ThinkStation Windows 10 Installation

Version 1.0

1. Introduction

As a follow up to the Windows 8 operating system, Microsoft released Windows 10 in the fall of 2015. Windows 10 brought with it a new user interface that merged the benefits of Windows 7 and Windows 8 along with several other enhanced features and architectural improvements.

The purpose of this document is to instruct users on the methods used to install or upgrade to the Windows 10 operating system on ThinkStation P500, 700, and 900 platforms.

2. Windows 10 Installation Using Intel sSATA Controller

Before starting the installation of Windows 10, it is important to ensure system BIOS is set to the proper mode for the type of installation to be used. While the OS can be installed with BIOS in Legacy mode and support MBR boot partitions, the default installation mode is with system BIOS in pure UEFI mode supporting GPT boot partitions. Using pure UEFI mode ensures the system is compliant with all Microsoft Windows 10 Logo Certification requirements as well as supporting features like Secure Boot. UEFI mode will also allow users to install the OS to partitions larger than 2TB, which is a limitation when using MBR boot partitions.

The steps below detail how users should set up their BIOS based on the desired boot partition type (GPT or MBR).
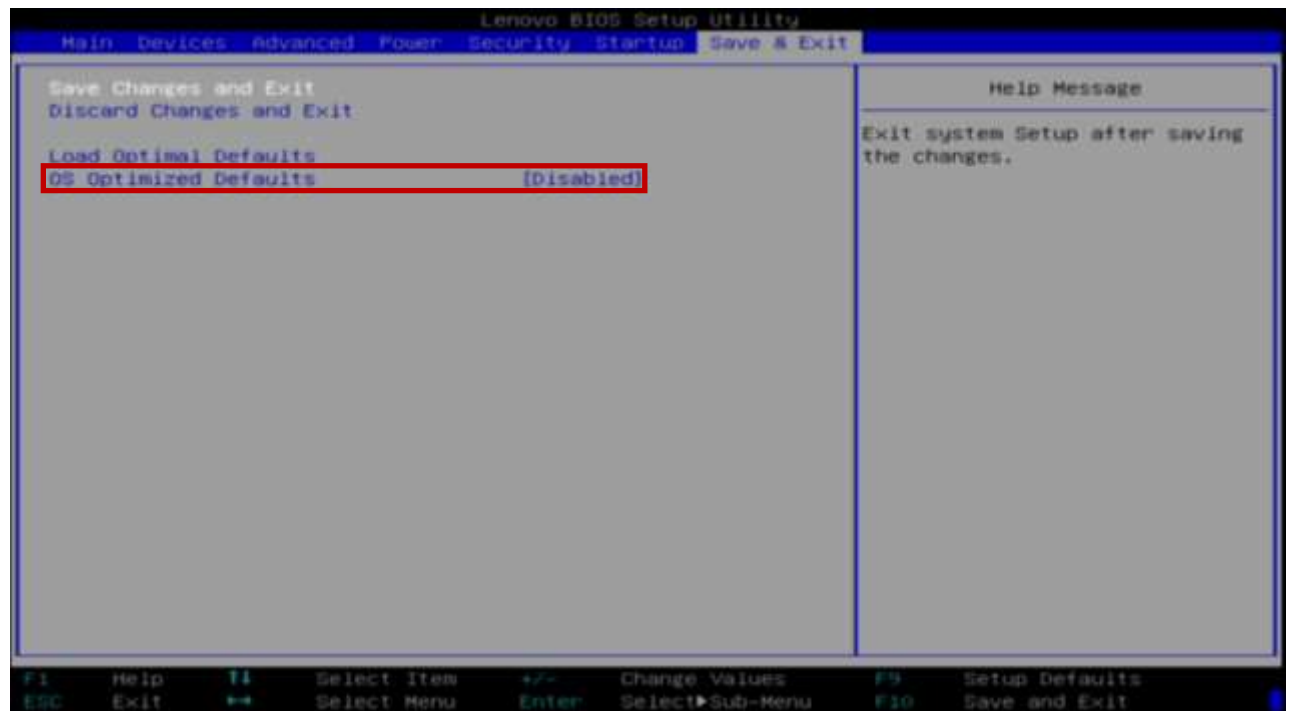
Changing BIOS settings to enable pure UEFI mode

1. As the system is booting through BIOS POST screens, press F1 to enter BIOS F1 Setup Menu:
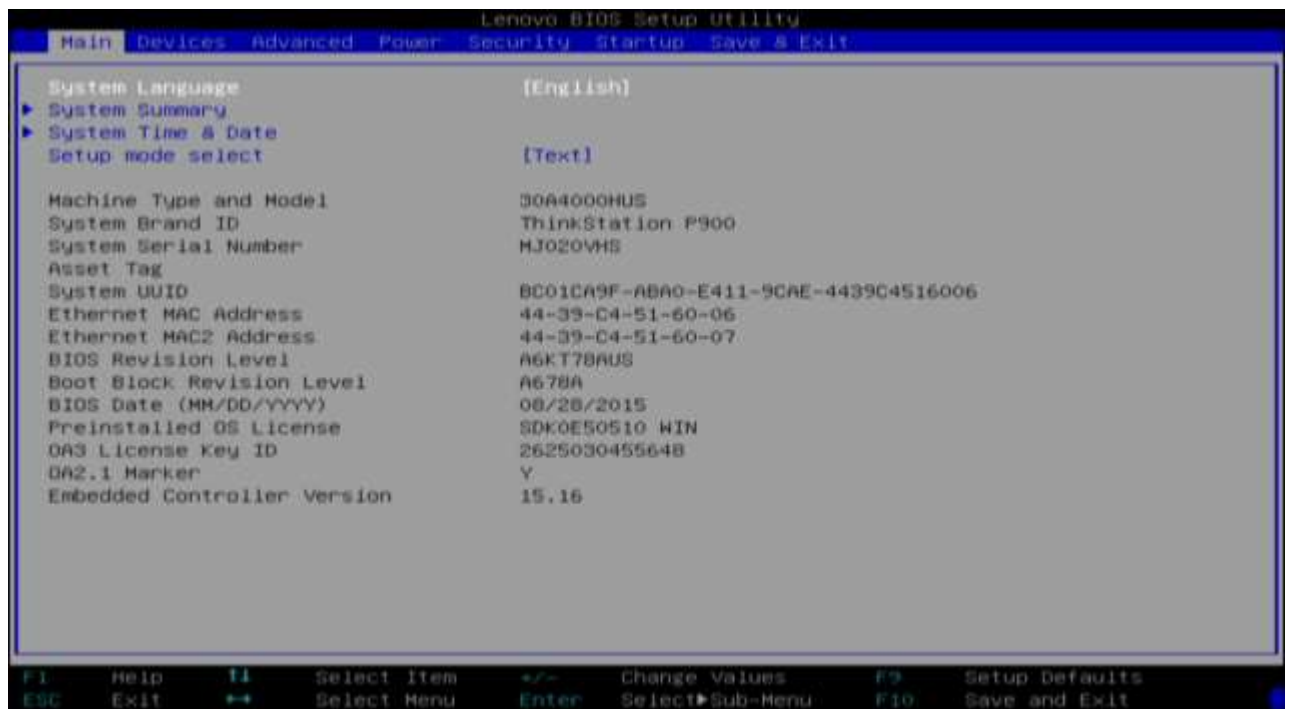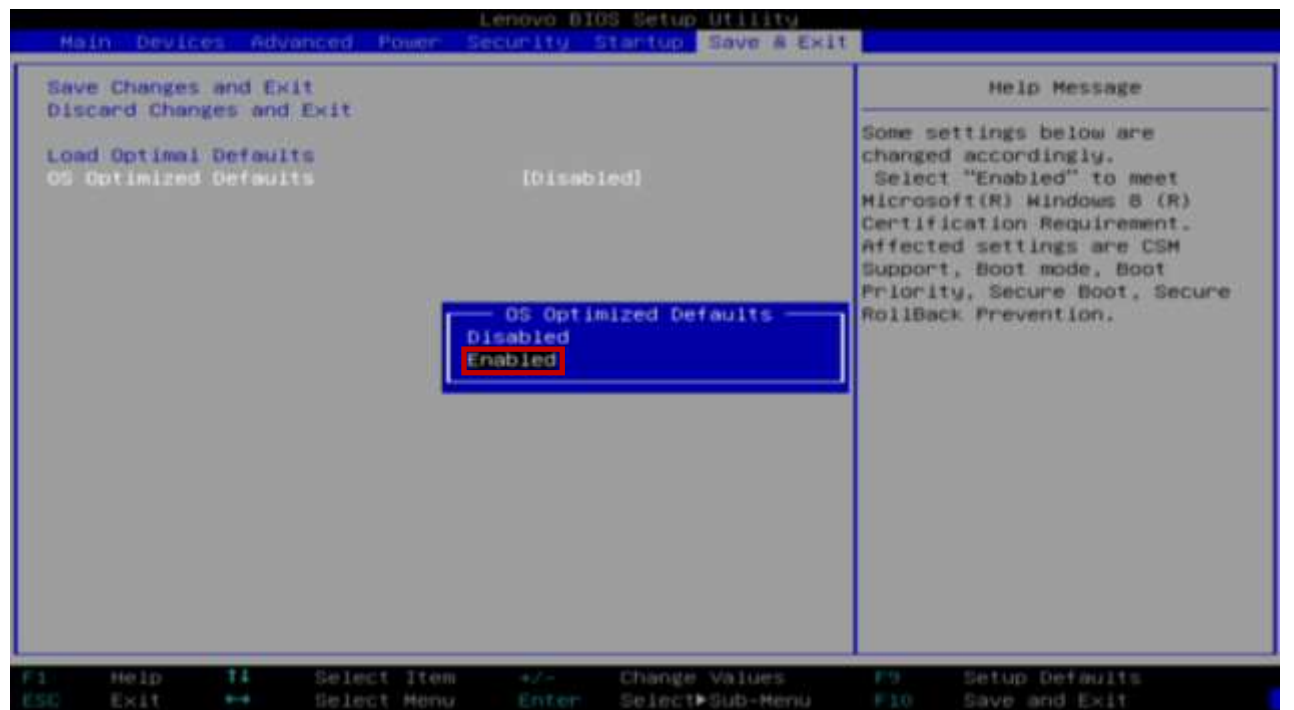

