

Intel® Optane™ Memory

Installation and User Guide

April 2017

Revision 1.0.2



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1 Introduction

1.1 Overview

This section describes the requirements for installing and enabling Intel® Optane™ memory, please refer to the below sections for detailed requirements:

1. Supported 7th Gen Intel® Core™ processor and chipset.
2. M.2 type 2280 connector on a PCH Remapped PCIe* Controller and Lanes in a x2 or x4 configuration with B-M keys that meet NVMe* Spec 1.1
3. System BIOS that supports the Intel® Rapid Storage Technology (Intel® RST) 15.5 driver
4. Windows* 10 64bit or above installed on a supported storage device (Hard drive, SATA SSD or SSHD)
5. Intel® Optane™ memory module.
6. A supported storage device (Hard drive, SATA SSD or SSHD) with Windows* 10 64bit installed, formatted for GPT partition and at least 5MB of continuous unallocated space at the end of the boot volume.
7. PCH SATA controller mode set to a supported mode
8. The most recent Intel® Rapid Storage Technology 15.5 or later driver available at downloadcenter.intel.com.

1.2 Supported Platforms and Chipsets

Intel® Optane™ memory is designed to provide functionality for the following Intel® PCH Storage Controllers:

1. Intel® 200 Series Chipset Family SATA AHCI/RAID Controller SKUs:
 - Q270
 - Z270
 - H270
 - Q250
 - B250
2. Intel® C230 Series Chipset Family SATA AHCI/RAID Controller SKUs:
 - C236

1.3 System Requirements

1. The system must contain one of the Intel controllers listed in Section 1.1B "SUPPORTED PLATFORMS/CHIPSETS" above and one of the following types of processors:
 - 7th Gen Intel® Core™ i3, i5, or i7 processors
 - Intel® Xeon® E3 v6 processor family



2. The system must be running one of the following operating systems (no other Windows* OS versions are supported):
 - Microsoft Windows* 10 x64 Edition
3. The system should contain at least the minimum system memory required by the operating system. Consult your computer system and OS vendor.
4. The system must contain one of the following supported Intel® Optane™ Technologies populated into M.2 connector:
 - Intel® Optane™ memory-series modules

Note: On some motherboards this M.2 connector is labeled 'Intel® Optane™ Memory Ready' or 'Intel® Optane™ Ready'.

5. The system must contain one of the following supported SATA-based storage devices connected to Intel® AHCI controller off of the chipset with Windows* 10 64bit installed, formatted for GPT partition with at least 5MB of continuous unallocated space at the end of the boot volume:
 - SATA HDD
 - SATA SSD
 - SATA SSHD**

***Self-pinning SSHDs only, SSHDs that use the Hybrid Information Feature Set are not supported*

- The system PCH SATA controller mode must be set to one of the following modes (optional for system BIOS that support automatic SATA controller mode switching):
- Intel® RST and System Acceleration with Intel® Optane™ Technology'
- Intel® RST Premium and System Acceleration with Intel® Optane™ Technology'

Mode of PCH SATA controller can be set in BIOS configurations.



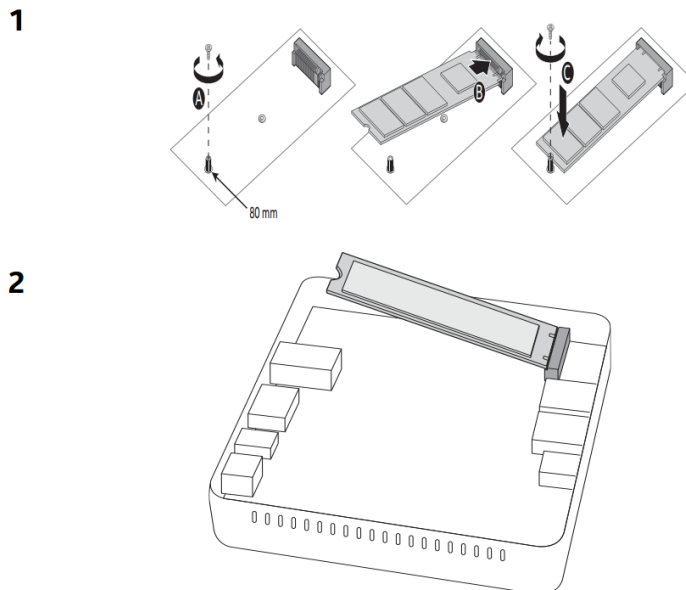
2 Intel® Optane™ Memory Module Installation

This chapter describes the steps for installing Intel® Optane™ memory module into your system. Refer to your system or motherboard manufacture's User Manual for the location to install your Intel® Optane™ memory module. See figure below for more information.

Warning: Turn off the power to your system and discharge your body's static electric charge (i.e. touching a grounded surface) before installing the module.

Visit <http://www.intel.com/support/optane-memory-handling> for proper handling instructions. Following these instructions will prevent damage from electrostatic discharge or mechanical damage.

1. Locate the supported B-M-2280 M.2 connector from the Intel® PCH that is remappable and supports the Intel® Optane™ memory module.
Note: On some motherboards this M.2 connector is labeled 'Intel® Optane™ Memory Ready' or 'Intel® Optane™ Ready'.
2. Remove the screw
3. Install the 2280 riser in front of the 2280-B-M M.2 connector (if not already pre-installed)
4. Place the Intel® Optane™ memory module into the M.2 connector
5. Replace the screw





3 Installation Media Preparation (Recommended Optional Step)

3.1 Preparing the Windows* 10 OS Recovery Image on a Computer Before Installing the Windows* 10 Operating System (Advanced)

This section walks through the process of preparing the Windows* 10 OS image for Windows* Recovery.

Background: The current Intel® Rapid Storage Technology (Intel® RST) driver that is shipped and contained within the Windows* 10 image does not support Intel® Optane™ memory. "Injecting" the Intel® Rapid Storage Technology 15.5 or later driver into the OS Recovery Image/tools before installation allows you to recover your system in the event the OS image gets damaged (i.e. hard disk corruption, file corruption, missing files, etc).

Requirements:

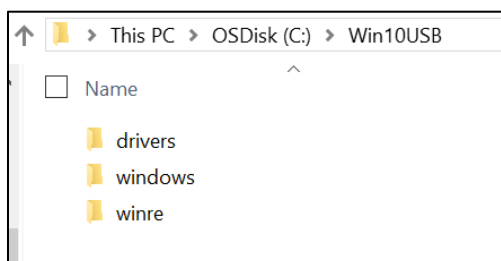
Windows* Assessment and Deployment Kit (ADK) installed

- Windows* 10 64b ISO
- F6 Intel® Rapid Storage Technology 15.5 or later SW/driver package available from downloadcenter.intel.com. Please Refer to section 4 if installing the Intel® Optane™ memory SW/driver package or section 7 if installing the Intel® Rapid Storage Technology SW/driver package.
- USB Key for installation

1. Create a USB Bootable Key from the Windows* 10 OS ISO Image

Note: Utilities such as Rufus* with default options make this very easy

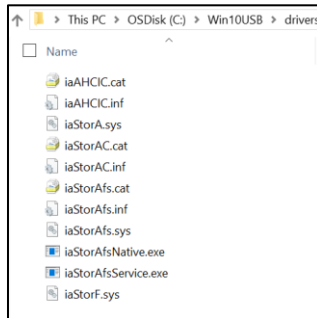
2. Create a temporary working directory on your local PC (Ex. C:\Win10USB)
3. In your working directory, create 3 sub directories named "windows", "winre" and "drivers"



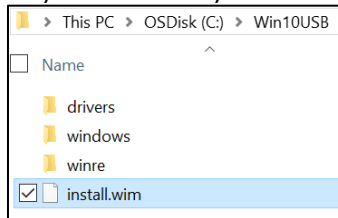
4. Extract the Intel® Rapid Storage Technology 15.5 or later driver to the "drivers" subdirectory



Installation Media Preparation (Recommended Optional Step)

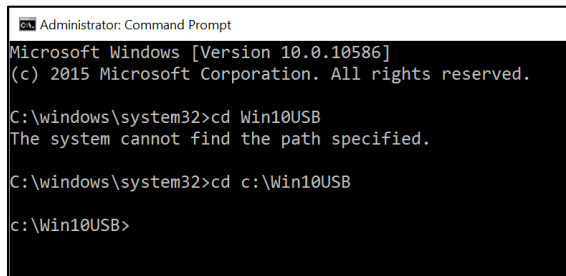


5. From your Windows* 10 USB Install key, copy the "install.wim" file from the "sources" directory on your install key to the working directory C:\Win10USB



6. Open a Command Prompt as Administrator, and change to your working directory (Ex. cd C:\Win10USB)

Note: Make sure that all folders and Windows* explorer is closed before starting this process.



7. Based on the version of Windows* 10 you have installed, you have to determine which index number to modify. Choose the index that matches the Windows* 10 version you have.

To determine the index, run the command:
`dism /get-wiminfo /wimfile:install.wim`

For this example we will modify Index 2. Steps can be repeated to modify additional versions.



```
c:\Win10USB>dism /get-wiminfo /wimfile:install.wim

Deployment Image Servicing and Management tool
Version: 10.0.10586.0

Details for image : install.wim

Index : 1
Name : Windows 10 Pro
Description : Windows 10 Pro
Size : 14,747,431,455 bytes

Index : 2
Name : Windows 10 Home
Description : Windows 10 Home
Size : 14,586,404,734 bytes

The operation completed successfully.

c:\Win10USB>
```

8. Modify the "install.wim" file by running the following commands:

Mount the Windows* Image:

```
dism /mount-image /imagefile:install.wim /index:2 /mountdir:windows
```

```
c:\Win10USB>dism /mount-image /imagefile:install.wim /index:2 /mountdir:windows

Deployment Image Servicing and Management tool
Version: 10.0.10586.0

Mounting image
[=====100.0%=====]
The operation completed successfully.
```

9. Add the Intel® Rapid Storage Technology drivers to the Windows* Image:

```
dism /image:windows /add-driver /driver:drivers /forceunsigned /recurse
```

```
c:\Win10USB>dism /image:windows /add-driver /driver:drivers /forceunsigned /recurse

Deployment Image Servicing and Management tool
Version: 10.0.10586.0

Image Version: 10.0.14393.0

Searching for driver packages to install...
Found 3 driver package(s) to install.
Installing 1 of 3 - c:\Win10USB\drivers\iaAHCIC.inf: The driver package was successfully installed.
Installing 2 of 3 - c:\Win10USB\drivers\iaStorAC.inf: The driver package was successfully installed.
Installing 3 of 3 - c:\Win10USB\drivers\iaStorAfs.inf: The driver package was successfully installed.
The operation completed successfully.
```

Mount the Windows* Recovery Image:

```
dism/mountimage/imagefile:c:\Win10USB\windows\windows\system32\recovery\winre.wim /Index:1 /mountdir:winre
```



Installation Media Preparation (Recommended Optional Step)

```
c:\Win10USB>dism /mount-image /imagefile:c:\Win10USB\windows\windows\system32\recovery\winre.wim /Index:1 /mountdir:winre

Deployment Image Servicing and Management tool
Version: 10.0.10586.0

Mounting image
[=====100.0%=====]
The operation completed successfully.
```

10. Add the Intel® Rapid Storage Technology driver to the Windows* Recovery Image:

dism /image:winre /add-driver /driver:drivers /forceunsigned /recurse

```
c:\Win10USB>dism /image:winre /add-driver /driver:drivers /forceunsigned /recurse

Deployment Image Servicing and Management tool
Version: 10.0.10586.0

Image Version: 10.0.14393.0

Searching for driver packages to install...
Found 3 driver package(s) to install.
Installing 1 of 3 - c:\Win10USB\drivers\iaAHCIC.inf: The driver package was successfully installed.
Installing 2 of 3 - c:\Win10USB\drivers\iaStorAC.inf: The driver package was successfully installed.
Installing 3 of 3 - c:\Win10USB\drivers\iaStorAfs.inf: The driver package was successfully installed.
The operation completed successfully.
```

11. Un-mount the Windows* Recovery Image:

dism /unmount-wim /mountdir:winre /commit

```
c:\Win10USB>dism /unmount-wim /mountdir:winre /commit

Deployment Image Servicing and Management tool
Version: 10.0.10586.0

Image File : c:\Win10USB\windows\windows\system32\recovery\winre.wim
Image Index : 1
Saving image
[=====100.0%=====]
Unmounting image
[=====100.0%=====]
The operation completed successfully.
```

12. Un-Mount the Windows* Image:

dism /unmount-wim /mountdir:windows /commit



```
c:\Win10USB>dism /unmount-wim /mountdir:windows /commit
Deployment Image Servicing and Management tool
Version: 10.0.10586.0

Image File : c:\Win10USB\install.wim
Image Index : 2
Saving image
[=====100.0%=====]
Unmounting image
[=====100.0%=====]
The operation completed successfully.
```

13. Copy the updated "install.wim" in the working directory back to the "sources" directory on your USB install key



4 Intel® Optane™ Memory SW/Driver Package Installation

4.1 Installation and Set-Up Overview

This section provides an overview of the steps to install and set-up Intel® Optane™ memory with the Intel® Optane™ memory application, please refer to sections [4.2](#) and [4.3](#) for detailed steps.

1. Go to downloadcenter.intel.com, and select the most recent Intel® Rapid Storage Technology 15.5 or later driver available.

Note: Download must include the setupoptane.exe package, which will include the Intel® Optane™ memory SW / Driver package.

2. Run the executable (SetupOptaneMemory.exe) and install the defaults
3. Reboot System
4. Enable Intel® Optane™ memory via the Intel® Optane™ memory application. When prompted, click 'yes' followed by 'enable'.
5. Wait for the User Interface prompts for a system reboot. Then reboot the system.

Note: Some motherboards may require a BIOS update before the Intel® Optane™ memory SW/driver package can be installed. Consult your Motherboard vendor's support website for the latest Intel® Optane™ memory supported BIOS. Visit www.intel.com/support/optane-memory for more information.

4.2 Downloading the Intel® Optane™ Memory Package

1. Go to downloadcenter.intel.com, and select the most recent Intel® Rapid Storage Technology 15.5 or later driver available.

Note: Download must include the setupoptane.exe package, which will include the Intel® Optane™ memory SW/driver package.

Note: Some motherboards may require a BIOS update before the Intel® Optane™ memory SW/driver package can be installed. Consult your motherboard vendor's support website for the latest Intel® Optane™ Memory supported BIOS. Visit www.intel.com/support/optane-memory for more information.



4.3 Basic Installation Method – Installation Within the Windows* 10 OS

This section provides an overview of steps to configure Intel® Optane™ memory with the Intel® Optane™ memory application on a computer that already contains the Windows* 10 Operating System.

If your computer's SATA controller is configured in 'AHCI' mode, installer will automatically switch your SATA controller to 'Intel® RST Premium and System Acceleration with Intel® Optane™ Technology'. To use this feature, your system BIOS must support automatic switching. To install on a computer with a system BIOS that does not support automatic switching, please refer to [section 4.4](#).

