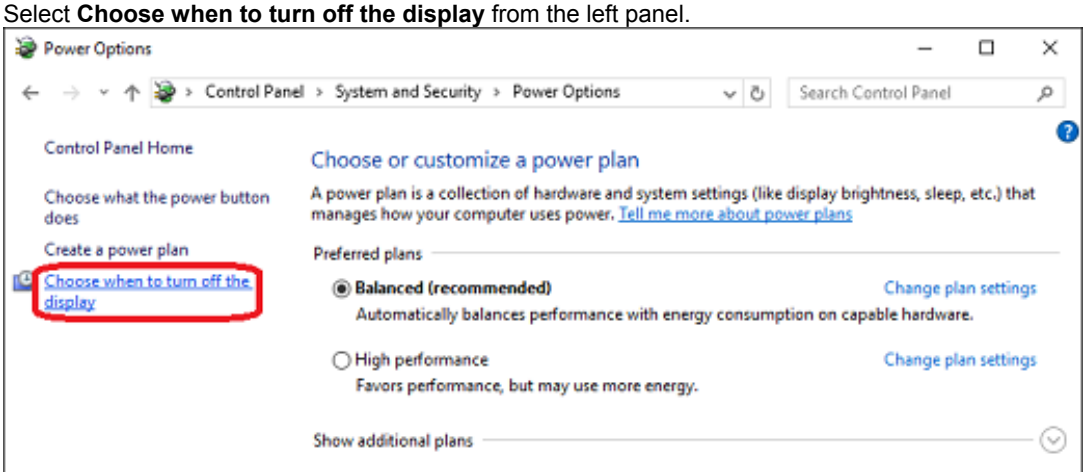
When this message appears, the configuration is not set to the resolution you selected after closing this message, so you will need to reopen **List All Modes** from the Adapter tab and configure the resolution.



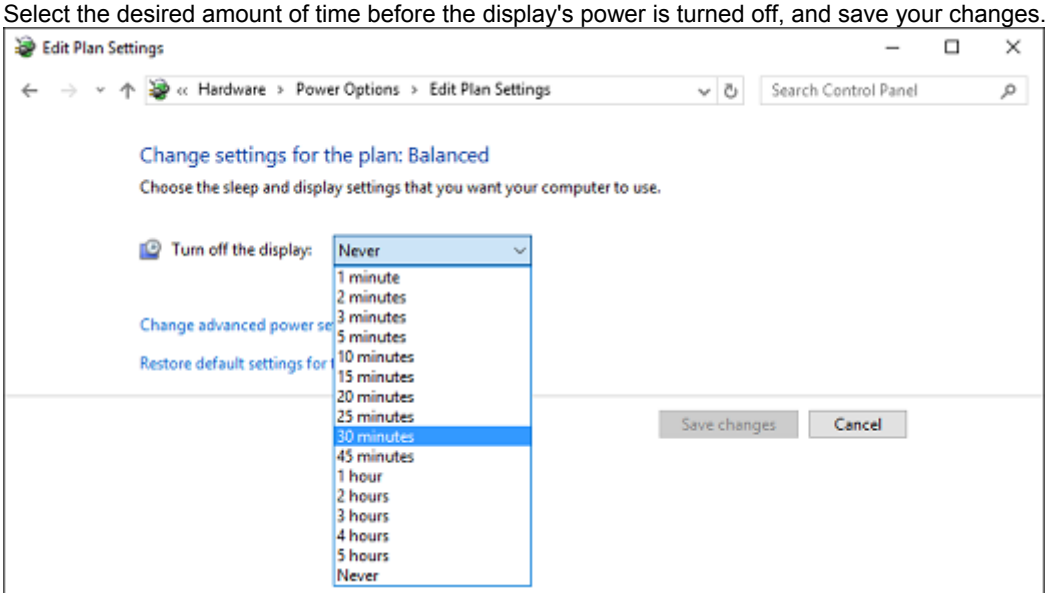


(2) Procedure to change Power Options

1. Sign in to an account with administrator privileges.
2. Open the **Control Panel** from the **Start** menu.
3. Select **System and Security**.
4. Select **Power Options**.
5. Select **Choose when to turn off the display** from the left panel.



6. Select the desired amount of time before the display's power is turned off, and save your changes.



4. Setup for Solving Problems

We recommend installing the following features for solving the server failure quickly.

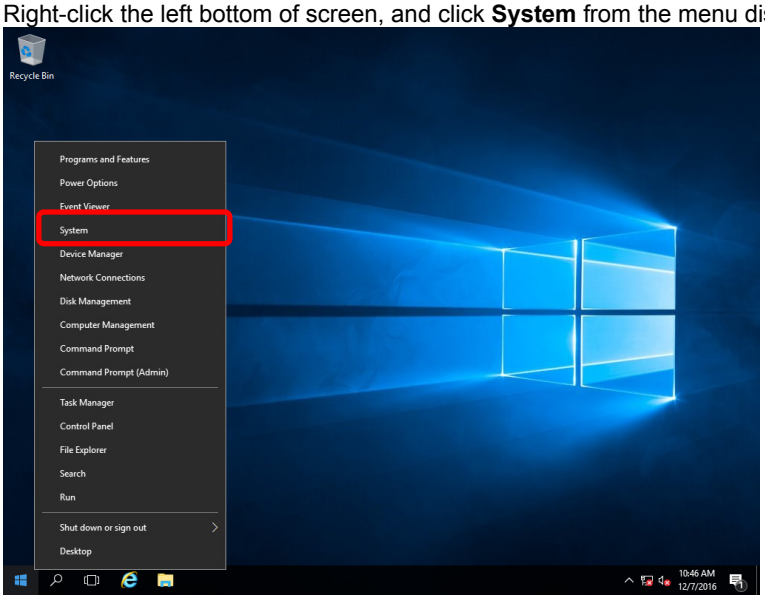
4.1 Memory Dump (Debug Information)

The following describes the procedures for collecting a memory dump (debug information).

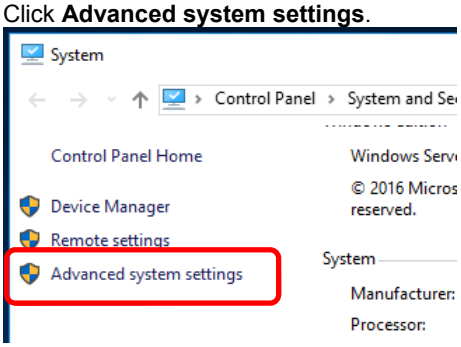
Important

- **If any trouble occurs after specifying the settings below and you attempt to restart the system to save the memory dump, a message informing you that the system is short of virtual memory might appear.**
- **However, this message can be ignored and you can proceed with the restart. If you restart the system a second time, the memory dump might not be stored normally.**
- **As this server has the DedicatedDumpFile configured, the memory dump may not be properly collected depending on the equipped physical memory size and system memory usage. See *4.4 DedicatedDumpFile Configuration*.**
- **When collecting memory dump by OS Standard dump feature (except Online dump and Quick dump feature), it takes a longer time than usual until OS is rebooted.**
  (Example: When the size of Dump file which is saved is 96GB, it takes about 30 minutes.)
  And after OS is rebooted, it takes 3 minutes longer than usual until CPU module becomes duplex.
  During that time, there is possibility that ft server utility or RDR Utility can't display information because they can't get specific information of ft server. In such cases, start ft server utility or RDR Utility after 3 or more minutes.

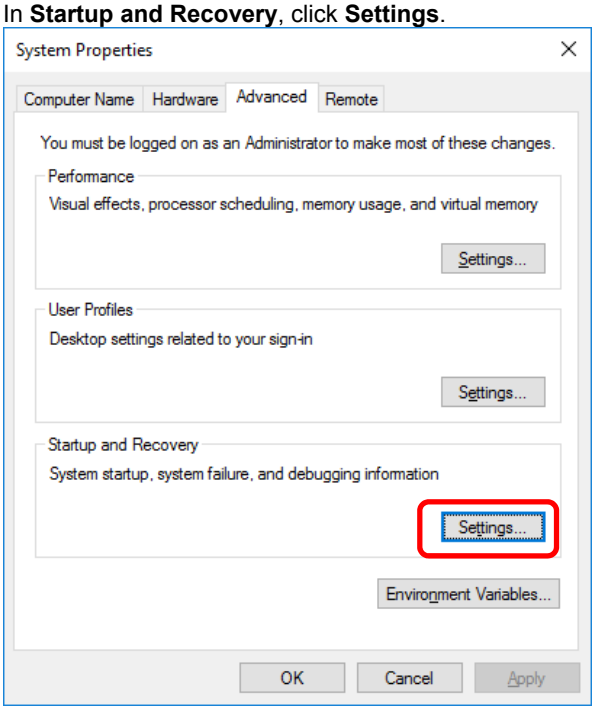
1. Right-click the left bottom of screen, and click **System** from the menu displayed.



