



TECHNICAL WHITE PAPER

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INSTALLING WINDOWS 7 ON HP Z4 G4, HP Z6 G4, AND HP Z8 G4 WORKSTATIONS WITH INTEL® SKYLAKE PROCESSORS

HP is providing this guide to assist with understanding how to install Windows 7 on the HP Z4 G4, HP Z6 G4, and HP Z8 G4 Workstations with Intel® Skylake Processors.

HP supports the installation of 64 bit Windows 7¹ on the HP Z4 G4, HP Z6 G4, and HP Z8 G4 workstations with Intel® Skylake Processors. All references to Windows 7 in this document imply 64-bit only. The newer features and controllers on these workstations are not native to Windows 7 and additional drivers must be installed. The drivers for the HP Z4 G4, HP Z6 G4, and HP Z8 G4 are provided on hp.com in the support section for the platform. A document is also provided on hp.com listing the supported hardware.

The areas that must be considered and customized for Windows 7 installation are BIOS settings, USB driver, storage controller driver which includes the Intel® RSTe driver and/or NVMe driver, Microsoft hotfix to add TPM 2.0 support and hotfix to install Intel® Management Engine driver. The next sections will describe what is required for each of these areas to work with Windows 7.

This document assumes the reader is familiar with creating and deploying a Windows 7 image and will not describe steps to add customizations. Instead, this document will alert the reader to information that is needed related to Bios settings, drivers, and Microsoft hotfixes.



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BIOS SETTINGS

Requirement

The minimum BIOS version for using Windows 7 is 1.51. HP recommends using the latest BIOS for highest quality operations.

Windows 7 requires the Option ROM Launch Policy to be either “All UEFI Except Video” or “All Legacy.” Windows 7 cannot be installed with an Option ROM Launch Policy of “All UEFI” which is the HP default factory setting for Windows 10. Below is a summary of the steps to change your BIOS settings. The user guide for your product will describe how to change the Option ROM Launch policy in more detail.

HP recommends UEFI boot of Windows 7 installation media for GPT partitioned storage.

Guide to change your BIOS settings

Here are the steps to change your Option ROM Launch Policy to support Windows 7. The steps are dependent on current settings in your BIOS and are written to guide you through the possible situations.

1. Boot the system and select F10 to enter the BIOS menu.
2. From the menu, select Advanced-->Secure Boot Configuration-->Configure Legacy Support and Secure Boot. Change this setting to “Legacy Support Enable and Secure Boot Disable”. Save and reboot the system.
 - a. If your system was already set to Legacy Support Enable and Secure Boot Disable, you may go to step 3.
 - b. If this setting is a change from your current Secure Boot Configuration, you will see a message that says, “Enabling Legacy Support also enables legacy OROM.” This means after the reboot, your Option ROM Launch Policy will automatically set itself to “All Legacy.”
 - c. If Secure Boot is being disabled, you will also be required to enter a 4 digit code to confirm disabling Secure Boot.
3. After step 2, the Option ROM Launch Policy should be automatically set to “All Legacy.” If All Legacy is the desired setting to install Windows 7 you may stop here. If you prefer the Option ROM Launch Policy to be “All UEFI Except Video,” then continue to step 4.
4. On a boot, press F10 to enter the BIOS setup menu again. From the menu, select Advanced-->Option ROM Launch Policy. Change the Option ROM Launch Policy to “All UEFI Except Video.” Save and reboot. Your system is ready to install Windows 7.

Failure mode

If the BIOS Option ROM Launch Policy is “All UEFI,” then Windows 7 will fail to install and will halt with a Windows Boot Manager error screen.

USB

Requirement

The USB controller with Intel® Skylake Processors is XHCI and the driver is not native to Windows 7. To have any access to USB such as for keyboard, mouse, or USB flash drive when installing Windows 7, the USB driver must be added into the installation media. If you complete installation using a PS2 keyboard and mouse and use optical media, you may be able to avoid adding the USB driver. Once the OS is installed and running, the USB driver must be installed to access any USB ports. The Windows 7 USB driver can be found on hp.com in the support section for the platform.

Failure mode

While booting the HP Workstation, you have USB control, because the BIOS contains a driver for USB that allows it to function. Once control has switched to Windows for installation, USB will not function. For example, if you were using a USB flash drive for installation, the flash drive will no longer be accessible. If using a USB keyboard or mouse, those will also not respond.

STORAGE CONTROLLER (INTEL® RSTe OR NVMe)

Requirement

In order to recognize the target storage for the operating system, the driver for the storage controller must be added to the Windows 7 image. Hard drives and SSDs use the Intel® RSTe storage controller. NVMe M.2 devices are also supported and the appropriate driver is recommended for these devices. A Microsoft hotfix driver is also available for NVMe however HP does not support this driver on the HP Z4 G4, HP Z6 G4, and HP Z8 G4. The Windows 7 storage drivers can be found on hp.com in the support section for the platform.



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Failure mode

If the driver for the storage is not added to the Windows 7 image, the installation will fail to find any storage device to load the operating system. Note that when adding the Intel® RSTe storage driver, the entire driver should be added including the VROC component of the driver.

TPM

Requirement

The HP Z4 G4, HP Z6 G4, and HP Z8 G4 workstations² are available from the factory with either TPM 1.2 or TPM 2.0. There is also a SoftPaq tool on hp.com under the support site for these workstations that will allow you to transition between TPM 1.2 and TPM 2.0. TPM 1.2 support is native to Windows 7 and no additional driver is required. TPM 2.0 support is not native to Windows 7. TPM 2.0 can be recognized in Windows 7 by installing Microsoft KB2920188. Use of TPM 2.0 requires UEFI boot of the Windows 7 media for GPT partitioning.

Failure mode

If KB2920188 is not installed after Windows 7 is installed, the TPM 2.0 is listed as an Unknown Device in device manager.

INTEL® MANAGEMENT ENGINE

Requirement

Before the Intel® Management Engine can be installed, Microsoft KB3112343 must be installed.

Failure mode

Intel® Management Engine driver does not install.

RESOURCES, CONTACTS, OR ADDITIONAL LINKS

[Windows 7 64-bit Hardware Matrix for HP Z8 G4, HP Z6 G4, and HP Z4 G4 Workstations.](#)

Learn more at

hp.com/go/z4

hp.com/go/z6

hp.com/go/z8

hp.com/go/workstations

¹ Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See <http://www.windows.com>

² Windows 7 is not supported on Intel® Core™ X-series processors.

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