



Dell
Business Client
Re-Image "How-To" Guide
Latitude Ultrabook, E-Family &
Mobile Precision Notebook

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1 Overview

This document is a quick guidance for re-image OS on Dell Latitude & Mobile Precision notebooks. Failure to install drivers and applications in this document may result in undesirable performance. These drivers are required to enable new technologies and features.

Reinstalled images should be built from [Windows clean installation](#) then following steps in this guide. Dell does not recommend starting from an image built on previous generations of products or other computer systems.

This “How-To” guide applies to following Systems, and support Windows OS list in below

| | Windows 10 64bit | Windows 8.1 64bit* | Windows 7 64bit* | Windows 7 32bit* |
|-----------------------|------------------|--------------------|------------------|------------------|
| Latitude E5280/5288 | Yes | No | No | No |
| Latitude E5480/5488 | Yes | No | No | No |
| Latitude E5580 | Yes | No | No | No |
| Latitude E7280 | Yes | No | No | No |
| Latitude E7480 | Yes | No | No | No |
| Mobile Precision 3520 | Yes | No | No | No |
| Mobile Precision 5520 | Yes | No | No | No |

***NOTE:** Before attempting to install Windows 7 or 8.1, [check your processor type](#). Systems with 7th Generation Intel® Core™ i7 Processors are **NOT** eligible for Windows 7/8.1 downgrades.

NOTE: Dell *highly recommends* you turn on Windows Update after Windows OS clean installation. The best way to keep your computer current is to turn on automatic updates. With automatic updates via internet, you don’t have to search for updates online or possibly miss critical fixes or device drivers for your Windows PC. Windows Update automatically installs important updates and latest drivers as they become available. Read [here](#) for more detail

NOTE: To enable internet access, please install Ethernet controller driver first.

Search for your system model name under Select a Product selection, or enter the service tag of your system to locate Drivers & Downloads page on the Dell [Support Website](#). Change the Operating System to view all available updates for your system. Select **Intel I2xx/825xx Gigabit Ethernet Network Controller Drivers** under “Network” category.

2 “How-To”

2.1 Auto Installation Application

Dell *highly recommends* **Dell Command | Update application (DCU)** to automate the installation of BIOS, firmware, driver and critical updates specific to your system. The application is available to download on [Dell Support Website Driver & Downloads page](#). Pick your system type from the list or enter the service tag of your system to get the right version for your computer.

The DCU is supported on Precision, XPS and Latitude notebooks. The Dell Command | Update tool allows you to keep your system up to date without you having to know every driver or update needed. It will automatically interrogate your system and compare it to the available updates on dell.com/support for your specific system.

Read [here](#) for more detail about How to use Dell Command | Update to update all drivers BIOS and firmware for your system

NOTE: Older BIOS versions and drivers could result in your computer or not functioning optimally.

2.2 Manual Installation Order

Alternatively, Dell recommends installing the following BIOS, firmware and drivers step-by-step in the prescribed order to ensure optimal performance.

Search for your system model name under Select a Product selection, or enter the service tag of your system to locate Drivers & Downloads page on the Dell Support Website. Change the Operating System to view all available updates for your system.

NOTE: Dell *highly recommends* that you install BIOS, firmware, driver and critical updates via **Microsoft Windows Update** (in session 1) or **Dell Command | Update application** (in session 2.1, [available since Feb.2017](#)). Manual installation is only recommended when auto installation applications are not available.

NOTE: Following above, Dell also recommends you install firmware, driver of **Dock WD15** and **Thunderbolt Dock TB16** via **Dell Command | Update** application. More information of **WD15**, please refer to *Dell WD15 docking Station Installation Guide* [here](#) or *Video tutorials* [here](#). More information of **TB16**, please refer Dell Thunderbolt Dock TB16 Driver Installation Guide or *Video tutorials* [here](#)

NOTE: Dell recommends restarting your system between each driver, firmware installation.

