

LENOVO THINKSTATION P520C, P520, P720, & P920

WINDOWS 7 INSTALLATION

Lenovo™



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Overview

The purpose of this document is to provide guidance for users on how to install a Windows 7 retail operating system on their ThinkStation P520c, P520, P720, and P920 systems.

Section 1 – BIOS & Pre-Installation Steps

The first step before installing Windows is to make sure BIOS is setup correctly. It is important to note which type of partitioning method (GPT or MBR) before attempting to install any operating system on their system.

- **For UEFI/GPT installations (recommended):**
 - Boot into BIOS by pressing the F1 key at the “Lenovo” splash screen.

A black rectangular splash screen with the white "Lenovo" logo centered in the middle.

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- Select “Setup” from the screen indicated below.

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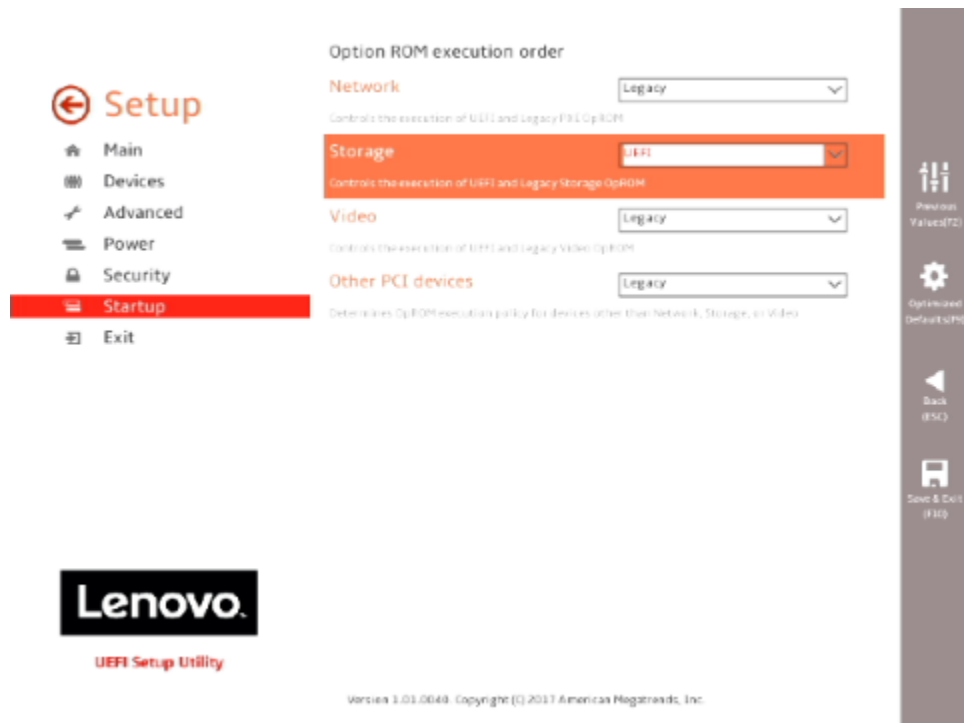
- Select the “Exit” menu option along the left column and set “OS Optimized Defaults” along the right column to “Disabled”.



- Select “Startup” menu option along the left column and select the “CSM Configuration” option along the right column.



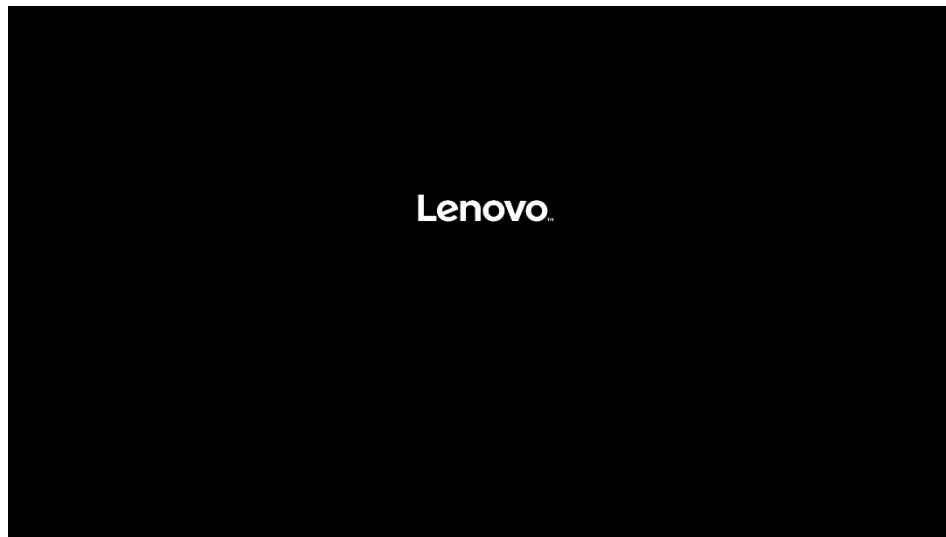
- Select “Storage” option ROM and set the pull-down menu to “UEFI”.



