Rebooting a Computer

Introduction

This guide covers how to reboot a target computer with a Collection Key in order to scan or image it.

This document applies to the following applications		
ADFPRO Mobile & Computer Triage	DEI Digital Evidence Investigator	

Why Reboot a Computer?

The ADF Collection Key contains its own Operating System capable of booting an Intel-based computer. Using this method has a few advantages:

- The target computer boots directly from the known Operating System of the Collection Key and not the unknown Operating System of the target computer.
- This method is forensically sound and no data is changed on the target computer's hard drive(s).
- This method bypasses the user logins and other protective mechanisms that may be in place on the target computer.
- This method allows access to hard drives where it may not be possible to remove them from the target. For example, some laptops now have on board storage rather than a traditional hard drive.
- This method does not bypass hard-drive encryption and the password or key will have to be provided to access the data.

Rebooting a Windows Computer

Most target computers will have to be configured to boot from the Collection Key. Computer manufacturers facilitate two ways to do this. Within the BIOS or UEFI settings there is generally a boot sequence area where the computer may be configured to boot from a removable device first, or alternatively many manufacturers provide a single use boot menu. Access to either the BIOS/UEFI settings or the single use boot menu is achieved by a user repeatedly pressing a hotkey on start up. The precise hotkey needed varies from manufacturer to manufacturer and model to model. Prior to booting, operators should research the appropriate manufacturers website to establish how to boot from a removable device.

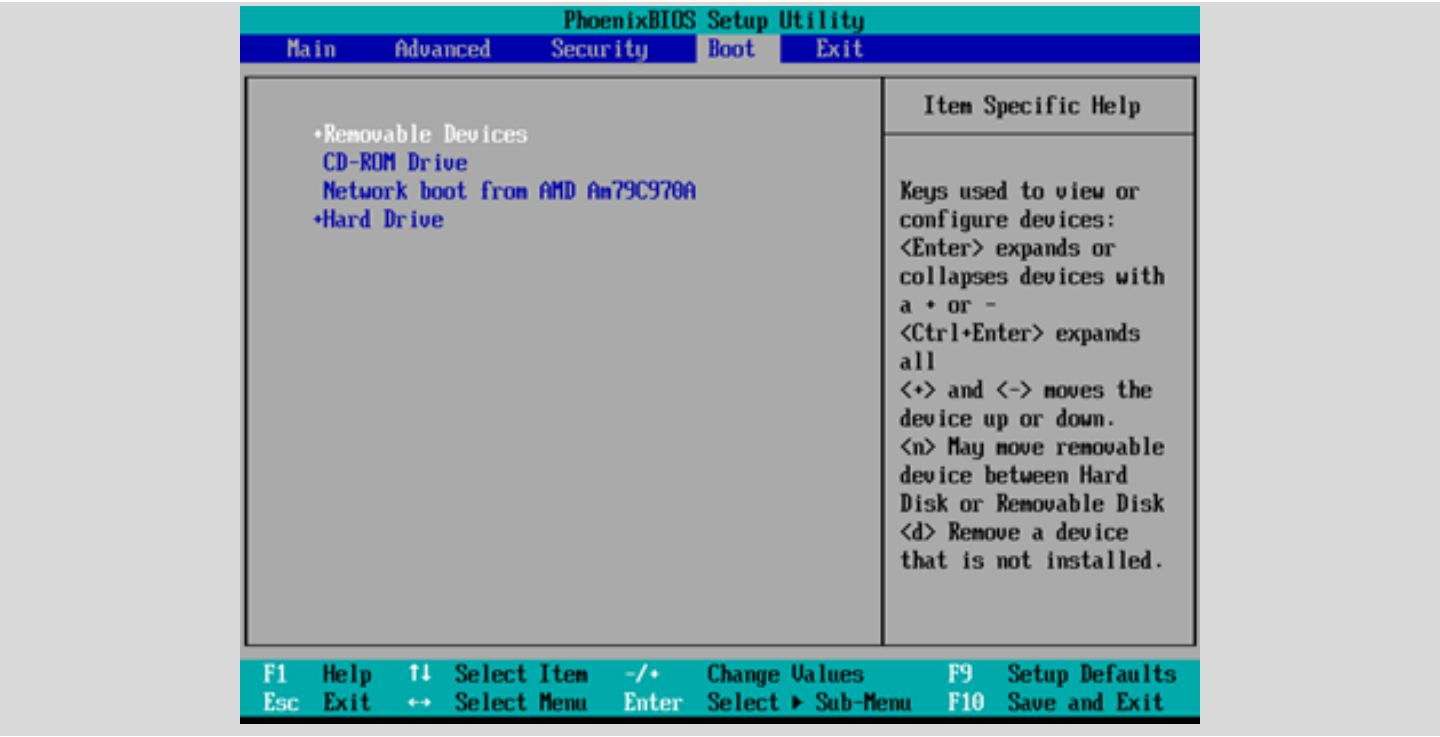
The Collection Key can boot computers with UEFI Secure Boot enabled.

