Setting up SATA RAID on the HP xw4600, xw6600, and xw8600 Workstations

Introduction

This document details the steps needed to setup RAID 0, RAID 1, RAID 5, and RAID 10 disk configurations on an HP xw4600, xw6600, and xw8600 Workstation using the on—board SATA ports. Additional information on these RAID modes can be found in the *HP Workstation RAID Primer* Mini White Paper at http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00786213/c00786213.pdf.

The steps are common to all Raid configurations. Raid configuration specific values are given as needed.

Installing Drives

With the power off, physically install the correct number of SATA drives using any combination of the 6 available SATA ports. Table 1 indicates the minimum number of drives needed for each Raid configuration.

Table 1 Minimum disk required for each RAID array

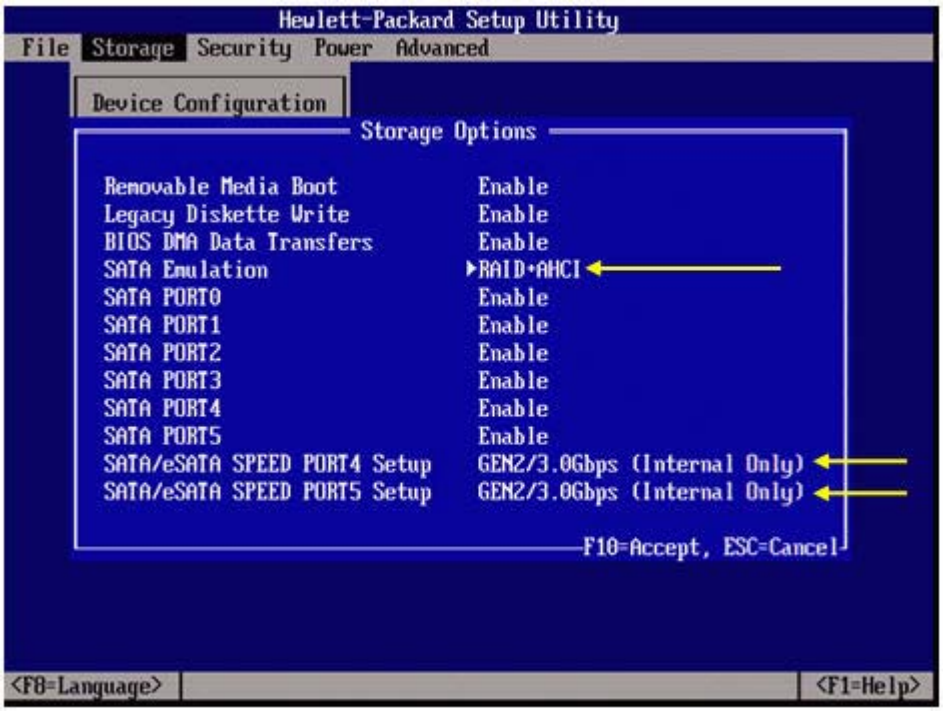
	RAID 0	RAID 1	RAID 5	RAID 10
Min # of Disks	2	2	3	4 & even number of disks

Enabling RAID

1. Boot the system and enter BIOS setup by pressing the F10 key at the startup screen.

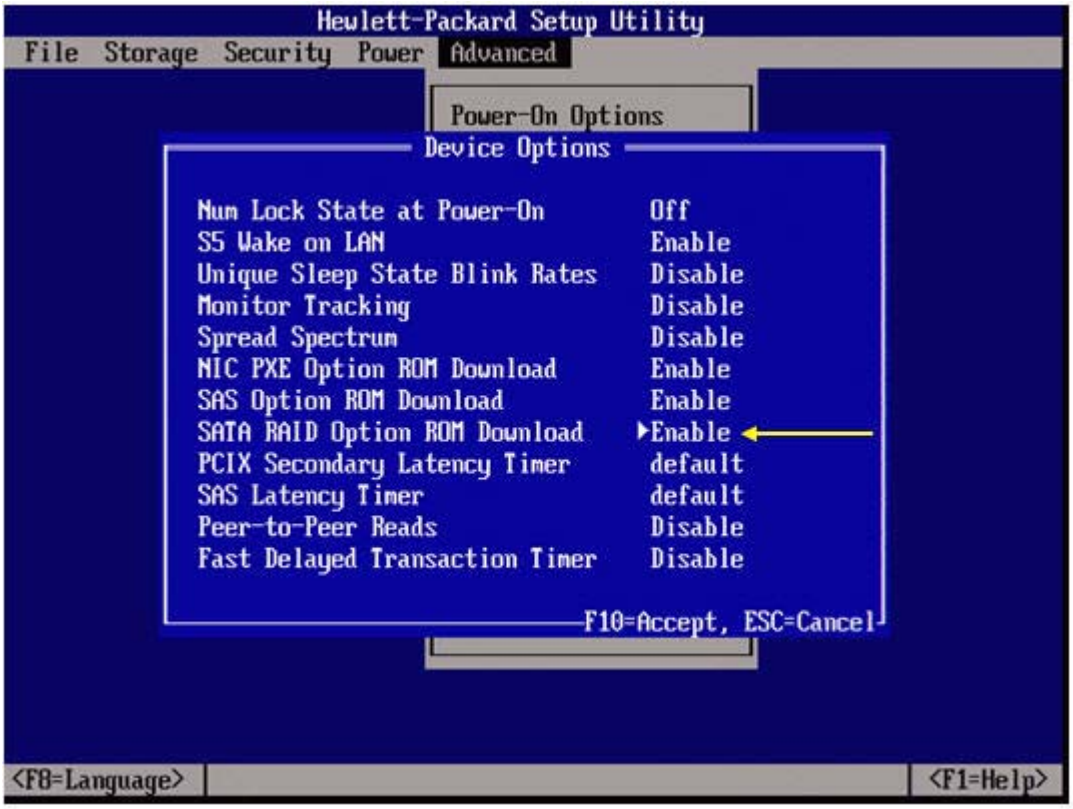
2. Using the arrow keys and the Enter key go to “Storage” and then “Storage Options.” SATA Emulation mode must be set to “RAID” or “RAID+AHCI” depending on your system, see Figure 1. Make sure press to press the F10 key to accept any changes you make.

