V2403C Series Windows Software User Manual

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www.moxa.com/products

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V2403C Series Windows Software User Manual

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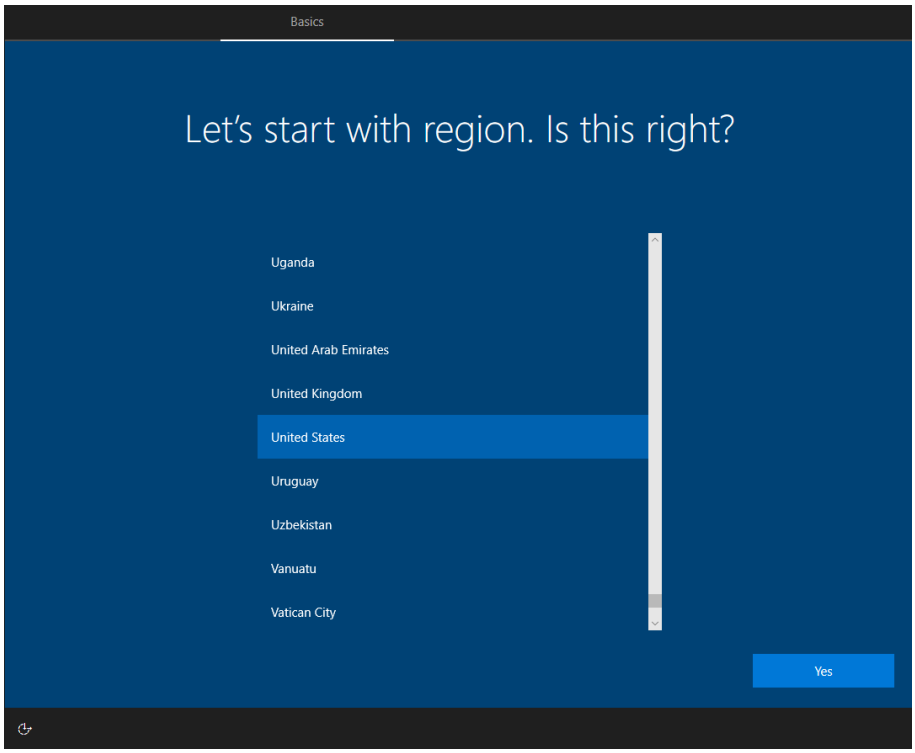
1. System Initialization

In this chapter, we describe how to initialize the system settings on the V2403C computer when you boot up the computer for the first time. When you turn on the computer, you will see the Windows Out of Box Experience (OOBE) wizard. OOBE consists of a series of screens that require customers to accept the license agreement, connect to the internet, log in with, or sign up for a Microsoft Account, and share information with the OEM.

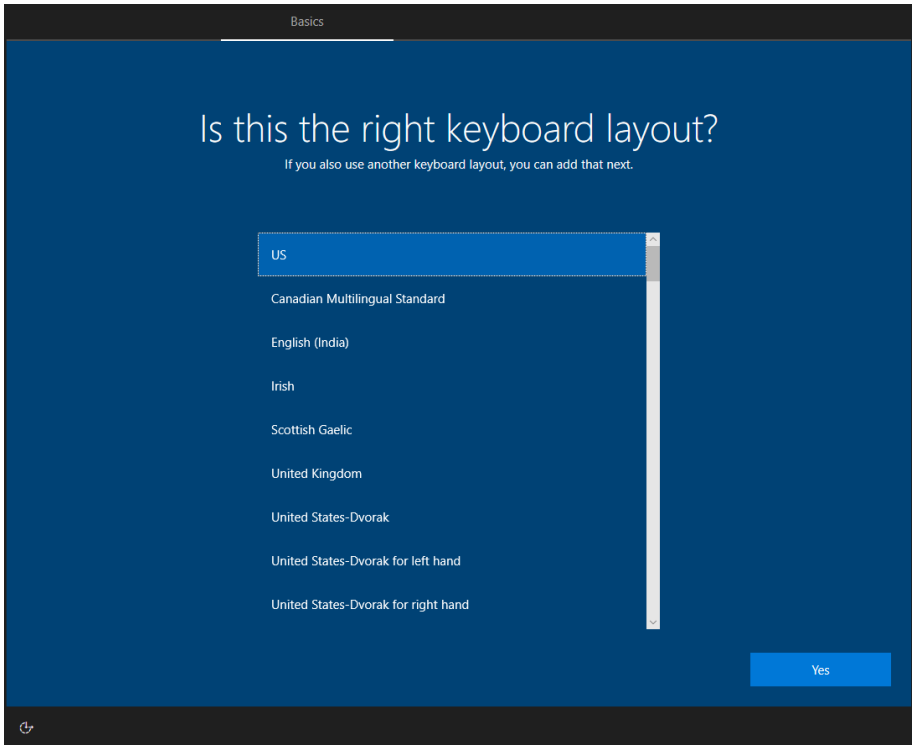
Initializing User Settings

The following is a non-exhaustive list of OOBE screens that you will see in the order that they are listed here:

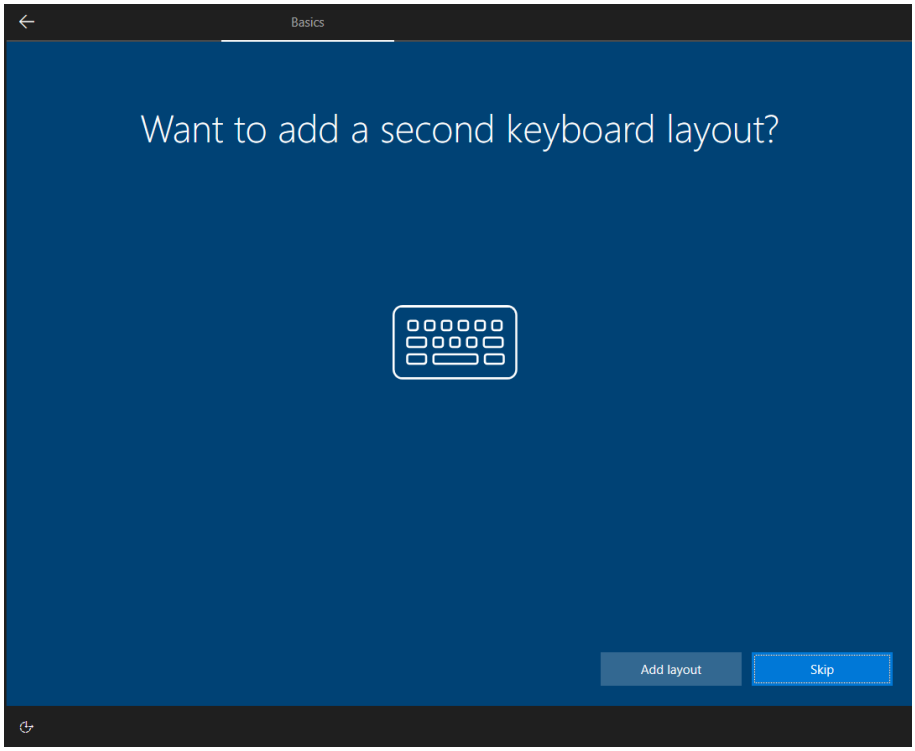
1. Select a region.



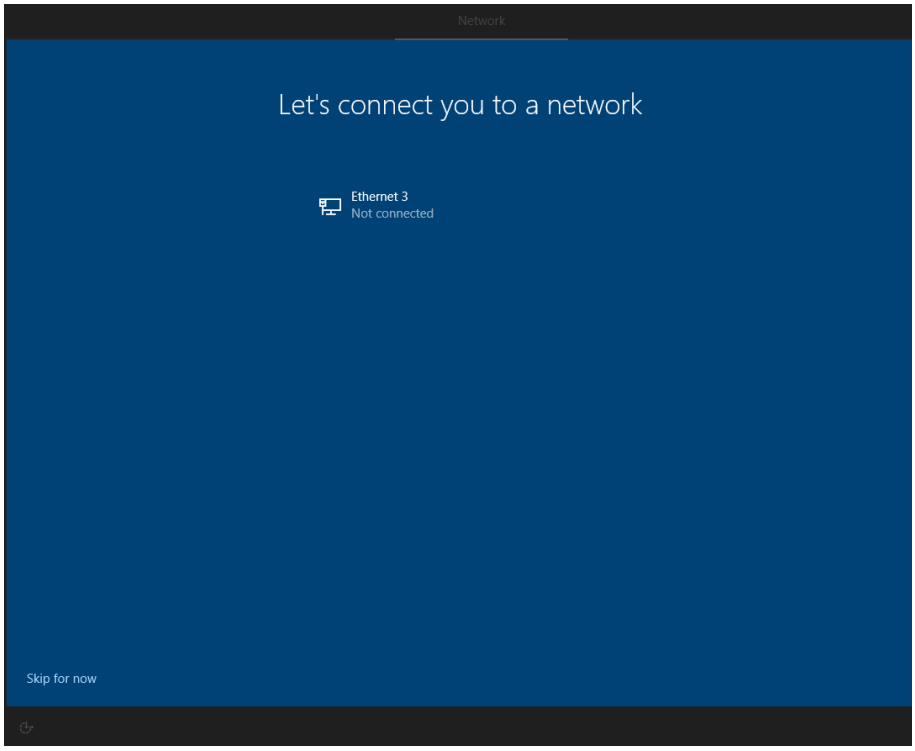
2. Select a keyboard.

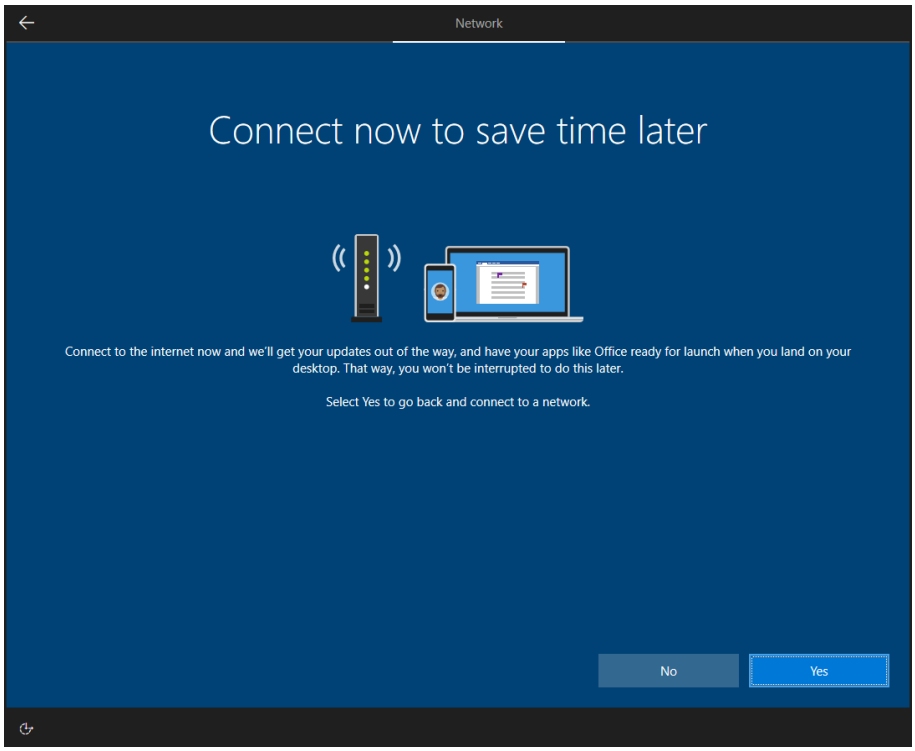


3. Select a second keyboard.

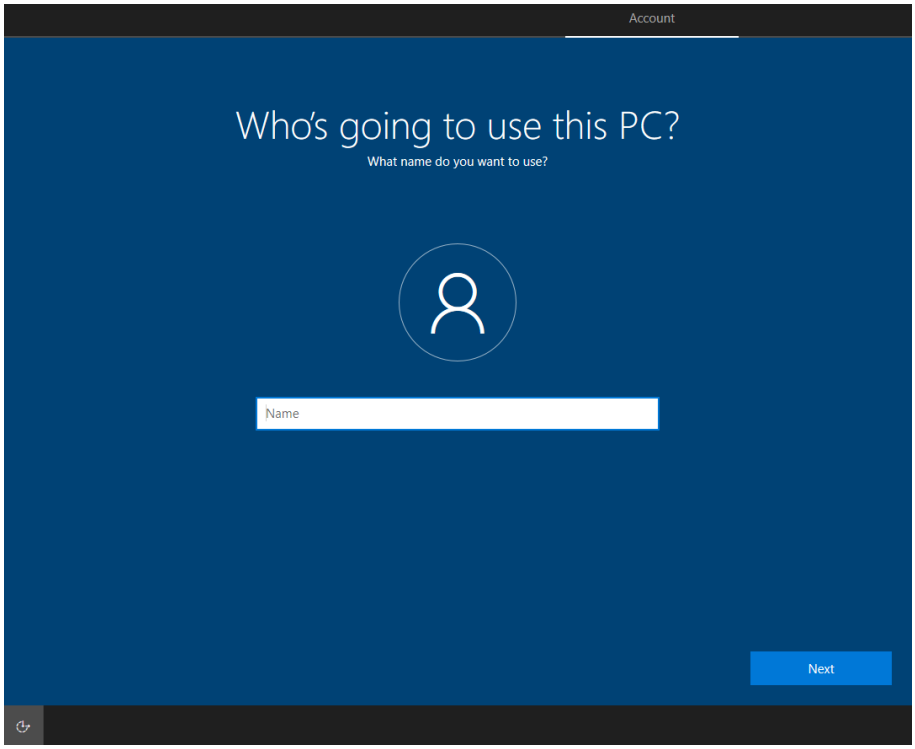


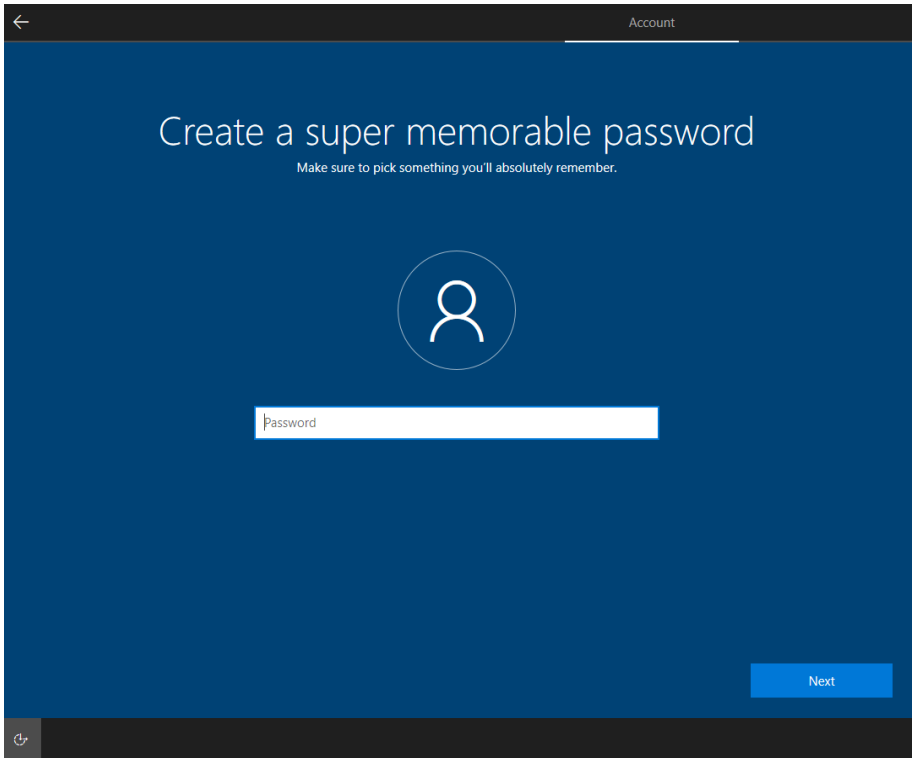
4. Connect to a network.



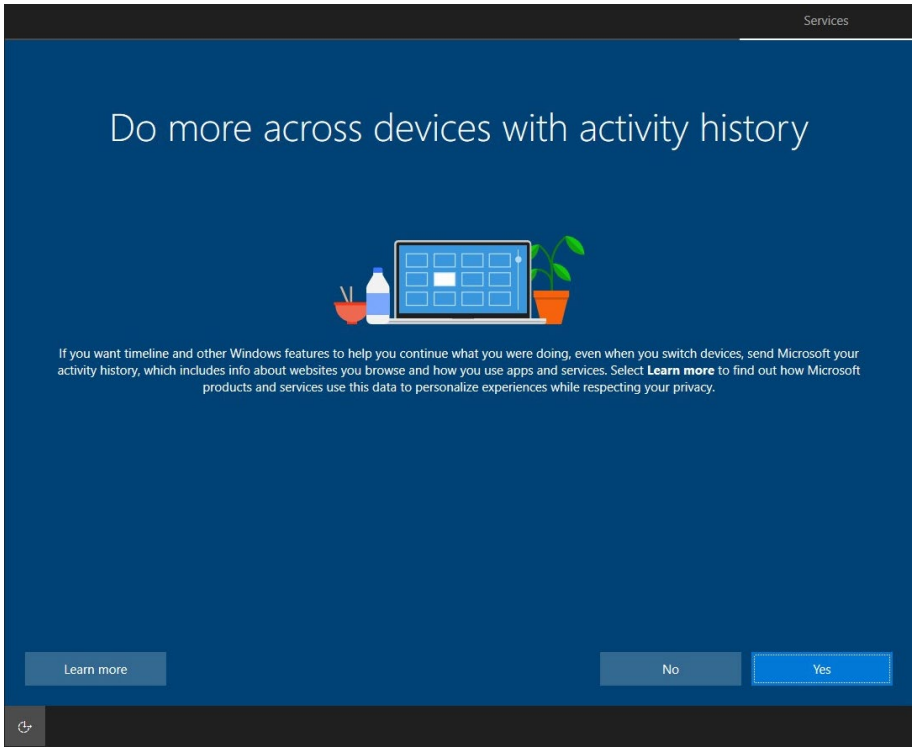


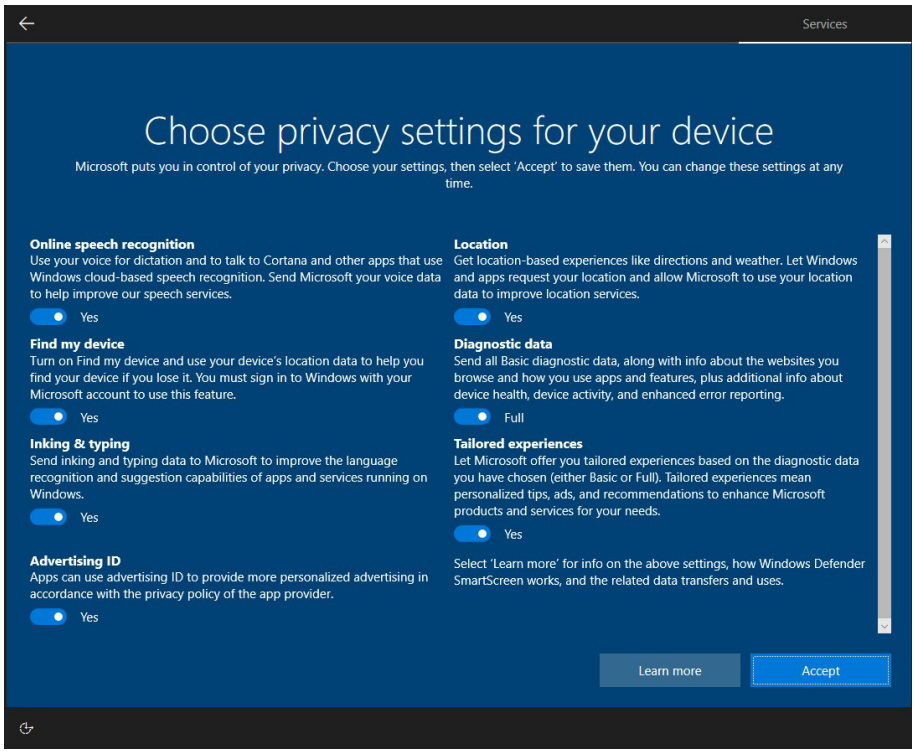
5. Sign in to or create a local account or a Microsoft account (MSA).





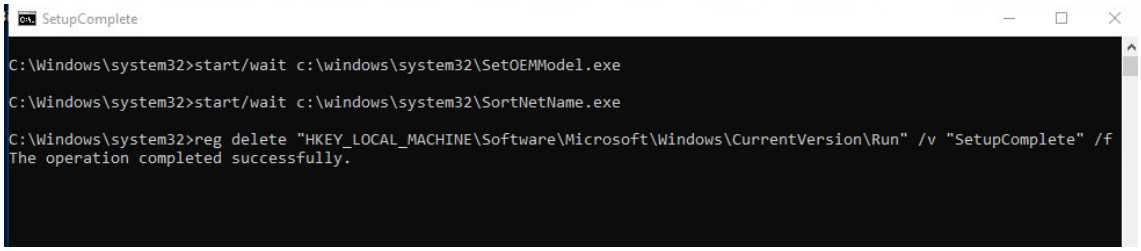
7. Do more across device with activity history.





Initializing the System

1. After the OOBE settings, you will be redirected to the device desktop of the device.



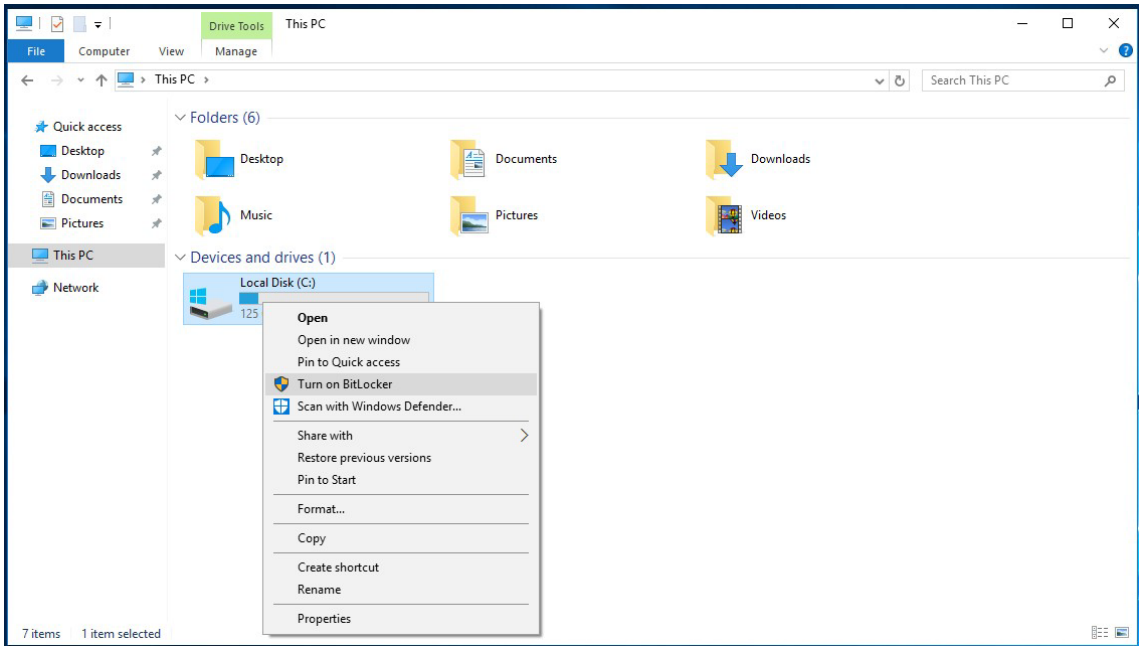
After the process is completed, the system initialization is done. The device will reboot, and the new settings will take effect after the system restarts.

2. BitLocker

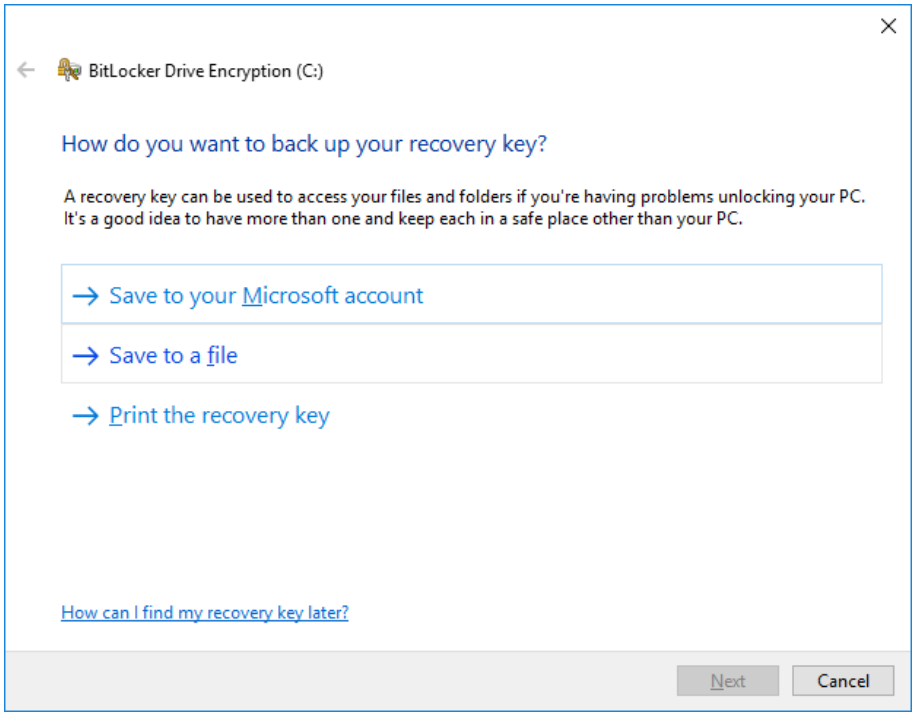
This chapter describes the BitLocker setup process.

Enabling the BitLocker

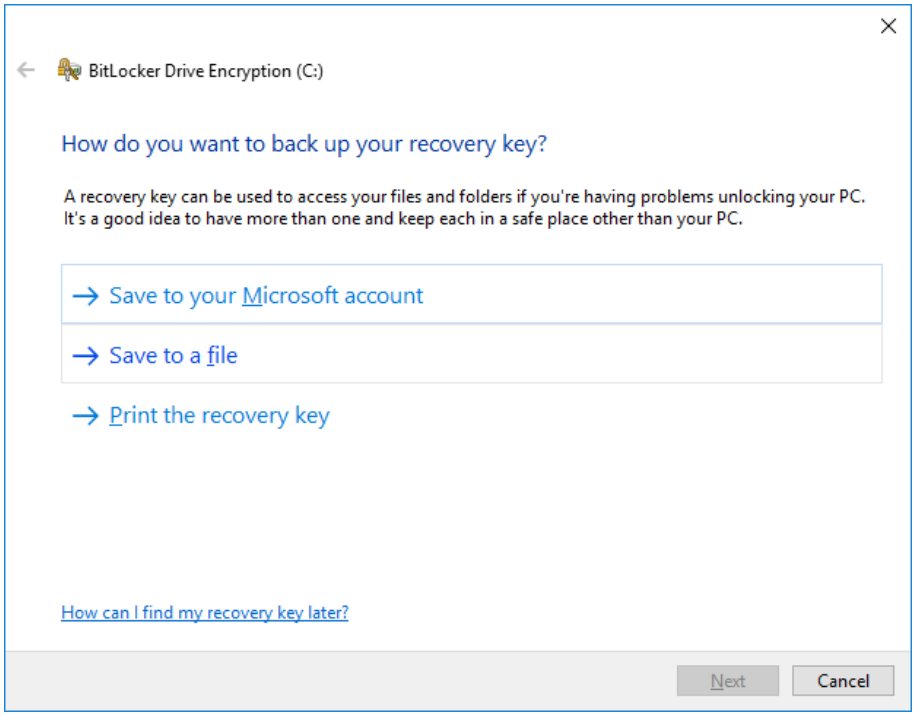
1. In the **Windows Devices and drives**, right-click on the drive and select **Turn on BitLocker**.