Dell Latitude Ultrabook, E-Family & Mobile Precision Reimage "How-To" Guide

| Title | Category | Support Products | | | Note |
|--|----------------------|---|-----------------------------|-----------------------------|---|
| | | Latitude E5280/5480/5580 E5288/5488 E7280/7480 | Mobile Precision 3520 | Mobile Precision 5520 | |
| BIOS | | | | | |
| DELL System BIOS | BIOS | ● | ● | ● | All config. required |
| Driver & Firmware - onboard Devices | | | | | |
| Intel Chipset Device Software Driver | Chipset | ● | ● | ● | All config. required |
| Intel I2xx/825xx Gigabit Ethernet Network Controller Driver | Network | ● | ● | ● | All config. required |
| Intel Device Manager Diagnostics Utility | Network | ● | ● | ● | All config. required |
| Intel HID Event Filter Driver | Chipset | ● | ● | ● | All config. required |
| Alps Touchpad Driver | Input | ● | ● | ● | All config. required |
| Intel HD Graphics - Driver | Video | ● | ● | ● | All config. required |
| Intel Rapid Storage Technology Driver and Management Console | Serial ATA | ● | ● | ● | All config. required |
| Realtek ALC3246 Audio Driver | Audio | ● | ● | ● | All config. required |
| Realtek RTS5242 Card Reader Driver | SD Card | ● | ● | ● | All config. required |
| Intel(R) Dynamic Platform and Thermal Framework | Chipset | ● | ● | ● | All config. required |
| Intel(R) Management Engine Components | Chipset | ● | ● | ● | All config. required |
| ST Microelectronics Accelerometer | Chipset | ○ | ○ | ○ | Required for spindle HDD config. |
| Intel(R) Thunderbolt(TM) Controller Driver | Chipset | ○ | ○ | ○ | Required for Thunderbolt config. |
| Intel Thunderbolt 3 Firmware Update | Chipset | ○ | ○ | ○ | Required for Thunderbolt config. |
| Dell ControlVault2 Driver and Firmware | Security | ○ | ○ | ○ | Required for USH config. |
| nVidia Video - Driver | Video | ○ | ○ | ○ | Required for Discrete Gfx config. |
| Realtek IR Camera Driver | Input | ○ | ○ | ○ | Required for IR Camara config. |
| Driver & Firmware - Communication Devices | | | | | |
| Intel 18265/8265/7265(SD)/3165 WiFi Driver | Network | ○ | ○ | ○ | Required for Intel 8265/18265 Wireless |
| Intel 8265/8260/7265/7260/3165/18265/18260/17265 Bluetooth Driver | Network | ○ | ○ | ○ | Required for Intel 8265/18265 Wireless |
| Intel 18265/18260/17265 WiGig Application | Network | ○ | ○ | ○ | Required for Intel 18265 Wireless card |
| Dell Wireless 1810/1820 WiFi/Bluetooth Driver | Network | ○ | ○ | ○ | Required for DELL 1820 Wireless card |
| Dell Wireless 5811e LTE Mobile Broadband and GPS Driver | Communication | ○ | ○ | ○ | Required for DELL 5811 LTE card |
| DW5814E LTE Mobile Broadband Driver | Communication | ○ | ○ | ○ | Required for DELL 5814 LTE card |
| Driver & Firmware - Dock Stands | | | | | |
| DELL Wired Dock(WD15)/Docking Monitor Stand(FS1000) Firmware Update Utility | Docks/Stands | ○ | ○ | ○ | (1) Required for WD15 dock (2) connect AC adapter to dock then attach the Type-C cable to system before installation |
| ASMedia USB 3.0 Extended Host Controller | Docks/Stands | ○ | ○ | ○ | Required for TB16 dock |
| RealTek USB GBE Ethernet Controller Driver | Docks/Stands | ○ | ○ | ○ | Required for TB16 and WD15 dock |
| Realtek USB Audio Driver for Dell Wireless Dock, Dell Thunderbolt Dock, Dell Docking Monitor Stand and Dell Dock | Docks/Stands | ○ | ○ | ○ | Required for TB16 and WD15 dock |
| ASIX USB to Serial / Parallel Port Driver | Docks/Stands | ○ | ○ | ○ | Required for LD17 dock |
| Applications | | | | | |
| Dell Command Power Manager (DCPM) | System Utilities | ● | ● | ● | All config. required |
| Dell Command Update (DCU) | System Management | ● | ● | ● | All config. required |
| Dell Command Configure (DCC) | System Management | ○ | ○ | ○ | Option for IT management |
| Dell Command Integration Suite (DCIS) | System Management | ○ | ○ | ○ | Option for IT management |
| Dell Command Intel vPro (DCIV) (Aurora) | System Management | ○ | ○ | ○ | Option for IT management |
| Dell Command Monitor (DCM) | System Management | ○ | ○ | ○ | Option for IT management |
| Dell Command Powershell Provider (DCPP) | System Management | ○ | ○ | ○ | Option for IT management |
| DELL Data Protection Encrytion | DELL Data Protection | ○ | ○ | ○ | Required for storage encrytion and PBA features |
| Dell Foundation Services - Application | Application | ○ | ○ | ○ | Option for IT management |
| Dell Update | Application | ○ | ○ | ○ | Option for IT management |
| Dell Digital Delivery Application | Application | ● | ● | ● | All config. required |
| Dell Precision Optimizer (DPO) | Application | ● | ● | ● | Mobile Precision Required |

