

Dell Server

Dell Server Hardware Setup

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Revision History

Revision	Date	Author	Comments
A	Feb 28, 2005	Derek Braendel	Created with the PE800, PE2800 Servers
C	Mar 1, 2006	Derek Braendel	Added TrippLite UPS.

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1. SCOPE

This document outlines the procedures for setting up the Dell Server hardware for 8G Dell Servers to be ready to install Windows 2000, for various Creo workflow:

Intel Xeon processor based of 8G Dell PowerEdge (PE800, PE2800) Servers are the current supported platforms. Legacy Dell server platforms such as the PowerEdge 400SC, 700, 1400, 1600SC, 2400, 2500, 2600, 2650, 4400, 4600 and 6400 servers are also covered in document 72-3572A.

For driver updates:

- **Tech Planet** contains the latest supported versions for all platforms.
  http://techplanet.creo.com/software_solutions/workflow_hardware
- **Resource CD** 21-0151: contains a snapshot of the latest qualified versions at the time of release of the CD. Current shipping platforms are fully regression tested. Older platforms are tested for basic functionality.Get from;
  Agile: http://ccapdmv1/AgilePC/HcmServlet
  P3 Server: \\p3\ResourceCDs
  Ordering from Manufacturing 21-0151
  Note: Ghost DVD's for a specific Server already contains the Resource CD files.
- Manufacturers Site: for troubleshooting situations where Tech Planet did not help, check the suppliers site for the most up to date versions. Engineering uses Server Supplier as 1st priority, and Component Supplier as 2nd priority.
  Dell Drivers: http://support.dell.com

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 (FC RAID, modem, UPS). 4. Connect Prinergy dongle to LPT1 for Prinergy Systems. 5. Power on server.
Check and configure bios, firmware.	1. Setup SCSI controller(s). 2. Setup disks (write cache, containers). 3. Check BIOS, and ESM levels against Last Known Good (for manufacturing). Upgrade to current shipping levels if necessary. 4. Configure BIOS. 5. Configure RCU (for 2400, 4400, 6400)

3. HARDWARE CONFIGURATIONS (FOR REFERENCE)

The standard platforms supported by Prinergy 2.x/ Windows 2000 are:

- Dell PowerEdge 400SC (1 x physical Xeon, 2 x logical CPU's) Renderstation, Evo, Integris, Veris.
- Dell PowerEdge 700 (1 x physical Xeon, 2 x logical CPU's) Prinergy, Renderstation, Evo, Integris, Veris.
- Dell PowerEdge 800 (1 x physical Xeon, 2 x logical CPU's) Prinergy, Renderstation, Evo, Integris, Veris.
- Dell PowerEdge 1600SC (2 x physical Xeon, 4 x logical CPU's) Prinergy Primary (Prinergy Access) or Secondary Server/Renderstation
- Dell PowerEdge 2600 (2 x physical Xeon, 4 x logical CPU's) Prinergy Primary or Secondary Server/Renderstation.
- Dell PowerEdge 2650 (2 x physical Xeon, 4 x logical CPU's) Prinergy Primary or Secondary Server/Renderstation, Director.
- Dell PowerEdge 2800 (2 x physical Xeon, 4 x logical CPU's) Prinergy Primary or Secondary Server/Renderstation, Director.
- Dell PowerEdge 4600 (2 x physical Xeon, 4 x logical CPU's) Prinergy Primary or Secondary Server.
- Dell PowerEdge 1400 Prinergy Server Access (No longer sold)
- Dell PowerEdge 2500 secondary server or Render Station (No longer sold)
- Dell PowerEdge 2400 secondary server or Render Station (No longer sold)
- Dell PowerEdge 4400 primary or secondary server (No longer sold)
- Dell PowerEdge 6400 primary or secondary server (No longer sold)

System Hardware setup procedure/information for the EMC/DG Aviion Servers that are supported under Prinergy 2.x/ Windows 2000 are provided in a separate document (See Document Number 72-3573A).

3.1 Drive Designations

There are different types of Drive Disk configurations based on the workflow being installed.

Table 2-1: Prinergy, Best Rip drive letter designations

Drive	Partition	Type	Information
0	Dell	Custom	Used for Dells Utility Partition. Used for System Tests and Configuration.
0	C:	NTFS	W2K NT Loader, boot files
0	D:	NTFS	W2K paging, operating system, Prinergy executables, third-party executables
0	E:	NTFS	Prinergy DataLog, Temp files, (on BestRip servers, BestRip Job Queue and output data storage and spooling.
1	F:	FAT32	Ghost images. This partition will be unassigned from factory and will contain the Image of the Server after Factory Integration is complete. **Note!** Ghost8 no longer requires a FAT32 partition to image data as a destination. New system images will not contain the recovery partition.
1	G:	NTFS	Jobs Drive volume 1. Database and jobs will be kept here. Disk 1 may be a single physical drive or a raid 5 set of drives configured as 1 LUN.
2+	J: - Z:	NTFS	Additional job volumes from capacity given by external direct attached raids.
	H:	N/A	CD-ROM

