Installing UEFI-based Windows 7(x64) on the HP Z420, Z620, and Z820 Workstations

This document describes the steps required to install the Unified Extensible Firmware Interface (UEFI) version of Windows 7(x64) on the HP Zx20 (Z420, Z620, and Z820) Workstations. UEFI is a replacement for BIOS that provides a 64-bit interface between system firmware and the operating system.

The Zx20 firmware is capable of booting in UEFI mode by enabling the storage controller's EFI driver in Computer Setup. These instructions assume that you are starting from a blank disk drive, or single- or a multiple-drive RAID volume, or one that contains a BIOS-based operating system (OS). To simplify the installation, you should unplug all disk drives except for the one you intend to use to install Windows. Note that installing from an optical drive connected to the Intel C602 SCU controller is not supported.

In UEFI mode, Windows requires a disk partitioning mechanism known as GUID partition table (GPT). GPT was introduced with UEFI, and allows for volumes larger than 2.2 TB. See the *Windows and GPT FAQ* at http://msdn.microsoft.com/en-us/windows/hardware/gg463525 for more details.

NOTE: The Zx20 restore DVD only supports BIOS-based OS installs. You need a Windows 7 (x64) DVD (for example, a retail DVD) to perform this installation in UEFI mode.

Installing the UEFI version of Windows 7

IMPORTANT: If the install disk drive is currently partitioned using Master Boot Record (MBR), the standard mechanism for BIOS-based boot disks, the Windows installer states that **Windows cannot be installed to this disk**. The MBR partition table must be removed, which destroys the contents of the disk. Back up the disk before installing UEFI-based Windows 7 (x64).

1. If the target volume is a RAID array, then the array needs to be configured before the installation process.
   a. With all drives for the target volume installed, power on the workstation and press CTRL+I (Intel) or CTRL+C (LSI) to enter the RAID configuration utility.
   b. After RAID configuration, the system will automatically reboot.
2. To set the embedded controller option ROM selections to **EFI**:

NOTE: For the BIOS 1.x, the embedded AHCI SATA controller is identified as **SATA RAID Option ROM Download**. The embedded SCU controller is identified by **SCU Option ROM Download**. The embedded SAS controller, Z820 only, is identified as **SAS Option ROM Download**.

NOTE: For the For BIOS 2.x, all embedded storage controllers can be configured to EFI mode by toggling **Mass Storage Option ROM's** from **Legacy** to **EFI**.

a. Power on the workstation and press F10 to enter the **Computer Setup** menu.

b. Using the arrow keys, select the **Advanced** menu.

c. Press Enter to select the **Device Options** menu.

d. Change the state of **all** embedded controller **Option ROM** selections from **Enabled** to **EFI**.

e. To save changes, exit **Computer Setup** by selecting **File** in the main menu and selecting **Save Changes and Exit**. The system reboots automatically.

3. To install Windows 7 (x64):

NOTE: If the boot controller is the 9212-4i HBA card or the LSI 2308 embedded controller, see: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c03255662&lang=en&cc=us&taskId=101&prodSeriesId=5225041&prodTypeId=12454

a. Insert the Windows 7 (x64) Installation DVD.

b. The installation DVD supports both UEFI and BIOS installation modes. Because boot time is short, it might be necessary to press Ctrl+Alt+Del to reboot the workstation.

c. The Zx20 firmware defaults to the UEFI installer. You can also manually select the UEFI installer by pressing F9 to enter the boot menu, and then selecting the DVD drive under **EFI Boot Sources** menu.

4. If the loader prompts you to **Press any key to boot from CD or DVD**, press any key.

5. To continue the Windows installation:

a. After the installer files are loaded, the **Install Windows** dialog box appears.

b. Click **Next** to continue, and then click **Install now**.

c. Accept the license, and select **Custom (advanced)**.

d. Windows shows the available disks.

6. Windows 7 does not recognize the embedded storage controller drivers on all HP Zx20 Workstations, so you will need to download new drivers. Follow these steps to download the HP Advanced System Diagnostics utility from the HP website to a USB key:

a. Navigate to www.hp.com and select **Support & Drivers**.

b. Select **Drivers & Software**.

c. Enter the product name:. For example, Z420 to search for the Z420 product media.

d. Select the specific model of the HP workstation.

e. Choose the software/driver language. English (International) is the default.

f. Select the operating system.

g. On the **Quick jump to downloads by category** list, click **Driver - Storage**.

h. Locate the boot controller, and click **Download** and save the file.

i. Double-click the downloaded file and follow the on-screen instructions.

After you download the drivers, click **Load Driver** from the Windows 7 **Setup** menu.

7. Windows requires a GPT partition for installation. If all drive space is unallocated space, then continue with the installation of Windows 7.

NOTE: The standard partition for BIOS-based boot disks is the Master Boot Record (MBR) partition. A **Windows cannot be installed to this disk** error message is an indication that the disk has a MBR partition. Remove the MBR partition before installing Windows

7.

WARNING! Back up all data before removing the MBR partition. Removing the MBR partition removes all data from the disk.

8. There are two methods to remove the MBR partition, both destroy the contents of the disk.

   To remove the MBR partition:

   a. Select the partition to be deleted, and then click **Delete** and **OK**. For example, select Disk 0, partition 1.

   b. Repeat for all partitions on the Disk 0.

   c. At the DISKPART prompt type `List Disk` to identify the MBR partition to remove

   d. After deleting all partitions on the Disk 0, continue with the installation of Windows 7.

   Remove the MBR partition using the Diskpart application.

   a. Press Shift + F10 to access a command prompt.

   b. Type `diskpart` and press Enter to launch the Diskpart application.

   c. At the **DISKPART** prompt and type `select disk [disk number]`, and `clean` to remove the partition.

   d. To exit Diskpart type `exit` to exit the command prompt.

   e. Click **Refresh** to update the disk contents. Repeat these steps for all disks with the MBR partition, and then continue with the installation of Windows 7.

9. Select **Disk 0 Unallocated Space**, and then click **Next**. The UEFI-based Windows installer operates as a BIOS-based installer. The Windows installer automatically adds an option to the Zx20 boot menu, under **EFI Boot Sources**, labeled **Windows Boot Manager**, and makes it the first boot option.