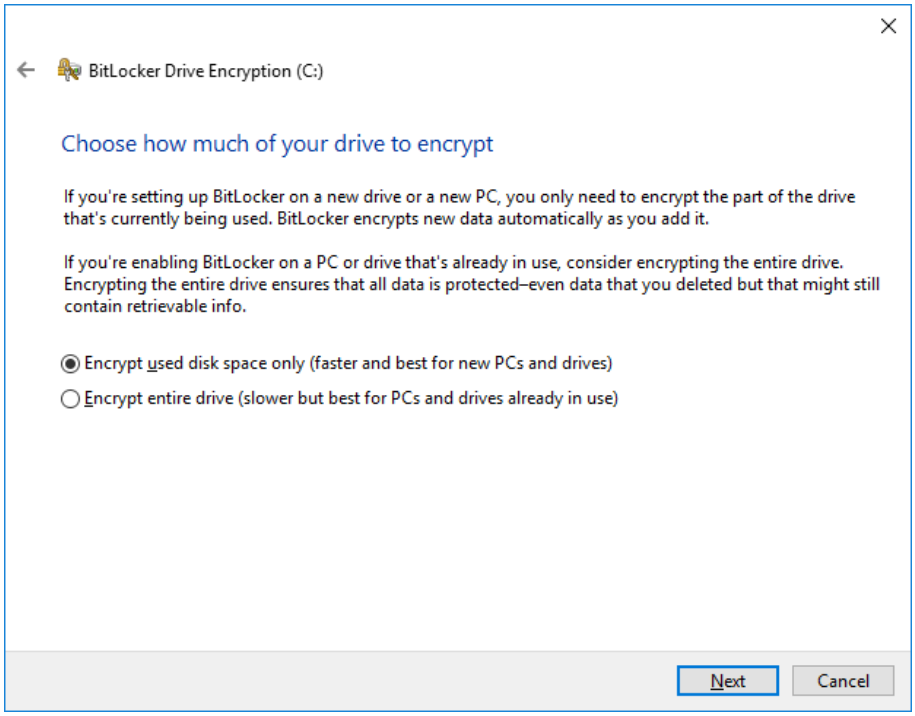
2. Select an option to back up the recovery key.

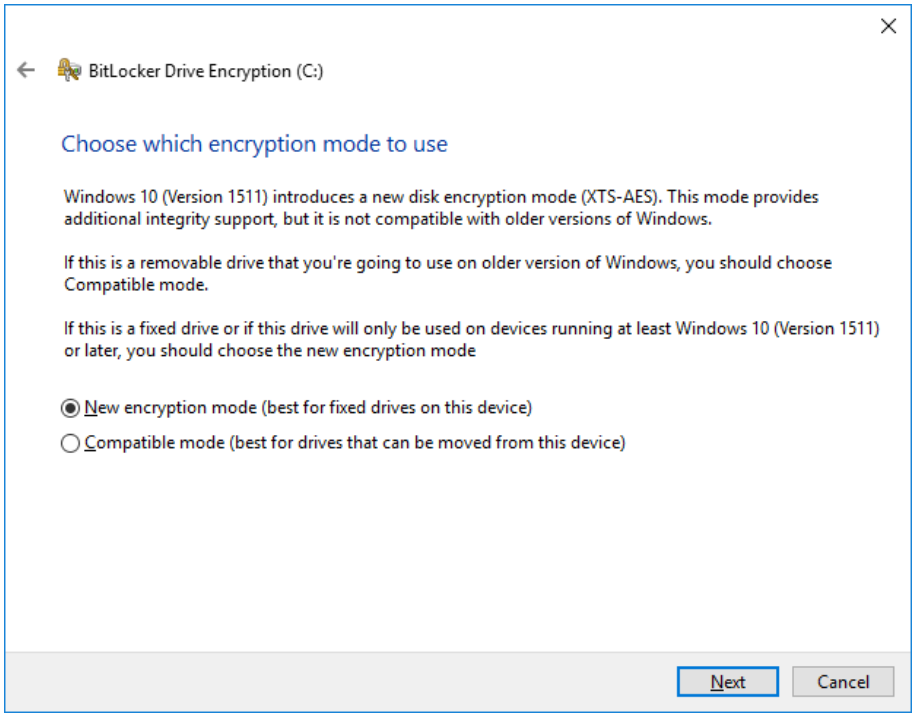


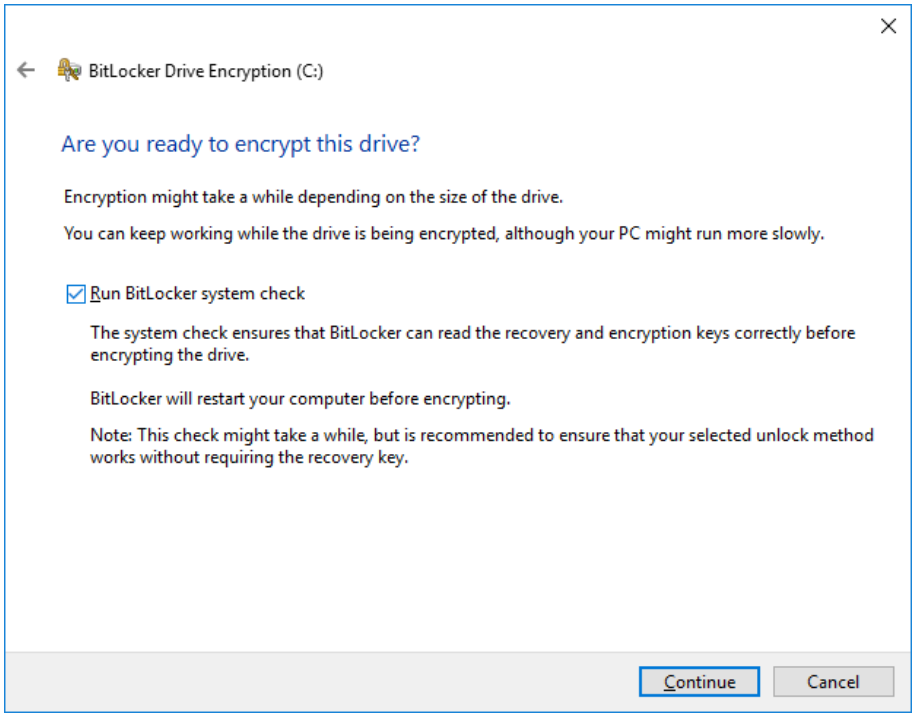
3. Select the path to store the file in.



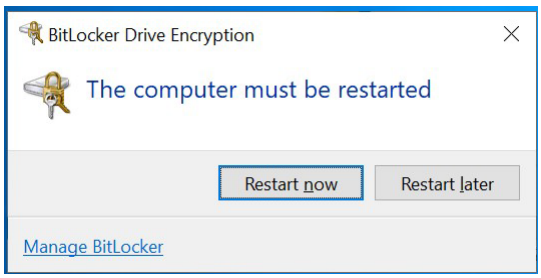
4. Follow the onscreen instructions to specify the drive encryption options.





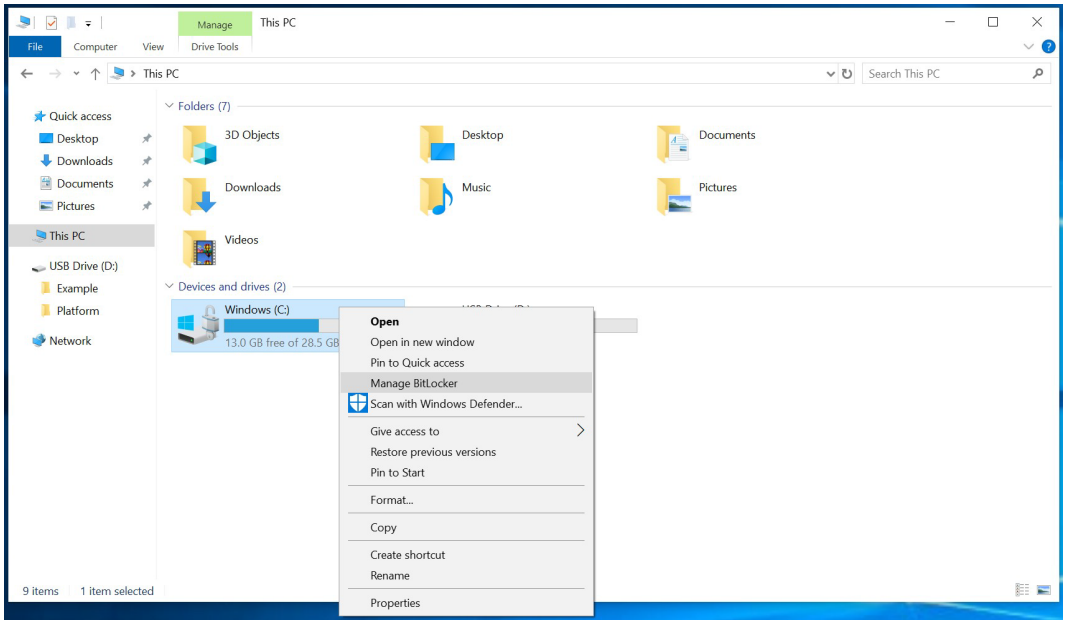


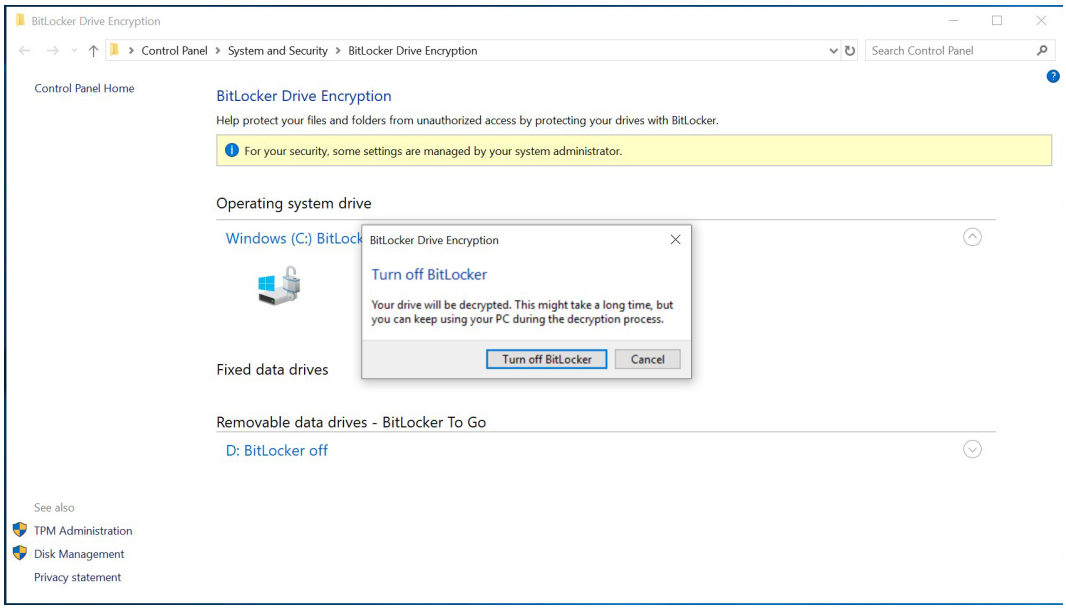
6. Restart the computer.

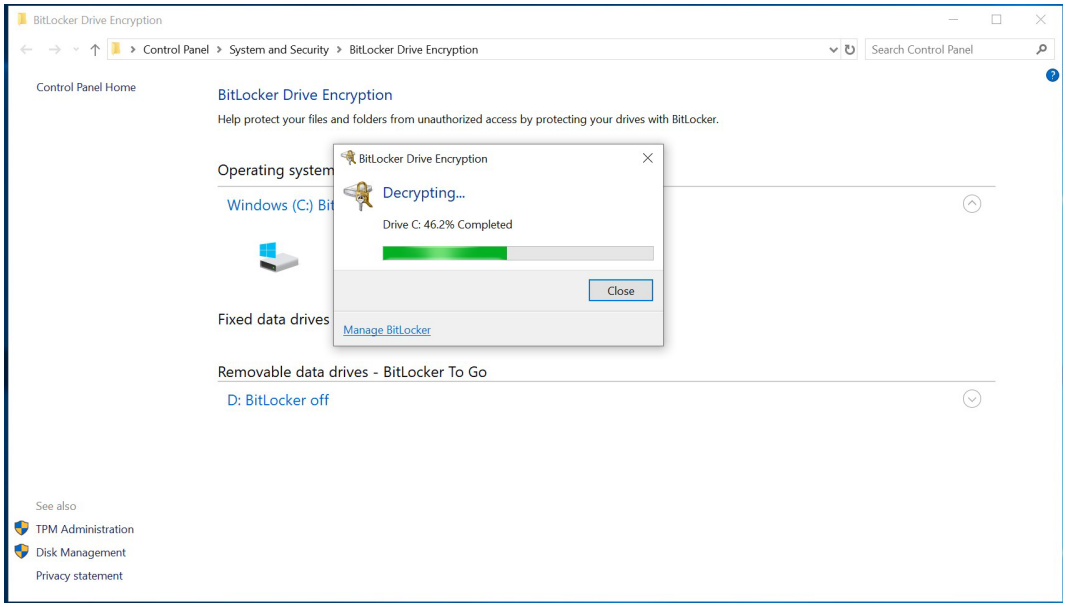


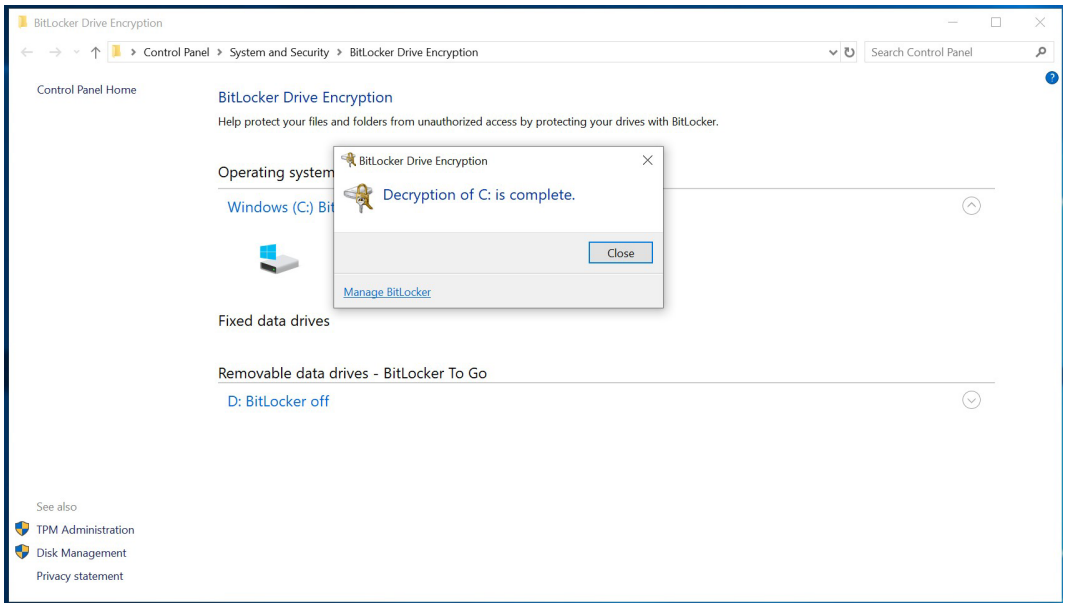
7. Wait for the encryption process to complete and then click Close.

1. In the Windows Devices and drives, right-click on the drive and select **Manage BitLocker**.

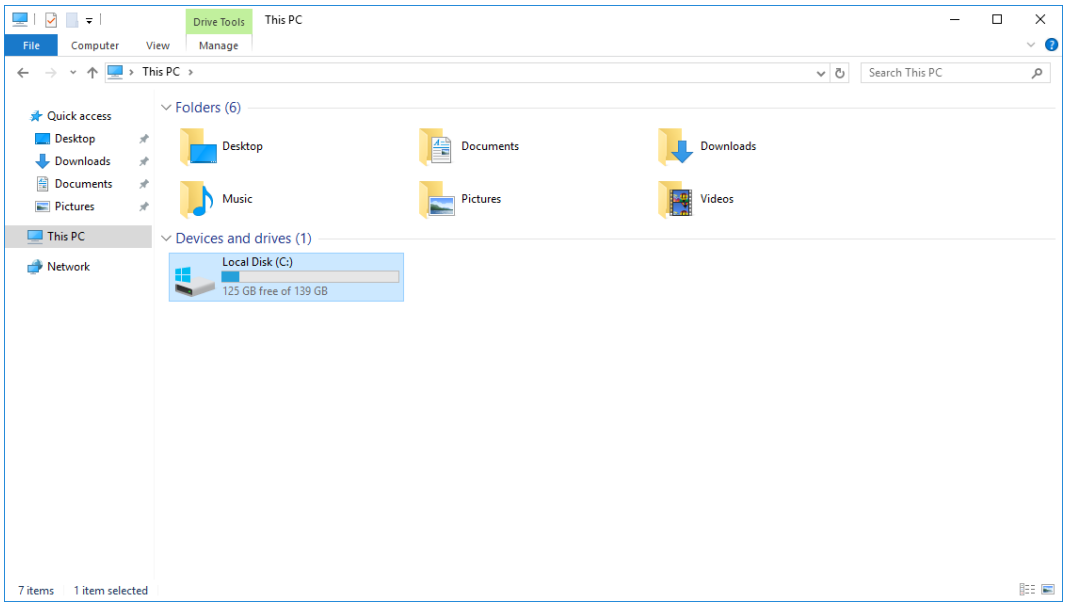





BitLocker Drive Encryption
Control Panel > System and Security > BitLocker Drive Encryption
Search Control Panel
Control Panel Home
BitLocker Drive Encryption
Help protect your files and folders from unauthorized access by protecting your drives with BitLocker.
Operating system
Windows (C:) Bit
BitLocker Drive Encryption
Decrypting...
Drive C: 46.2% Completed
Close
Manage BitLocker
Fixed data drives
Removable data drives - BitLocker To Go
D: BitLocker off
See also
TPM Administration
Disk Management
Privacy statement


BitLocker Drive Encryption
Control Panel > System and Security > BitLocker Drive Encryption
Search Control Panel
Control Panel Home
BitLocker Drive Encryption
Help protect your files and folders from unauthorized access by protecting your drives with BitLocker.
Operating system
Windows (C:) Bit
BitLocker Drive Encryption
Decryption of C: is complete.
Close
Manage BitLocker
Fixed data drives
Removable data drives - BitLocker To Go
D: BitLocker off
See also
TPM Administration
Disk Management
Privacy statement

4. Check the disk status after the decryption process is completed.

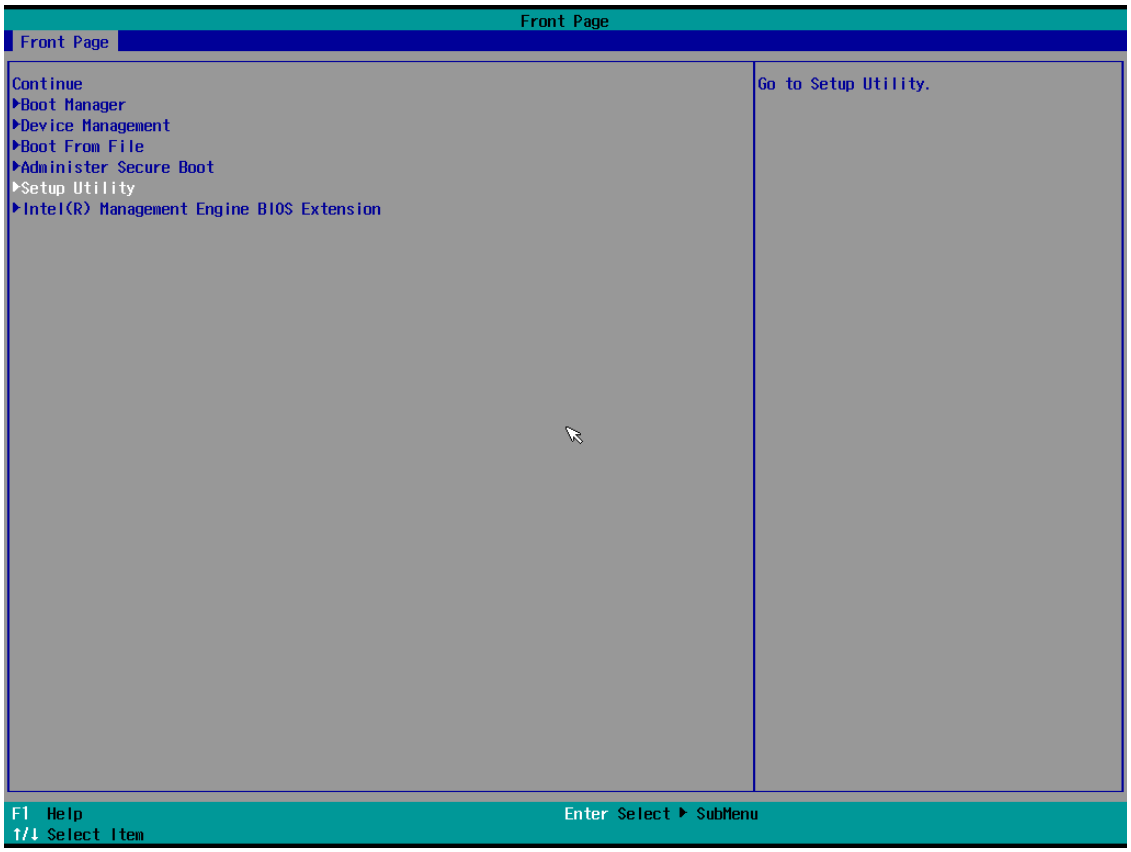


3. Configuring RAID

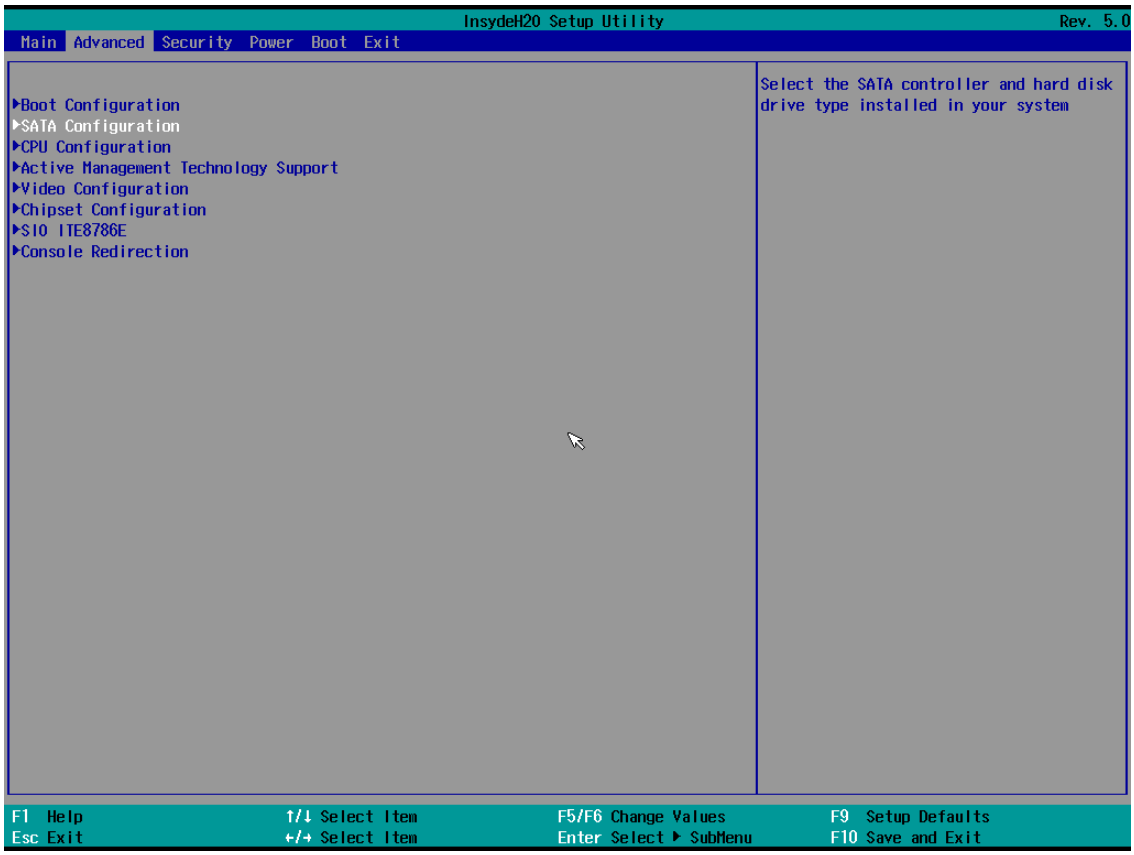
This chapter describes the setup process for RAID.

Changing the RAID Mode

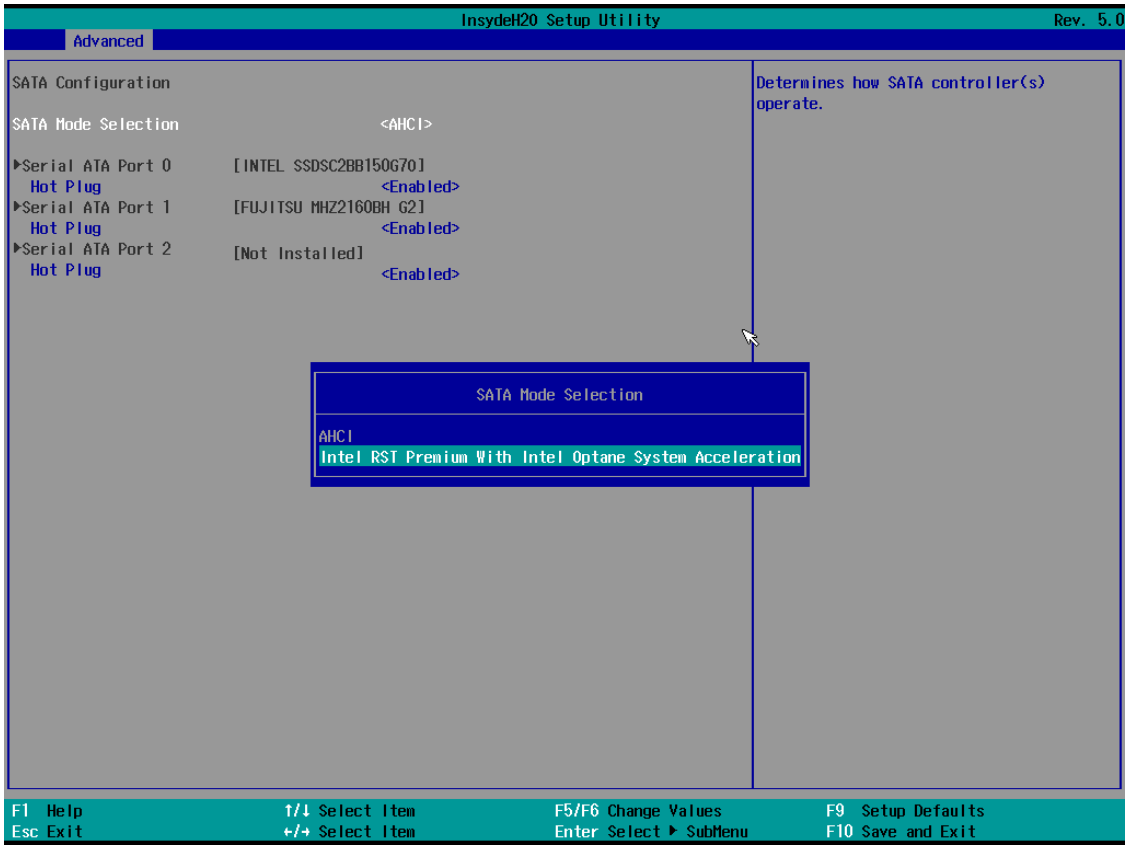
1. Power on the computer and press **F2** to enter the BIOS menu.
2. Select the **Setup Utility** option.



