

Latitude 7410

Re-imaging guide for Microsoft Windows



Notes, cautions, and warnings

 **NOTE:** A NOTE indicates important information that helps you make better use of your product.

 **CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

 **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

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Installation overview

i **NOTE:** It is recommended that you download and install the device drivers from the [Dell Drivers & Downloads website](#). Installing device drivers from a non-Dell website can cause:

- System performance issues
- Corrupt operating system files
- Blue screen errors
- Unexpected shutdown
- Infect your system with malicious software.

i **NOTE:** With the introduction of Windows 10, Microsoft has prioritized driver installations by Universal Windows Platform (UWP) from the Microsoft Store. UWP applications replace Windows executable drivers and are a more secure method of driver installation. Some domain administrators may place limits of Microsoft Store accessibility. If you have questions about accessing the Microsoft Store for driver updates, contact your administrator.

Device drivers must be updated when you reinstall the operating system using either CD, DVD, USB drive, or when you are facing networking, graphics, sound or other hardware-related problems. If you have performed a factory reset of your Dell system using the Dell Backup and Recovery application or other factory-reset methods, it is recommended that you install or update device drivers. Doing so ensures that you have the latest device drivers that are installed on your system and that the devices function optimally.


Installing or updating device drivers may lead to the following improvements:

- Increase system performance
- Patch security risks
- Expand compatibility
- Fix device issues, and support new features.

However, if your system is operating optimally and there are no driver issues that are listed in Windows Device Manager and Windows is not suggesting urgent or recommended driver updates, driver updates are unnecessary. Updating drivers unnecessarily may create problems. Review the importance of each driver update on the Dell driver downloads page before assessing the need to install an update.

Introduction

Reimaging is the process of removing all software on the computer and reinstalling the removed software. Reimaging is required when software in the computer is corrupted or damaged. It can also be used as a means of removing harmful and malicious software in your computer. This reimaging guide provides the steps that are required for reimaging your computer.

 **CAUTION:** This reimaging guide is designed for system administrators. Do not attempt to reimage the system if you are not an administrator or are unsure of the procedures. Failure to follow instructions may result in permanent data loss.

 **NOTE:** Information that is provided in this guide is applicable to computers with Microsoft Windows only.

This guide assists you in installing Dell-recommended software stack and settings, drivers, and applications, which are tested and validated on the Latitude Notebook. The installation of the listed drivers and applications as described in the guide enhances the optimal performance of your computer.

Dell also provides drivers and applications that are not included with the Windows operating system.

It is always recommended to reimage on a newly installed operating system and not from any previous image-build. Ensure BIOS settings, including SATA configurations and modes, are appropriately set and the latest drivers and applications are used when reimaging the computer.

Order of reinstallation

NOTE: Some drivers and application installation steps may not be applicable, depending on the configuration of the computer you have ordered.

To achieve optimal performance, install the drivers and applications in the following sequence:

1. BIOS: Allows the operating system to be loaded into the memory and enables the initial startup process on your computer.
2. Windows operating system: The operating system controls the system hardware to be a base on which other software can operate on.
3. Intel Chipset driver: Allows Windows to communicate and adjust settings on components on the system board.
4. Critical Microsoft Quick Fix Engineering (QFE) updates: Microsoft updates that fix and optimize the operating system.
5. Media-card reader driver: Enables and enhances the media-card reader.
6. Intel Rapid Storage Technology (IRST): Enables and enhances data storage virtualization for the storage drives installed in the computer.
7. Graphics:
 - Enhances and optimizes video performance
 - Enables and provides additional functionality that is not part of the native Microsoft VGA driver, including:
 - User-customizable power management features
 - Portability and behavioral profiles
 - Multiple-monitor support
8. Audio: Enables and enhances the audio controller.
9. Security, which includes:
 - Dell ControlVault3 Driver and Firmware
 - Realtek IR camera : Enables and enhances the infrared camera
10. Dell application, which includes:
 - Dell Power Manager (DPM)
 - Dell ExpressSign-in (P-sensor with Windows Hello IR camera)
11. Networking and Communication, which includes:
 - Wireless Local Area Network Adapters (WLAN): Enables and enhances the wireless adapter.
 - Bluetooth: Enables and enhances the Bluetooth adapter
12. Dell Client Command Suite

NOTE: Dell Client Command Suite is the new name of the industry-leading Client Systems Management tools. These tools make Dell commercial client systems the most manageable client devices in the world. Click here <https://en.community.dell.com/techcenter/enterprise-client/w/wiki/7431.dell-client-command-suite> for more details.