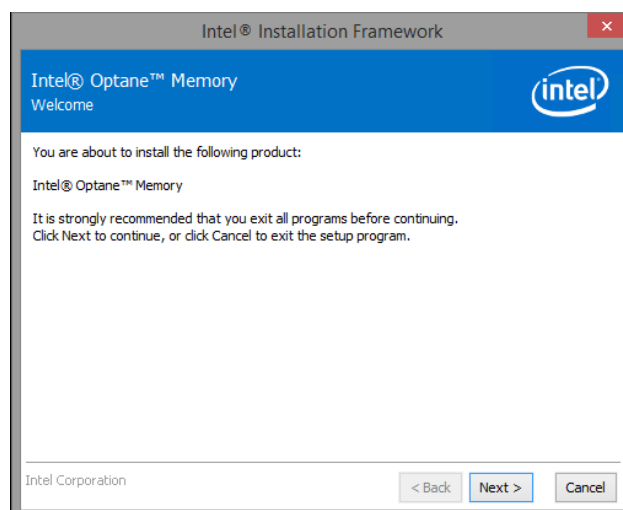
If your system BIOS does not support this, there will be error indicating that your system BIOS is unsupported. For more details on errors see [chapter 6](#).

For a video tutorial of this process visit <http://www.intel.com/content/www/us/en/support/memory-and-storage/intel-optane-memory/000023845.html>

Warning: After the installer changes your SATA controller mode to 'Intel® RST Premium and System Acceleration with Intel® Optane™ Technology' mode DO NOT change your SATA controller mode back to 'AHCI'. Doing so, will prevent Intel® Optane™ memory from functioning properly.

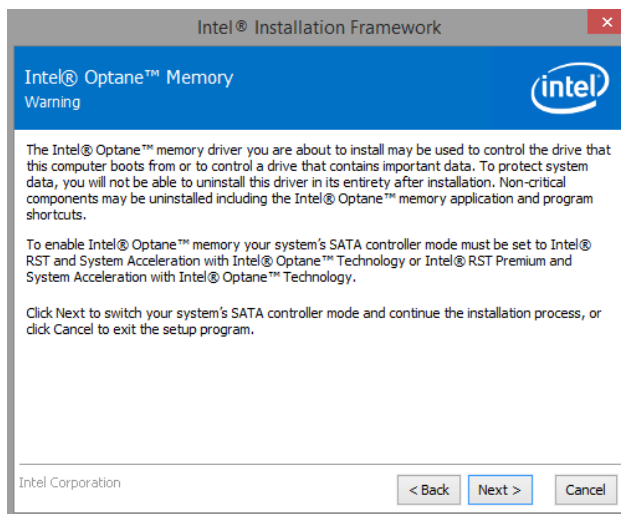
To install the Intel® Optane™ memory SW/driver package run the executable SetupOptaneMemory.exe from the download package and complete installation according to screens below:

1. Welcome screen. Click Next.

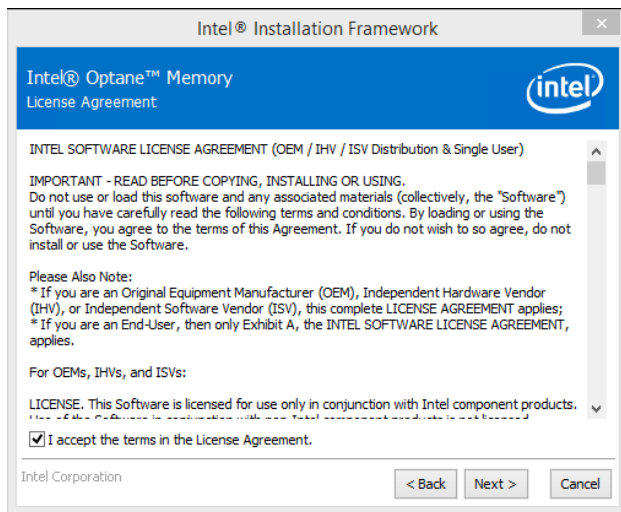




2. The installer discovered that your system SATA controller is configured in 'AHCI' mode, during the installation process, the installer will automatically switch your SATA controller to 'Intel® RST Premium and System Acceleration with Intel® Optane™ Technology'. Click Next to continue.

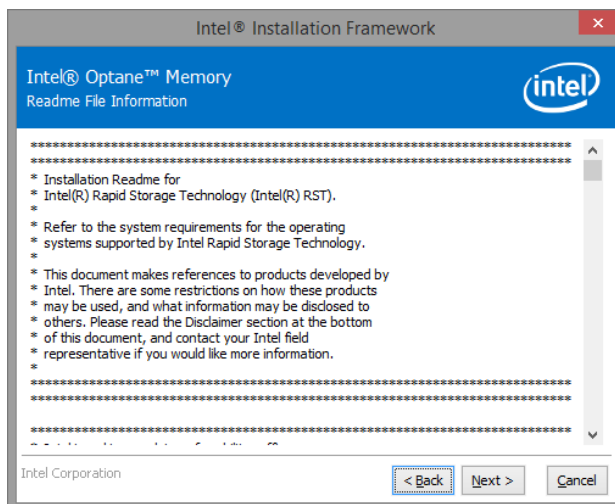


3. License Agreement screen. Accept the license agreement and click Next to continue.

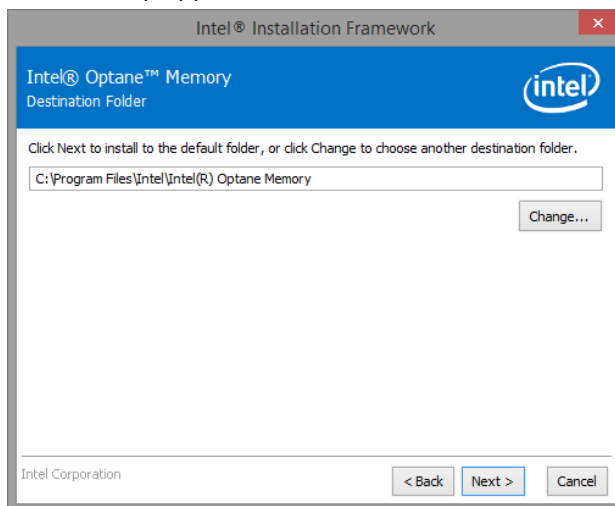




4. Readme File Information. Read and click Next to continue.

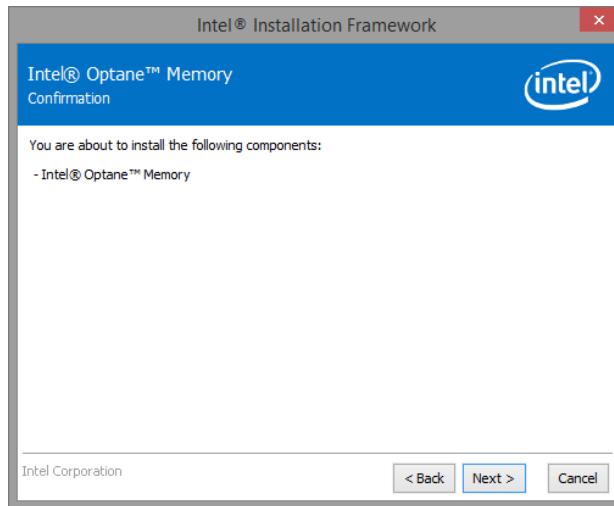


5. Destination folder. Specify the destination folder to install the Intel® Optane™ memory application and click Next to continue.

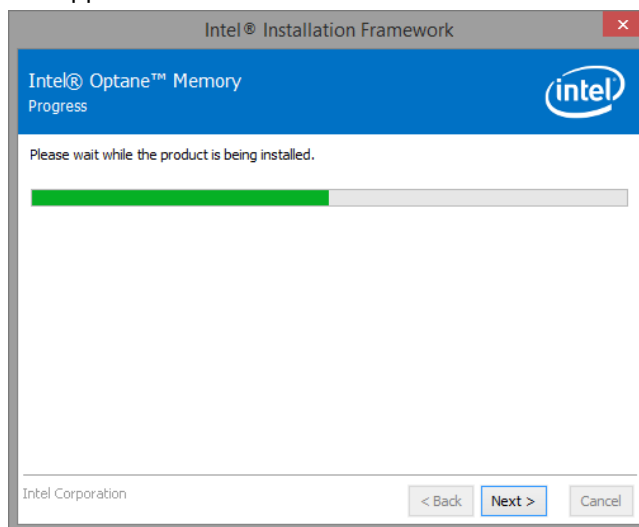




6. Confirmation screen. Click Next to continue.

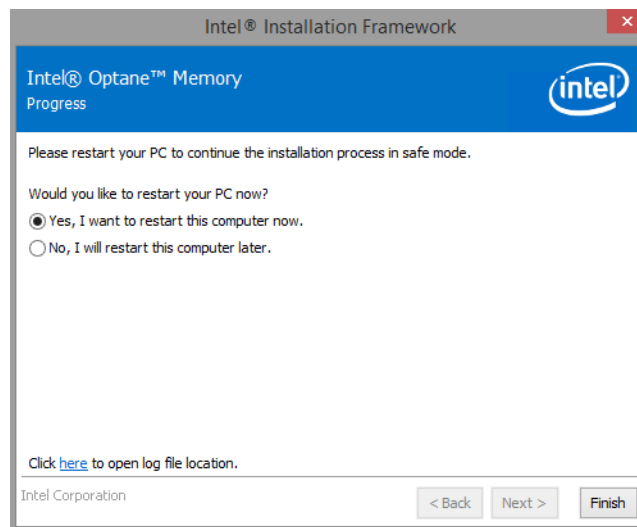


7. Progress screen. Installation is now in progress, once finished the next screen will appear.





8. Restart to safe mode. Select yes and click Finish to restart your system in safe mode.



9. After restarting the system, installation will continue in safe mode. After completing installation there will be another automatic restart of system. After the second restart you can use Intel® Optane™ memory application as described in [chapter 5](#).

Note: After the second restart, the Intel® Optane™ memory application may take several seconds to pop up. If the the Intel® Optane™ memory application does not pop up automatically, it can be launched manually by searching for 'Intel® Optane™ memory in Windows* File Search.





4.4 Advanced Installation Method - Installation on a Computer with System BIOS that Does Not Support Automatic SATA Controller Switching

This section describes the process of installing the Intel® Optane™ memory SW/driver prior to installing the OS on a computer with System BIOS that does not support automatic SATA Controller switching.

For a video tutorial of this process visit

<http://www.intel.com/content/www/us/en/support/memory-and-storage/intel-optane-memory/000023853.html>

4.4.1 Manual SATA Controller Mode Switch

If your computer's System BIOS does not support automatic SATA Controller switching, you will need to switch the SATA controller manually, prior to installing the OS. Consult your system or motherboard vendor's User Manual for manual BIOS SATA controller mode switching procedures.

1. Prepare the installation media as outlined in [chapter 3](#) (recommended optional step)
2. Power on your system and boot to the System BIOS (typically done by pressing F2 or Delete)

Note: Make sure your System BIOS is up to date with support for Intel® Optane™ memory. Consult your vendors support website for the latest Intel® Optane™ memory supported System BIOS.

3. Change the System BIOS settings to the following:
 - i. SATA Mode = 'Intel® RST Premium and System Acceleration with Intel® Optane™ Technology' or 'Intel® RST and System Acceleration with Intel® Optane™ Technology'
 - ii. UEFI = Enabled
 - iii. CSM = Disabled
 - iv. Intel® Rapid Storage Technology (Intel® RST) enabled
 - v. M.2 Port Remapping enabled
4. Install the Windows* 10 OS

Note: After the second restart, the Intel® Optane™ memory application may take several seconds to pop up. If the the Intel® Optane™ memory application does not pop up automatically it can be launched by searching for 'Intel® Optane™ memory' in Windows* File Search.

Consult your system or motherboard vendors User Manual and support site for details on how to update these settings.

4.4.2 Installation of the Intel® Optane™ Memory SW/Driver

This section describes the process of installing the Intel® Optane™ memory SW/driver package on a platform where PCH SATA Controller is set to 'Intel® RST and System

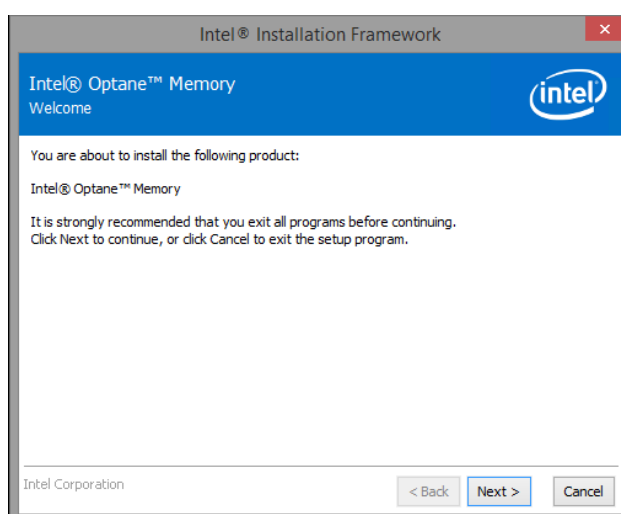


Acceleration with Intel® Optane™ Technology' or 'Intel® RST Premium and System Acceleration with Intel® Optane™ Technology' mode.

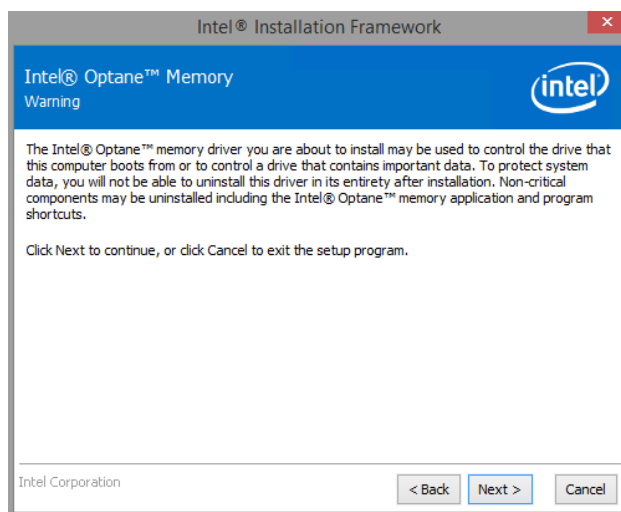
Note: No automatic switch of PCH SATA Controller mode is required for this installation process and remapping is already set in BIOS.