Table 2-1: Evo/Director drive letter designations

Drive	Partition	Type	Information
0	Dell	Custom	Used for Dells Utility Partition. Used for System Tests and Configuration.
0	C:	NTFS	W2K NT Loader, boot files, paging, operating system, Workflow executables, third-party

			executables, temp files.
1	G:	NTFS	Jobs Drive volume 1. Database and jobs will be kept here. Disk 1 may be a single physical drive or a raid 5 set of drives configured as 1 LUN.
2+	J: - Z:	NTFS	Additional job volumes from capacity given by external direct attached raids.
	D:	N/A	CD-ROM

Table 2-1: InSite drive letter designations

Drive	Partition	Type	Information
0	Dell	Custom	Used for Dells Utility Partition. Used for System Tests and Configuration.
0	C:	NTFS	W2K NT Loader, boot files, paging, operating system, Workflow executables, third-party executables, temp files.
0	E:	NTFS	InSite DataLog, Temp files,
0	G:	NTFS	Jobs Drive volume 1. Database and jobs will be kept here. Disk 1 may be a single physical drive or a raid 5 set of drives configured as 1 LUN.
2+	J: - Z:	NTFS	Additional job volumes from capacity given by external direct attached raids.
	D:	N/A	CD-ROM

3.2 Peripheral Storage Device Kits (RAID)

Table 2-2: AE-S External SCSI RAID

Item	Type	Manufacturer (Distributor)	Model	Comments
Cabinet	AE-S Rack or Pedestal	Nexsan	Ataboy2	
host adapter	Adaptec 39u160	Adaptec	39u160	In AE-S BOM
SCSI cable	HD68 – VHDCI 68, 2M		-	

3.3 Output Device Connection Kits

Table 2-3: Creo Platesetter/ Trendsetter, TS Spectrum, PS/ TS VLF

Item	Type	Manufacturer (Distributor)	Model	Comments
SCSI diff controller	Adaptec AHA2944 for MPE based devices. or Adaptec 39160 + Adapter cable (16-3907) for MCE based devices.	Adaptec	-	
Multi port serial card	Digi AccelePort 4P PCI + adapter cable	Digi	-	Expand to 6 serial ports
Serial cable	1-1, 9 pin D-Sub male/female, length 10m	Creo	16-3460	
SCSI cable	68pin HD male, 2-56 screws to 68pin HD male, 2-56 screws, length 25ft	Creo	16-3503	
Software + documents	Print Console	Creo	-	

3.4 AIT-2-3/ DLT Tape Drive/Library Kits

Table 2-4: Single AIT-2/3 Tape Drive

Item	Type	Manufacturer (Distributor)	Model	Comments
AIT-2 drive	External AIT-2 Tape	Sony (Qualstar)	-	
LVD SCSI terminator	68 pin HD	-	-	Comes with the Tape drive
SCSI LVD controller	Server integrated U160 SCSI Controller or Adaptec 39160 U160 SCSI PCI Controller	Adaptec	-	
SCSI cable	68pin HD male, 2-56 screws to 68 pin HD male, length 3ft	Sony	-	Comes with the Tape drive

Table 2-5: AIT-2/3 Tape Library

Item	Type	Manufacturer	Model	Comments

		(Distributor)		
Qualstar TLS-4xxxx	External AIT-2 Tape Library	Qualstar	-	
LVD SCSI terminator	68 pin HD	-	-	Comes with the tape library
SCSI LVD controller	Server integrated U160 SCSI Controller or Adaptec 39160 U160 SCSI PCI Controller	Adaptec	-	
SCSI cable	68pin HD male, 2-56 screws to 68 pin HD male, length 3ft	Qualstar	-	Comes with the tape library

Table 2-6: Single DLT 8000 Drive (Obsolete)

Item	Type	Manufacturer (Distributor)	Model	Comments
DLT8000 drive	External DLT 8000	ADIC	-	
SCSI SE terminator	68 pin HD	-	-	Comes with the DLT drive
SCSI SE controller	Adaptec 2940U2W Ultra 2 SCSI	Adaptec	-	
SCSI cable	68pin HD male, 2-56 screws to 68 pin HD male, length 3ft	ADIC	-	Comes with the DLT drive

Table 2-7: DLT 8000 Tape Library (Obsolete)

Item	Type	Manufacturer (Distributor)	Model	Comments
ADIC FastStor tape library	External FastStor 7 or 22	ADIC	-	
SCSI diff terminator	68 pin HD	-	-	Comes with the DLT tape library
SCSI diff controller	Adaptec 2944UW Ultra Wide SCSI	Adaptec	-	
SCSI cable	68pin HD male, 2-56 screws to 68 pin HD male, length 3ft	ADIC	-	Comes with the DLT tape library

3.5 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	not supported	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. PE800 HARDWARE SETUP

This section describes how to set up a new PowerEdge 800 based server that has not been pre-configured for Workflow. It'll show the user how to perform the following:

- Hardware configuration
- BIOS Settings
- Disk Setup

4.1 Installing Hardware

The PE800 will come configured as per the following workflows.