Updating or Resetting the BIOS

Flashing the BIOS

Dell recommends flashing the BIOS when an update is available or when you replace the system board. To flash the BIOS:

1. Turn on your computer.
2. Go to <https://www.dell.com/support>.
3. Click Product support, enter the Service Tag of your computer, and then click Submit.

 **NOTE:** If you do not have the Service Tag, use the Autodefect feature or manually browse for your computer model.

4. Click Drivers and downloads → Find it myself.
5. Select the operating system installed on your computer.
6. Scroll down the page, and expand BIOS.
7. Click **Download** to download the latest version of the BIOS for your computer.
8. After the download is complete, go to the folder where you saved the BIOS update file.
9. Double-click the BIOS update file icon, and follow the instructions on the screen.

Clearing CMOS settings

When, flashing your computer with the latest BIOS update results in your computer being unable to boot, a BIOS reset is necessary. Clearing the CMOS settings resets the BIOS to factory settings. For more information about clearing the CMOS settings, see your computer *Service Manual*.

Trusted Platform Module (TPM) security

TPM must be enabled in the BIOS setup program for it to be deployed on the computer. Follow these steps to enable and configure the TPM:

1. Turn on or restart your computer.
2. Press F2 when the Dell logo is displayed on the screen to enter the BIOS setup program. The BIOS setup program is displayed.
3. On the left pane, select **Security → TPM Security → Clear TPM**.
4. Select or clear any of the following options to enable or disable it, respectively:
 - **Enabled (Default):** The BIOS enables the TPM during POST, and accessible by the operating system.
 - **Disabled:** TPM will not be enabled during the POST and is inaccessible to the operating system.
 - **TPM On:** The TPM is enabled and activated.
 - **Clear:** The BIOS clears the information that is stored in the TPM.
5. Save the settings and exit.

Reinstalling the Operating System

The 64-bit Microsoft Windows 10 operating system is validated for use on this computer. You can reset or reinstall the operating system under different scenarios. For more information about reinstalling the operating system, see the knowledge base article [SLN297920](#).

Before attempting a reinstall of your operating system, Dell recommends that you backup all data as described in the Microsoft knowledge base article located <https://support.microsoft.com/en-us/help/17143/windows-10-back-up-your-files>

Reinstalling drivers and Applications

Drivers and applications are software that enables Windows (or another operating system) to communicate with the hardware devices and software in your computer. Devices such as video and sound cards require drivers to function correctly within Windows, and require applications to enable users to adjust hardware settings.

The Windows reinstallation includes drivers for most devices, but device-specific drivers may have to be downloaded and installed separately. Dell recommends that you download the device drivers for your Dell computer from [Drivers & Downloads](#)

Applications must be downloaded and installed separately. Dell recommends that you download the required applications for your Dell computer from the [Dell Download Center](#).

Displaying drivers and applications on your computer

1. Turn on your computer.
2. Go to <https://www.dell.com/support>.
3. Click Product support, enter the Service Tag of your computer, and then click Submit.

 **NOTE: If you do not have the Service Tag, use the Autodefect feature or manually browse for your computer model.**

4. Click Drivers and downloads → Find it myself.
5. Select the Windows operating system installed on your computer to get a list of the drivers and applications available on your computer.

Reinstallation sequence for drivers and applications

Driver installation is critical if you have reinstalled the Windows operating system on your Dell computer. Install the drivers in the correct sequence for your computer to function correctly. In some scenarios, you may have to reinstall or update the device driver if you are encountering any issues with a specific device. For more information, see the Dell knowledge-base article [SLN148687](https://www.dell.com/support.com) at <https://www.dell.com/support.com>

NOTE: Windows 10 operating system includes the touchpad drivers- no other touchpad driver installation is required.