To install the Intel® Optane™ memory SW/driver package you need to run the executable 'SetupOptaneMemory.exe' from the package and complete installation according to screens below:

1. Welcome screen. Click Next to continue.

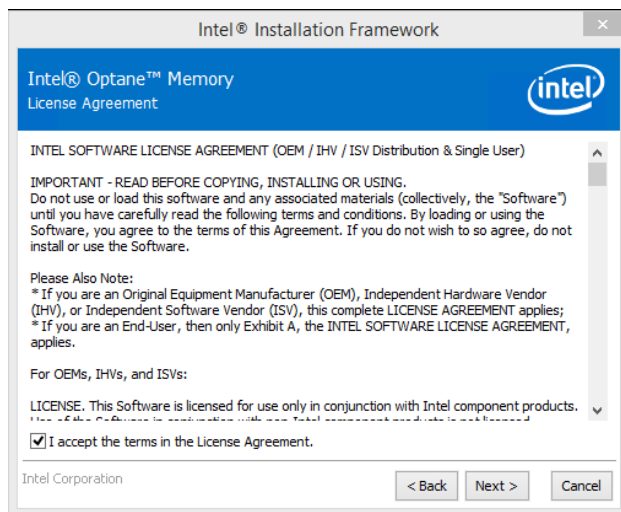


2. Warning screen. Click Next to continue.

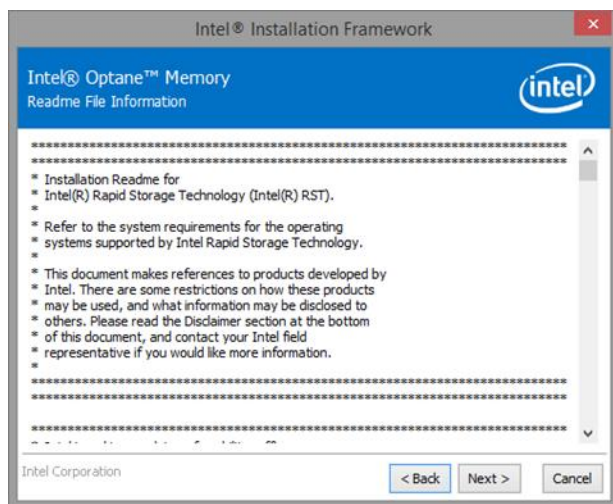




3. License Agreement screen. Accept the license agreement and click Next to continue.

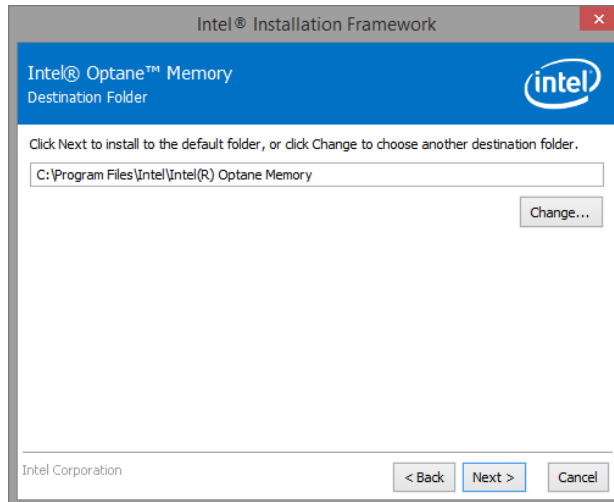


4. Readme File Information. Read and click Next to continue.

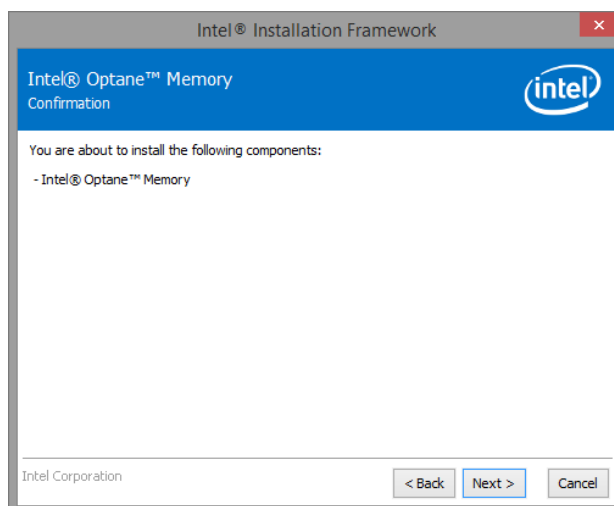




5. Destination folder. Specify the destination folder to install the Intel® Optane™ memory application and click Next to continue.

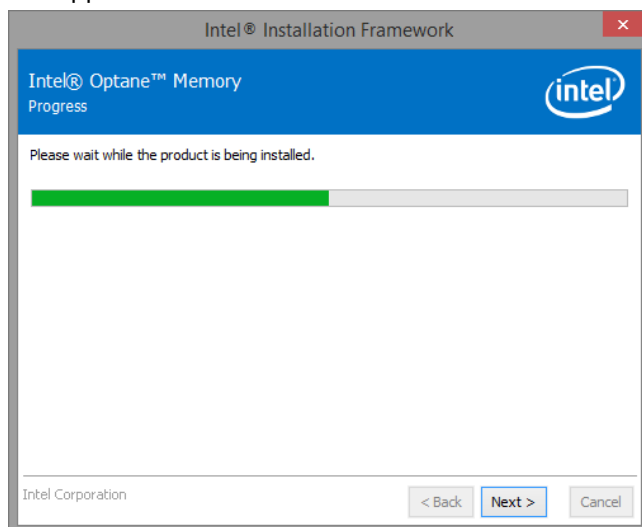


6. Confirmation screen. Click Next to continue.



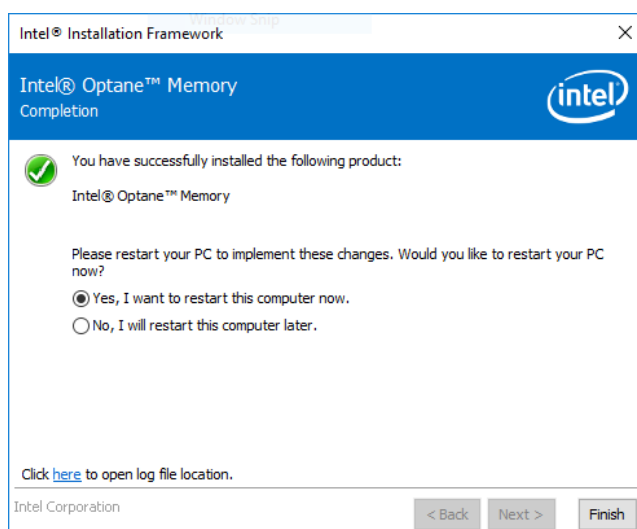


7. Progress screen. Installation is now in progress, once finished the next screen will appear.



8. Finish screen. Select yes and click Finish to restart your system. After restart you can use the Intel® Optane™ memory application as described in [chapter 5](#).

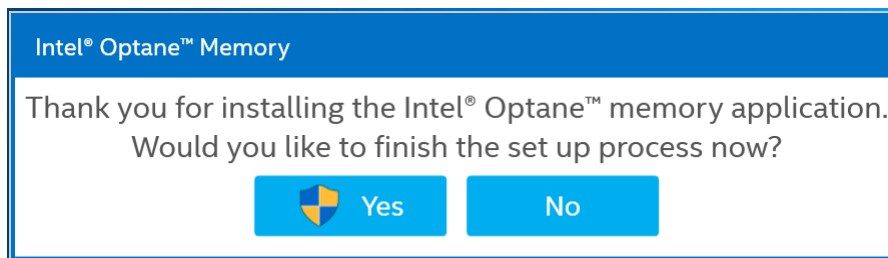
Note: After restarting, the Intel® Optane™ memory application may take several seconds to pop up. If the the Intel® Optane™ memory application does not pop up automatically, it can be launched manually by searching for 'Intel® Optane™ memory in Windows* File Search.





5 Using the Intel® Optane™ Memory Application

5.1 First Usage



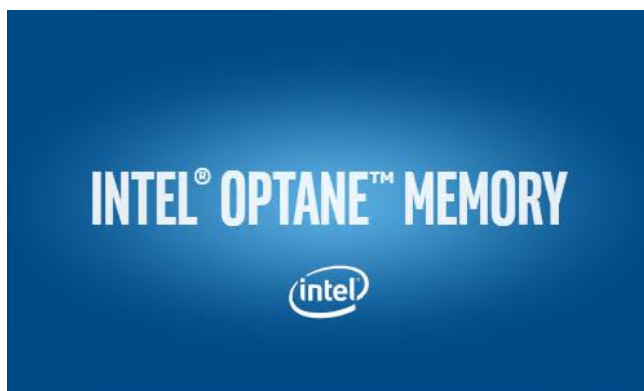
This popup appears after installing the package and restarting the system.

If you click "Yes", application will open with the view from figure below.

If you click "No", this popup will close and nothing happen. This popup won't be shown ever again. Notice: to open the application you will need to provide administrator permission.

5.2 Initialization of Application

You can open the application by clicking "Yes" on the popup described after installing the package in [Chapter 4](#) or you can open the application from the shortcut "Intel® Optane™ memory" from menu start.

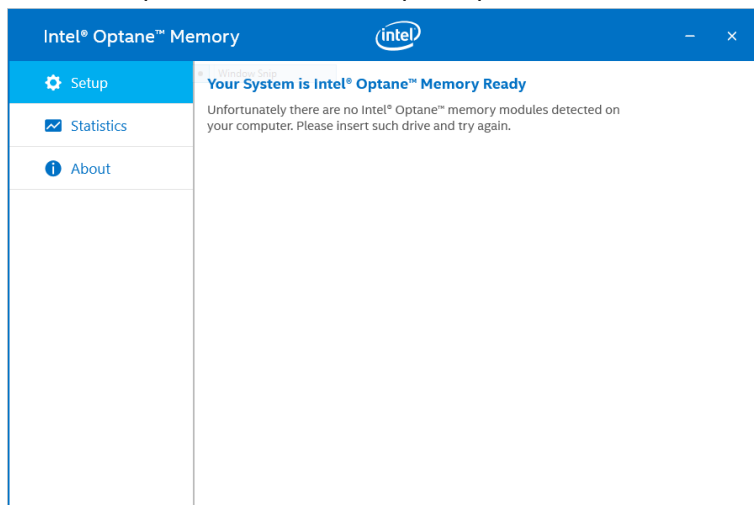


This view will appear at starting the application. The application is being initialized and getting data from driver about your system. After initialization, you will see the screen from the steps 1 or 2 in [section 5.3](#), if your system is ready to enable Intel® Optane™ memory. If your system is not ready to enable Intel® Optane™ memory, you will see one of the screens from steps 1 to 5.

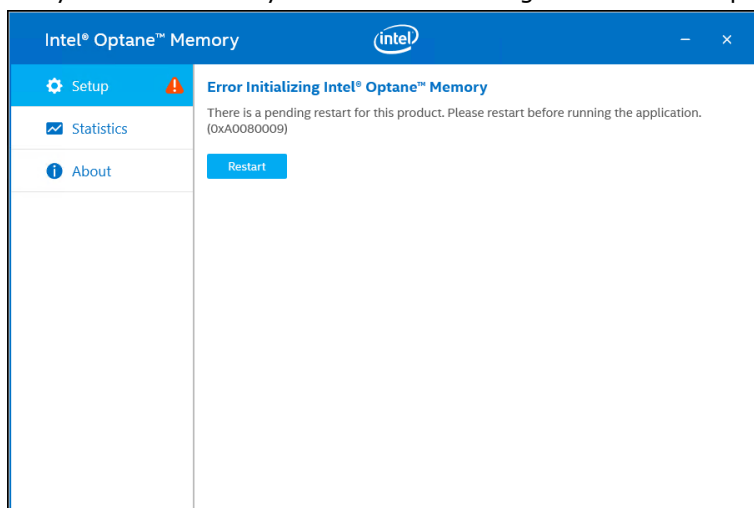


Refer to www.intel.com/support/optane-memory for help on these errors.

1. This screen will appear when your system is Intel® Optane™ memory ready, but you can't continue the enabling process because there is not an Intel® Optane™ memory module installed in your system.

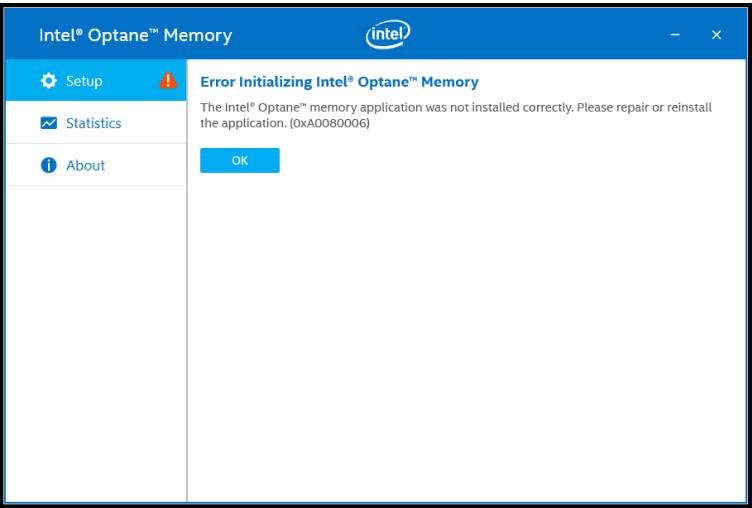


2. This error will appear when you will install the package according to section 2 but you don't restart your PC after finishing the installation process.

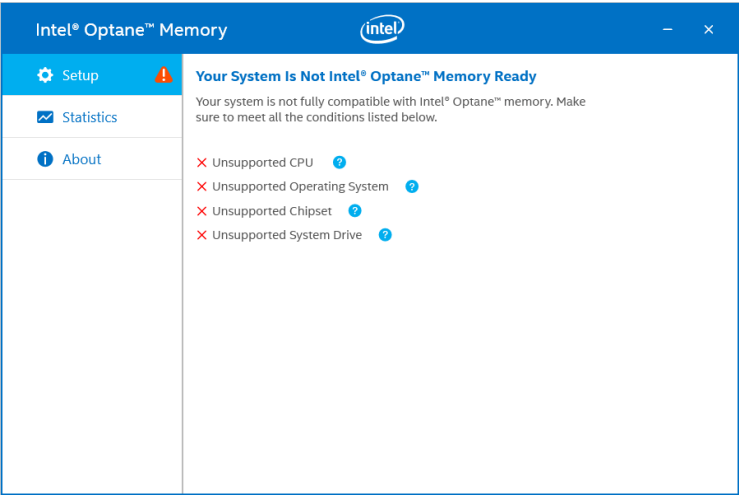




3. Initialization error. This error will occur if the installation didn't finish successfully.



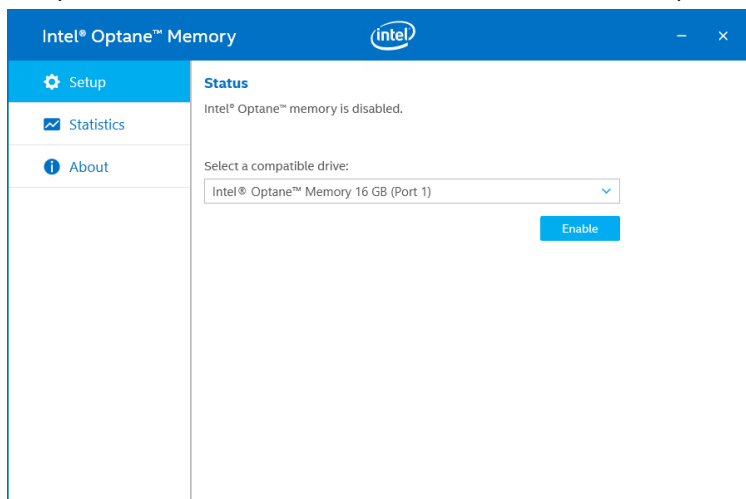
4. Checker Failed window. This screen will appear if one or more of the system requirements are not met.