Figure 1 SATA Emulation mode and eSATA SPEED Setup



3. Next, arrow over to the “Advanced” tab and select “Device Options.” SATA RAID Option ROM Download” must be set to “Enable” see Figure 2. If you are NOT using eSATA drives skip step 4. and continue with step 5.

Figure 2 SATA RAID Option ROM Enable



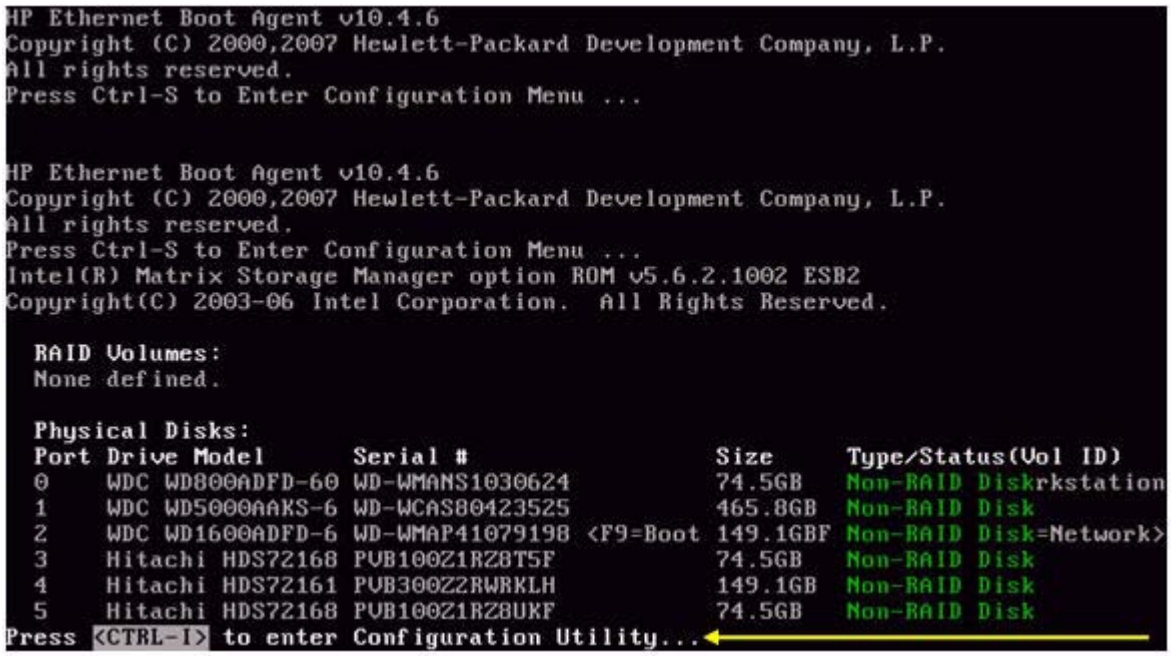
4. If eSATA drives are used then the speed must be changed to Gen1/1.5Gbps.
5. Leave all other settings as currently set. Exit the BIOS by arrowing over to “File” and selecting “Save Changes and Exit.” Press the F10 keyto accept all changes. The system will reboot.

Configuring the RAID volumes

1. Press the space bar once you see the HP logo splash screen at the beginning of the boot.

2. When the system prompts to enter the “Intel Matrix Storage Manager Configuration Utility.” Press <CTRL>-I to enter the utility as shown in Figure 3.