Configuring the Boot Process in Bios/UEFI

1. Research the Bios/UEFI settings Hotkey from the manufacturer.

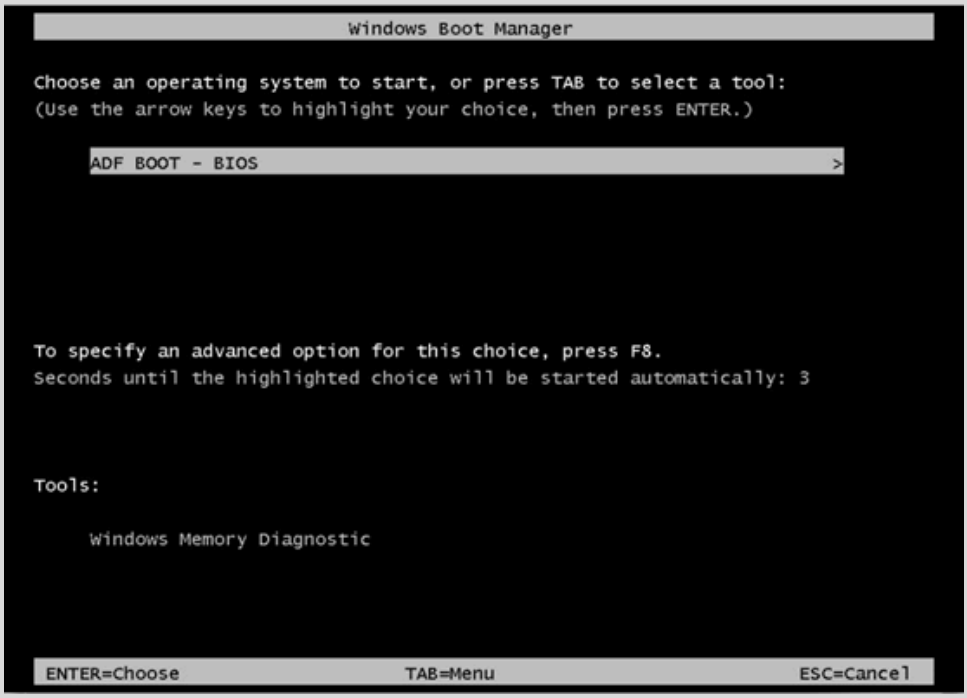
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2. Make a note to revert the changes you are about to make in the Bios/UEFI settings.
3. Locate the hotkey on the target computer and be prepared to press it.
4. Connect the Collection Key.
5. Turn the target computer ON and start pressing the hotkey multiple times without holding it down.
6. Once in the Bios/UEFI settings, locate the boot menu and reorder to boot from:
    a. Removable Device (sometimes referred to USB HDD or similar)
    b. CD-ROM Drive
    c. Hard Drive



7. Save the changes and exit and let the computer restart.
8. Make sure you see the ADF BOOT option in the Windows Boot Manager. If not, turn the target computer OFF and try again.