2. Use the left/right arrow keys to select the "Save & Exit" tab at the top.
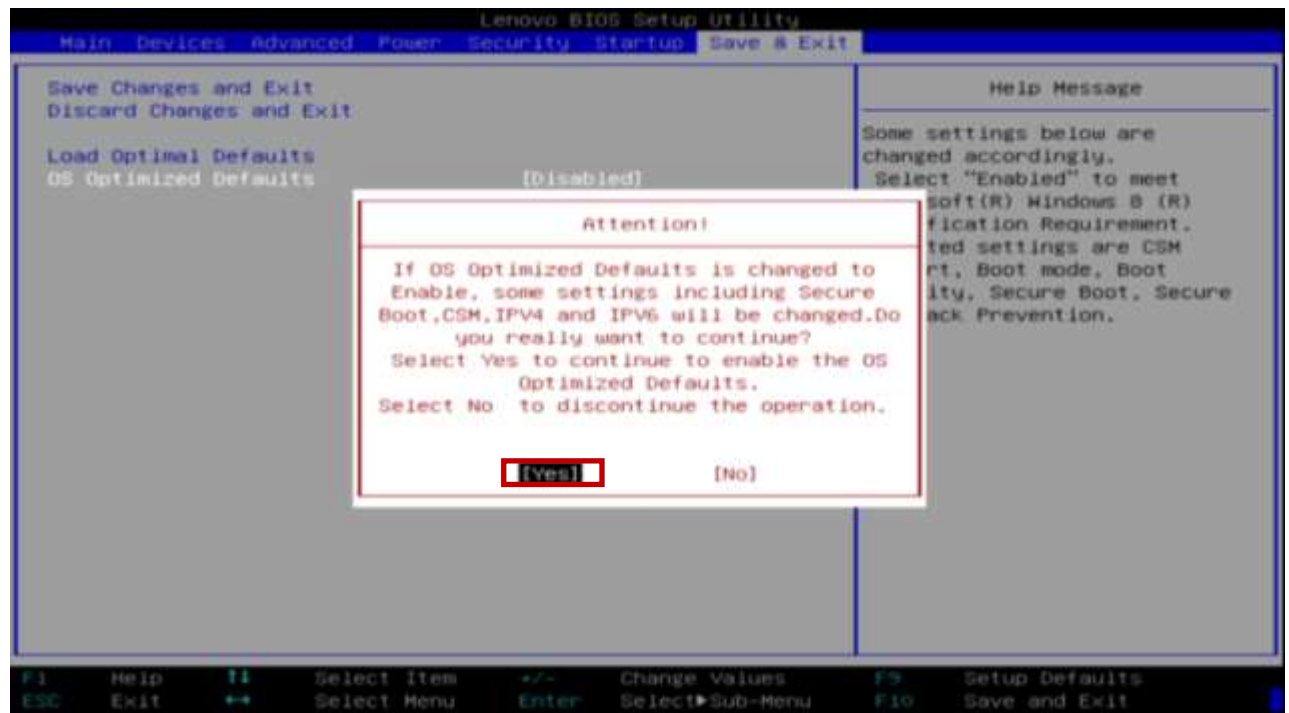
3. From this tab, use the down arrow key to select 'OS Optimized Defaults' and press Enter.

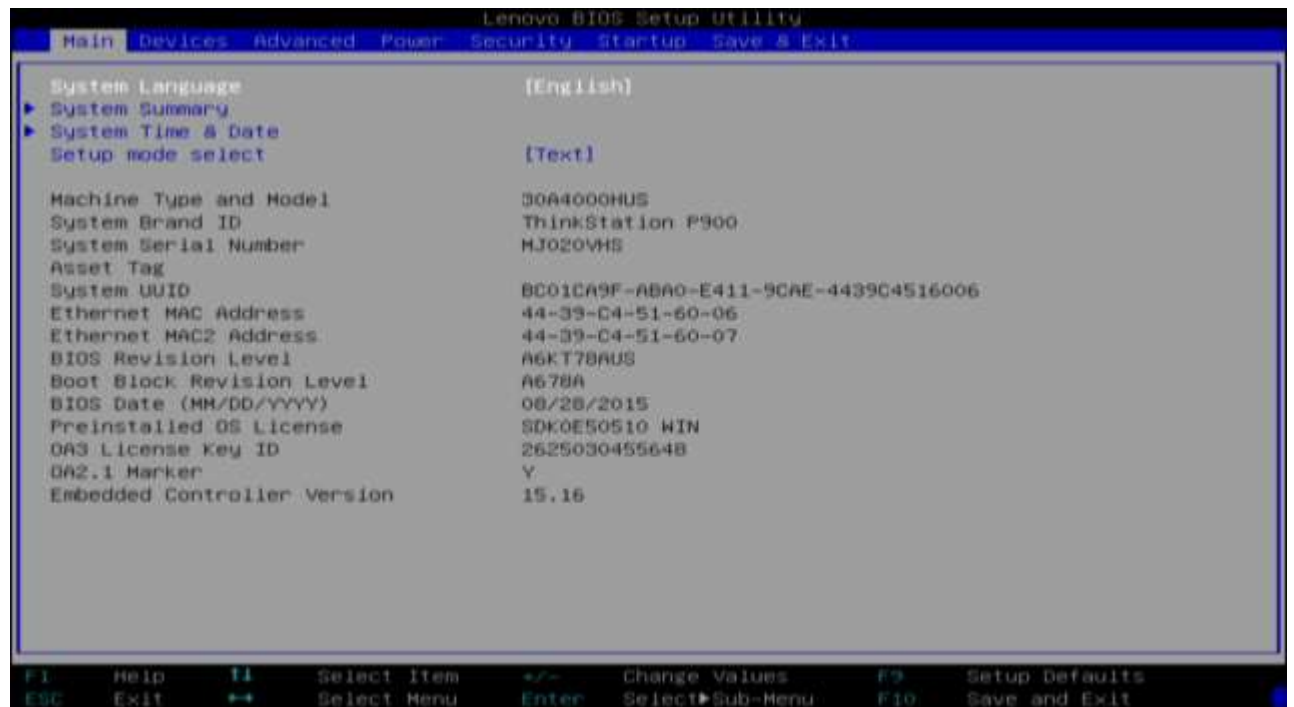
4. Select 'Enabled' and press Enter.

5. A confirmation window will appear. Select 'Yes' and press Enter.

6. Press F10 to save settings and reboot the system. Continue on to OS installation.

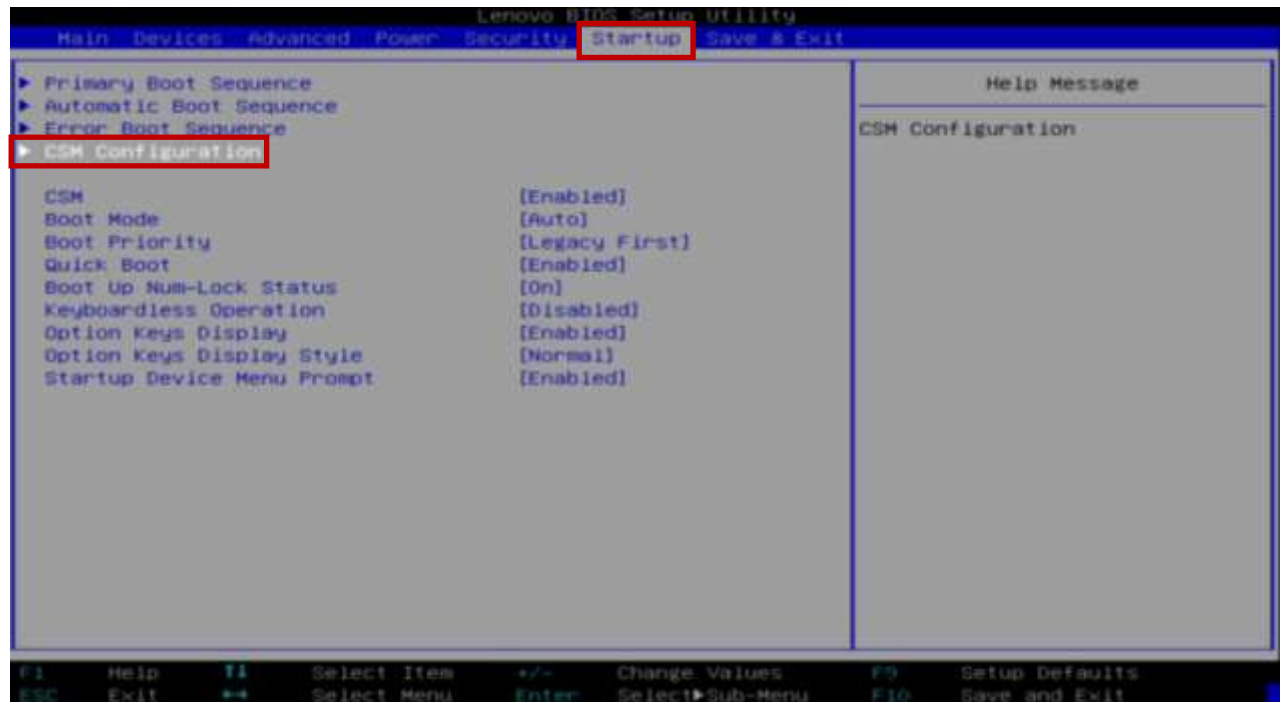**Changing BIOS settings to enable pure UEFI mode**