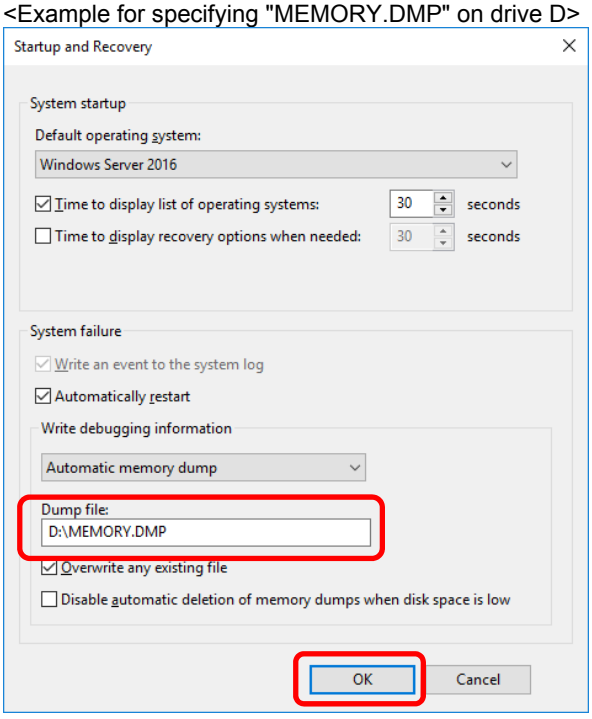
2. Click **Advanced system settings**.



3. In **Startup and Recovery**, click **Settings**.



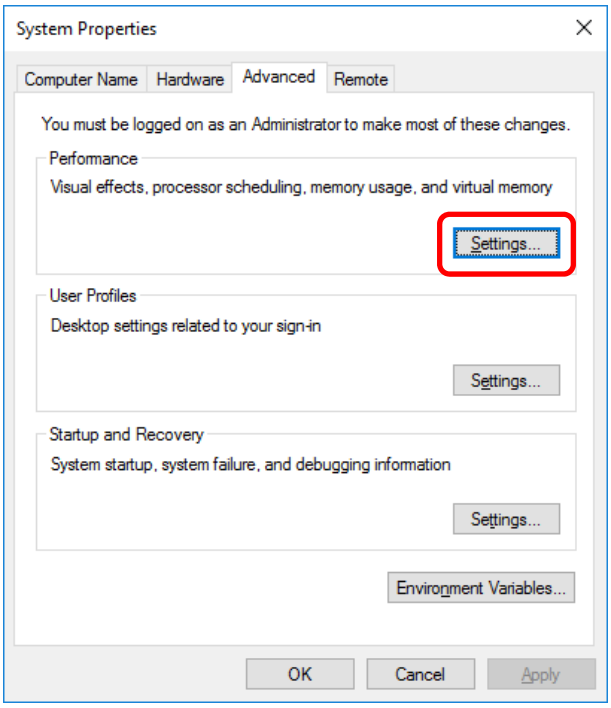
4. Type a file name to store the debug information in the **Dump file** text box, and then click **OK**.
<Example for specifying "MEMORY.DMP" on drive D>



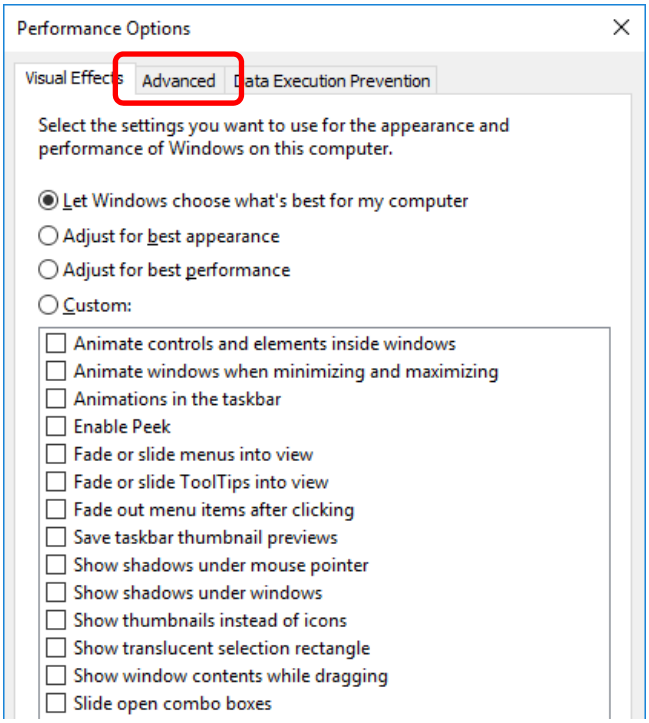
Note the following when specifying a dump file:

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

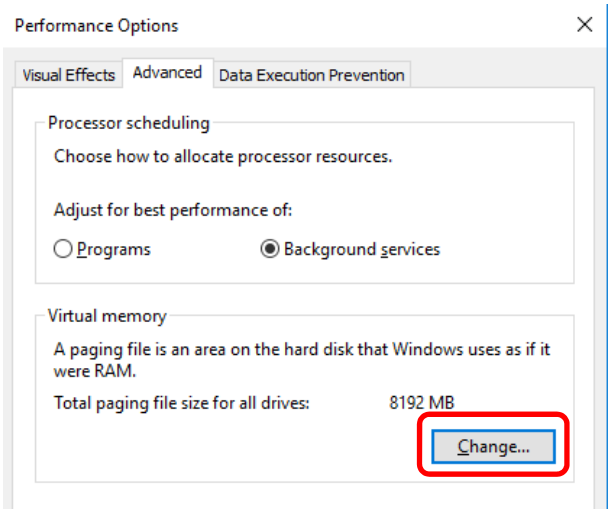
5. In **Performance**, click **Settings**.



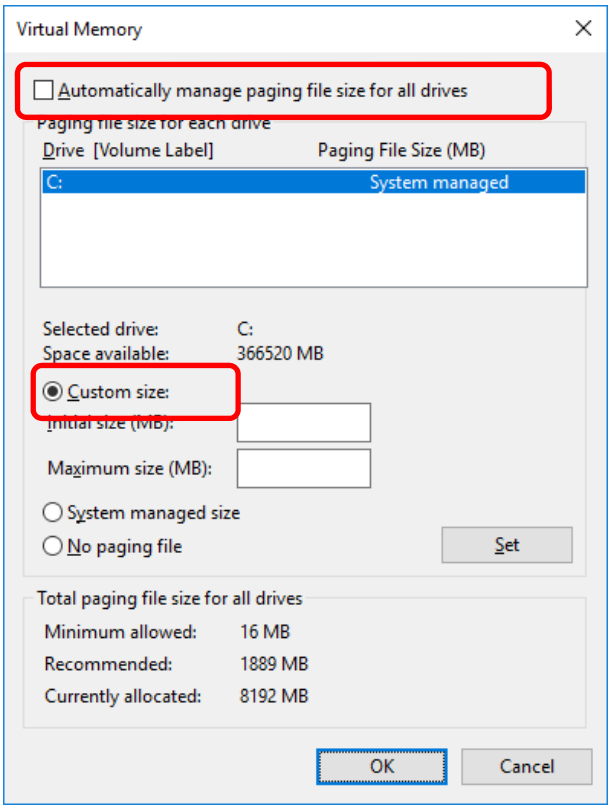
6. Click the **Advanced** tab on the **Performance Options** window.



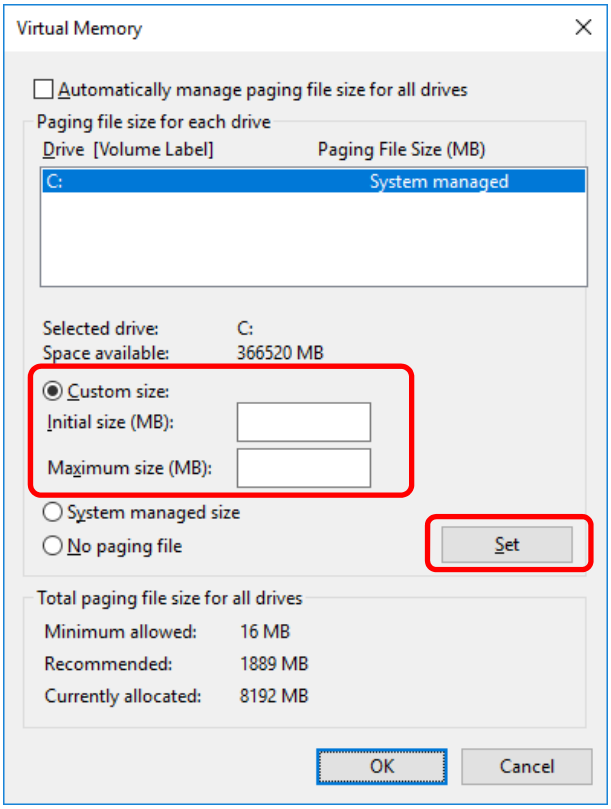
7. In **Virtual memory**, click **Change**.