	Prinergy	Evo	InSite	Print Console
CPU	1x 3.2Ghz	1x 3.2Ghz	1x 3.2Ghz	1x 3.2Ghz
Memory	2GB	1GB	1GB	1GB
Disk	2x 80GB 7.2Krpm ****1**	1x 80GB 7.2Krpm	2x 80GB 7.2Krpm ****2**	1x 80GB 7.2Krpm
Monitor	17" CRT	17" CRT	17" CRT	17" CRT
Other	39u160	39u160	39u160	39u160, Digi Accel

Note: **1 – Configured as Non-Mirrored by default.
2 – Configured as Hardware Mirrored by internal **CERC SATA 1.5 6ch by default.

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

Standard System Components for PE800 servers			
Item	Type	Manufacturer	Comments
PC	PE800, 1 x 3.2 GHz P4 Prescott CPU's	DELL	1024 KB L2 cache
RAM	Prinergy: 2 GB 400Mhz DDR2 SDRAM All other: 1 GB 400Mhz DDR2 SDRAM	DELL	Replaces Dell default with 2 x 512 or 1024 MB DIMMs
Hard disk	80 GB SATA1 disk, 7.2K RPM Evo, Render (1x 80GB) Prinergy, InSite (2x 80GB)	DELL	Disk 0 and Disk 1 slots. ***Note (1)
DVD ROM/FLPY	EIDE		
Video	On-board Integrated Intel E7221 with 8MB	Intel /Dell	
Network	On-board Broadcom 5721 (10/100/1000) Copper Gigabit NIC Controller	Broadcom/Dell	Uses the Broadcom 5700 driver from the Dell site.
Miscellaneous Components for PE800 servers			
Keyboard	PS/2 - Keyboard,104 Key,US	DELL	
Mouse	PS/2 - Logitech PS/2 2-button with Scroll	DELL	
External modem	USR or MultiTech External 56K	USR/MultiTech	NA/ ROW, connected to COM1
Monitor	17", CRT monitor	DELL	
Power cord + documents	North America: IEC320-R to Nema15-P Rest of world: IEC320-R to IEC320-P	DELL	
Software + documents	Windows 2003 Server, 5 client licenses	Microsoft	English
Software + documents	GHOST8	Symantec	English

Notes:

(1) The Server can be configured for RAID1 or non-RAID SATA mode. Though the server can support up to 4 physical disks, if the Server is configured for CERC 2S RAID1 mode only 2 disks will be seen. An optional PCI-X SATA RAID controller CERC SATA6 pn# 609-00269 is required for more then 2 disks to be configured for hardware RAID.