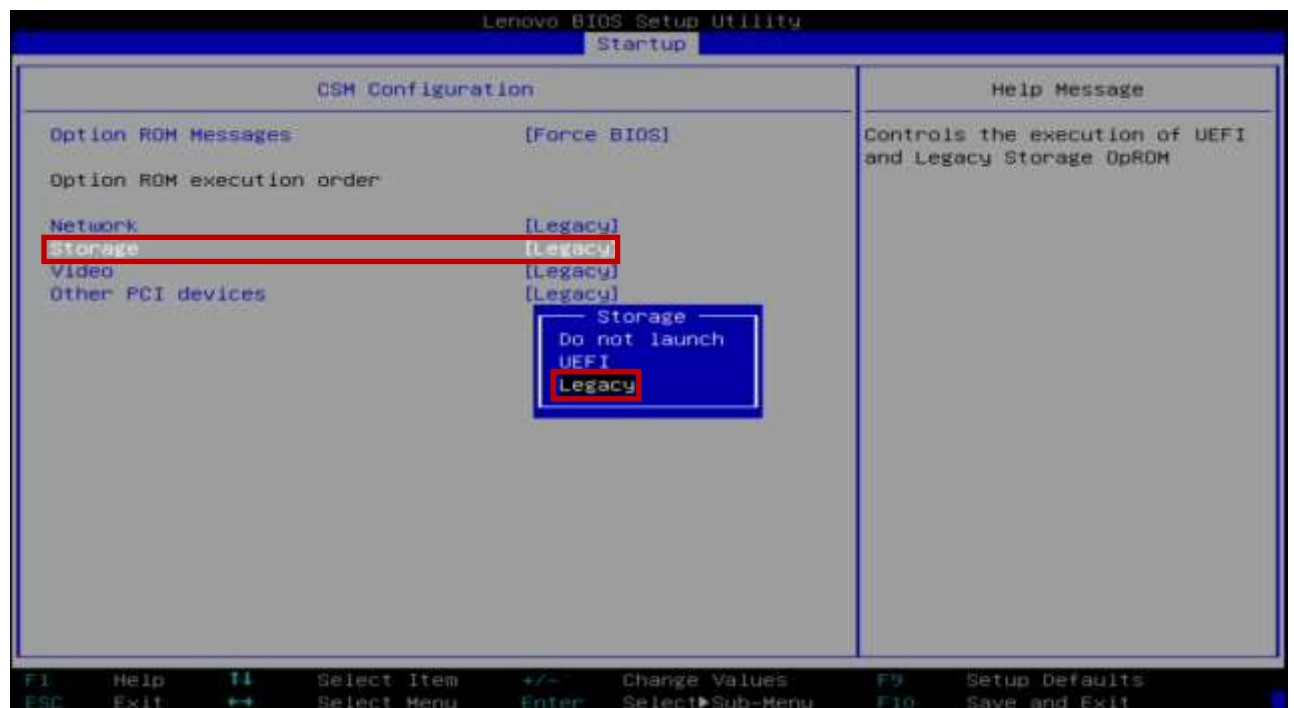1. As the system is booting through BIOS POST screens, press F1 to enter BIOS F1 Setup Menu:

2. Use the left/right arrow keys to select the 'Save & Exit' tab at the top.
3. Ensure OS Optimized Defaults is set to 'Disabled'.
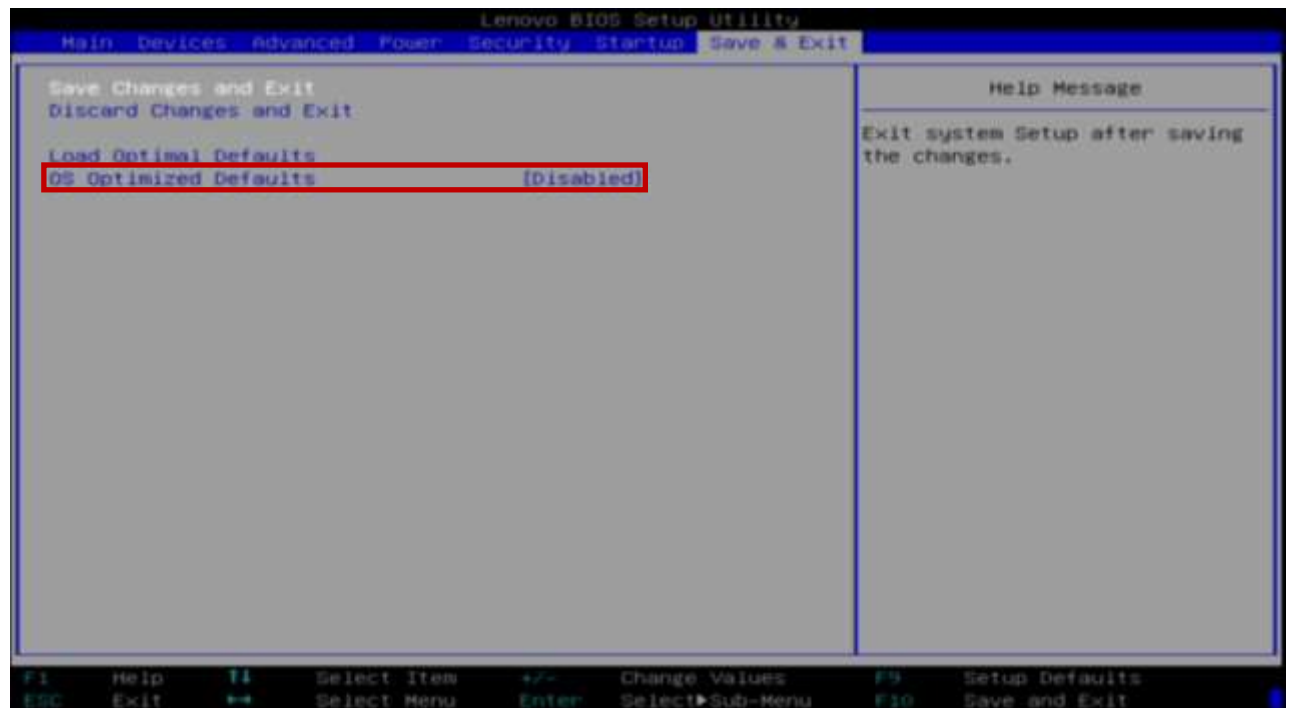
4. Tab over using the arrow keys to the 'Startup' menu tab at the top of the screen. From this tab, use the up and down arrow keys to select 'CSM Configuration' option and press 'Enter'.

```
                        Lenovo BIOS Setup Utility
    Main  Devices  Advanced  Power  Security  Startup  Save & Exit

  ► Primary Boot Sequence                              Help Message
  ► Automatic Boot Sequence
  ► Error Boot Sequence                          CSM Configuration
  ► CSM Configuration

    CSM                              [Enabled]
    Boot Mode                        [Auto]
    Boot Priority                    [Legacy First]
    Quick Boot                       [Enabled]
    Boot Up Num-Lock Status          [On]
    Keyboardless Operation           [Disabled]
    Option Keys Display              [Enabled]
    Option Keys Display Style        [Normal]
    Startup Device Menu Prompt       [Enabled]



  F1    Help      ↑↓   Select Item    +/-     Change Values    F9    Setup Defaults
  ESC   Exit      ←→   Select Menu    Enter   Select►Sub-Menu  F10   Save and Exit
```