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 capacity of physical memory mounted + 400MB or larger) is enough to store the dump file. Make sure to specify a sufficient paging file size (recommended size: Total capacity of physical memory mounted x 1.5 or more).
- See *System partition size* in *Chapter 1 (3.1 Before Starting Setup)* for recommended value.
- When DIMM is added, re-specify the paging file according to the increased memory size.

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 Precautions for Using Online dump or Quick dump feature

ft server has **Online dump feature** and **Quick dump feature** as collecting dump method except OS Standard dump.

[Collecting by **Online dump feature**]
This is the feature that collect memory dump without stopping system. There are some method as follows.
- Select **Harvest memory dump of the current system without stopping it.** on ft server utility and click **Harvest** button in **Dump**
- Choose **Maintenance** on NEC ESMPRO Manager and click **Execute** button in **Dump**

[Collecting by **Quick dump feature**]
This feature is executed at the time of system crush or pressing **DUMP** switch while Quick dump feature is enabled. The procedure for enabling Quick dump feature is as follows.
(*Default setting of Quick dump feature is set to be disabled.)
On ftserver utility, open [**FTServer**] – [**General**]. Check the [**Enable quick dump that is harvested at the same time of reboot**] check box and click [**Apply**]. Click [**OK**] on Confirmation screen.

Important

- **On collecting by Online dump feature, CPU module changes to simplex state temporarily and memory dump image is written to the disk.**
- **On collecting by Quick dump feature, memory dump image is written to the disk after system reboot by system crush or pressing DUMP switch. During that time, CPU module is simplex state temporarily.**
- **Whichever collecting method you choose, CPU module changes to simplex state until the completion of writing memory dump image. Therefore, please note that it takes a longer time than usual to be duplex state.**

  (Example: When the size of Dump file which is saved is 96GB, it takes about 120 minutes.)

When using **Online dump feature** or **Quick dump feature**, it sometimes fails depending on the size of Dump file. So, after you change the setting as follows, please collect it.

[Setting for Collecting by **Online dump feature**]
Change setting by using the following procedure before collect memory dump by **Online dump feature**. In addition, this setting returns to default by OS reboot, then you need to perform the procedure again.

1. Right click the lower left corner of the screen, select **Run**.
2. Type as follows and click **OK** button.
   "C:\Program Files\ftsys\Utility\DumpDelaySetting\OnlineDump.BAT"
3. Setting is completed if it is displayed as follows in the command prompt. Press any key and close it.

```
------------------------------------------------------------
Setting of DumpSaveDelayMs for OnlineDump is starting.
------------------------------------------------------------
Setting has been completed.
Press any key to continue . . .
```

[Settings for Collecting by **Quick dump feature**]

Change setting by using the following procedure before collect memory dump by Quick dump feature. In addition, this setting does not return to default if OS is rebooted. Therefore, it is unnecessary to set again.
If you need to return to default setting, perform procedure(*4) as below.

1. Right click the lower left corner of the screen, select **Run**.
2. Type as follows and click **OK** button.
   "C:\Program Files\ftsys\Utility\DumpDelaySetting\QuickDump.BAT"
3. Setting is completed if it is displayed as follows in the command prompt. Press any key and close it.

```
------------------------------------------------------------
Setting of DumpSaveDelayMs for QuickDump is starting.
------------------------------------------------------------
Setting has been completed.
Press any key to continue . . .
```

After execute QuickDump.BAT, when you return to default setting, perform the following procedure. In addition, this setting does not return to default if OS is rebooted. Therefore, it is unnecessary to set again.

1. Right click the lower left corner of the screen, select **Run**.
2. Type as follows and click **OK** button.
   "C:\Program Files\ftsys\Utility\DumpDelaySetting\SaveDump.BAT"
3. Setting is completed if it is displayed as follows in the command prompt. Press any key and close it.

```
------------------------------------------------------------
Setting of DumpSaveDelayMs for SaveDump is starting.
------------------------------------------------------------
Setting has been completed.
Press any key to continue . . .
```

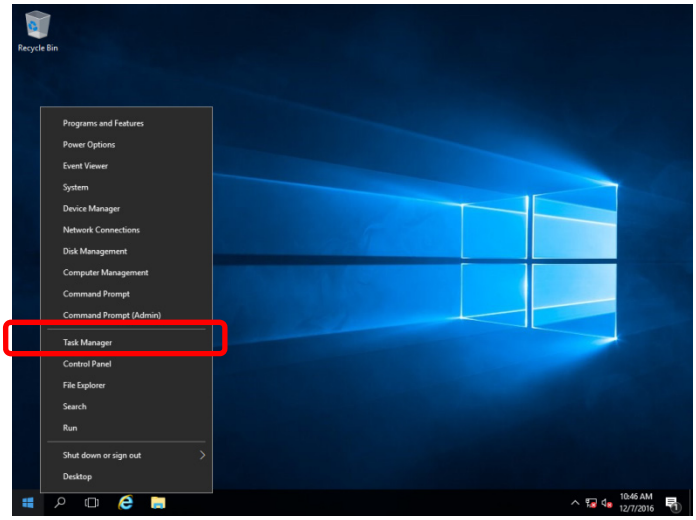
Important **If you execute OnlineDump.BAT or QuickDump.BAT and collect memory dump by Online dump feature or Quick dump feature, ft server utility or RDR Utility can't display information because they can't get specific information of ft server for more than 20 minutes(: the case that installed memory size is 96GB), and then ESMPS service is stopped. If ESMPS service is stopped, please start ESMPS service manually.**

4.3 How to Create a User-mode Process Dump File

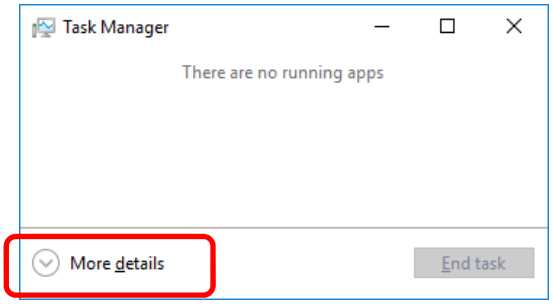
The user-mode process dump file records information when an application error occurs.

If an application error occurs, please 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**.

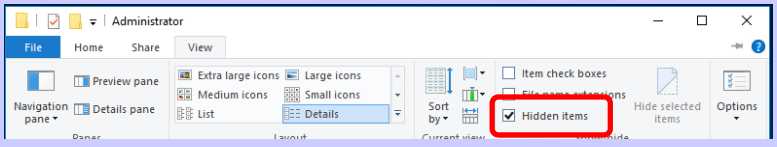


3. Click the **Processes** tab.
4. Right-click the name of the process that you want to get dump information for, and then click **Create Dump File**.
5. A dump file for the process is created in the following folder:

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

Tips

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



You can get the user-mode process dump file from the folder shown in step 5.

4.4 DedicatedDumpFile Configuration

This server has the DedicatedDumpFile configured by default so that the minimum amount of information is collected upon memory dump collection by the Windows OS when malfunction occurs, even if the physical memory size is bigger than the paging file size. If the appropriate paging file size is set, the DedicatedDumpFile is not necessary. Please confirm the necessity of the DedicatedDumpFile by the method described in the next section.

Note

If you update ft Control Software, the DedicatedDumpFile is reconfigured, so confirm the settings for DedicatedDumpFile after the update is complete

Review of the DedicatedDumpFile is necessary whether the memory dump type is "kernel memory dump" or "complete memory dump".

Tips

The DedicatedDumpFile is a standard Windows Server function that is used as storage space for memory information instead of the paging file when the Windows OS collects memory dump. If there is a DedicatedDumpFile when collecting memory dump, the memory information is first stored in the DedicatedDumpFile before the memory dump file is created. If there is no DedicatedDumpFile, the memory information is first stored in the paging file before the memory dump file is created. The DedicatedDumpFile only has an effect when memory dump is collected. It does not affect normal system operation even if the settings do not match the physical memory size.