- Select F10 to “Save and Exit” BIOS.



- Insert the Windows 7 install media (either through USB or CD/DVD).
- Power on the system and press the F12 key whenever the following Lenovo splash screen appears.



- Select the Windows bootable installation media “UEFI” option from the F12 boot menu.



- **For Legacy/MBR installations:**
 - Boot into BIOS by pressing the F1 key at the “Lenovo” splash screen.



- Select “Setup” from the screen indicated below.

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- Select the “Exit” menu option along the left column and set “OS Optimized Defaults” along the right column to “Disabled”.



- Select “Startup” menu option along the left column and select the “CSM Configuration” option along the right column.



- Select the “Storage” option ROM and set the pull-down menu to “Legacy”.



- Select F10 to “Save and Exit” BIOS.



- Insert the Windows 7 install media (either through USB or CD/DVD).
- Power on the system and press the F12 key whenever the following Lenovo splash screen appears.



- Select the Windows bootable installation media “Legacy” option from the F12 boot menu.



Section 2 – Windows 7 Driver Slipstream Setup

The new generation ThinkStation uses a new generation Intel chipset that drops native USB 2.0 support. However, native Windows 7 support does not contain USB 3.0 drivers. Therefore, in order to use a USB keyboard and mouse to install a Windows 7 operating system, modification to the Windows 7 installation media is necessary. Follow the steps below to slipstream the Intel USB 3.0 device drivers into the Windows 7 installation media.

Note: For non-RAID M.2 drives, the user may need to slipstream the Microsoft KB2990941 into the installation media.

Note: The Intel USB 3.0 device drivers can be found on the Lenovo Support website [here](#).

1. Install the latest [Windows Assessment and Deployment Kit \(ADK\)](#) found on Microsoft's website.
2. Create the following local folders.
 - C:\temp\src
 - C:\temp\mount
 - C:\temp\winremount
 - C:\temp\drivers
 - C:\temp\hotfix
3. Copy the contents of the Windows 7 DVD or mounted ISO to the C:\temp\src directory.
4. Copy the Intel USB 3.0 driver files to the C:\temp\drivers directory.
5. Copy the Microsoft Knowledge Base Article [KB2990941](#) to C:\temp\hotfix.
*Note: Need to extract the *.exe contents to C:\temp\hotfix.*
6. Run the "Deployment and Imaging Tools Environment (DISM)" command prompt as administrative from the Windows ADK installed from Step 1.
7. Run the following DISM commands:
****Easiest method is to copy these commands into a *.batch file and run the *.batch file. A sample *.bat file can be found below.*