5. Ensure the Storage option is set to 'Legacy'.

```
                        Lenovo BIOS Setup Utility
                              Startup

            CSM Configuration                            Help Message

    Option ROM Messages              [Force BIOS]   Controls the execution of UEFI
                                                    and Legacy Storage OpROM
    Option ROM execution order

    Network                          [Legacy]
    Storage                          [Legacy]
    Video                            [Legacy]
    Other PCI devices                [Legacy]
                                        ┌───── Storage ─────┐
                                        │  Do not launch    │
                                        │  UEFI             │
                                        │  Legacy           │
                                        └───────────────────┘



  F1    Help      ↑↓   Select Item    +/-     Change Values    F9    Setup Defaults
  ESC   Exit      ←→   Select Menu    Enter   Select►Sub-Menu  F10   Save and Exit
```
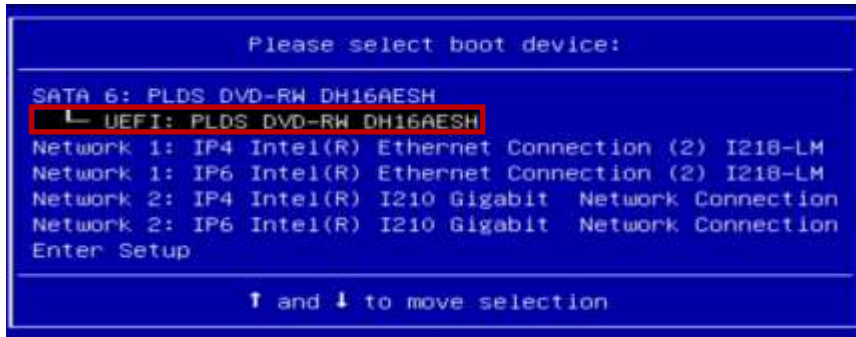
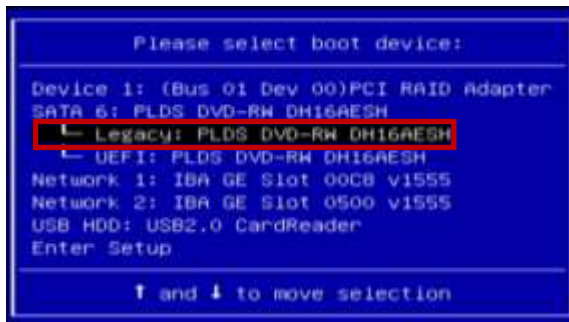6. Press G10 to save the BIOS settings and reboot the system. Continue on to OS installation.

Windows 10 Retail Installation Using Intel sSATA Controller

➔ _**Note**: Drive capacity greater than 2TB must be installed in UEFI/GPT mode. Legacy/MBR installation limits drive capacity to 2TB or less._
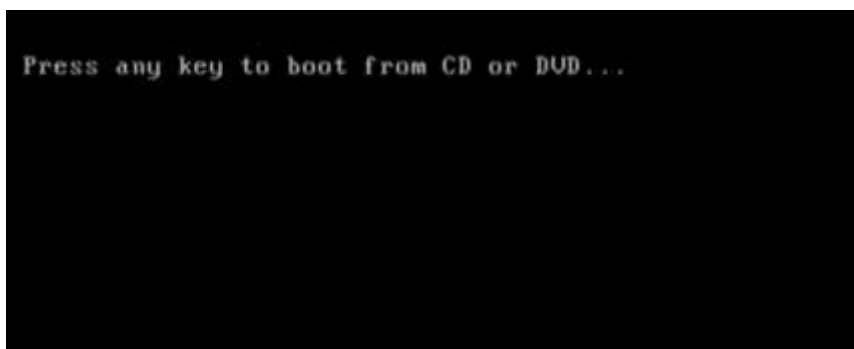
1. As the system is booting through the Lenovo BIOS POST screens, press the F12 key for the BIOS startup menu option. Once the startup menu appears, choose one of the two options below
   a. Select the 'UEFI' option for the device containing the installation media to install the OS to a **GPT partition**.

   b. Select the 'Legacy' option for the device containing the installation media to install the OS to a **MBR partition.**

2. The system should then boot the Windows 10 image installation media.
   **Note**: Enter a keystroke on the keyboard to initialize media if/when prompted.

3. Select the 'Language', 'Time and currency format', and 'Keyboard or input method' from the drop-down menu options. Then, select 'Next'.

4. Select 'Install now' option.

5. Enter the Windows 10 product key and select 'Next' to continue. Alternatively, the product key can be entered at a later date within the OS.
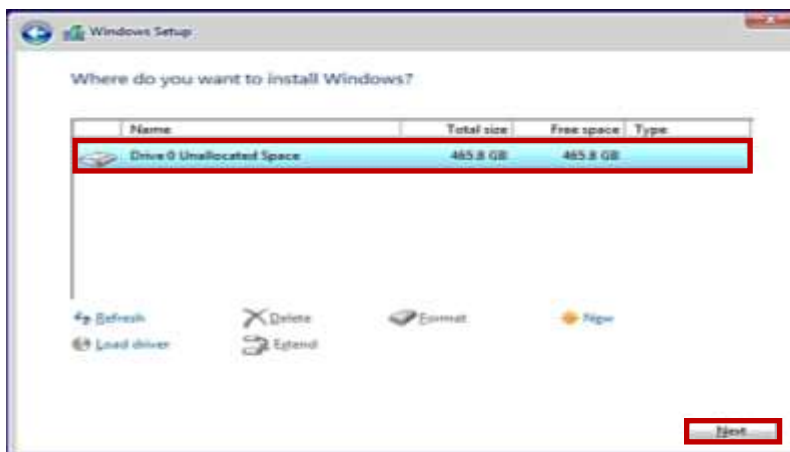
6. Check the box to accept the Microsoft Software License Terms and select 'Next' to continue.

7. Select 'Custom (advanced)' installation method.

8. Select the drive to where to install the operating system and select 'Next' to continue.

Note: A user may or may not have to load the Intel Rapid Storage Technology Enterprise (RSTe) driver depending on whether their drives show up above. Please refer to the "P500-P700-P900 How to Create and Configure RAID Arrays" document for details on how to set up a RAID device.

➔ If the drives don't show in the drive list, the user will need to load the Intel RSTe driver from the Lenovo support website.

Note: *Drivers from the Lenovo Support Website are generally packaged as an executable (.exe). Double-click on the executable and point the default path to extract the contents to a USB device. Do not allow the package to install after unpacking the driver to the USB device.*

➔ Once the user downloads the Intel RSTe driver and copies it over to a USB device, insert the USB device into one of the USB ports, select "Load Driver" above and browse to the appropriate directory.
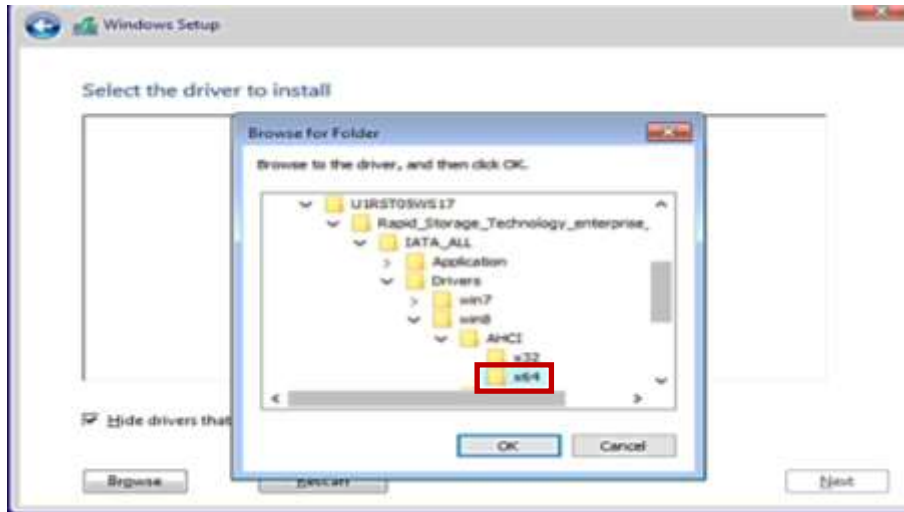
Note: *In this instance, Win8 driver is compatible with Win10 Installation*