NOTE: Windows 10 operating system includes the webcam drivers—no additional webcam driver installation is required. For video capture or streaming, users can install webcam software available from third-party providers.

It is recommended installing drivers or applications in the following sequence:

Intel chipset device software

The Windows operating system may not include the updated Intel chipset driver set for Dell computers. These Intel chipset drivers are available on Dell support site <https://www.dell.com/support>.

Downloading and installing these chipset drivers

1. Turn on your computer.
2. Go to <https://www.dell.com/support>.
3. Click Product support, enter the Service Tag of your computer, and then click Submit.

NOTE: If you do not have the Service Tag, use the auto detect feature or manually browse for your computer model.

4. Click Drivers and downloads.
5. Scroll down the page, and select Chipset in Category .
6. Click **Download** to download chipset drivers for your computer.
7. After the download is complete, go to the folder where you saved the chipset driver files.
8. Double-click the chipset driver files icon, and follow the instructions on the screen.

NOTE: Intel Chipset drivers including Intel Chipset Device Software Driver, Intel Dynamic Platform and Thermal Framework, Intel Management Engine Components Installer and Intel HID Event Filter Driver

Critical Microsoft Quick Fix Engineering (QFE) updates

Install all the latest available QFE updates from the latest Service. Pack from Microsoft. Service packs are automatically downloaded and installed when Windows Updates are enabled and can be manually downloaded and installed from the Microsoft support site.

Media-card reader driver

The Windows operating system does not include the media-card reader driver. Install the Realtek driver, that is available for download on the Dell support site.

Downloading and installing the media-card reader driver

1. Turn on your computer.
2. Go to <https://www.dell.com/support>.

3. Click Product support, enter the Service Tag of your computer, and then click Submit.

 **NOTE: If you do not have the Service Tag, use the auto detect feature or manually browse for your computer model.**

4. Click Drivers and downloads.
5. Scroll down the page, and select Chipset in Category .
6. Click **Download** to download media card reader drivers for your computer.
7. After the download is complete, go to the folder where you saved the media card reader driver files.
8. Double-click the card reader driver file icon, and follow the instructions on the screen.

Intel Rapid Storage Technology (IRST)

The IRST software package enables and enhances high-performance Serial ATA (SATA) and SATA RAID capabilities for supported operating systems. The IRST software package provides an added protection against data loss in an event of a hard drive failure.

 **NOTE: The following conditions must be met before you can install IRST on your computer:**

- **Your computer has a RAID I/O controller hub (ICH). If your computer does not have a RAID ICH, you cannot install IRST unless a third-party RAID controller card is installed.**
- **Your RAID controller is enabled by default.**

 **CAUTION: Enabling the RAID controller with SATA hard drive preinstalled might cause your computer to display a blue screen with an error code and a system reboot. To enable RAID, reinstall the operating system.**

Downloading and installing the IRST driver

1. Turn on your computer.
2. Go to <https://www.dell.com/support>.
3. Click Product support, enter the Service Tag of your computer, and then click Submit.

 **NOTE: If you do not have the Service Tag, use the auto detect feature or manually browse for your computer model.**

4. Click Drivers and downloads.
5. Scroll down the page, and select **Serial ATA** in Category .
6. Click **Download** to download IRST driver for your computer.
7. After the download is complete, go to the folder where you saved the IRST driver file.
8. Double-click the driver file icon, and follow the instructions on the screen.

Graphics

The Windows operating system includes the VGA graphics driver only. For optimal graphics performance, install the Dell graphics driver applicable to your computer that is available for download on the Dell support site.

Downloading and installing the Dell graphics driver

1. Turn on your computer.
2. Go to <https://www.dell.com/support>.
3. Click Product support, enter the Service Tag of your computer, and then click Submit.