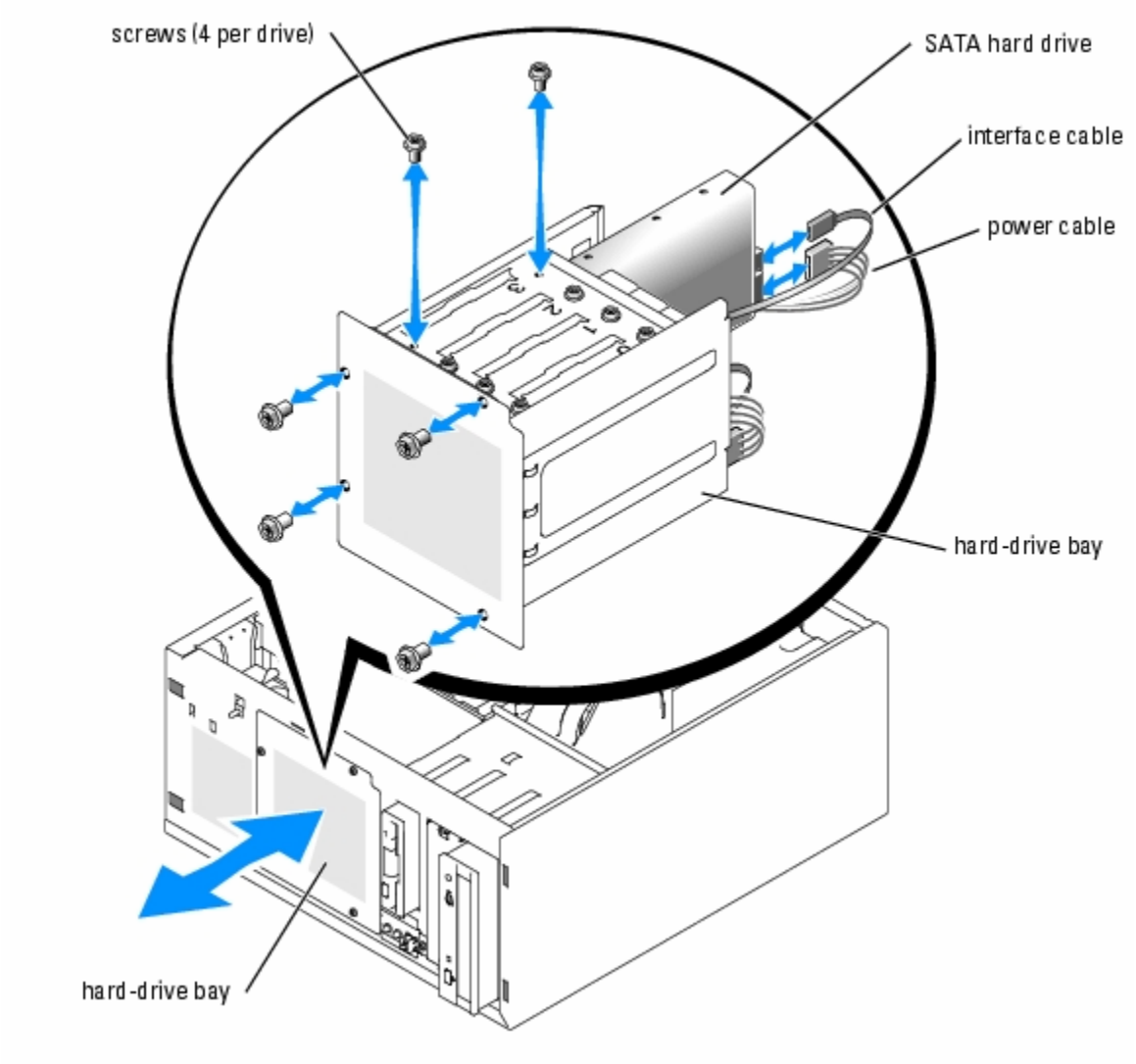
(2) CERC2s (the motherboard RAID controller option) is **not** supported. Only the CERC SATA 1.5 6ch is supported if RAID is desired on the PE800.

Controller	Configured	Type	Location	Max # Disks
CERC 2S	**NOT SUPPORTED**	Hardware RAID	On Motherboard, enabled in the BIOS	2
SATA1	Optional	JBOD	On Motherboard, enabled in the BIOS	4
CERC SATA6	Optional	Hardware RAID	PCI-X slot, optional card	4

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

Optional system components for 400 servers			
Item	**Type**	**Manufacturer**	**Comments**
RAM	Optional 1024MB (2x 512MB) DDR2 400Mhz SDRAM DIMM – 120-00080	DELL	1 available bank for upgrade, 2 banks total
Hard disk	80 GB SATA1 disk, 7.2K RPM – 518-00788A 160 GB SATA1 disk, 7.2K RPM – 518-00870A 250 GB SATA1 disk, 7.2K RPM – 518-01138A	DELL	1 slot for default OS disk. 3 additional slots
Network	Optional Intel PRO/1000 Gigabit Fibre PCI NIC Controller - 94-3221	Intel	Installed in PCI 4,1
FC controller	Not supported	Not supported	Not supported
Internal RAID controller	CERC SATA6 (optional) – 609-00269	Dell	6 channel Serial ATA RAID1. No battery, no write cache. PCI 4,1
SCSI HVD controller	Optional Adaptec AHA2944UW, PCI, (for connecting MPE based CTP devices) – 94-3291	Adaptec	Installed in PCI 1
SCSI LVD controller	Optional Adaptec Dual Ch. 39160, PCI, (for connecting MCE based CTP devices. And for connecting external SE/ LVD SCSI Device) - 94-3220	Adaptec/DELL	Installed in PCI 2
Serial interface	Digi AccelePort 4P + adapter cable - 94-3287A	Digi	Installed in PCI 3

3) Install the 2 Hard Drives in the Hard Drive Bay as described in the picture below (note, picture shows drive being installed in slot 3, install the drive in the 1st available slot instead):



Drives installed in the non hot swap 4-bay drive cage off the Motherboard or the optional CERC SATA PCI Controller; starting from top.

- Top Disk (0) attaches to Motherboard SATA channel 0, or SATA CERC channel 0 if installed.
- Each additional Disk attaches to the next SATA channel, whether on the Motherboard or SATA CERC controller. Note, there are only 4 SATA channels but only 2 are seen if the BIOS is configured for the onboard CERC. If you want a 3rd or 4rth disk under RAID you must purchase the CERC SATA6 option.