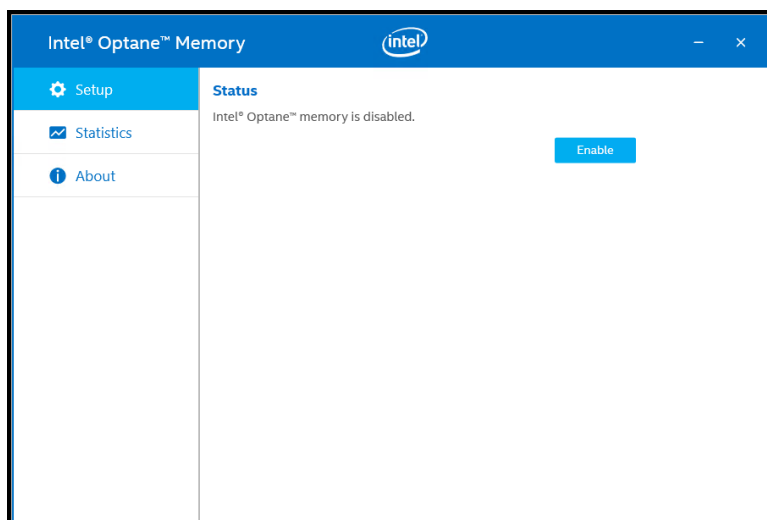


5.3 Enabling Intel® Optane™ Memory

1. Enable view. This view will only appear if your system has more than one Intel® Optane™ memory modules installed. Select the Intel® Optane™ memory module you wish to use and click Enable to enable Intel® Optane™ memory.



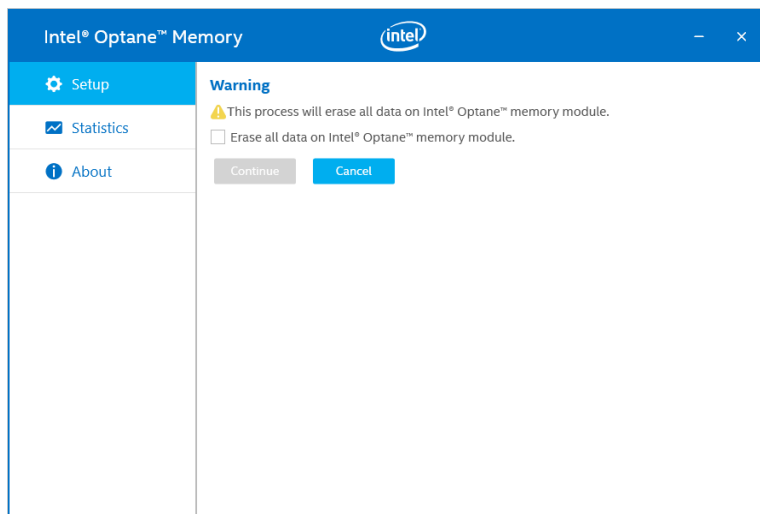
2. Enable view. This view will only appear when there is only one Intel® Optane™ memory module installed in your system. Click Enable to enable Intel® Optane™ memory.



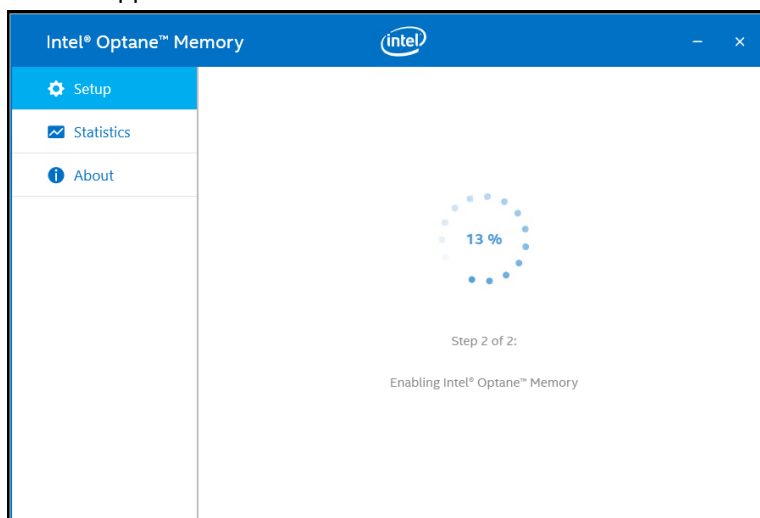


3. Warning view. This screen will appear after you click Enable. To continue, select the check box and click continue.

Note: Freshly installed Intel® Optane™ memory modules do not have any data on them by default. This process will not erase data on any other drives in your computer.

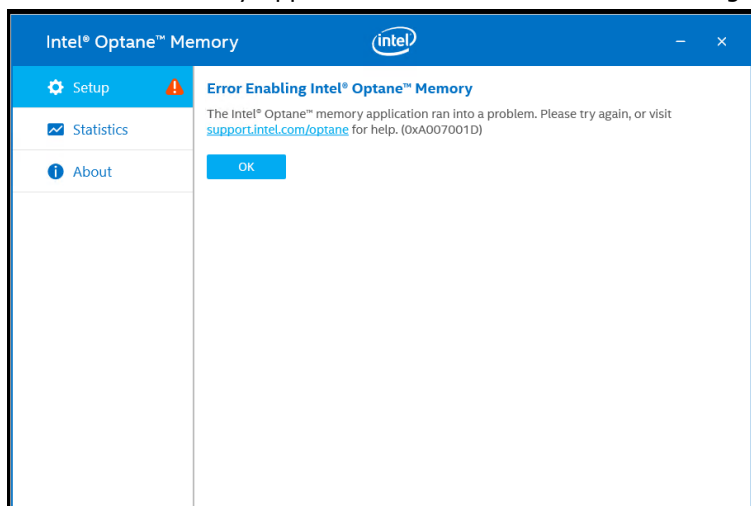


4. Enabling progress screen. If an error occurs during the enable process, a screen from step 5, 6 or 7 will appear. If process ends successfully the view from step 8 will appear.

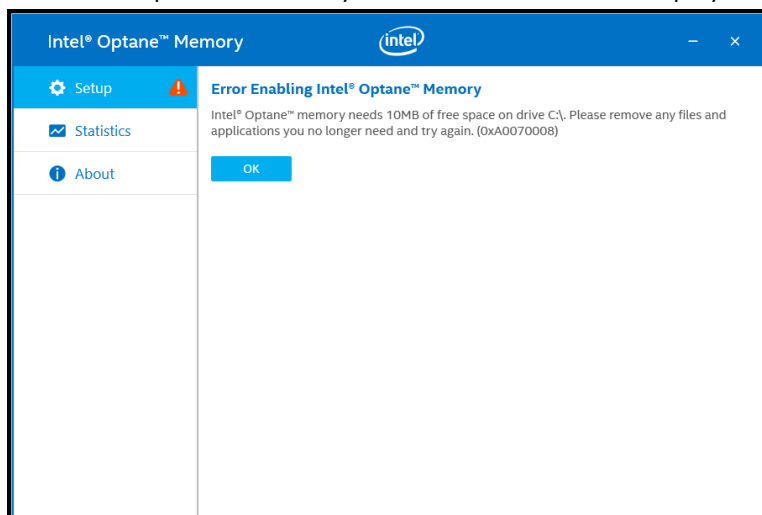




5. This screen may appear if an error occurs while enabling Intel® Optane™ memory.

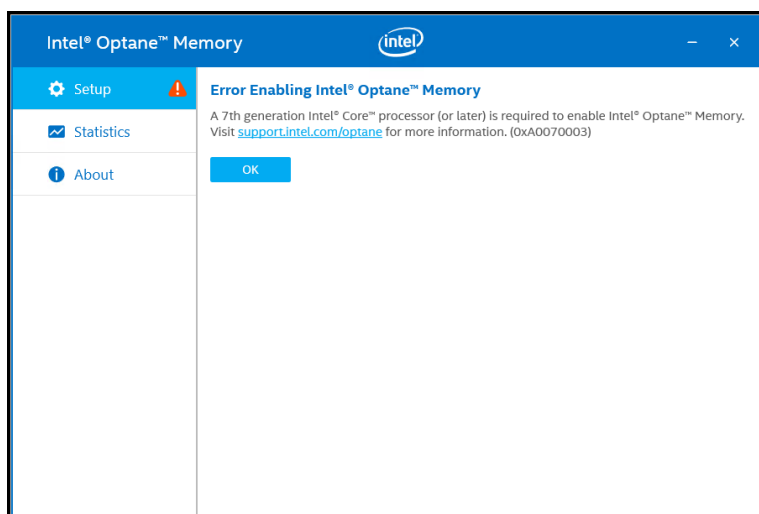


6. This screen may appear if your system does not have enough space to enable Intel® Optane™ memory. Follow the instruction displayed and try again.





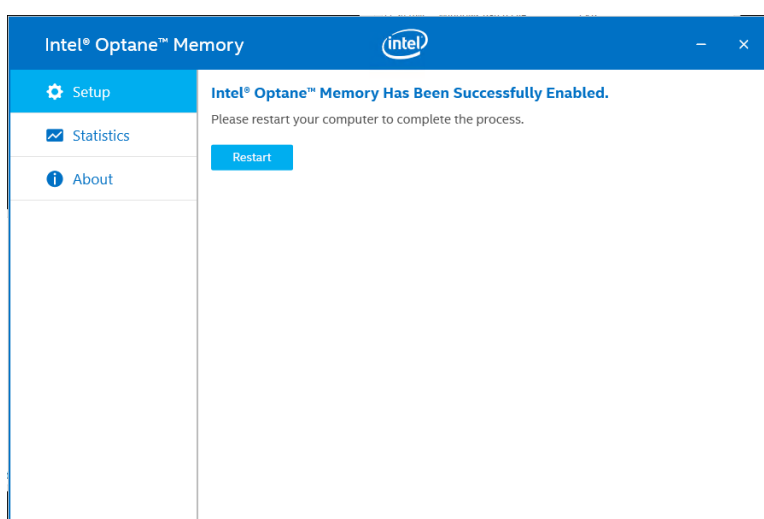
7. This screen may appear if your system does not fulfill all system requirements.



8. Reboot screen. Occurs after enabling is completed. After clicking restart button, restart of the system will occur. After restarting your computer Intel® Optane™ memory is fully set up. The Intel® Optane™ memory application at any time by searching for 'Intel® Optane™ memory' in the Windows* search bar.

Note: Applications may take up to three subsequent launches after enablement to see the full performance benefits.

Warning: System MUST BE restarted and NOT shutdown. Shutdown may result in incorrect display of drive volumes.



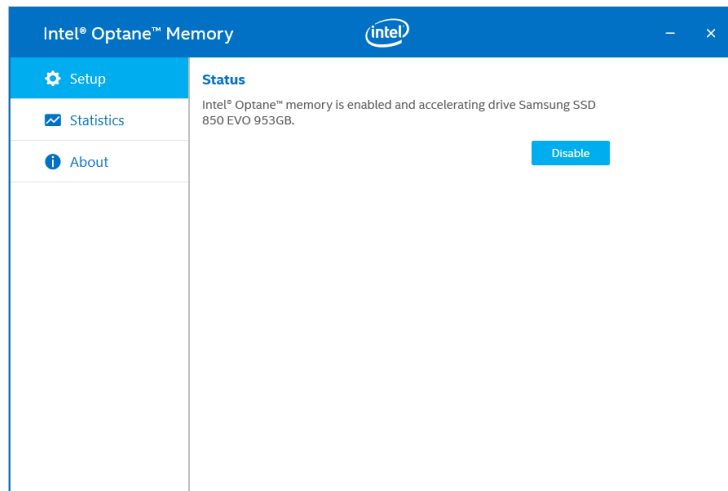


5.4 Disabling Intel® Optane™ Memory

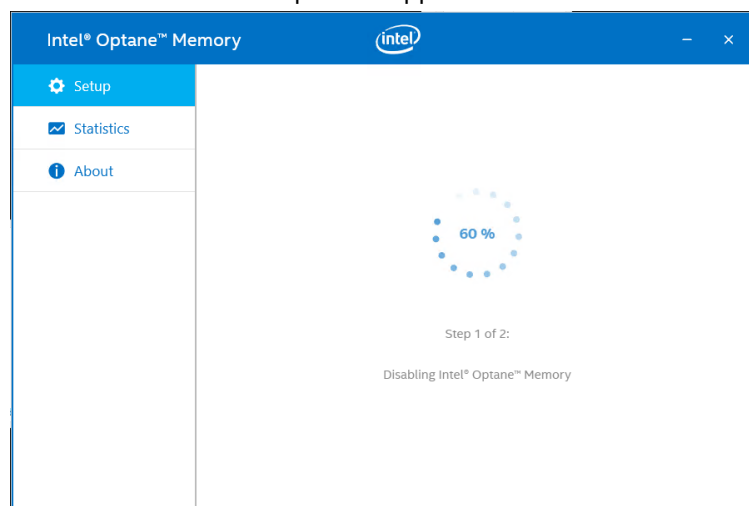
Note: Disabling is required before removing the SATA storage device being accelerated by Intel® Optane™ memory or you want to remove the Intel® Optane memory module from the system.

Warning: DO NOT try to remove the Intel® Rapid Storage Technology driver after disabling Intel® Optane™ memory, this will result in a BSOD.

1. This screen occurs when Intel® Optane™ memory is enabled. To disable you need to click Disable button and the screen from step 2 in section 5.2 will appear.



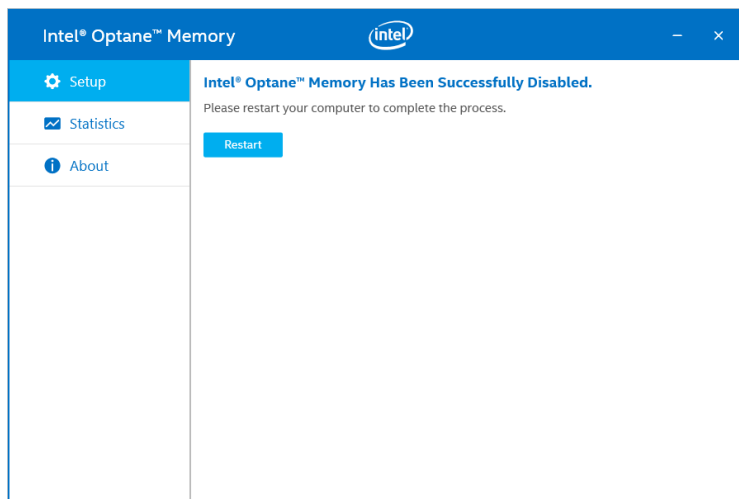
2. Progress screen for disabling Intel® Optane™ memory. The screen from step 3 will appear after the disable operation finishes. If an error occurs during the process, the screen from step 4 will appear.