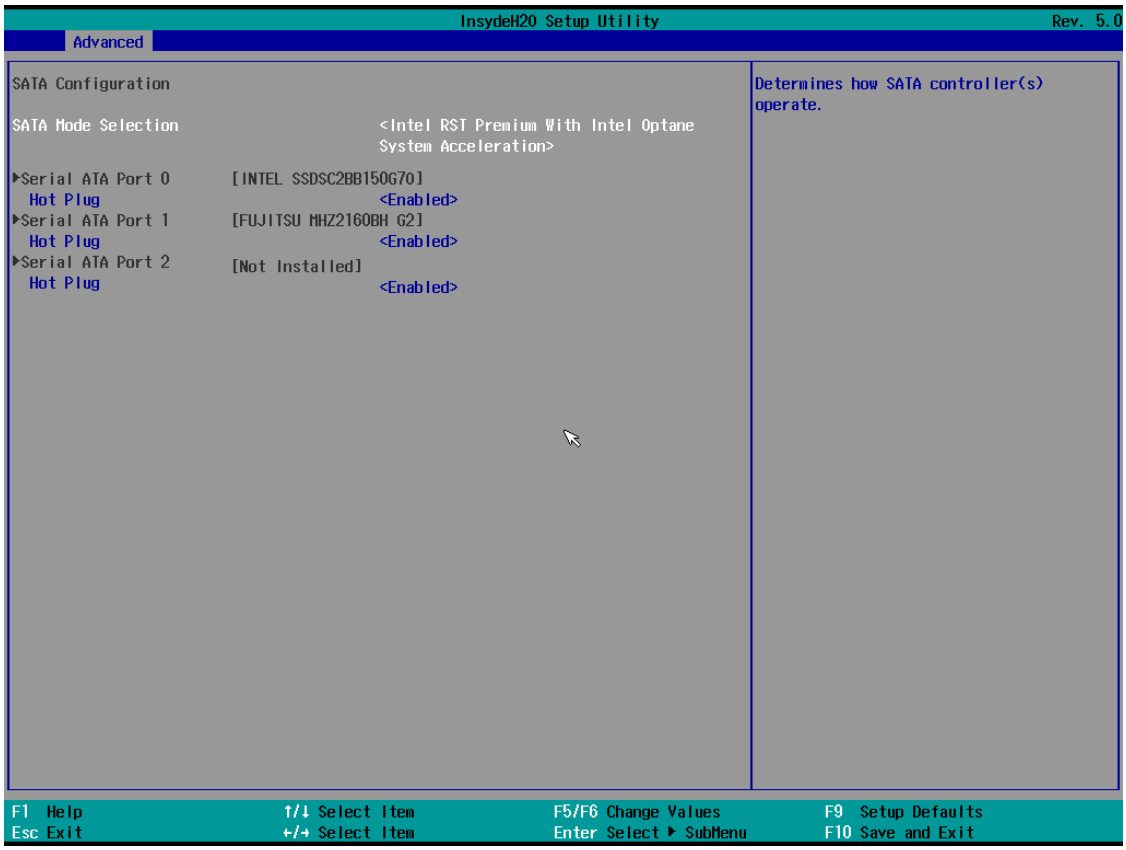
3. Select the **SATA Configuration** option.



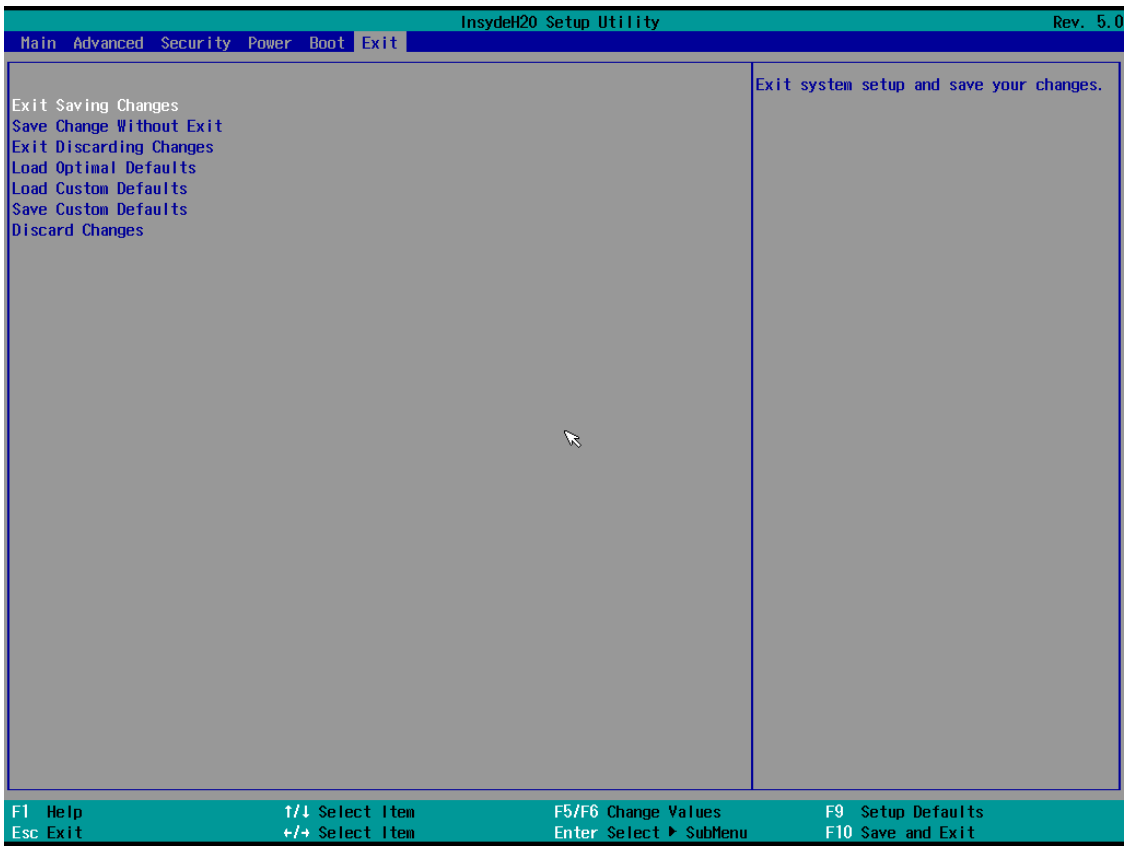
5. Enable the **Hot Plug** function on all ports.



6. Press **F10** to save the settings and then press **ESC** to return to the main page.



7. Select **Exit Saving Changes**, and then select **Yes** to save the settings.

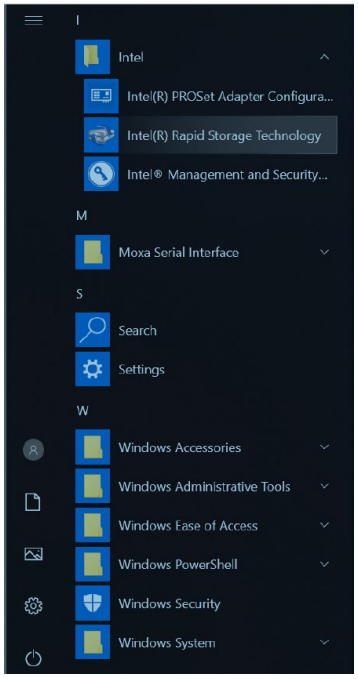


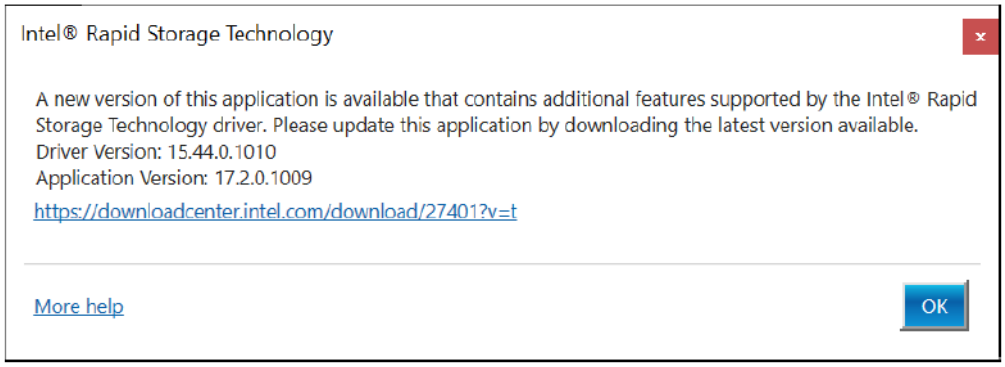
Changing the SATA Mode From AHCI to RAID

The Moxa OS image is created using the AHCI mode. If you need to set up the RAID mode in the default Moxa OS image, you must reinstall the Intel® Rapid Storage Technology (RST) driver.

To reinstall the Intel® RST driver, do the following:

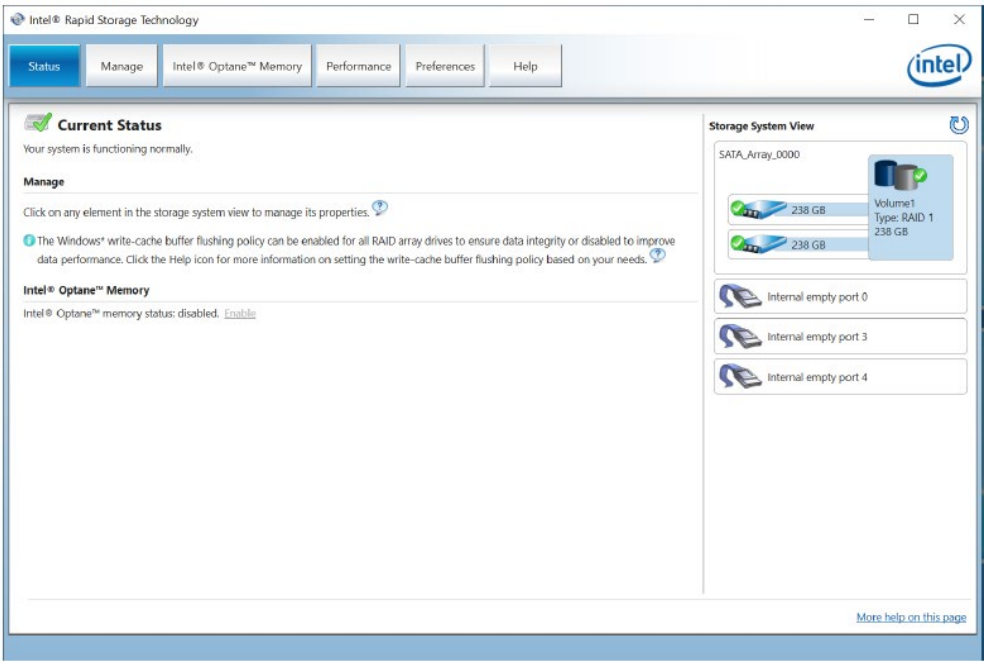
1. Run the **Intel® Rapid Storage Technology** tool.



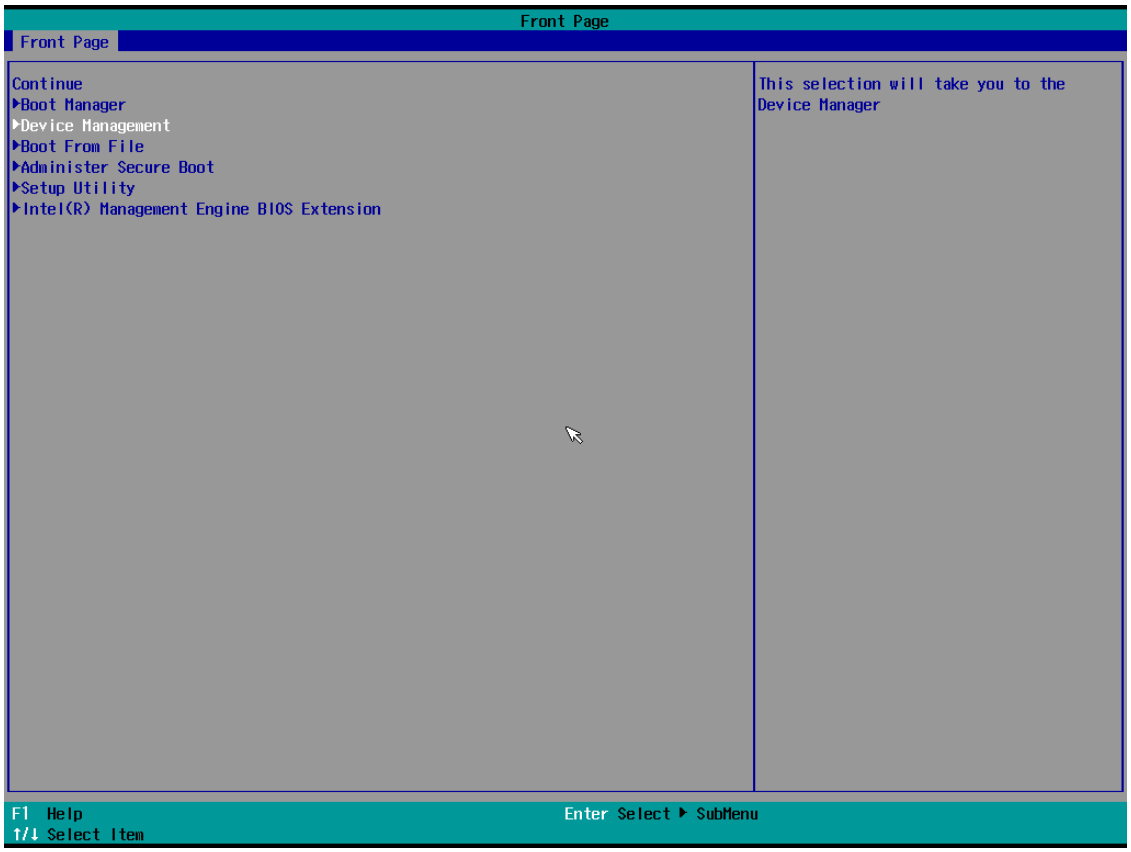


3. Download the latest driver from Moxa's website or Intel's driver download page.
4. Install the latest Intel® RST driver.

5. Run the Intel® Rapid Storage Technology tool to see the current disk status.

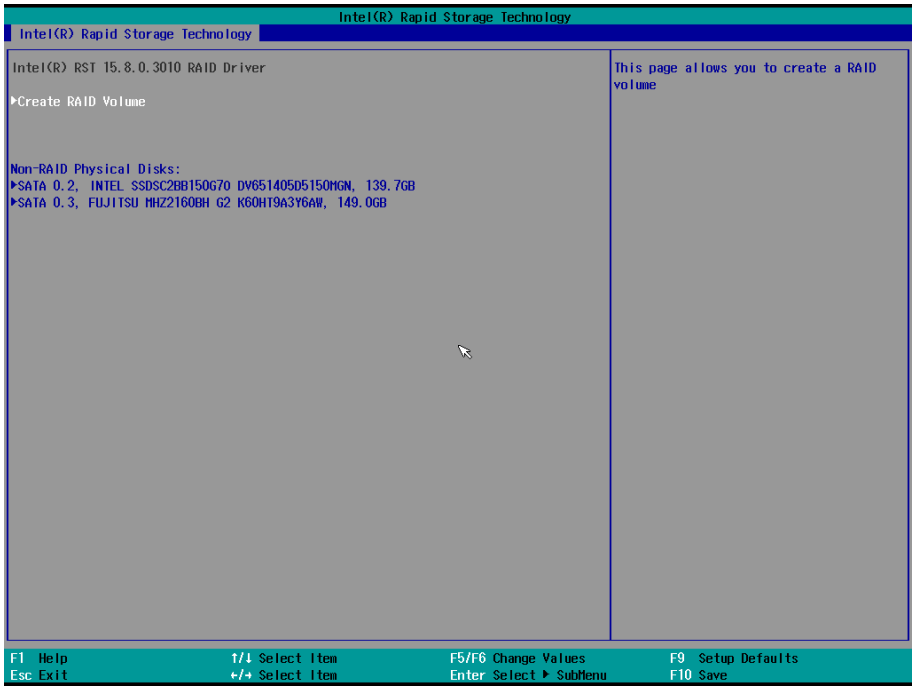


1. Power on the computer and press **F2** to enter the BIOS menu.
2. Select the **Device Management** option.

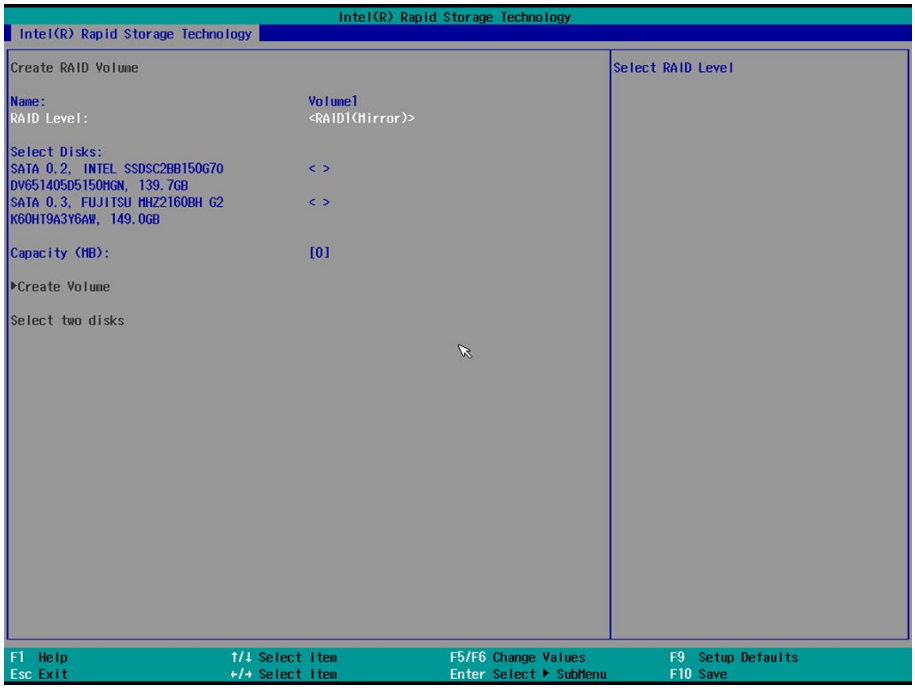


3. Select **Intel® Rapid Storage Technology**.

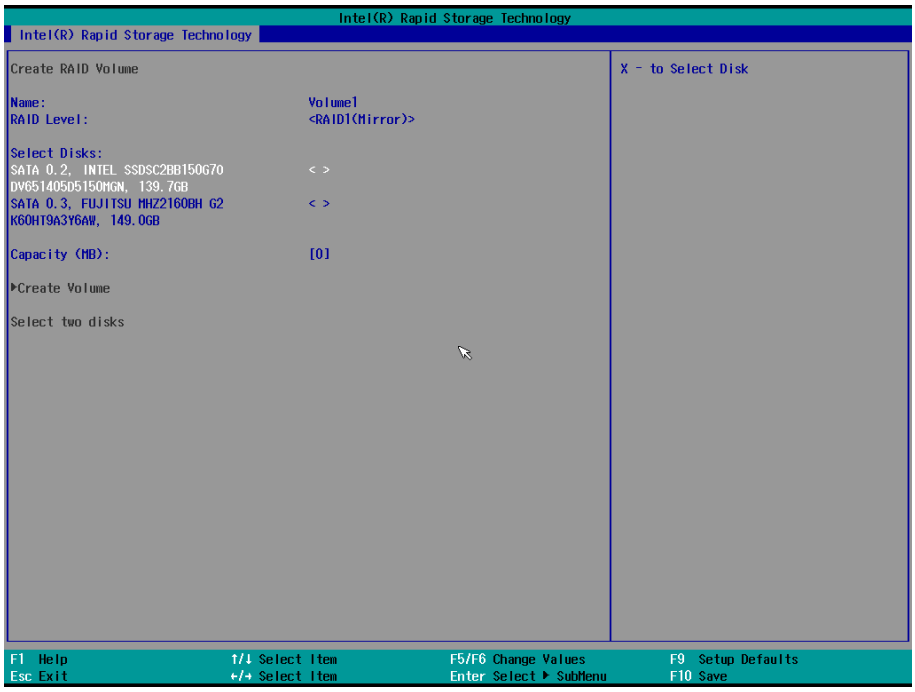
4. Select **Create RAID Volume**.

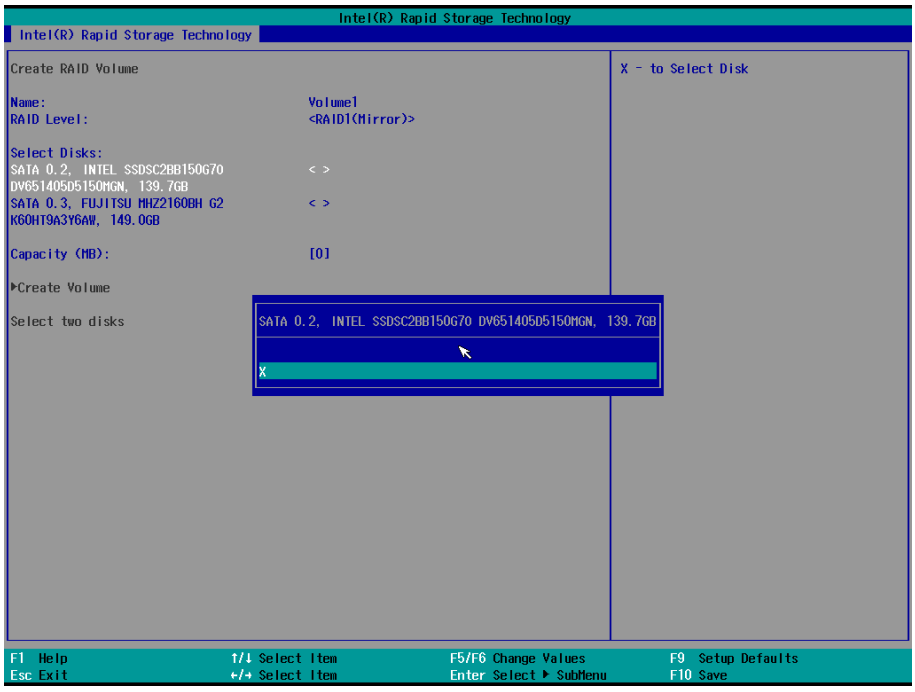


Intel(R) Rapid Storage Technology
Intel(R) Rapid Storage Technology
Create RAID Volume
Name: Volume1
RAID Level: <RAID0(Stripe)>
Select Disks:
SATA 0.2, INTEL SSDSC2BB150G70 < >
DV651405D5150MGN, 139.7GB
SATA 0.3, FUJITSU MHZ2160BH G2 < >
K60HT9A3Y6AW, 149.0GB
Strip Size: <16KB>
Capacity (MB): [0]
Create Volume
Select at least two disks
RAID Level:
RAID0(Stripe)
RAID1(Mirror)
Recovery
Select RAID Level
F1 Help ↑/↓ Select Item F5/F6 Change Values F9 Setup Defaults
Esc Exit ←/→ Select Item Enter Select ▸ SubMenu F10 Save

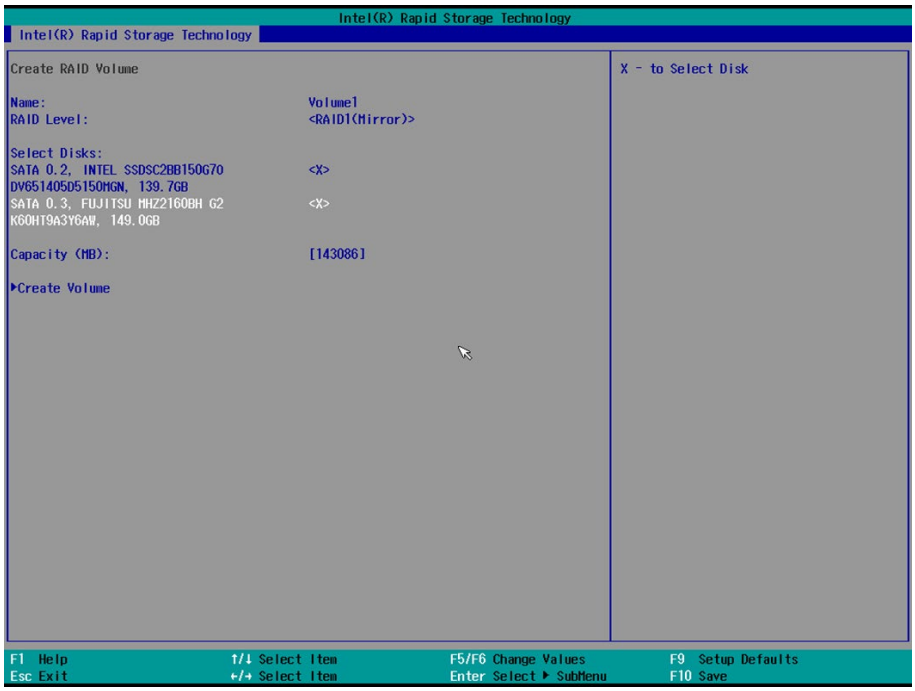

Intel(R) Rapid Storage Technology
Intel(R) Rapid Storage Technology
Create RAID Volume
Name: Volume1
RAID Level: <RAID1(Mirror)>
Select Disks:
SATA 0.2, INTEL SSDSC2BB150G70 < >
DV651405D5150MGN, 139.7GB
SATA 0.3, FUJITSU MHZ2160BH G2 < >
K60HT9A3Y6AW, 149.0GB
Capacity (MB): [0]
Create Volume
Select two disks
Select RAID Level
F1 Help ↑/↓ Select Item F5/F6 Change Values F9 Setup Defaults
Esc Exit ←/→ Select Item Enter Select ▸ SubMenu F10 Save

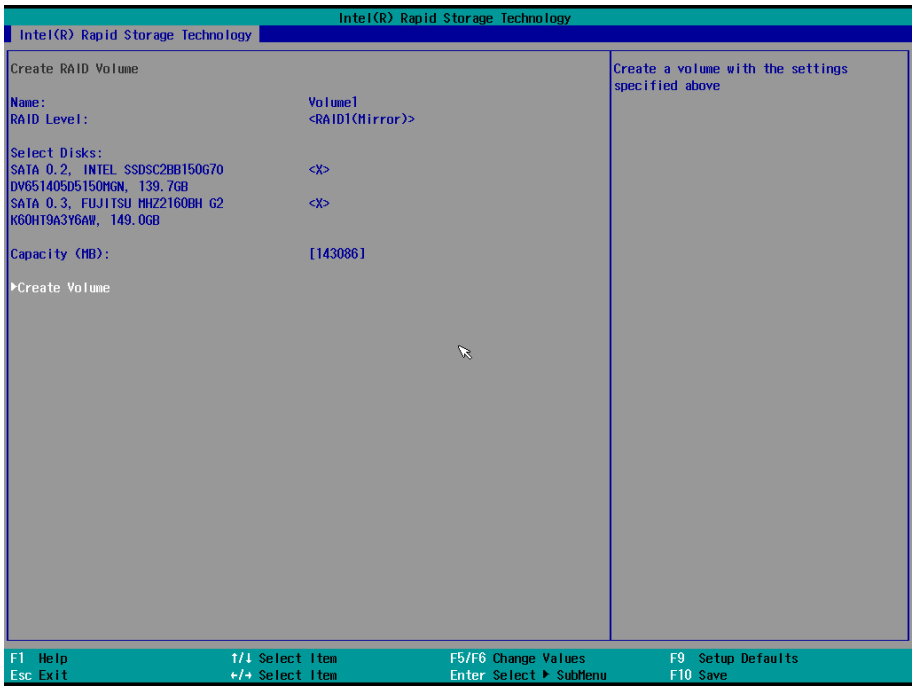
6. Select the disk.



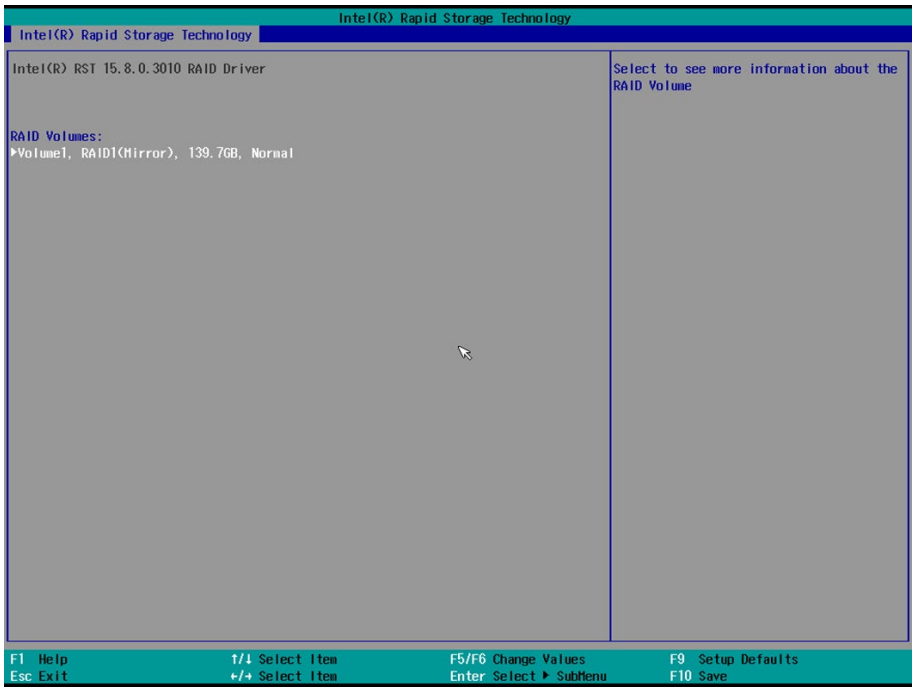


The disk is now marked with an x next to it to indicate the selection.