Appendix

Appendix A

How to create and use the Dell Windows recovery image

After you download the Windows recovery image [file](#), follow these instructions to create a bootable USB drive or DVD, copy the recovery image onto your bootable media, and then use the media to reinstall Windows on your Dell device.

Warning: These advanced steps are intended primarily for system administrators and those familiar with command line and/or comfortable following technical tutorials.

Note: To print this document, expand the required section before you click the printer icon at the top of this document.

How to create Windows 10 installation media

Create USB installation media

Step 1: Format your USB drive as a bootable drive

Make sure that you use 8 GB or larger USB drive (32 GB Maximum) and backup any important data on it. When the drive is formatted, all existing data will be deleted.

1. Connect the USB drive to the PC where you'll be creating the installation media.
2. Open the Command Prompt window by right-clicking the **Start** button and then select **Command Prompt (Admin)** to run in administrator mode.
3. At the command prompt, type **diskpart** and press **Enter**.
4. Next, type **list volume** and press **Enter**.
5. From the list, determine which volume number is the connected USB drive. The volume type should be marked as Removable.
6. Type **select volume X**, where X is the number obtained in the previous step. For example, **select volume 9**.
7. Type **clean** and press **Enter**.
8. Type **create partition primary** and press **Enter**.
9. Type **format fs=fat32 label='OS install' quick** and press **Enter**.
10. Type **active** and press **Enter**.
11. To close the Command Prompt window, type **exit** and press **Enter**.

Step 2: Copy the recovery image to your bootable USB drive

1. Go to the location where you saved the recovery image.
2. Right-click the recovery image file (.iso) and on the options menu, select **Mount**.
3. Windows will open the contents of the image in File Explorer.
4. Copy the contents of the image to your bootable device.

Create DVD installation media

1. Insert the DVD into the disc drive of the PC where you'll be copying the recovery image to DVD. Make sure that the disc drive has burning capabilities.

2. Navigate to the folder where you saved the recovery image and double-click the iso file.
3. Either the Windows ISO media creation tool or installed third-party disc burning software will open.
4. Follow the on-screen instruction to burn the ISO to the DVD. When the process completes, you will have created bootable installation media.

[Using the USB or DVD installation media to reinstall Windows 10](#)

1. Connect the installation media you created to the Dell system where you want to install Windows.
2. Restart the system and when the Dell logo screen appears, tap the **F12** key until you see **Preparing one time boot menu** in the top-right corner of the screen.
3. On the boot menu, under UEFI boot, select your media type (USB or DVD) and enter your language.
4. On the Choose an option screen, select **Troubleshoot**, and then select **Recover from a drive**.
5. Follow the on-screen instructions to finish installing Windows. The installation process will take some time and your computer will restart.

Appendix B

Intel® Rapid Storage Technology

Intel® Rapid Storage Technology offers greater levels of performance, responsiveness, and expandability than ever before. Whether you are using one or multiple serial ATA (SATA) or PCIe drives, you can take advantage of enhanced performance and lower power consumption from the latest storage technologies. Additionally, you can rest easy knowing you have added protection against data loss in the event of a hard drive failure.