 **NOTE: If you do not have the Service Tag, use the auto detect feature or manually browse for your computer model.**

4. Click Drivers and downloads.
5. Scroll down the page, and select **Video** in Category .
6. Click **Download** to download graphics driver for your computer.
7. After the download is complete, go to the folder where you saved the graphics driver file.
8. Double-click the driver file icon, and follow the instructions on the screen.

Audio

Dell recommended audio drivers, are not included with the Windows operating system. Install the HD audio driver that is available for download on the Dell support site.

Downloading and installing the Dell audio driver

1. Turn on your computer.
2. Go to <https://www.dell.com/support>.
3. Click Product support, enter the Service Tag of your computer, and then click Submit.

 **NOTE: If you do not have the Service Tag, use the auto detect feature or manually browse for your computer model.**

4. Click Drivers and downloads.
5. Scroll down the page, and select **Audio** in Category .
6. Click **Download** to download audio driver for your computer.
7. After the download is complete, go to the folder where you saved the audio driver file.
8. Double-click the driver file icon, and follow the instructions on the screen.

Dell ControlVault v3 Driver and Firmware

Dell ControlVault v3 contains software that protects data in your computer from disclosure or modification. The software package is available on the Dell support site.

Downloading and installing Dell ControlVault v3

1. Turn on your computer.
2. Go to <https://www.dell.com/support>.
3. Click Product support, enter the Service Tag of your computer, and then click Submit.

 **NOTE: If you do not have the Service Tag, use the auto detect feature or manually browse for your computer model.**

4. Click Drivers and downloads.
5. Scroll down the page, and select **Security** in Category .
6. Click **Download** to download software package for your computer.
7. After the download is complete, go to the folder where you saved the Dell ControlVault v3 Driver and Firmware.
8. Double-click the file icon, and follow the instructions on the screen.

Dell Power Manager Service (DPM)

DPM is a Dell-developed application providing simplified and efficient power management capabilities for Dell computers. Dell Power Manager is an application that allows you to maximize the battery life of the system. Configure how the battery should be maintained based on your personal preferences. It also supports alert notifications that are related to power adapter, battery, docking, and USB Type-C device/protocol incompatibility. The key features are as follows:

- Battery information: Display battery health information, adjust battery settings or create a custom-battery setting.
- Advanced charge mode: Control battery charging to prolong battery life.
- Peak Shift : Reduce power consumption by automatically switching the computer to battery power. DPM does it during certain times of the day, even when the computer is plugged into a direct power source.
- Thermal Management: Control processor and cooling fan settings to manage performance, system surface temperature, and fan noise.
- Battery Extender: Conserve battery charge by affecting CPU power level, screen brightness and keyboard illumination levels, and by muting audio.
- Alerts Management: Enable or disable adapter, battery, docking station, thermal, and other types of alerts.
- Group Policies: Apply default settings and/or prevent users from changing power alerts system events, power management, thermal management, battery extender, and battery settings.
- Product Feedback: Provide feedback on the software.

Downloading and installing the DPM

1. Turn on your computer.

2. Go to <https://www.dell.com/support>.
3. Click Product support, enter the Service Tag of your computer, and then click Submit.

 **NOTE: If you do not have the Service Tag, use the auto detect feature or manually browse for your computer model.**

4. Click Drivers and downloads.
5. Scroll down the page, and select **System Management** in Category .
6. Click **Download** to download the DPM application for your computer.
7. After the download is complete, go to the folder where you saved the DPM file.
8. Double-click the DPM file icon, and follow the instructions on the screen.

Wireless Local Network (WLAN) drivers and applications

Windows operating systems do not provide native device driver support for WLAN controllers on Dell computers. To obtain wireless network functionality, install the relevant WLAN drivers from the Dell support site. WLAN applications, which provide additional features including enterprise authentication enhancements can also be installed from the Dell support site.

Downloading and installing the Wi-Fi driver

1. Turn on your computer.
2. Go to <https://www.dell.com/support>.
3. Click Product support, enter the Service Tag of your computer, and then click Submit.


 **NOTE: If you do not have the Service Tag, use the auto detect feature or manually browse for your computer model.**

4. Click Drivers and downloads.
5. Scroll down the page, and select **Network** in Category .
6. Click **Download** to download the WiFi application for your computer.
7. After the download is complete, go to the folder where you saved the WiFi driver file.
8. Double-click the WiFi driver file icon, and follow the instructions on the screen.