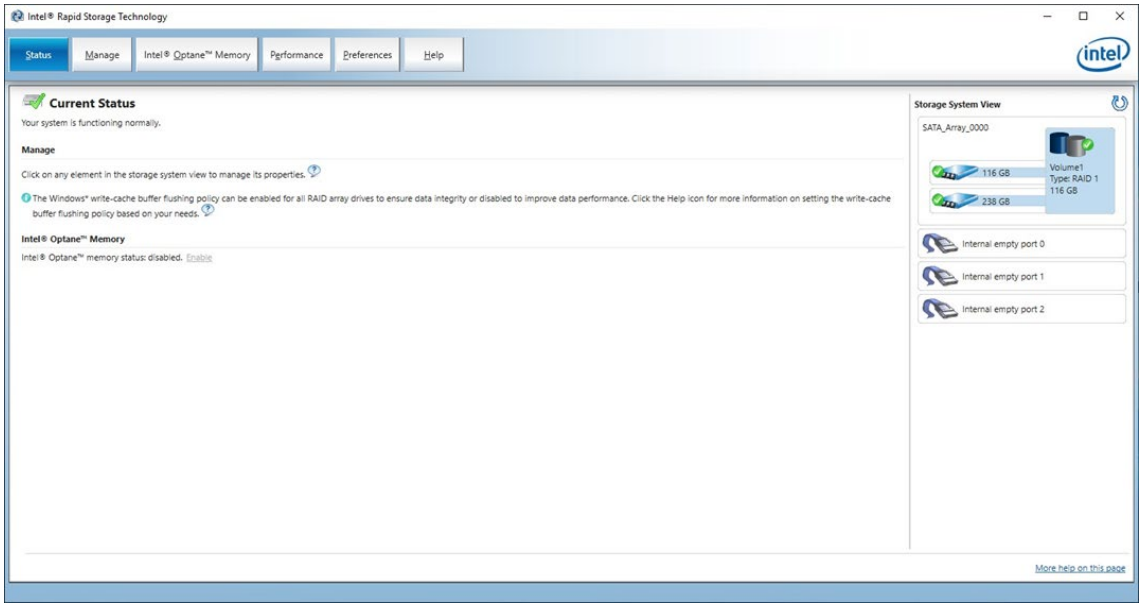


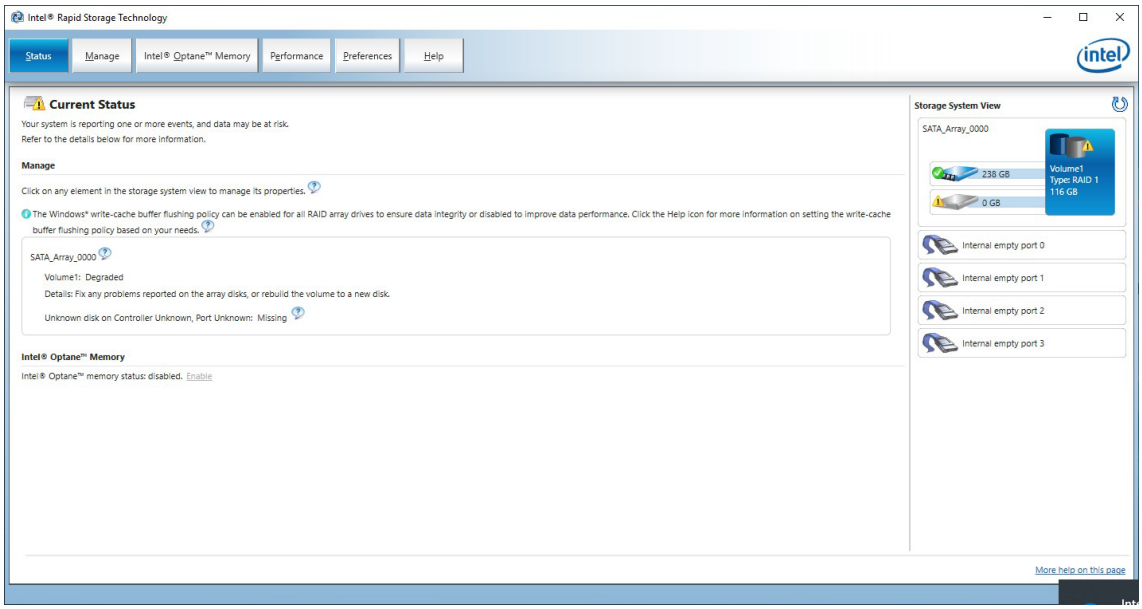
A RAID volume is created based on the settings specified.

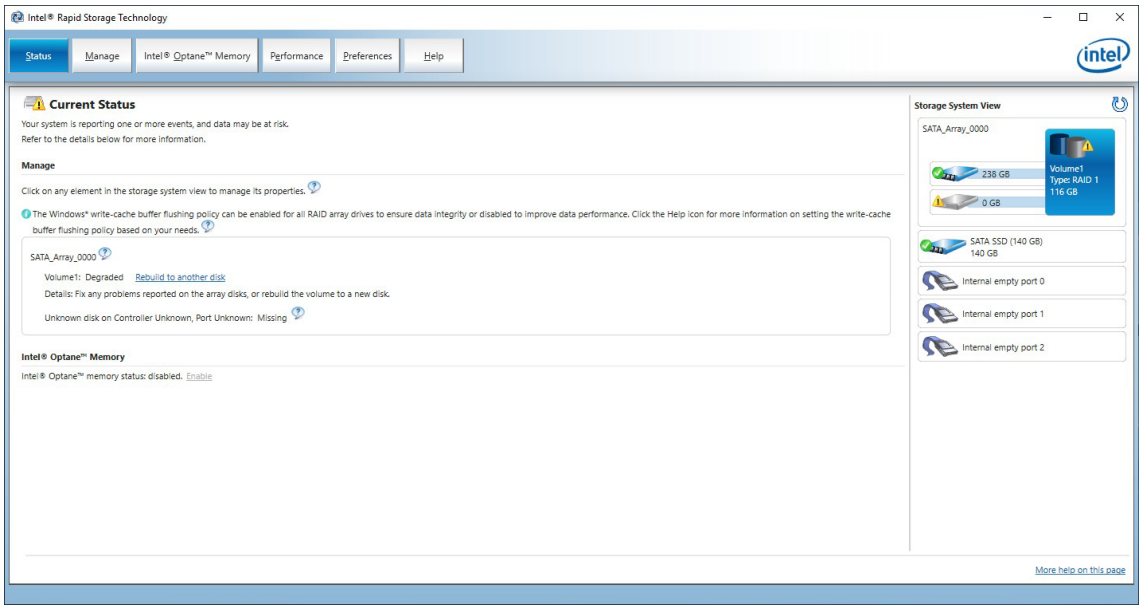


Replacing a Disk

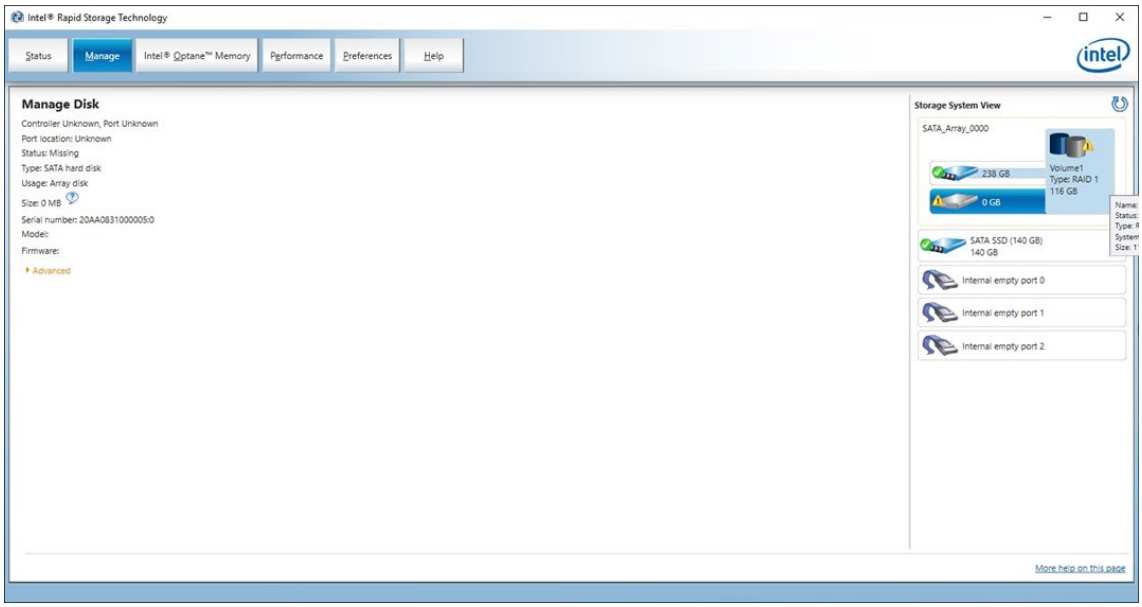
1. Unplug the current SSD.

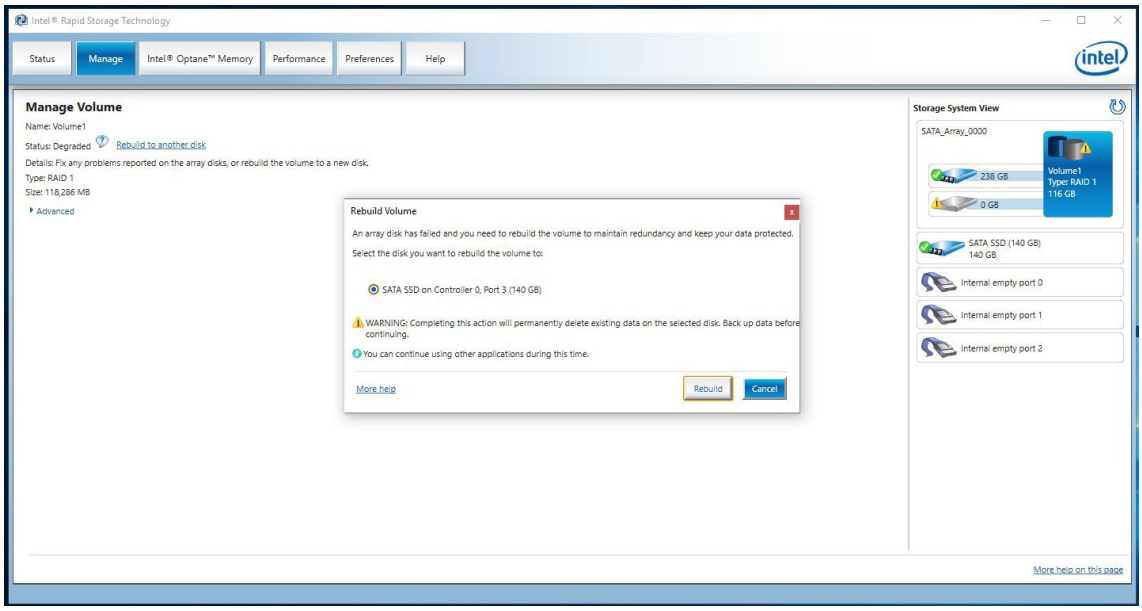



Intel® Rapid Storage Technology
Status
Manage
Intel® Optane™ Memory
Performance
Preferences
Help
Current Status
Your system is reporting one or more events, and data may be at risk.
Refer to the details below for more information.
Manage
Click on any element in the storage system view to manage its properties.
The Windows* write-cache buffer flushing policy can be enabled for all RAID array drives to ensure data integrity or disabled to improve data performance. Click the Help icon for more information on setting the write-cache buffer flushing policy based on your needs.
SATA_Array_0000
Volume1: Degraded
Details: Fix any problems reported on the array disks, or rebuild the volume to a new disk.
Unknown disk on Controller Unknown, Port Unknown: Missing
Intel® Optane™ Memory
Intel® Optane™ memory status: disabled. Enable
Storage System View
SATA_Array_0000
238 GB
0 GB
Volume1
Type: RAID 1
116 GB
Internal empty port 0
Internal empty port 1
Internal empty port 2
Internal empty port 3
More help on this page

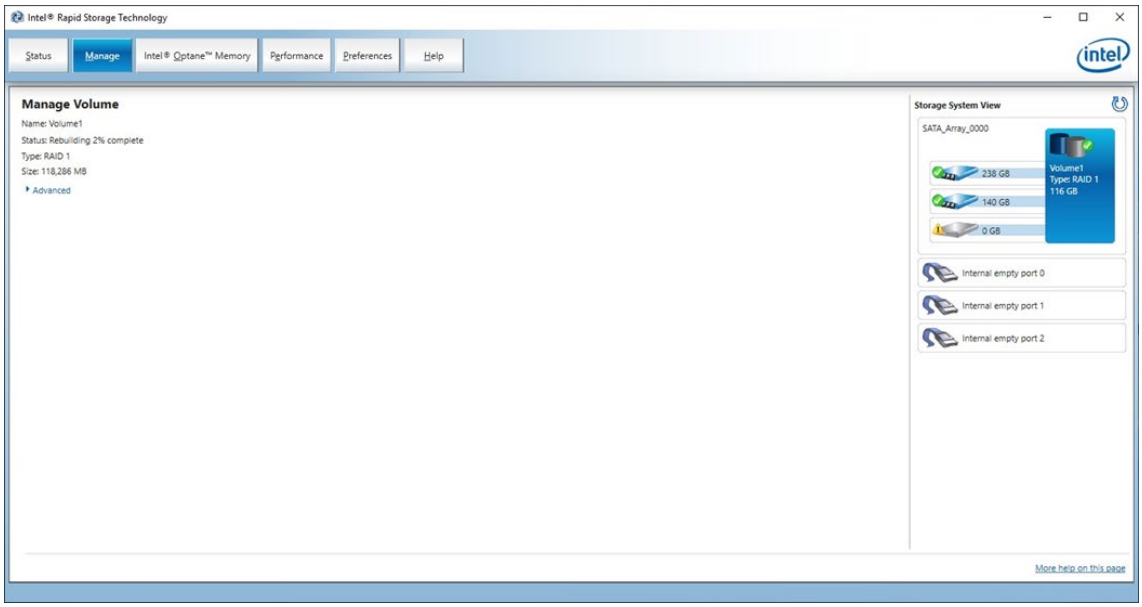

Intel® Rapid Storage Technology
Status
Manage
Intel® Optane™ Memory
Performance
Preferences
Help
Current Status
Your system is reporting one or more events, and data may be at risk.
Refer to the details below for more information.
Manage
Click on any element in the storage system view to manage its properties.
The Windows* write-cache buffer flushing policy can be enabled for all RAID array drives to ensure data integrity or disabled to improve data performance. Click the Help icon for more information on setting the write-cache buffer flushing policy based on your needs.
SATA_Array_0000
Volume1: Degraded Rebuild to another disk
Details: Fix any problems reported on the array disks, or rebuild the volume to a new disk.
Unknown disk on Controller Unknown, Port Unknown: Missing
Intel® Optane™ Memory
Intel® Optane™ memory status: disabled. Enable
Storage System View
SATA_Array_0000
238 GB
0 GB
Volume1
Type: RAID 1
116 GB
SATA SSD (140 GB)
140 GB
Internal empty port 0
Internal empty port 1
Internal empty port 2
More help on this page

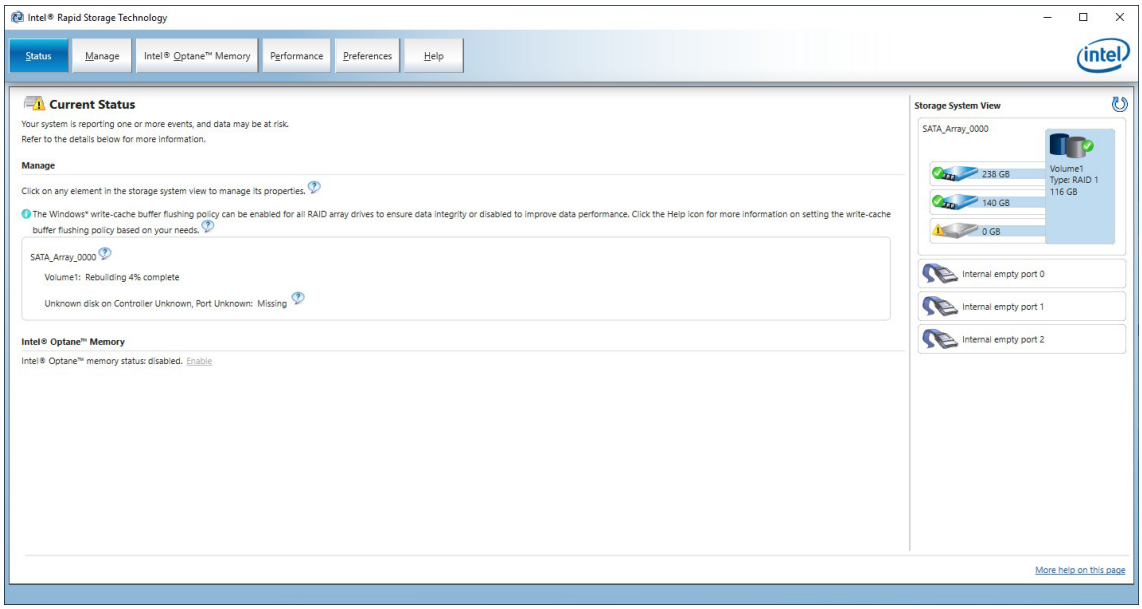
3. Click on the **Manage** tab.

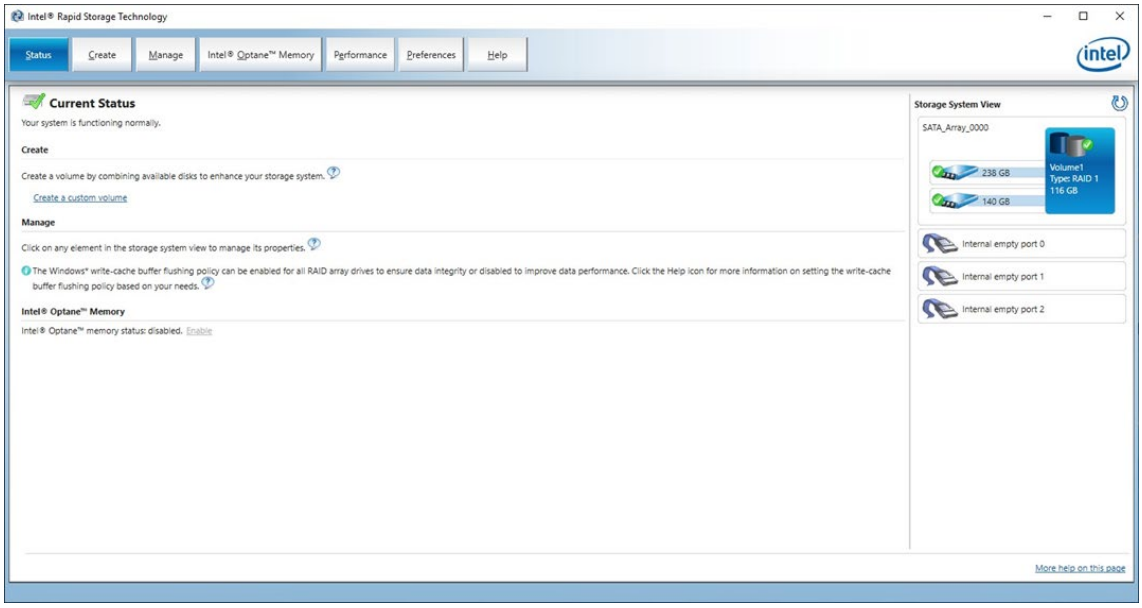




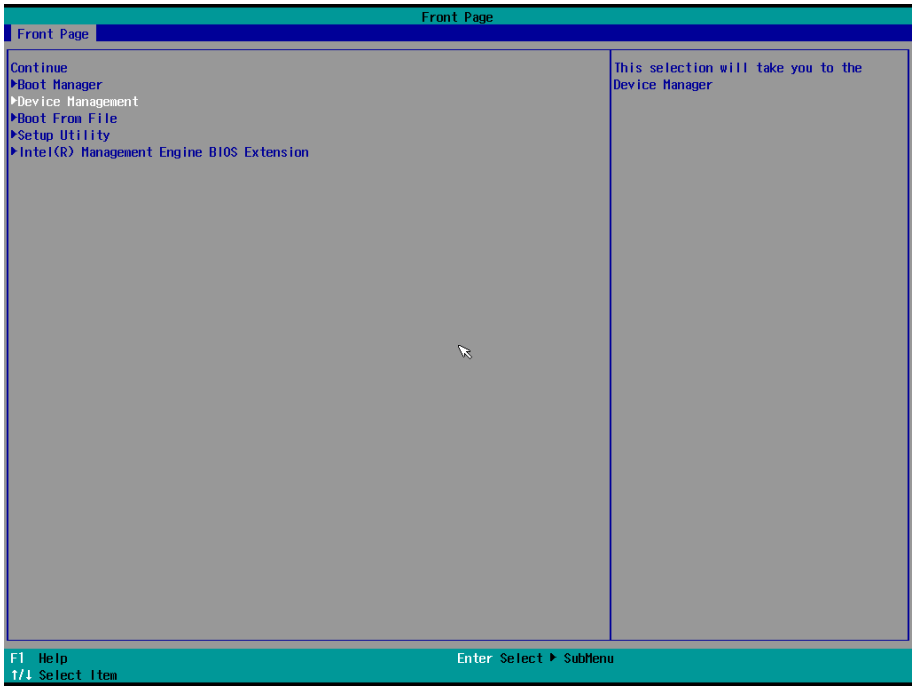
5. Wait for the rebuild process to complete.



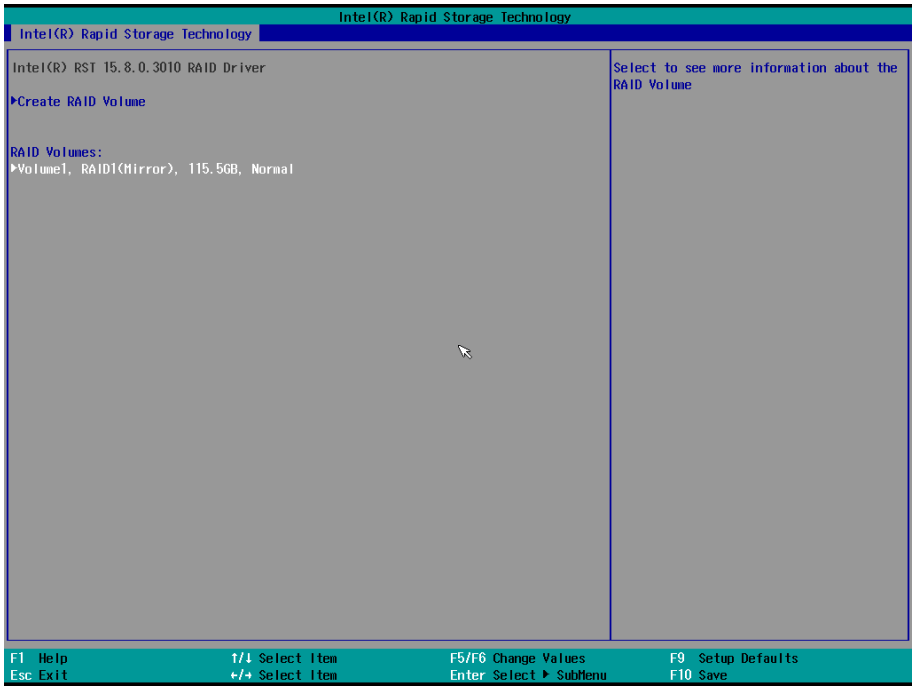




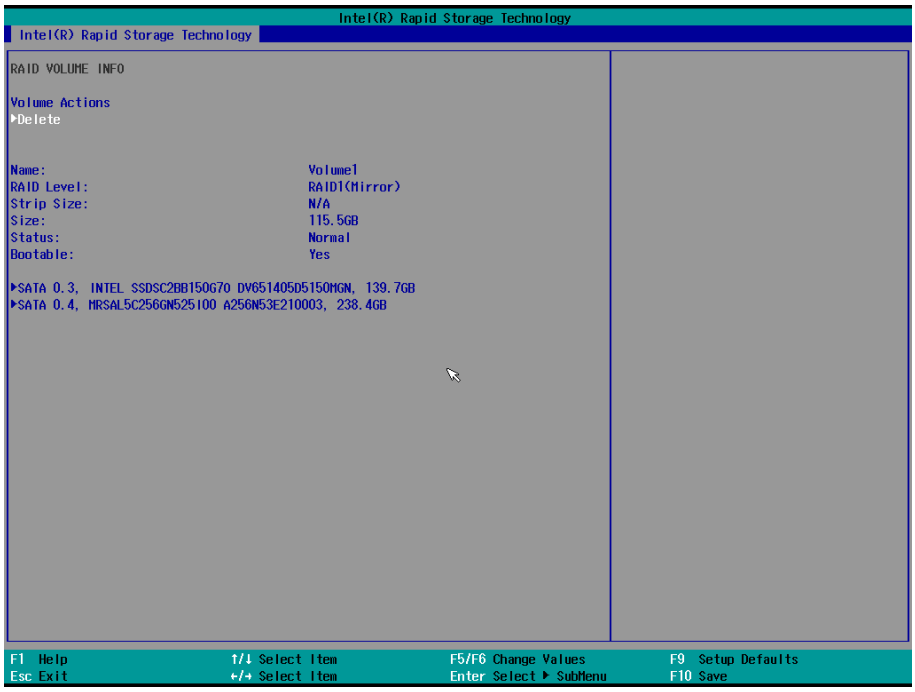
1. Power on the computer and press **F2** to enter the BIOS menu.
2. Select **Device Management**.

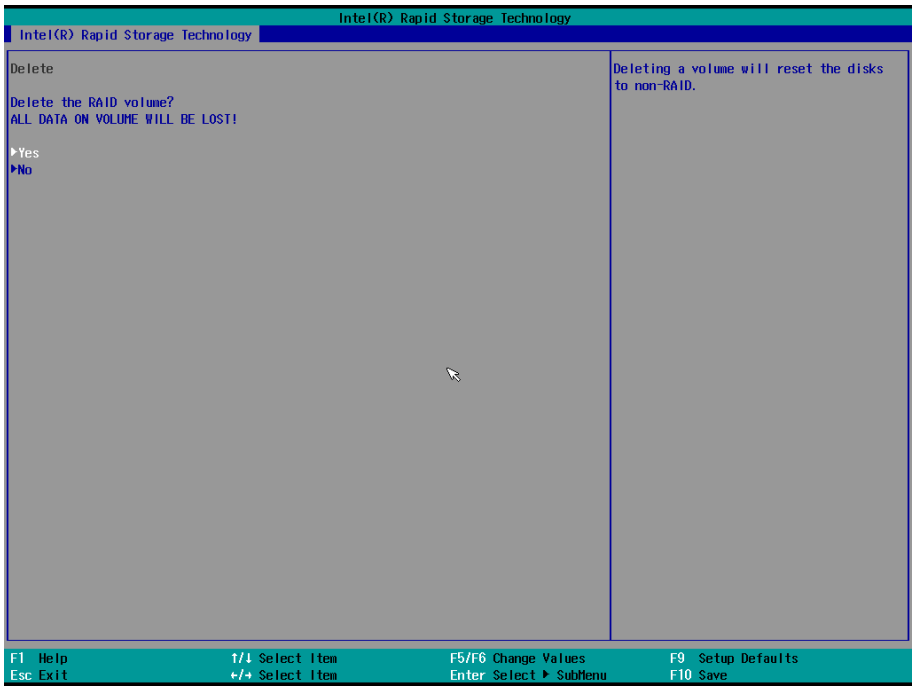


3. Select the **Intel® Rapid Storage Technology** option.



5. Select **Delete** and then press **Enter**.





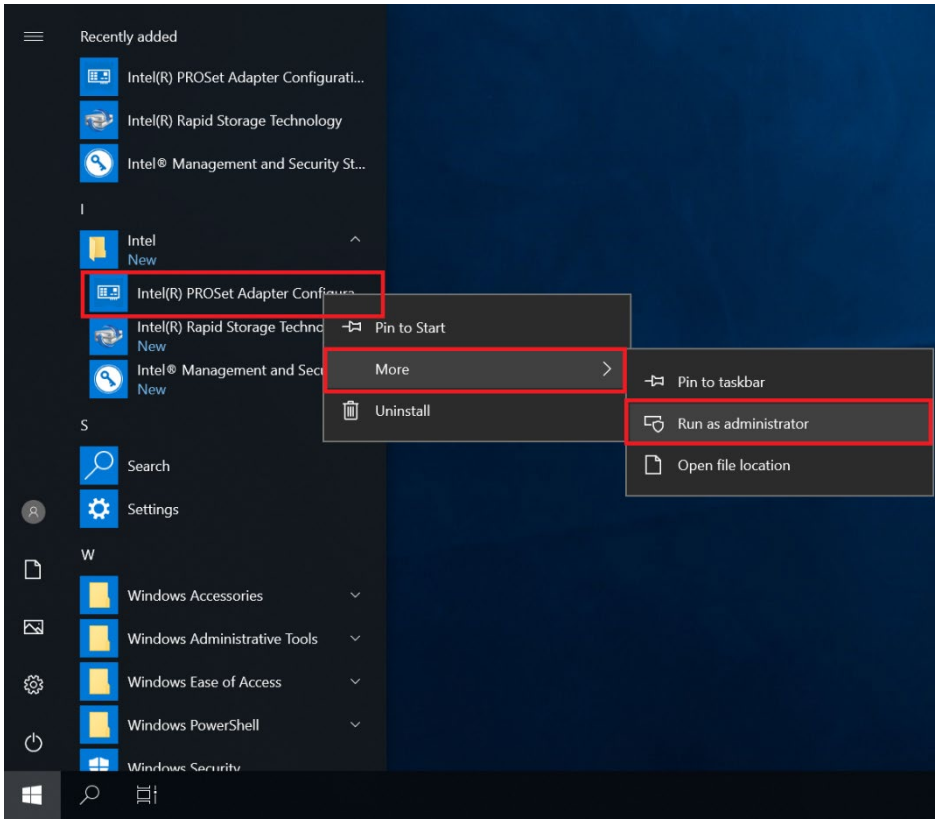
4. Teaming

This chapter describes the setup process for the Intel® Teaming function.