- Unleash the Performance of Your Solid-State Drive

Intel Rapid Storage Technology has added support for next generation PCIe storage devices with transfer speeds up to 1 GB/s that maximizes storage performance and improves response time for everyday usages like photo editing, video loading, and office productivity. Dynamic storage accelerator accelerates the performance of your SSD by dynamically adjusting system power management policies to deliver up to 15 percent faster performance¹ during heavy multitasking compared to default power management.

- Fast Access to the Files and Applications You Use Most

Intel® Smart Response Technology is a feature of Intel Rapid Storage Technology that recognizes and automatically stores your most frequently used applications and data into a high performance SSD while giving you full access to the large storage capacity of a hard disk drive (HDD). This enables a lower-cost, small-capacity SSD to be used in conjunction with a high-capacity HDD. Intel Smart Response Technology enables your system to perform faster than a system with just a HDD.

Intel Smart Response Technology also supports solid-state hybrid drives (SSHDs). Intel Smart Response Technology boosts SSHD performance by informing the drive which data you use the most so it can store it into the built-in SSD, so your most frequently used data and applications are instantly accessible.

- Performance with Protection: RAID Technology

Most of us don't plan backup storage well in advance. Hard drive failure can be devastating, because it results in irretrievable content. Intel Rapid Storage Technology offers features that improve performance and data reliability for disk-intensive retrieval applications such as editing home video. For the fastest performance, Intel Rapid Storage Technology can combine from two to six drives in a configuration known as RAID 0, so data can be accessed on each drive simultaneously, speeding up response time. For the best reliability, Intel Rapid Storage Technology RAID support includes the following levels of performance and reliability:

RAID level 0 (Striping)

RAID level 1 (Mirroring)

RAID level 5 (Striping with parity)

RAID level 10 (Striping and mirroring)

Multiple drives in a PC can also provide added protection from disastrous hard drive failures by mirroring all data among two or more drives. This configuration is known as RAID 1. RAID 5 and 10 provide additional reliability by mirroring all data among three and four drives respectively.

- Rapid Data Recovery

Intel® Rapid Recover Technology (Intel® RRT) provides a recovery point that can be used to quickly recover a system in the event of hard drive failure or data corruption. The clone can also be mounted as a read-only volume to allow a user to recover individual files.

Intel Smart Response Technology also supports SSHDs. An SSHD is a new type of HDD with a built-in high-performance SSD. Intel Smart Response Technology boosts SSHD performance by informing the drive which data you use the most, so it can store it into the built-in SSD.

You can create, work, and play faster than ever before without paying more for a larger SSD to store your entire digital library.

Appendix C

[Dell Client Command Suite](#)

The Dell Client Command Suite is the new name of our industry leading Client Systems Management tools. These tools make Dell commercial client systems the world's most manageable client devices. Click on a link below for more details

[Dell Command | Monitor](#)

[Dell Command | Configure](#)

[Dell Command | Deploy](#)

[Dell Command | Integration Suite for System Center 2012](#)

[Dell Command | Update Catalog](#)

[Dell Command | Update](#)

[Dell Command | Power Manager](#)

[Dell Command | Intel vPro Out of Band](#)

[Dell Command | PowerShell Provider](#)