4.4.1 How to Decide Whether to Cancel or Change DedicatedDumpFile Settings

Confirm if the paging file necessary to collect memory dump is configured.

The paging file size needed to collect memory dump for each OS is listed below.

Windows Server 2016: Physical memory + 400 MB or more

Note

The recommended paging file size is 1.5 times the physical memory size or more.

Whether the memory dump type is "complete memory dump" or "kernel memory dump", the needed paging file size for memory dump collection is the same.

There is no problem if the paging file of the size shown above is set on the system disc (C drive).
If configuring the paging file on the drives other than the system disc, See *3.1 Before Starting Setup*.

If the paging file necessary for file dump collection is set, the DedicatedDumpFile is not needed. See *4.4.2 Cancelling DedicatedDumpFile Configuration* and cancel the configuration.

If the paging file necessary for file dump collection is not set, the DedicatedDumpFile is needed. See *4.4.3 Changing DedicatedDumpFile Configuration (Not Cancel)* and adjust the settings to match the physical memory size.

4.4.2 Cancelling DedicatedDumpFile Configuration

Important

Be aware of the following when configuring the DedicatedDumpFile.

- **Take caution when editing the registry.**
- **The OS needs to be restarted for the configuration to take effect.**

1. Open the Registry Editor and delete the following 2 registries (DedicatedDumpFile and DumpFileSize).

Key:	HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\CrashControl
Name:	DedicatedDumpFile
Type:	REG_SZ
Data:	C:\NtKernel.dmp (Initial value)

Key:	HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\CrashControl
Name:	DumpFileSize
Type:	REG_DWORD
Data:	(Initial value: Decimal values from 8193 to 14336)

2. Restart the OS to put the configuration into effect.

3. If the DedicatedDumpFile is still in the C: Drive (C:\NtKernel.dmp), delete it. As it is a hidden attribute file, if using command prompt, the command must be executed with "/ah" option added.

   (Command examples)

   dir C:\NtKernel.dmp /ah * Confirm whether or not the file exists

   del C:\NtKernel.dmp /ah * Delete the file

4.4.3 Changing DedicatedDumpFile Configuration (Not Cancel)

Important

Be aware of the following when configuring the DedicatedDumpFile.

- **Take caution when editing the registry.**
- **The OS needs to be restarted for the configuration to take effect.**
- **Specify a drive with equipped memory size + 400 MB of free storage or more.**
- **The DedicatedDumpFile cannot be set to dynamic volume.**
- **The DedicatedDumpFile is used only for collecting memory dump, and cannot be used as virtual memory. Configure the paging file to secure enough virtual memory for the entire system.**

1. Open the Registry Editor and change the following 2 registries (DedicatedDumpFile and DumpFileSize).

Key:	HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\CrashControl	
Name:	DedicatedDumpFile	
Type:	REG_SZ	
Data:	C:\NtKernel.dmp	← Change the save destination drive as needed. (Example) D:\NtKernel.dmp

Key:	HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\CrashControl	
Name:	DumpFileSize	
Type:	REG_DWORD	
Data:	16784	← Set it at physical memory + 400 MB (or 300 MB) or more. The unit of settings value is MB.

2. Restart the OS to put the configuration into effect.

3. If you changed the save destination drive of the DedicatedDumpFile, Check if the file before the change was implemented (C:\NtKernel.dmp) still exists after restarting the OS. If it is still there, delete it. As it is a hidden attribute file, if using command prompt, the command must be executed with "/ah" option added.

   (Command examples)

   dir C:\NtKernel.dmp /ah * Confirm whether or not the file exists

   del C:\NtKernel.dmp /ah * Delete the file

5. Windows OS Parameter File

Create a parameter file by configuring setup information required for OS installation.

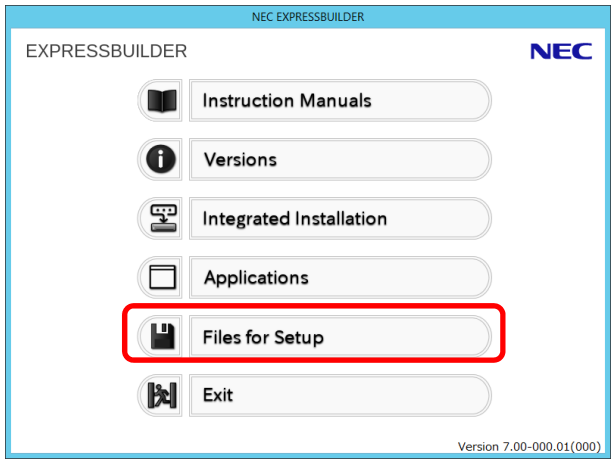
If a parameter file is used when performing Setup with EXPRESSBUILDER, you can re-install an OS with settings used at the previous installation.

5.1 Creating Windows OS Parameter File

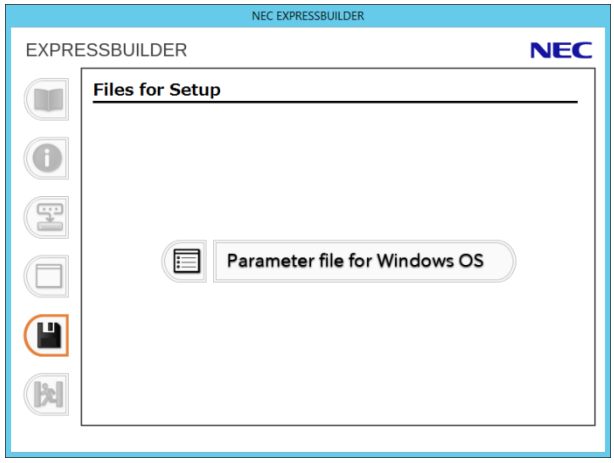
Note Do not remove EXPRESSBUILDER DVD from the drive while using it.

Tips Use Internet Explorer 7 or later version for creating a parameter file.

1. Start Windows.
2. Insert the EXPRESSBUILDER DVD into the server and run **\autorun\dispatcher_x64.exe**.
3. Click **Files for Setup**.



4. Click **Parameter file for Windows OS**.

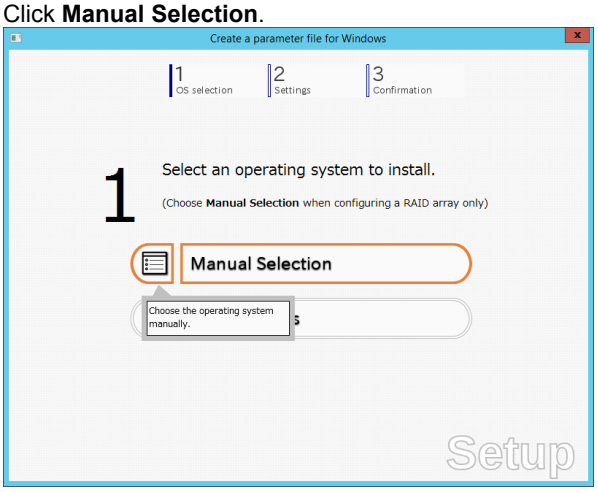


The following window appears.

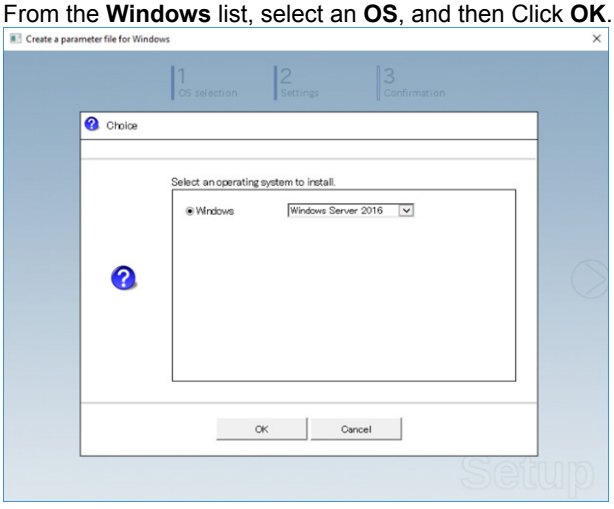
5. On the **OS selection** menu, select either of the following:
   - When creating a parameter file : Go to Step 6.
   - When editing a parameter file : Go to Step 7.