Slipstream_USB3_N
VMe.bat

```

dism /Mount-Image /ImageFile:c:\temp\src\sources\boot.wim /Index:1 /MountDir:c:\temp\mount
dism /Image:C:\temp\mount /Add-Package /PackagePath:c:\temp\hotfix
dism /Image:C:\temp\mount /Add-Driver /Driver:c:\temp\drivers /Recurse
dism /Unmount-Image /MountDir:C:\temp\mount /Commit
dism /Mount-Image /ImageFile:c:\temp\src\sources\boot.wim /Index:2 /MountDir:c:\temp\mount
dism /Image:C:\temp\mount /Add-Package /PackagePath:c:\temp\hotfix
dism /Image:C:\temp\mount /Add-Driver /Driver:c:\temp\drivers /Recurse
Pause
Manually sort the C:\temp\mount\sources by date and copy the updated files to C:\temp\src\sources.
Pause
dism /Unmount-Image /MountDir:C:\temp\mount /Commit
dism /Mount-Image /ImageFile:c:\temp\src\sources\install.wim /Index:1 /MountDir:c:\temp\mount
dism /Image:C:\temp\mount /Add-Package /PackagePath:c:\temp\hotfix
dism /Image:C:\temp\mount /Add-Driver /Driver:c:\temp\drivers /Recurse
dism /Mount-Image /ImageFile:c:\temp\mount\windows\system32\recovery\winre.wim /Index:1
/MountDir:c:\temp\winremount
dism /Image:C:\temp\mount /Add-Package /PackagePath:c:\temp\hotfix
dism /Image:C:\temp\mount /Add-Driver /Driver:c:\temp\drivers /Recurse
dism /Unmount-Wim /MountDir:C:\temp\winremount /Commit
dism /Mount-Image /ImageFile:c:\temp\src\sources\install.wim /Index:2 /MountDir:c:\temp\mount
dism /Image:C:\temp\mount /Add-Package /PackagePath:c:\temp\hotfix
dism /Image:C:\temp\mount /Add-Driver /Driver:c:\temp\drivers /Recurse
dism /Unmount-Wim /MountDir:C:\temp\mount /Commit
dism /Mount-Image /ImageFile:c:\temp\src\sources\install.wim /Index:3 /MountDir:c:\temp\mount
dism /Image:C:\temp\mount /Add-Package /PackagePath:c:\temp\hotfix
dism /Image:C:\temp\mount /Add-Driver /Driver:c:\temp\drivers /Recurse
dism /Unmount-Wim /MountDir:C:\temp\mount /Commit
dism /Mount-Image /ImageFile:c:\temp\src\sources\install.wim /Index:4 /MountDir:c:\temp\mount
dism /Image:C:\temp\mount /Add-Package /PackagePath:c:\temp\hotfix
dism /Image:C:\temp\mount /Add-Driver /Driver:c:\temp\drivers /Recurse
dism /Unmount-Wim /MountDir:C:\temp\mount /Commit
oscdimg -LTEST -m -u2 -
bootdata:2#p0,e,bC:\temp\src\boot\efisboot.com#pEF,e,bC:\temp\src\efi\microsoft\boot\efisys.bin
C:\temp\src C:\temp\Win7.usbdriver.ISO

```



Section 3 – Windows 7 Installation

Follow the steps below to proceed with the Windows 7 installation.

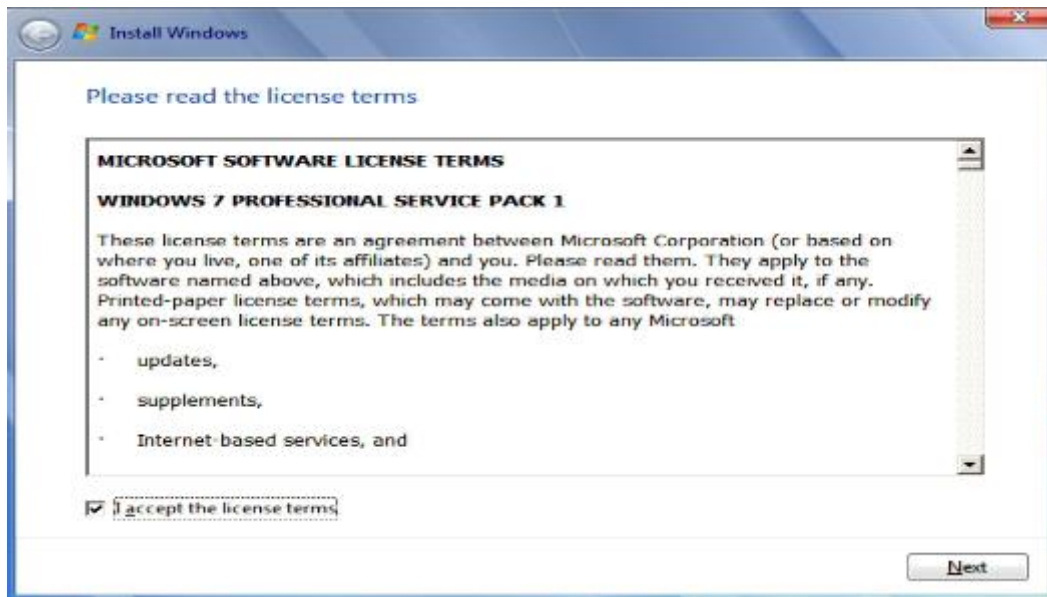
1. Select the following Language, Time, and Keyboard Layout and select “Next”.