Appendix D

Dell Dock (WD15) & Dell Thunderbolt Dock (TB16) information

| Dell Dock WD15 | |
|---|--|
| Display Ports | VGA, mDP, HDMI |
| Number Displays Supported | 2 ¹ |
| Max Resolution | 3840 x 2160 @ 30 Hz, 2560 x 1600 @ 60Hz |
| USB Ports | USB 2.0 - (2), USB 3.0 - (3) |
| Thunderbolt 3 Port | None |
| Audio/Headphone | 3.5 mm Combo - (1), 3.5 mm Speaker Out (1) |
| Network | RJ-45 Gigabit Ethernet |
| LED Indicators | Power Adapter LED |
| | Docking Cable Connector LED |
| | RJ-45 LEDs |
| Dock Connector | Proprietary Docking Connector to USB Type-C |
| AC Adapter | 130W/180W |
| Dimensions | 155 x 110 x 21 mm |
| | 6.1 x 4.3 x 0.83 inches |
| Weight | 0.93 lbs |
| | 420 g |
| System Requirements | PC equipped with DisplayPort over USB-Type-C or Thunderbolt 3 |
| Operating Systems | Windows 7/8/8.1/10 |
| Systems Management ² | Wireless vPro Supported by the Notebook, Tablet or Workstation |
| Docking Cable Type | DisplayPort over USB Type-C (0.8m) |
| MAC Address ³ | Pass Thru MAC Address (Dell Systems ONLY) |
| Warranty | If purchased as a tied laptop accessory the dock shares the system warranty |
| | If purchased APOS, 1 yr warranty. Advanced Exchange (DAO/APJ), Next business day exchange EMEA |
| ¹ A 3rd display can be connected with the VGA port. The image will be in clone mode vs. Extended Desktop. ² Dell Dock WD15 does not support wired vPro. If vPro is needed, then the system host Ethernet port may be used or WiFi vPro within the system. ³ The dock has the capability to pass through the system MAC address to the network. | |
| Dell Thunderbolt Dock TB16 | |
| Display Ports | VGA, mDP, HDMI, DP, Thunderbolt |
| Number Displays Supported | 3 @ 60Hz ⁴ |
| Max Resolution | 5120 x 2880 @ 60Hz |
| USB Ports | USB 2.0 - (2), USB 3.0 - (3) |
| Thunderbolt 3 Port | USB Type-C |

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| | |
|---|--|
| Audio/Headphone | 3.5 mm Combo - (1), 3.5 mm Speaker Out (1) |
| Network | RJ-45 Gigabit Ethernet |
| LED Indicators | Power Adapter LED |
| | Docking Cable Connector LED |
| | RJ-45 LEDs |
| Dock Connector | Proprietary Docking Connector to USB Type-C |
| AC Adapter | 180W/240W |
| Dimensions | 145 x 145 x 52 mm |
| | 5.7 x 5.7 x 2.05 inches |
| Weight | 1.63 lbs |
| | 740 g |
| System Requirements | PC equipped with DisplayPort over USB-C or Thunderbolt |
| Operating Systems | Windows 7/8/8.1/10 |
| Systems Management ² | Wireless vPro supported by the notebook, tablet, or workstation |
| Docking Cable Type | USB Type-C Thunderbolt (0.5m) |
| MAC Address ³ | Pass Thru MAC Address (Dell Systems ONLY) |
| Warranty | If purchased as a tied laptop accessory the dock shares the system warranty |
| | If purchased APOS, 1 yr warranty. Advanced Exchange (DAO/APJ), Next business day exchange EMEA |
| <p>¹ USB-Type C Non-Thunderbolt™ or USB Type-C Universal cable required. The host device must support Thunderbolt™ 3 for Thunderbolt speeds to be supported on the Dell Thunderbolt™ Dock.</p> <p>² Dell Dock and Dell TBT Dock do not support wired vPro. If vPro is needed, the host Ethernet port can be used, or WiFi vPro within the host.</p> <p>³ The dock will pass through the NB/Tablet MAC address</p> <p>⁴ With Intel HD Integrated graphics. Some systems with Discrete Graphics (Nvidia/AMD) may be able to display additional displays, but due to bandwidth limitations of the Thunderbolt bus, the refresh rate may have to be reduced to 30 Hz. See the TB16 user guide pg 22</p> | |

The Dell Thunderbolt Dock TB16 is a device that links all your electronic devices to your laptop computer using Thunderbolt™ 3 (Type-C) cable interface. When you connect the laptop to the docking station, you can gain access to all your peripherals such as the mouse, keyboard, stereo speakers, external hard drive, and large-screen displays without having to plug each one into the laptop.

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Key Features:

- Supports up to three FHD displays or two 4K displays @ 60Hz
- Supports faster data transfer of up to 40 Gbps, ideal for large files.
- Common docking experience across platforms with USB-C port(s) having data, video, and power capabilities.
- Single cable for power and data (up to 130w on supported computers only).

For more information about USB Type-C, refer to the knowledgebase article [USB Type-C - Frequently Asked Questions](#).