6. To create a parameter file, select an OS from the menu by using the following procedure.

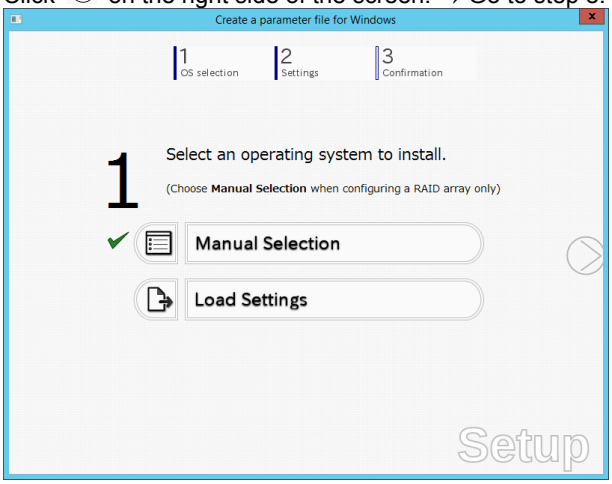
6-(1) Click **Manual Selection**.



6-(2) From the **Windows** list, select an **OS**, and then Click **OK**.

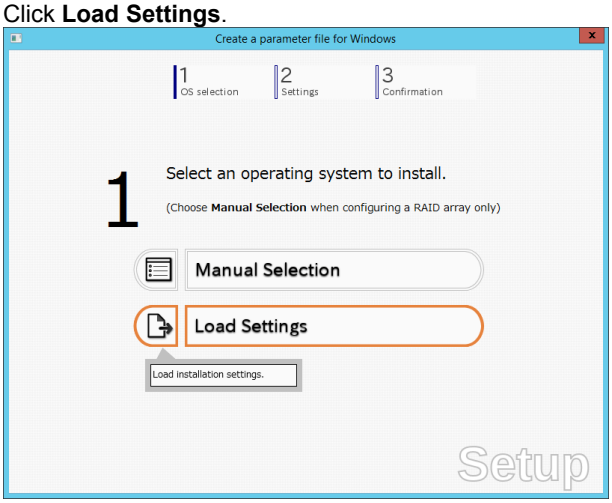


6-(3) Click ⊘ on the right side of the screen. → Go to step 8.

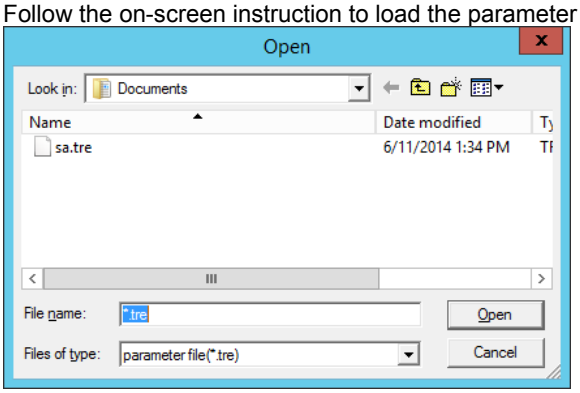


7. To modify a parameter file, select an OS from the menu by using the following procedure.

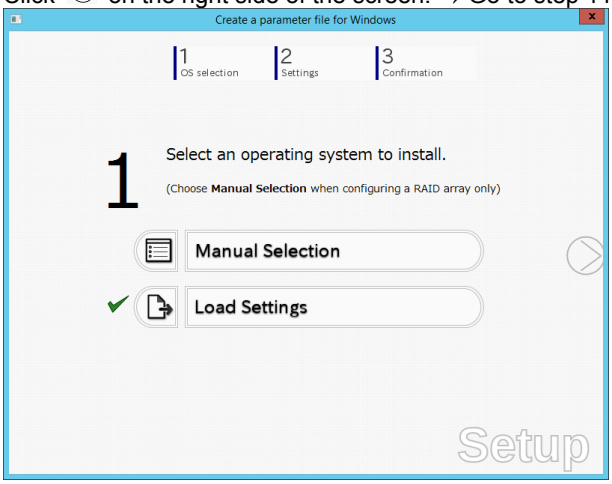
7-(1) Click **Load Settings**.



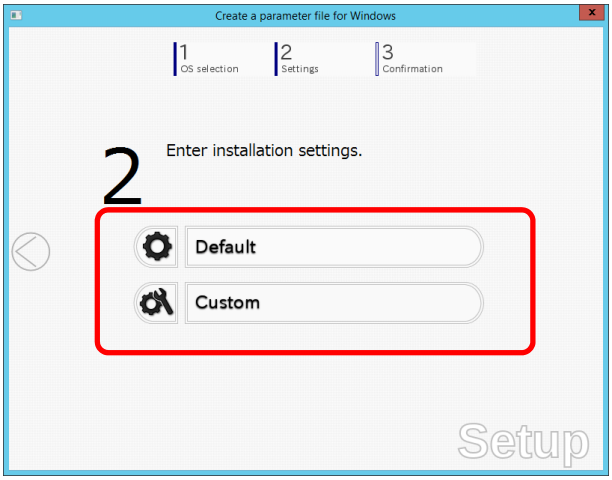
7-(2) Follow the on-screen instruction to load the parameter file (*.tre).



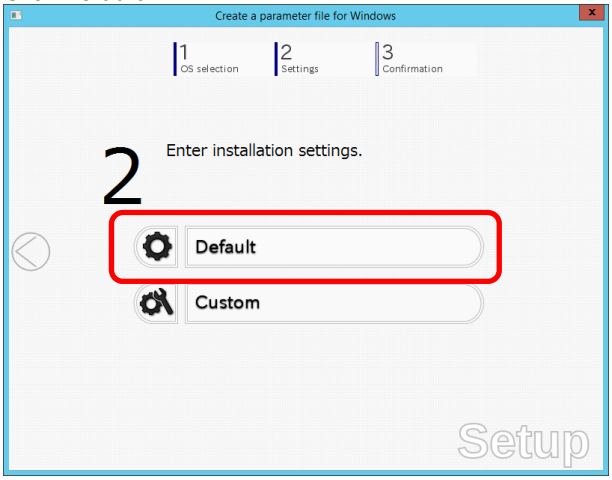
7-(3) Click ⊘ on the right side of the screen. → Go to step 11.



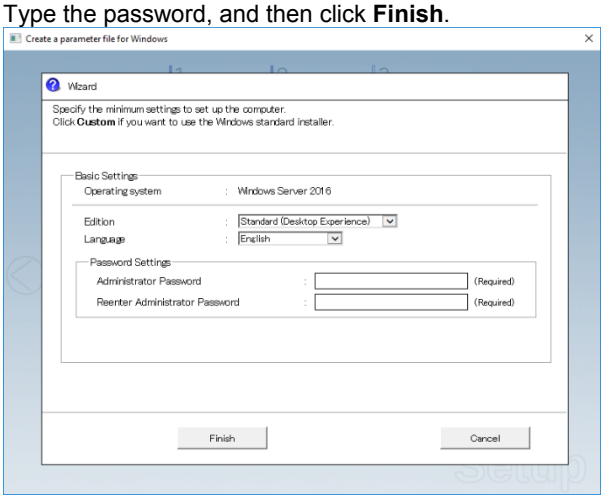
8. Specify the parameters by using either of the following methods:
   - **Default** : Go to step 9
   - **Custom** : Go to step 10.



9. Click **Default**.



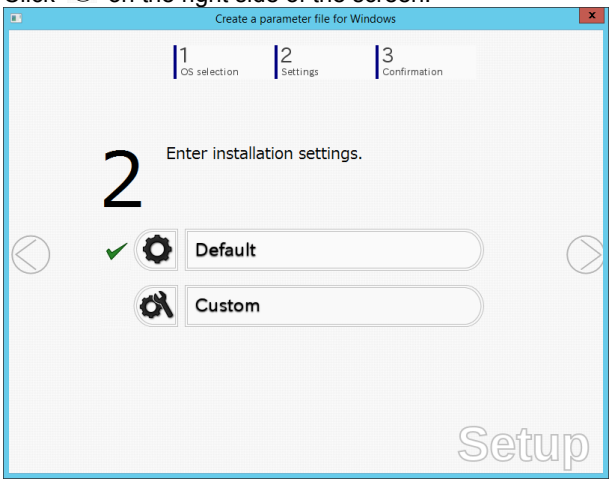
9-(1) Select the edition of OS in the **Edition** list.
Type the password, and then click **Finish**.