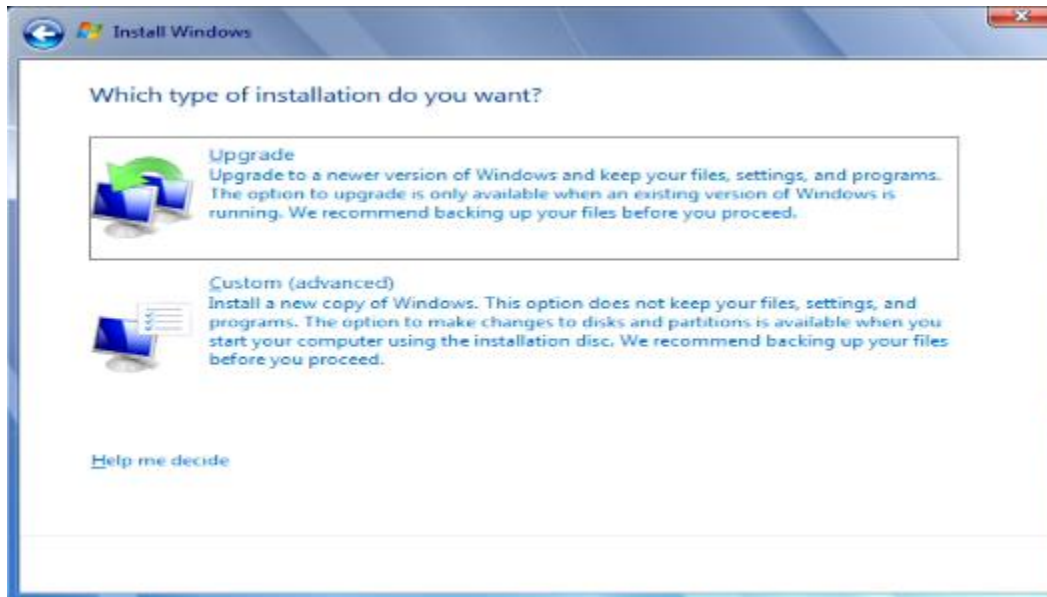
2. Select “Install now” option.



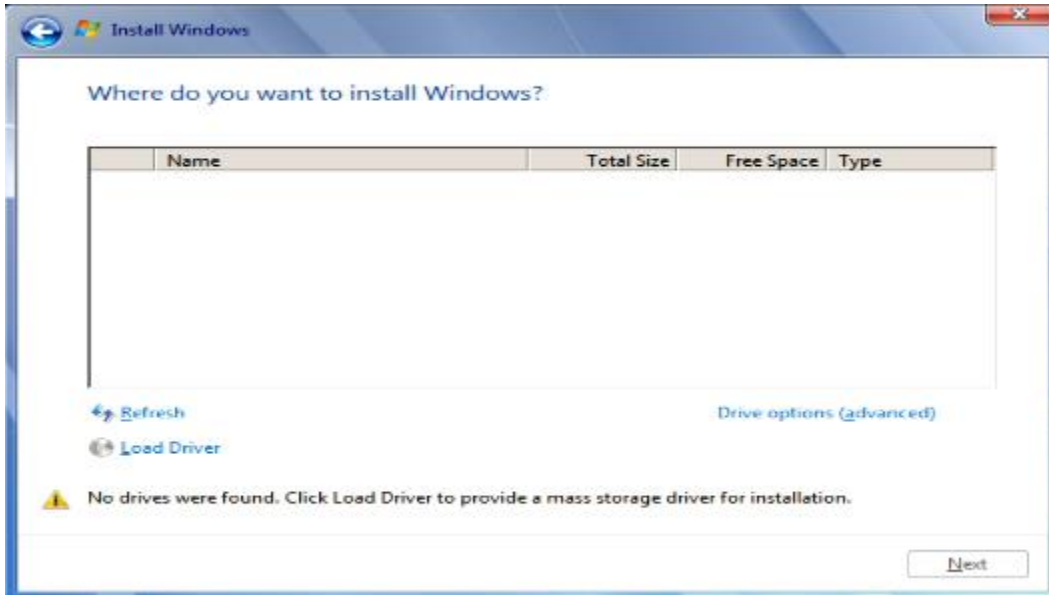
3. Check the box next to “I accept the license terms” and select “Next”.



