



Dell
Consumer Client
Re-Image “How-To” Guide XPS
Notebook

Revision 3.5

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1 Overview

The purpose of this document is to detail the required steps for reimaging XPS notebooks.

Dell XPS notebooks systems ship with Microsoft operating systems (see Chapter 2.1 for detail). These images include the Dell recommended software stack and settings, drivers, and applications which are tested and validated with the system.

Drivers and applications must be installed on Dell XPS systems in a prescribed order to ensure optimal performance. Failure to install drivers and applications as detailed in this document may result in undesirable performance.

Dell provides drivers and applications that are not included in Microsoft Operating Systems. These drivers are required to enable the new technologies and features of Dell XPS products, including the support on NVMe PCIe SSD. Reinstalled images should be built from a clean hand installed OS load and following the steps in this guide. Dell does not recommend starting from an image built on previous generations of products or other computer systems.

Dell recommends ensuring BIOS settings (including SATA configurations modes) are correctly set and using the latest device drivers and applications when imaging their systems.

This “How-To” guide applies to the following XPS systems:

2 “How-To”

2.1 Supported Operating Systems

The following Microsoft operating systems have been validated for use on notebook computers:

- Windows 7 64-Bit: Validated on XPS-15-9550
- Windows 8.1 64-Bit: Validated on XPS-15-9550
- Windows 10 64-Bit: Validated on XPS-15-9550

2.2 XPS New Features & Image Impact

Dell XPS systems feature new hardware technologies which require a new software stack, drivers, and / or applications. These products are not compatible with previous images built or installed on none XPS Dell products. Images between different XPS models are also not compatible

Among these new hardware and technologies are:

2.2.1 New Features Offered on XPS systems, All Generations:

Note: Not all features are available on all systems

- New BIOS architecture – XPS
- Chipset
 - Intel Core i3 Dual Core, i5 Quad Core & i7 Quad Core CPUs that include updated integrated graphics
- Intel Turbo Boost (i5 & i7)
- NVMe PCIe SSD
- Intel RST (Rapid Storage Technology)
- Integrated Graphic(Intel)
- Discrete Graphic (Nvidia)for MS Hybrid(Win8.1/Win10)
- Wireless LAN
- Bluetooth
- Webcam
- TypeC USB
- USB3.1
- Thunderbolt Controller (Alpine Ridge)
- USB 3.0
- Precision Touchpad(Win10) and P/S2 Touchpad(Win8.1)
- Dell DCPM
- Touch Screen
- WiDi display
- Dock Support - Dell Dock WD15. Refer to Appendix E

2.3 Latest Drivers / Applications and Utilities

Dell recommends always obtaining the latest and most updated BIOS, drivers, firmware, and applications. Dell validated and tested drivers and applications are located on Dell’s support web site <http://support.dell.com/>

- Enter the Service Tag or select the product model and the model number
- Select Operating System (32-Bit or 64-Bit version must be selected)
- Choose drivers and downloads

Note:Dell recommends that better update latest BIOS,Intel Thunderbolt Controller Driver,Intel(R) Thunderbolt 3 firmware utility first.

Customer can download them under BIOS/Chipset option of below link:

<http://www.dell.com/support/home/us/en/19/product-support/product/xps-15-9550-laptop/drivers>

<http://www.dell.com/support/home/us/en/19/product-support/product/New-15-5000-laptop/drivers>

2.4 Important Information

You must update your computer’s BIOS and the Dell Docking Station drivers to the latest versions available at www.dell.com/support before using the docking station. Older BIOS versions and drivers could result in the docking station not being recognized by your computer or not functioning optimally.

NOTE: Please see Display Resolution Table for more information on maximum resolution capacity.

2.4.1 Dell Dock (WD15) and Dell Thunderbolt Dock (TB15) Driver Set

– Applies to 7th generation Latitude E-Family & Mobile Precision only

To fully support new generation Dell Dock and Dell Thunderbolt Dock, DELL highly recommend installing the following BIOS/Drivers step by step on 64 bit Windows OS

1. Flash the latest **BIOS** available to the system. This is posted on Dell’s driver & downloads support web site (dell.com/support) under the “**BIOS**” section. Restart system before next step.
2. Install **Intel(R) Thunderbolt Controller Driver** available to the system. This is posted on Dell’s driver & downloads support web site (dell.com/support) under the “**Chipset**” section. Restart system before next step.
3. Install **Intel(R) Thunderbolt 3 Firmware Update** available to the system. This is posted on Dell’s driver & downloads support web site (dell.com/support) under the “**Docks/Stands**” section. Restart system before next step.
4. For **Dell Thunderbolt Dock** only, install **ASMedia USB 3.0 Extended Host Controller Driver** for Dell Thunderbolt Dock available to the system. This is posted on Dell’s driver & downloads support web site (dell.com/support) under the “**Docks/Stands**” section. Restart system before next step.
5. Install **Realtek USB GBE Ethernet Controller Driver** for Dell Thunderbolt Dock and Dell Dock available to the system. This is posted on Dell’s driver & downloads support web site (dell.com/support) under the “**Docks/Stands**” section. Restart system before next step.
6. Install **Realtek USB Audio Driver** for Dell Wireless Dock, Dell Thunderbolt Dock, and Dell Dock available to the system. This is posted on Dell’s driver & downloads support web site (dell.com/support) under the “**Docks/Stands**” section. Restart system before next step.
7. For Windows 8.1 and Windows 10 OS only, install Patch for the USB audio/mouse issue on Dell Thunderbolt Dock and Dell Dock available to the system. This is posted on Dell’s driver & downloads support web site (dell.com/support) under the “**Docks/Stands**” section. Restart system.