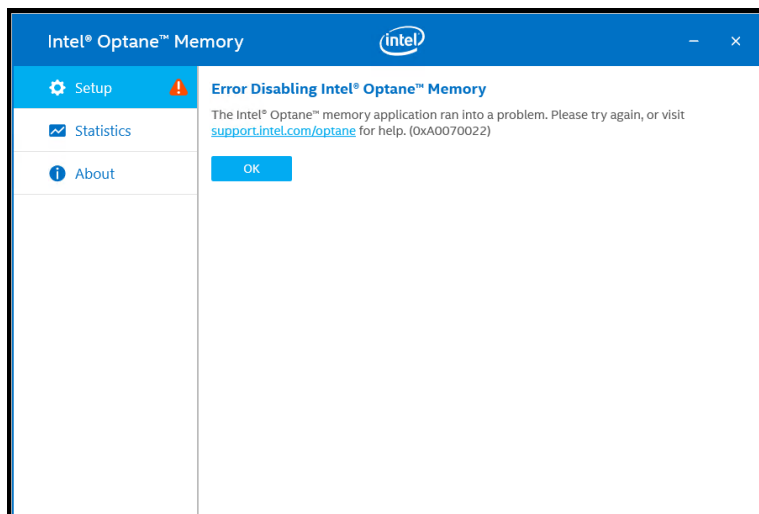


3. Reboot screen. After clicking restart button the system will be restarted.

Warning: DO NOT try to remove the Intel® Rapid Storage Technology driver after disabling Intel® Optane™ memory, this will result in a BSOD.



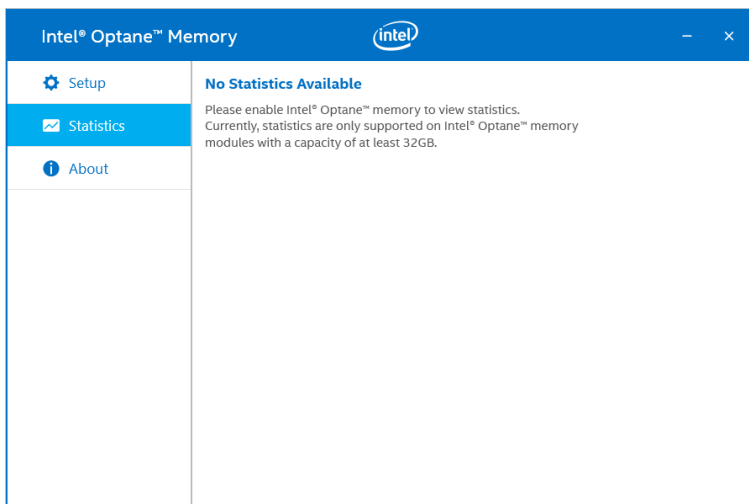
4. This screen can appear if an error occurs while disabling Intel® Optane™ memory.



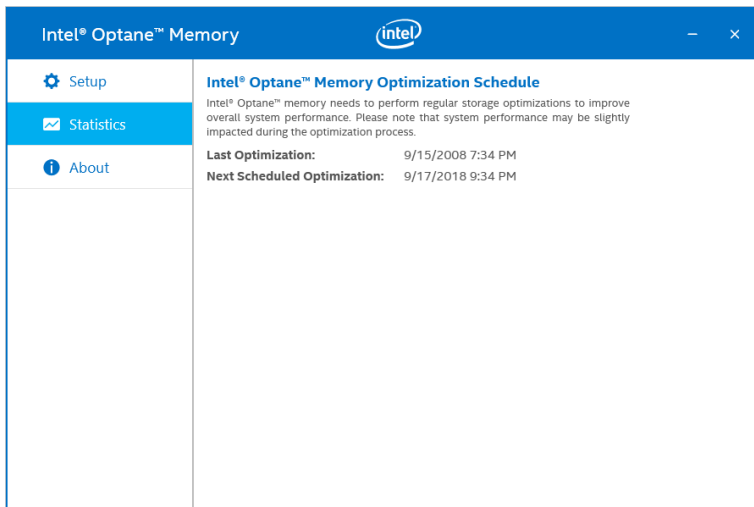


5.5 Statistics Page

1. If the Statistics tab is selected and Intel Optane memory is not enabled, you will see this screen.



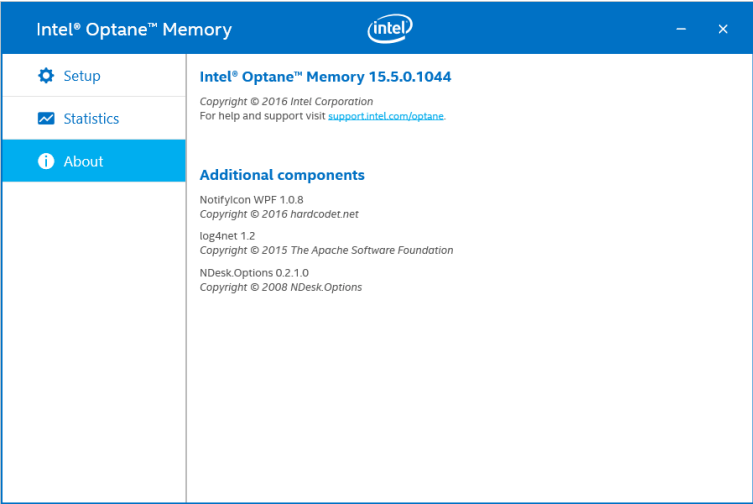
2. If the Statistics tab is selected and Intel Optane memory is enabled, you will see this screen. *Note: The Optimization schedule will only be shown if a 32GB or larger Intel® Optane™ memory module is being used*





5.6 About Page

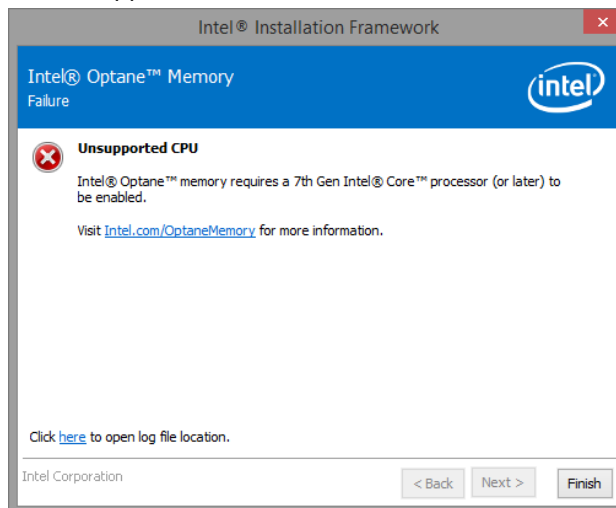
- 1. In about page you can see the version of the package and additional components used by the application.



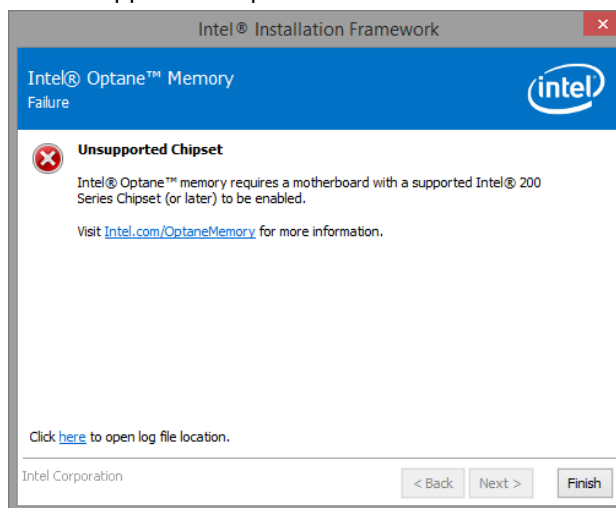
6 *Troubleshooting*

This chapter includes examples of errors that could occur during installation of the Intel® Optane™ memory SW/driver package. For more information and help on these errors, please contact Intel Customer Support at www.intel.com/support/optane-memory.

1. This view will appear if you run the installation package on system with an unsupported CPU.

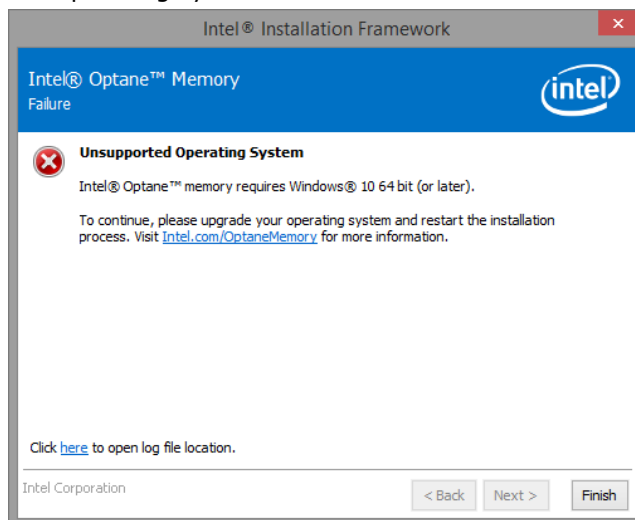


2. This view will appear if you run the installation package on system with unsupported chipset.

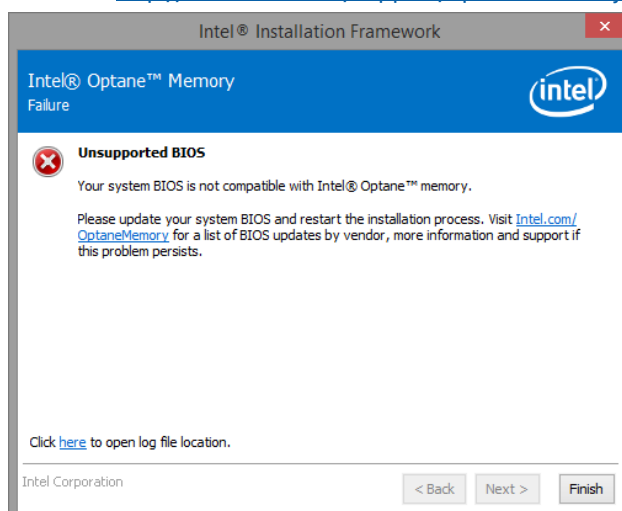




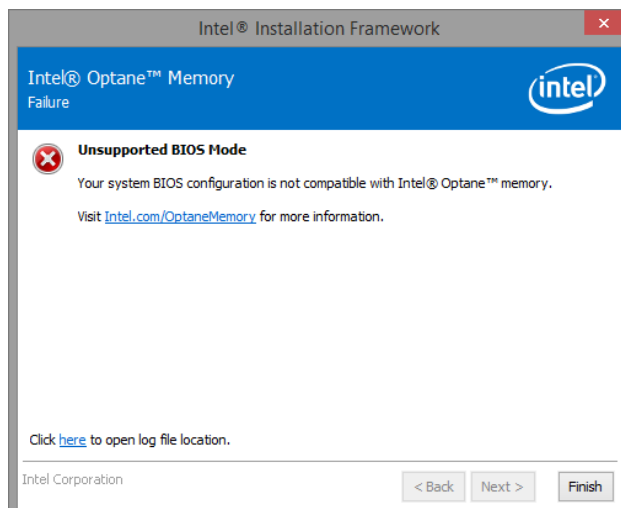
3. This view will appear if you run the installation package on system with unsupported OS. To install Intel® Optane™ memory you need to reinstall your operating system with Windows* 10 64bit.



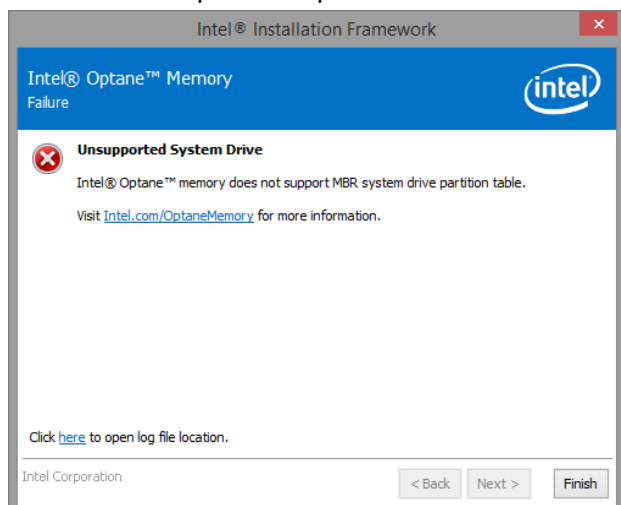
4. This view will appear if you run installation on system with unsupported BIOS. This means that your SATA Controller set to 'AHCI' mode and your BIOS does not support auto-switch from 'AHCI' to 'Intel® RST Premium and System Acceleration with Intel® Optane™ Technology' mode. To resolve this issue, a BIOS update may be required or you may need to switch your BIOS SATA controller mode manually. Consult your system or motherboard vendor's support website for the latest Intel® Optane™ memory supported BIOS. Consult your system or motherboard vendor's user guide for manual BIOS SATA controller mode switching procedures. Visit <http://www.intel.com/support/optane-memory> for more information.



5. This view will appear if you run installation on system with unsupported BIOS mode. Your system is installed on Legacy Mode of BIOS. To resolve this issue, a BIOS update may be required. Consult your Motherboard vendors support website for the latest Intel® Optane™ memory supported BIOS. Visit <http://www.intel.com/support/optane-memory> for more information.

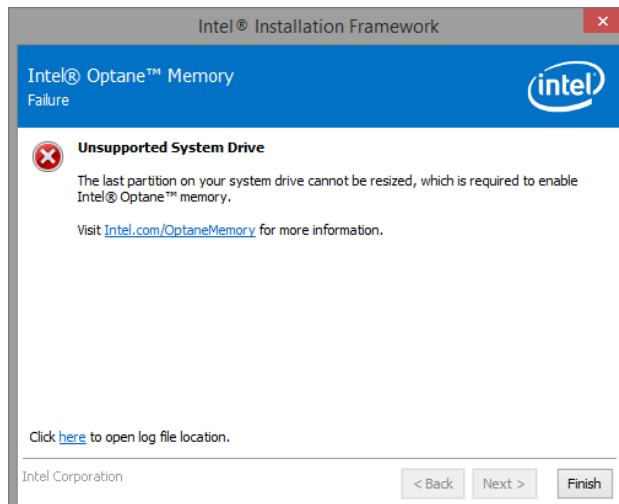


6. This view will appear if you run installation on system on which system drive partition table is MBR, which is not supported. To resolve this issue the type of your system drive partition table will need to be changed to GPT and reinstall your operating system. Consult your system vendors User Manual for instructions on how to complete this process.

