

HP Server

HP Server Hardware Setup

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A	Mar 16, 2005	Derek Braendel	Release with ML370G4, ML110G1, DC7100
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C	June 10, 2005	Derek Braendel	Updated with ML310G2
D	December 5, 2005	Keith Chan	Updated with ML310G3 & DC7600
E	July 6, 2006	Derek Braendel	Update with TrippLite
F	April 9,2007	Gary Tanaka	Updated with ML370G5 & DL380G5 reference
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1 SCOPE

This document outlines the procedures for setting up hardware to be ready to install Windows 2000, and one of the following applications:

Prinergy 2, 3 & 4(Windows2003 only) Connect, Access, Powerpack, Direct

Synapse InSite 3, 4 and 5 (Windows2003 only)

BestRip Server for Proofing Connectivity to an IRIS 43Wide

HP ProLiant ML110, ML310, ML370G4, DL380G4 Servers, HP DC7100 Workstations are the current supported platforms. Dell and DG platforms can be referenced with doc 72-3572. If you see a section heading referring to a specific model, for example, (*For ML370G4 Server*), skip that section if you are not dealing with that specific model.

HP ProLiant **ML370G5, DL380G5 and ML310G5** please refer to document **709-00840A - HP 5G Proliant Hardware Setup**

For driver updates:

Manufacturers Site: This should be your primary source for Firmware/Driver/Utility Images. Go to WWW.HP.COM and navigate. As an example, to search for the ProLiant ML370G4:

1) Select the Server: **Support** and **Drivers > Servers > ProLiant Series Servers > ProLiant ML Servers > ML 370 > G4**
2) Select the Drivers: **Download Drivers and Software > Microsoft windows 2000 > Software Support Pack**.
3) Follow rest of the instructions to download.

- **Tech Planet** contains the latest supported versions for all platforms.
  http://techplanet.creo.com/software_solutions/workflow_hardware
  Note that Tech Planet will not contain all the drivers/firmware that are available from HP's Software Support Pack.

Resource CD 651-00203A: contains a snapshot of the latest qualified versions at the time of release of the CD. Current shipping platforms are fully regression tested. Note that this file is contained on all Ghost DVDs. Older platforms are tested for basic functionality. Get from;
Agile: http://ccapdmv1/AgilePC/HcmServlet
P3 Server: \\p3\ResourceCDs
Ordering from Manufacturing 651-00203A

2 OVERVIEW OF PROCEDURE

Assemble hardware	1. Check delivered parts against sales order. 2. Add any optional cards, memory, or drives in the correct locations. 3. Connect external hardware (RAID, modem, UPS). 4. Connect Dongles to LPT1 or USB ports. 5. Power on server.
Configure bios.	1. Setup SCSI controller(s). 2. Setup disks (write cache, containers). 3. Configure BIOS.

3 HARDWARE CONFIGURATIONS (FOR REFERENCE)

The standard HP platforms supported under Windows 2000 are:

HP ProLiant DL380G5 Server (Please see Document 709-00840A for HP 5G servers).

HP ProLiant ML370G5 Server (Please see Document 709-00840A for HP 5G servers).

HP ProLiant ML310G5 Server (Please see Document 709-00840A for HP 5G servers).

HP ProLiant ML370G4 Server (2 x Physical Xeon, 4 x Logical CPU's) Renderstation, Evo, InSite, Prinergy.

HP ProLiant DL380G4 Server (2 x Physical Xeon, 4 x Logical CPU's) Evo, InSite, Prinergy.

HP ProLiant ML310G4 Server (1x Physical Xeon, 2x physical cores/Logical CPU's) Renderstaion, Evo, Prinergy.

HP ProLiant ML310G3 Server (1x Physical Pentium D, 2x physical cores/Logical CPU's) Renderstaion, Evo, InSite, Prinergy.

HP ProLiant ML110 Server (1x Physical Pentium, 2x Logical CPU's) Renderstaion, Evo, InSite, Prinergy.

HP DC7100 Workstation (1x Physical Pentium, 2x Logical CPU's) Renderstation, Prinergy.

HP DC7600 Workstation (1x Physical Pentium, 2x Logical CPU's) Renderstation, Prinergy.

3.1 UPS REQUIREMENTS

Each server type is configured with a different rating of UPS unit. Ensure that the site has the proper outlet for handling the UPS.

The following table lists the different APC and TrippLite UPS plug types:

Table 2-8: UPS plug types

UPS Type			Plug Type			
Vendor	**Model**	**VA Rating**	**North American**	**Europe**	**Japan**	**Australia**
APC	SmartUPS	1000VA	125V 15A nema 5-15	230V 10A iec320 c14	100V nema 5-15p	240V 10A iec320 c14
APC	SmartUPS	1400VA	125V 15A nema 5-15	230V 10A iec320 c14	100V nema 5-15p	240V 10A iec320 c14
APC	SmartUPS	2200VA	125V 20A nema 5-20	230V 10A iec320 c14	100V nema 5-20p	240V 16A iec320 c20
APC	SmartUPS	3000VA	125V 30A nema 5-30	230V 16A iec320 c30 BS1363/A CEE 7/7	100V nema 5-30p	240V 20A iec320 c30 BS1363/A CEE 7/7

TrippLite	Smart	1050VA	125V 15A nema 5-15	not supported	not supported	not supported
TrippLite	Smart	1500VA	125V 15A nema 5-15	230V 10A Iec320 C14 CEE 7/7	not supported	not supported
TrippLite	Smart	2200VA	not supported	240V 16A iec320 c20 BS1363/A CEE 7/7	not supported	240V 16A iec320 c20 BS1363/A CEE 7/7
TrippLite	Smart	3000VA	125V 30A nema 5-30	240V 16A iec320 c20 BS1363/A CEE 7/7	not supported	240V 16A iec320 c20 BS1363/A CEE 7/7

Refer to documents 72-2125A for details on how to appropriately size a UPS for various Kodak Workflow Server and Peripheral components.

4 ML370G4 HARDWARE SETUP

This section describes how to set up a ProLiant ML370G4 based server.
Note: As apposed to configuring Dell Servers you do not update the Servers BIOS here. Once the OS has been applied you will run the Software Support Pack update that will upgrade Drivers, BIOS and Firmware for all the HP components.

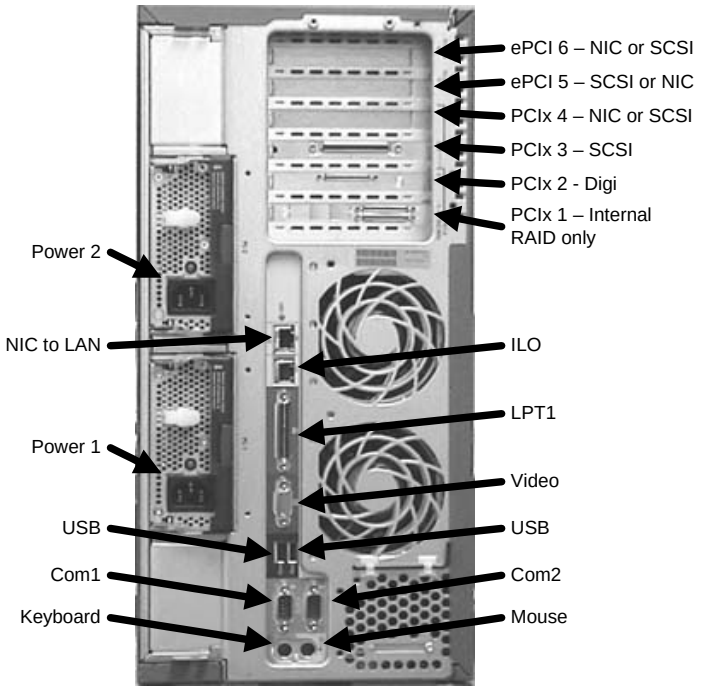
4.1 INSTALLING HARDWARE

1) Please verify the delivered hardware against the sales order and the specifications below.

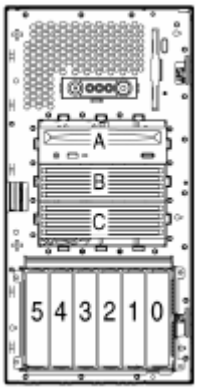
Standard System Components for ML370G4 servers			
Item	**Type**	**Man**	**Comments**
PC	**ML370G4**, 2 x 3.4 GHz Nacona Xeon CPU's	HP	
RAM	2GB 400Mhz DDR2 ECC PC2-3200	HP	4 Banks, 2 DIMMS/Bank
RAID	Smart Array 6402 PCI-X RAID Controller	HP	
SCSI	Adaptec 39u160 controller	Adaptec	Creo supplied
Hard disk	2x 73 GB U320 disks, 10K RPM (RAID1 System) 1x 73 GB U320 disk, 10K RPM (RAID 0 Jobs)	HP HP	Top 2 slots Bottom right slot
DVD ROM/FLPY	EIDE	HP	
Video	On-board Integrated ATI Rage XL Graphics Controller (8MB)	ATI/HP	
Network	1st 1x Broadcom NC7781 Gbit copper 2nd 1x 100BT ILO	Intel/HP HP	1st General connection 2nd RC troubleshooting
Miscellaneous Components for ML370G4 servers			
Keyboard		HP	English or GB for International
Mouse	PS/2	HP	
External modem	USR / MultiTech External 56K	USR/MultiTech	NA/ ROW, connected to COM1
Monitor	15", Flat panel LCD color monitor	HP	
Power cord + documents	1x IEC320R to NEMA15P for North America or 1x IEC320R to IEC320P for ROW	HP	
Software + documents	Windows 2003 Server, 5 client licenses (Server may or may not be downgraded to Windows 2000 Server	Microsoft	English
Software + documents	GHOST8	Symantec	English

2) Install all of the optional hardware, as listed on the sales order.

Item	Type	Source	Comments
RAID controller	MSA 6402 dual u320 channel PCI	HP	Install in PCI 1
Network	Optional Intel PRO/1000 Gigabit Fiber or Copper PCI NIC Controller	Intel	Install in PCI 4
Network	Optional Intel PRO/1000 Gigabit Fiber or Copper **PCIe** NIC Controller	Intel	Install in PCI 6, 5
SCSI LVD controller	Optional Adaptec 39u160, **PCIe**, (for connecting external SE/ LVD SCSI Device **non MCE CTP**)	Adaptec	Install in PCI 5, 6
SCSI LVD controller	Optional Adaptec 39u160, PCI, (for connecting external SE/ LVD SCSI Device non MCE CTP)	Adaptec	Install in PCI 4, 3
SCSI LVD controller	Optional Adaptec 39u160, PCI, (for connecting **MCE based CTP devices**)	Adaptec	Install in PCI 3
Serial interface	Digi AccelePort 4P + adapter cable	Digi	Install in PCI 2
RAM	Optional 512 or 1024MB DDR2 400Mhz SDRAM ECC DIMMs	HP	3 additional banks 2 DIMMs each (4 banks total)
Hard disk	73 GB U320 disk, 10K RPM 146 GB U320 disk, 10K RPM 300 GB U320 disk, 10K RPM	HP	2 slots default OS disks. 1 slot for default Jobs disk. 5 additional slots
USB Dongle	Sentinel USB Dongle	Sentinel	Any back USB port



3) Install the Hard Drives as described in the picture below:



Disk	Location
OS Mirror (2 identical disks)	Slots B and C
Jobs Drive (1 disk only)	Slot 0
Jobs Drive (more then 1 disk)	Slot 0 progressing to slot 5

4) Connect the server to the UPS and connect the external devices.

Device	
Server power 1 and 2	Both to the UPS
Server Network and ILO	Both to the LAN
Modem Signaling	COM1
Modem Power	UPS
MCE CTP Recorder Interface	COM3
MCE Diagnostics 1	COM4
MCE Diagnostics 2	COM5
UPS Signaling	COM2 or USB (any port)
External Device (ie. RAID) Serial	Any available COM port
External Device power 1	UPS 1
External Device power 2 (if applicable)	UPS 2 or another power circuit

5) Power on the server. Go on to configure the SCSI controllers, setup the hard drives, and configure the BIOS as described in the next section.

4.2 SETTING UP THE SCSI CONTROLLER

4.2.1 Configuring the PCI Adaptec 39u160

PCI Adaptec 39u160 SCSI Controller

1) Ensure the 39u160 BIOS is at a rev listed Tech Planet > Server > Downloads page. At the time of this writing v3.10 is the current supported rev. Download the update from Tech Planet if requiring an update.
2) Press <**CTRL**> **+A** (if appears) during the **Adaptec 39160 SCSI BIOS** boot up prompt to run the Adaptec SCSI Select Utility.
3) For each 39160 found under Bus:Device:Channel select an adapter do the following.
   a) From the Main Menu screen, select **Configure/View Host Adapter Settings**.
   b) Select **<F6> / Yes** to Reset options to default.
   c) Select Advanced Configuration.