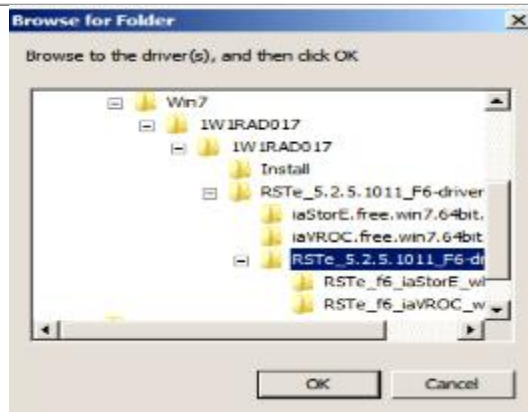
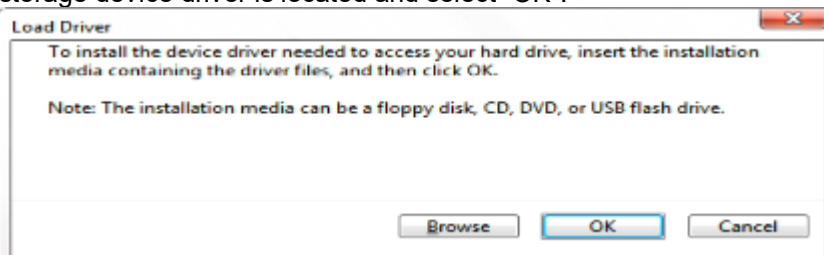
4. Choose the type of installation to perform.
 - To upgrade to Windows 10 from an earlier version of Windows, select the “Upgrade” option below.
 - To perform a clean OS installation, select “Custom: (advanced)” option below. *For instructional purposes, this option was selected below.*



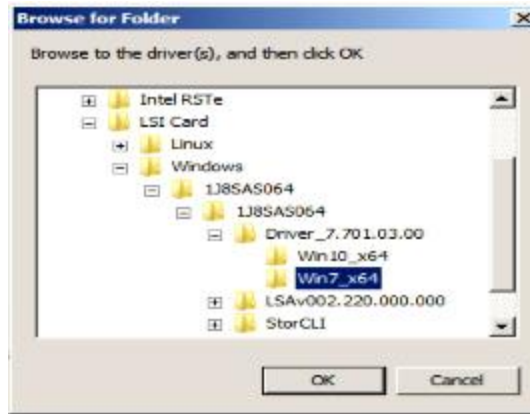
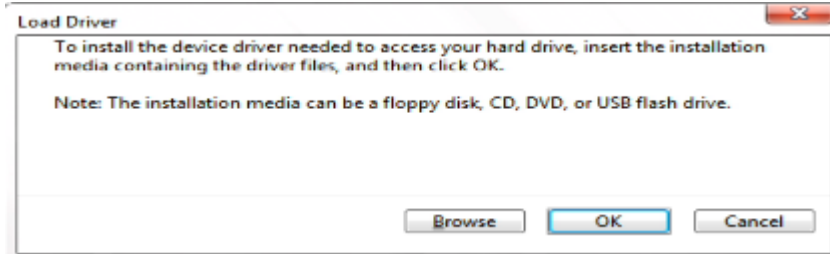
5. Select the “Load driver” option to load the appropriate driver for the storage device.