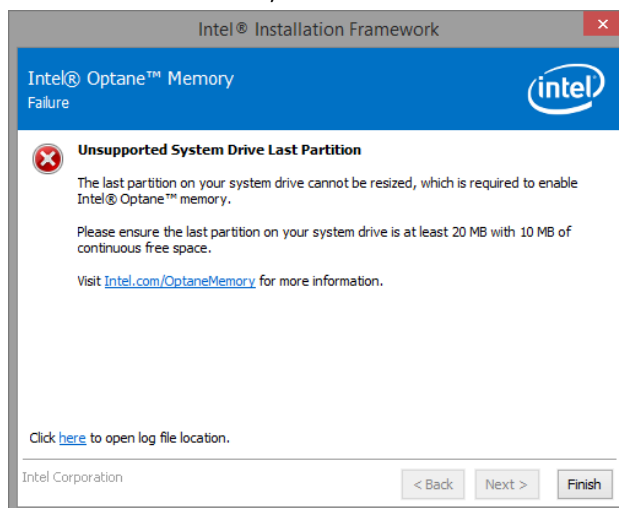




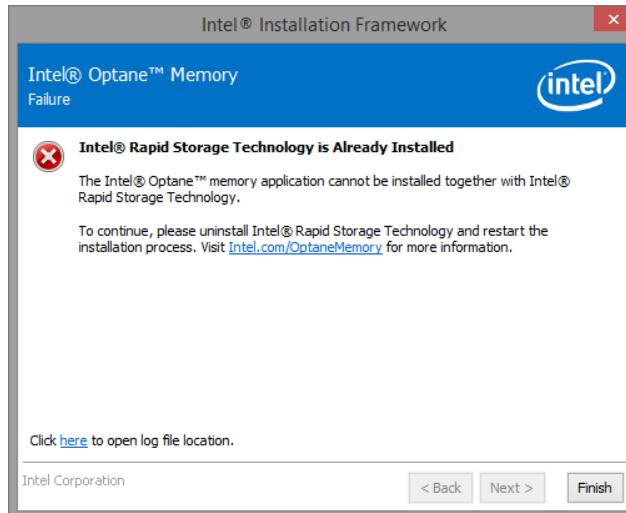
7. This view will appear if you run the installation package on system where the last partition cannot be resized, because it is blocked for resizing.



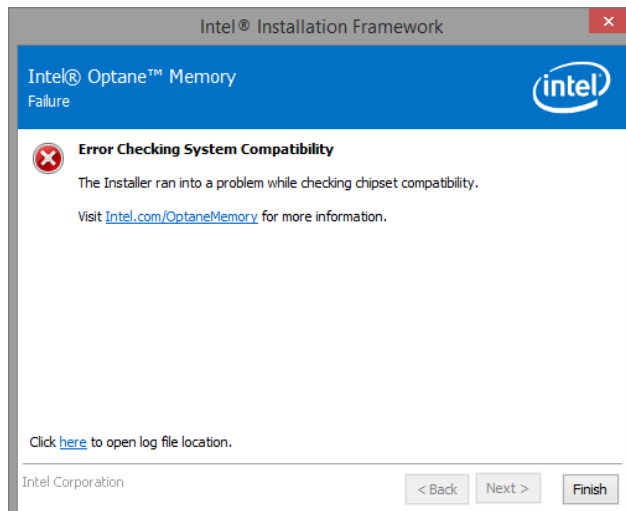
8. This view will appear if you run installation on system where the last partition cannot be resized, because it does not have enough free space.



9. This view will appear if you run the installation package on system on that has the Intel® Rapid Storage Technology user interface is already installed. To continue, uninstall Intel® Rapid Storage Technology user interface and then install the Intel® Optane™ memory application.

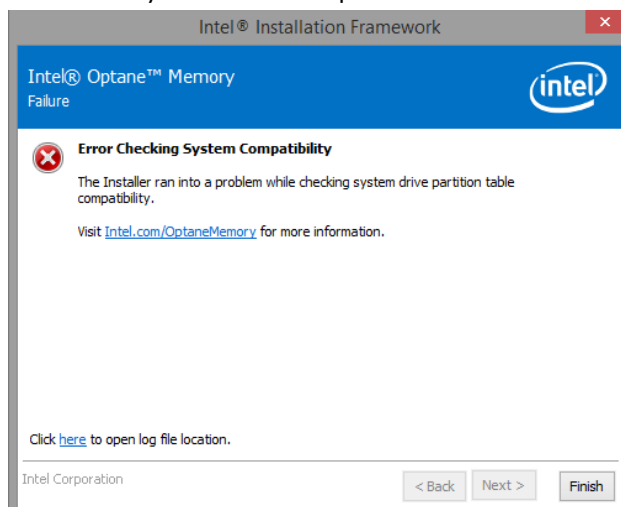


10. This view will appear if you run installation and the installation fails to check for chipset compatibility.

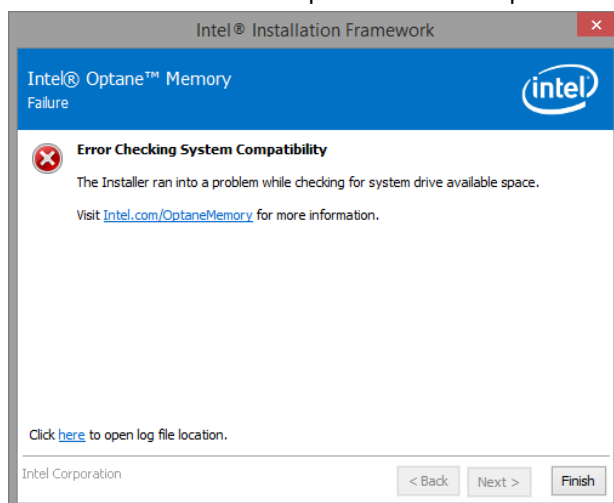




11. This view will appear if you run the installation package and the installation fails to check system for drive partition table.

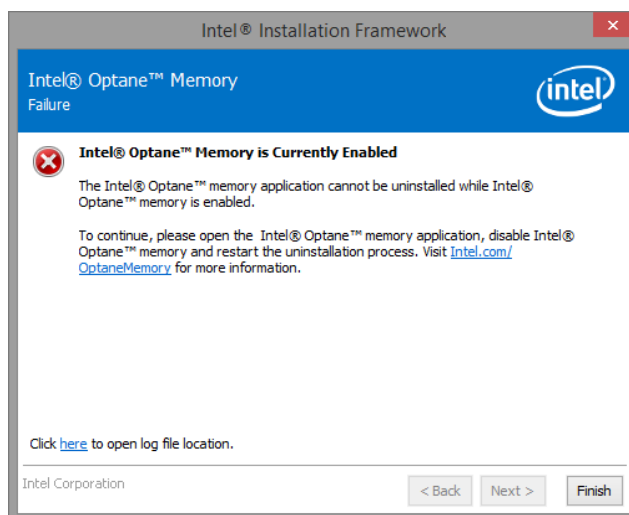


12. This view will appear if you run the installation package and the installation fails to check the available space on the last partition of the system drive.





13. This view will appear if you want to uninstall the Intel® Optane™ memory application, while you have Intel® Optane™ memory enabled. To uninstall Intel® Optane™ memory application, open Intel® Optane™ memory application and disable Intel® Optane™ memory before uninstalling the Intel® Optane™ memory application.





7 Intel® Rapid Storage Technology (Intel® RST) SW/ Driver Package Installation

7.1 Installation and Set-Up Overview

This section provides an overview of steps to install and set-up Intel® Optane™ memory with the Intel® Rapid Storage Technology application.

1. Install the Intel® Optane™ memory module into the connector following the steps outlined in [chapter 2](#). Refer to your system or motherboard manufacture's User Manual to determine the proper M.2 B-M Key connector from the Intel PCH that is remappable and supports the Intel® Optane™ memory module.

Note: On some motherboards this M.2 connector is labeled 'Intel® Optane™ Memory Ready' or 'Intel® Optane™ Ready'.

2. Go to downloadcenter.intel.com, and select the most recent Intel® RST 15.5 or later driver available.
3. If you are installing the Intel® RST SW/driver prior to installing the OS on a computer with System BIOS that does not support automatic SATA Controller switching please follow the steps outlined in [chapter 3](#) and [section 4.4.1](#)
4. Run the executable (setupRST.exe) and install the defaults
5. Reboot System
6. From Windows* desktop, find and launch the Intel® RST UI and Click the 'Intel® Optane™ Memory' tab (The application will open to the 'Status' page).
7. Click the "Enable" link to start the enabling process.
8. Wait for the User Interface prompts for a system reboot. Then reboot the system.

Note: Some motherboards may require a BIOS update before the Intel® Optane™ memory SW/driver package can be installed. Consult your Motherboard vendor's support website for the latest Intel® Optane™ memory supported BIOS. Visit www.intel.com/support/optane-memory for more information.

7.2 Downloading the Intel® Rapid Storage Technology package

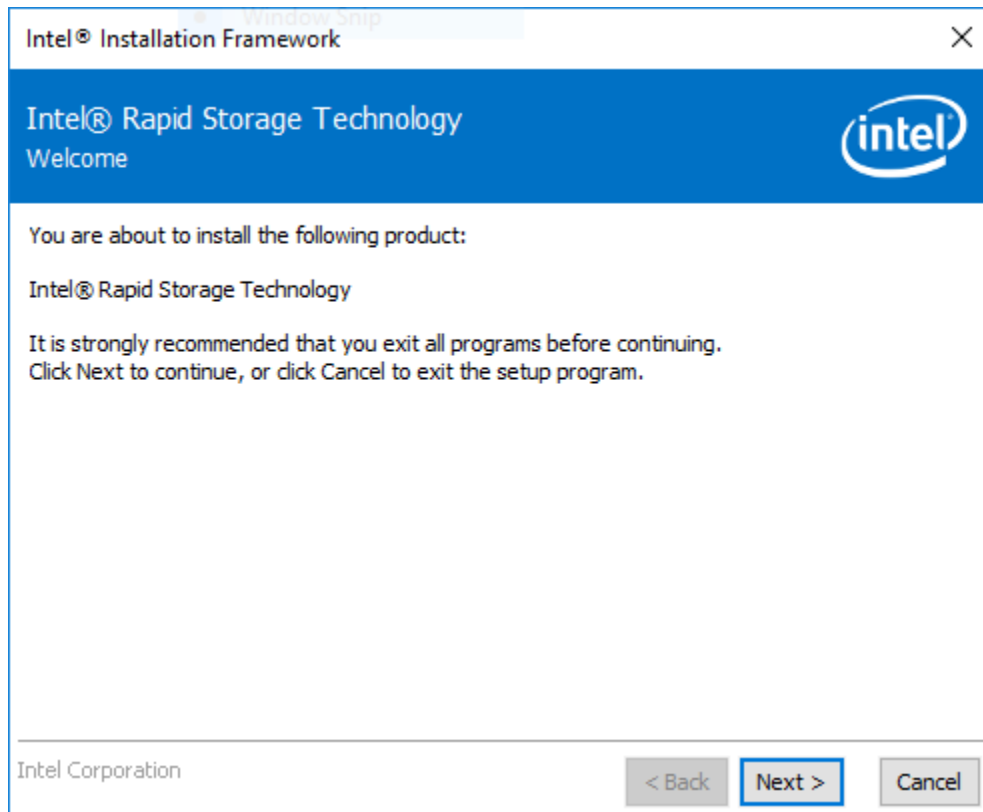
Go to downloadcenter.intel.com, and select the most recent Intel® Rapid Storage Technology 15.5 or later driver available.



7.3 Installation

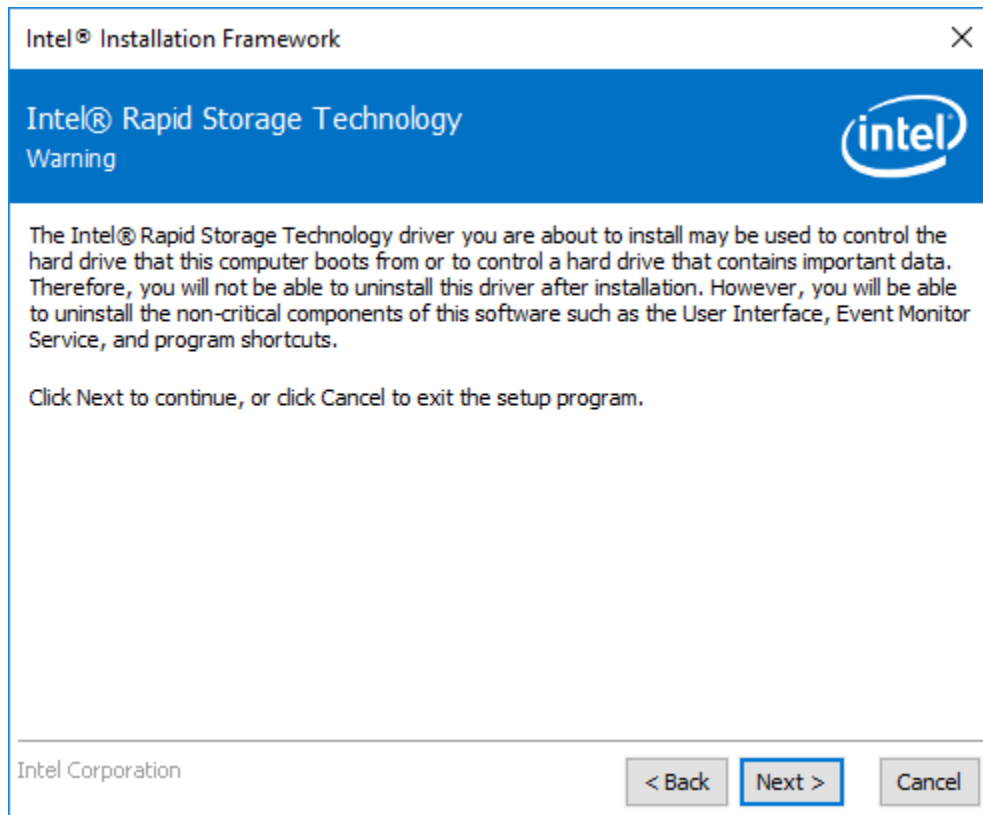
To install the Intel® Rapid Storage Technology SW/driver package you need to run the executable setupRST.exe from the package and complete installation process according to screens below:

1. Welcome screen. Click Next to continue.





2. Warning screen. Click Next to continue.





3. License Agreement screen. Accept the license agreement and click Next to continue.

Intel® Installation Framework

Intel® Rapid Storage Technology
License Agreement

INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single User)

IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.

Please Also Note:

- * If you are an Original Equipment Manufacturer (OEM), Independent Hardware Vendor (IHV), or Independent Software Vendor (ISV), this complete LICENSE AGREEMENT applies;
- * If you are an End-User, then only Exhibit A, the INTEL SOFTWARE LICENSE AGREEMENT, applies.

For OEMs, IHVs, and ISVs:

LICENSE. This Software is licensed for use only in conjunction with Intel component products. Use of the Software in conjunction with non-Intel component products is not licensed.