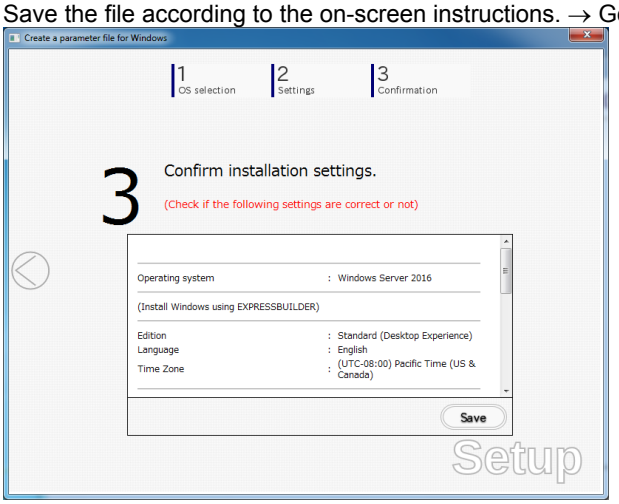
Note

Administrator Password needs to meet the following conditions:
- Contains six or more characters
- Contains characters from at least three of the following categories: numbers, uppercase letters (A - Z), lowercase letters (a - z), and symbols.

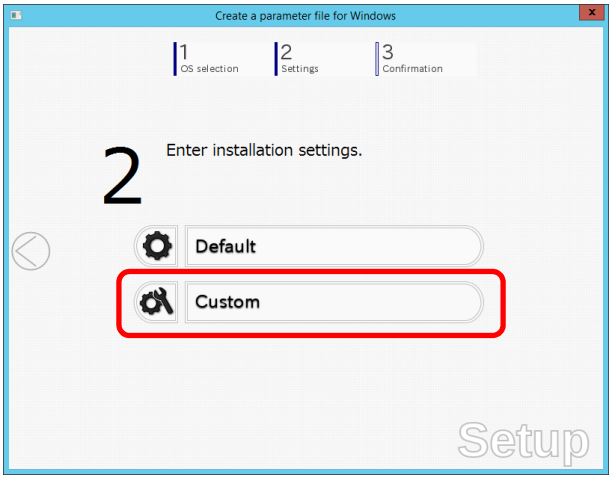
9-(2) Click ▷ on the right side of the screen.



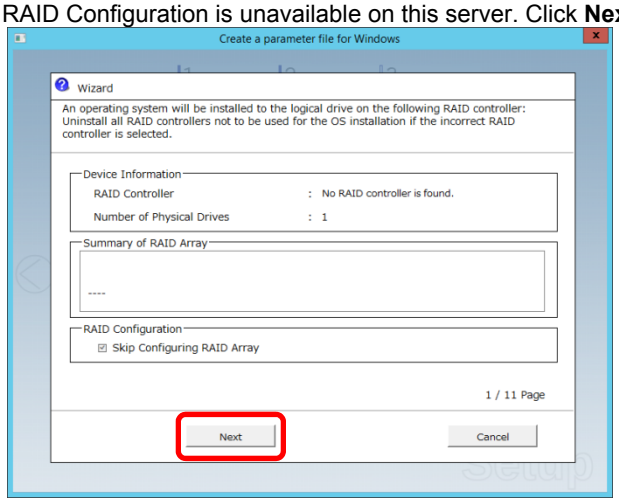
9-(3) Check the settings, and then click **Save**.
Save the file according to the on-screen instructions. → Go to step 12.



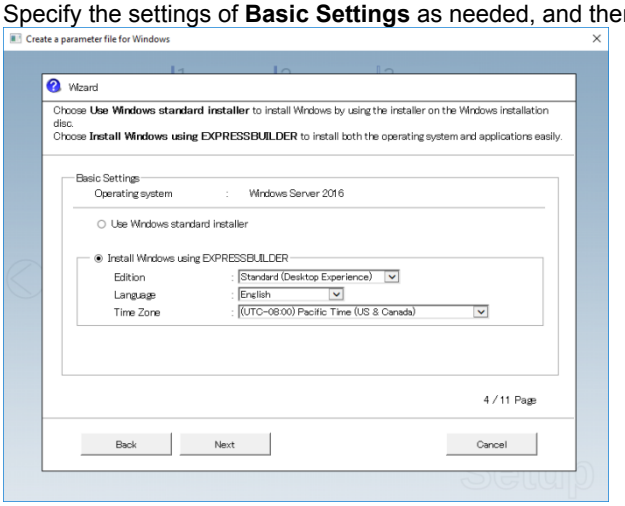
10. Click **Custom**.



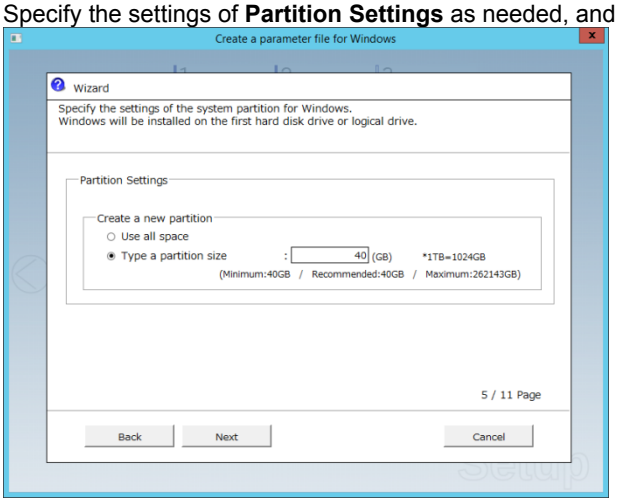
10-(1) RAID Configuration is unavailable on this server. Click **Next**.



10-(2) Specify the settings of **Basic Settings** as needed, and then click **Next**.



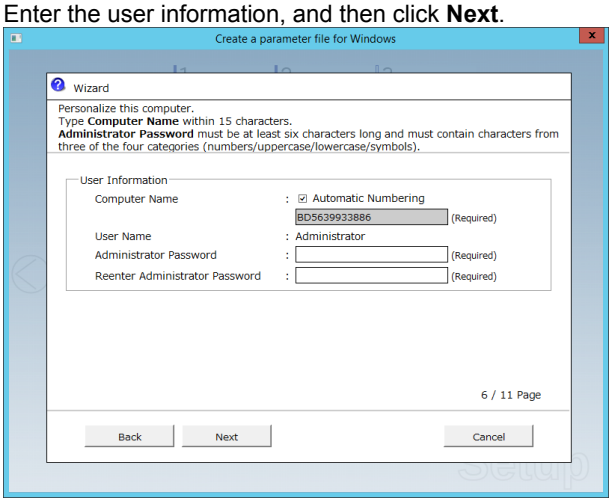
10-(3) Specify the settings of **Partition Settings** as needed, and then click **Next**.



Important

- **Backing up user data is recommended.**
- **Partition size**
  - **Specify a partition size larger than the minimum required for installing the operating system. (See *Chapter 1 (3.1 Before Starting Setup)*).**
- **The entire contents of the hard disk drive will be erased.**

10-(4) Enter the user information, and then click **Next**.



Note

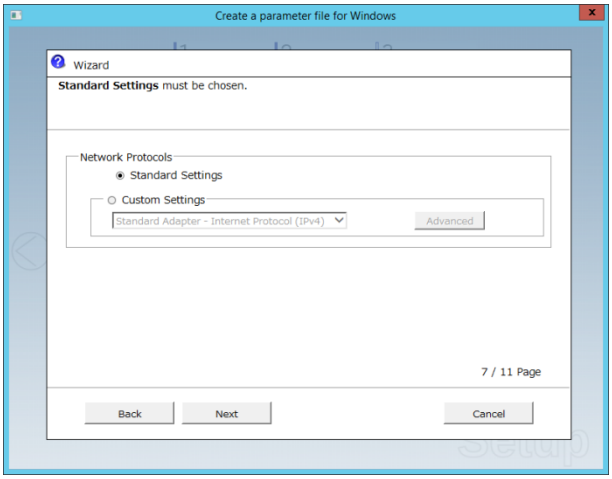
Administrator Password need to meet the following conditions:

- Contains six or more characters
- Contains characters from at least three of the following categories: numbers, uppercase letters (A - Z), lowercase letters (a - z), and symbols.