NOTE: The Dock is not required to be connected to system during driver installation.

Rebooting the system after connecting the dock the first time is recommended.

NOTE: Graphic driver should be also installed by following section 2.7.5

2.4.2 Updating the Graphics drivers for your computer

The Microsoft Windows operating systems include the VGA graphics drivers only. Therefore, for optimum graphics performance, it is recommended that Dell graphics drivers applicable for your computer be installed from dell.com/support under the “Video” section.

NOTE:

1. For nVidia Discrete Graphics solutions on the Latitude E-Family and Mobile Precision 3rd Generation and above computers:
 - a. First, install the Intel Media Adapter Graphics Driver applicable to your computer.
 - b. Second, install the nVidia Discrete Graphics Driver applicable to your computer.
2. For AMD Discrete Graphics solutions on the Latitude E-Family and Mobile Precision 5th Generation and above computers:
 - a. First, install the Intel Media Adapter Graphics driver applicable to your computer.
 - b. Second, install the AMD Discrete Graphics driver applicable to your computer.

NOTE: Both 2nd and 3rd Generation Intel Core CPUs are available on the 4th Generation Latitude E-Family and Mobile Precision computers. Please re-install the graphics drivers when you exchange a 2nd Generation CPU for a 3rd Generation CPU, and vice versa.

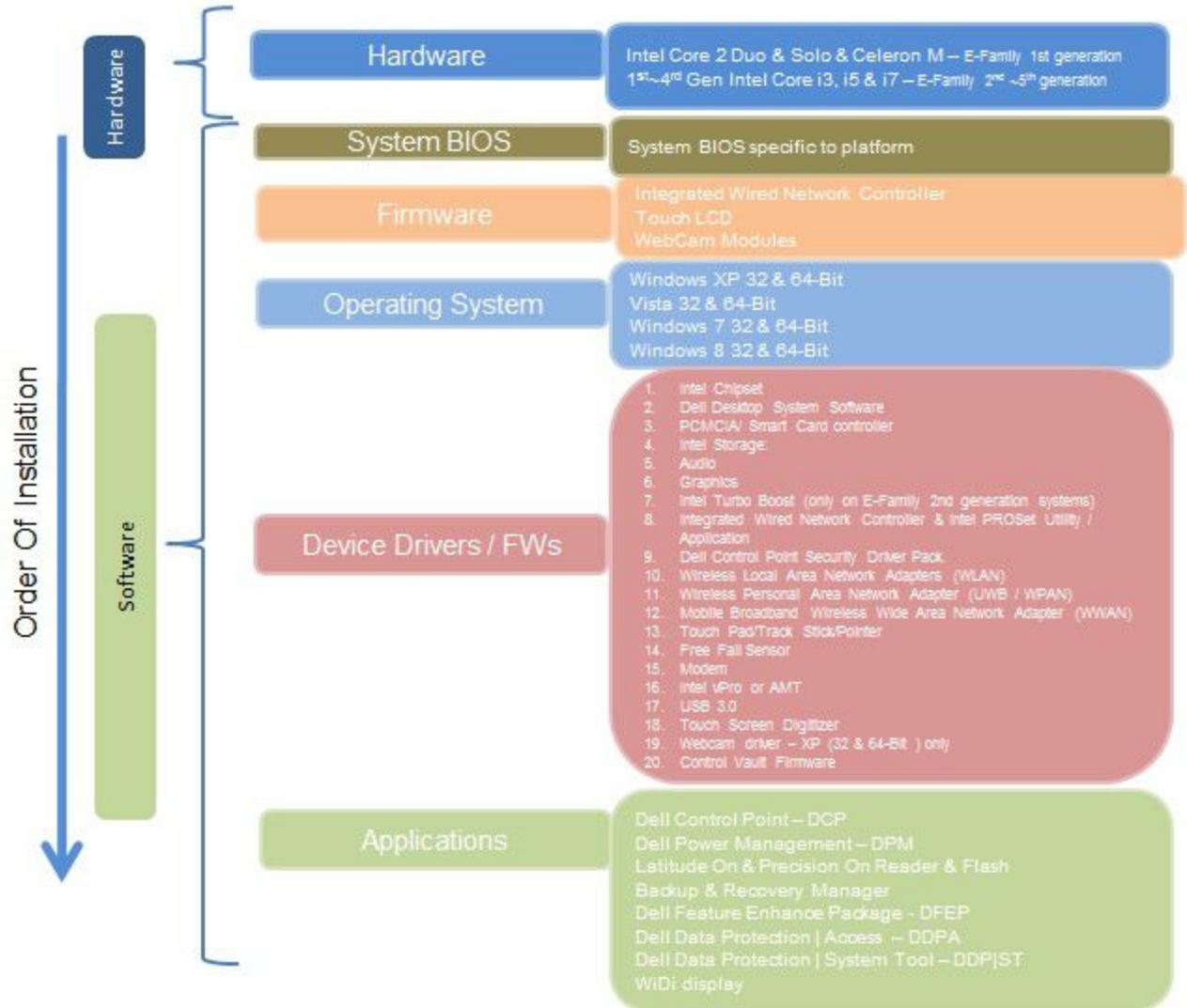
NOTE: Both 3rd and 4th Generation Intel Core CPUs are available on the 5th Generation Latitude E-Family and Mobile Precision computers, except for the Dell Latitude 3440/3540 computers. Please re-install the graphics drivers when you exchange a 3rd Generation CPU for a 4th Generation CPU, and vice versa.