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Configuring the Boot Process in Boot Menu

This method is generally simpler than having to access the Bios/UEFI settings but it is not always available.

1. Research the single-use Boot Menu Hotkey from the manufacturer.
2. Locate the hotkey on the target computer and be prepared to press it.
3. Connect the Collection Key.
4. Turn the target computer ON and start pressing the hotkey multiple times without holding it down.
5. Once in the Boot Menu, identify the option that corresponds to the Collection Key from the list and press its number. The Collection Key might be listed as “Removable Device” or the make and model of the key.

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6. Make sure you see the ADF BOOT option in the Windows Boot Manager. If not, turn the target computer OFF and try again.

Fast Boot/Ultra-Fast Boot Enabled Computers

Fast Boot is a feature of UEFI that allows a computer to boot faster. The following booting issues are created when Fast Boot or Ultra-Fast Boot are enabled on the target computer:

1. Fast Boot - Booting from a USB Device is disabled.
2. Ultra-Fast - Booting from a USB device is disabled as well as access to the UEFI setup screen.

Fast Boot can be turned off by accessing the UEFI settings via the appropriate hotkey and modifying the Fast Boot configuration. Please consult the relevant computer manufacturer's website for details on how to modify this setting.

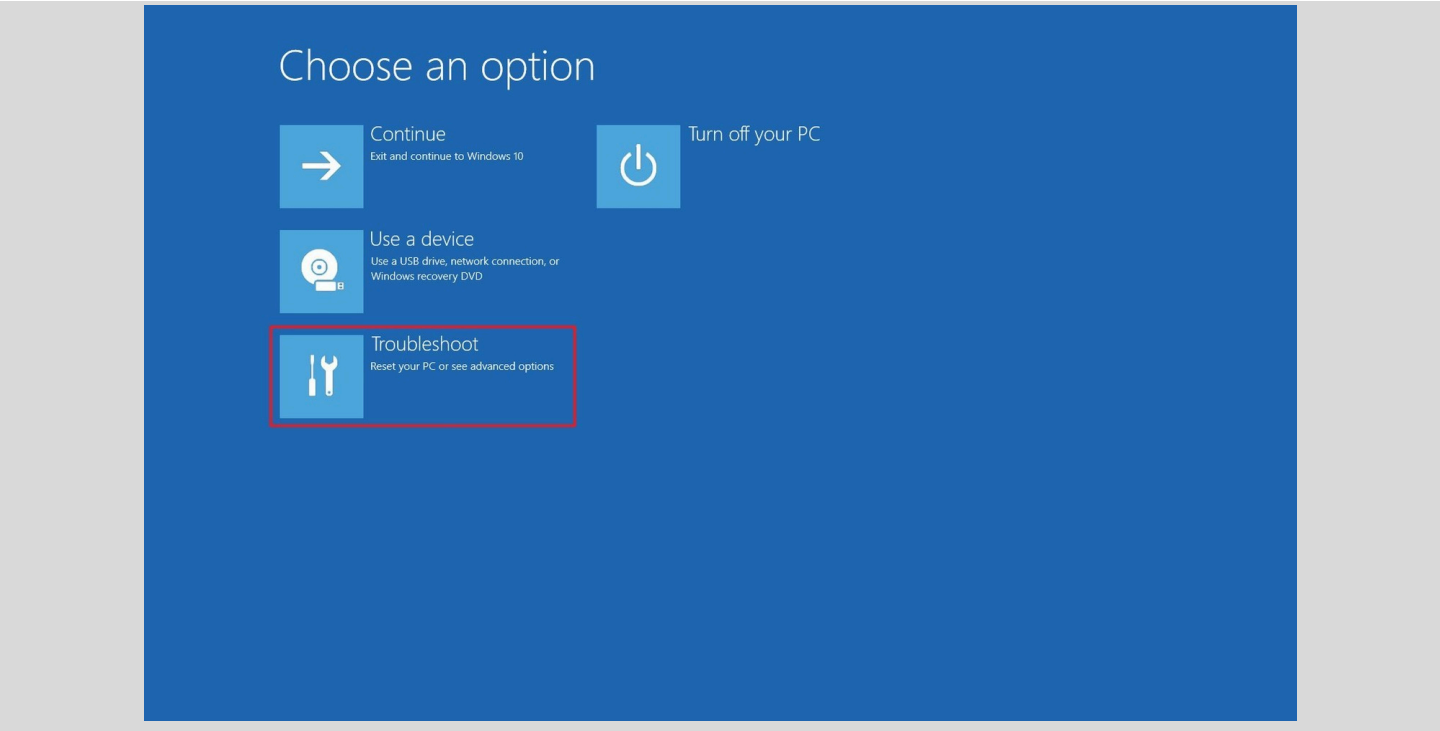
Inadvertent Boot to Windows 8/10/11

If the UEFI settings cannot be accessed or Windows has been inadvertently booted here is another method to restart automatically and access UEFI settings.

1. On the live computer, find the option to restart.

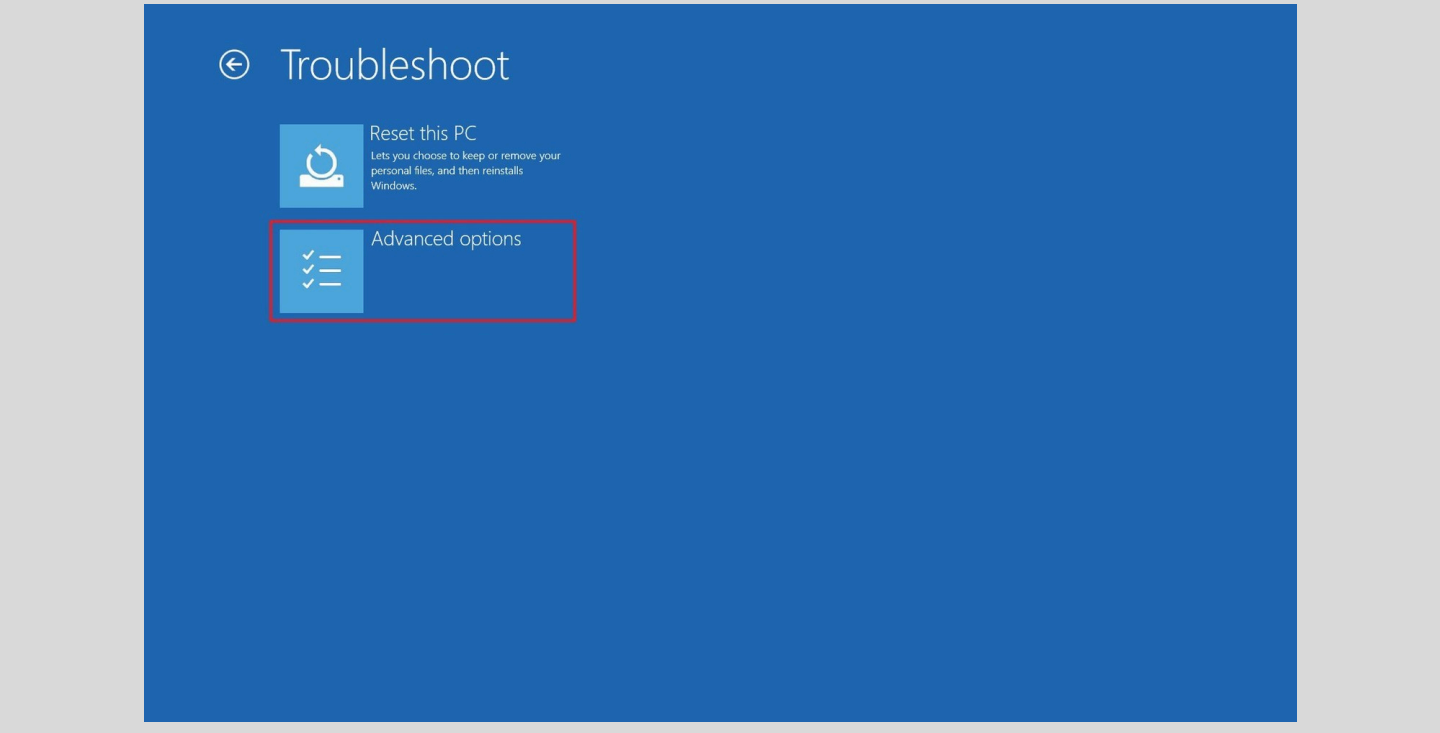
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2. Hold down the Shift key and select restart computer. This method also works if Windows is not signed into, and the login screen is displayed allowing access to the restart menu option. If the computer signed in automatically, click the Restart option from the Start menu while holding the shift key down.
3. While shutting down Choose Troubleshoot from the menu options.