9. Select the correct driver for the installation desired.

➔ For systems with sSata in RAID mode, select the following option and select 'Next'.
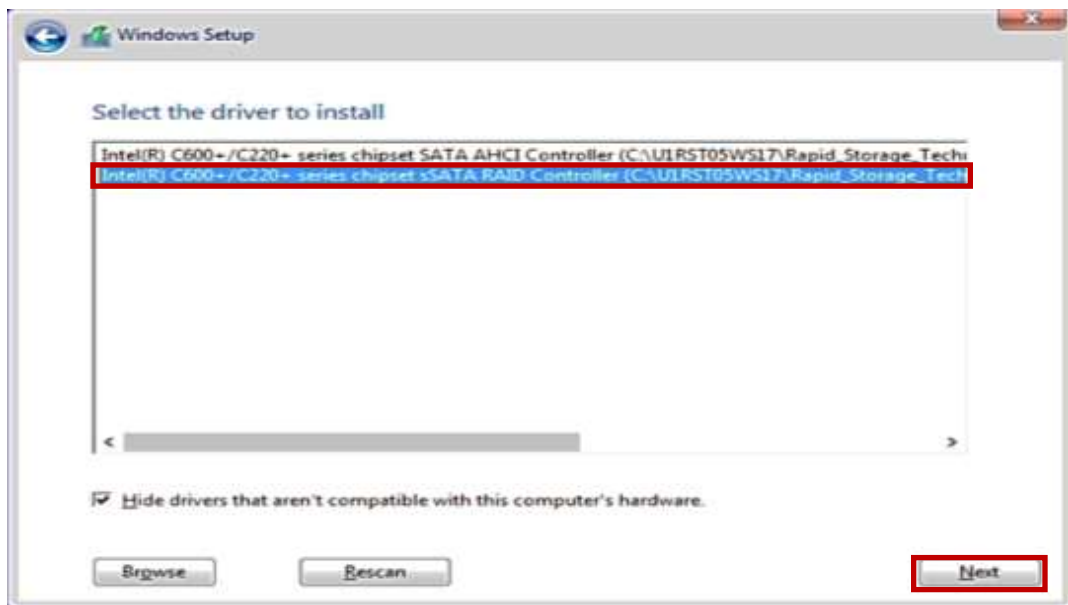
➔ For systems with sSata in AHCI mode (non-RAID), select the following option and select 'Next'.
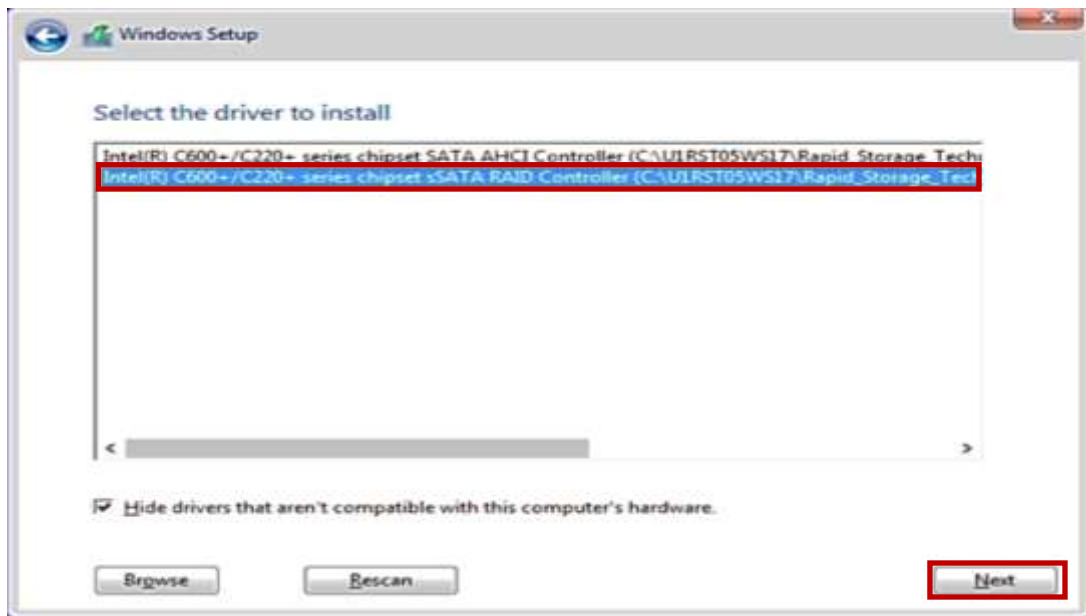
10. Windows 10 will start to install on the drive selected.

Note: The system may reboot a couple times to finish the installation.
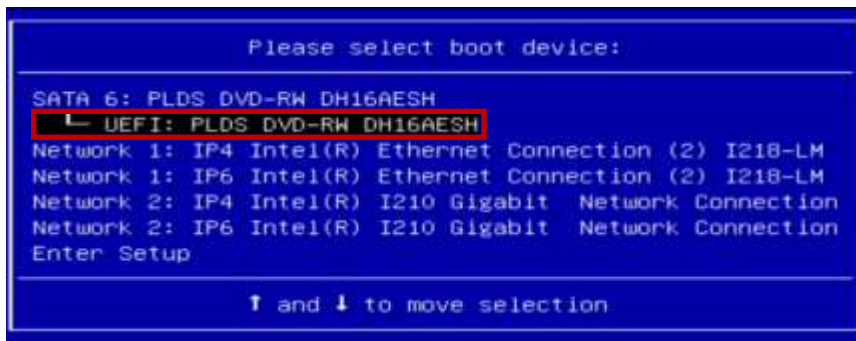
11. Installation is complete!
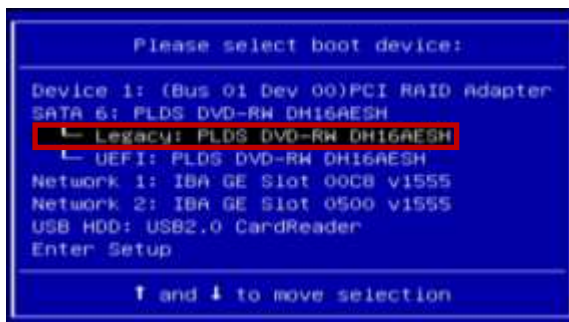
3. Windows 10 Installation Using AVAGO Controllers

Windows 10 Retail Installation Using AVAGO Controllers

➔ _**Note**: Drive capacity greater than 2TB must be installed in UEFI/GPT mode. Legacy/MBR installation limits drive capacity to 2TB or less._

➔ _**Note**: The AVAGO controller requires the use of a RAID or JBOD being set up prior to starting the installation. Please refer to the "P500-P700-P900 How to Create and Configure RAID Arrays" document for details on how to set up a RAID device._

1. As the system is booting through the Lenovo BIOS POST screens, press the F12 key for the BIOS startup menu option. Once the startup menu appears, choose one of the two options below
   a. Select the 'UEFI' option for the device containing the installation media to install the OS to a **GPT partition**.

   b. Select the 'Legacy' option for the device containing the installation media to install the OS to a **MBR partition.**
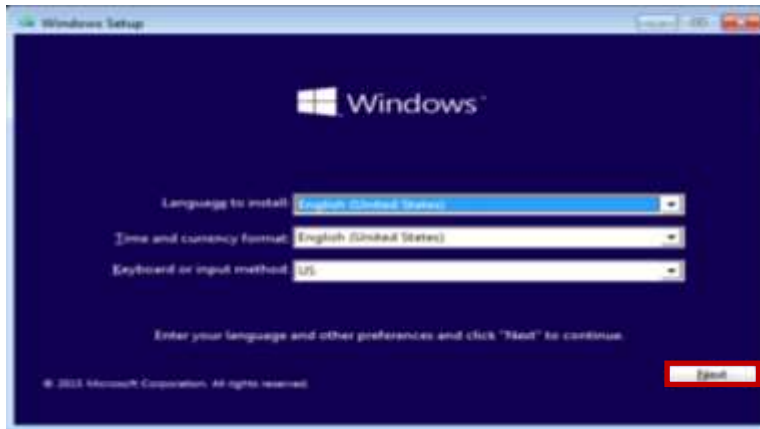

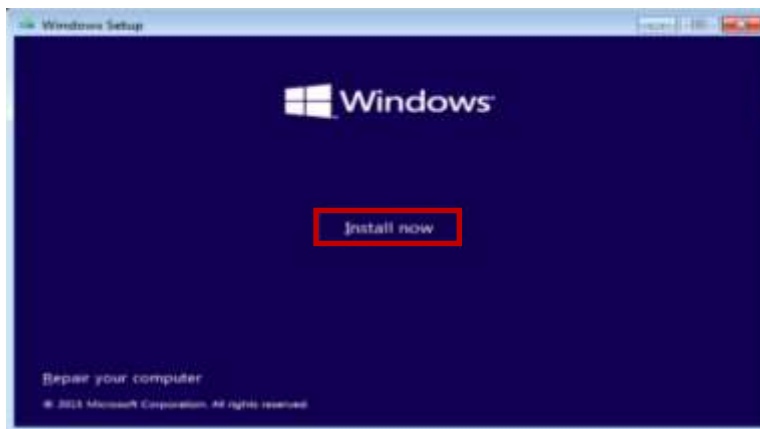2. The system should then boot the Windows 10 image installation media.