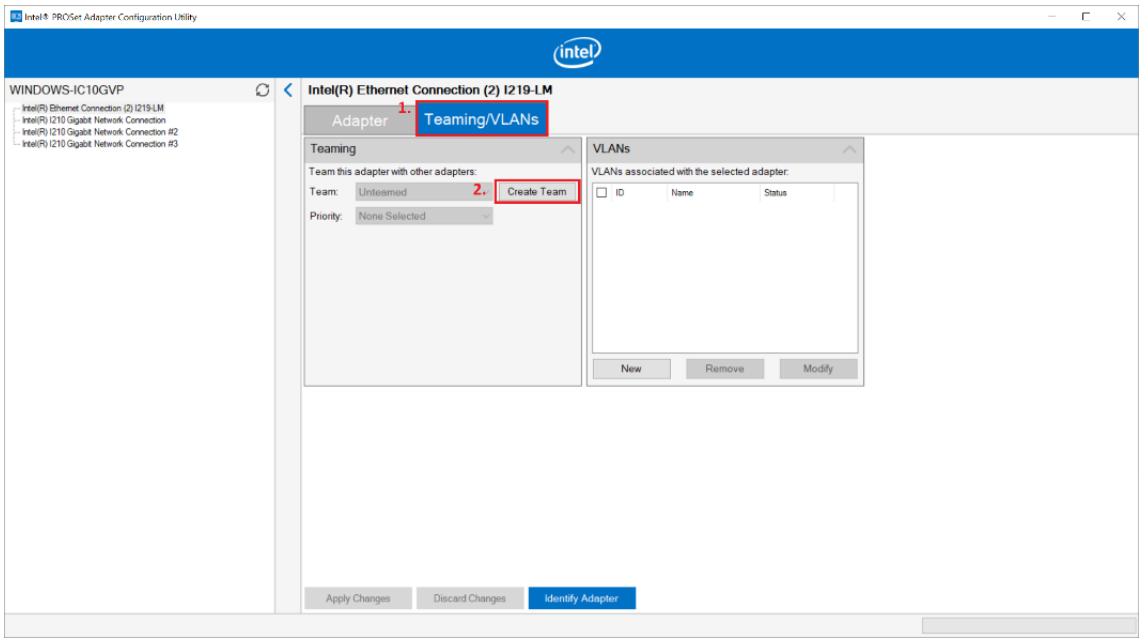
Creating an Intel® Net Team

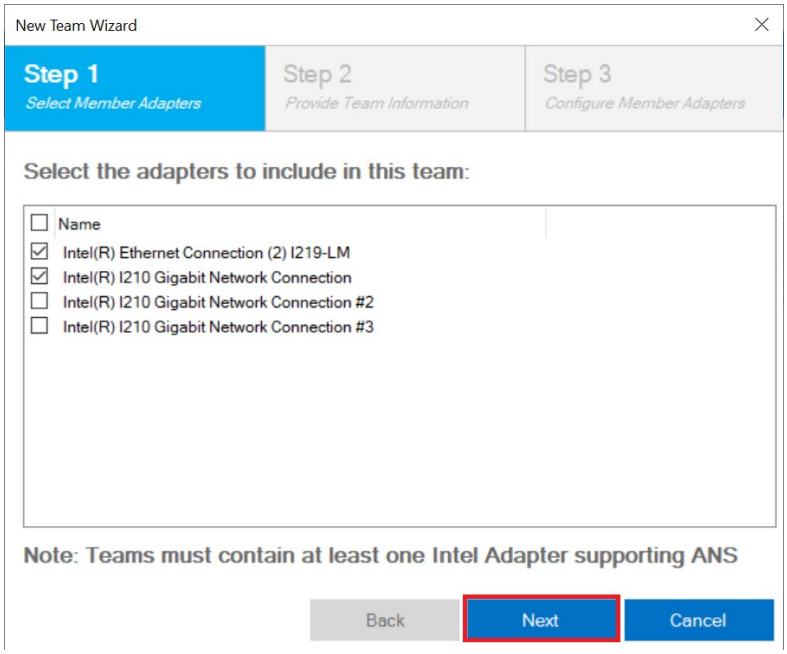
Intel® Network Driver Version 25.0 and Higher

1. Run the **Intel® PROSet Adapter Configuration Utility** as administrator.



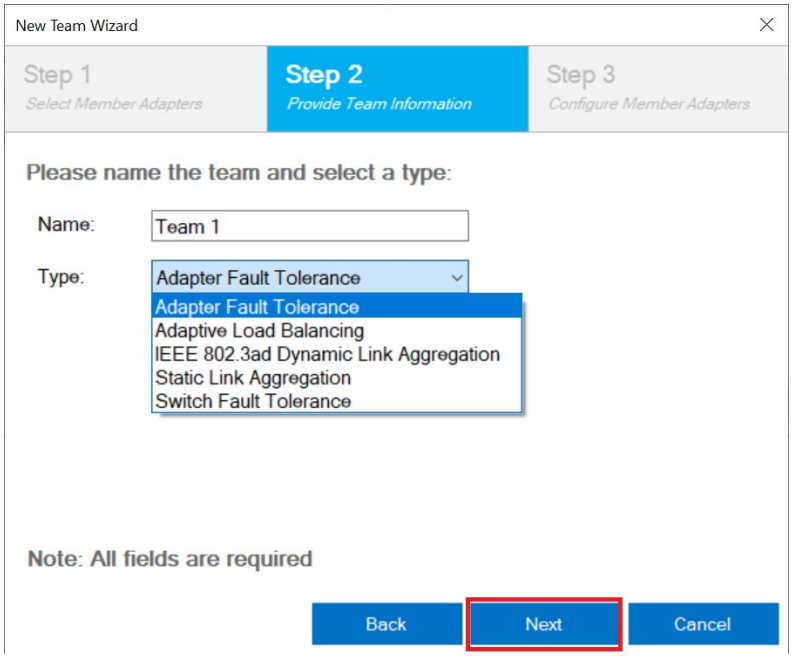
2. In the **Teaming/VLANs** tab, click **Create Team**.



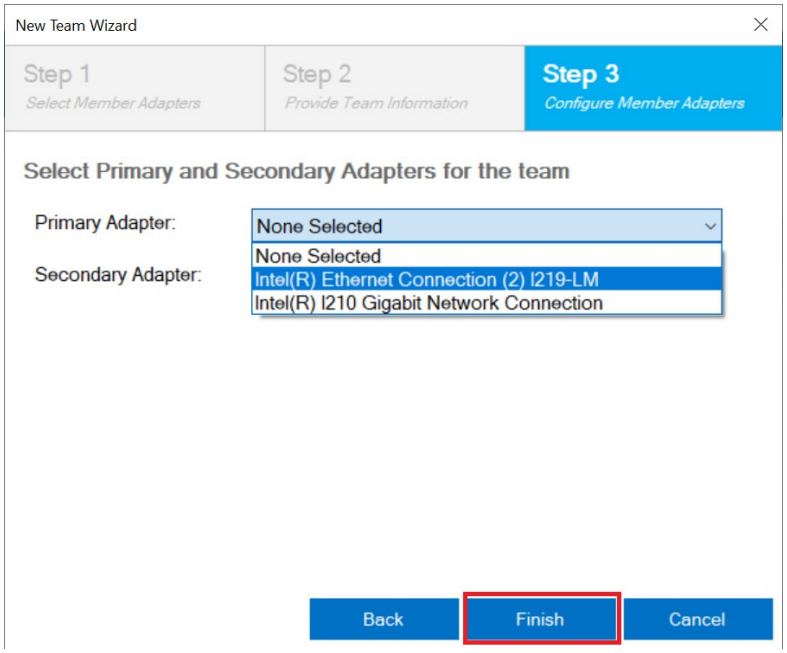


An Intel ANS team can contain a maximum of eight members.

4. Name the team and select a team type. Click **Next** to continue.



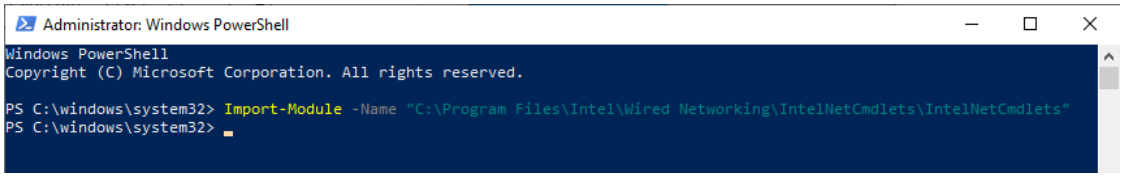
5. Select the primary and secondary adapters for the team and click **Finish** to create an Intel net team.



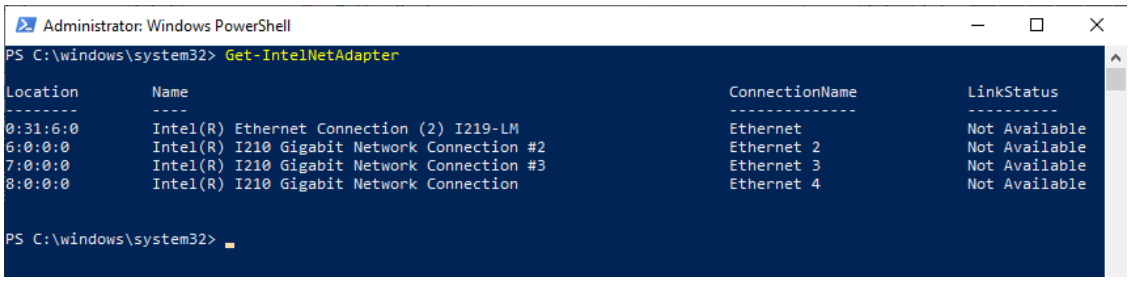
Intel® Network Driver Prior to Version 25.0

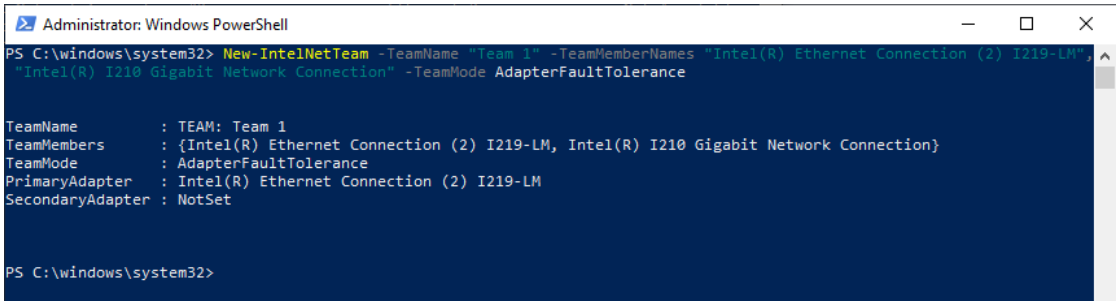
1. Run the Windows PowerShell as administrator.
2. Run the command:

   `Import-Module -Name "C:\Program Files\Intel\Wired Networking\IntelNetCmdlets\IntelNetCmdlets".`



This command creates a new Intel ANS team consisting of one or more adapters. A team may consist of both Intel and non-Intel adapters. Adapter objects obtained using the **`Get-IntelNetAdapter`** command may be passed into this cmdlet using the **`TeamMembers`** parameter.



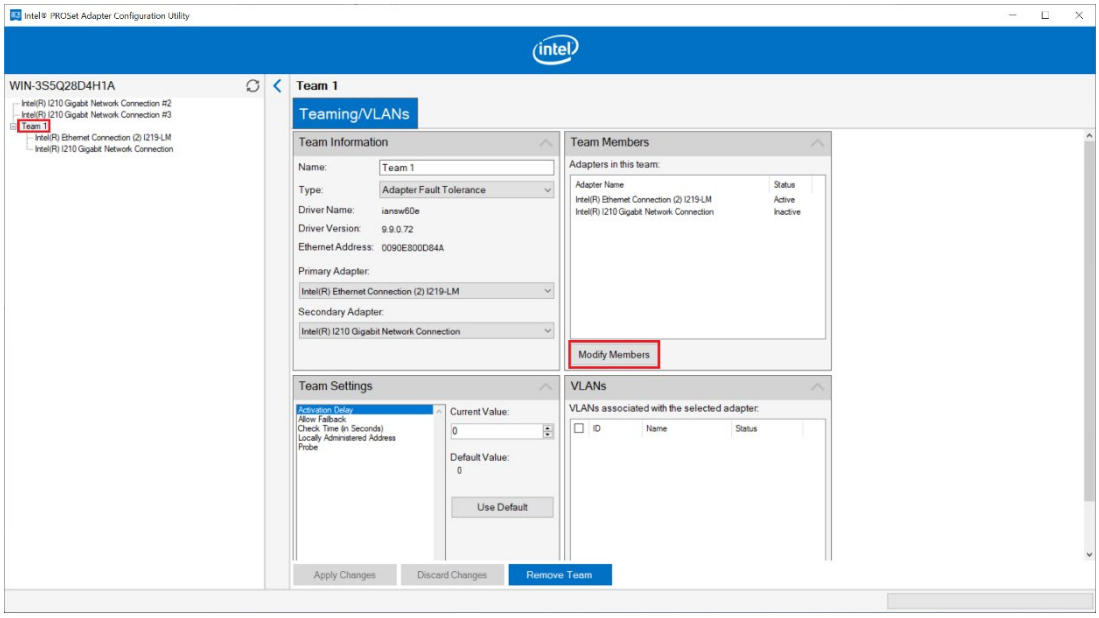


Modifying an Intel® Net Team Member

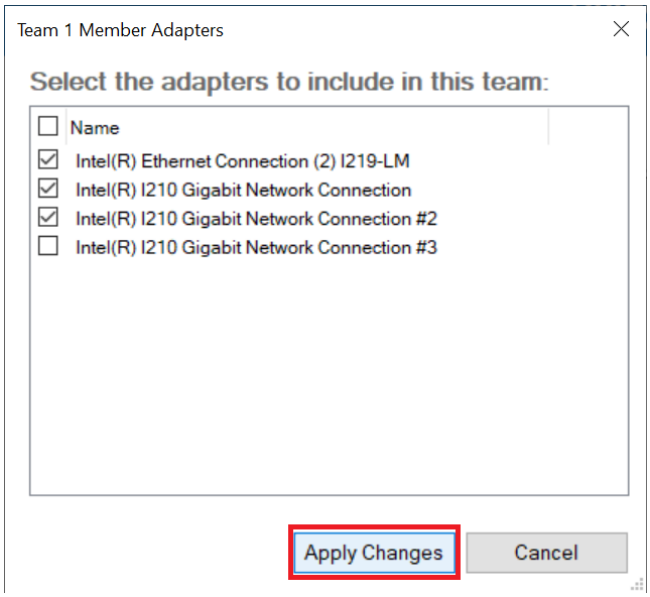
Adding an Intel® Net Team Member

Intel® Network Driver Version 25.0 and Higher

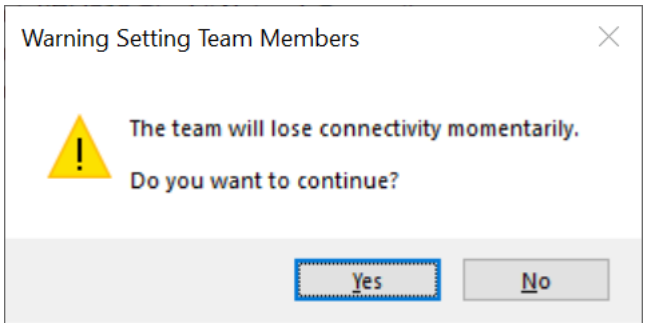
1. Select an Intel net team and click **Modify Members**.



2. Select the adapters to include in this team and click **Apply Changes**.

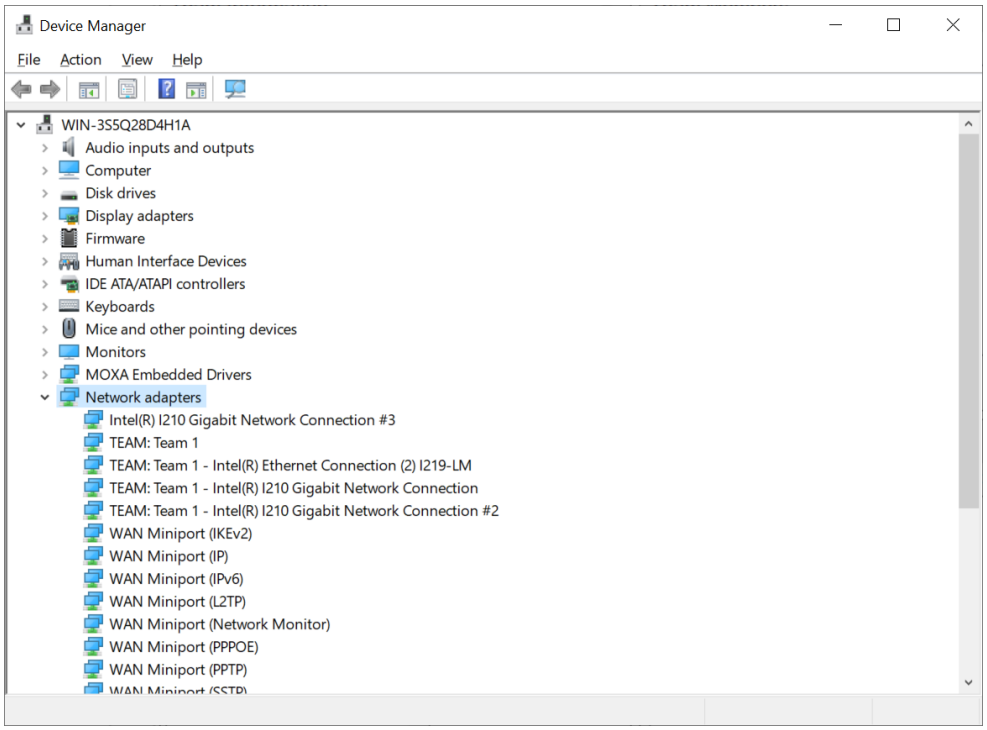


3. Click **Yes** to continue.



Modifying team members will cause the members to momentarily lose connectivity.

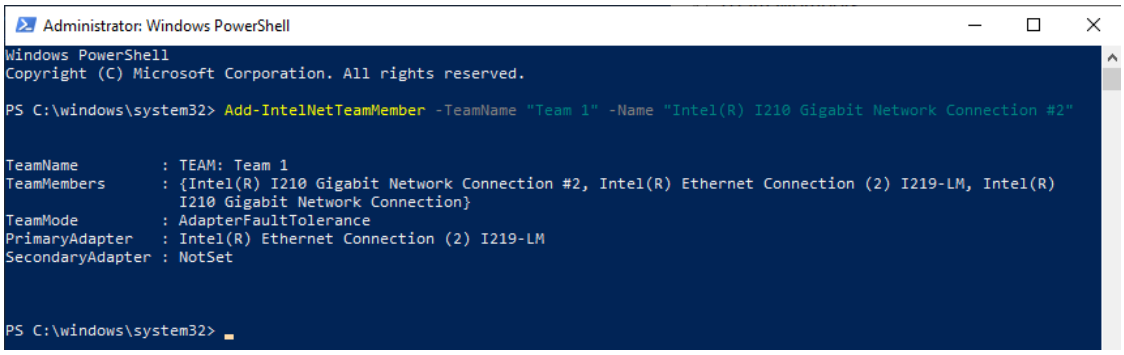
4. Check the Network adapters in the Windows Device Manager.



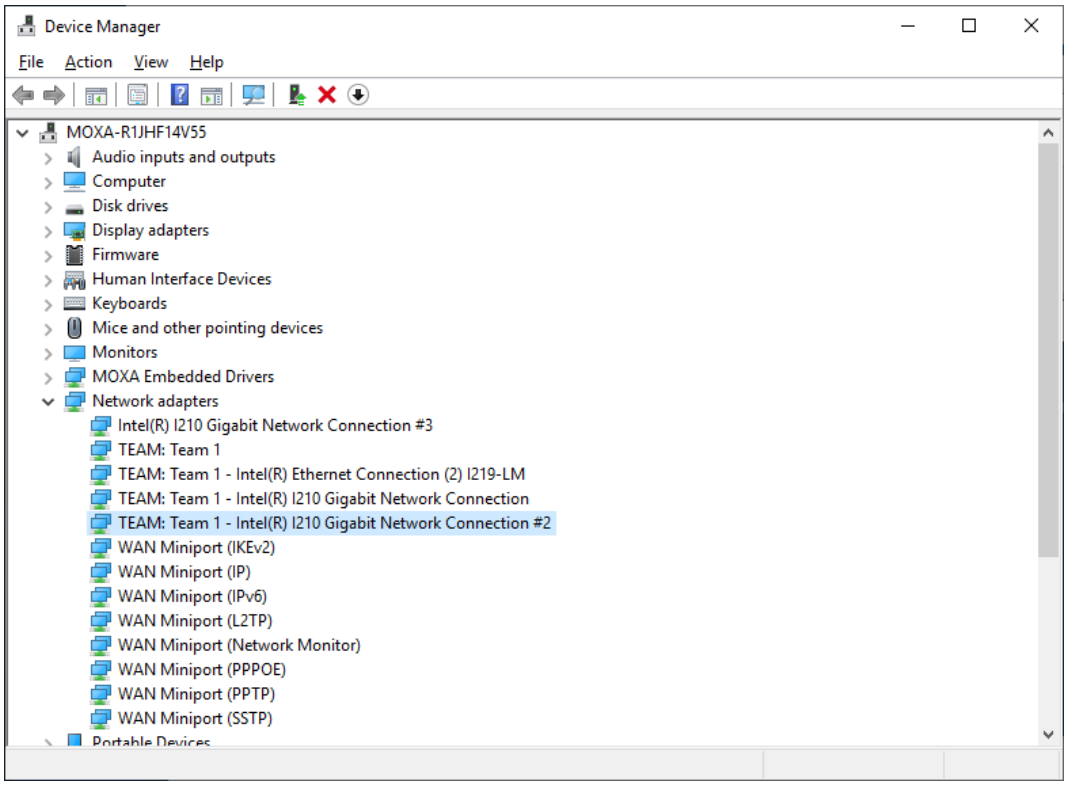
Intel® Network Driver Prior to Version 25.0

1. Run the **`Add-IntelNetTeamMember`** command.

   This command adds a new team member to an existing Intel® Advanced Network Services (Intel® ANS) Team. The new team member can be piped into the cmdlet or passed in using the adapter's name. An Intel ANS team can contain a maximum of eight members.



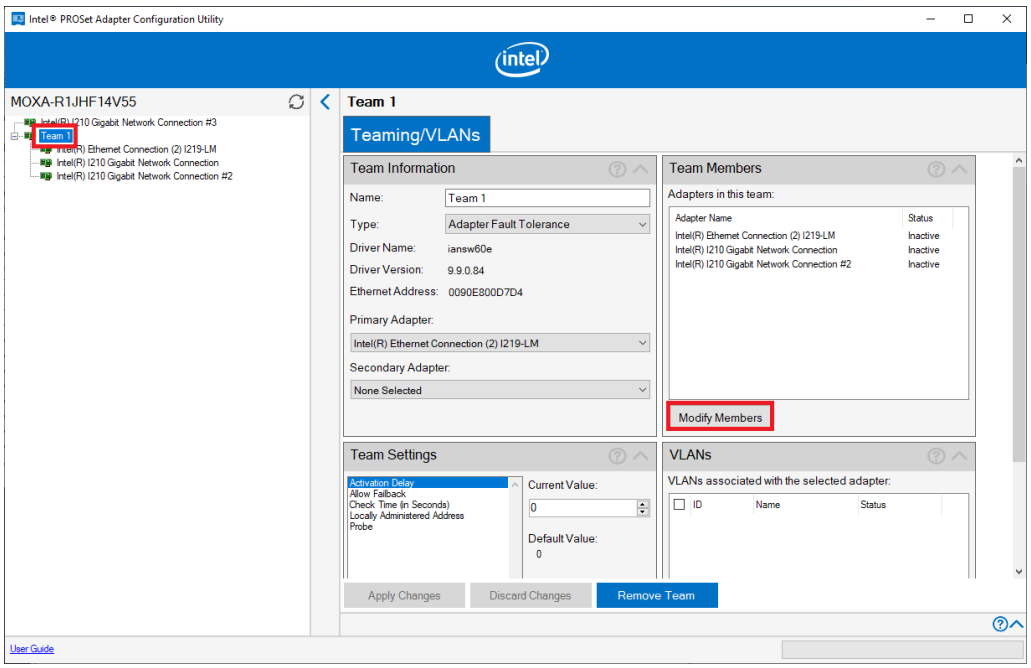
2. Check the Network adapters in the Windows Device Manager.