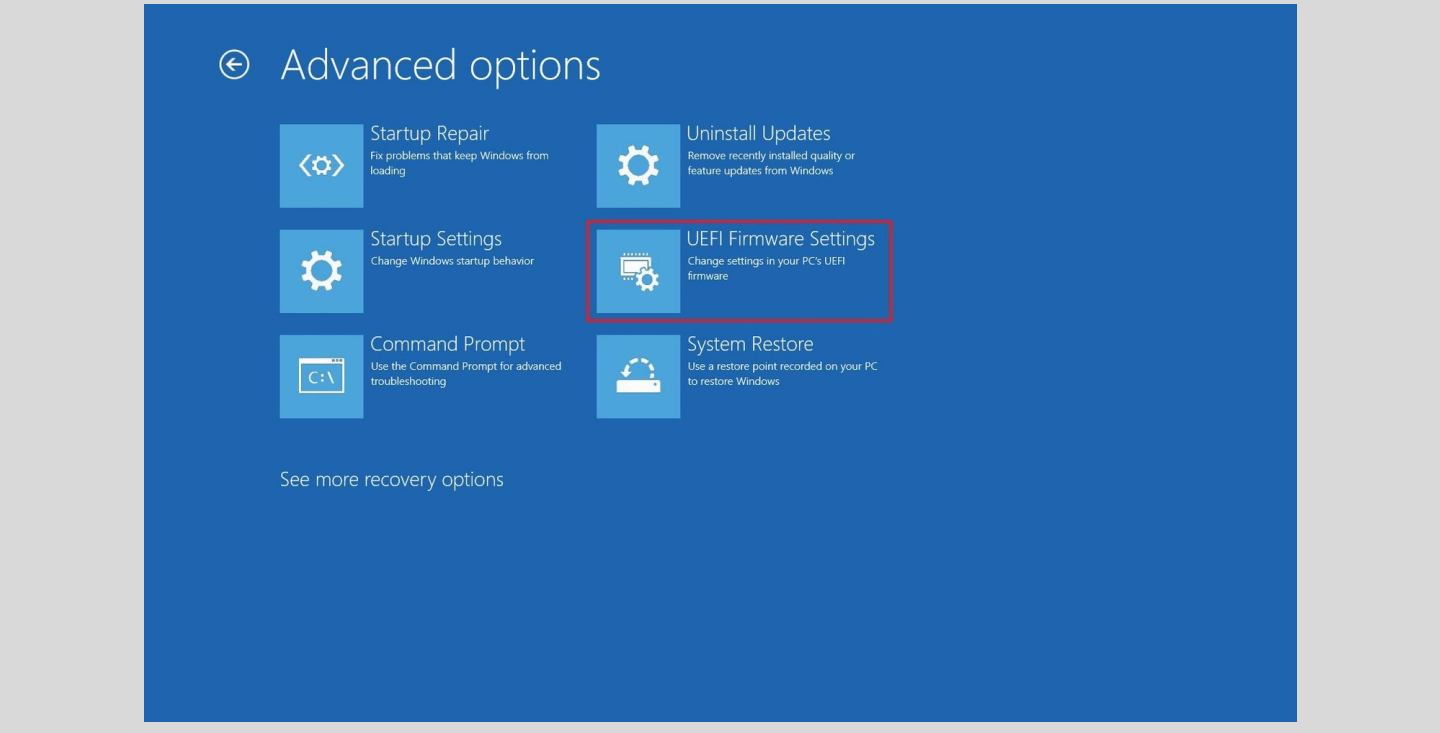


4. Choose Advanced Options.

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5. Select UEFI Firmware Settings.



6. Choose restart to UEFI Settings. The computer will restart and allow access to the UEFI Firmware settings.

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Rebooting a Mac Computer



To scan Mac computers, please use the remote agent instead as described in the ADF Remote Agent Scan section of the Scanning a Target guide.

Adding Drivers to the WinPE Image

When trying to boot a target computer it is possible that some hardware components are not natively supported by WinPE which is the Operating System used by our bootable Collection Key. Advanced users have the ability to add drivers to the WinPE image of the Collection Key.
To add drivers:

- Make sure to install the Windows ADK and WinPE add-on. See instructions in the Installing the ADF Application guide.
- Locate the current WinPE image "C:\ProgramData\ADF Solutions Inc\v4\WinPE\build\boot_image.iso" and delete it (or back it up).
- Place the driver files including the *.inf file in a sub-folder of “C:\ProgramData\ADF Solutions Inc\v4\WinPE\drivers.in”. Note that the driver cannot be in an archive file.
- Rename the folder “drivers.in” to “drivers”.

Prepare the Collection Key and it will create a new boot_image.iso containing the new drivers.

BIOS HotKey Table