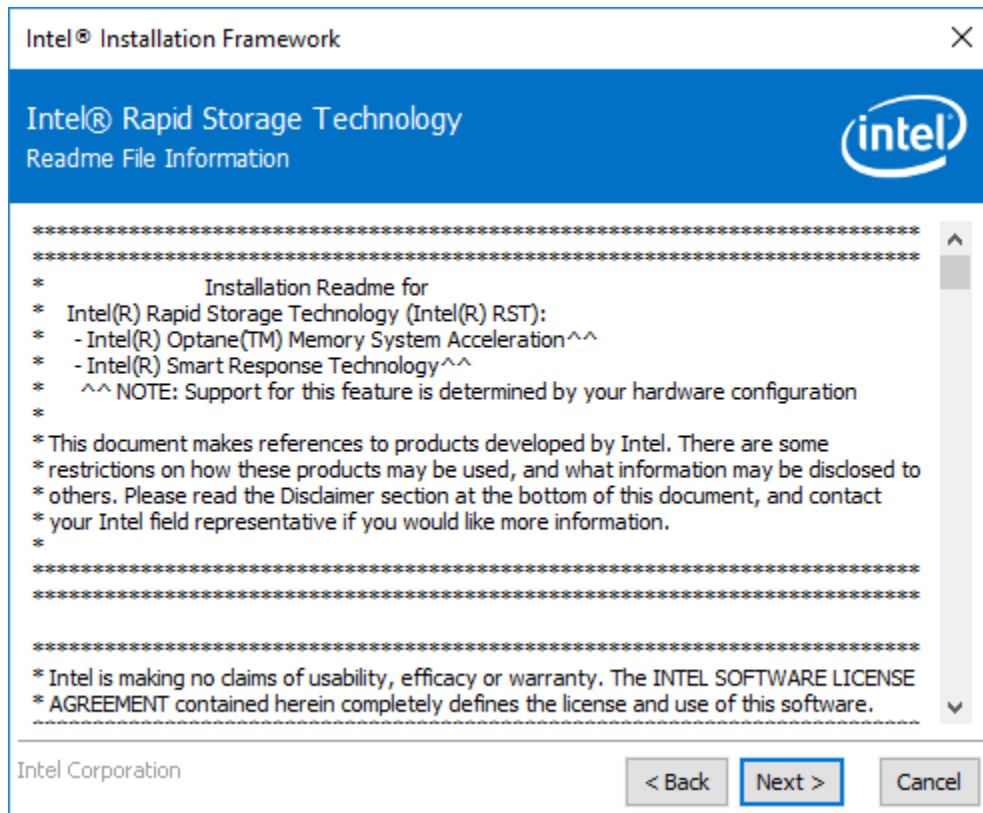
☐ I accept the terms in the License Agreement.

Intel Corporation

< Back Next > Cancel



4. Readme File Information. Read and click Next to continue.



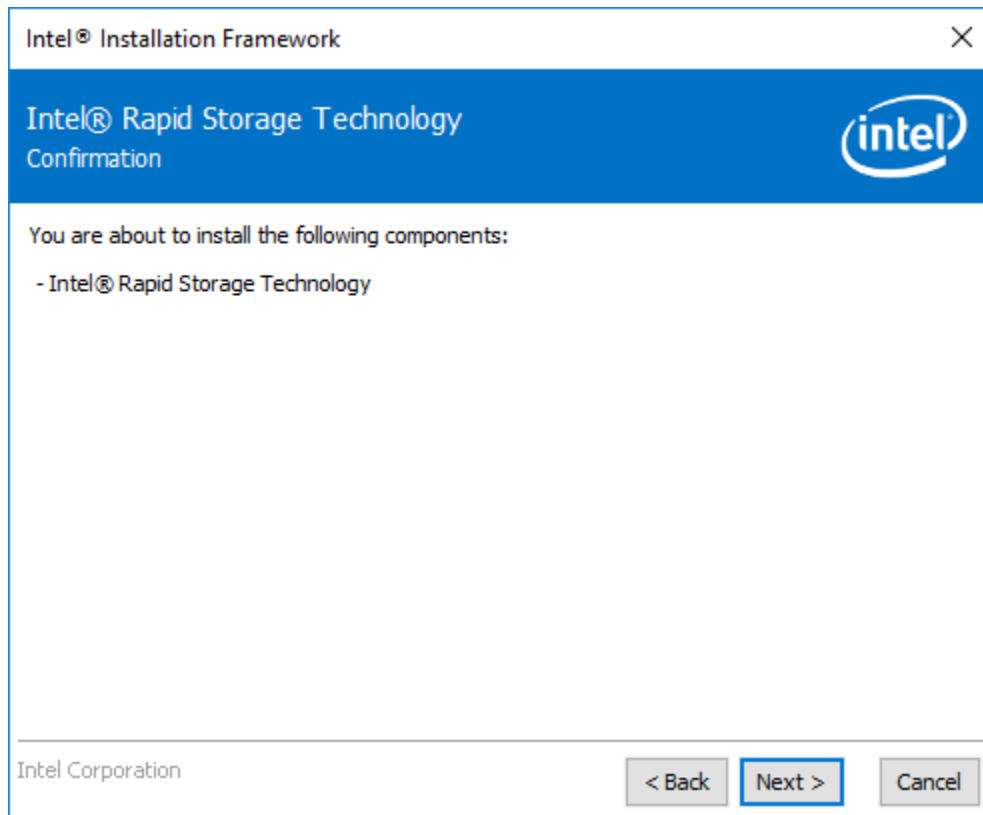


5. Destination folder. Specify the destination folder to install the Intel® Rapid Storage Technology application and click Next to continue.

The screenshot shows a window titled "Intel® Installation Framework" with a close button (X) in the top right corner. The window has a blue header bar with the text "Intel® Rapid Storage Technology" and "Destination Folder" on the left, and the Intel logo on the right. Below the header, there is a text instruction: "Click Next to install to the default folder, or click Change to choose another destination folder." A text box below this contains the default path: "C:\Program Files\Intel\Intel(R) Rapid Storage Technology". To the right of the text box is a "Change..." button. At the bottom of the window, there is a footer area with "Intel Corporation" on the left and three buttons: "< Back", "Next >" (which is highlighted with a blue border), and "Cancel".

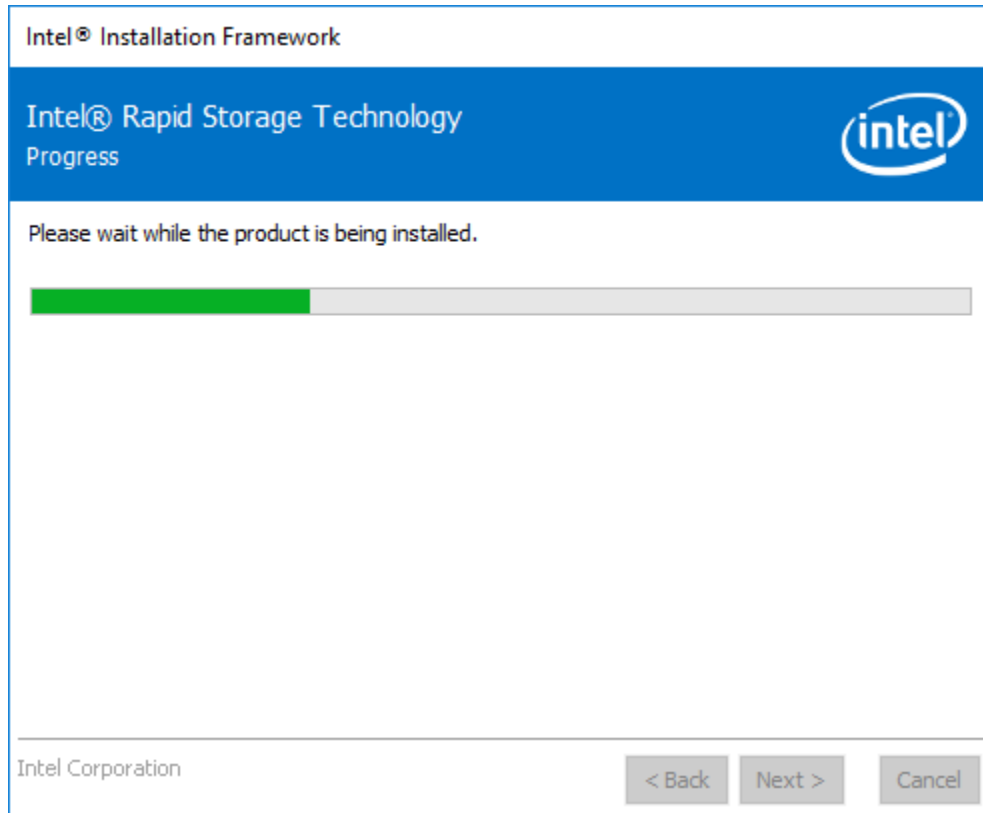


6. Confirmation screen. Click Next to continue.



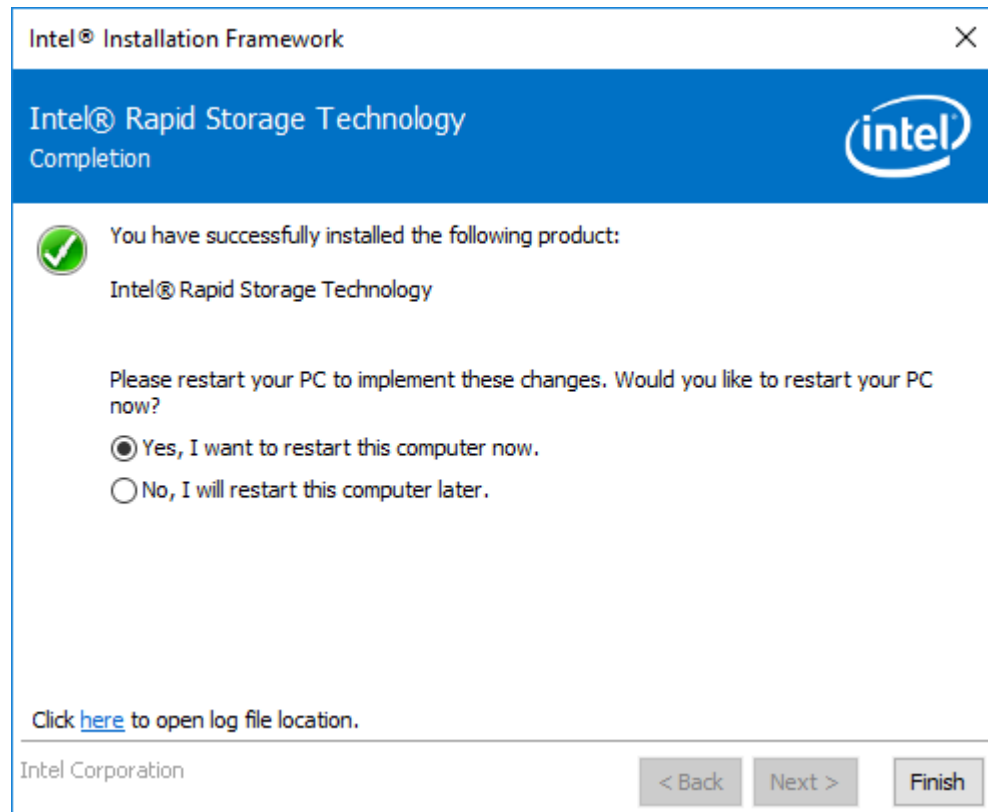


7. Progress screen Installation is now in progress, once finished the next screen will appear.





8. Finish screen. After restart you can use Intel® Rapid Storage Technology application as described in [chapter 8](#).





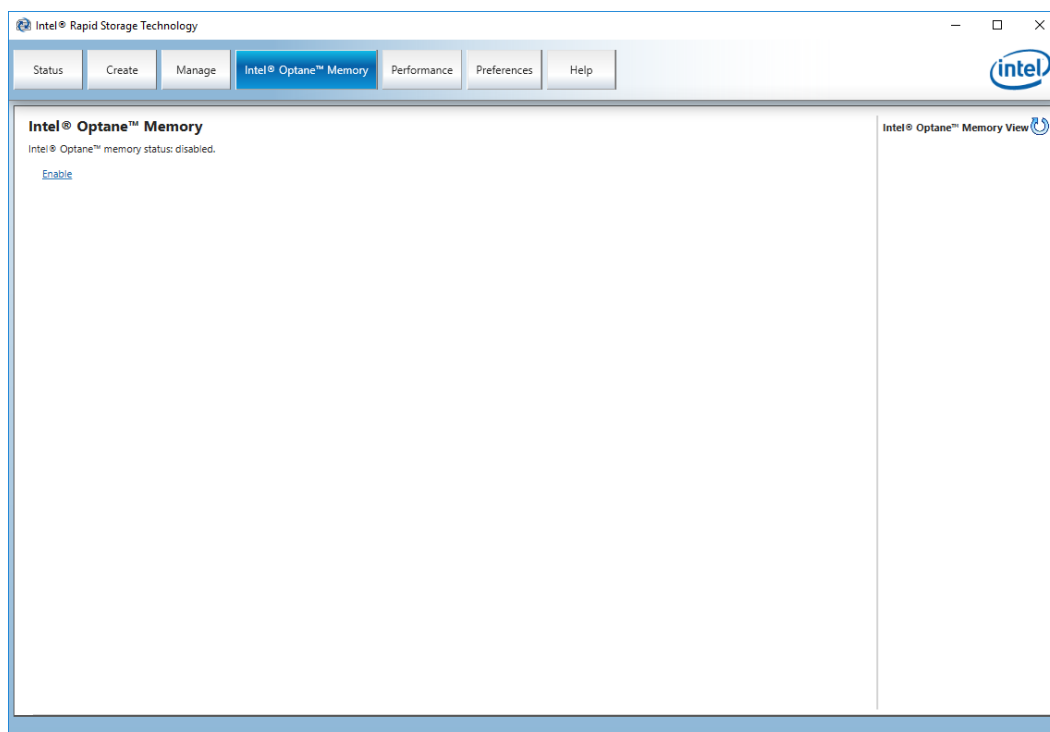
8 *Using Intel® Optane™ Memory with Intel® Rapid Storage Technology Application.*

8.1 Enabling Intel® Optane™ memory.

To enable Intel® Optane™ memory using Intel® Rapid Storage Technology application, open Intel® Rapid Storage Technology application on the platform which fulfills the requirements described in [chapter 1](#) and click on the "Intel® Optane™ memory" tab as you can see on the screen from figure below.

Note: The "Intel® Optane™ memory" tab will only appear in the Intel® Rapid Storage Technology 15.5 or later SW/driver package that platform which fulfill the requirements described in [chapter 1](#).

1. Intel® Optane™ memory view in Intel® Rapid Storage Technology application.



When you click Enable, a new Window will appear with the title "Enable Intel® Optane™ memory" (see figure below).



2. Enable Intel® Optane™ memory window.

Enable Intel® Optane™ memory

Select a compatible fast drive:

PCIe SSD on Controller 3, Port 0 (15 GB)

System drive:

SATA disk on Controller 0, Port 2 (233 GB) (system)

After Intel® Optane™ memory is enabled, please restart your PC before performing any partition or formatting operations.

Ensure that the PC is connected to an AC power source during this process.

This process will take some time and may negatively impact system performance. All data on the fast drive will be erased. Do you want to enable Intel® Optane™ memory now?