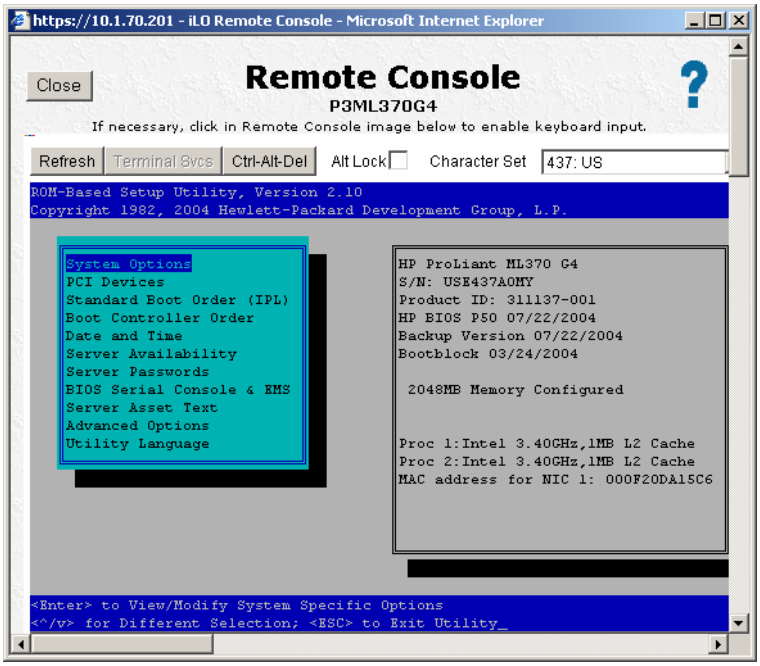
Domain Validation	Disabled
BIOS support for bootable CD	Disabled

      i) All other items left at default.
      ii) Press <**ESC**>**,** <**ESC**> and then select **Yes** to save the changes (if changes has been made).
   d) Press <**ESC**> to get back to the controller select screen and repeat for the next channel.
4) Press <**ESC**> and select **Yes** to exit the utility.

4.3 CONFIGURING HARDWARE SYSTEM SETTINGS

4.3.1 Configuring BIOS Settings

1) Reboot the server.
2) Press **<F9>** (normally after the SCSI BIOS checks) when prompted to get to the ROM BIOS Setup Utility (RBSU) screen as shown below:



3) Ensure the settings follow the below recommendations. **highlighted** items are changed from default:

System Options:

Embedded COM Port A	Com=1, IRQ=4, IO=3H8h-3FFh
Embedded COM Port B	**Com=2, IRQ=3, IO=2F8h-2FFh**
Embedded LPT Port	LPT=1, IRQ=7
Virtual Serial Port	**Disabled**
Embedded LPT Mode Support	SPP Extended
Integrated Diskette Controller	Enabled
Numlock power-on state	Off
Embedded NIC PXE Support	**Disabled**
Diskette Write Control	Read and Write
Diskette Boot Control	Enabled
Advanced Memory Protection	Advanced ECC Support
USB Control	USB Enabled
USB 2.0 Controller	Enabled

PCI Devices: Leave all settings as default.

Standard boot order

IPL:1	CDROM
IPL:2	Floppy Drive A:
IPL:3	USB: DriveKey (C:)
IPL:4	Hard Drive C:

Boot Controller Order:

Ctlr:1 **PCI Slot 1 – HP Smart Array 6402 Controller**

All others to be ignored.

Date and Time: **Set accordingly**

Server Availability

ASR Status	**Disabled**
ASR Timeout	n/a

Thermal Shutdown	Enabled
Wake-On LAN	**Disabled**
POST Speed Up	Enablde
POST F1 Prompt	Delayed
Power Button	Enabled
Automatic Power-On	**Disabled**
Server Passwords	
Set Power-On Password	<blank>
Set Admin Password	<blank>
Network Server Mode	Disabled
QuickLock Disabled	
BIOS Serial Console & EMS	
BIOS Serial Console Port	**Disabled**
BIOS Serial Console Baud Rate	n/a
EMS Console Disabled	
BIOS Interface Mode	Auto
Server Asset Text	
Server info Text	
Server Name Line1	**Name of the customer's Server**
Server Name Line2	**Customer's Name**
Server Primary OS Line1	**OS version to be installed**
Service Contact Text	
Service Name Text Line1	**Creo Products**
Custom Post Message	**Creo Premium Workflow Server**
Advanced Options	
MPS Table Mode Full Table APIC	
ROM Selection Use Current ROM	
Erase NVRAM n/a	
Erase NVRAM Boot Disk	n/a
NMI Debug Button	Enabled
Processor Hyper-Threading	Enabled
Virtual Install Disk	Enabled
Serial Number	n/a
Product ID	n/a... 311137-001 for ML370G4
HW Prefetcher	Enabled
Adjacent Sector Prefetch	Enabled
Utility Language	English

4) Press <**ESC**>, and <**F10**> to exit and reboot the system.

4.4 SETTING UP DISKS

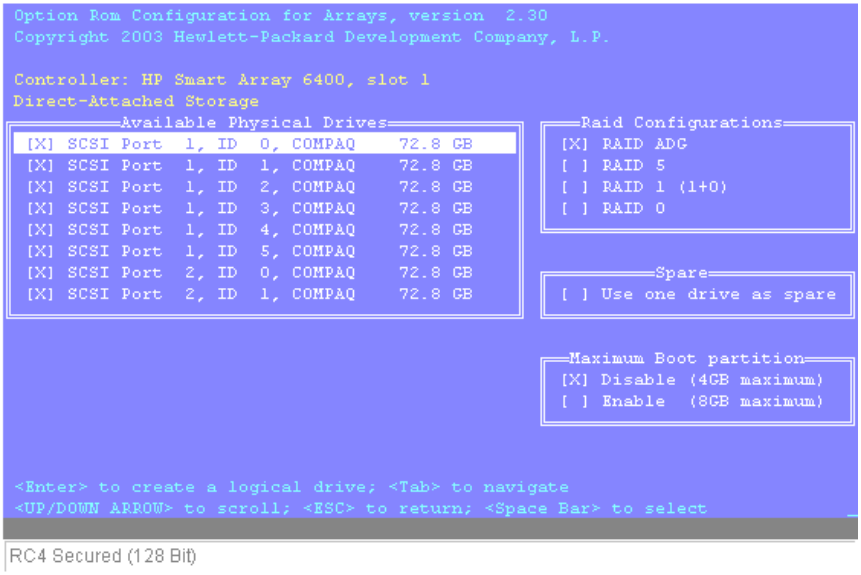
Summary of RAID settings

Number of Disks	6402 Port	RAID settings
2 System Disks	2	RAID = 1
1 internal data disk	1	RAID = 0
2 internal data disks	1	RAID = 1
3 to 6 internal data disks	1	RAID = 5

Instructions

1) During bootup press <**F8**> at the **Smart Array 6400 RAID Controller** prompt.
2) **Delete** the existing **Logical Volumes**. For each **Logical Volume**:
   a) Select **Delete Logical Volume**
   b) Hit <**F8**> then <**F3**> to delete the volume.

3) **Delete** the existing **Logical Drive**. For each **Logical Drive** (if applicable):
   a) Select **Delete Logical Drive**
   b) Hit <**F8**> then <**F3**> to delete the volume.
2) Creating the OS Mirror:
   a) Select **Create Logical Drive**, you should see the following:



   b) Unselect all the drives on Port-1 by selecting the drive and hitting <**space**>. Only the two bottom disks (**Port2-ID0, Port2-ID1**) should be selected (have an 'X').
   c) Set the other settings are as follows:

Raid Configuration	RAID 1 (1+0)
Spare	Unchecked
Maximum Boot Partition	Disable (4GB Max)

   d) Hit <**Enter**> and then <**F8**> to accept the configuration.
3) Creating the Data Drive:
   a) Select Create Logical Drive.
   b) If you have done the preceding step correctly you should see no disks on Port2. Ensure all the drives on Port-1 are selected (show 'X').
   c) Set the other settings are as follows:

Raid Configuration	RAID 5
Spare	Unchecked
Maximum Boot Partition	Disable (4GB Max)

   d) Hit <**Enter**> and then <**F8**> to accept the configuration.
4) Server is now good to go to apply the ghost baseline. Hit <Esc> to exit the RAID configuration utility.

5 DL380G4 HARDWARE SETUP

This section describes how to set up a ProLiant ML380G4 based server. The DL380 is the Rack Optimized version of the ML370. Most of what applies to the ML370 applies to the DL380.
Note: As apposed to configuring Dell Servers you do not update the Servers BIOS here. Once the OS has been applied you will run the Software Support Pack update that will upgrade Drivers, BIOS and Firmware for all the HP components.

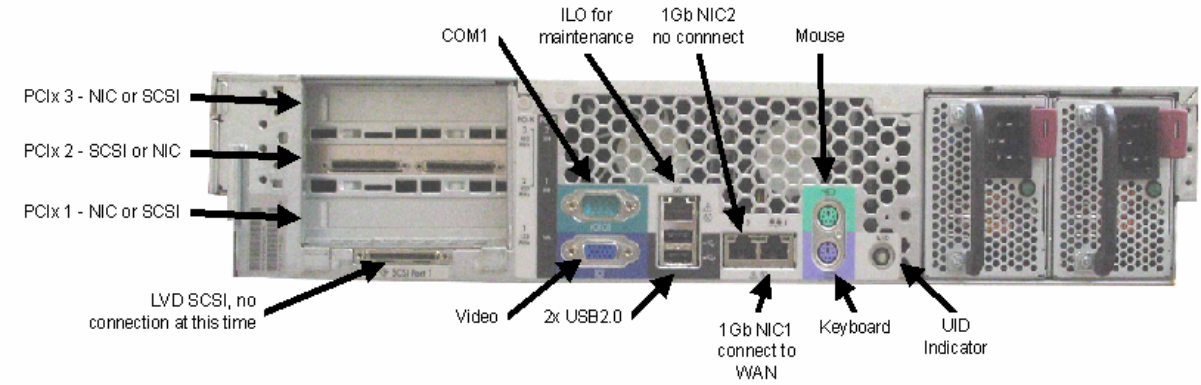
5.1 INSTALLING HARDWARE

5) Verify the delivered hardware against the sales order and the specifications below.

Standard System Components for DL380G4 servers			
Item	**Type**	**Man**	**Comments**
PC	**DL380G4**, 2 x 3.4 GHz Nacona Xeon CPU's	HP	
RAM	2 GB 400Mhz DDR2 ECC PC2-3200	HP	4 Banks, 2 DIMMS/Bank
RAID	Smart Array 6i RAID Controller	HP	Internal
SCSI	Adaptec 39u160 controller	Adaptec	Creo supplied
Hard disk	2x 73 GB U320 disks, 10K RPM (RAID1 System) 1x 73 GB U320 disk, 10K RPM (RAID 0 Jobs)	HP HP	Slot 0, 1 Slot 2
DVD ROM	EIDE	HP	
Floppy Drive	1.44"	HP	
Video	On-board Integrated ATI Rage XL Graphics Controller (8MB)	ATI/HP	
Network	1st Broadcom NC7782 Gbit copper 2nd Broadcom NC7782 Gbit copper 1x 100BT ILO	Broadcom Broadcom HP	General LAN connection Not Used RC troubleshooting
Miscellaneous Components for DL380G4 servers			
KVM MUX	8 Port included 609-00326 (HP 336044-B21)	HP	1 per Rack
KVM MUX Adapter	RJ45 to (2xPS2+DB15) 214-00051 (HP 262588-B21)	HP	1 per Server
KVM cable	RJ45 to RJ45, 6' + 12'. 216-00131 6' cable (A3L791-06)	HP	1 per Server
KVM	LCR, Keyboard and Trackball 609-00307A (HP 221546-001)	HP	1 per Rack
External modem	USR / MultiTech External 56K	USR/MultiTech	NA/ ROW, connected to COM1
Power cord + documents	1x IEC320R to NEMA15P for North America or 1x IEC320R to IEC320P for ROW	HP	
Software + documents	Windows 2003 Server, 5 client licenses (Server may or may not be downgraded to Windows 2000 Server	Microsoft	English
Software + documents	GHOST8	Symantec	English

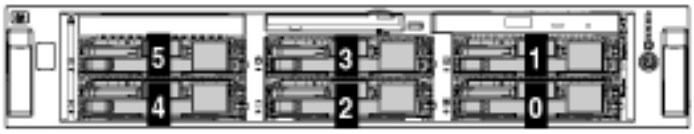
1) Install all of the optional hardware, as listed on the sales order.

Item	Type	Source	Slot Priorities
Network	Optional Intel PRO/1000 Gigabit Fiber or Copper PCI NIC Controller	Intel	Install in PCI 1, 3, 2
SCSI LVD controller	Optional Adaptec 39u160, PCI, (for connecting external SE/ LVD SCSI Device non MCE CTP)	Adaptec	Install in PCI 2, 1, 3
RAM	Optional 512 or 1024MB DDR2 400Mhz SDRAM ECC DIMMs	HP	2 additional banks 2 DIMMs each (3 banks total)
Hard disk	73 GB U320 disk, 10K RPM 146 GB U320 disk, 10K RPM 300 GB U320 disk, 10K RPM	HP	2 slots default OS disks. 1 slot for default Jobs disk. 3 additional slots
USB Dongle	Sentinel USB Dongle	Sentinel	Any back USB port



2) Install the Hard Drives as described in the picture below:

Disk	Location
OS Mirror (2 identical disks)	Slot 0, 1
Jobs Drive (1 disk only)	Slot 2
Jobs Drive (more then 1 disk)	Slot 2 to 5



3) Connect the server to the UPS and connect the external devices.