2.5 Installation Sequence

The list below is a general overview of drivers and applications that must be installed on Dell XPS systems in a prescribed order to ensure optimal performance. Actual system configurations may vary.

Note: Dell Alienware, Inspiron, Studio, XPS and Vostro Laptops may have different installation sequence. Please refer to Dell Support Website for these Laptops.

2.5.1 Installation Sequence Overview



2.5.2 Installation Sequence & Features at a Glance:

2.5.2.1 BIOS, Drivers and Firmware:

- BIOS
- Intel Chipset - Helps Windows control system board components and controllers.
- Dell Desktop System Software - A compilation of critical Microsoft QFEs updates
- Media Memory Card / SmartCard controller - Enables and enhances the Media Memory / SmartCard controller
- Intel Storage:
 1. Intel Rapid Storage Technology.
- Audio - Enables and enhances the audio controller
- Graphics-Intel:
 1. Enhances and optimizes video performance
 2. Enables & provides additional functionality that are not included in MS native VGA driver
 - User customizable Power Management features
 - Portability & behavioral profiles
 - Multiple monitor support
- Graphics-NVIDIA: (Discrete Sku)
 1. Enhances and optimizes video performance
 2. Better power management by switch between iGPU and dGPU based on user's usage.
- Integrated Wired Network Controller & Intel PROSet Utility / Application - Enables and enhances the network controller
- Networking & Communication
 1. Wireless Local Area Network Adapters (WLAN) - Enables and enhances the Wireless LAN network adapter
 2. Bluetooth (BT) - Enables and enhances the Bluetooth Adapter
- Touch Pad - Enhances the pointing device features
- Intel Thunderbolt controller driver –Enable Thunderbolt function
- USB 3.0
- USB 3.1(Win7 only) – Enable USB3.1 performance via TypeC USB
- FreeFall Sensor(OS installed on HDD sku) – Protect Data while any freefall event.

2.6 BIOS

Dell recommends flashing the latest BIOS available to the system. This is posted on Dell’s driver & downloads support web site (support.dell.com) under the “BIOS” section.

Some of the BIOS settings are critical to Operating System performance and installation. These are as follows:

Settings → System Configuration → SATA Operation

- Disabled: SATA Controllers are hidden
 - AHCI, SATA bus is configured for AHCI mode (Advanced Disk Operation mode) which offers faster performance, eSATA support, and increased battery life. This mode requires an additional storage driver.
 - RAID On, SATA bus is configured to RAID mode (Redundant Array of Independent Disks). This mode requires an additional storage driver. It’s default setting for shipment on Dell-XPS-9550.
-
- If AHCI mode is selected, System may occur blue screen and it is not recommend to set it for this platform
 - If RAID mode is selected, Intel Rapid Storage Technology driver should be pre-loaded on PCIe SSD SKU if the PCIe SSD can’t be seen while re-install OS. See section “2.6.4 Intel Storage” of this document
 - Must keep the SATA mode setting the same as choose while building Operating system. If the mode change from original selection will cause Blue screen-INACCESSIBLE BOOT DEVICE and can’t boot to OS until change the mode back. Refer to Appendix C- BIOS SATA mode selection

Settings → General → Advanced Boot Options → Enable Legacy Option ROMs

- If OS installed with Legacy Mode, system may occur un-expected behavior and it is not recommended to install OS with Legacy Mode

TPM Security:

These options enable and configure the Trusted Platform Module (TPM). If TPM is to be deployed, TPM must be enabled in the BIOS Setup program

2. Security → TPM Security

- TPM Security:
 - Disabled: The BIOS will not turn on the TPM during POST. The TPM will be non-functional and invisible to the Operating System
 - Enabled(Default): The BIOS will turn the TPM during POST so that it can be used by the Operating System
- PPI Bypass for Enable Commands = This option controls the TPM Physical Presence Interface(PPI). When enabled, this setting will allow the OS to skip BIOS PPI user prompts when issuing TPM PPI enable and activate commands.
- PPI Bypass for disable Commands = This option controls the TPM Physical Presence Interface(PPI). When enabled, this setting will allow the OS to skip BIOS PPI user prompts when issuing TPM PPI disable and deactivate commands.
- Clear = The BIOS clears the information stored in the TPM

2.7 Recommended Drivers / Applications Installation Order

For best results, Dell recommends installing drivers / applications in the following order:

2.7.1 Intel Mobile Chipset Software Installation Utility

- Microsoft Operating Systems might not include the updated Intel Chipset Mobile driver for Dell notebooks , Ultrabook . The Intel Mobile Chipset driver is available on Dell’s driver & downloads support web site (support.dell.com) under the “Chipset” section

2.7.2 Critical Microsoft QFEs

- Dell recommends installing all of the latest available fixes specific to the systems
- Please enable the Windows Update and connect to Internet once install the driver of Integrated Wired or Wireless Network Controller. (see more detail in chapter 2.6.10)

2.7.3 Media Memory Card Controller

- Microsoft Operating Systems do not include the Memory Card controller driver. Install the following driver provided by Dell:
 - Realtek driver is available on Dell’s driver & downloads support web site (support.dell.com) found under the “Chipset” section