Manufacturer	Type	Models	Boot Menu	Boot Once	BIOS/UEFI Key	Change Priority
Acer			F12		Del, F2	
Acer	netbook	Aspire One zg5, zg8	F12		F2	
Acer	netbook	Aspire Timeline	F12		F2	
Acer	netbook	Aspire v3, v5, v7	F12	The "F12 Boot Menu" must be enabled in BIOS. It is disabled by default.	F2	
Apple		After 2006	Option			

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Asus	desktop		F8		F9	
Asus	laptop	VivoBook f200ca, f202e, q200e, s200e, s400ca, s500ca, u38n, v500ca, v550ca, v551, x200ca, x202e, x550ca, z202e	Esc		Delete	
Asus	laptop	N550JV, N750JV, N550LF, Rog g750jh, Rog g750jw, Rog g750jx	Esc	Disable "Fast Boot" and "Secure Boot Control" in order to boot from MBR formatted media.	F2	
Asus	laptop	Zenbook Infinity ux301, Infinity ux301la, Prime ux31a, Prime ux32vd, R509C, Taichi 21, Touch u500vz, Transformer Book TX300	Esc	Disable "Fast Boot" and "Secure Boot Control" in order to boot from MBR formatted media.	F2	
Asus	notebook	k25f, k35e, k34u, k35u, k43u, k46cb, k52f, k53e, k55a, k60ij, k70ab, k72f, k73e, k73s, k84l, k93sm, k93sv, k95vb, k501, k601, R503C, x32a, x35u, x54c, x61g, x64c, x64v, x75a, x83v, x83vb, x90, x93sv, x95gl, x101ch, x102ba, x200ca, x202e, x301a, x401a, x401u, x501a, x502c, x750ja	F8		DEL	
Asus	netbook	Eee PC 1015, 1025c	Esc		F2	Boot Tab, Boot Device Priority, 1st Boot Device, Removable Device, F10
Compaq		Presario	Esc, F9		F10	BIOS "Advanced Tab", Boot Order