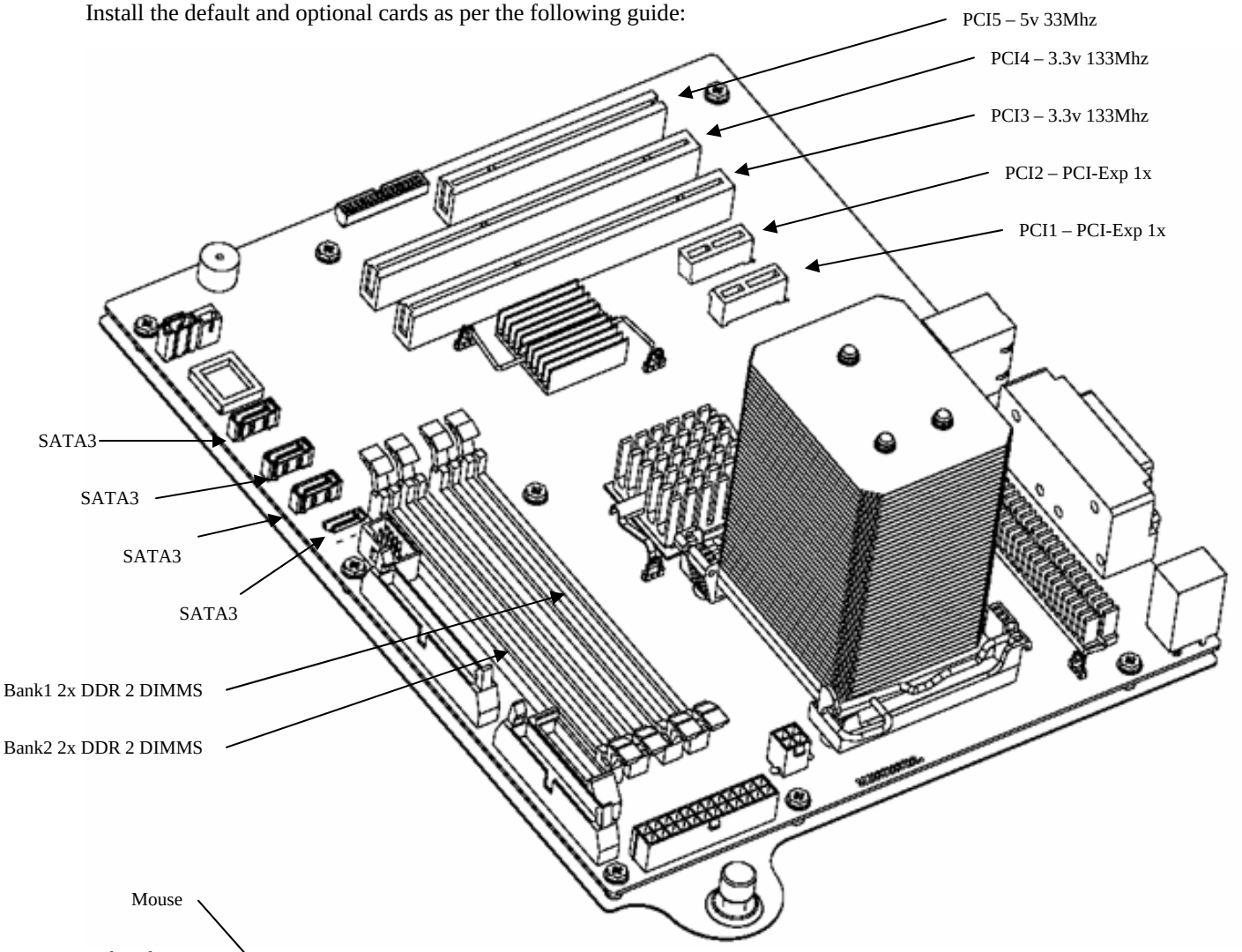
4) Install the following external devices. Connect all but the last two to the UPS:

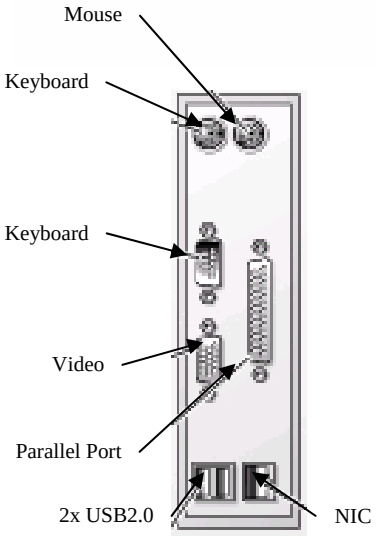
- Server
- Monitor
- Modem (to COM 1)
- Tape library or Single AIT-2 tape drive (if one is installed)
- External RAID.
- UPS (use the appropriate power cord to meet the specific country requirements at the customer site.)

5) Power on the server. Go on to configure the SCSI controllers, setup the hard drives, and configure the BIOS.