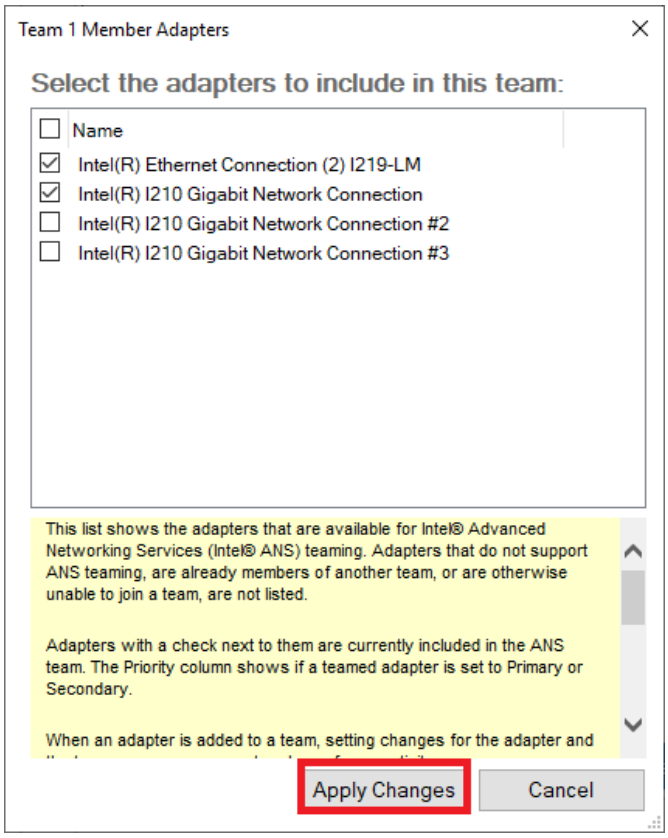
Removing an Intel® Net Team Member

Intel® Network Driver Version 25.0 and Higher

1. Select an Intel net team and click **Modify Members**.

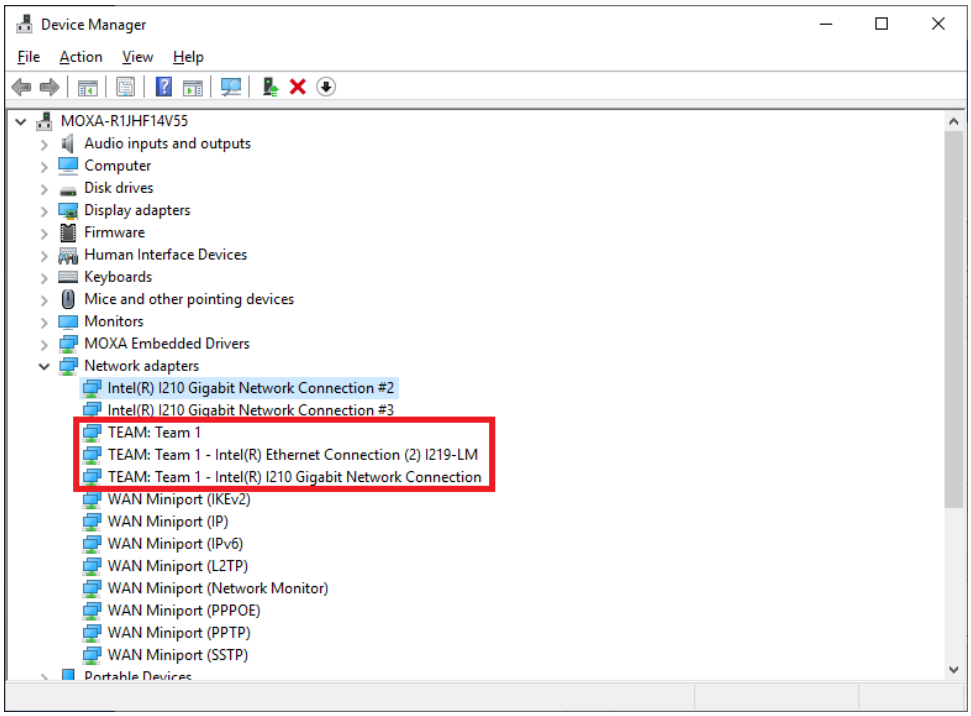


2. Uncheck the adapters you want to remove in this team and click **Apply Changes**.



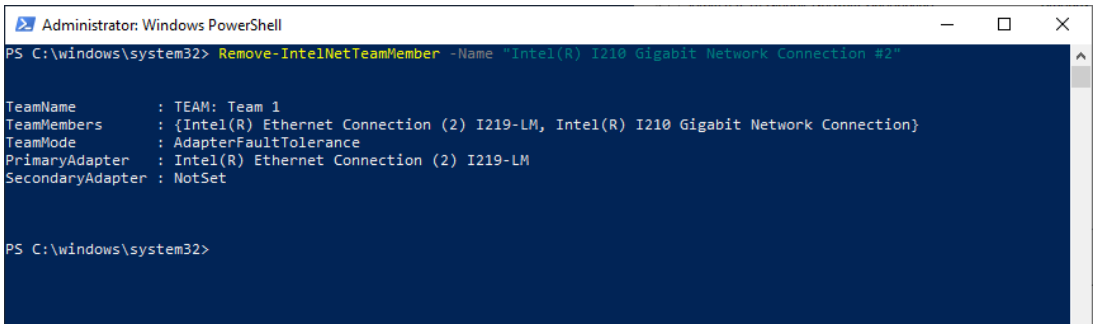
3. Click **Yes** to continue.

4. Check the network adapters in the Windows Device Manager.

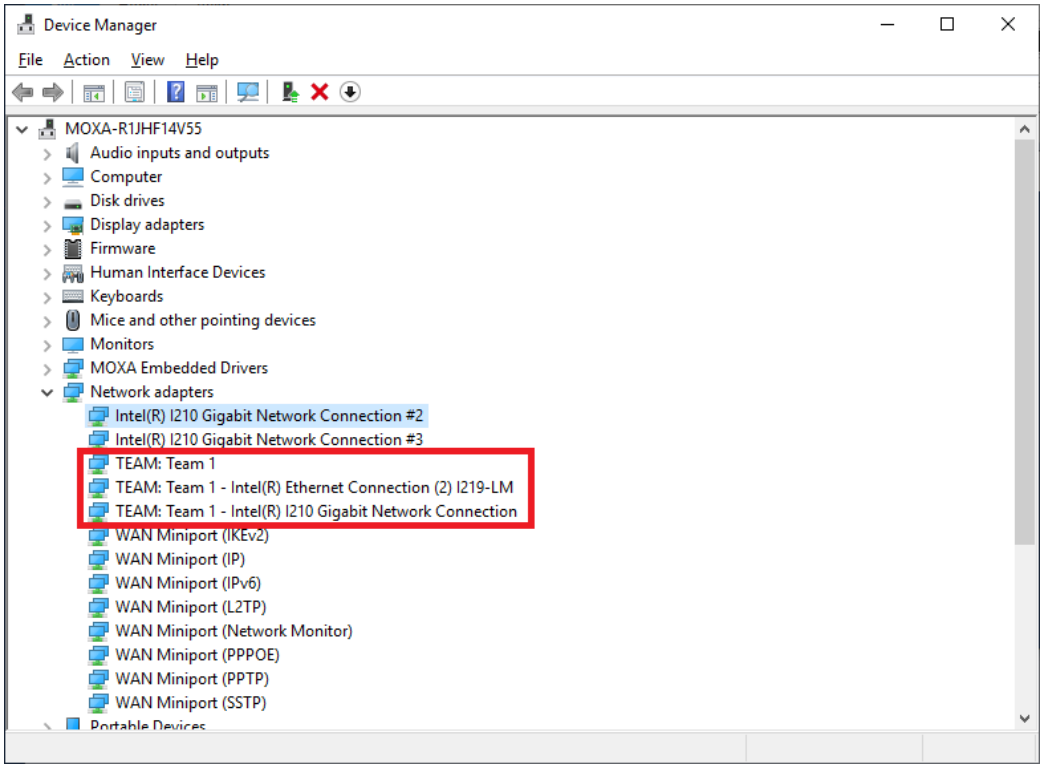


1. Run the **`Remove-IntelNetTeamMember`** command.

   This command allows users to remove a team member from an Intel ANS team. The team member can be piped into the cmdlet or passed in using the team member's name.

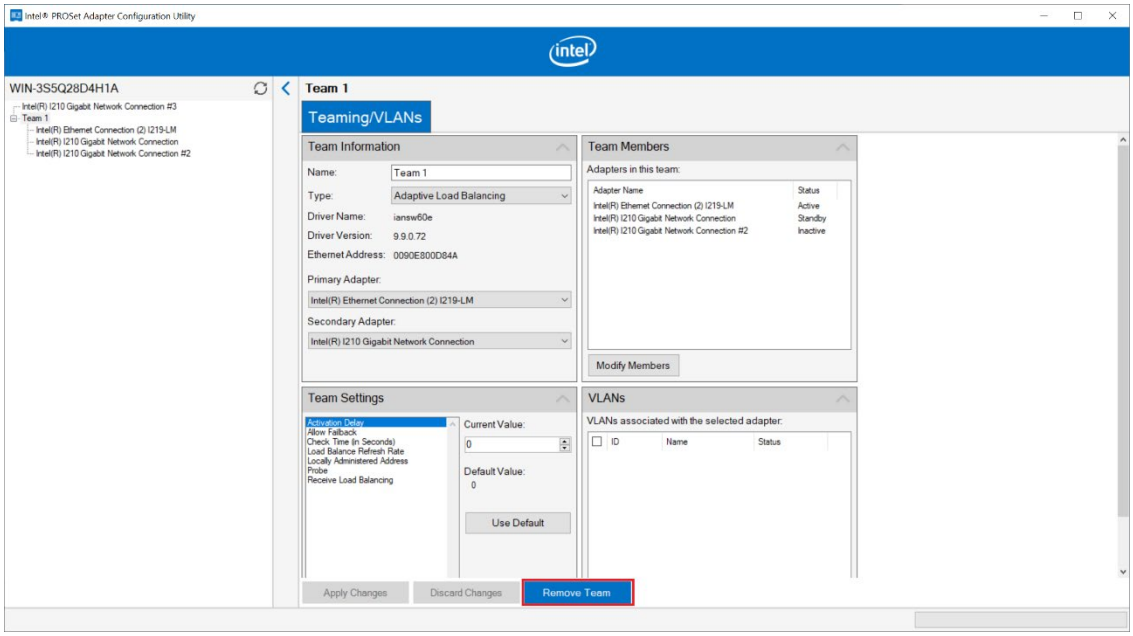


2. Check the Network Adapters in the Windows Device Manager.

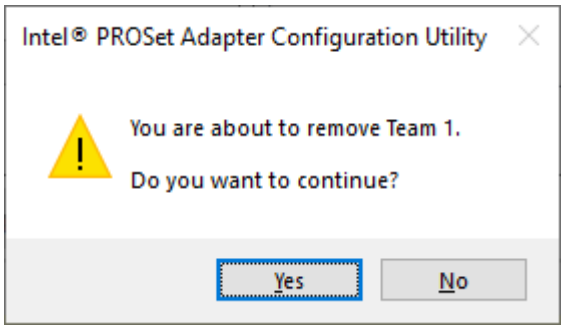


Intel® Network Driver Version 25.0 and Higher

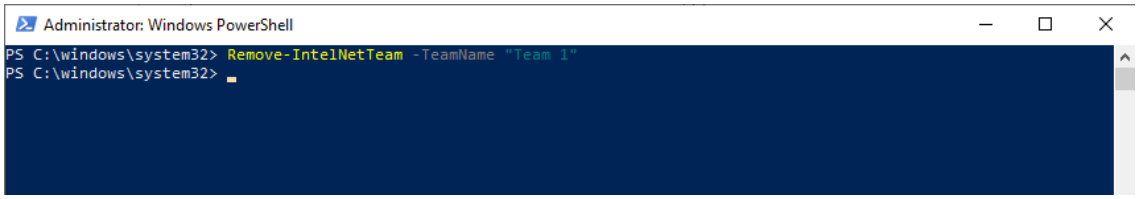
1. Select an Intel net team and click **Remove Team** to remove the specified Intel ANS team.



2. Click **Yes** to continue.



Run the **`Remove-IntelNetTeam`** command. Removes the specified Intel ANS team.



5. Unified Write Filter

This chapter describes how to use the Unified the Write Filter (UWF).

To use the UWF, you must first install the feature and enable (optionally configure) it.

The first time you enable UWF on your device, UWF makes the following changes to your system to improve its performance:

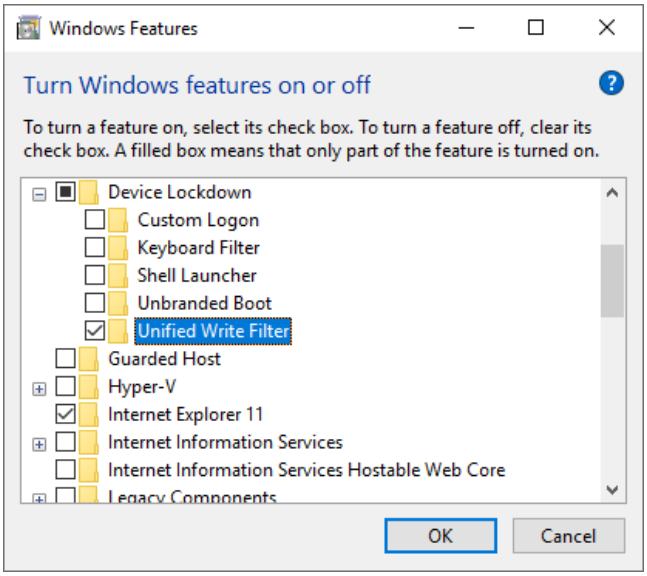
- Paging files are disabled.
- System restore is disabled.
- SuperFetch is disabled.
- File indexing service is turned off.
- Fast boot is disabled.
- Defragmentation service is turned off.
- BCD setting **`bootstatuspolicy`** is set to **`ignoreallfailures`**.

After UWF is enabled, you can select a drive that you want to protect and start using UWF. UWF can help you manage PCs and devices remotely using WMI.

Turning on UWF on a Running PC

1. Install UWF.
   a. In the Windows **Start** window, type **`Turn Windows features on or off`**.
   b. Open the Windows Features window and expand the **Device Lockdown** node.
   c. Select **Unified Write Filter** and click **OK**.

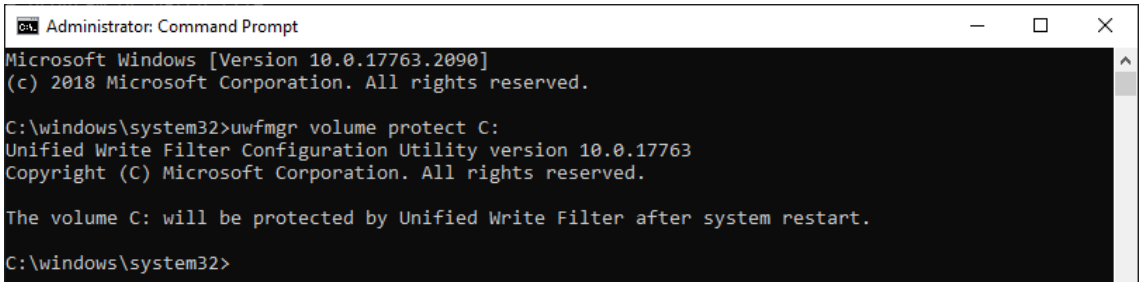
      Windows searches for the required files and displays a progress bar. Once the files are found, Windows applies the changes. When the changes are complete, a message to this effect is displayed.
   d. Click **Close**.



2. Enable the following filter as an Administrator:

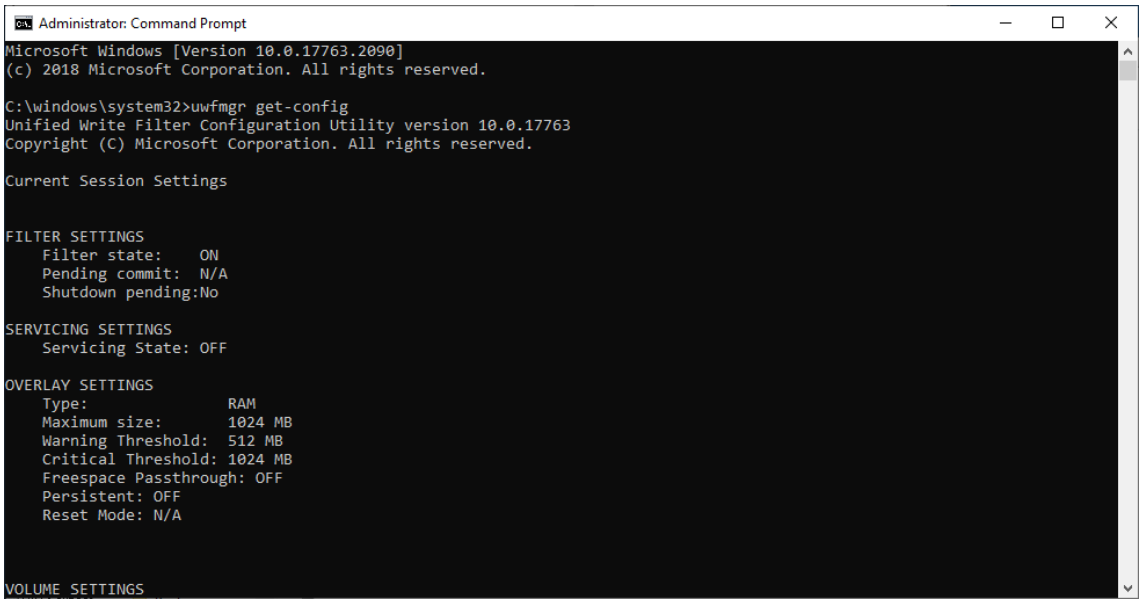
   cmd uwfmgr filter enable

3. Enable write protection for a drive:



5. Confirm that UWF is running:

   cmd uwfmgr.exe get-config



Installing UWF Using WMI

If you have already installed Windows on your computer and you do not want to use a provisioning package, you can configure UWF by using Windows Management Instrumentation (WMI) providers. To turn on UWF using WMI, use the **`UWF_Filter`** function, specifically the **`UWF_Filter.Enable`** method in one of the following ways:

- Use the WMI providers directly in a PowerShell script
- Use the WMI providers directly in an application
- Use the command line tool, uwfmgr.exe

NOTE

You must restart your computer after you turn on or turn off UWF for the changes to take effect.

You can also change the settings after you turn on UWF. For example, you can move the page file location to an unprotected volume and re-enable paging files.

IMPORTANT!

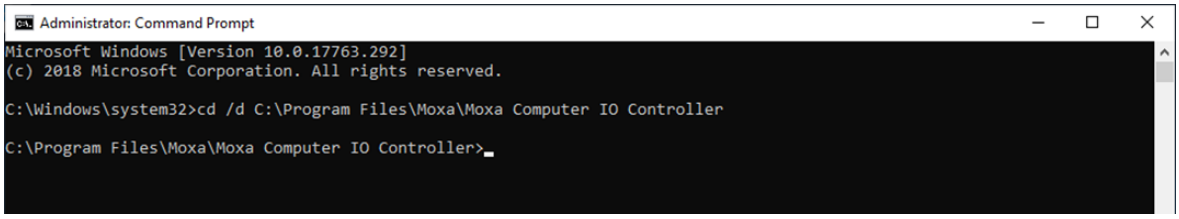
If you add UWF to your image by using SMI settings in the unattend.xml file, turning on UWF only sets the bootstatuspolicy BCD setting and turns off the defragmentation service. You have to manually turn off the other features and services if you want to increase the performance of UWF.

After the device is restarted, UWF maintains configuration settings for the current session in a registry. UWF automatically excludes these registry entries from its filter. Static configuration changes do not take effect until after a device restart; the changes are saved in registry entries for use in the next session. Dynamic configuration changes occur immediately and persist after a device restart.

6. Moxa IO Controller Utility

This chapter describes how to use the Moxa IO Controller utility.

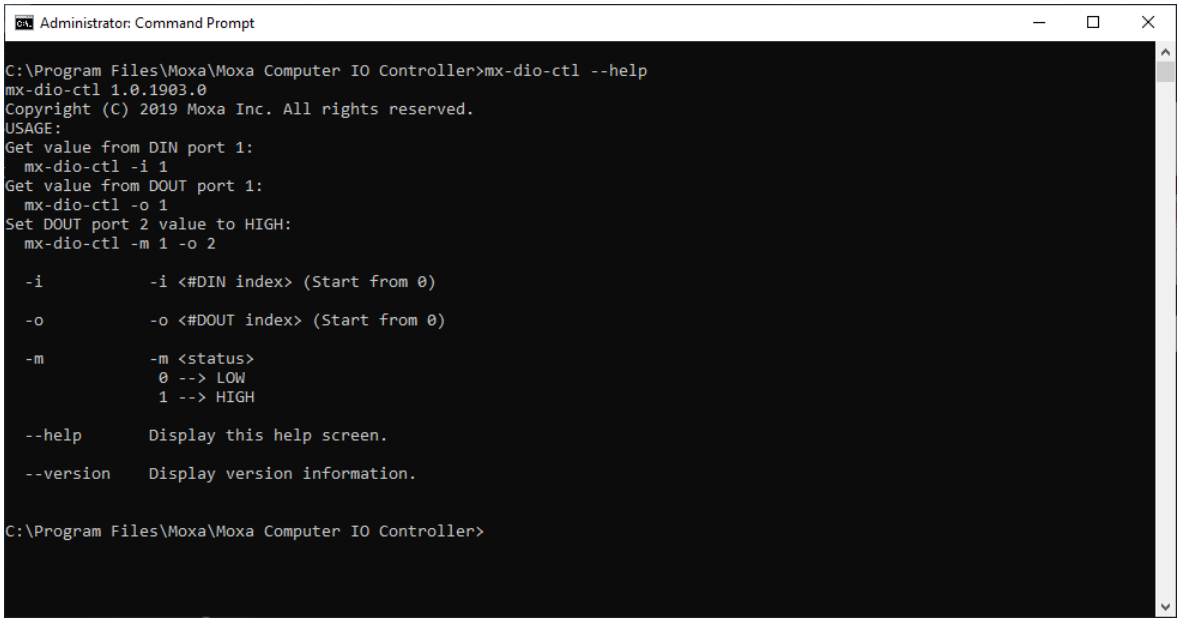
To use the Moxa IO Controller utility, first install the utility and enable the utility to configure the DIO, UART mode, SIM settings, and LED status. After the installation process is complete, run the Windows command prompt as an Administrator and change the path to C:\Program Files\Moxa\Moxa Computer IO Controller.



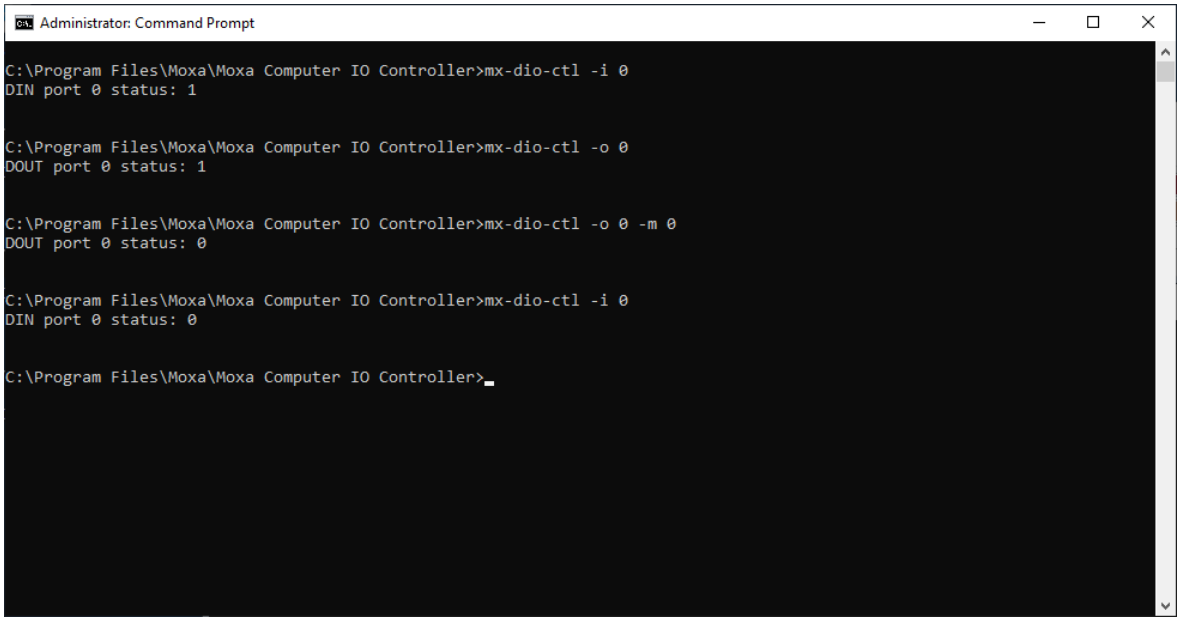
Type the command **`mx-dio-ctl --help`** command to see the instructions on using this utility and follow them to get or set the DIO status.

IMPORTANT!

The DIN and DOUT indices start at 0. Even though the console output starts at 1, the indices still start at 0.



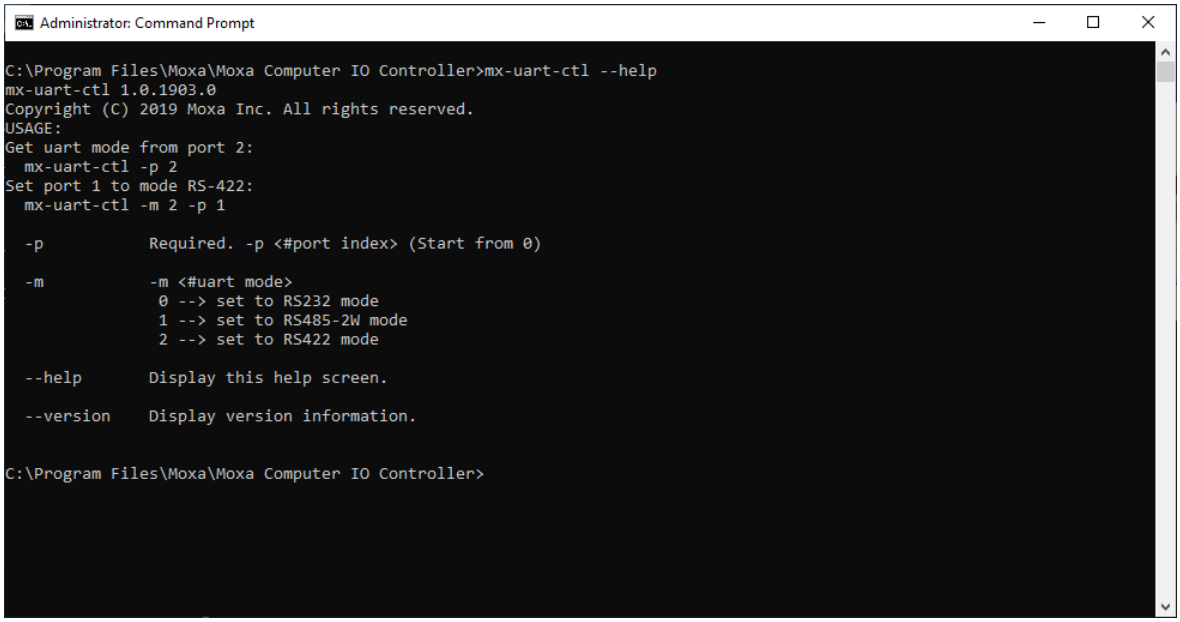
Example:



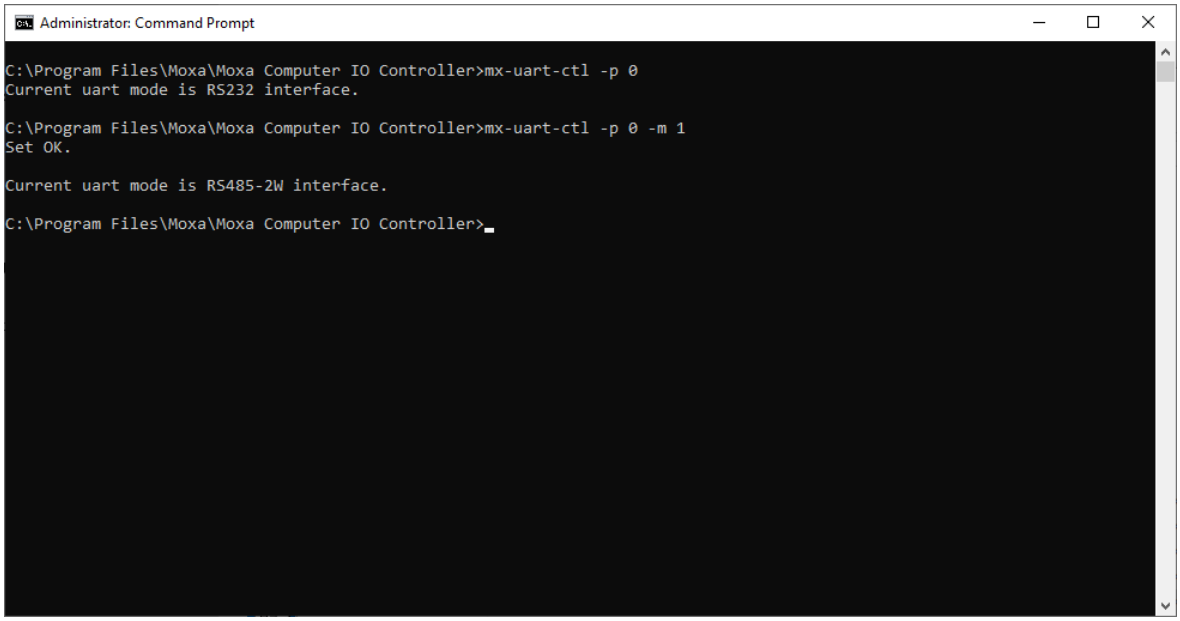
Type the **`mx-uart-ctl --help`** command to see instructions on using this utility and follow the onscreen instructions to get or set the UART mode.

IMPORTANT!

The UART index starts from 0. Even though the console output starts at 1, the index still starts at 0.