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Dell	desktop	Dimension, Inspiron, Latitude, Optiplex	F12	Select "USB Flash Drive".	F2	
Dell	desktop	Alienware Aurora, Inspiron One 20, Inspiron 23 Touch, Inspiron 620, 630, 650, 660s, Inspiron 3000, X51, XPS 8300, XPS 8500, XPS 8700, XPS 18 Touch, XPS 27 Touch	F12	Select "USB Flash Drive".	F2	
Dell	desktop	Inspiron One 2020, 2305, 2320, 2330 All-In-One	F12	Select "USB Flash Drive".	F2	
Dell	laptop	Inspiron 11 3000 series touch, 14z Ultrabook, 14 7000 series touch, 15z Ultrabook touch, 15 7000 series touch, 17 7000 series touch	F12	Select "USB Storage Device"	F2	Settings->General->Boot Sequence->"USB Storage Device", then up arrow, [Apply]--[Exit]
Dell	laptop	Inspiron 14R non-touch, 15 non-touch, 15R non-touch, 17 non-touch, 17R non-touch	F12	Select "USB Storage Device"	F2	Settings->General->Boot Sequence->"USB Storage Device", then up arrow, [Apply]--[Exit]
Dell	laptop	Latitude c400, c600, c640, d610, d620, d630, d830, e5520, e6320, e6400, e6410, e6420, e6430, e6500, e6520, 6430u Ultrabook, x300	F12	Select "USB Storage Device" from boot menu.	F2	
Dell	laptop	Precision m3800, m4400, m4700, m4800, m6500, m6600, m6700, m6800	F12	Select "USB Storage Device" from boot menu.	F2	

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Dell	laptop	Alienware 14, Alienware 17, Alienware 18, XPS 11 2-in-1, XPS 12 2-in-1, XPS 13, XPS 14 Ultrabook, XPS 15 Touch,	F12	Select "USB Storage Device" from boot menu.	F2	
eMachines			F12		Tab, Del	
Fujitsu			F12		F2	
HP	generic		Esc, F9		Esc, F10, F1	
HP	desktop	Pavilion Media Center a1477c	Esc		F10	BIOS "Advanced" tab, Boot Order, Move "USB Device" before "Hard Drive"
HP	desktop	Pavilion 23 All In One	Esc	Select boot media from the menu.	F10	UEFI/BIOS "Advanced" tab, Boot Order, Move "USB Device" before "Hard Drive". For non-UEFI media, disable secure boot and enable legacy support.
HP	desktop	Pavilion Elite e9000, e9120y, e9150t, e9220y, e9280t	Esc, F9		F10	
HP	desktop	Pavilion g6 and g7	Esc		F10	UEFI/BIOS "Advanced" tab, Boot Order, Move "USB Device" before "Hard Drive"
HP	desktop	Pavilion HPE PC, h8-1287c	Esc	Then F9 for "Boot Menu"	Esc	F10, Storage tab, Boot Order, Legacy Boot Sources
HP	desktop	Pavilion PC, p6 2317c	Esc	Then F9 for "Boot Menu"	Esc	F10, Storage tab, Boot Order, Legacy Boot Sources
HP	desktop	Pavilion PC, p7 1297cb	Esc	Then F9 for "Boot Menu"	Esc	F10, Storage tab, Boot Order, Legacy Boot Sources