Device	
Server power 1 and 2	Both to the UPS
Server NIC1	LAN
Server NIC2	No connection
ILO NIC	LAN
Modem Signaling	COM1
Modem Power	UPS
UPS Signaling	USB (any port)
External Device power 1	UPS 1
External Device power 2 (if applicable)	UPS 2 or another power circuit

4) Power on the server. Go on to configure the SCSI controllers, setup the hard drives, and configure the BIOS as described in the next section.

5.2 SETTING UP THE SCSI CONTROLLER

5.2.1 Configuring the PCI Adaptec 39u160

PCI Adaptec 39u160 SCSI Controller

1) Ensure the 39u160 BIOS is at a rev listed **Tech Planet > Server > Downloads** page. At the time of this writing v3.10 is the current supported rev. Download the update from Tech Planet if requiring an update.
2) Press <**CTRL**> **+A** (if appears) during the **Adaptec 39160 SCSI BIOS** boot up prompt to run the Adaptec SCSI Select Utility.
3) For each 39160 found under Bus:Device:Channel select an adapter do the following.
   a) From the Main Menu screen, select **Configure/View Host Adapter Settings**.
   b) Select **<F6> / Yes** to Reset options to default.
   c) Select Advanced Configuration.

Domain Validation	Disabled
BIOS support for bootable CD	Disabled

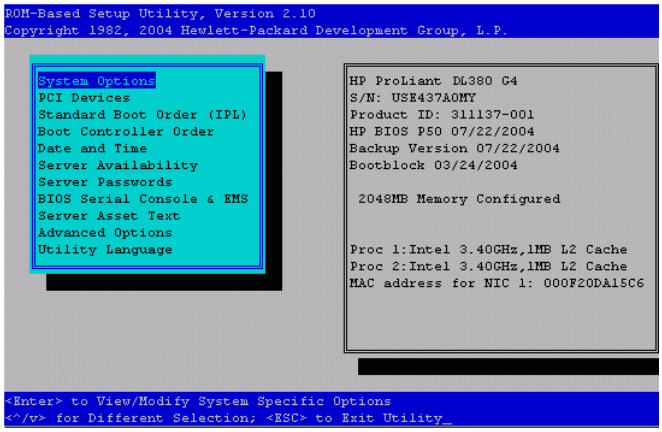
      i) All other items left at default.
      ii) Press <**ESC**>**,** <**ESC**> and then select **Yes** to save the changes (if changes has been made).
   d) Press <**ESC**> to get back to the controller select screen and repeat for the next channel.
4) Press <**ESC**> and select **Yes** to exit the utility.

5.3 CONFIGURING HARDWARE SYSTEM SETTINGS

5.3.1 Configuring BIOS Settings

5) Reboot the server.

6) Press **<F9>** (normally after the SCSI BIOS checks) when prompted to get to the ROM BIOS Setup Utility (RBSU) screen as shown below:



7) Ensure the settings follow the below recommendations. **highlighted** items are changed from default:

System Options:

OS Selection	n/a
Embedded Serial Port	Com=1, IRQ=4, IO=3H8h-3FFh
Virtual Serial Port	**Disabled**
Integrated Diskette Controller	Enabled
Numlock power-on state	Off
Embedded NIC Port 1 PXE Support	**Enabled**
Embedded NIC Port 2 PXE Support	**Disabled**
Diskette Write Control	Read and Write
Diskette Boot Control	Enabled
Advanced Memory Protection	Advanced ECC Support
USB Control	USB Enabled
USB 2.0 Controller	Enabled
PCI Devices:	Leave all settings as default.
Standard boot order	IPL:1 CDROM
	IPL:2 Floppy Drive A:
	IPL:3 USB: DriveKey (C:)
	IPL:4 Hard Drive C:
Boot Controller Order:	Ctlr:1 PCI Embedded **HP Smart Array 6i Controller**
	Ctlr:2 PCI Embedded **HP Integrated PCI IDE**
Date and Time:	**Set accordingly**
Server Availability	**Disabled**
ASR Status	Enabled
ASR Timeout	n/a
Thermal Shutdown	Enabled
Wake-On LAN	**Disabled**
POST Speed Up	Enabled
POST F1 Prompt	Delayed
Power Button	Enabled
Automatic Power-On	**Disabled**
Server Passwords	
Set Power-On Password	<blank>
Set Admin Password	<blank>
Network Server Mode	Disabled
QuickLock	Disabled
BIOS Serial Console & EMS	
BIOS Serial Console Port	**Disabled**
BIOS Serial Console Baud Rate	n/a

EMS Console	Disabled
BIOS Interface Mode	Auto
Server Asset Text	
Server info Text	
Server Name Line1	**Name of the customer's Server**
Server Name Line2	**Customer's Name**
Server Primary OS Line1	**OS version to be installed**
Service Contact Text	
Service Name Text Line1	**Creo Products**
Custom Post Message	**Creo Premium Workflow Server**
Advanced Options	
MPS Table Mode	Full Table APIC
Hot Plug resources	Auto Set
ROM Selection	Use Current ROM
Erase NVRAM	n/a
Erase NVRAM Boot Disk	n/a
NMI Debug Button	Enabled
Processor Hyper-Threading	Enabled
Virtual Install Disk	Enabled
Serial Number	n/a
Product ID	n/a... 311144-001 for DL380G4
HW Prefetch	Enabled
Adjacent Sector Prefetch	Enabled
Processor Power Mode	Full Performance
Utility Language	English

8) Press **<ESC>**, and **<F10>** to exit and reboot the system.

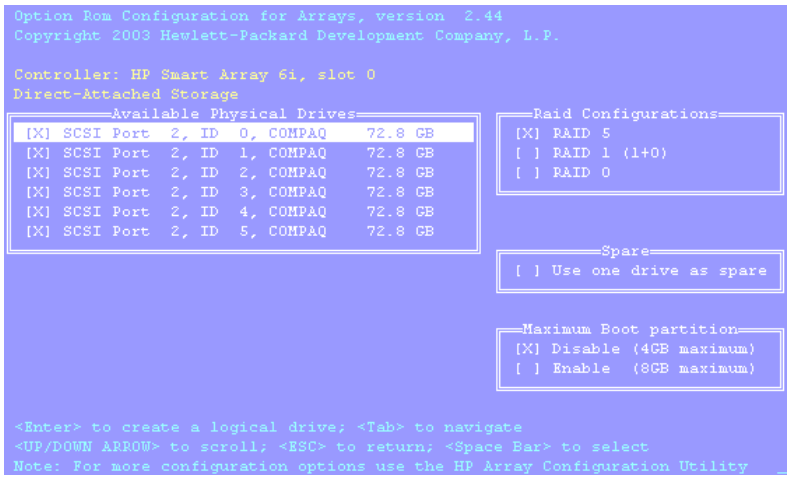
5.4 SETTING UP DISKS

Summary of RAID settings

Number of Disks	RAID settings
2 System Disks	RAID = 1
1 internal data disk	RAID = 0
2 internal data disks	RAID = 1
3 or 4 internal data disks	RAID = 5

Instructions

5) During bootup press **<F8>** at the **Smart Array 6i RAID Controller** prompt.
6) **Delete** the existing **Logical Volumes**. For each **Logical Volume**:
   a) Select **Delete Logical Volume**.
   b) Select the logical volume.
   c) Hit <**F8**>, <**F3**> then <Enter> to delete the volume.
   d) Repeat for any other logical volume.
7) **Delete** the existing **Logical Drive**. For each **Logical Drive** (if applicable):
   a) Select **Delete Logical Drive**
   b) Hit <**F8**> then <**F3**> to delete the volume.
8) Create the Logical Drives:
9) Creating the OS Mirror:
   a) Select **Create Logical Drive**, you should see the following:



b) Ensure disks ID0 and ID1 are selected ('X' in front) by selecting the disk and hitting the space bar.

c) Unselect all the disks by removing the 'X' in front.

d) Configure the other settings as follows:

Raid Configuration	RAID 1 (1+0)
Spare	Unchecked
Maximum Boot Partition	Disable (4GB Max)

e) Hit <**Enter**>, <**F8**> then **<Enter>** to accept the configuration.

10) Creating the Data Drive:

a) Select Create Logical Drive.

b) If you have done the preceding step correctly you should see not disks ID0 or ID1. Ensure all the drives are selected (show 'X').

c) Configure the other settings as follows:

Raid Configuration	RAID 5
Spare	Unchecked
Maximum Boot Partition	Disable (4GB Max)

d) Hit <**Enter**>, <**F8**> then **<Enter>** to accept the configuration.

e) Server is now ready to apply the ghost baseline. Hit <Esc> to exit the

6 ML310G4 HARDWARE SETUP

This section describes how to set up a ProLiant ML310G4 based server.
Note: As apposed to configuring Dell Servers you do not update the Servers BIOS here. Once the OS has been applied you will run the Software Support Pack update that will upgrade Drivers, BIOS and Firmware for all the HP components.

6.1 INSTALLING HARDWARE

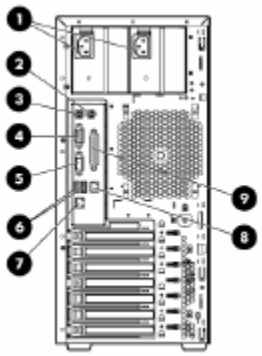
1) Please verify the delivered hardware against the sales order and the specifications below.

Standard System Components for ML310G4 servers			
Item	**Type**	**Man**	**Comments**
PC	**ML310G4**, 1 x 2.13Ghz Core2Duo CPU	HP	
RAM	2 GB FBD DDR2 ECC PC2-5300	HP	4 Banks, 2 DIMMs/Bank
RAID	Embedded SATA Controller	HP	RAID0
RAID	Smart Array P400 RAID Controller (optional)	HP	RAID1(2x80GB or 160GB)
Hard disk	1 x 80 GB SATA, 7.2K RPM Opt. 3x SATA (80GB or 160GB)	HP HP	Bottom slot Top 3 slots
DVD ROM/FLPY	EIDE	HP	
Video	On-board Integrated ATI ES1000 Graphics Controller (16MB)	ATI/HP	
Network	1x Broadcom NC320i Gbit copper	Broadcom / HP	
Miscellaneous Components for ML310G4 servers			
Keyboard	PS/2	HP	
Mouse	PS/2	HP	
External modem	USR / MultiTech External 56K	USR/MultiTech	NA/ ROW, connected to COM1
Monitor	17", LCD color monitor	HP	
Power cord + documents	1x IEC320R to NEMA15P for North America or 1x IEC320R to IEC320P for ROW	HP	
Software + documents	Windows 2003 Server, 5 client licenses (Server may or may not be downgraded to Windows 2000 Server	Microsoft	English
Software + documents	GHOST8	Symantec	English

2) Install all of the optional hardware, as listed on the sales order.

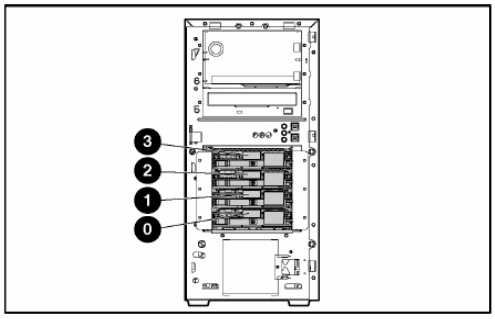
Item	Type	Source	Comments
Network	Optional Intel PRO/1000 Gigabit Fiber or Copper PCI-X NIC Controller	Intel	Install in PCI 2 or 3
Network	Optional Intel PRO/1000 Gigabit Fiber or Copper PCI-e NIC Controller	Intel	Install in PCI 1 or 4
SCSI HVD controller	Optional LSI HVD(LSI8751D)	LSI	Install in PCI 2 or 3
SCSI LVD controller	Optional Adaptec 39u160	Adaptec	Install in PCI 3 or 2
SCSI LVD controller	Optional Adaptec 39u320	Adaptec	Install in PCI 3 or 2
Serial interface	Digi AccelePort 2P or 4P + adapter cable	Digi	Install in PCI 2 or 3
Serial interface	Moxa serial Card(PCIe)	Moxa	Install in PCI 4 or 1
RAM	Optional 512 or 1024MB DDR2 533Mhz SDRAM ECC DIMMs	HP	1 additional banks, 2 DIMMs each (2 banks total)
Hard disk	80 GB SATA1, 7.2K RPM 160 GB SATA1, 7.2K RPM	HP	1 slot default OS disk. 3 additional slots
USB Dongle	Sentinel USB Dongle	Sentinel	Any back USB port

Back



Item	Description
1	Power supply connectors
2	Mouse connector
3	Keyboard connector
4	Serial connector
5	Video connector
6	USB connectors (2)
7	RJ-45 Ethernet connector
8	RJ-45 connector (iLO 2)
9	Parallel connector

Front



Item	Description
0	SCSI ID 0
1	SCSI ID 1
2	SCSI ID 2
3	SCSI ID 3

3) Install the Hard Drives as the following:

Disk	Location	Notes
OS Single (1 disk)	Slots 0	Default
Data	Slots 1 - 3	
System Mirror (optional)	Slots 0,1	With purchase of P400 Controller
Data Mirror (optional)	Slots 2,3	With purchase of P400 Controller

Note:

a) RAID 1 available with purchase of Smart Array P400 256MB RAID Controller.