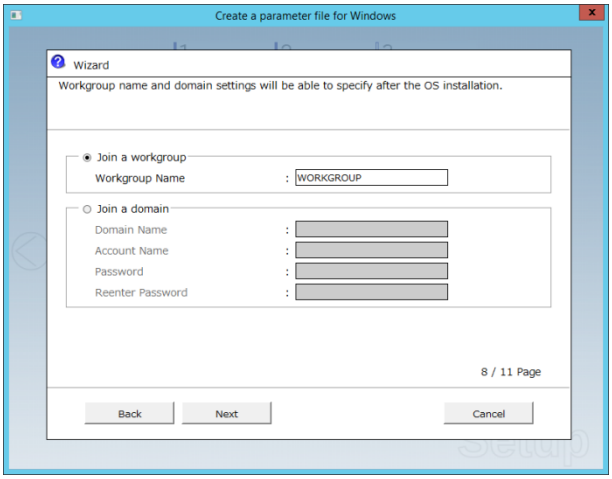
Tips

If you want to type your computer name, clear the **Automatic Numbering** check box and type the name in text box.

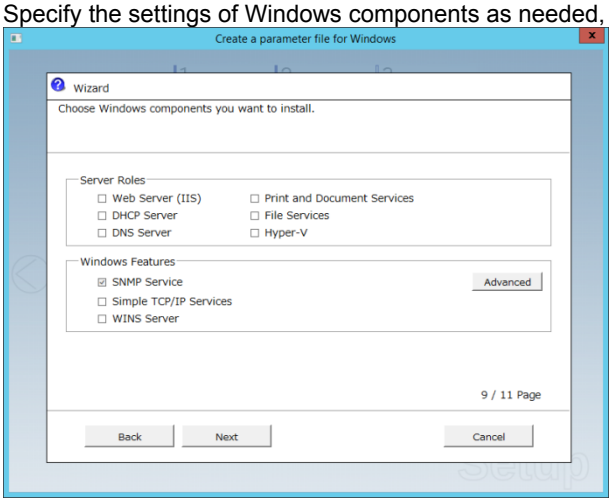
10-(5) **Network Protocols** cannot be set on this server.
Click **Next**.



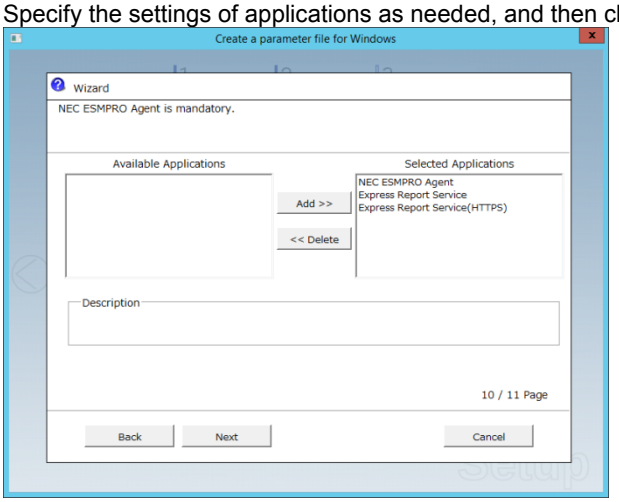
10-(6) Specifying domain or workgroup is unavailable on this server.
Click **Next**.



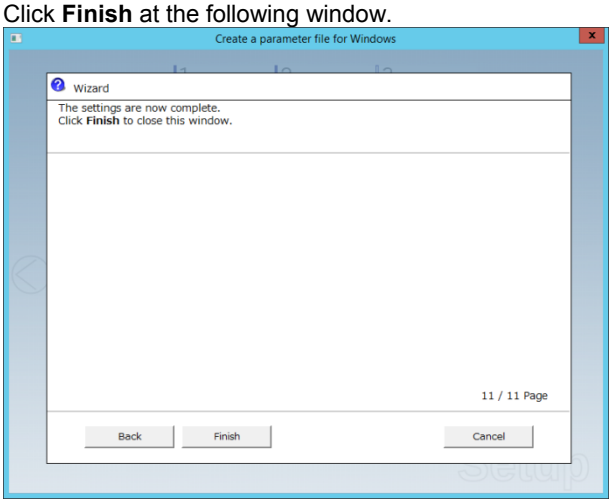
10-(7) Specify the settings of Windows components as needed, and then click **Next**.



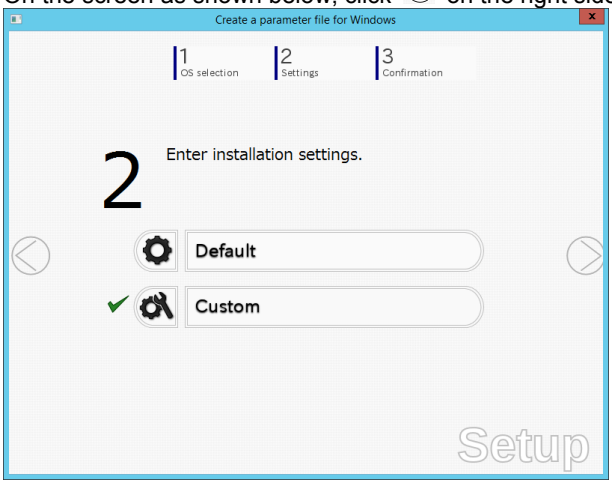
10-(8) Specify the settings of applications as needed, and then click **Next**.



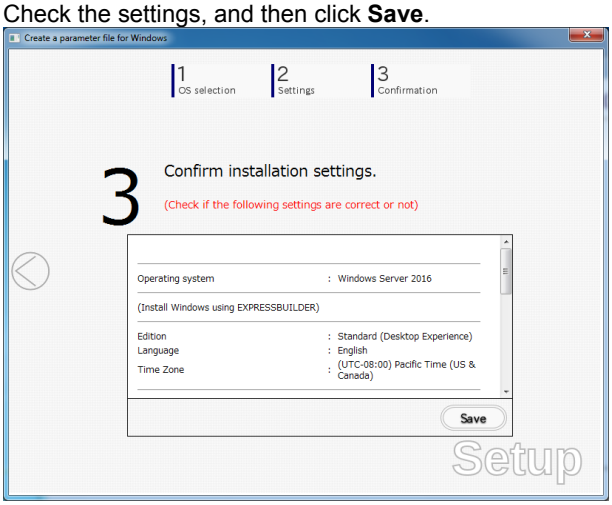
Click **Finish** at the following window.



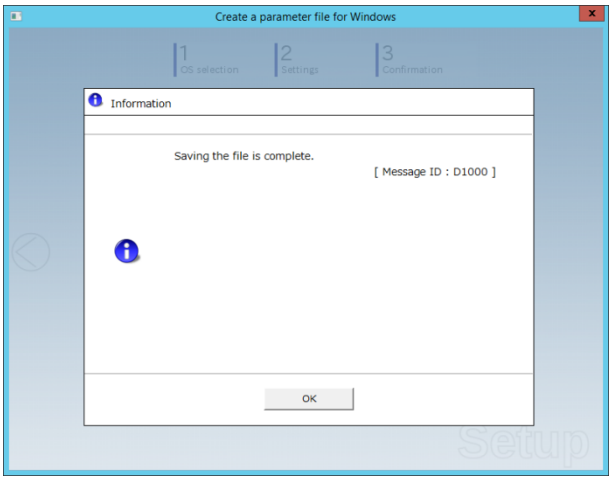
10-(9) On the screen as shown below, click ⊳ on the right side of the screen.



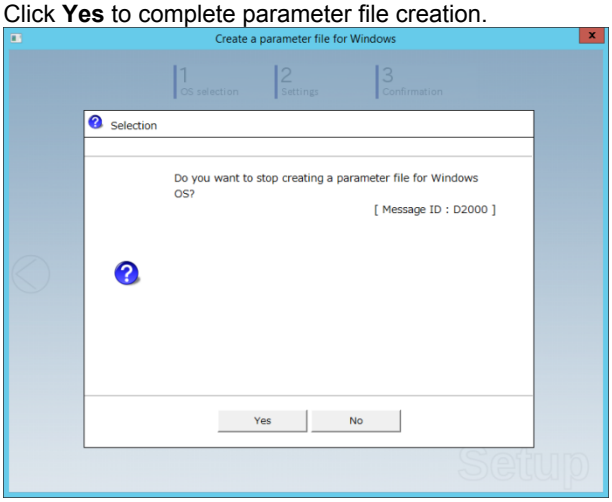
Check the settings, and then click **Save**.



11. Click **OK**.



12. Click **Yes** to complete parameter file creation.



Creation of parameter file is now complete.

6. Backing Up System Information

When replacing the server, system information including system-specific information, BIOS configuration, and/or BMC configuration data can be inherited to the new server. Refer to *"BMC Configuration User's Guide"* for how to back up the system information.

Note

Backup/restore process must be performed on duplex system configuration. If it is performed on simplex system configuration, the information may not be inherited correctly. Refer to *Chapter 1* (*4. Names and Functions of Components*) in *User's Guide* for how to verify the duplex system configuration.