[More help](#)

Yes No

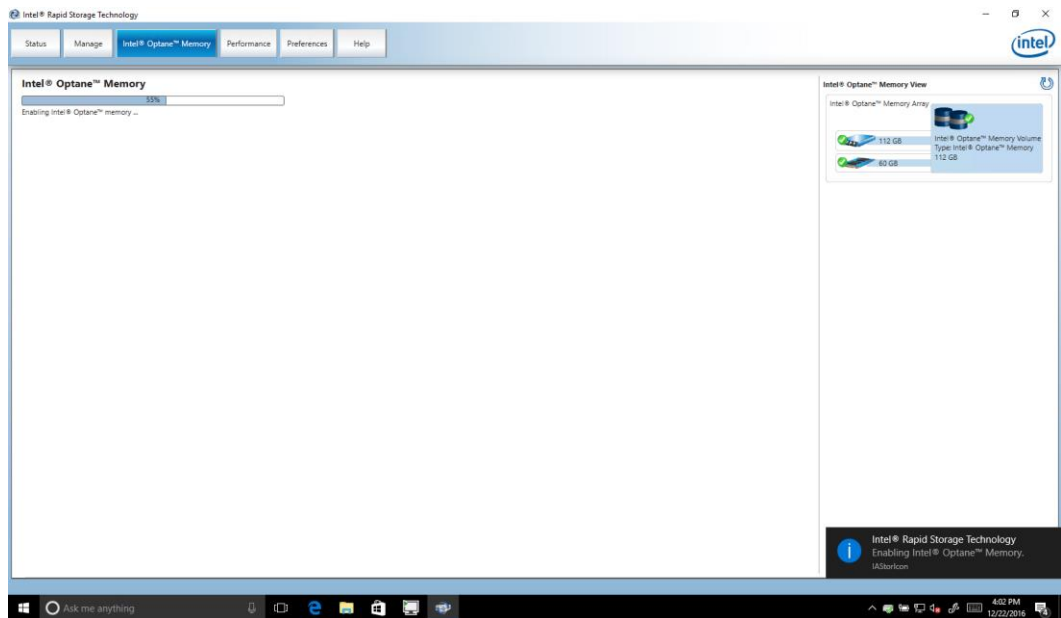
Then you should choose one of compatible fast drives which will accelerate your system disk and click Yes button to continue enabling process. The compatible drive option will only appear if there are more than one Intel® Optane™ memory module attached to the system.

Once a drive has been selected, the view on the Intel® Optane™ memory page will change to show the working process with progress bar (see figure below). After enabling there will appear "Reboot view" in which there will be "Reboot" button. You should click "Reboot" button to complete the process. When you click "Reboot" button, your computer will be restarted.

After restart, when you open Intel® Rapid Storage Technology you will see that Intel® Optane™ memory is enabled (see figure in step 4).



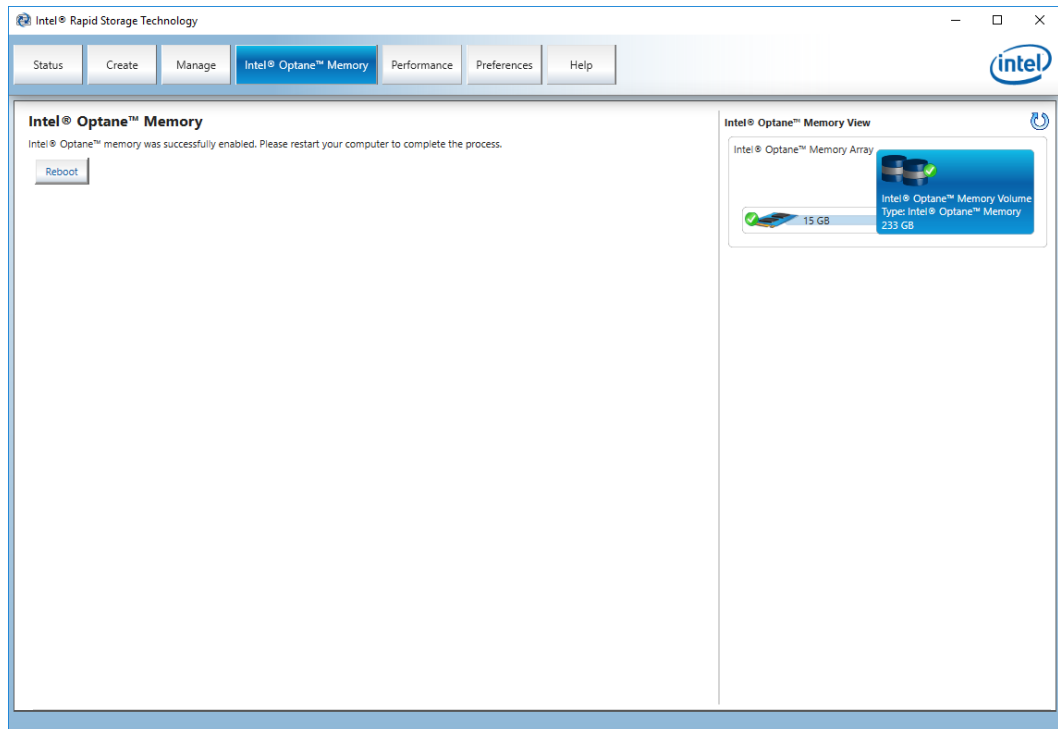
3. Intel® Optane™ memory is enabling.





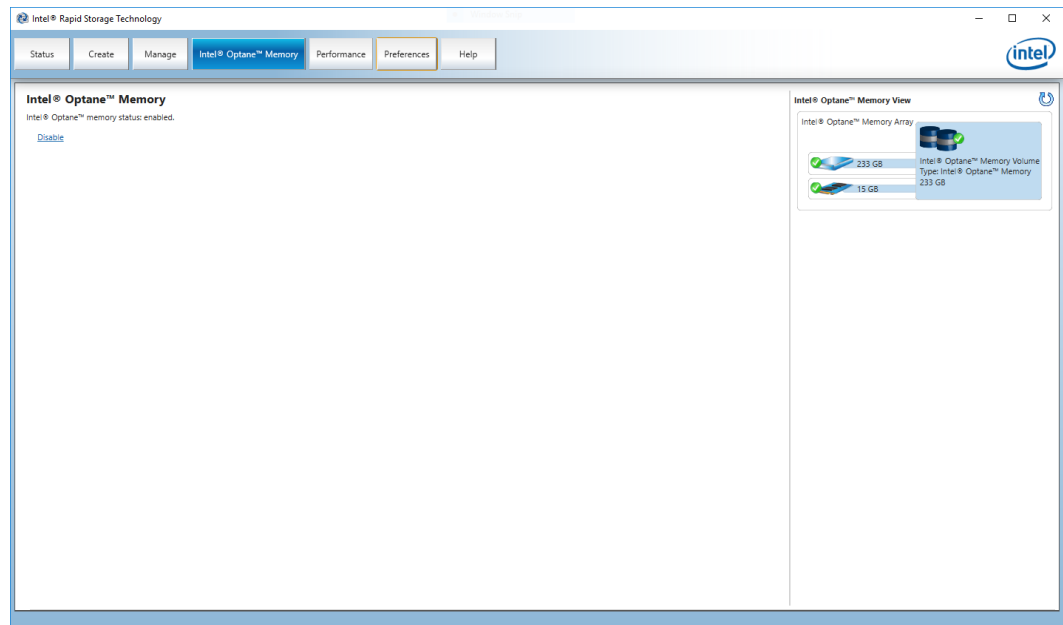
4. Intel® Optane™ memory is enabled before reboot. After clicking reboot button the system will be restarted.

Warning: System MUST BE restarted and NOT shutdown. Shutdown may result in incorrect display of drive volumes.





5. Intel® Optane™ memory is enabled after reboot.



8.2 Disabling Intel® Optane™ Memory.

To disable Intel® Optane™ memory using the Intel® Rapid Storage Technology application you need to open the Intel® Rapid Storage Technology application and go to "Intel® Optane™ Memory" page as you can see on the screen from step 1.

Warning: DO NOT try to remove the Intel® Rapid Storage Technology driver after disabling Intel® Optane™ memory, this will result in a BSOD.

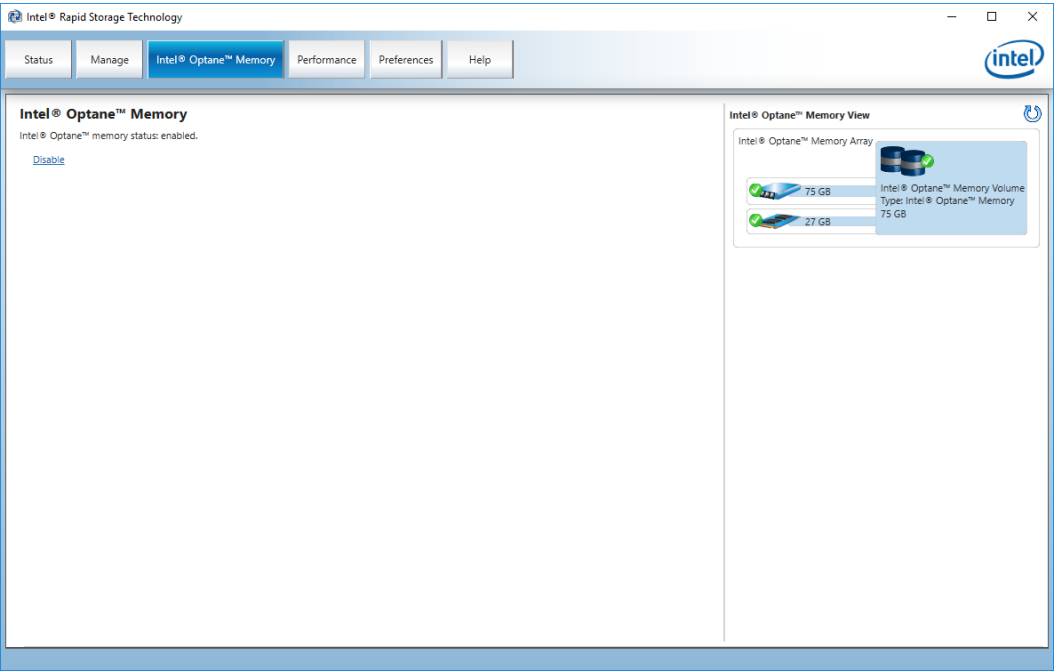
When click "Disable" button, you will see an extra warning message as you can see on the screen from step 2.

After accepting the warning and clicking "Yes" button, the operation of disabling Intel® Optane™ memory will start. You will be able to see progress of the process (figure from step 3).

After disabling there will appear "Reboot view" in which there will be "Reboot" button. You should click "Reboot" button to complete the process. When you click "Reboot" button, your computer will be restarted (figure from step 4).



1. Intel® Optane™ Memory is enabled.

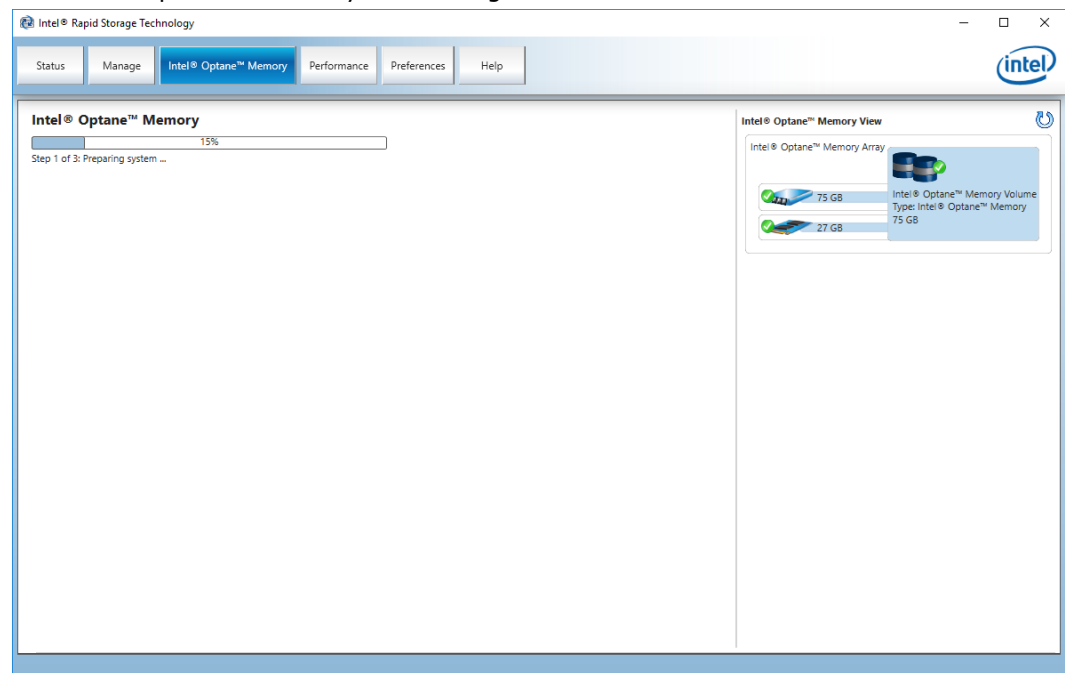


2. Warning popup before disabling Intel® Optane™ memory.



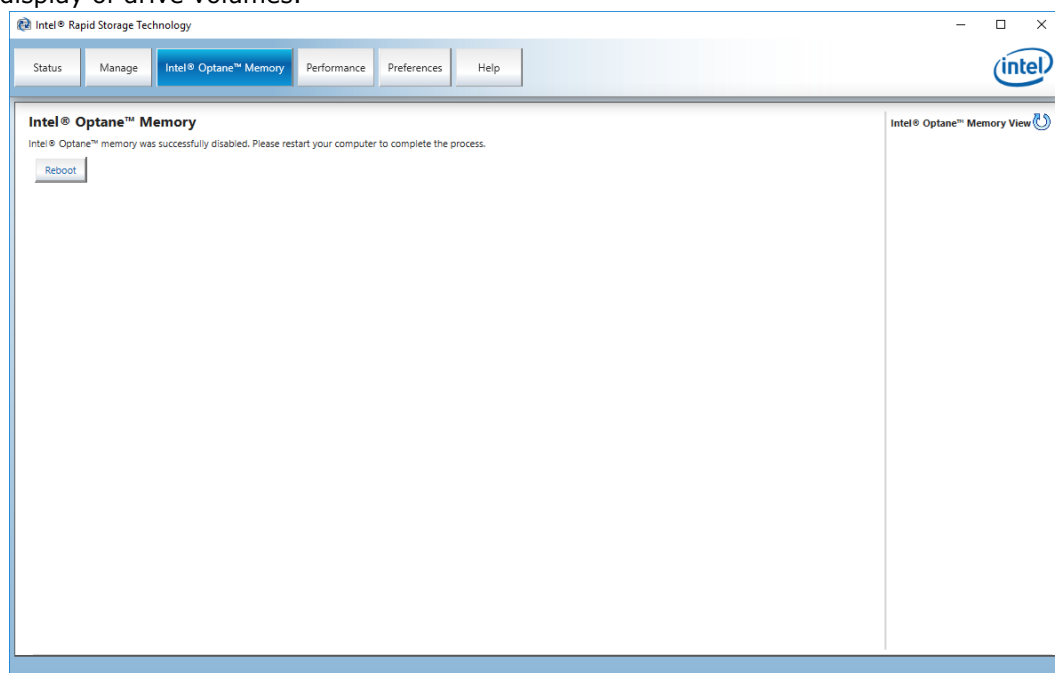


3. Intel® Optane™ memory is disabling.



4. Intel® Optane™ memory is disabled before reboot. After clicking reboot button the system will be restarted.

Warning: System MUST BE restarted and NOT shutdown. Shutdown may result in incorrect display of drive volumes.





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