2.7.4 Intel Storage - Intel Rapid Storage Technology

- The Intel Rapid Storage Technology (IRST) driver is required to be installed on Operating Systems in AHCI mode or RAID mode(Default)
- The Intel IRST application must also be installed
- The SATA operation modes are configured in the BIOS. Refer to the BIOS section 2.5
- If the SATA mode is configured in RAID mode, the IRST driver must be installed during the initial Operating System installation stages on PCIe SSD sku. The IRST driver is only available from Dell
- If SATA configuration mode in the BIOS is set to AHCI/RAID, install the Dell IRST driver and application available on Dell’s driver & downloads support web site (support.dell.com) under the “Serial ATA” section

- Follow these steps to install the IRST driver:

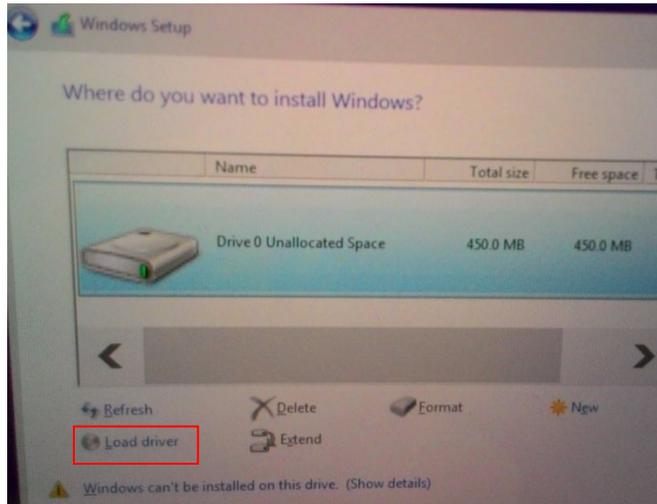
1. For “AHCI mode” or “RAID On mode with non-PCIe storage”.
 - Installing the Intel IRST driver after the installation of the Operating System
 - Boot to the Operating System DVD or Boot from PXE , then start the OS installation
 - After completing the OS installation, insert the Dell RDVD
 - Select the IRST driver and follow the installation procedure

Note: the latest IRST driver can also be obtained from support.dell.com under the “SATA Drivers” section

2. For “RAID On mode with PCIe storage”.
 - Installing the Intel IRST driver in OS installation stage
 - Download Intel Rapid Storage driver from support.dell.com.
 - Execute the .exe package and extract the file to folder.



- Copy the folder “f6flpy-x64” to one USB key.
- Boot to the Operating System DVD or Boot from PXE , then start the OS installation
- Choose “Load driver” in this step

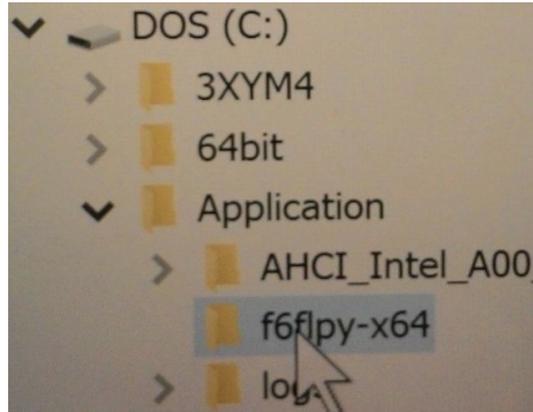


- Plug in USB Key which includes folder “f6flpy-x64” and click Browse



- Choose the folder “f6flpy-x64” and press OK. Then next to complete the OS

installation as normal steps



- After complete OS installation, still need to install Intel RST driver via .exe to install its application.

2.7.5 Graphics:

- Microsoft Operating Systems include the VGA graphics drivers only. Therefore for optimum graphics performance, Dell recommends installing the Dell graphics driver applicable to their system available on Dell’s driver & downloads support web site (support.dell.com) under the “Video” section
- On Discrete sku, Microsoft Operating Systems does not include the NVIDIA graphics drivers so need to install NVIDIA driver available on Dell’s driver & downloads support web site (support.dell.com) under the “Video” section

2.7.6 Audio:

- Microsoft Operating Systems do not include the Audio driver recommended by Dell. The HD Audio driver is available on Dell’s driver & downloads support web site (support.dell.com) under the “Audio” section

2.7.7 Dell Command Power Management – DCPM

- DCPM is a Dell developed application providing an advanced set of power management configuring and alerting capabilities
 - Dell customized power plans and extensions
 - Battery Health Information
 - Advanced Charge mode
- The DCPM Application is available on Dell’s driver & downloads support web site (support.dell.com) under “System Utilities” section

2.7.8 Wireless Local Network Adapters (WLAN)

- Operating Systems do not provide native device driver support for WLAN controllers featured in Dell systems. To obtain wireless network functionality, install the Wireless LAN device driver applicable to the WLAN devices installed in the notebook computer found under the “Network” section posted on Dell’s driver & downloads support web site (support.dell.com). The installer also provides WLAN application support which provides additional features including enterprise authentication enhancements

Note: With Intel Wireless Display (WiDi) you can quickly connect your laptop to your TV and projector using the Intel® Centrino® wireless solution that’s already built into your laptop. Because it’s based on Wi-Fi*, there are no cables between the laptop and TV/Projector. To obtain Wireless Display(ONLY applied to Intel WLAN) functionality, install the Wireless Display Application

found under the “Network” section posted on Dell’s driver & downloads support web site (support.dell.com).