 **NOTE: For Wireless Wide Area Network (WWAN) Drivers. Select Modem/Communications in Category of above Step 4.**

Dell docking station WD15/WD19/WD19DC

The Dell Docking Station WD15/WD19/WD19DC is a device that links all your electronic devices to your computer using a USB Type-C cable interface. Connecting the computer to the docking station enables you to access all peripherals (mouse, keyboard, stereo speakers, external hard drive, and large-screen displays) without having to plug each device into the computer.

 **CAUTION: Update your computer BIOS and the Dell Docking Station drivers to the latest versions available on Dell support site before using the docking station. Older BIOS versions and drivers could result in the docking station that is not recognized by your computer or not functioning optimally.**

For more information about the drivers required for the Dell docking station WD19, see <https://www.dell.com/support>.

Dell Thunderbolt dock TB16/WD19TB

The Dell Thunderbolt dock TB16/WD19TB is a device that links all your electronic devices to your laptop 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.

 **CAUTION: Update your computers Firmware and the Dell Docking Station drivers to the latest versions available on Dell support site before using the docking station. Older BIOS versions and drivers could result in the docking stations not being recognized by your computer or not functioning optimally.**

For more information about the drivers required for the Dell Thunderbolt dock WD19TB, see <https://www.dell.com/support>.

.NET Framework



The .NET Framework is a software framework from Microsoft, which is bundled with Windows operating systems. Most of the applications that are created for the Microsoft Windows platform use .NET Framework.

Getting help and contacting Dell

Self-help resources



You can get information and help on Dell products and services using these self-help resources:

Table 1. Self-help resources

Self-help resources	Resource location
Information about Dell products and services	https://www.dell.com/
Dell Support	
Tips	
Contact Support	In Windows search, type <code>Contact Support</code> , and press Enter.
Online help for operating system	<ul style="list-style-type: none"> Windows: https://www.dell.com/support/windows Linux: https://www.dell.com/support/linux
Troubleshooting information, user manuals, set up instructions, product specifications, technical help blogs, drivers, software updates, and so on.	https://www.dell.com/support/home/
Dell knowledge base articles for various of system concerns:	<ol style="list-style-type: none"> Go to https://www.dell.com/support/home/?app=knowledgebase. Type the subject or keyword in the Search box. Click Search to retrieve the related articles.
Learn and get more information about your product: <ul style="list-style-type: none"> Product specifications Operating system Setting up and using your product Data backup Troubleshooting and diagnostics Factory and system restore BIOS information 	<p>Dell provides several online and telephone-based support and service options. If you do not have an active Internet connection, you can find contact information about your purchase invoice, packing slip, bill, or Dell product catalog.</p> <ul style="list-style-type: none"> Select Detect Product. Locate your product through the drop-down menu under View Products. Enter the Service Tag number or Product ID in the search bar. Once on product support page, scroll down to Manuals and Documents section to preview all the Manuals, documents, and other information for your product.

Contacting Dell

Dell provides several online and telephone-based support and service options. If you do not have an active Internet connection, you can find contact information about your purchase invoice, packing slip, bill, or Dell product catalog. Availability varies by country/region and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

1. Go to <https://www.dell.com/support/>.
2. Select your country/region from the drop-down menu on the lower right corner of the page.
3. For **customized support**:
 - a. Enter your system Service Tag in the **Enter your Service Tag** field.
 - b. Click **submit**.
 - The support page that lists the various support categories is displayed.
4. For **general support**:
 - a. Select your product category.
 - b. Select your product segment.
 - c. Select your product.
 - The support page that lists the various support categories is displayed.
5. For contact details of Dell Global Technical Support, see <https://www.dell.com/contactdell>.
 -  **NOTE: The Contact Technical Support page is displayed with details to call, chat, or email the Dell Global Technical Support team.**
 -  **NOTE: Availability varies by country/region and product, and some services may not be available in your area.**