4.2 Install the PCI Controllers

Install the default and optional cards as per the following guide:





Device	PCI Slot choise, 1st, 2nd, 3rd, ...
PCI Intel Pro 1000 NIC	PCI 4, PCI 5
CERC SATA6 RAID	PCI 4, PCI 5
Adaptec 2944 HVD	PCI 5 only
Adaptec 39U160	PCI 3
Digi Acceleport	PCI 4

4.3 Setting Up the SCSI Controller

4.3.1 Configuring the PCI Adaptec 39u160

PCI Adaptec 39u160 SCSI Controller (if installed in PCI slot 1)

1) Ensure the 39u160 BIOS is at a rev listed in the Last Known Good spreadsheet or from 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 **both** 39160s found 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).

      iii) Press ESC to the controller A/B select and repeat for controller B.

   d) Press ESC and select **Yes** to exit the utility.

4.3.2 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 in the Last Known Good spreadsheet or from 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.

4.4 Setting up Disks

4.4.1 OS Mirror if CERC Option Used

The PE800 comes with an on board RAID controller called the CERC2S. which is **NOT** supported. If you need RAID you must install an optional PCI CERC SATA1.5 6ch controller (pn: 609-00269). Use the following procedure when using either the onboard CERC SATA1.5 6ch RAID controllers.

Since there is no battery on the CERC controller we should not attempt to turn on the Write cache.

1) If the optional CERC SATA6 PCI card is being installed, disable onboard disks.
   a) Press **<F2>** to get into the Setup Utility.
   b) Select **Integrated Devices**.
   c) Set **SATA Controller**:

CERC2S	**Off**

   d) **<ESC>** > **Save Changes** to reboot.
2) Press **<CTRL><A>** during the CERC BIOS boot up prompt to invoke the Setup Utility.
3) Select **Array Configuration Utility**.
4) If prompted for Configuration Change has been Detected select **Accept**.
5) Clear any existing configurations.
   a) Select **Manage Arrays**.
   b) Select **each array** under List of Arrays and hit **<Del>, <Del>, 'Y'**.
6) 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.
7) 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. Note drives 02/03 will only show up if using a CERC SATA6, not the CERC2S.
   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.

8) Exit CERC by rebooting the system with **<Ctrl><Alt><Del>.**

4.5 Configuring Hardware System Settings

4.5.1 Checking BIOS / ESM Versions

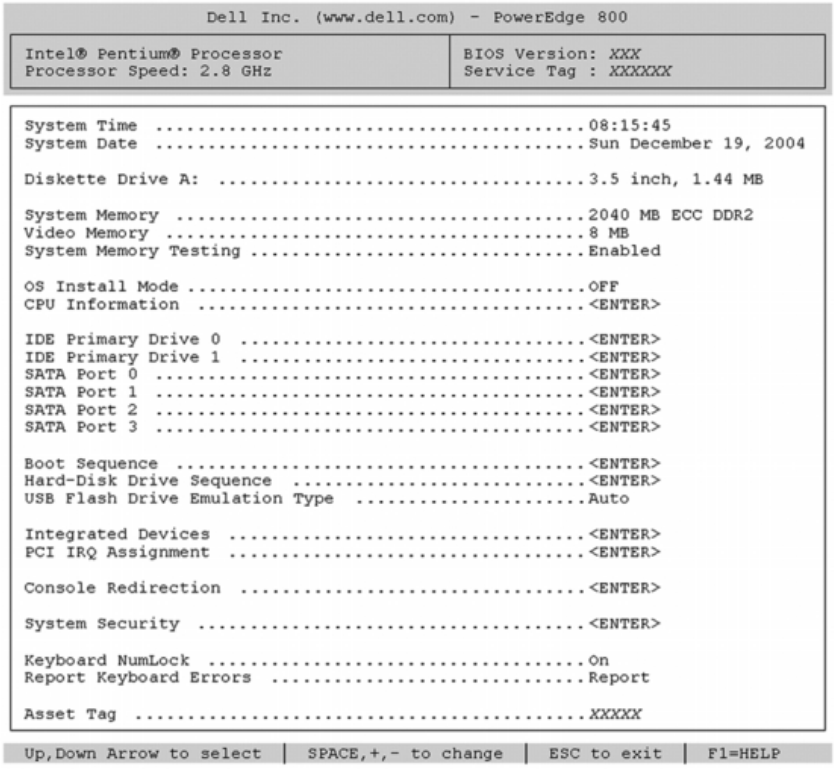
Power up the system and check the version level of different hardware components. The BIOS levels should be at least at the following levels for a PE800.

- BIOS A00

If your BIOS is out of date, note it for now and update it when applying the Ghost image. The BIOS update runs from the Windows Desktop.