2.7.9 Touchpad

- Microsoft Windows 10 Operating System includes the Touchpad drivers, users don’t need to install additional Touchpad drivers. But need to install Intel Serial IO Driver for Precision Touchpad enabled. Intel Serial IO driver is found under the “ System Utilities” section posted on Dell’s driver & downloads support web site(support.dell.com)
- Microsoft Windows 7 64-Bit Operating Systems do not include the Dell Touchpad drivers
- The Microsoft Windows 7/8.1 native OS mouse driver only provides basic point and click functionality. No advanced features are available with the native driver and this may provide a less than optimal user experience
- For Windows 7 and Windows 8.1, Dell recommends installing the appropriate Dell Touchpad driver for the following user experience benefits:
 1. The driver is tuned to the system characteristics to offer enhanced cursor acceleration and precision
 2. The driver provides the core palm rejection features
 3. Access to additional features and control setting (varies with system) including:
 - Enhanced scrolling and tapping
 - Touch sensitivity control
 - Multi-Touch Gestures
 - Jog Shuttle control
- For Windows 7/8.1, Dell Touchpad drivers are found under the “Input Device Drivers” section posted on Dell’s driver & downloads support web site (support.dell.com)

2.7.10 Intel Thunderbolt Driver

- Microsoft Operating Systems does not include the Thunderbolt driver. Install the Thunderbolt driver available on Dell’s driver & downloads support web site (support.dell.com) under the “Chipset” section

2.7.11 USB 3.0

- Microsoft Windows 7 64-Bit Operating Systems does not include the USB 3.0 driver. Install the USB 3.0 driver available on Dell’s driver & downloads support web site (support.dell.com) under the “Chipset” section
- Dell recommend to install USB 3.0 driver on Windows 8.1 64-Bit Operating Systems even it has native driver already. Install the USB 3.0 driver available on Dell’s driver & download

2.7.12 USB 3.1

- Microsoft Windows 7 64-Bit Operating Systems does not include the USB 3.1 driver. Install the USB 3.1 driver available on Dell’s driver & downloads support web site (support.dell.com) under the “Chipset” section

2.7.13 FreeFall Sensor (For HDD sku)

- Microsoft Operating Systems does not include the FreeFall Sensor driver. Install the FreeFall Sensor driver available on Dell’s driver & downloads support web site (support.dell.com) under the “System Utilities” section

2.7.14 Webcam

- Microsoft Operating System includes the Webcam drivers, users don’t need to install additional Webcam drivers.
- For video capturing / streaming features, install webcam software available from a variety of third party providers and as freeware

2.7.15 Windows Update

- Dell recommends performing Microsoft Windows updates to ensure the latest security, reliability, and compatibility updates are installed. These updates can be downloaded from Windowsupdate.Microsoft.com

2.7.16 Intel® Responsiveness Technologies

- Intel® Smart Response Technology- Support HDD with 32GB SSD Configuration on XPS-9550.
 1. Deliver SSD-Level performance with HDD storage capacity at lower BOM cost. Intelligent Block-Based Caching improves system performance.
 2. Deliver SSD-Level performance with HDD storage capacity at lower BOM cost. Intelligent Install the "Intel Rapid Storage Driver" for ISRT support in Windows available on Dell’s driver & downloads support web site (support.dell.com) under the “Serial ATA” section.
 3. Refer to Appendix B - Enable Intel Smart Response Technology Guidelines for How to enable.

Table of Storage configurations supported:

| Boot Disk (below)/ Technology (right) | Smart Response |
|--|---|
| HDD only | Not supported |
| HDD + SSD | Supported |
| HDD + Msata | Supported |
| SSD only | Not supported (Note: SSD performance achieved without Smart Response) |
| mSATA only | Not supported (Note: SSD performance achieved without Smart Response) |
| Hybrid Drive | Supported on the 32GB flash version |

Appendix

Appendix A

.NET Framework Requirements

What is .NET Framework?

The .NET Framework is a software framework from Microsoft, which is bundled with Windows operating systems. The .NET Framework is intended to be used by most applications created for the Microsoft Windows platform.

Appendix B

Enable Intel Smart Response Technology Guidelines

1 Requirement

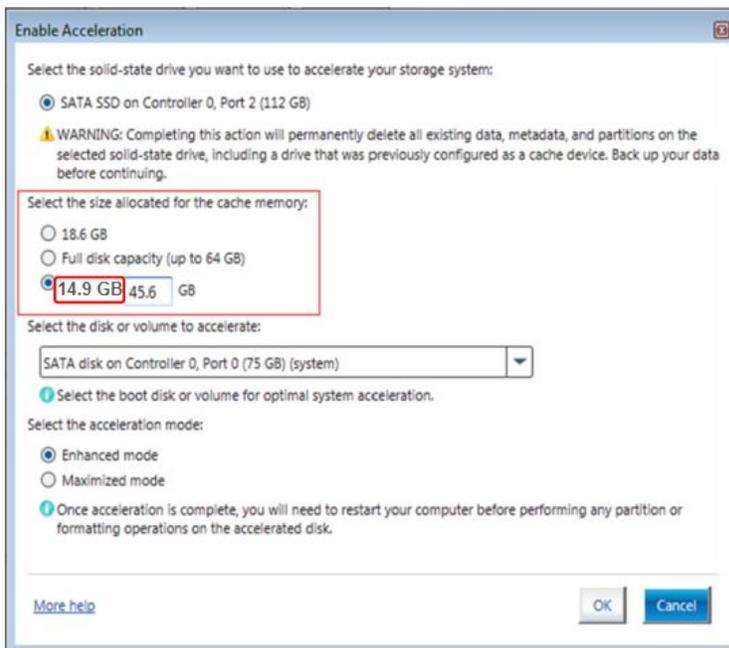
- BIOS SATA setting should be Raid on mode
- Intel Rapid Storage Driver should be installed
- The configuration should be HDD+32GB SSD/mSATA
- OS installed on HDD and leave 5MB unallocated disk space at the max LBA of the disks for writing metadata to the disk that stores all the configuration information and describe the volume.