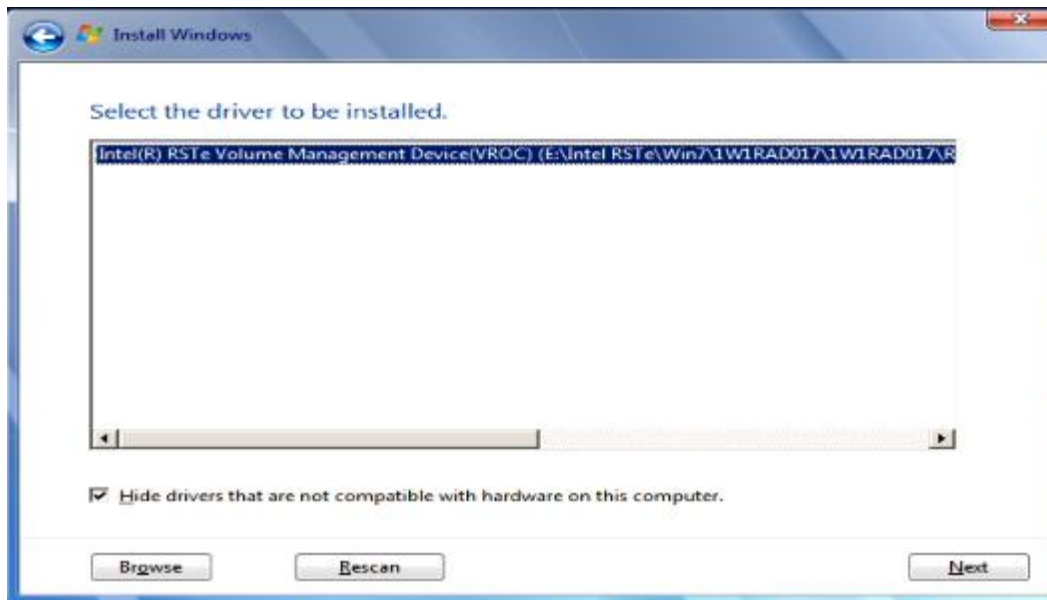
6. Make sure to load the appropriate storage device driver onto a CD, DVD, or USB flash drive before completing the next step. The storage device drivers can be found on the Lenovo Support website [here](#).
 - For storages devices attached to the Intel storage controller, load the Intel Rapid Storage Technology enterprise (RSTe) driver.
 - o Select “Browse”, and browse to the CD, DVD, or USB flash drive to where the storage device driver is located and select “OK”.



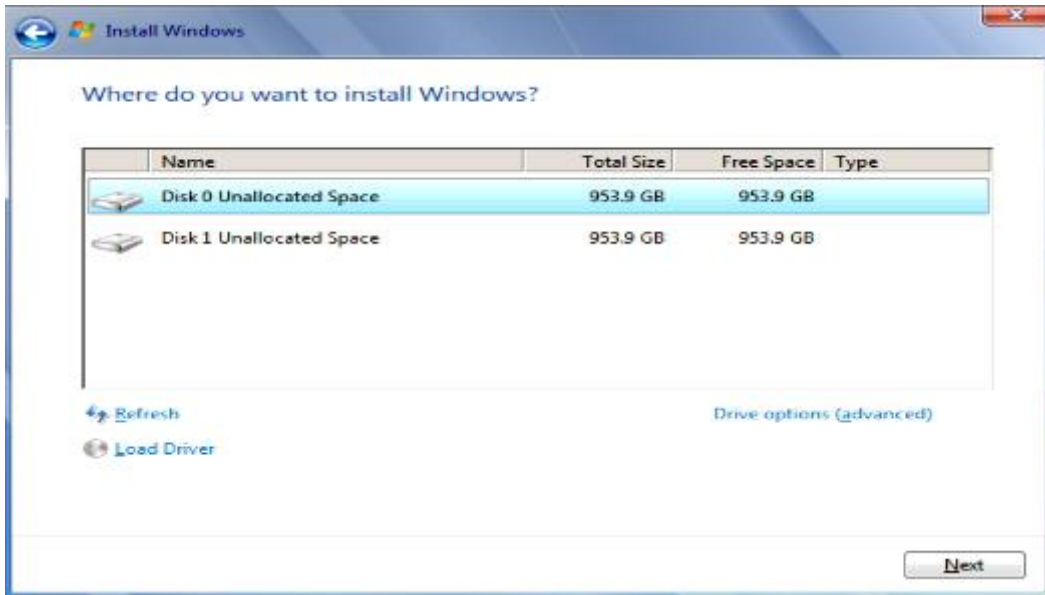
- For storages devices attached to the Broadcom controller, load the Broadcom storage driver.
 - o Select “Browse”, browse to the CD, DVD, or USB flash drive to where the storage device driver is located and select “OK”.