   **Note**: Enter a keystroke on the keyboard to initialize media if/when prompted.

3. Select the 'Language', 'Time and currency format', and 'Keyboard or input method' from the drop-down menu options. Then, select 'Next'.
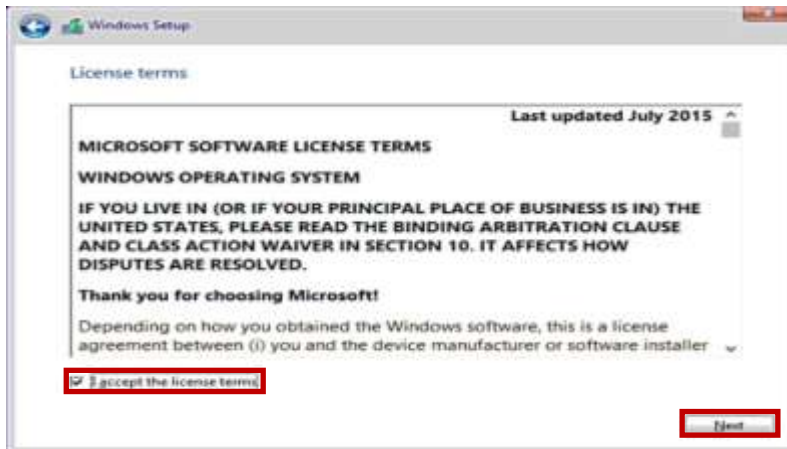

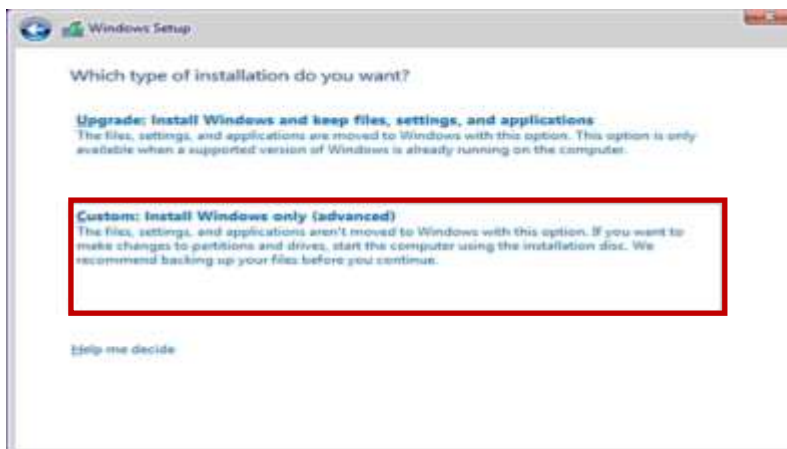4. Select 'Install now' option.

5. Enter the Windows 10 product key and select 'Next' to continue. Alternatively, the product key can be entered at a later date within the OS.

6. Check the box to accept the Microsoft Software License Terms and select 'Next' to continue.


7. Select 'Custom (advanced)' installation method.

8. At this point, the AVAGO controller driver might need to be loaded from the Lenovo support website if the target drive is not listed.

    Note: Drivers from the Lenovo Support Website are generally packaged as an executable (.exe). Double-click on the executable and point the default path to extract the contents to a USB device. Do not allow the package to install after unpacking the driver to the USB device.

    Download the AVAGO controller driver and copy it over to a USB device, insert the USB device into one of the USB ports and select "Load Driver" below.
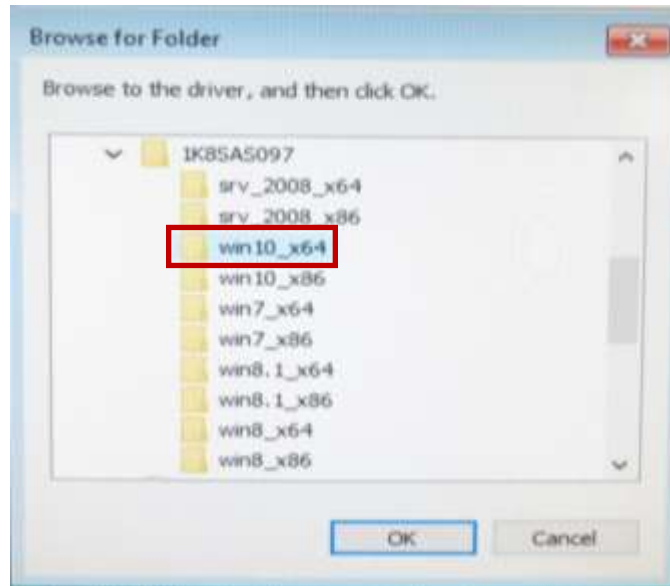

9. Select "Browse" to point to the appropriate directory where the AVAGO driver is stored.
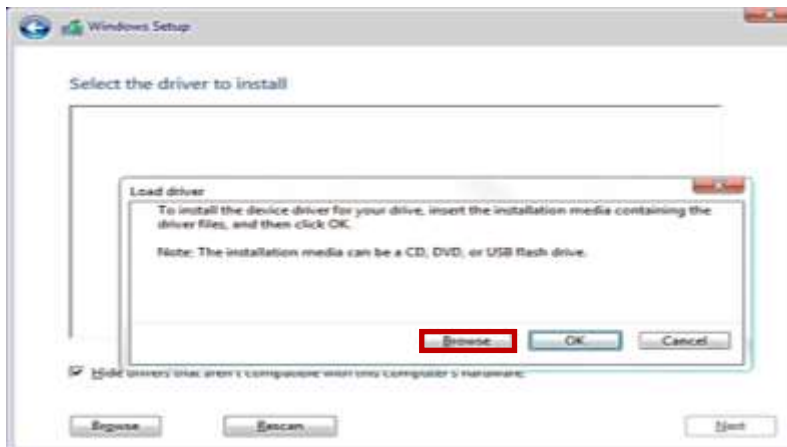
10. The AVAGO driver package contains the different drivers for the different operating systems. Select the appropriate operating system version to load the appropriate driver and select "OK".

11. All the drive groups should be visible (RAID arrays and individual drives set up in JBOD). Select the drive group to where to install the operating system and select 'Next' to continue.
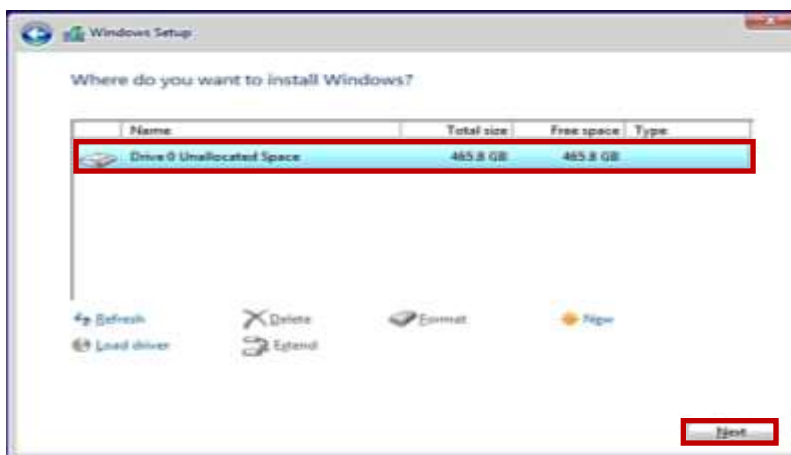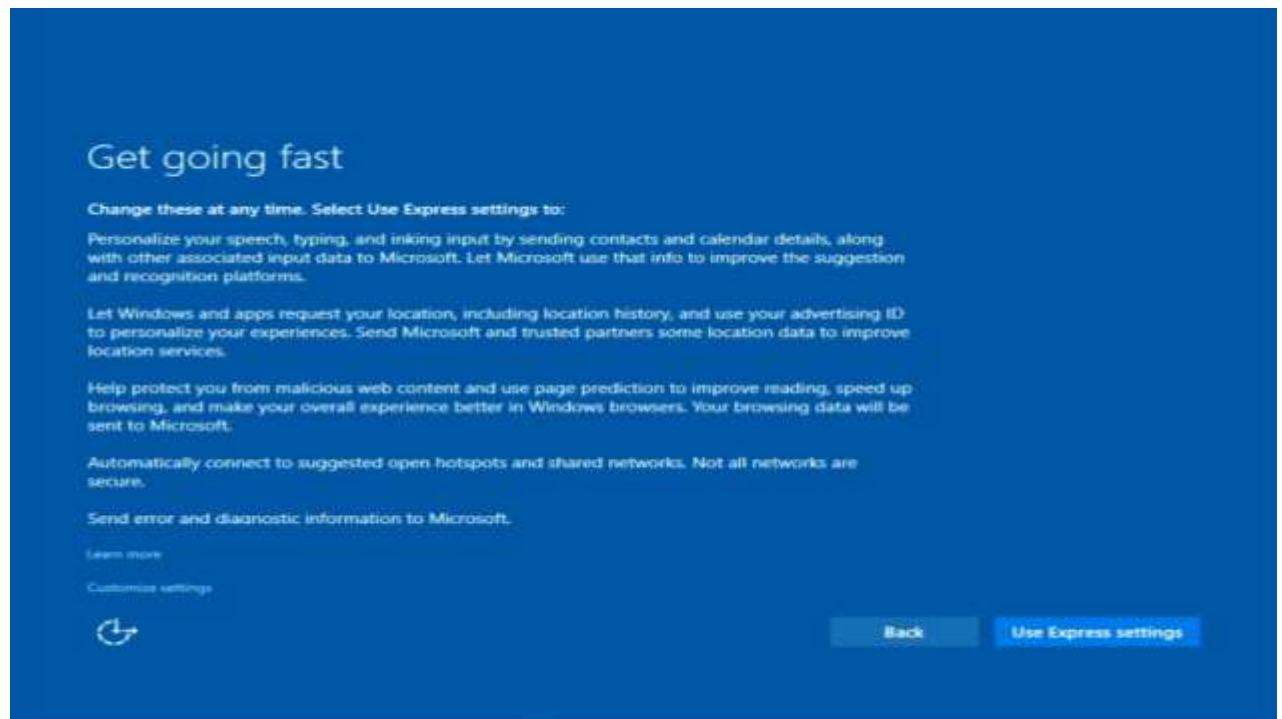

12. Windows 10 will start to install on the drive selected.

Note: The system may reboot a couple times to finish the installation.