2 Configure by Intel RST UI

- If Acceleration is enabled, will show status as below in UI

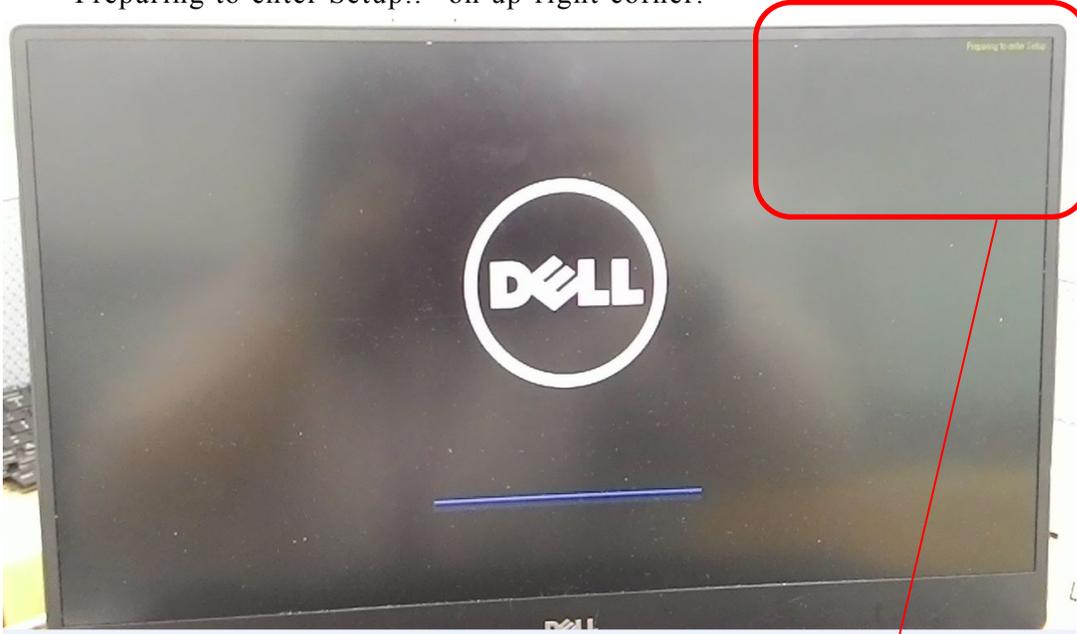


- Further Configuration
The Caching memory ranging from 14.9GB to 64GB

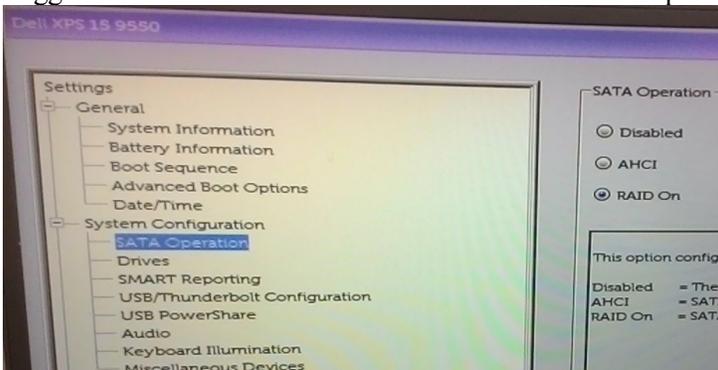


Appendix C BIOS SATA Mode Selection for image installation

1. Choose mode before building your Operating System
 - a. Boot system and press F2 while Boot to POST screen (Dell Logo) until shows yellow word “Preparing to enter Setup..” on up-right corner.”

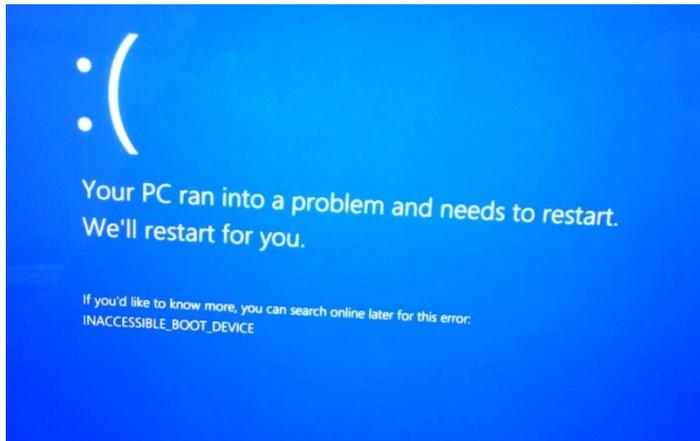


- b. Enter BIOS Setup-menu and extend the menu to choose SATA Operation
Suggest to choose the mode to RAID On mode which is platform default setting