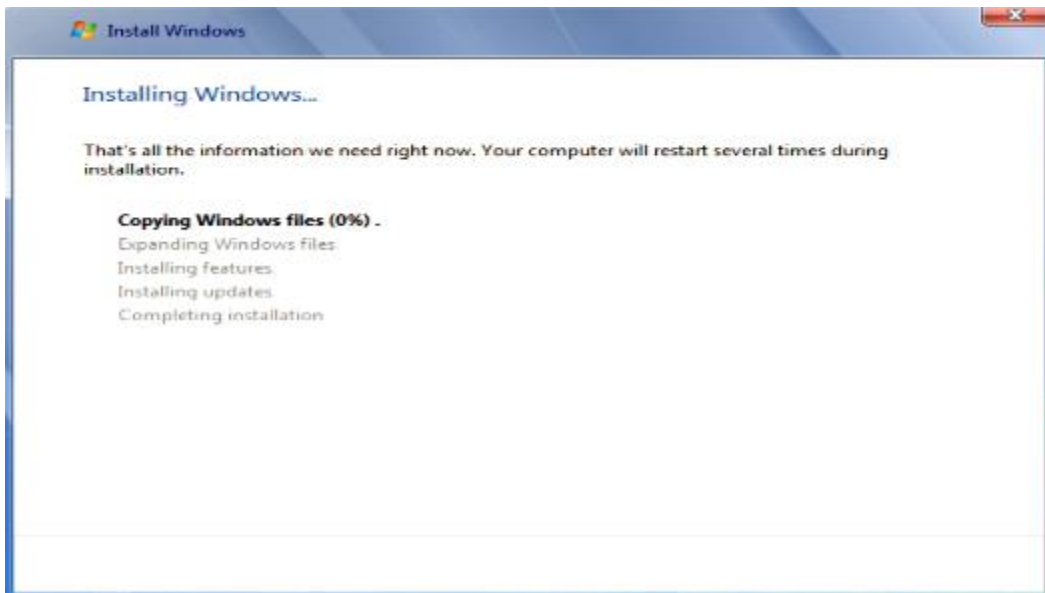
7. Select the driver to install and select “Next”.



8. Select the drive to install Windows and select “Next” at the bottom.



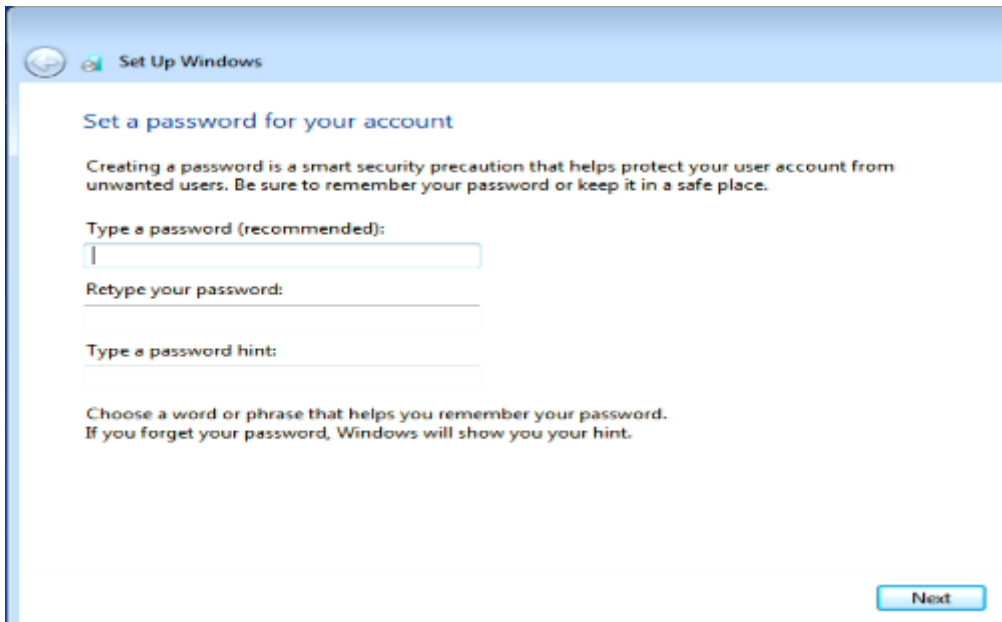
9. Installing Windows screen.