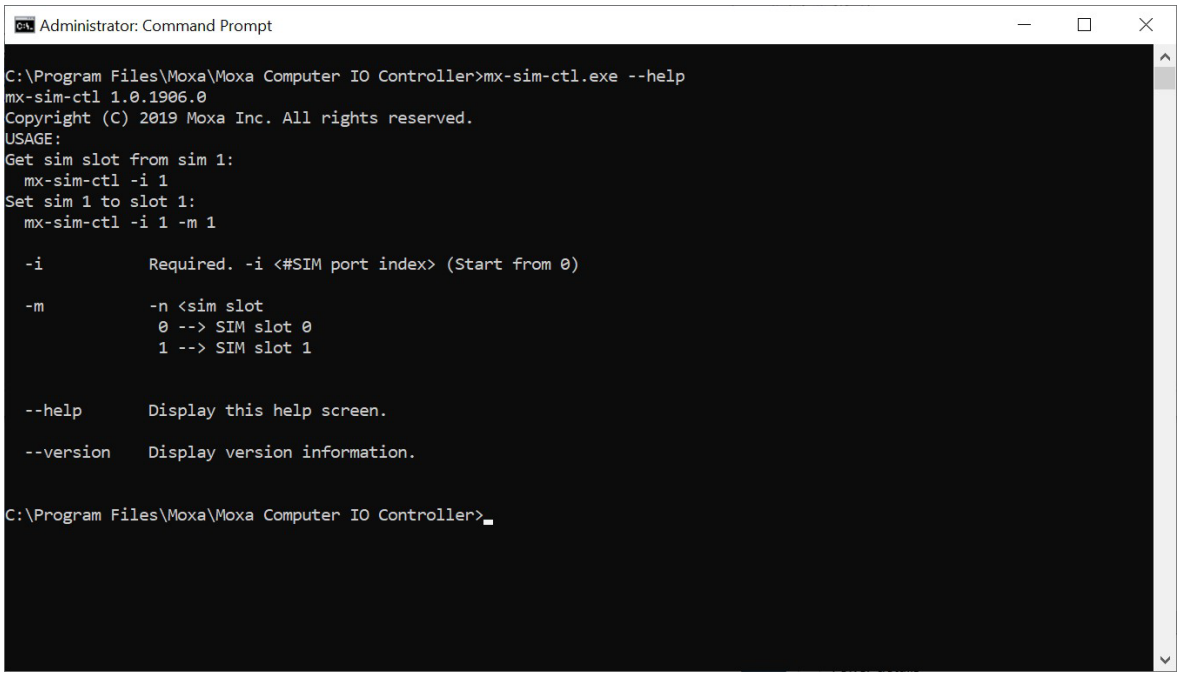
Example



Type the **`mx-sim-ctl --help`** command to see instructions on using this utility and follow the onscreen instructions to get or set the status of the SIM card.

IMPORTANT!

The SIM card index starts from 0. Even though the console output starts at 1, the SIM card index still starts at 0.

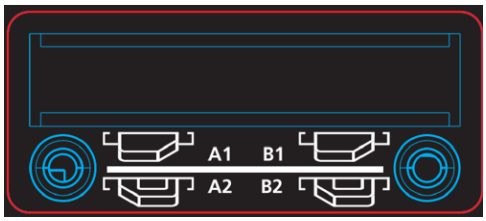


Example

```
Administrator: Command Prompt

C:\Program Files\Moxa\Moxa Computer IO Controller>mx-sim-ctl.exe -i 0
SIM 0 slot: 1

C:\Program Files\Moxa\Moxa Computer IO Controller>mx-sim-ctl.exe -i 0 -m 0
SIM 0 slot: 0

C:\Program Files\Moxa\Moxa Computer IO Controller>
```

SIM slot 0: A1 or B1

SIM slot 1: A2 or B2



Setting LED Status

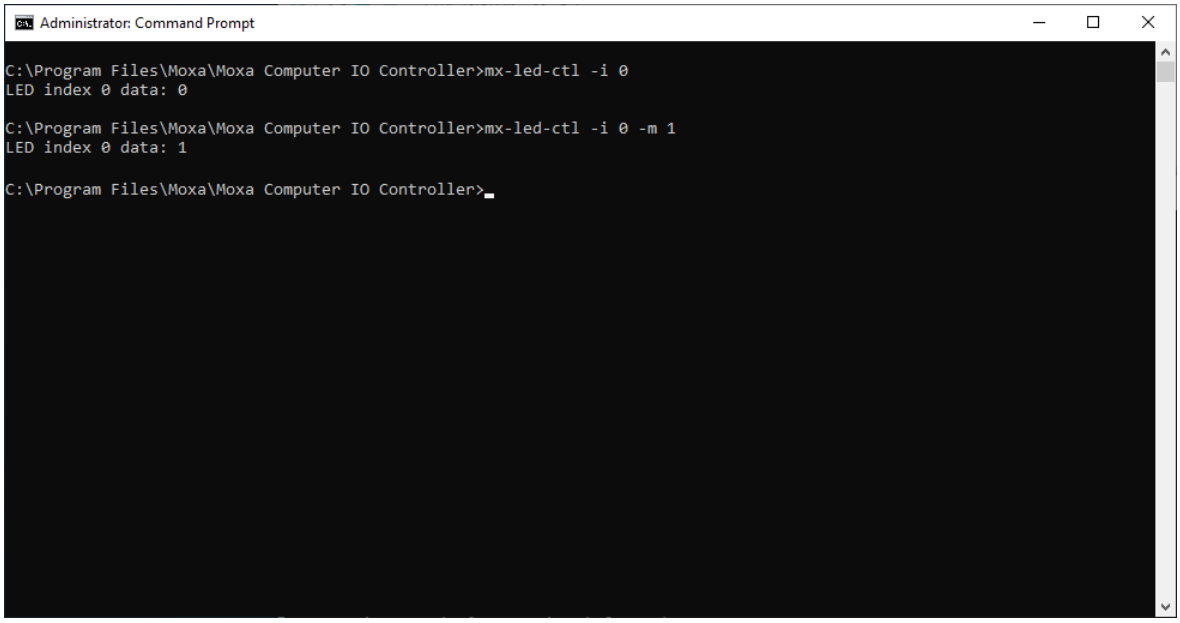
Type the command **`mx-led-ctl --help`**. The screen will show the utility usage, following the description to **`get`** or **`set`** the LED status.

IMPORTANT!

All the LED indices start from 0. If the printing start from 1, the index still starts from 0 in this utility.

```
Administrator: Command Prompt

C:\Program Files\Moxa\Moxa Computer IO Controller>mx-led-ctl --help
mx-led-ctl 1.0.1903.0
Copyright (C) 2019 Moxa Inc. All rights reserved.
USAGE:
Get value from LED index 1:
  mx-led-ctl -i 1
Turn on LED index 2:
  mx-led-ctl -i 2 -m 1
Set LED index 3 to blink mode:
  mx-led-ctl -i 3 -m 2

  -i           Required. -i <#LED index> (Start from 0)

  -m           -m <status>
                0 --> led off
                1 --> led on
                2 --> led blink

  --help       Display this help screen.

  --version    Display version information.


C:\Program Files\Moxa\Moxa Computer IO Controller>
```

Example

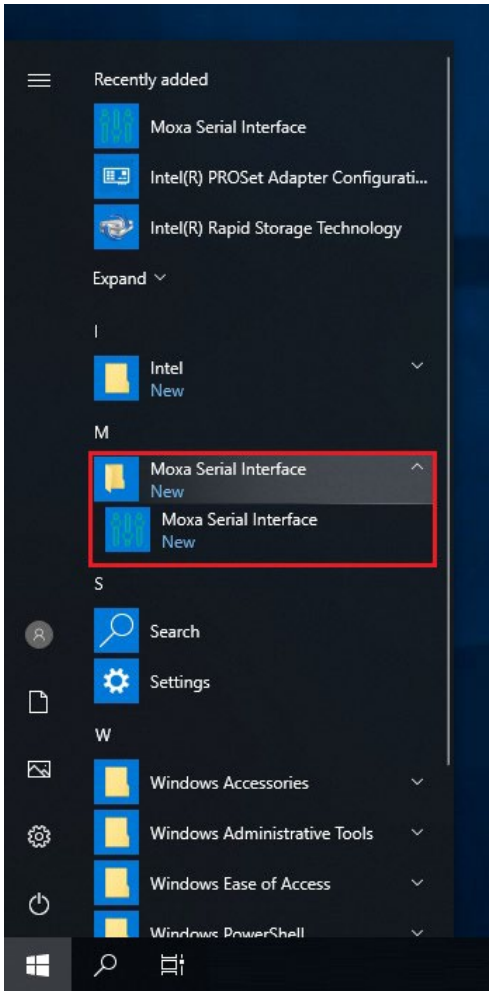

Administrator: Command Prompt
C:\Program Files\Moxa\Moxa Computer IO Controller>mx-led-ctl -i 0
LED index 0 data: 0
C:\Program Files\Moxa\Moxa Computer IO Controller>mx-led-ctl -i 0 -m 1
LED index 0 data: 1
C:\Program Files\Moxa\Moxa Computer IO Controller>

7. Moxa Serial Interface Utility

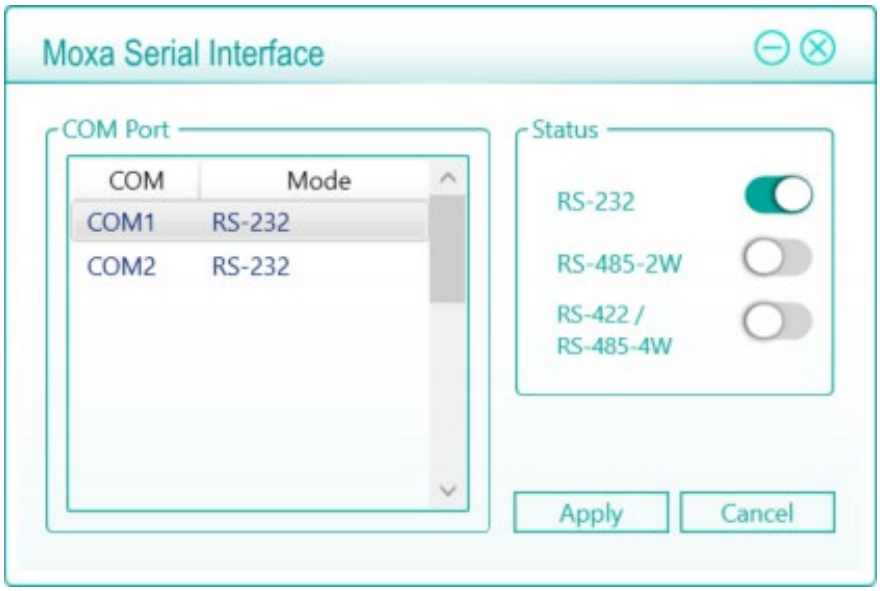
In this chapter, we describe how to use the Moxa Serial Interface utility to set the UART mode in your computer's serial interface.

Setting the UART Mode

1. Install the Moxa Serial Interface utility.
2. From the Windows **Start** menu, run the **Moxa Serial Interface** utility.



3. Select the target COM port and UART mode and click **Apply** to save the settings.

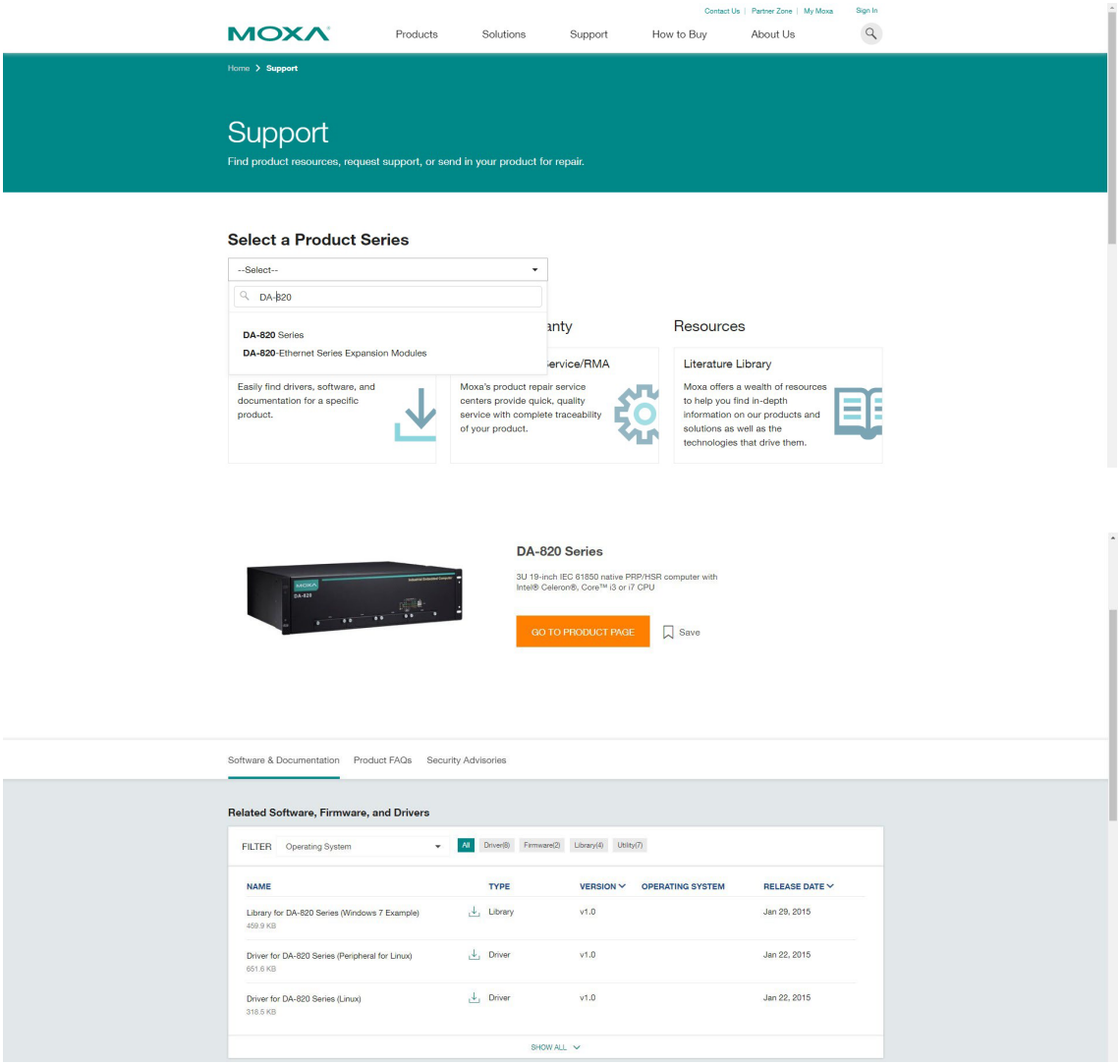


8. IO Control API

This chapter describes how to use the IO Control API.

Downloading the API

1. Access the Moxa support page: https://www.moxa.com/en/support
2. Select the product series (example: DA-820).



The mxdgio library operates on the digital I/Os and consists of the following:

- GetDinStatus
- GetDoutStatus
- SetDoutStatus

GetDinStatus

Syntax

```
int GetDinStatus (int port);
```

Description

Gets the status of a digital input port.

Parameters

port: The index of the digital input port (starts at 0).

Return Value

The status of the digital input port; 0 for low and 1 for high.

Error codes

The following error codes can be retrieved by the **DIO_STATUS** function.

Name	Value	Meaning
LIB_INITIALIZE_FAIL	-1	The mxdgio library initialization failed. Can't open json profile.
PORT_OUTOF_INDEX	-2	Target port index is out of range.

Requirements

Name	Items
Header	mxdgio.h
Library	mxdgio.lib
DLL	mxdgio.dll
Profile	MxdgioProfile[*ModelName*].json

GetDoutStatus

Syntax

```
int GetDoutStatus(int port);
```

Description

Gets the status of a digital output port.

Parameters

port: The index of the digital output port; starts at 0.

Return Value

The status of the digital output port; 0 for low and 1 for high.

Error codes

The following error codes can be retrieved by the **DIO_STATUS** function.

Name	Value	Meaning
LIB_INITIALIZE_FAIL	-1	The mxdgio library initialization has failed. Cannot open the json profile.
PORT_OUTOF_INDEX	-2	Target port index is out of range.

Requirements

Name	Items
Header	mxdgio.h
Library	mxdgio.lib
DLL	mxdgio.dll
Profile	MxdgioProfile[*ModelName*].json

SetDoutStatus

Syntax

```
int SetDoutStatus(int port, int status);
```

Description

Sets the status of a digital output port.

Parameters

port: The index of the digital output port; starts at 0.

status: The status of the digital output port; 0 for low and 1 for high.

Return Value

Returns the value 0 if the digital output status is successfully set.

Error codes

The following error codes can be retrieved by the **DIO_STATUS** function.

Name	Value	Meaning
LIB_INITIALIZE_FAIL	-1	The mxdgio library initialization failed. Can't open json profile.
PORT_OUTOF_INDEX	-2	Target port index is out of range.
SET_STATUS_ERR	-3	Set the status fail. Status is defined with a bad format.

Requirements

Name	Items
Header	mxdgio.h
Library	mxdgio.lib
DLL	mxdgio.dll
Profile	MxdgioProfile[*ModelName*].json

mxsp

The mxsp library operates on the serial port and consists of the following:

- GetUartMode
- SetUartMode

GetUartMode

Syntax

```
int GetUartMode(int port);
```

Description

Gets the status of the UART port.

Parameters

port: The index of the UART port; starts at 0.

Return Value

The mode of a UART interface; 0 for RS-232, 1 for RS-485-2w, and 2 for RS-422.

Error codes

The following error codes can be retrieved by the **UART_STATUS** function.

Name	Value	Meaning
LIB_INITIALIZE_FAIL	-1	The mxsp library initialization failed. Can't open json profile.
PORT_OUTOF_INDEX	-2	Target port index is out of range.

Requirements

Name	Items
Header	mxsp.h
Library	mxsp.lib
DLL	mxsp.dll
Profile	MxspProfile[*ModelName*].json

SetUartMode

Syntax

```
int SetUartMode(int port, int mode);
```

Description

Sets the status of the UART port.

Parameters

port: The index of the UART port; starts at 0.

mode: The mode of a UART interface; 0 for RS-232, 1 for RS-485-2w, and 2 for RS-422.

Return Value

Returns 0 if the UART mode is successfully set.

Error codes

The following error codes can be retrieved by the **UART_STATUS** function.

Name	Value	Meaning
LIB_INITIALIZE_FAIL	-1	The mxsp library initialization failed. Can't open json profile.
PORT_OUTOF_INDEX	-2	Target port index is out of range.
SET_STATUS_ERR	-3	Set the status fail. Status is defined with a bad format.

Requirements

Name	Items
Header	mxsp.h
Library	mxsp.lib
DLL	mxsp.dll
Profile	MxspProfile[*ModelName*].json

mxwdg

The mxwdg library operates on the watchdog and consists of the following:

- mxwdg_open
- mxwdg_refresh
- mxwdg_close

mxwdg_open

Syntax

```
PVOID mxwdg_open(unsigned long time);
```

Description

Initializes the watchdog timer.

Parameters

time: The interval at which the watchdog timer is refreshed; the unit is seconds.

Return Value

Returns the pointer to the watchdog handle; returns -1 on failure to initialize the watchdog timer.

Requirements

Name	Items
Header	mxwdg.h
Library	mxwdg.lib
DLL	mxwdg.dll

mxwdg_refresh

Syntax

```
int mxwdg_refresh(PVOID fd);
```

Description

Refreshes the watchdog timer.

Parameters

fd: The handle of the watchdog timer.

Return Value

Returns o on success; otherwise, the function has failed.

Requirements

Name	Items
Header	mxwdg.h
Library	mxwdg.lib
DLL	mxwdg.dll

mxwdg_close

Syntax

```
void mxwdg_close(PVOID fd);
```

Description

Disables the watchdog timer.

Parameters

fd: The handle of the watchdog timer.

Return Value

This function does not return a value.

Requirements

Name	Items
Header	mxwdg.h
Library	mxwdg.lib
DLL	mxwdg.dll

mxsim

The mxsim library operates on the SIM slot index and consists of the following:

- GetSIMSlot
- SetSIMSlot

GetSIMSlot

Syntax

```
int GetSIMSlot(int port);
```

Description

Gets the SIM card slot index number.

Parameters

port: The index of the SIM card slot; starts at 0.

Return Value

The SIM card slot number; 0 for SIM 0 slot, 1 for SIM 1 slot.

Error codes

The following error codes can be retrieved by the **SIM_STATUS** function.

Name	Value	Meaning
LIB_INITIALIZE_FAIL	-1	The mxsim library initialization failed. Can't open json profile.
PORT_OUTOF_INDEX	-2	Target port index is out of range.

Requirements

Name	Items
Header	mxsim.h
Library	mxsim.lib
DLL	mxsim.dll
Profile	MxsimProfile[*ModelName*].json

SetSIMSlot

Syntax

```
int GetSIMSlot(int port);
```

Description

Sets the SIM card slot index.

Parameters

port: The index of the SIM card slot; starts at 0.

slot: The SIM card slot of a SIM number; 0 is SIM 0 slot, 1 is SIM 1 slot.

Return Value

Returns 0 if the SIM card slot of the SIM number is successfully set.

Error codes

The following error codes can be retrieved by the **SIM_STATUS** function.

Name	Value	Meaning
LIB_INITIALIZE_FAIL	-1	The mxsim library initialization failed. Can't open json profile.
PORT_OUTOF_INDEX	-2	Target port index is out of range.
SET_STATUS_ERR	-3	Set the status fail. Status is defined with a bad format.

Requirements

Name	Items
Header	mxsim.h
Library	mxsim.lib
DLL	mxsim.dll
Profile	MxsimProfile[*ModelName*].json

mxled

The mxled library operates on the programmable LED and consists of the following:

- GetLedData
- SetLedData

GetLedData

Syntax

```
int GetLedData(int port);
```

Description

Gets the status of the LED port.

Parameters

port: The index of the LED port; starts at 0.

Return Value

The status of a LED port; 0 for OFF, 1 for ON.

Error codes

The following error codes can be retrieved by the **LED_STATUS** function.

Name	Value	Meaning
LIB_INITIALIZE_FAIL	-1	The mxled library initialization failed. Can't open json profile.
PORT_OUTOF_INDEX	-2	Target port index is out of range.

Requirements

Name	Items
Header	mxled.h
Library	mxled.lib
DLL	mxled.dll
Profile	MxledProfile[*ModelName*].json

SetLedData

Syntax

```
int SetLedData(int port, int status);
```

Description

Sets the status of the LED port.

Parameters

port: The index of the LED port; starts at 0.

status: The status of the LED; 0 for OFF, 1 for ON, and 2 for blinking.

Return Value

Returns 0 if the LED status is set successfully.

Error codes

The following error codes can be retrieved by the **LED_STATUS** function.

Name	Value	Meaning
LIB_INITIALIZE_FAIL	-1	The mxled library initialization failed. Can't open json profile.
PORT_OUTOF_INDEX	-2	Target port index is out of range.
SET_STATUS_ERR	-3	Set the status fail. Status is defined with a bad format.

Requirements

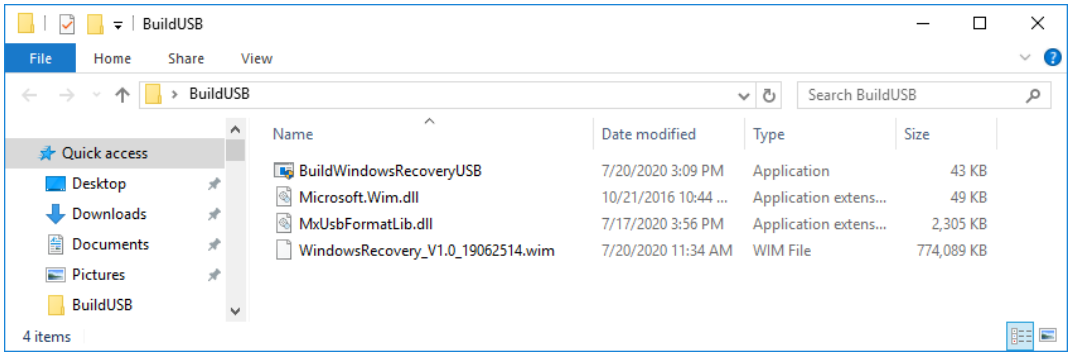
Name	Items
Header	mxled.h
Library	mxled.lib
DLL	mxled.dll
Profile	MxledProfile[*ModelName*].json

9. Windows Recovery

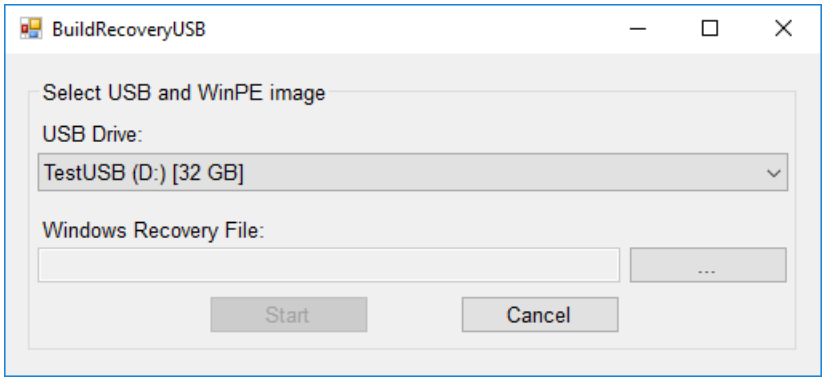
This chapter describes the setup process of the Windows Recovery function.

Preparing the USB device

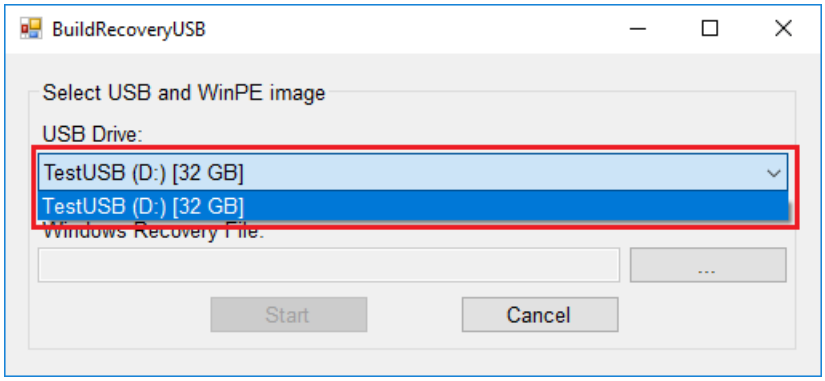
1. Contact Moxa technical support for the required files.



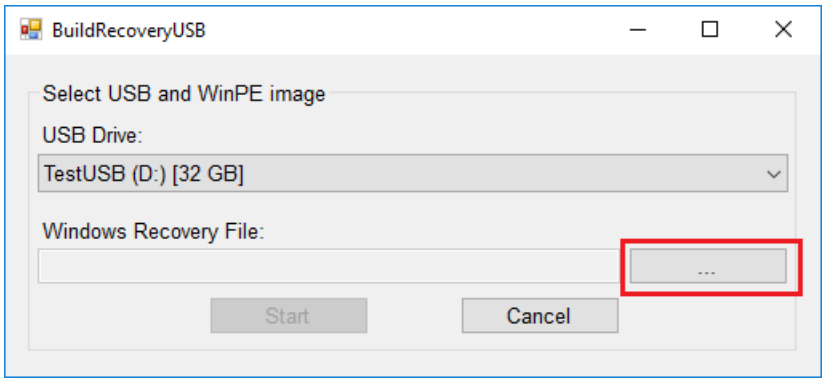
2. Run **BuildWindowsRecoveryUSB.exe**.