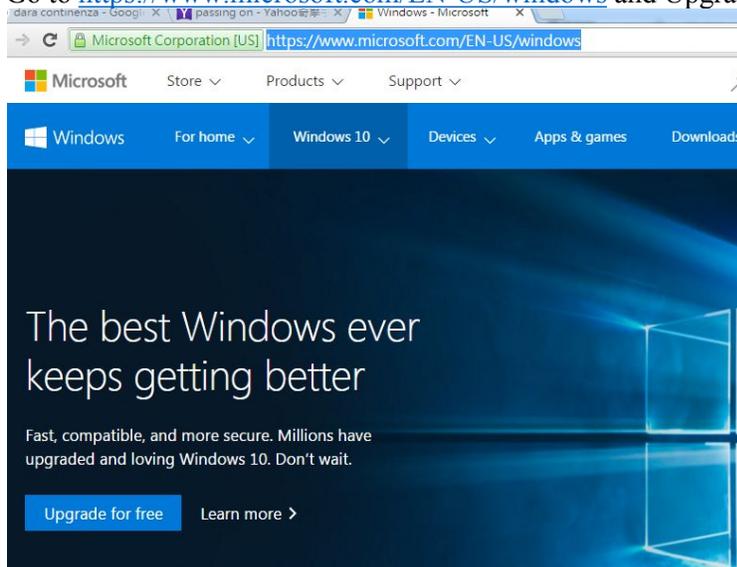
- c. Apply and restart to begin OS installation.

2. If OS setup in AHCI mode, need to confirm the setting is not changed to RAID or load to BIOS default
 - a. If the mode is different from the original setting while OS installation, will meet the problem that system can't boot to OS with BSOD(Blue Screen of Death)- INACCESSIBLE BOOT DEVICE.
This can be resolved after going to BIOS setup menu and change the mode back.
 - b. Fail symptom for the wrong SATA mode



Appendix D Upgrade to Win10 from Win7/8.1

1. Boot to Win7/Win8.1 OS
2. Connect to Wireless
3. Go to <https://www.microsoft.com/EN-US/windows> and Upgrade for free



4. Follow the instruction to process the OS upgrade.
5. If meet problem to launch OS with BSOD-INACCESSIBLE BOOT DEVICE. Please refer to Appendix C about SATA mode setting for resolving.

Appendix E

Dell Dock WD 15

1. Dell Dock WD15 Design

- a. It's USB Type-C interface. Please connect to XPS system via Type-C.



- b. A lot of I/O ports on dock and some need driver support. List as below
 - Realtek USB Audio Driver
 - Realtek USB GBE Ethernet Controller Driver

- c. Dell Dock WD15 support document

<http://www.dell.com/support/home/us/en/19/product-support/product/dell-dock-wd15/research>

2. Drivers & Downloads :

<http://www.dell.com/support/home/us/en/19/product-support/product/dell-dock-wd15/drivers>

3. Dell Dock WD15 Driver Set

- Applies to 7th generation Latitude E-Family & Mobile Precision only

To fully support new generation Dell Dock WD15, DELL highly recommend installing the following BIOS/Drivers step by

step on 64 bit Windows OS .

- a. Connect the AC adapter to the **Dell Dock (WD15)**, and then connect the USB Type-C connector to the system
- b. Flash the latest **BIOS** available to the system. This is posted on Dell's driver & downloads support web site (dell.com/support) under the “**BIOS**” section. Restart system before next step.
- c. Install **Intel(R) Thunderbolt Controller Driver** available to the system. This is posted on Dell's driver & downloads support web site (dell.com/support) under the “**Chipset**” section. Restart system before next step.
- d. Install **Intel(R) Thunderbolt 3 Firmware Update** available to the system. This is posted on Dell's driver & downloads support web site (dell.com/support) under the “**Docks/Stand**s” section. Restart system before next step.
- e. Install **Intel® HD Graphics Driver** available for the system. This is posted on Dell's driver & downloads support web site (dell.com/support) under the “**Video**” section. Restart system before next step.
- f. Install **Realtek USB GBE Ethernet Controller Driver for Dell Dock WD15** available to the system. This is posted on Dell's driver & downloads support web site (dell.com/support) under the “**Docks/Stand**s” section. Restart system before next step.
- g. Install **Realtek USB Audio Driver for Dell Dock WD15** available to the system. This is posted on Dell's driver & downloads support web site (dell.com/support) under the “**Docks/Stand**s” section. Restart system before next step.
- h. Install the **Dell Dock Firmware Update Tool** available to the system. This is posted on Dell's driver & downloads support web site (dell.com/support) under the “**Docks/Stand**s” section. Restart system before next step.

NOTE: After the update process completes, it's desired to shut down the computer and perform below steps in order to make the new firmware take effect.

- Power off the system.
- Disconnect the Thunderbolt 3 (Type-C) cable from the computer and then remove the AC adapter of dock from the power outlet.
- Then follow the recommended steps of connecting the AC adapter to the dock first and then attaching the Thunderbolt cable to the computer.
- Power on the computer with the docking station connected.

Dell provides the **Dell Command | Update** Application on a business client supported platforms to simplify the BIOS, firmware & driver update experience. This application is located under the "**Systems Management**" section of the Dell Support website (www.dell.com/support). Be sure to pick your system type from the list or enter your service tag to ensure you get the right version for your system.

NOTE: The **Dell Dock Firmware Update**, and **Intel HD Graphics Driver** are excluded in **Dell Command | Update v2.2.0**.

Dell also provides pre-packaged CAB pack for OS deployment through System Center Configuration Manager (SCCM) or other deployment services, which now contains prerequisite drivers for Dell Thunderbolt™ Dock. The CAB files can be downloaded from the "**Systems Management**" section of the Dell Support website (www.dell.com/support).