4) Connect the server to the UPS and connect the external devices.

Device	
Server power	UPS
Server Network	LAN
Modem Signaling	COM1
Modem Power	UPS
MCE CTP Recorder Interface	COM3 (Digi)
MCE Diagnostics 1	COM4 (Digi)
MCE Diagnostics 2	COM5 (Digi)
UPS Signaling	COM6 or USB (any port)
External Device (ie. RAID) Serial	Any available COM port if available.
External Device power 1	UPS 1
External Device power 2 (if applicable)	UPS 2 or another power circuit

5) Power on the server. Go on to configure the SCSI controllers, setup the hard drives, and configure the BIOS as described in the next section.

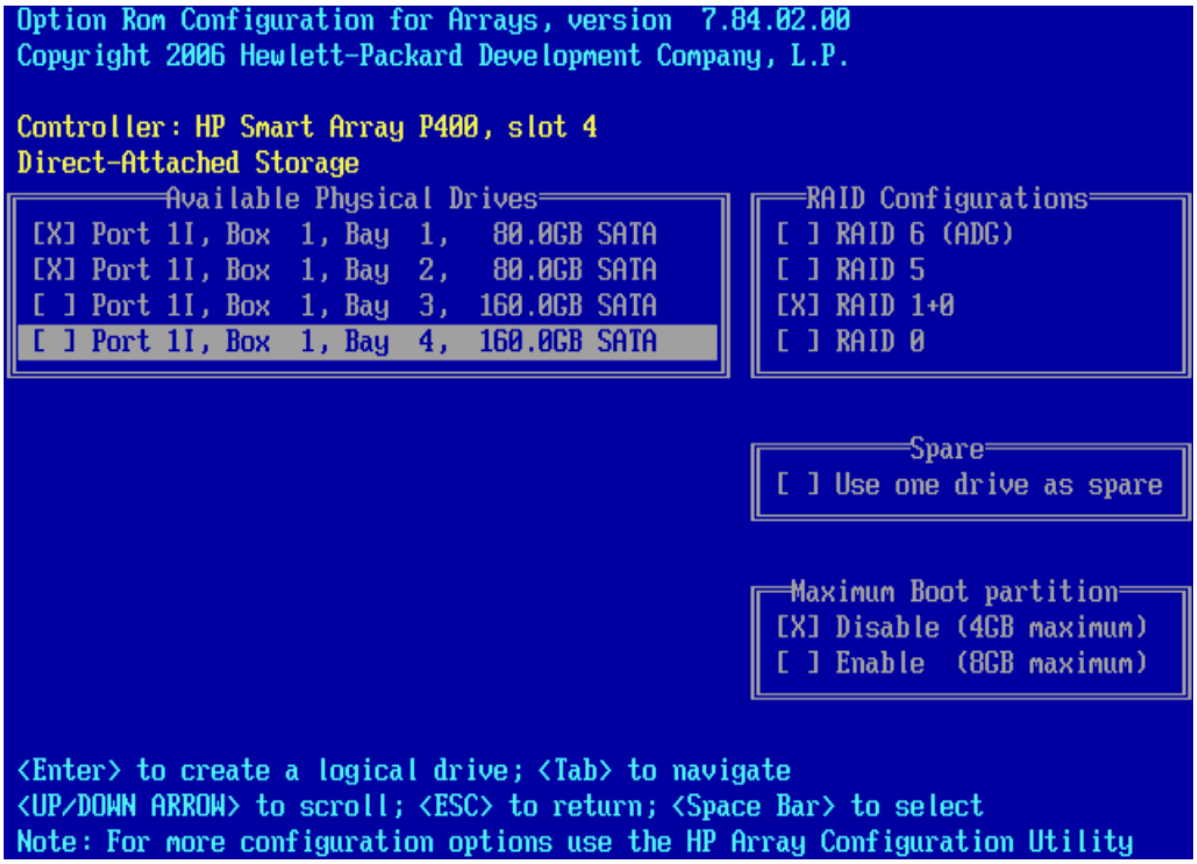
6.1.1 Configuring the System and Mirror Drives (if optional hardware purchased)

Summary of RAID settings

Number of Disks	P400 Port	RAID settings
2 System Disks	1	RAID = 1
2 Data Disks	1	RAID = 1

Instructions

1) During bootup press **<F8>** at the **Smart Array P400 RAID Controller** prompt.
2) Create the Logical Drives:
3) Creating the **OS Mirror:**
   a) Select **Create Logical Drive**, you should see the following.



b) Ensure disks Port1I Bay 1 and 2 are selected ('X' in front) by selecting the disk and hitting the space bar.

c) Unselect all the disks by removing the 'X' in front. (using space bar to unselect/select)

d) Configure the other settings as follows:

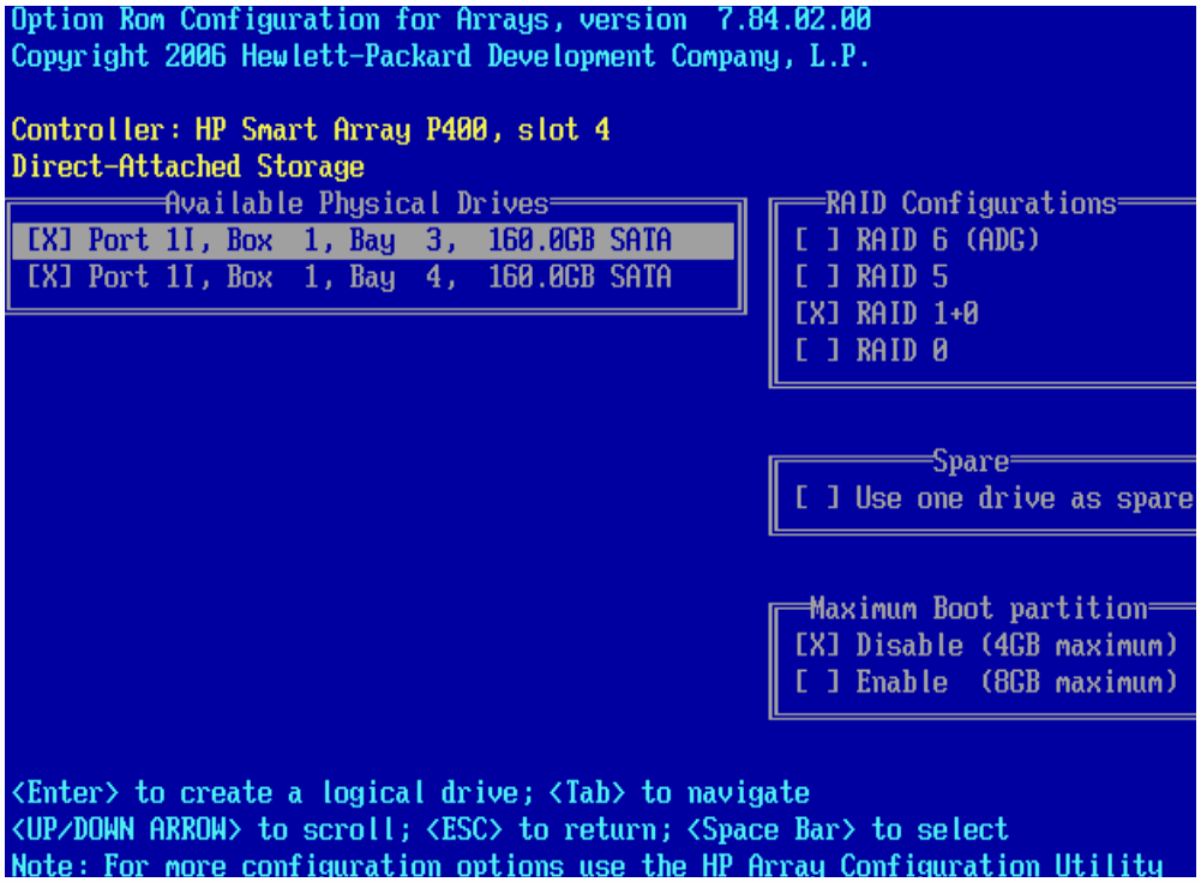
Raid Configuration	RAID 1 (1+0)
Spare	Unchecked
Maximum Boot Partition	Disable (4GB Max)

e) Hit <**Enter**>, <**F8**> then **<Enter>** to accept the configuration.

f) Hit **<Esc>** exit.

4) Creating the **DATA** Mirror:

a) Select **Create Logical Drive**, you should see the following.



b) Ensure disks Port1I Bay 3 and 4 are selected ('X' in front) by selecting the disk and hitting the space bar.

c) Unselect all the disks by removing the 'X' in front. (using space bar to unselect/select)

d) Configure the other settings as follows:

Raid Configuration	RAID 1 (1+0)
Spare	Unchecked
Maximum Boot Partition	Disable (4GB Max)

e) Hit <**Enter**>, <**F8**> then <**Enter**> to accept the configuration.

f) Press ESC to exit and restart the server

6.2 SETTING UP THE SCSI CONTROLLER

6.2.1 Configuring the PCI Adaptec 39u160

1) PCI Adaptec 39u160 SCSI Controller

2) Ensure the 39u160 BIOS is at a rev listed Tech Planet > Server > Downloads page. At the time of this writing v3.10 is the current supported rev. Download the update from Tech Planet if requiring an update.

3) Press <**CTRL**> **+A** (if appears) during the **Adaptec 39160 SCSI BIOS** boot up prompt to run the Adaptec SCSI Select Utility.

4) For each 39160 found under Bus:Device:Channel select an adapter do the following.

   a) From the Main Menu screen, select Configure/View Host Adapter Settings.

   b) Select **<F6> / Yes** to Reset options to default.

   c) Select Advanced Configuration.

Domain Validation	Disabled
BIOS support for bootable CD	Disabled

d) All other items left at default.

e) Press <**ESC**>, <**ESC**> and then select **Yes** to save the changes (if changes has been made).

f) Press <**ESC**> to get back to the controller select screen and repeat for the next channel.

5) Press <**ESC**> and select **Yes** to exit the utility.

6.2.2 Configuring the Differential Adaptec 2944UW

WARNING: This controller requires 5V PCI slot, and it's not compatible with the 3.3V based PCI-X & PCI-Express slots available on the ML310G4 server. Hence, it's NOT supported on this platform.

6.3 CONFIGURING HARDWARE SYSTEM SETTINGS

6.3.1 Configuring BIOS Settings

1) Reboot the server.

2) Press <**F9**> when prompted after the initial peripheral BIOS tests to get into the ROM BIOS config.

3) Ensure the settings follow the below recommendations. **Highlighted** items are changed from default:

System Options:	
Embedded COM Port A	Com=1, IRQ=4, IO=3H8h-3FFh
Optional LPT Port	Disabled
Virtual Serial Port	**Disabled**
Embedded LPT Port	LPT=1, IRQ=7
Embedded LPT Mode Support	SPP Extended
Integrated Diskette Controller	Auto(Enabled)
Numlock power-on state	Off
Embedded NICs->NIC1 Boot options	**Disabled**
USB Control	USB Enabled
USB 2.0 Controller	Enabled
Power Regulator for ProLiant	HP Dynamic Power Savings Mode
PCI Devices:	Leave all settings as default.
Standard boot order	
IPL:1	CDROM
IPL:2	Floppy Drive A:
IPL:3	USB: DriveKey (C:)
IPL:4	Hard Drive C:
IPL:5	PCI Embedded HP NC320i Integrated Gigabit Port 1
Boot Controller Order:	
Ctlr:1	**HP Smart Array P400 Controller**
All others to be ignored.	
Date and Time:	**Set accordingly**
Server Availability	
ASR Status	**Disabled**
ASR Timeout	n/a
Thermal Shutdown	Enabled
Wake-On LAN	**Disabled**
POST F1 Prompt	Delayed
Power Button	Enabled
Automatic Power-On	**Disabled**

Server Passwords	
Set Power-On Password	<blank>
Set Admin Password	<blank>
BIOS Serial Console & EMS	
BIOS Serial Console Port	**Disabled**
BIOS Serial Console Baud Rate	n/a
EMS Console	Disabled
BIOS Interface Mode	Auto
Server Asset Text	
Server info Text	
Server Name Line1	To be changed by Kodak
Server Name Line2	To be changed by Kodak
Server Primary OS Line1	To be changed by Kodak
Service Contact Text	
Service Name Text Line1	**Kodak**
Custom Post Message	**Kodak Performance Workflow Server**
Advanced Options	
MPS Table Mode	Full Table APIC
Restore Default System Settings	
Resore Settings/Erase Boot Disk	
NMI Debug Button	Enabled
Virtual Install Disk	Enabled
Serial Number	n/a
Product ID	n/a... 418040-001 for ML310G4
Drive Write Cache	Disabled
Embedded SATA RAID	Disabled
Processor Options	
HW Prefetcher	Enabled
Adjacent Sector Prefetch	Enabled
N-Execute Memory Protection	Disabled
Intel Virtualization Technology	Disabled
Expansion Card Caching	Disabled
Default Fan Speen	Normal Speed
Utility Language	English

4) Hit <**ESC**> then <**F10**> to save settings and exit.

7 ML310G3 HARDWARE SETUP

This section describes how to set up a ProLiant ML310G3 based server.
Note: As apposed to configuring Dell Servers you do not update the Servers BIOS here. Once the OS has been applied you will run the Software Support Pack update that will upgrade Drivers, BIOS and Firmware for all the HP components.