13. Installation is complete!

4. Upgrading to Windows 10

Upgrading to Windows 10 from an existing operating system is simple enough. The installation media can be downloaded from Microsoft and, per Microsoft, installed if the user has a genuine license of Windows 7, 8, or 8.1. Other Windows can be updated as well, but a Windows 10 license has to be purchased and the hardware must be compatible.

__Note__: Not all systems with Windows 7, 8, or 8.1 will be compatible with Windows 10. Check before performing any upgrades.

Windows 10 Retail Upgrade Using Installation Media

1. Once the system reaches the desktop, open the "Computer" folder and double-click on the drive containing the installation DVD. This will initialize the installation media.
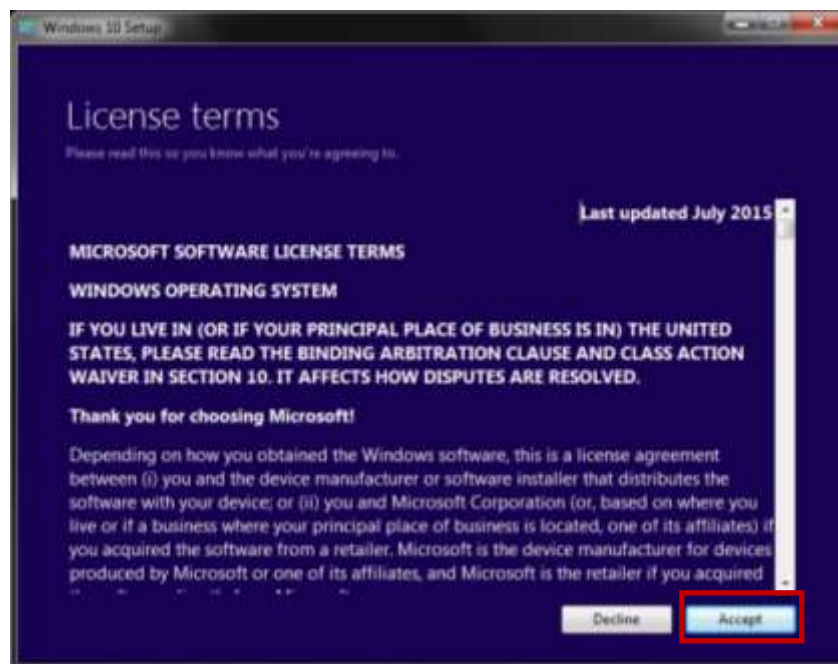
   __Note:__ The installation files (32-bit or 64-bit) must match the systems existing operating system. Be sure to create a backup of any personal files as there is always potential for data loss during any installation procedure.
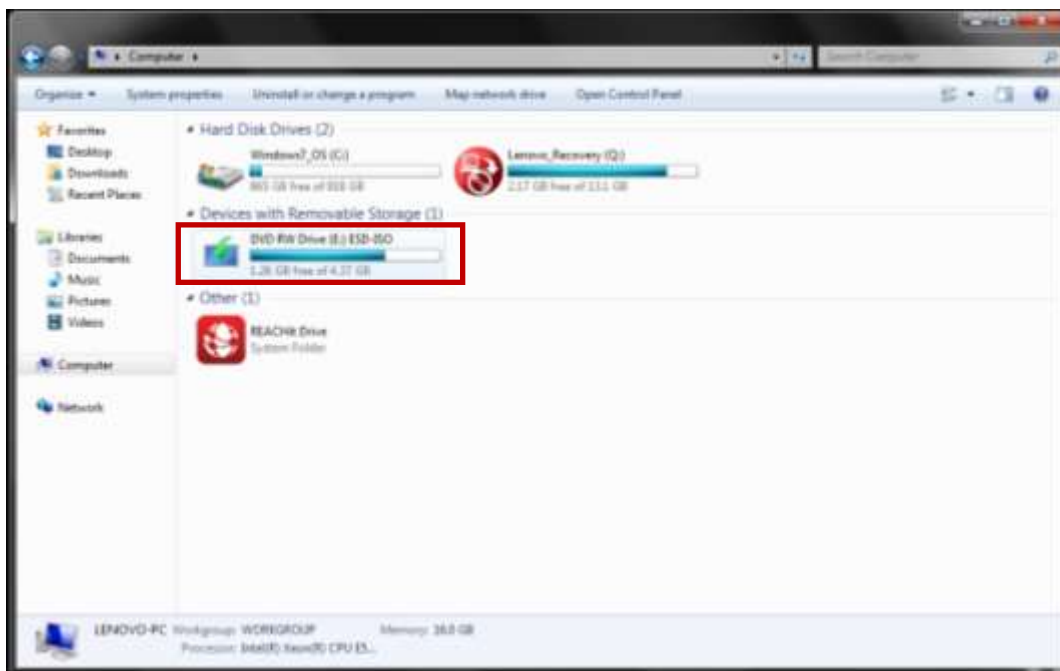
2. Select whether to install recommended Microsoft updates or defer.
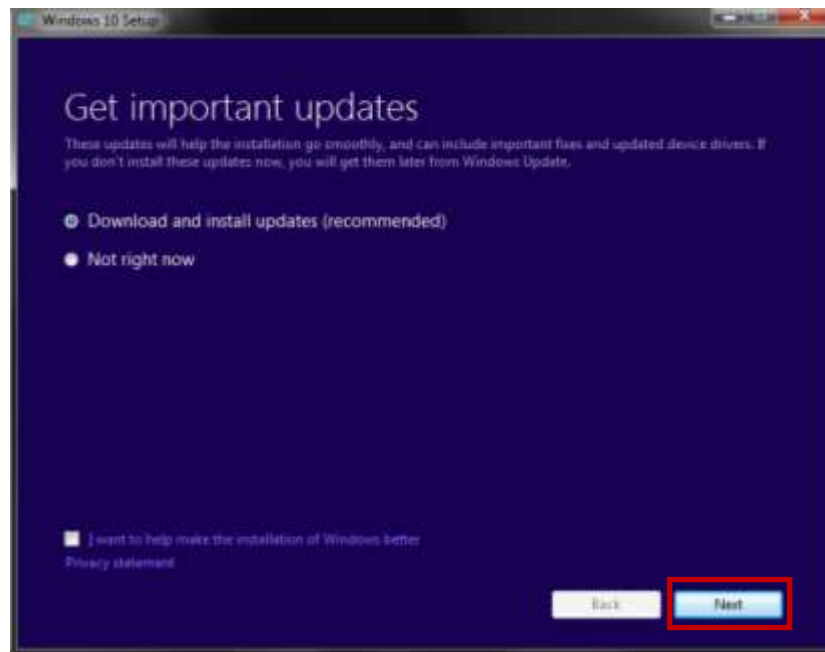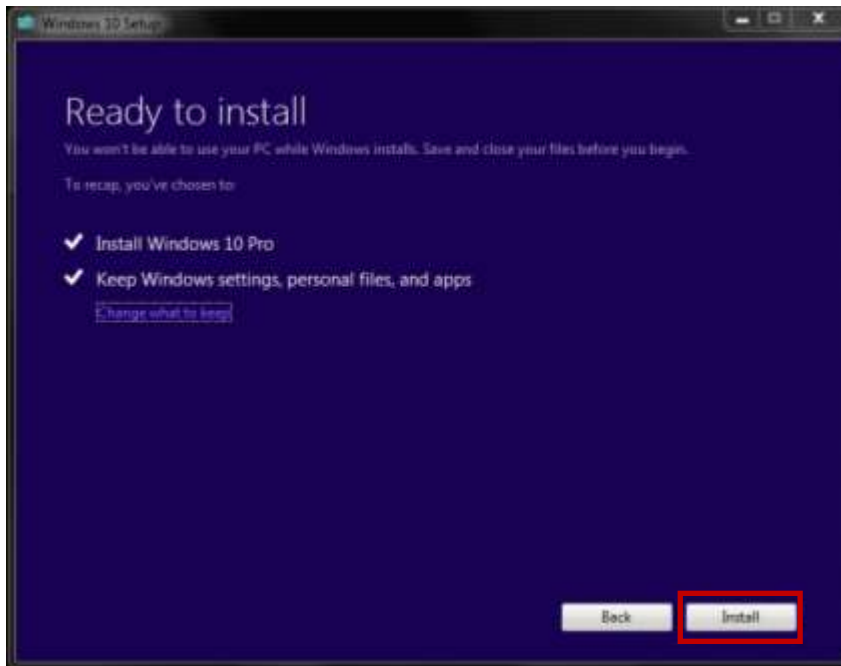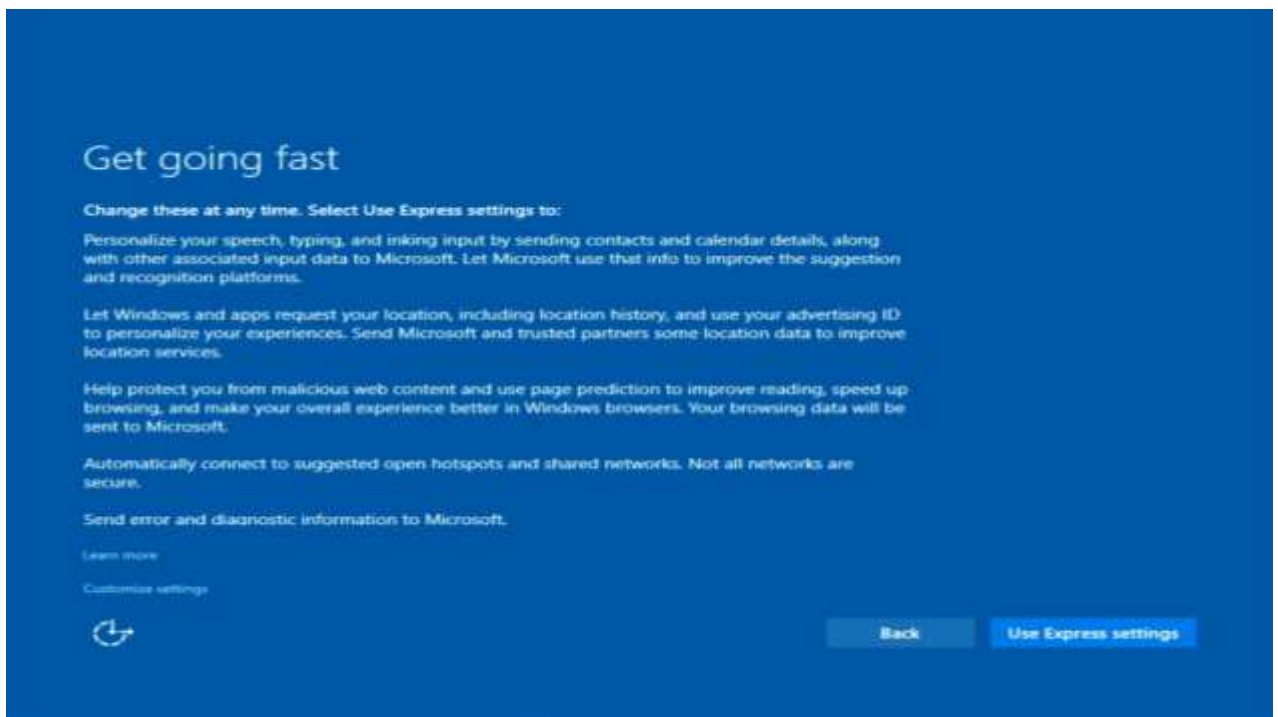