NOTE: After image deployment process, users have to further complete **Intel Thunderbolt 3 Firmware Update** and **Dell Dock Firmware Update** prior to using the docking station properly.

Appendix F

Dell Thunderbolt Dock TB15

1. What is the Dell Thunderbolt Dock TB15?

It is the Type-C dock product for extension a lot of I/O device usage.
Need User connect the dock via Type-C cable.



Dell Thunderbolt Dock TB15 support document were web-post under Select a product/Electronics & Accessories/Docking Stations/Dell Thunderbolt Dock TB15.

<http://www.dell.com/support/home/us/en/19/product-support/product/dell-thunderbolt-dock-tb15/research>

2. Dell Thunderbolt Dock TB15 Driver Set

– Applies to 7th generation Latitude E-Family & Mobile Precision only

To fully support new generation Dell Thunderbolt Dock TB15, DELL highly recommend installing the following BIOS/Drivers step by step on 64 bit Windows OS .

- a. Connect the AC adapter to the **Dell Thunderbolt Dock (TB15)**, and then connect the USB Type-C connector to the system
- b. Flash the latest **BIOS** available to the system. This is posted on Dell’s driver & downloads support web site (dell.com/support) under the “**BIOS**” section. Restart system before next step.
- c. Install **Intel(R) Thunderbolt Controller Driver** available to the system. This is posted on Dell’s driver & downloads support web site (dell.com/support) under the “**Chipset**” section. Restart system before next step.
- d. Install **Intel(R) Thunderbolt 3 Firmware Update** available to the system. This is posted on Dell’s driver & downloads support web site (dell.com/support) under the “**Docks/Stand**” section. Restart system before next step.
- e. Install **Intel® HD Graphics Driver** available for the system. This is posted on Dell’s driver & downloads support web site (dell.com/support) under the “**Video**” section. Restart system before next step.
- f. For **Dell Thunderbolt Dock** only, install **ASMedia USB 3.0 Extended Host Controller Driver for Dell Thunderbolt Dock** available to the system. This is posted on Dell’s driver & downloads support web site (dell.com/support) under the “**Docks/Stand**” section..
- g. For **Dell Thunderbolt Dock** only, install **ASMedia USB 3.0 Extended Host Firmware Utility** available to the system. This is posted on Dell’s driver & downloads support web site (dell.com/support) under the “**Docks/Stand**” section. Restart system before next step.
- h. Install **Realtek USB GBE Ethernet Controller Driver for Dell Thunderbolt Dock TB15** available to the system. This is posted on Dell’s driver & downloads support web site (dell.com/support) under the “**Docks/Stand**” section.
Restart system before next step.
- i. Install **Realtek USB Audio Driver for Dell Thunderbolt Dock TB15** available to the system. This is posted on Dell’s driver & downloads support web site (dell.com/support) under the “**Docks/Stand**” section. Restart system before next step.
- j. Install the **Dell Thunderbolt Dock Firmware Update Tool** available to the system. This is posted on Dell’s driver & downloads support web site (dell.com/support) under the “**Docks/Stand**” section.
Restart system before next step.

NOTE: After the update process completes, it's desired to shut down the computer and perform below steps in order to make the new firmware take effect.

- Power off the system.
- Disconnect the Thunderbolt 3 (Type-C) cable from the computer and then remove the AC adapter or dock from the power outlet.
- Then follow the recommended steps of connecting the AC adapter to the dock first and then attaching the Thunderbolt cable to the computer.
- Power on the computer with the docking station connected.

Dell provides the **Dell Command | Update** Application on a business client supported platforms to simplify the BIOS, firmware & driver update experience. This application is located under the "**Systems Management**" section of the Dell Support website (www.dell.com/support). Be sure to pick your system type from the list or enter your service tag to ensure you get the right version for your system.

NOTE: The **Dell Thunderbolt Dock Firmware Update**, and **Intel HD Graphics Driver** are excluded in **Dell Command | Update v2.2.0**.

Dell also provides pre-packaged CAB pack for OS deployment through System Center Configuration Manager (SCCM) or other deployment services, which now contains prerequisite drivers for Dell Thunderbolt™ Dock. The CAB files can be downloaded from the "**Systems Management**" section of the Dell Support website (www.dell.com/support).

NOTE: After image deployment process, users have to further complete **Intel Thunderbolt 3 Firmware Update** and **Dell Thunderbolt Dock Firmware Update** prior to using the docking station properly.

Appendix G General

Re-Imaging FAQs

1. How do I resolve a PCI Yellow Bang?
 - a. After installing the drivers and you have this PCI yellow bang in device manager, you need to install the following drivers found in the Chipset folder:


The screenshot shows two entries in a device manager window. The first entry is 'PCI Serial Port' and the second is 'PCI Simple Communications Controller'. Both entries have a yellow warning icon to their left, indicating a driver issue.
 - b. For E-Family 1st generation you need to install two drivers - AMT SOL / LMS and AMT HECI
 - c. For E-Family 2nd generation you need to install one driver - AMT HECI
2. What is the Dell System Software utility and why do I need it?
 - a. The Dell System Software utility provides critical updates and patches for your operating system necessary for the correct operation of your system. It is important to install this utility first after re-imaging your system. It is found under the System Utilities folder on the Dell Drivers and Download page
3. What is the Client System Update application?
 - a. Located under System Management > Client System Update, this is primarily targeted at Customers who want to manage systems on their own. The tool is designed to allow users to specify their update preferences and apply updates based on the criticality. Alternatively, end users can use the scheduling option to keep their system up-to-date with the systems software released by Dell.