7.1 INSTALLING HARDWARE

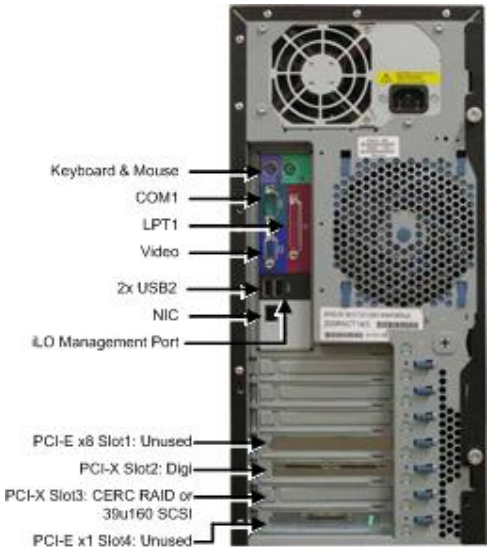
6) Please verify the delivered hardware against the sales order and the specifications below.

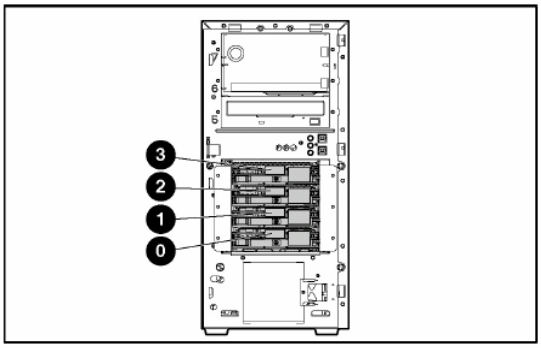
Standard System Components for ML310G3 servers			
Item	**Type**	**Man**	**Comments**
PC	**ML310G3**, 1 x Pentium D CPU	HP	
RAM	1 GB 533Mhz DDR2 ECC PC2-4200	HP	4 Banks, 2 DIMMs/Bank
RAID	CERC SATA 1.5/6ch RAID Controller	Adaptec	RAID0, 1, 5
SCSI	Adaptec 39u160 controller	Adaptec	Creo supplied
Hard disk	1x 80 GB SATA, 7.2K RPM Opt. 3x SATA, (80GB, 160GB or 250GB)	HP HP	Bottom slot Top 3 slots
DVD ROM/FLPY	EIDE	HP	
Video	On-board Integrated ATI ES1000 Graphics Controller (16MB)	ATI/HP	
Network	1x Broadcom NC320i Gbit copper	Broadcom / HP	
Miscellaneous Components for ML310G3 servers			
Keyboard	PS/2	HP	
Mouse	PS/2	HP	
External modem	USR / MultiTech External 56K	USR/MultiTech	NA/ ROW, connected to COM1
Monitor	15”, LCD color monitor	HP	
Power cord + documents	1x IEC320R to NEMA15P for North America or 1x IEC320R to IEC320P for ROW	HP	
Software + documents	Windows 2003 Server, 5 client licenses (Server may or may not be downgraded to Windows 2000 Server	Microsoft	English
Software + documents	GHOST8	Symantec	English

7) Install all of the optional hardware, as listed on the sales order.

Item	Type	Source	Comments
RAID	CERC SATA 1.5/6ch PCI RAID Controller	Adaptec	Install in PCI 3
Network	Optional Intel PRO/1000 Gigabit Fiber or Copper PCI NIC Controller	Intel	Install in PCI 2 or 3
SCSI HVD controller	Optional Adaptec AHA2944UW, PCI, (for connecting **MPE based CTP devices**)	Adaptec	Not Supported
SCSI LVD controller	Optional Adaptec 39u160	Adaptec	Install in PCI 3
Serial interface	Digi AccelePort 2P or 4P + adapter cable	Digi	Install in PCI 2
RAM	Optional 512 or 1024MB DDR2 533Mhz SDRAM ECC DIMMs	HP	1 additional banks, 2 DIMMs each (2 banks total)
Hard disk	80 GB SATA1, 7.2K RPM 160 GB SATA1, 7.2K RPM 250 GB SATA1, 7.2K RPM	HP	1 slot default OS disk. 3 additional slots
USB Dongle	Sentinel USB Dongle	Sentinel	Any back USB port

Back **Front**





Item	Description
0	SCSI ID 0
1	SCSI ID 1
2	SCSI ID 2
3	SCSI ID 3

8) Install the Hard Drives as the following:

Disk	Location	Notes
OS Single (1 disk)	Slots 0	
OS Mirror (2 identical disks)	Slots 0 and 1	Requires the CERC SATA 1.5/6ch
Jobs Drive(s)	next available slot	

Note:

a) If any RAID configuration is required then a PCI CERC SATA 1.5/6ch is needed. SATA cables will come with the RAID controller.

b) If the CERC SATA RAID option is used then the OS disks will always be a Mirror. The Jobs drive(s) can either be mirrored or JBOD.

9) Connect the server to the UPS and connect the external devices.

Device	
Server power	UPS
Server Network	LAN
Modem Signaling	COM1
Modem Power	UPS
MCE CTP Recorder Interface	COM3 (Digi)
MCE Diagnostics 1	COM4 (Digi)
MCE Diagnostics 2	COM5 (Digi)
UPS Signaling	COM6 or USB (any port)
External Device (ie. RAID) Serial	Any available COM port if available.
External Device power 1	UPS 1
External Device power 2 (if applicable)	UPS 2 or another power circuit

10) Power on the server. Go on to configure the SCSI controllers, setup the hard drives, and configure the BIOS as described in the next section.

7.2 SETTING UP THE SCSI CONTROLLER

7.2.1 Configuring the PCI Adaptec 39u160

6) PCI Adaptec 39u160 SCSI Controller

7) Ensure the 39u160 BIOS is at a rev listed Tech Planet > Server > Downloads page. At the time of this writing v3.10 is the current supported rev. Download the update from Tech Planet if requiring an update.

8) Press <**CTRL**> **+A** (if appears) during the **Adaptec 39160 SCSI BIOS** boot up prompt to run the Adaptec SCSI Select Utility.

9) For each 39160 found under Bus:Device:Channel select an adapter do the following.

   a) From the Main Menu screen, select Configure/View Host Adapter Settings.

   b) Select **<F6> / Yes** to Reset options to default.

   c) Select Advanced Configuration.

Domain Validation	Disabled
BIOS support for bootable CD	Disabled

   d) All other items left at default.

   e) Press <**ESC**>**,** <**ESC**> and then select **Yes** to save the changes (if changes has been made).

   f) Press <**ESC**> to get back to the controller select screen and repeat for the next channel.

10) Press <**ESC**> and select **Yes** to exit the utility.

7.2.2 Configuring the Differential Adaptec 2944UW

WARNING: This controller requires 5V PCI slot, and it's not compatible with the 3.3V based PCI-X & PCI-Express slots available on the ML310G3 server. Hence, it's NOT supported on this platform.

7.3 CONFIGURING HARDWARE SYSTEM SETTINGS

7.3.1 Configuring BIOS Settings

5) Reboot the server.

6) Press **<F9>** when prompted after the initial peripheral BIOS tests to get into the ROM BIOS config.

7) Ensure the settings follow the below recommendations. **Highlighted** items are changed from default:

System Options	
Embedded Serial Port A	COM1; IRQ4; IO: 3F8-3FFh
Optional Serial Port	Disabled

Virtual Serial Port	**Disabled**
Embedded LPT Port	LPT1; IRQ7
Embedded LPT Mode Support	SPP Extended
Integrated Diskette Controller	Enabled
Numlock Power On State	Disabled
Embedded NIC (PXE) Support	**Disabled**
USB Control	USB Enabled
USB 2.0 Controller	Enabled
Power Regulator for Proliant	Disabled
PCI Devices	The following is for reference only. leave as default
PCI Embedded	USB 1.1 Controller 1 IRQ: 5
PCI Embedded	USB 1.1 Controller 2 IRQ: 5
PCI Embedded	USB 1.1 Controller 3 IRQ: 5
PCI Embedded	USB 1.1 Controller 4 IRQ: 5
PCI Embedded	USB 2.0 Controller IRQ: 5
PCI Embedded	Intel 82801FR SATA Controller IRQ: 11
PCI Embedded	ATI ES1000 Video Controller IRQ: 5
PCI Embedded	HP Integrated Lights-Out 2 Controller IRQ: 5
PCI Embedded	HP Integrated Lights-Out 2 Processor IRQ: 5
PCI Embedded	HP Integrated Lights-Out 2 UHCI Virtual Devices IRQ: 5
PCI Embedded	HP NC320i Gigabit Server Adapter Port 1 IRQ 10
PCI Slot 2	RAID Mass Storage Controller or Compaq 64-Bit Dual Wide Ultra3 Port1/2 IRQ 10
PCI Slot 3	Communications Device IRQ 3
Standard Boot Order (IPL)	
IPL:1	**Floppy Drive (A:)**
IPL:2	**CD-ROM**
IPL:3	**Hard Disk C: (See Boot Controller Order)**
IPL:4	**USB Drive Key C:**
Boot Controller Order	
Ctlr:1 PCI Embedded	Intel 82801FR SATA Controller (if Enabled)
Ctlr:2 PCI Embedded	HP Integrated PCI IDE Controller
Ctlr:3 PCI Slot 2	**RAID Mass Storage Controller**
Ctlr:4 PCI Slot 2	Compaq 64-Bit Dual Wide Ultra3 Port1
Ctlr:5 PCI Slot 2	Compaq 64-Bit Dual Wide Ultra3 Port2
Date and Time	**Set as required**
Server Availability	
ASR Status	**Disabled**
ASR Timeout	10 Minutes
Thermal Shutdown	Enabled
Wake-On LAN	**Disabled**
Post Speed Up	Enabled
Post F1 Prompt	Delayed
Power Button	Enabled
Automatic Power-On	**Disabled**
Power-On Delay	No Delay
Server Passwords	Leave as default
BIOS Serial Console & EMS	
BIOS Serial Console Port	Auto
BIOS Serial Console Baud	9600
EMS Console	Disabled
BIOS Interface Mode	Auto
Server Asset Tag	

Server Info Text	
Server Name – Line 1	**Customers name for the Server Line 1**
Server Name – Line 2	**Customers name for the Server Line 2**
Server Asset Tag – Line 1	
Server Asset Tag – Line 2	
Server Primary OS – Line 1	
Server Primary OS – Line 2	
Server Primary OS – Line 3	
Other Text – Line 1	
Other Text – Line 2	
Administrator Info Text	
Admin Name Text – Line 1	
Admin Name Text – Line 2	
Admin Phone Number Text – Line 1	
Admin Phone Number Text – Line 2	
Admin Page Number Text – Line 1	
Admin Page Number Text – Line 2	
Other Text – Line 1	
Other Text – Line 2	
Service Contact Text	
Service Name Text – Line 1	
Service Name Text – Line 2	
Service Phone Number Text – Line 1	
Service Phone Number Text – Line 2	
Service Page Number Text – Line 1	
Service Page Number Text – Line 2	
Other Text – Line 1	
Other Text – Line 2	
Custom Post Message	**Kodak Performance Workflow Server**
Advanced Options	
MPS Table Mode	Full Table APIC
Erase Non-volatile memory	leave as default
Erase NVRAM/Boot Disk	leave as default
NMI Debug Button	Enabled
Virtual Install Disk	Enabled
Serial Number	leave as default
Product ID	8155701006G
Drive Write Cache	Disabled
Embedded SATA RAID	**Disabled**
Processor Options	
HW Prefetcher	Enabled
Adjacent Sector Prefetch	Enabled
No-Execute Memory Protection	Disabled
Utility Language	English

8) Hit <**ESC**> then <**F10**> to save settings and exit.

7.4 SETTING UP DISKS

This section is only required if the CERC SATA 1.5/6ch PCI RAID card option is installed. If this is not the case you can skip this section.

Summary of RAID settings

Number of Disks	RAID settings
2 System Disks	RAID = 1
1 internal data disk	RAID = JBOD
2 internal data disks	RAID = 1

Instructions

1) During bootup press **<CTRL-A>** at the **Adaptec RAID Configuration Utility** prompt.
2) Select **Array Configuration Utility**.
3) If prompted for Configuration Change has been Detected select **Accept**.
4) Clear any existing configurations.
   a) Select **Manage Arrays**.
   b) Select **each array** under List of Arrays and hit **<Del>, <Del>, 'Y'**.
5) For CERC SATA6, initialize any new drives.
   a) Select **Initialize Drives**.
   b) Repeatedly hit **<Ins>** to add all your drives to the "Selected Drives" window.
   c) Hit **<Enter>, 'Y'** to begin initialize. This should only take a second or 2.
6) Create the Arrays. Only RAID1 Mirrors are supported in Creo workflows so drives will be selected in pairs to create an array. Do the following for each pair (00/01 and 02/03) of drives.
   a) Select **Create Array**.
   b) Hit **<Ins>** to add disk **00** and **01** (or 02 and 03) to the Selected Drive window.
   c) Hit **<Enter>** to complete the selection. Enter the following.