4.5.2 Configuring BIOS Settings

1) Press the F2 key whenever prompted to get to the BIOS setup screen shown below:



2) The following options or information fields appear on the main System Setup screen:

Bios Settings

Bios Setting	Value
System time and date	Set to current values
Diskette Drive A	3.5 inch, 1.44 MB
System Memory	1024 MB ECC DDR2 (1024 is min)
Video Memory	8 MB SDRAM
OS Install Mode	Off
CPU Information	
Bus Speed	800 Mhz
Logical Processor	Enabled
Processor ID	F41 (min)

Bios Setting	Value
Core Speed	3.20 Ghz (min)
Level 2 Cache	1024 KB (min)
64-Bit Tech	Yes (Intel EM64T)
Non RAID Option:	
IDE Primary Drive 0	CD-ROM Reader
IDE Primary Drive 1	Off
SATA Port 0	Hard Drive
SATA Port 1	Off (or optional Hard Drive)
SATA RAID Option	
IDE Primary Drive 0	CD-ROM Reader
IDE Primary Drive 1	Off
SATA Port 0	Off (should not show when in RAID mode)
SATA Port 1	Off (should not show when in RAID mode)
Boot Sequence	Checked – 1. Diskette Drive A: Checked – 2. IDE CD-ROM Device Checked – 3. Hard Drive C:
Hard-Disk Drive Sequence	System BIOS Boot Devices CERC
USB Flash Drive Emulation Type	Auto
Integrated Device	
Diskette Controller	Auto
IDE Controller	Auto
SATA Conrtoller	***as described in section 4.4.1**
USB Controller	On with BIOS support
Embedded Gb NIC	**Enabled without PXE**
Serial Port	COM1
Parallel Port	378h
Parallel Port Mode	PS/2
Speaker	On
PCI IRQ Assignments	Leave the Server set the assigments automatically. Items listed below are for reference only. Embedded Intel Corp VGA adapter IRQ 11 Embedded Intel Corp RAID adapter IRQ 3 Embedded Intel Corp USB adapter IRQ 10 Embedded Intel Corp USB adapter IRQ 5 Embedded Intel Corp USB adapter IRQ 10 Embedded Intel Corp USB adapter IRQ 5 Embedded Intel Corp USB adapter IRQ 10 Slot 3: Adaptec SCSI adapter IRQ 10 Slot 3: Adaptec SCSI adapter IRQ 5 Embedded Broadcom Corp NIC IRQ 5 Slot 5: Digi International Comm adapter IRQ 3
Console Redirection	
Console Redirection	Off
Failsafe Baud Rate	115200
Remote Terminal Type	VT100/VT220
Redirection After Boot	Enabled
System Security	
System Password	Not Enabled
Setup Password	Not Enabled
Password Status	Unlocked
Power Button	Enabled
AC Power Recovery	Last
Keyboard Numlock	On

Bios Setting	Value
Report Keyboard Errors	Report
Asset Tag	Blank

3) Press ESC, and select "**Save Changes and Exit**" <**ENTER**> to exit and reboot the system.

5. PE2800 HARDWARE SETUP

This section describes how to set up a new PowerEdge 2800 based server that has not been pre-configured for Creo Workflow. It'll show the user how to perform the following:

- Hardware configuration
- BIOS Settings
- Disk Setup

5.1 Installing Hardware

The following is a typical workflow configuration for a PE2800.

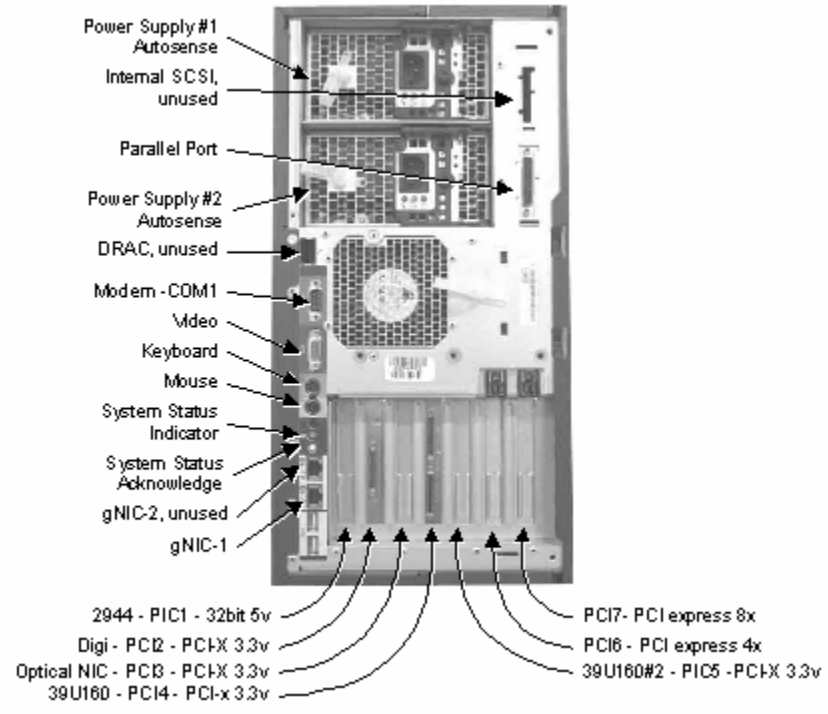
	Prinergy	Evo	InSite	Print Console
CPU	2x 3.2Ghz	2x 3.2Ghz	2x 3.2Ghz	n/a
Memory	2GB	2GB	2GB	
Disk	3x 73GB 10Krpm (1 mirror + 1 jbod)	3x 73GB 10Krpm (1 mirror + 1 jbod)	4x 73GB 10Krpm (2 mirrors)	
Monitor	15" LCD	15" LCD	15" LCD	
Other	39u160	39u160	39u160	