3. Accept the License terms

4. Once verified, the executable will give the details of what is to be installed. Click 'Install' to start installation. ***Note***: *By default, Windows will keep any existing settings, personal files, and apps. This preference can be changed if desired.*

This is the last user input required for the upgrade. From this point forward, the system will restart several times until the installation is complete.
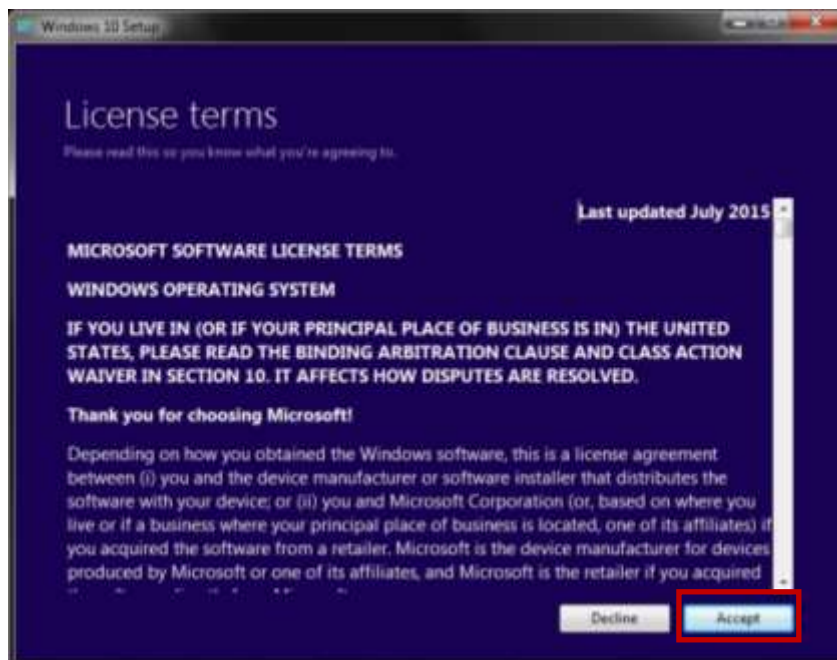
Installation is complete!

Windows 10 Retail Upgrade Using Media Creation Tool

1. Download and run the appropriate 32-bit or 64-bit 'media creation tool' from Microsoft's website: 'http://windows.microsoft.com/en-us/windows-10/media-creation-tool-install'. Once program has started, select 'Upgrade this PC now' and left-click 'Next'.

Note: *To upgrade using the media creation tool, an existing Windows 7, 8, 8.1, or 10 OS with a genuine license key is necessary.*
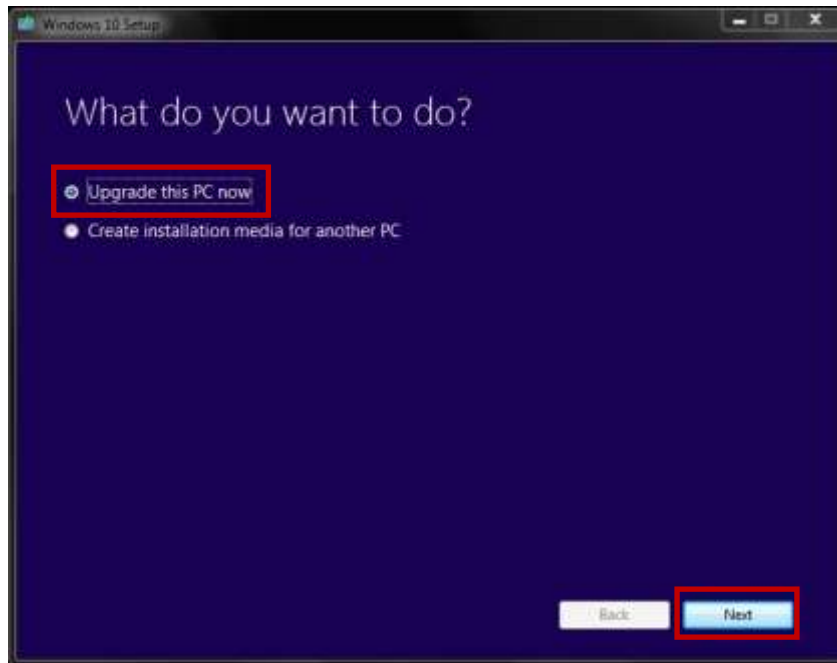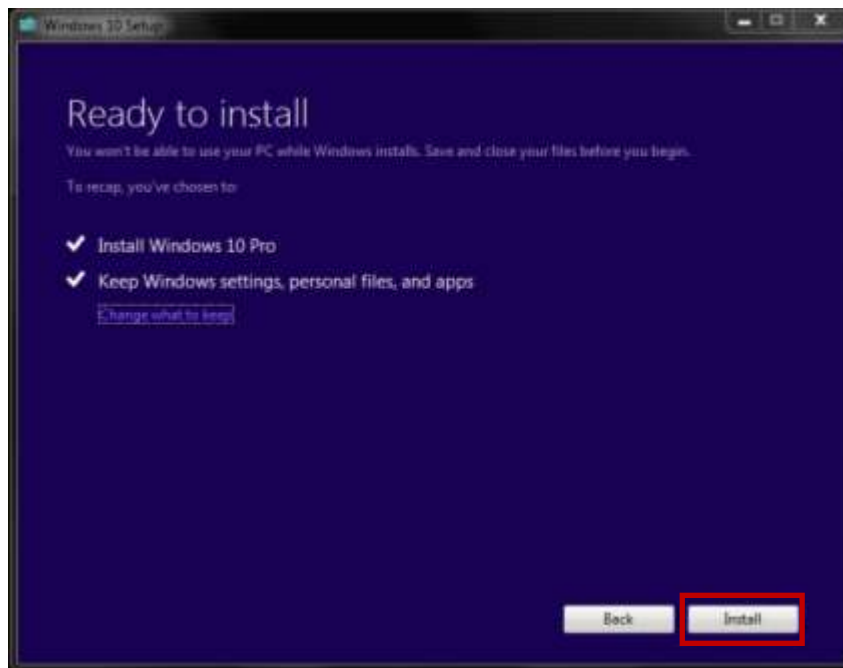

2. Accept the License terms

3. Once verified, the executable will give the details of what is to be installed. Click 'Install' to start installation. *__Note__: By default, Windows will keep any existing settings, personal files, and apps. This preference can be changed if desired.*

This is the last user input required for the upgrade. From this point forward, the system will restart several times until the installation is complete.

Installation is complete!