Array Type	RAID 1 (Mirror)	
Array Label	1st RAID (disks 00,01):	**System**
	2nd RAID (disks 02,03):	**Data**
Array Size	Leave as default (GB)	
Read Caching (available SATA6 only)	Y	
Write Caching (available SATA6 only)	Disabled	
Create RAID via	Build/Verify	
Rebuild Rate	High	

   d) Hit **Done**.
   e) Hit **<Enter>** to the RAID is now available prompt.
7) Exit CERC by rebooting the system with **<Ctrl><Alt><Del>.**
8) Server is now good to go to apply the ghost baseline.

8 ML110 HARDWARE SETUP

This section describes how to set up a ProLiant ML110 based server.
Note: As apposed to configuring Dell Servers you do not update the Servers BIOS here. Once the OS has been applied you will run the Software Support Pack update that will upgrade Drivers, BIOS and Firmware for all the HP components.

8.1 INSTALLING HARDWARE

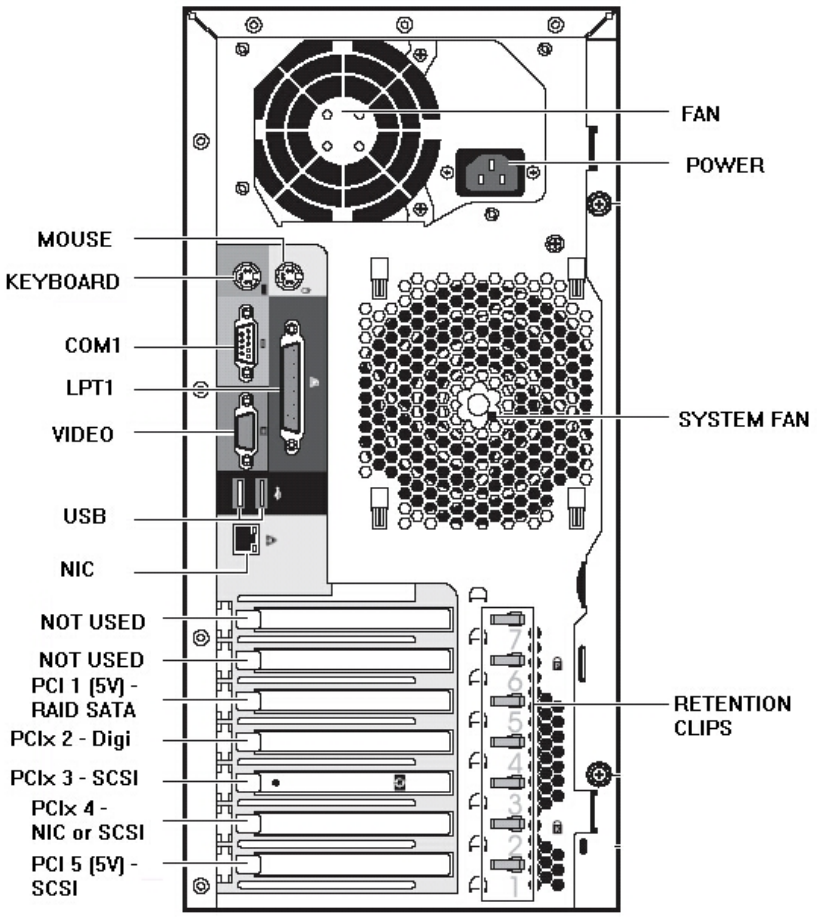
1) Please verify the delivered hardware against the sales order and the specifications below.

Standard System Components for ML110 servers			
Item	**Type**	**Man**	**Comments**
PC	**ML110**, 1 x Pentium4 CPU	HP	
RAM	1 GB 400Mhz DDR ECC PC-3200	HP	4 Banks, 1 DIMM/Bank
RAID	Promise FastTrak S150 SX4 SATA RAID Controller	Promise/HP	RAID0, 1, 5
SCSI	Adaptec 39u160 controller	Adaptec	Creo supplied
Hard disk	2x 80 GB SATA, 7.2K RPM (RAID1 System) Opt. 2x SATA, (80GB, 160GB or 250GB)	HP HP	Top 2 slots Bottom 2 slots
DVD ROM/FLPY	EIDE	HP	
Video	On-board Integrated ATI Rage XL Graphics Controller (8MB)	ATI/HP	
Network	1x Broadcom 5705 Gbit copper	Broadcom / HP	
Miscellaneous Components for ML110 servers			
Keyboard		HP	English or GB for International
Mouse	PS/2	HP	
External modem	USR / MultiTech External 56K	USR/MultiTech	NA/ ROW, connected to COM1
Monitor	15”, Flat panel LCD color monitor	HP	
Power cord + documents	1x IEC320R to NEMA15P for North America or 1x IEC320R to IEC320P for ROW	HP	
Software + documents	Windows 2003 Server, 5 client licenses (Server may or may not be downgraded to Windows 2000 Server	Microsoft	English
Software + documents	GHOST8	Symantec	English

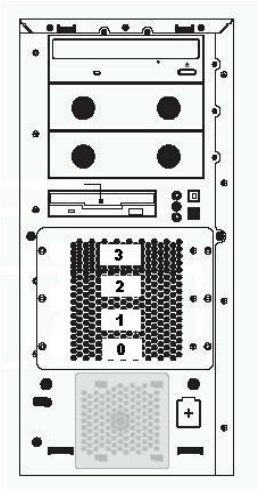
2) Install all of the optional hardware, as listed on the sales order.

Note: Promise FastTrak SATA RAID controller is installed in PCI slot 1.

Item	Type	Source	Comments
Network	Optional Intel PRO/1000 Gigabit Fiber or Copper PCI NIC Controller	Intel	Install in PCI 4
SCSI HVD controller	Optional Adaptec AHA2944UW, PCI, (for connecting **MPE based CTP devices**)	Adaptec	Install in PCI 5
SCSI LVD controller	Optional Adaptec 39u160, PCI, (for connecting external SE/ LVD SCSI Device non MCE CTP)	Adaptec	Install in PCI 3, 4
SCSI LVD controller	Optional Adaptec 39u160, PCI, (for connecting **MCE based CTP devices**)	Adaptec	Install in PCI 3
Serial interface	Digi AccelePort 4P + adapter cable	Digi	Install in PCI 2
RAM	Optional 512 or 1024MB DDR 400Mhz SDRAM ECC DIMMs	HP	3 additional banks, 1 DIMM each (4 banks total)
Hard disk	80 GB SATA1, 7.2K RPM 160 GB SATA1, 7.2K RPM 250 GB SATA1, 7.2K RPM	HP	2 slots default OS disks. 2 additional slots
USB Dongle	Sentinel USB Dongle	Sentinel	Any back USB port



3) Install the Hard Drives as described in the picture below:



Disk	Location
OS Mirror (2 identical disks)	Slots 0 and 1
Jobs Drive(s) (Option)	Slots 2 and 3

4) Connect the server to the UPS and connect the external devices.

Device	
Server power	UPS
Server Network	LAN
Modem Signaling	COM1
Modem Power	UPS
MCE CTP Recorder Interface	COM3 (Digi)
MCE Diagnostics 1	COM4 (Digi)
MCE Diagnostics 2	COM5 (Digi)
UPS Signaling	COM6 or USB (any port)
External Device (ie. RAID) Serial	Any available COM port
External Device power 1	UPS 1
External Device power 2 (if applicable)	UPS 2 or another power circuit

5) Power on the server. Go on to configure the SCSI controllers, setup the hard drives, and configure the BIOS as described in the next section.

8.2 SETTING UP THE SCSI CONTROLLER

8.2.1 Configuring the PCI Adaptec 39u160

PCI Adaptec 39u160 SCSI Controller

1) Ensure the 39u160 BIOS is at a rev listed Tech Planet > Server > Downloads page. At the time of this writing v3.10 is the current supported rev. Download the update from Tech Planet if requiring an update.
2) Press <**CTRL**> **+A** (if appears) during the **Adaptec 39160 SCSI BIOS** boot up prompt to run the Adaptec SCSI Select Utility.
3) For each 39160 found under Bus:Device:Channel select an adapter do the following.
   a) From the Main Menu screen, select Configure/View Host Adapter Settings.
   b) Select **<F6> / Yes** to Reset options to default.
   c) Select Advanced Configuration.

Domain Validation	Disabled
BIOS support for bootable CD	Disabled

   d) All other items left at default.
   e) Press <**ESC**>**,** <**ESC**> and then select **Yes** to save the changes (if changes has been made).

f) Press <**ESC**> to get back to the controller select screen and repeat for the next channel.

4) Press <**ESC**> and select **Yes** to exit the utility.

8.2.2 Configuring the Differential Adaptec 2944UW

WARNING: This controller is running 5V supply, so it's not compatible with the 3.3V based PCI-64 and PCI-X buses.

1) Ensure the 2944UW BIOS is at a rev listed Tech Planet / Server / Downloads page. At the time of this writing v2.20 is the current supported rev. Download the update from Tech Planet if requiring an update.
2) Press **CTRL +A** (if appears) during the Adaptec 2944 SCSI BIOS boot up prompt to run the Adaptec SCSI Select Utility.
3) From the Main Menu screen, select **Configure/View Host Adapter Settings**.
4) Select **<F6> / Yes** to Reset options to default.
5) Select Advanced Configuration.

Host Adapter BIOS	Disabled: Scan Bus
BIOS support for bootable CD	Disabled

   a) All other items left at default.
   b) Press **<ESC>, <ESC>** and then select **Yes** to save the changes (if changes has been made).
6) Press **<ESC>** to the controller A/B select and repeat for controller B.
7) Press **<ESC>** and select **Yes** to exit the utility.

8.3 CONFIGURING HARDWARE SYSTEM SETTINGS

8.3.1 Configuring BIOS Settings

1) Reboot the server.
2) Press **<F2>** when prompted to get to the ROM BIOS Setup Utility (RBSU) screen.
3) Ensure the settings follow the below recommendations. **Highlighted** items are changed from default:

MAIN:	
Legacy Diskette A	1.44/1.25 MB 3-1/2"
IDE Channel 0 Master	None
IDE Channel 0 Slave	None
IDE Channel 1 Master	CDROM
IDE Channel 1 Slave	None
Memory Cache	Accept Default
Boot Features:	
Floppy Check	**Enabled**
Summary Screen	Enabled
Boot-time Diagnostic Screen	**Enabled**
Extended Memory Testing	Normal
Advanced:	
Reset Configuration Data	No
Parallel ATA	Both
PCI Configuration	Accept Default
Advanced Chipset Control:	
Integrated Device Control Sub-Menu:	
Onboard LAN	Enabled
Onboard VGA	Enabled
USB Device 29, Function 0	Enabled
USB Device 29, Function 1	Enabled
USB2.0 Device 29, Function 7	**Enabled**
Default Primary Video Adapter	Auto

ECC Config	Enabled
ECC Error Type	NMI
SERR signal condition	Multiple bit
Advanced Processor Options:	
Hyperthreading Technology	Enabled
I/O Device Configuration	Accept Default
Serial Port A	Enabled
Base I/O Address	3F8
Interrupt	IRQ4
Parallel Port	Enabled
Mode	EPP & ECP
Base I/O address	378
Interrupt	IRQ7
DMA Channel	DMA1
Floppy disk controller	Enabled
Hardware Protection	All unlocked
Legacy USB Support	Enabled
Security	All clear
Power	
Power Savings	Disabled
Resume On Time	Off
Resume Time	00:00:00
After Power Failure	**Stay Off**
On Board LAN Power Up	**Disabled**
PCI PME Power Up	**Disabled**
Modem Ring In Power Up	**Disabled**
Boot (configure the following order):	CDROM
	Removable Device
	Hard Drive
	PXE (disabled)

4) Save the settings.

8.4 SETTING UP DISKS

Summary of RAID settings

Number of Disks	RAID settings
2 System Disks	RAID = 1
1 internal data disk	RAID = JBOD
2 internal data disks	RAID = 1

Instructions

1) During bootup press **<CTRL-F>** at the **FastTrak** prompt.
2) From the Main Menu, view the Drive Assignments [**1**].
3) Verify of the drives in Channels 1 and 2 are configured as mirrored drives. If not, delete the array(s) where the drives are assigned.
4) To create the mirrored system drive array, do the following:
   a) Select option **Define Array [2]** from the main menu.
   b) Select Array 1 and configure as follows:

      RAID Mode: RAID 1

      Fast Init: Yes

   c) Select the 2 Drives for Array 1
   d) Save by pressing <**CTRL-Y**>.

e) Press <**CTRL-Y**> again to Initialize.

f) Verify that Array 1 is the bootable Array (marked with "*****"). If not, press <**SPACE**> bar to change the boot drive to Array 1.

5) Configure other Arrays for remaining drives as required.

6) From the main menu, select **Controller Configuration [4]** and configure Cache Mode to **Write Thru**.

7) Exit the utility.

8) Server is now good to go to apply the ghost baseline.

9 DC7100 HARDWARE SETUP

This section describes how to set up a DC7100 based workstation.

1) Ensure you have updated the Motherboard's BIOS to the latest version. This can be found in TechPlanet, the Ghost/ResourceCD, or on the www.hp.com site.