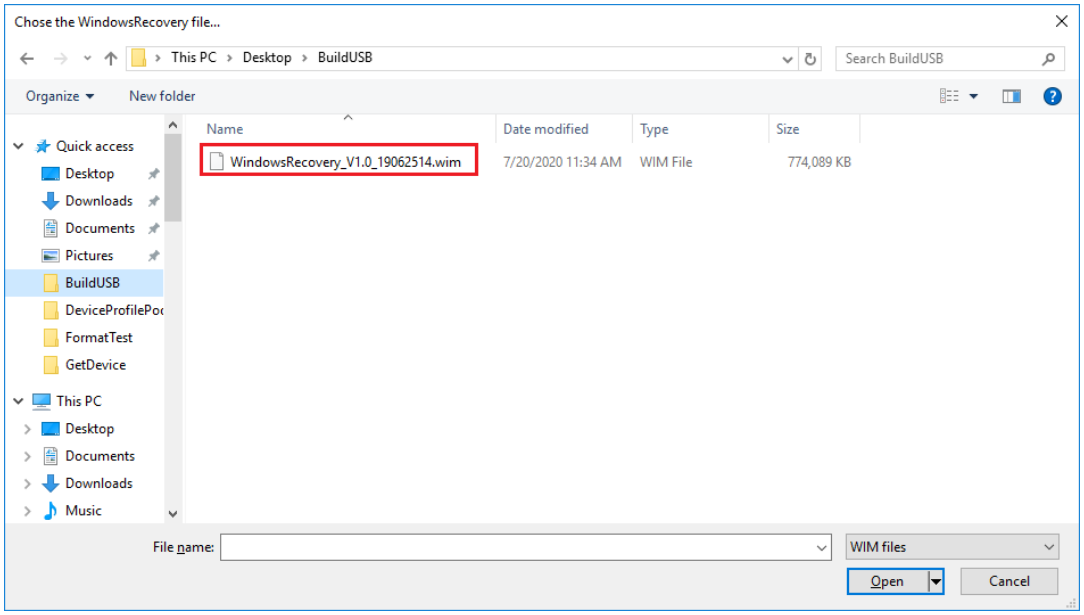


3. Select the USB drive that can be formatted.

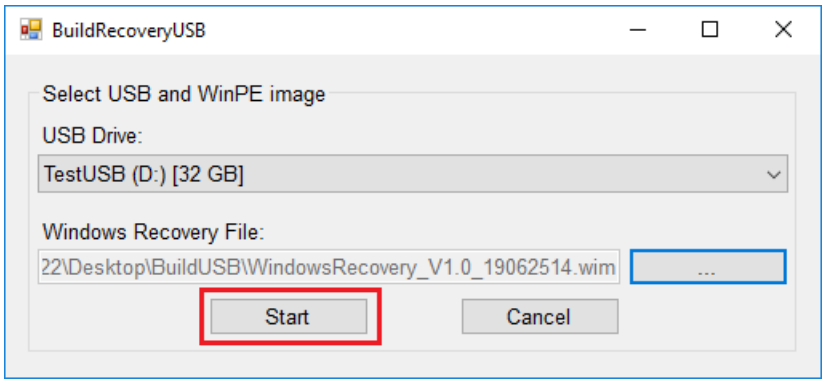


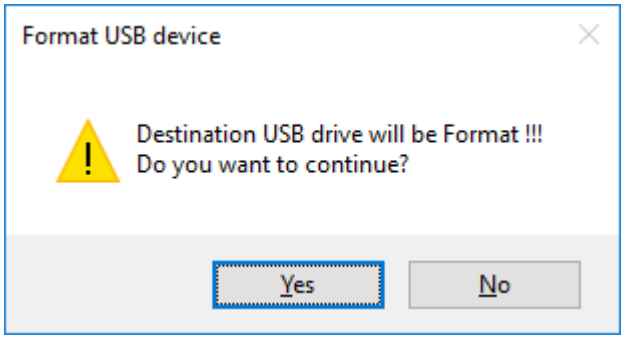
4. Click **...** to browse to the folder where the files are located and select the **wim** file.



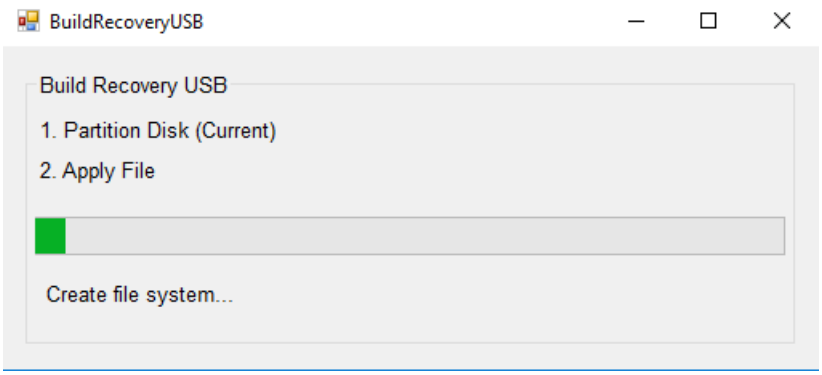


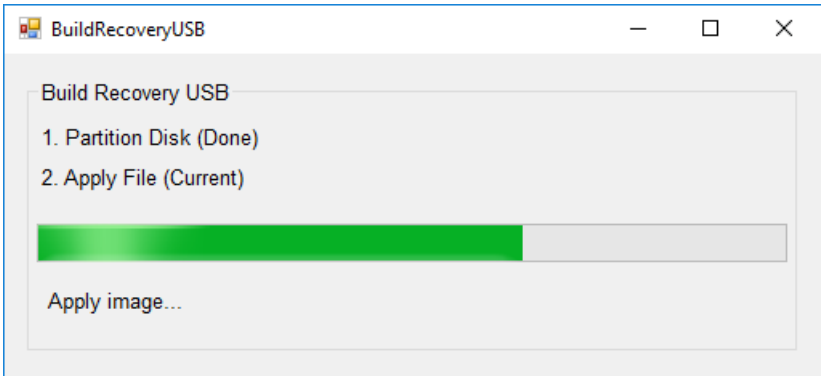
5. Click **Start** and make sure the selected USB can be formatted. click **Yes** to start creating the recovery USB.



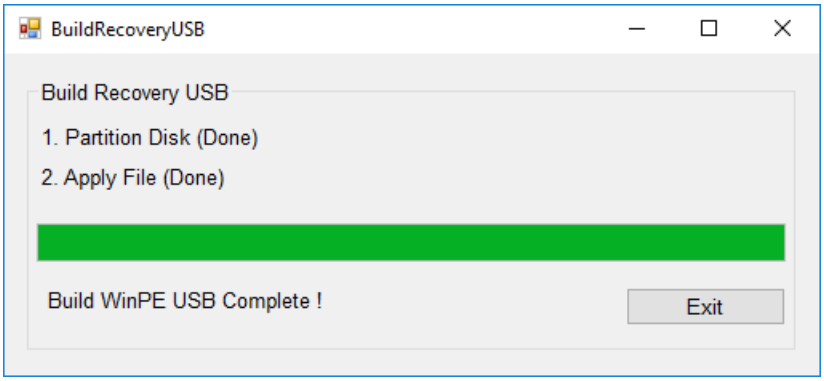


6. Wait for the process finished, the program will format the USB device and create a UEFI bootable volume and a WinPE volume. There may appear some windows about folder information, just skip it. You can close the window after the process finishes.

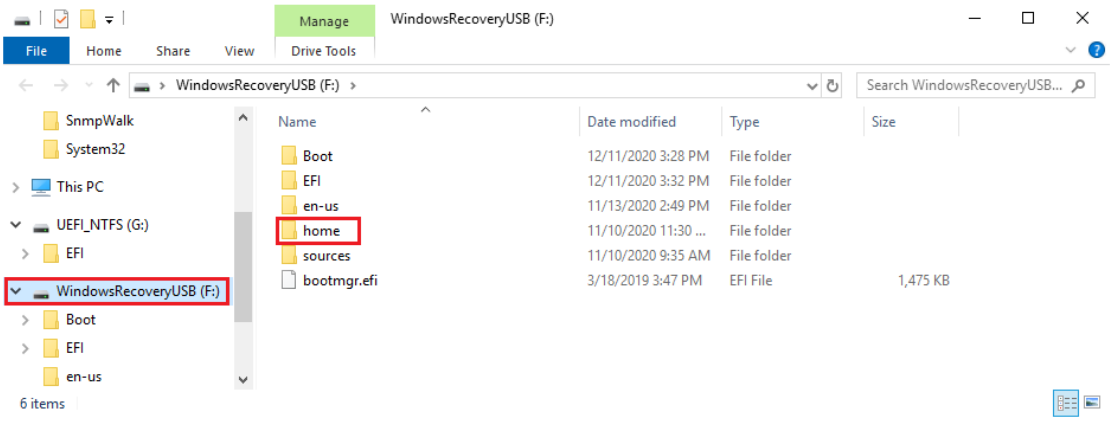


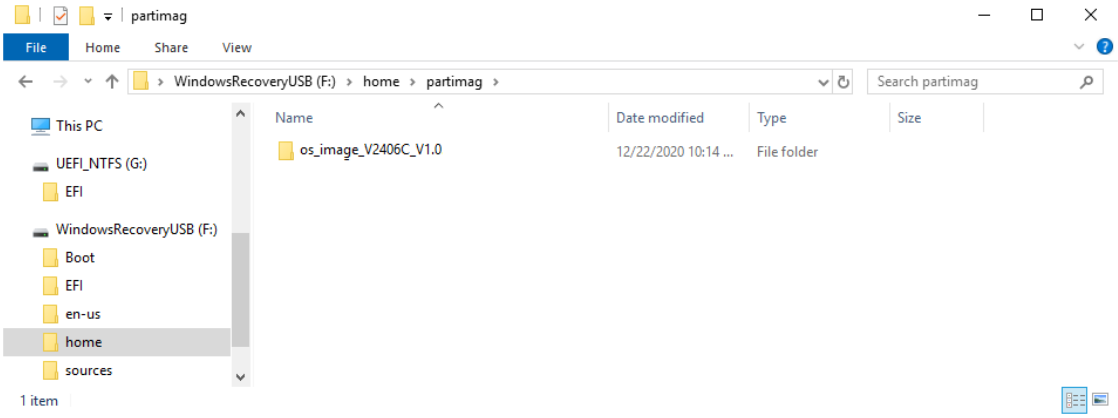


7. When finished, click **Exit** to close the program.

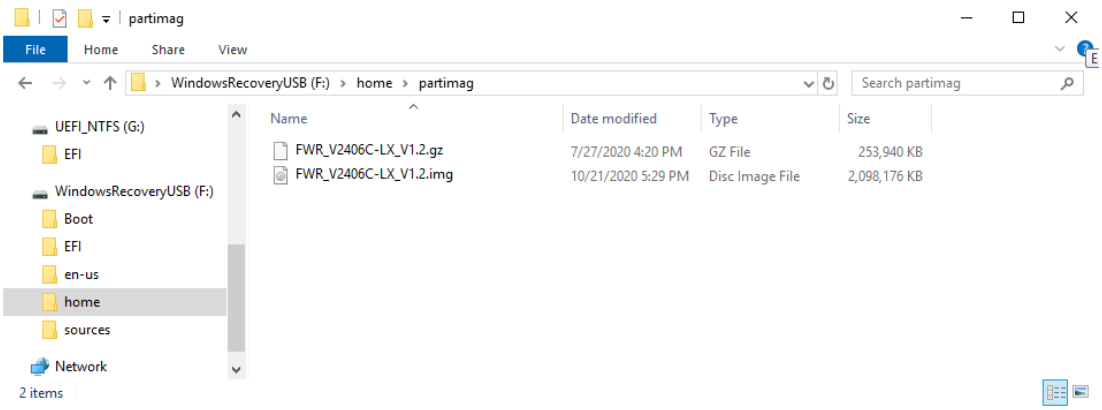


8. To create a recovery USB disk with the Windows 10 image, copy the **os_image_ModelName** directory to the **\home\partimag** folder in the USB drive.



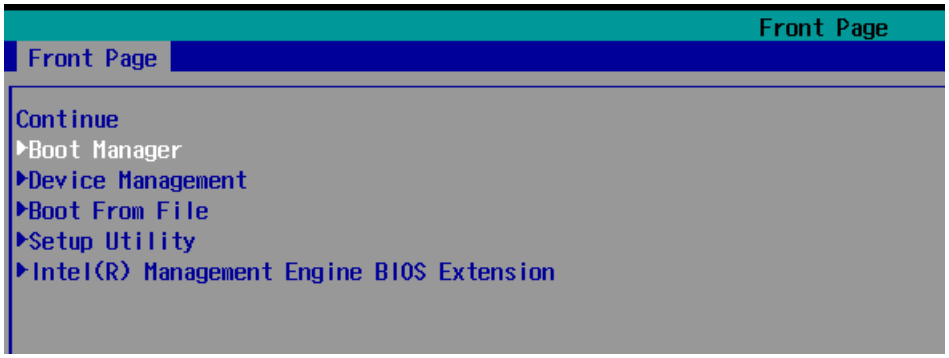


9. To create a recovery USB disk with a Linux image, copy the **ModelName.gz** or **ModelName.img** image file to the**\home\partimag** folder in the USB drive.

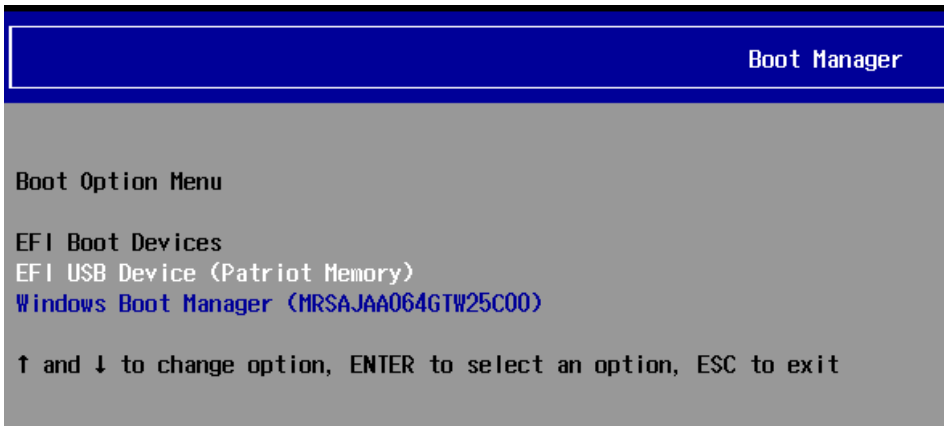


Booting From the USB Disk

1. Turn on the computer and press **F2** when you hear the beep sound to enter the BIOS setup menu.
2. Select **Boot Manager** and press **Enter** to continue.



3. Select the **EFI USB Device** on the computer and press **Enter** to continue to boot from the USB device.



System Image Backup

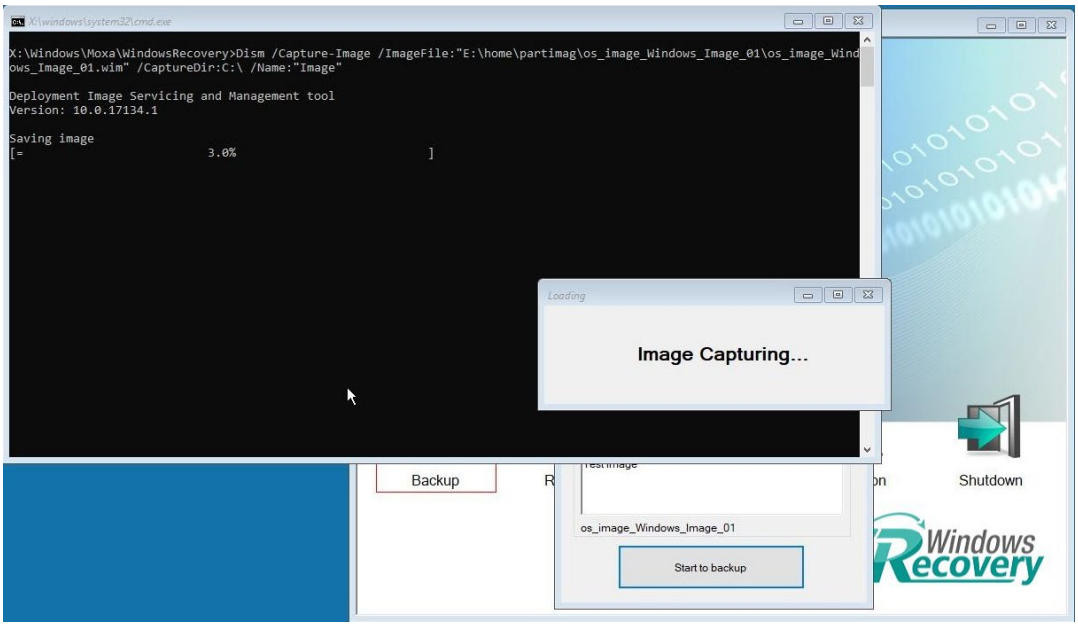
To back up the image from the USB disk, run **Windows Preinstallation Environment(WinPE)** and the **Windows Recovery** utility will display. Follow these steps.

1. Click **Backup**.

2. Select the **Source disk** to backup and **Destination USB** to store the OS image, also give an image name and description. Click **Start to backup**.

3. Click **Yes** to continue.

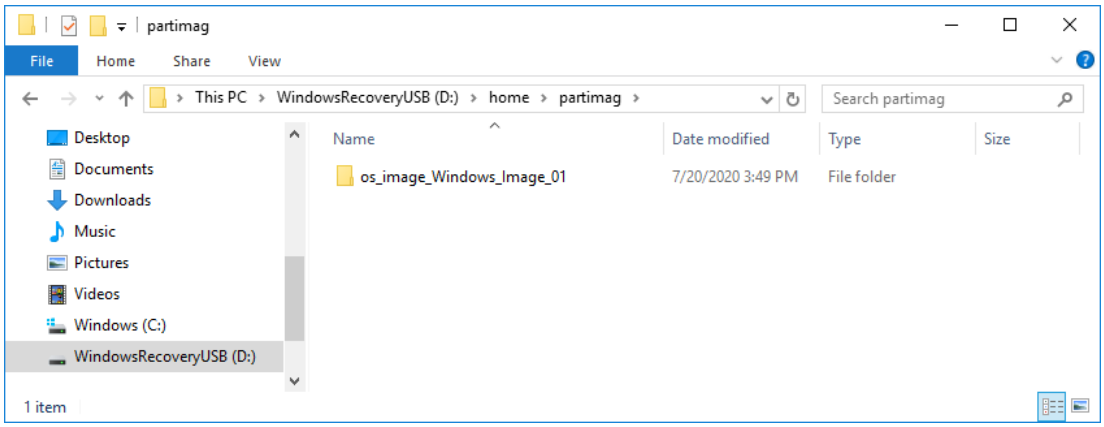
4. Wait for the backup process to complete.



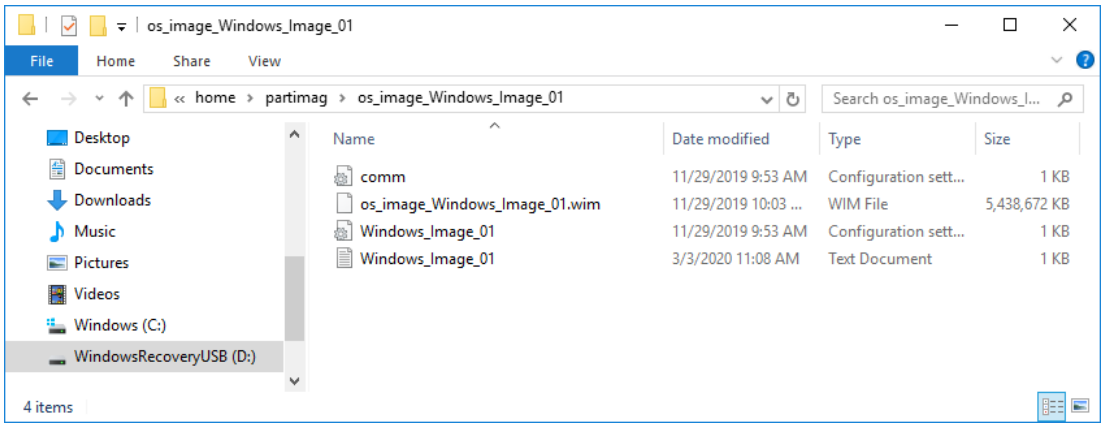
5. When the process is done, click **OK**.

6. Click **OK**, the computer will shut down.

7. The OS image will be saved in **USB disk home\partimag**.



8. In the **os_image** folder you can view the backup information and the image files.



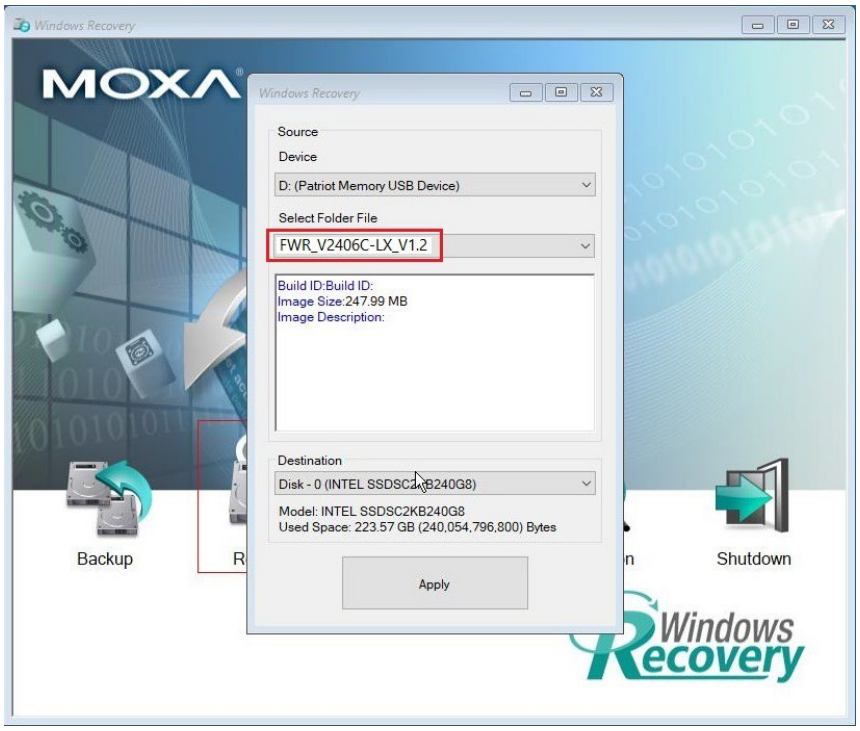
Restoring the System From a Backup

To restore the image, run the **Windows Preinstallation Environment(WinPE)** and the **Windows Recovery** utility will display. Follow these steps.

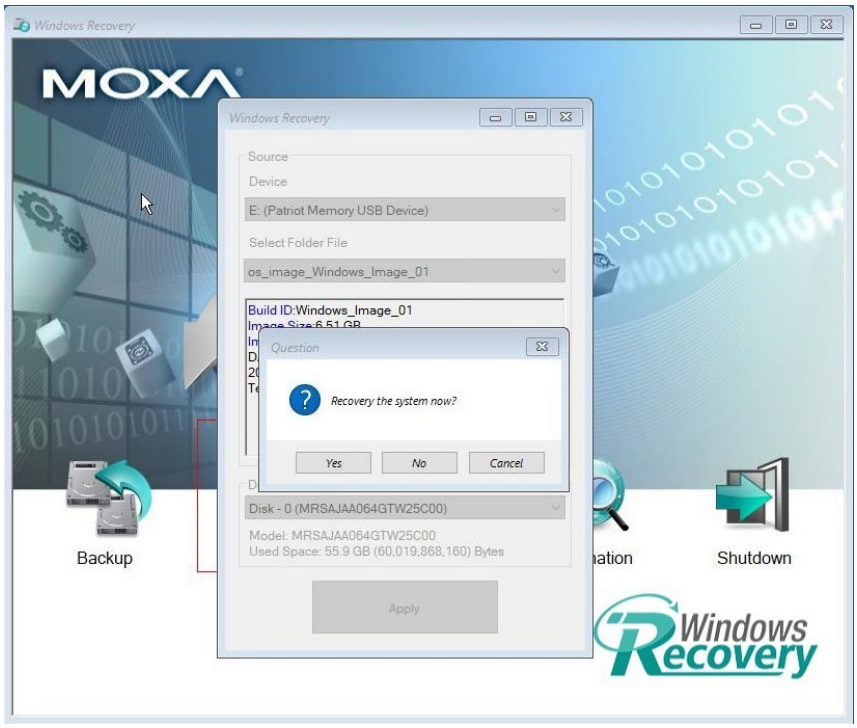
1. Click **Recovery**.

2. Select the **Source USB Device, Image Folder File** and check the image information, select the **Destination Disk** to restore. Click **Apply**.

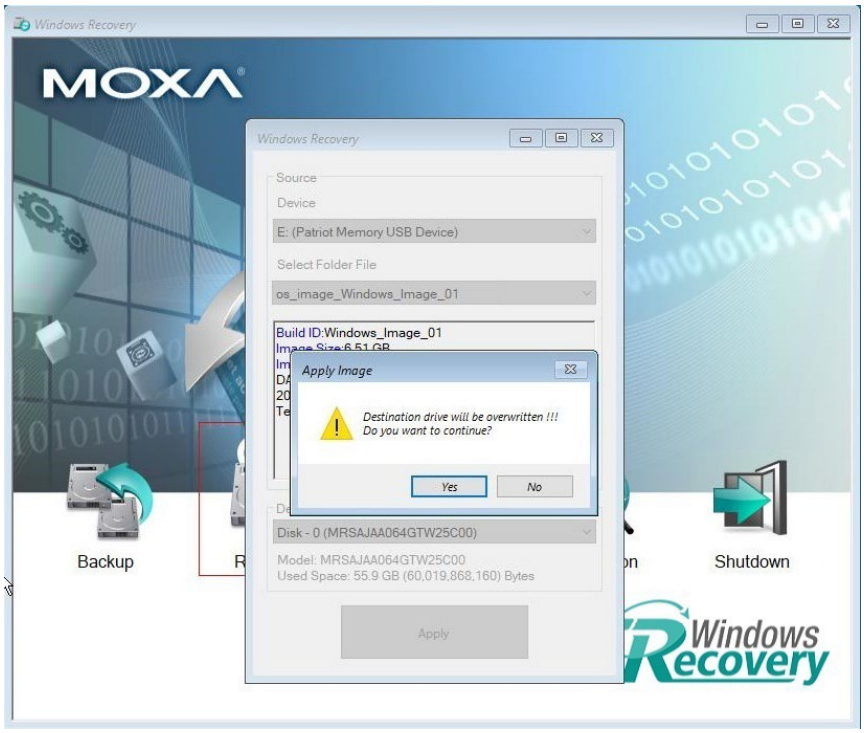
3. If you are using Linux image, select Linux image to restore.



4. Click **Yes** to continue the process.

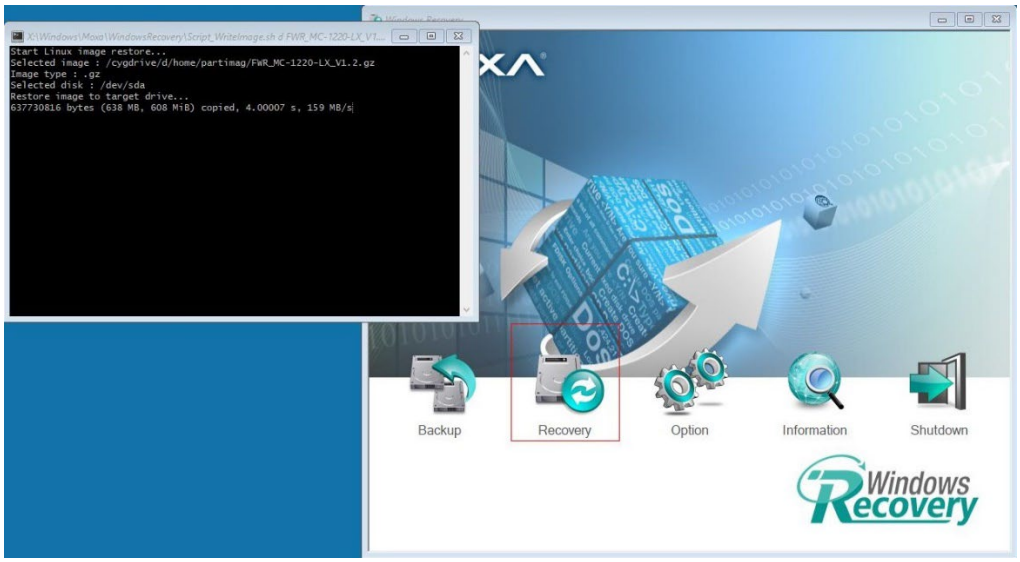


5. Click **Yes** to overwrite the destination drive.



6. Wait for the process to complete.

7. If you restore the Linux image, a new window will appear. Wait for the process to complete.



8. Click **OK**.

9. Click **OK**, the system will shut down and restart.

When you restart the computer, you will need to wait about 5 minutes for the computer to go through two cycles of the reboot process. The system configuration files will be initiated during the first boot-up process. Do not turn off or shut down the computer while the system is restarting.