Figure 3 Entering Intel Matrix Storage Manager Configuration Utility



3. The Intel Matrix Storage Manager Configuration Utility invokes as seen in Figure 4.

Figure 4 Intel Matrix Storage Manager Configuration Utility

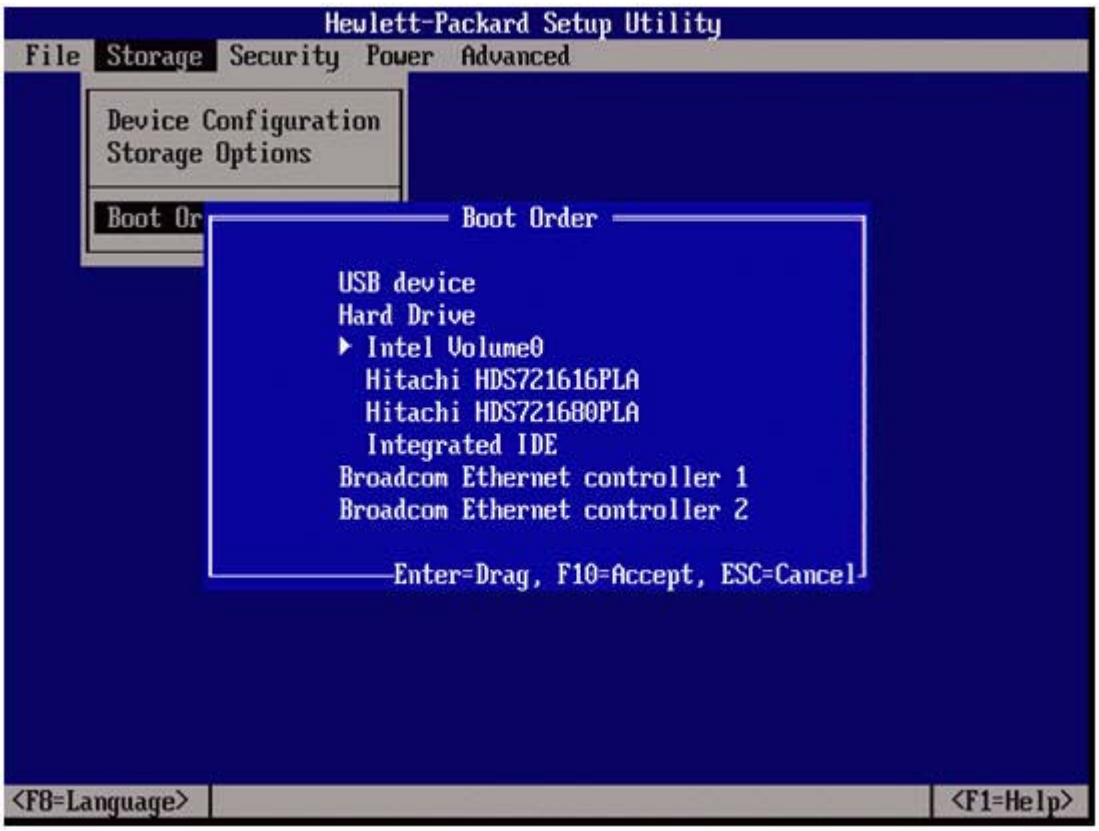
4. Select “Create RAID Volume”
5. ‘Volume Name’ – Enter a name for the RAID volume, default is “Volume0.”
6. ‘RAID Level’ – Select the desired RAID level with the up/down arrow keys.

7. ‘Disk Select’ – If available, press <enter>, use the up/down arrow keys to move over the drives in the list. Use the space bar to select the drive for the volume. Make sure that the correct number of drives is selected as per Table 1.
8. ‘Strip Size’ – Use up/down arrow keys to select strip block size (default is 128KB, this is a reasonable value).
9. ‘Capacity’ is based on the drives and the RAID level selected. The default value is the maximum capacity and should be selected.
10. ‘Create Volume’ – Press the Enter key to create the RAID volume. Note that the ‘Disk/Volume Information’ is now updated with the RAID volume status as ‘Normal’ and lists which drives are “Members” of the volume.
11. Exit the Intel Matrix Storage Manager Configuration Utility.

Setting the Boot Order

1. Reboot the system and enter Setup again by pressing the F10 key at the startup screen.
2. Enter “Storage” and then “Boot Order,” see Figure 5.
3. Make sure that the hard drive that has or will have the operating system on it is listed first under “Hard Drive.” If this is the case then exit the BIOS without saving any of the changes and proceed to Step 5.
4. If the drive that has or will have the operating system on it is not at the top of the list use the arrow keys to select your drive. Press the Enter key to select and drag your drive to the top location. Press the F10 key to accept the changes and exit the BIOS saving your changes.

Figure 5 Setting the Boot Order



Accessing the new RAID volume

1. If the RAID volume will also contain the operating system then place the recovery CD into the system and reboot.
2. When the recovery CD boots, follow the instructions to install the operating system onto the newly-created RAID Volume.
3. If the RAID volume does not contain the operating system then boot in to Windows normally.
4. Once booted, right click on “My Computer” and select “Manage”
5. Initialize the disk when prompted.
6. Once initialized, right click on the volume and create a partition which will allow you to assign a drive letter to the RAID volume.