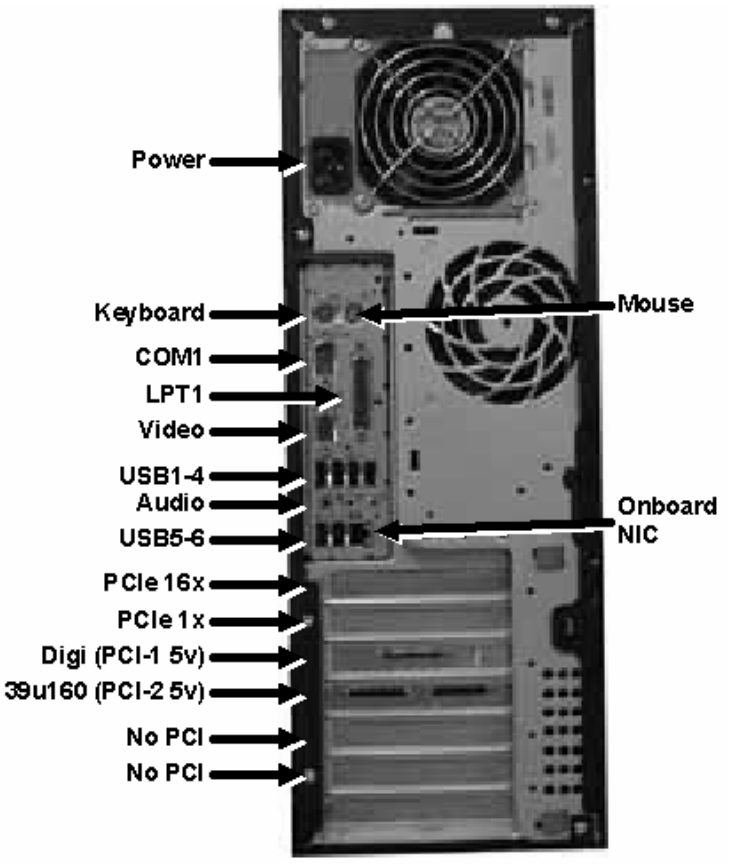
9.1 INSTALLING HARDWARE

1) Please verify the delivered hardware against the sales order and the specifications below.

Standard System Components for DC7100 Workstation			
Item	**Type**	**Man**	**Comments**
PC	**DC7100**, 1 x 3.2 Ghz Pentium CPU's	HP	
RAM	1 GB 400Mhz DDR ECC PC-3200 (DDR 400)	HP	4 Banks, 2 DIMMS/Bank
Disk controller	Onboard SATA, 4 channels	HP	
Hard disk	1x 80 GB SATA1 disks, 7.2K RPM	HP	
DVD ROM	EIDE	HP	
Floppy	None	HP	
Video	Intel Media Accelerator 900	Intel/HP	
Network	Broadcom NetXtreme 5782	Broadcom	
Miscellaneous Components for DC7100 Workstation			
Keyboard		HP	English or GB for International
Mouse	PS/2	HP	
External modem	USR / MultiTech External 56K	USR/MultiTech	NA / ROW, connected to COM1
Monitor	15", Flat panel LCD color monitor	HP	
Power cord + documents	1x IEC320R to NEMA15P for North America or 1x IEC320R to IEC320P for ROW	HP	
Software + documents	Windows XP	Microsoft	English
Software + documents	GHOST8	Symantec	English

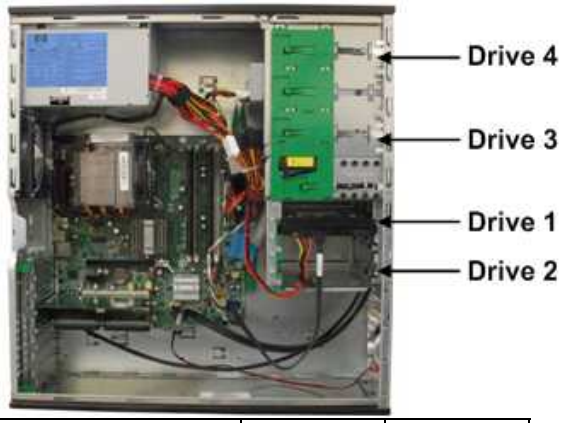
2) Install all of the optional hardware, as listed on the sales order.

Item	Type	Source	Comments
Network	Optional Intel PRO/1000 Gigabit Fiber or Copper **PCIe** NIC Controller	Intel	Install in PCIe
SCSI LVD controller	Optional Adaptec 39u160, PCI, (for connecting **MCE based CTP devices**)	Adaptec	Install in PCI 2
SCSI HVD controller	Optional Adaptec 2944, PCI, (for connecting **MPE based CTP devices**)	Adaptec	Install in PCI 2
Serial interface	Digi AccelePort 4P + adapter cable	Digi	Install in PCI 1
RAM	Optional 512 or 1024MB DDR2 400Mhz SDRAM ECC DIMMs	HP	1 additional bank 2 DIMMs each (2 banks total)
Hard disk	80 GB SATA disk, 7.2K RPM 160 GB SATA disk, 7.2K RPM 250 GB SATA disk, 7.2K RPM	HP	1 slot default OS disks. 3 additional slots
USB Dongle	Sentinel USB Dongle	Sentinel	Any back USB port



3) Install the Hard Drives as described in the picture below:

There can be 2x SATA disks installed into the DC7100 without the need of an expansion mounting bracket. An additional 2x drives can be added with mounting brackets for a total of 4 drives.



Number of Disks	Location	SATA Port
1 System Drive	Drive1	0
1st Data Drive	Drive 2	1
2nd Data Drive	Drive 3	2
3rd Data Drive	Drive 4	3

4) Connect the server to the UPS and connect the external devices.

Device	
Workstation power 1	To the UPS
Workstation Network	To the LAN
Modem Signaling	COM1
Modem Power	UPS
MCE CTP Recorder Interface	COM3
MCE Diagnostics 1	COM4
MCE Diagnostics 2	COM5
UPS Signaling	USB (any port)
External Device (ie. RAID) Serial	Any available COM port
External Device power 1	UPS 1
External Device power 2 (if applicable)	UPS 2 or another power circuit

5) Power on the Workstation. Go on to configure the SCSI controllers, and configure the BIOS as described in the next section.

9.2 SETTING UP THE SCSI CONTROLLER

9.2.1 Configuring the PCI Adaptec 39u160

PCI Adaptec 39u160 SCSI Controller

1) Ensure the 39u160 BIOS is at a rev listed Tech Planet > Server > Downloads page. At the time of this writing v3.10 is the current supported rev. Download the update from Tech Planet if requiring an update.
2) Press <**CTRL**> +**A** (if appears) during the **Adaptec 39160 SCSI BIOS** boot up prompt to run the Adaptec SCSI Select Utility.
3) For each 39160 found under Bus:Device:Channel select an adapter do the following.
   a) From the Main Menu screen, select Configure/View Host Adapter Settings.
   b) Select <**F6**> / **Yes** to Reset options to default.

c) Select Advanced Configuration.

Domain Validation	Disabled
BIOS support for bootable CD	Disabled

i) All other items left at default.

ii) Press <**ESC**>**,** <**ESC**> and then select **Yes** to save the changes (if changes has been made).

d) Press <**ESC**> to get back to the controller select screen and repeat for the next channel.

4) Press <**ESC**> and select **Yes** to exit the utility.

9.2.2 Configuring the Differential Adaptec 2944UW

WARNING: This controller is running 5V supply, so it's not compatible with the 3.3V based PCI-64 and PCI-X buses.

1) Ensure the 2944UW BIOS is at a rev listed Tech Planet / Server / Downloads page. At the time of this writing v2.20 is the current supported rev. Download the update from Tech Planet if requiring an update.
2) Press **CTRL +A** (if appears) during the Adaptec 2944 SCSI BIOS boot up prompt to run the Adaptec SCSI Select Utility.
3) From the Main Menu screen, select **Configure/View Host Adapter Settings**.
4) Select **<F6> / Yes** to Reset options to default.
5) Select Advanced Configuration.

Host Adapter BIOS	Disabled: Scan Bus
BIOS support for bootable CD	Disabled

a) All other items left at default.

b) Press **<ESC>, <ESC>** and then select **Yes** to save the changes (if changes has been made).

6) Press **<ESC>** to the controller A/B select and repeat for controller B.
7) Press **<ESC>** and select **Yes** to exit the utility.

9.3 CONFIGURING HARDWARE SYSTEM SETTINGS

9.3.1 Configuring BIOS Settings

1) Reboot the server.
2) Press **<F10>** (almost immediately after <ctrl><alt><del>) when prompted to get to the Setup Utility.
3) Ensure the settings follow the below recommendations. **highlighted** items are changed from default:

File	
System Information	Overview of system including Model#, CPU, Memory, MAC#, BIOS v, Serial#
About	useless
Set Time and Date	Set as required
Replicated Setup	Use this to backup your BIOS settings to a floppy
Save to removable Media	Save the current BIOS settings to floppy
Restore from Media	Restore the BIOS settings from floppy
Default Setup	Save your changes
Save settings as default	Make your current settings the default factory config.
Restore factory settings	Reset the current BIOS settings to the factory defaults.
Apply defaults and exit Ignore Changes and Exit Save changes and Exit	Various options to exit the BIOS Setup.
Storage	
Device Configuration	Settings for the Internal Storage
Hard Disk	
SATA 0 to 3	Shows the size, model#, FW, Serial#
Emulation Type	Hard Disk (options = none, hard disk)
Multisector Transfers	16 (options = disable, 8, 16)

Translation Mode	Automatic (options = automatic, user specified)	
CD-ROM	IDE Primary 0	
Transfer Mode	Max UDMA (options = PIO, Max PIO, Enhanced DMA, Ultra DMA)	
Diskette		
Legacy Diskette	3.5” 1.44MB	
Default values	IDE/SATA	
Multisector Transfers	16 (options = disable, 8, 16)	
Transfer Mode	Max UDMA (options = PIO, Max PIO, Enhanced DMA, Ultra DMA)	
Translation Mode	Automatic (options = automatic, Bit Shift, LBA Assisted, User, Off)	
Storage Options		
Removable Media Boot	Enabled (options = Disabled, Enabled)	
Legacy Diskette Write	Enabled (options = Disabled, Enabled)	
BIOS DMA Data Transfer	Enabled (options = Disabled, Enabled)	
SATA Emulation	Separate IDE Controller (options = Combined or Separate IDE controller)	
IDE Controller	Enabled (options = Disabled, Enabled)	
Primary SATA Controller	Enabled (options = Disabled, Enabled)	
Secondary SATA Controller	Enabled (options = Disabled, Enabled)	
DPS Self Test	Tests an internal drive	
Select a drive	time for an 80GB SATA1 Drive is 37min	
Boot Order	Diskette Drive IDE CD-ROM USB Device Hard Drive	
	Integrated SATA	
	Integrated IDE	
	Broadcom Ethernet Controller (Hit **<F5>** to disable)	
Security		
Setup Password	leave as blank	
Power on Password	leave as blank	
Device Security	Set all to “Device Available” except for : SMBUS controller = Device Hidden	
Network Services Boot	**Disabled** (do not allow workstation to boot from an OS on the network_	
System ID’s	Lists Asset Tags, UUIDs, and Keyboard	
Master Boot Record Security	Disabled (enabling this will prevent changes including disk formatting)	
Power		
OS Power Management	ACPI S3 Support ACPI S3 Hard Disk Reset ACPI S3 PS2 Mouse Wake Up	Enabled Disabled Enabled
Hardware Power Management		
SATA Power Management	Disabled	
Thermal	leave blank	
Advanced		
Power-On Options		
Post Mode	Quick Boot	
Post Message	Disabled	
F9 Prompt	Enabled	
F10 Prompt	Enabled	
F12 Prompt	Enabled	
Option ROM Prompt	Enabled	
Remote Wakeup Boot Source	Local Hard Disk	
After Power Loss	Off	
POST Delay	None	
I/O APIC Mode	Enabled	
Hyper-Threading	Enabled	
Limit CPUID Max Value to 3	Disabled	
ACPI/USB Buffers @ Top of Memory	Enabled	

BIOS Power On	All set to Disabled
OnBoard Devices	
Serial Port A	3F8 – 3FF, IRQ4
Parallel Port	378-37F, IRQ7, DMA3
Diskette Controller	3F0-3F7, IRQ6, DMA2
PCI Devices	**Leave as default.** The list below is for comparative Reference only
Intel VGA Controller	IRQ 10
Intel USB Controller	IRQ 11
Intel USB Controller	IRQ 11
Intel USB Controller	IRQ 5
Intel USB Controller	IRQ 11
Intel USB Controller	IRQ 11
Intel Audio Device	IRQ 5
Intel IDE Controller	Enabled
Intel SATA Controller	IRQ 5
Communications Device	IRQ 10 (this is the Digi if installed)
SCSI Controller	IRQ 11 (this is the Adaptec 39u160 if installed)
SCSI Controller	IRQ 11 (this is the Adaptec 39u160 if installed)
Broadcom Ethernet Controller	IRQ 5
Bus Options	
PCI Serr# Generation	Enabled
PCI VGA Palette Snooping	Disabled
Device Options	
Printer Mode	EPP+ECP
Num Lock State after Power Up	Off
S5 Wake on LAN	Enabled
Processor Cache	Enabled
Unique Sleep State Blink Rates	Disabled
Monitor Tracking	Disabled
NIC PXE Option ROM Download	**Disabled** (default = enabled)

4) Press <**ESC**>, and <**F10**> to exit and reboot the system.
5) You can now apply the Workstation Ghost.