7. Precautions for Using Hyper-V

Express5800/ft series supports Hyper-V feature.

This section describes precautions for using Hyper-V with Express5800/ft series.
Refer to the URL below for precautions other than those described in this section.

- **Windows Server 2016**

  Support Information for Windows Server 2016 Hyper-V on Express5800 Series Servers
  http://www.58support.nec.co.jp/global/download/w2016/hyper-v/hyper-v-ws2016.html

7.1 System Blackout Time Caused by Duplexing CPU Module

In the duplex process of CPU modules, a memory copy is performed to duplex memory on both the CPU modules. The system does not respond for a longer period of time during the duplex process of CPU modules as compared to when Hyper-V is not used. The following are the reference values of each model. When enabling Hyper-V, refer to Chapter 1 (3.15 Setting TCP/IP Timeout) and use this value for Timeout value.

Important

- **Starting a memory copy does not cause OS shutdown. However, a process that was running before copying is interrupted, and it does not respond for a certain period of time. The interrupted process will be resumed after the memory copy is completed.**
- **The time required for copying increases in proportion to the installed memory size.**
- **When a large amount of memory is installed, non-responding time will become longer and the connection from a client may time out. Adjust the timeout values of TCP/IP, etc., on the client side as necessary.**

Model/Memory Size	16GB	32GB	64GB	128GB	256GB	320GB	512GB	640GB
Express5800/R310g-E4	3 sec	4 sec	7 sec.	13 sec	24 sec	–	–	–
Express5800/R320g-E4	3 sec	4 sec	7 sec.	13 sec	25 sec	30 sec	47 sec	59 sec.
Express5800/R320g-M4	3 sec	4 sec	5 sec.	9 sec	16 sec	17 sec	25 sec	31 sec.

Use the above memory copy time as a guide when no load is applied to OS. The actual time differs depending on the status of use.

NEC Express5800 Series
Express5800/R310g-E4, R320g-E4, R320g-M4

2

Installing Bundled Software

This chapter explains the bundled software and how to install them.

1. **Bundled Software for the Server**
   Describes the bundled software to be installed in the server.

2. **Bundled Software for "PC for Management"**
   Describes the bundled software to be installed in "PC for Management" that is used to monitor and manage the server.

1. Bundled Software for the Server

1.1 NEC ESMPRO Agent (for Windows)

NEC ESMPRO Agent (for Windows) is an application used to monitor the server.

The application is automatically installed when Windows OS is installed by EXPRESSBUILDER.

For details, see *NEC ESMPRO Agent Installation Guide (Windows)* in EXPRESSBUILDER.

1.2 NEC ESMPRO Agent Extension

NEC ESMPRO Agent Extension can remotely manage this server with NEC ESMPRO Manager monitoring the BMC of the server.

For details, see *NEC ESMPRO Agent Extension Installation Guide* in EXPRESSBUILDER.

1.3 RDR

This server duplexes hard disk drives to secure data by using the Rapid Disk Resync (RDR) feature.

The ft Server Control Software includes the feature. Duplex each hard disk drive after installing the software.

1.4 BMC Configuration

BMC Configuration is a utility for specifying the settings of the BMC.

The utility is automatically installed when Windows OS is installed by EXPRESSBUILDER.

For details, see *BMC Configuration User's Guide* in EXPRESSBUILDER.

1.5 NEC ExpressUpdate Agent

NEC ExpressUpdate Agent can manage and update the versions of the firmware and software installed in this server with NEC ESMPRO Manager.

You can easily install the downloaded packages by using NEC ExpressUpdate.

For details, see *NEC ExpressUpdate Agent Installation Guide* in EXPRESSBUILDER.

Tips

Refer to the following website to install the packages that do not support the feature of NEC ExpressUpdate

https://www.nec.com/global/prod/express/index.html

[Related Links] – [Download]

1.6 Express Report Service / Express Report Service (HTTPS)

To avoid system failures or to maintain the server quickly, Express Report Service / Express Report Service (HTTPS) informs the support center of the failure information, preventive maintenance information by E-Mail, modem, or HTTPS. If you want to use this service, contact your sales representative and install NEC ESMPRO Agent before using this service.

You can install it automatically when Windows OS is installed with EXPRESSBUILDER.

For details, see *Express Report Service / Express Report Service (HTTPS) Installation Guide (Windows)* in EXPRESSBUILDER.

1.7 NEC Product Info Collection Utility

NEC Product Info Collection Utility can collect various logs related to the server all at once. You can collect the server information (Product Info) for maintenance by using this utility.

1.7.1 Installation

Follow the steps below to install this utility.

1. Log on to Windows as an administrator, and then insert EXPRESSBUILDER DVD into the optical disk drive.
2. Run \autorun\dispatcher_x64.exe on the DVD.
3. Click **Applications** from the menu and then click **Product Info Collection Utility**.
   Follow the instructions in the dialog boxes until installation is complete.
   This utility is usually installed to the C:\ezclct folder.

Tips

- The installation drive requires a free space of at least 2.5 GB.
- Restart the server after installing this utility on Windows Server 2016, but you do not need to restart after updating.

1.7.2 Uninstallation

1. From **Control Panel**, select **Add/Remove Programs** and then **Product Info Collection Utility (Vx.x.x)**.
2. Follow the instructions in the dialog boxes until uninstallation is complete.

2. Bundled Software for "PC for Management"

2.1 NEC ESMPRO Manager

NEC ESMPRO Manager remotely controls and monitors the server hardware.

To use these features, install NEC ESMPRO Agent on the server.

For details, see *NEC ESMPRO Manager Installation Guide* in EXPRESSBUILDER.

Glossary

Term	Description
BIOS Setup Utility (SETUP)	Software for setting BIOS. You can run this software by pressing <F2> key during POST.
BMC	Baseboard Management Controller (BMC) is a built-in controller that supports the IPMI version 2.0 protocol. BMC can manage the server hardware.
BMC Configuration Utility	Software for setting BIOS and BMC. You can use as Windows application or run this software when pressing <F4> key during POST.
CPU module	A CPU subsystem logically configured in a CPU/IO module. It includes CPUs and memory.
CPU/IO module	A module that includes CPUs (processors), memory, PCI boards, a cooling fan, hard disk drives and power supply units.
DUMP Switch	A switch that is used for collecting the memory dump if an error occurs. You can specify the destination of the dump by using the OS function.
EXPRESSBUILDER	Standard software for setting up the server easily. This also includes several useful applications and instruction manuals.
EXPRESSSCOPE ENGINE 3	A name of BMC for NEC Express5800 series.
Express Report Service	Software that can report the server failure to the contact center by E-mail or modem. This software is installed with NEC ESMPRO Agent to the server.
Express Report Service (HTTPS)	Software that can report the server failure to the contact center by HTTPS.
ExpressUpdate	A feature for updating BIOS, firmware, driver, and software of the server. This feature is available when NEC ESMPRO Manager cooperates with EXPRESSSCOPE ENGINE 3 and ExpressUpdate Agent.
ExpressUpdate Agent	Software for performing ExpressUpdate. This is installed to the server.
Flash FDD	An optional USB device that can use as a floppy disk drive.
NEC ESMPRO	Standard software for the server management. This consists of several applications for managing or monitoring.
NEC ESMPRO Agent	Software for monitoring the server. This works with NEC ESMPRO Manager and resides as the OS service.
NEC ESMPRO Agent Extension	Software for performing the scheduled operations. This works with NEC ESMPRO Manager.
NEC ESMPRO Manager	Software for managing a number of servers on network.
OEM driver	A Windows driver for the mass storage device.
OS standard installer	An installer that stored in Windows installation disc. Use this installer if you want to install the OS manually.
Offline tools	Software that can read and change SEL, SDR, FRU and other IPMI data. You can start Offline tools when pressing <F4> key during POST.
PC for Management	A computer for managing the server on network. A general Windows/Linux computer can be used as "PC for Management".
PCI module	An I/O subsystem logically configured in a CPU/IO module. It includes hard disk drives, PCI cards, BMC and 1G/10G LAN.
Product Info Collection Utility	Software for collecting several hardware/software statuses and event logs. You can easily collect the data for the server maintenance by using this software.
Starter Pack	Software package for the server. This software includes the customized drivers for Windows. This must be installed before using Windows on the server.
Windows OS parameter file	A file that saved settings for installing Windows. You can install with the saved settings in this file when installing Windows with EXPRESSBUILDER.

Revision Record

Document Number	Date Issued	Description
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NEC Express Server

Express5800/R310g-E4, R320g-E4, R320g-M4
Installation Guide (Windows)

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