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HP	desktop	TouchSmart 520 PC	Esc	Then F9 for "Boot Menu"	Esc	F10, Storage tab, Boot Order, Legacy Boot Sources
HP	laptop	2000	Esc	Then F9 for "Boot Menu". Select "Patriot Memory" on the Boot Option Menu.	Esc	Then F10, Storage tab, Boot Order, Legacy Boot Sources
HP	notebook	Pavilion g4	Esc		F10	BIOS "Advanced" tab, Boot Order, Move "USB Device" before "Hard Drive"
HP	notebook	ENVY x2, m4, m4-1015dx, m4-1115dx, sleekbook m6, m6-1105dx, m6-1205dx, m6-k015dx, m6-k025dx, touchsmart m7	Esc	Then F9 for "Boot Menu"	Esc	Then F10, Storage tab, Boot Order, Legacy Boot Sources
HP	notebook	Envy, dv6 and dv7 PC, dv9700, Spectre 14, Spectre 13	Esc	Then F9 for "Boot Menu"	Esc	Then F10, Storage tab, Boot Order, Legacy Boot Sources
HP	notebook	2000 - 2a20nr, 2a53ca, 2b16nr, 2b89wm, 2c29wm, 2d29wm	Esc	Then F9 for "Boot Menu"	Esc	Then F10, Storage tab, Boot Order, Legacy Boot Sources
HP	notebook	Probook 4520s, 4525s, 4540s, 4545s, 5220m, 5310m, 5330m, 5660b, 5670b	Esc		F10	BIOS "Advanced" tab, Boot Order, Move "USB Device" before "Hard Drive"
HP	tower	Pavilion a410n	Esc		F1	BIOS "Boot" tab, Boot Device Priority, Hard Drive Boot Priority, Move "USB-HDD0" up to #1 position.
IBM	ThinkPad		F11			
Intel			F10			
Lenovo	desktop		F12, F8, F10		F1, F2	
Lenovo	laptop		F12		F1, F2	

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Lenovo	laptop	ThinkPad edge, e431, e531, e545, helix, l440, l540, s431, t440s, t540p, twist, w510, w520, w530, w540, x140, x220, x230, x240, X1 carbon	F12		F1	
Lenovo	laptop	IdeaPad s300, u110, u310 Touch, u410, u510, y500, y510, yoga 11, yoga 13, z500	Novobutton	Small button on the side next to the power button.	Novo button	Small button on the side next to the power button.
Lenovo	laptop	IdeaPad P500	F12 or Fn + F11		F2	
Lenovo	netbook	IdeaPad S10-3	F12		F2	
Lenovo	notebook	g460, g470, g475, g480, g485	F12		F2	
NEC			F5		F2	
Packard Bell			F8 or F11		F1, Del	
Samsung			F12, Esc			
Samsung	netbook	NC10	Esc		F2	Boot Tab, Select "Boot Device Priority", Press Return, Up/Down to Highlight, F6/F5 to change priority.
Samsung	notebook	np300e5c, np300e5e, np350v5c, np355v5c, np365e5c, np550p5c	Esc		F2	Boot Tab, Select "Boot Device Priority", Press Return, Up/Down to Highlight, F6/F5 to change priority.
Samsung	ultrabook	Series 5 Ultra, Series 7 Chronos, Series 9 Ultrabook	Esc	Note: first disable fast boot in BIOS/UEFI to boot from a USB drive.	F2	Boot Tab, Select "Boot Device Priority", Press Return, Up/Down to Highlight, F6/F5 to change priority.
Samsung	ultrabook	Ativ Book 2, 8, 9	F2	Note: first disable fast boot in BIOS/UEFI to boot from a USB drive or use the F2 boot menu.	F10	Boot Tab, Select "Boot Device Priority", Press Return, Up/Down to Highlight, F6/F5 to change priority.

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Sharp					F2	
Sony		VAIO Duo, Pro, Flip, Tap, Fit	assistbutton		assist button	
Sony		VAIO, PCG, VGN	F11		F1, F2, F3	
Sony		VGN	Esc, F10		F2	BIOS "BOOT" section, "External Device Boot" enabled
Toshiba	laptop	Kira, Kirabook 13, Ultrabook	F12		F2	
Toshiba	laptop	Qosmio g30, g35, g40, g50	F12		F2	
Toshiba	laptop	Qosmio x70, x75, x500, x505, x870, x875, x880	F12		F2	
Toshiba		Protege, Satellite, Tecra	F12		F1, Esc	
Toshiba		Equium	F12		F12	

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