10 DC7600 HARDWARE SETUP

This section describes how to set up a DC7100 based workstation.

Ensure you have updated the Motherboard's BIOS to the latest version. This can be found in TechPlanet, the Ghost/ResourceCD, or on the www.hp.com site.

10.1 INSTALLING HARDWARE

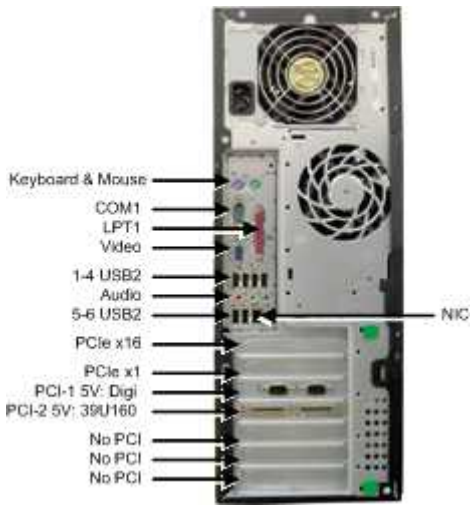
1) Please verify the delivered hardware against the sales order and the specifications below.

Standard System Components for DC7600 Workstation			
Item	**Type**	**Man**	**Comments**
PC	**DC7600**, 1 x 3.2 Ghz Pentium 4 CPU's	HP	
RAM	1 GB 400Mhz DDR ECC PC-3200 (DDR 400)	HP	4 Banks, 2 DIMMS/Bank
Disk controller	Onboard SATA, 4 channels	HP	
Hard disk	1x 80 GB SATA1 disks, 7.2K RPM	HP	
DVD ROM	EIDE	HP	
Floppy	None	HP	
Video	Intel Media Accelerator 900	Intel/HP	
Network	Broadcom NetXtreme 5782	Broadcom	
Miscellaneous Components for DC7600 Workstation			
Keyboard		HP	English or GB for International
Mouse	PS/2	HP	
External modem	USR / MultiTech External 56K	USR/MultiTech	NA / ROW, connected to COM1
Monitor	15", Flat panel LCD color monitor	HP	
Power cord + documents	1x IEC320R to NEMA15P for North America or 1x IEC320R to IEC320P for ROW	HP	
Software + documents	Windows XP	Microsoft	English
Software + documents	GHOST8	Symantec	English

2) Install all of the optional hardware, as listed on the sales order.

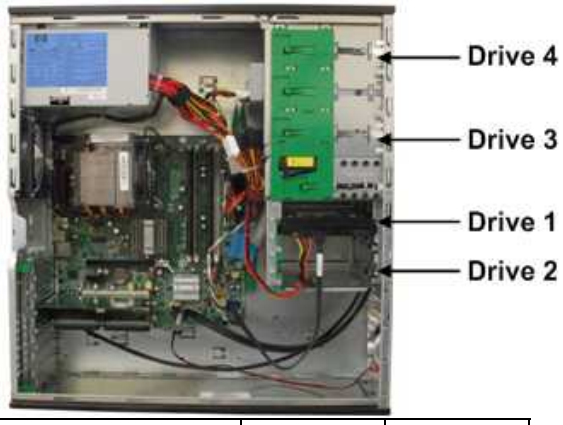
Item	**Type**	**Source**	**Comments**
Network	Optional Intel PRO/1000 Gigabit Fiber or Copper **PCIe** NIC Controller	Intel	Install in PCIe
SCSI LVD controller	Optional Adaptec 39u160, PCI, (for connecting **MCE based CTP devices**)	Adaptec	Install in PCI 2
SCSI HVD controller	Optional Adaptec 2944, PCI, (for connecting **MPE based CTP devices**)	Adaptec	Install in PCI 2
Serial interface	Digi AccelePort 4P or 2P + adapter cable	Digi	Install in PCI 1
RAM	Optional 512 or 1024MB DDR2 400Mhz SDRAM ECC DIMMs	HP	1 additional bank 2 DIMMs each (2 banks total)
Hard disk	80 GB SATA disk, 7.2K RPM 160 GB SATA disk, 7.2K RPM 250 GB SATA disk, 7.2K RPM	HP	1 slot default OS disks. 3 additional slots

USB Dongle	Sentinel USB Dongle	Sentinel	Any back USB port



3) Install the Hard Drives as described in the picture below:

There can be 2x SATA disks installed into the DC7600 without the need of an expansion mounting bracket. An additional 2x drives can be added with mounting brackets for a total of 4 drives.



Number of Disks	Location	SATA Port
1 System Drive	Drive1	0
1st Data Drive	Drive 2	1
2nd Data Drive	Drive 3	2
3rd Data Drive	Drive 4	3

4) Connect the server to the UPS and connect the external devices.

Device	
Workstation power 1	To the UPS
Workstation Network	To the LAN
Modem Signaling	COM1
Modem Power	UPS
MCE CTP Recorder Interface	COM3
MCE Diagnostics 1	COM4
MCE Diagnostics 2	COM5
UPS Signaling	USB (any port)

External Device (ie. RAID) Serial	Any available COM port
External Device power 1	UPS 1
External Device power 2 (if applicable)	UPS 2 or another power circuit

5) Power on the Workstation. Go on to configure the SCSI controllers, and configure the BIOS as described in the next section.

10.2 SETTING UP THE SCSI CONTROLLER

10.2.1 Configuring the PCI Adaptec 39u160

PCI Adaptec 39u160 SCSI Controller

5) Ensure the 39u160 BIOS is at a rev listed Tech Planet > Server > Downloads page. At the time of this writing v3.10 is the current supported rev. Download the update from Tech Planet if requiring an update.
6) Press <**CTRL**> **+A** (if appears) during the **Adaptec 39160 SCSI BIOS** boot up prompt to run the Adaptec SCSI Select Utility.
7) For each 39160 found under Bus:Device:Channel select an adapter do the following.
   a) From the Main Menu screen, select Configure/View Host Adapter Settings.
   b) Select **<F6> / Yes** to Reset options to default.
   c) Select Advanced Configuration.

Domain Validation	Disabled
BIOS support for bootable CD	Disabled

      i) All other items left at default.
      ii) Press <**ESC**>**,** <**ESC**> and then select **Yes** to save the changes (if changes has been made).
   d) Press <**ESC**> to get back to the controller select screen and repeat for the next channel.
8) Press <**ESC**> and select **Yes** to exit the utility.

10.2.2 Configuring the Differential Adaptec 2944UW

WARNING: This controller is running 5V supply, so it's not compatible with the 3.3V based PCI-64 and PCI-X buses.

8) Ensure the 2944UW BIOS is at a rev listed Tech Planet / Server / Downloads page. At the time of this writing v2.20 is the current supported rev. Download the update from Tech Planet if requiring an update.
9) Press **CTRL +A** (if appears) during the Adaptec 2944 SCSI BIOS boot up prompt to run the Adaptec SCSI Select Utility.
10) From the Main Menu screen, select **Configure/View Host Adapter Settings**.
11) Select **<F6> / Yes** to Reset options to default.
12) Select Advanced Configuration.

Host Adapter BIOS	Disabled: Scan Bus
BIOS support for bootable CD	Disabled

   a) All other items left at default.
   b) Press <**ESC**>**,** <**ESC**> and then select **Yes** to save the changes (if changes has been made).
13) Press <**ESC**> to the controller A/B select and repeat for controller B.
14) Press <**ESC**> and select **Yes** to exit the utility.

10.3 CONFIGURING HARDWARE SYSTEM SETTINGS

10.3.1 Configuring BIOS Settings

6) Reboot the server.
7) Press **<F10>** (almost immediately after <ctrl><alt><del>) when prompted to get to the Setup Utility.

8) Ensure the settings follow the below recommendations. **highlighted** items are changed from default:

File		
System Information	Overview of system including Model#, CPU, Memory, MAC#, BIOS v, Serial#	
About	useless	
Set Time and Date	Set as required	
Replicated Setup	Use this to backup your BIOS settings to a floppy	
Save to removable Media	Save the current BIOS settings to floppy	
Restore from Media	Restore the BIOS settings from floppy	
Default Setup	Save your changes	
Save settings as default	Make your current settings the default factory config.	
Restore factory settings	Reset the current BIOS settings to the factory defaults.	
Apply defaults and exit Ignore Changes and Exit Save changes and Exit	Various options to exit the BIOS Setup.	
Storage		
Device Configuration	Settings for the Internal Storage	
Hard Disk		
SATA 0 to 3	Shows the size, model#, FW, Serial#	
Emulation Type	Hard Disk (options = none, hard disk)	
Multisector Transfers	16 (options = disable, 8, 16)	
Translation Mode	Automatic (options = automatic, user specified)	
CD-ROM	IDE Primary 0	
Transfer Mode	Max UDMA (options = PIO, Max PIO, Enhanced DMA, Ultra DMA)	
Diskette		
Legacy Diskette	3.5” 1.44MB	
Default values	IDE/SATA	
Multisector Transfers	16 (options = disable, 8, 16)	
Transfer Mode	Max UDMA (options = PIO, Max PIO, Enhanced DMA, Ultra DMA)	
Translation Mode	Automatic (options = automatic, Bit Shift, LBA Assisted, User, Off)	
Storage Options		
Removable Media Boot	Enabled (options = Disabled, Enabled)	
Legacy Diskette Write	Enabled (options = Disabled, Enabled)	
BIOS DMA Data Transfer	Enabled (options = Disabled, Enabled)	
SATA Emulation	Separate IDE Controller (options = Combined or Separate IDE controller)	
IDE Controller	Enabled (options = Disabled, Enabled)	
Primary SATA Controller	Enabled (options = Disabled, Enabled)	
Secondary SATA Controller	Enabled (options = Disabled, Enabled)	
DPS Self Test	Tests an internal drive	
Select a drive	time for an 80GB SATA1 Drive is 37min	
Boot Order	IDE CD-ROM USB Device Hard Drive Integrated SATA Integrated IDE **Broadcom Ethernet Controller** (Hit **<F5>** to disable)	
Security		
Setup Password	leave as blank	
Power on Password	leave as blank	
Device Security	Set all to “Device Available” except for : SMBUS controller = Device Hidden	
Network Services Boot	**Disabled** (do not allow workstation to boot from an OS on the network_	
System ID’s	Lists Asset Tags, UUIDs, and Keyboard	
Master Boot Record Security	Disabled (enabling this will prevent changes including disk formatting)	
Power		
OS Power Management	ACPI S3 Support ACPI S3 Hard Disk Reset ACPI S3 PS2 Mouse Wake Up	Enabled Disabled Enabled

Hardware Power Management	
SATA Power Management	Disabled
Thermal	leave blank
Advanced	
Power-On Options	
Post Mode	Quick Boot
Post Message	Disabled
F9 Prompt	Enabled
F10 Prompt	Enabled
F12 Prompt	Enabled
Option ROM Prompt	Enabled
Remote Wakeup Boot Source	Local Hard Disk
After Power Loss	Off
POST Delay	None
I/O APIC Mode	Enabled
Hyper-Threading	Enabled
Limit CPUID Max Value to 3	Disabled
ACPI/USB Buffers @ Top of Memory	Enabled
BIOS Power On	All set to Disabled
OnBoard Devices	
Serial Port A	3F8 – 3FF, IRQ4
Parallel Port	378-37F, IRQ7, DMA3
Diskette Controller	3F0-3F7, IRQ6, DMA2
PCI Devices	**Leave as default.** The list below is for comparative Reference only
Intel VGA Controller	IRQ 10
Intel USB Controller	IRQ 11
Intel USB Controller	IRQ 11
Intel USB Controller	IRQ 5
Intel USB Controller	IRQ 11
Intel USB Controller	IRQ 11
Intel Audio Device	IRQ 5
Intel IDE Controller	Enabled
Intel SATA Controller	IRQ 5
Communications Device	IRQ 10 (this is the Digi if installed)
SCSI Controller	IRQ 11 (this is the Adaptec 39u160 if installed)
SCSI Controller	IRQ 11 (this is the Adaptec 39u160 if installed)
Broadcom Ethernet Controller	IRQ 5
Bus Options	
PCI Serr# Generation	Enabled
PCI VGA Palette Snooping	Disabled
Device Options	
Printer Mode	EPP+ECP
Num Lock State after Power Up	Off
S5 Wake on LAN	Enabled
Processor Cache	Enabled
Unique Sleep State Blink Rates	Disabled
Monitor Tracking	Disabled
NIC PXE Option ROM Download	**Disabled** (default = enabled)

9) Press <**ESC**>, and <**F10**> to exit and reboot the system.

10) You can now apply the Workstation Ghost.

About Kodak Graphic Communications Group (GCG)

The leading provider of graphic communications solutions worldwide, Kodak's Graphic Communications Group (GCG) offers image capture systems; professional color, copydot, and high-speed document scanning systems; inkjet printing and proofing systems; workflow and color management software; thermal imaging devices for film, plates, and proofs; high-quality proofing media, printing plates, and recording film; on-demand color and black-and-white printing systems; data storage products; and professional services. Creo joined the GCG in June 2005, when it became a wholly owned subsidiary of Kodak. With corporate headquarters located in Rochester, N.Y., Kodak (NYSE: EK) had sales of $13.5 billion in 2004 and is committed to a digitally oriented growth strategy.

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