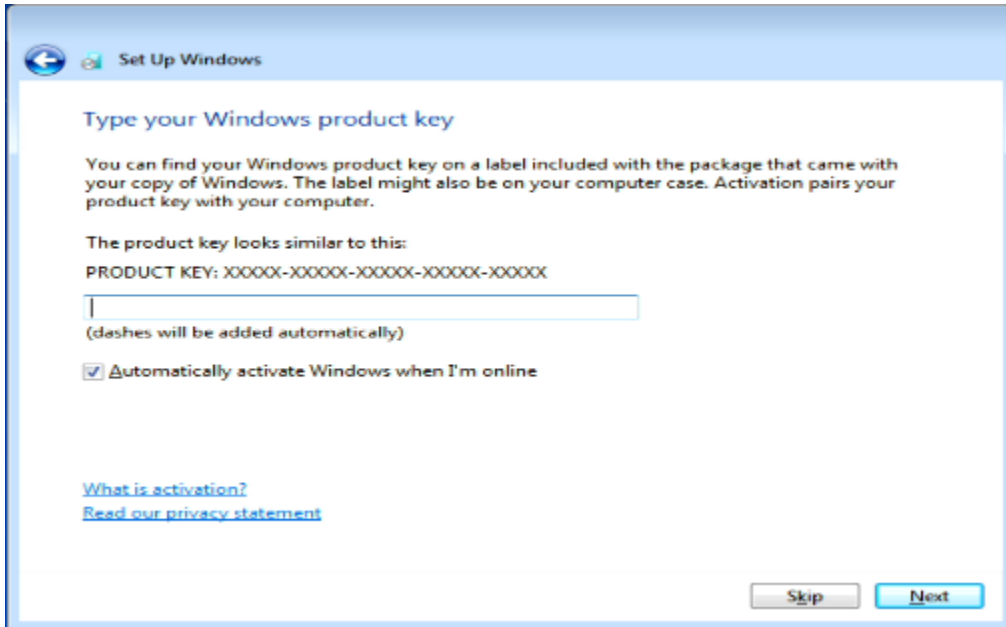
10. After the installation completes, the system will automatically reboot. Enter a user name and select “Next”.



11. *Optional* – Enter a password to make the account secure.



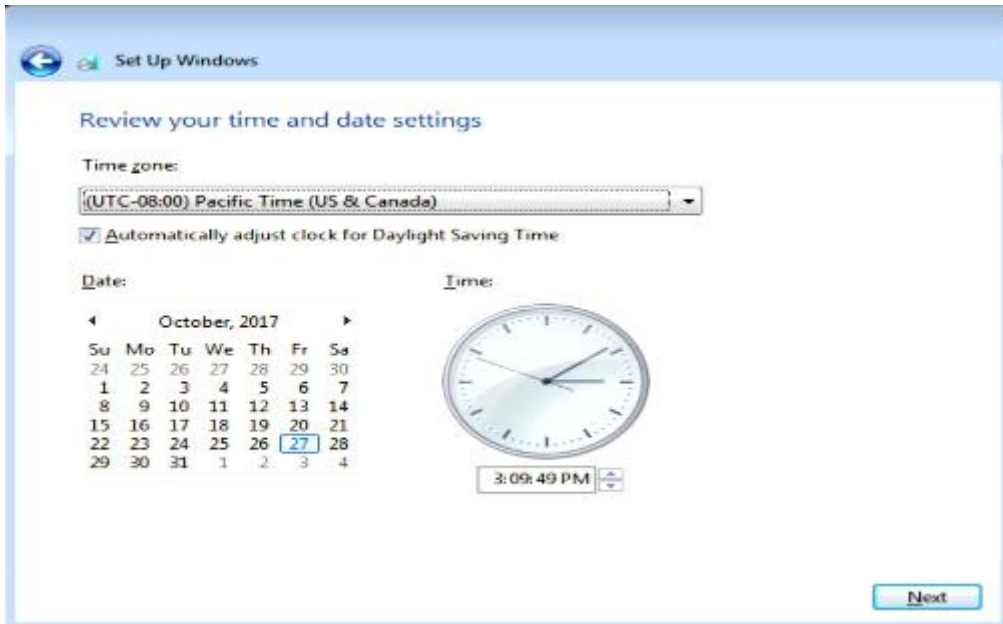
12. Enter a Windows product key to activate the Windows operating system and select “Next”. Else, select “Skip” to activate Windows later.



13. Choose the type of Windows updates setting.



14. Customize the time and date and select “Next”.



15. Windows 7 desktop screen.



16. At this point, download and install the appropriate device drivers, i.e. Intel Chipset, Intel AMT, Ethernet, Graphics, etc. The device drivers can be found on the Lenovo Support website [here](#).

Section 4 – Revision History

Version	Date	Author	Changes/Updates
1.1	8/7/2019	Jason Moebs	Update KB2990941 hotfix link.
1.0	11/8/2017	Jason Moebs	Initial launch release