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

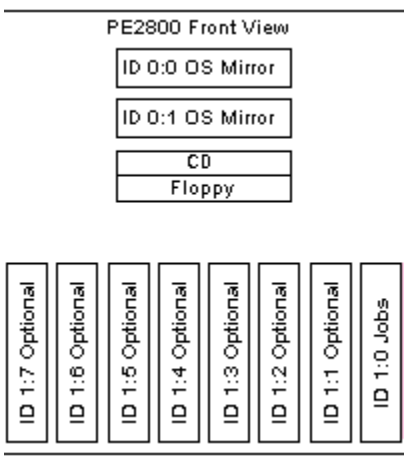
Standard System Components for 2800 servers			
Item	**Type**	**Mfg.**	**Comments**
PC	2800, 2 x 3.2 GHz Nocona Xeon CPU	DELL	
RAM	2 GB ECC 400Mhz DDR2 SDRAM	DELL	
Hard disks	3x 73GB SCSI u320 SCA in Dell G8 hot swap cases	DELL	2x in Media bay 1x in the 8 bay in slot 0:0
DVD / FLPY	EIDE		
Video	ATI Radeon 16MB SDRAM	ATI/Dell	
Network	2x Intel Pro Tabor 82541EI Copper Gigabit NIC Controller	Intel	1 Port disabled for default configurations
Internal RAID controller	PERC 4e/Di onboard RAID Controller 256MB cache, battery backed	LSI	Channel-0: Media Bay Channel-1: Main Bay
SCSI SE/LVD controller	Adaptec 39U160	Adaptec	Installed in PCI 4
Miscellaneous Components for 2600 servers			
Keyboard	Standard Windows Keyboard,Gray	DELL	PS/2
Mouse	Logitech PS/2 2-button Mouse with Scroll,	DELL	PS/2
External modem	USR or MultiTech External 56K	USR/MultiTech	NA/ROW, connected to COM1
Monitor	15", Flat panel LCD color monitor	DELL	
Power cord + documents	North America: IEC320-R to Nema15-P Rest of world: IEC320-R to IEC320-P	DELL	
Software + documents	Windows 2003 Server, 5 client licenses EULA downgrade rights to Windows 2000	Microsoft	English, W2K preload
Software + documents	GHOST8	Symantec	English

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

Optional system components for 2650 servers			
Item	**Type**	**Manufacturer**	**Comments**
RAM	2GB installed by default. OS apps do not directly support over 2GB. But, if customers insist: 120-00070 (2x 512MB DDR2 400Mhz DIMMs)	DELL	2 DIMMs per bank
Hard disk	607-00112A - 36GB 10Krpm U320 HotSwap 8G 607-00087A - 73GB 10Krpm U320 HotSwap 8G 607-00088A - 146GB 10Krpm U320 HotSwap 8G 607-00102A – 300GB 10Krpm U320 HotSwap 8G	DELL	Up to 8 disks can be installed in the main bay, 1x 73GB typically installed by default.
Network	609-00248 - Optional Intel PRO/1000 Gigabit Fibre PCI NIC Controller with LC connector	Intel	Installed in PCI 5, 3
SCSI LVD controller	94-3220 - Optional Adaptec Dual Ch. 39U160, PCI, (for connecting external SCSI SE or LVD Device)	Adaptec/DELL	Installed in PCI 3, 5
SCSI HVD controller	94-3291 – Optional Adaptec AHA2944UW, PCI, (for connecting MPE based CTP devices)	Adaptec	Installed in PCI 7
FC controller	Optional Emulex LP8000 (EOL) FC Controller (for connecting external FC RAID)	Emulex/DELL	Installed in PCI 3, 5
Serial interface	94-3287A - Digi AccelePort 4P + adapter cable (Classic board not supported)	Digi	Installed in PCI 6



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



All Workflows	ID0:0, 0:1: RAID1	System
Prinergy	ID1:0: RAID0	Jobs1
Evo	ID1:0: RAID0	Jobs1
InSite	ID1:0:, 1:1 RAID1	Jobs1
Additional Disks	ID1:1 ... ID1:7	Jobs 1 or Jobs2

4) Install the following external devices. Connect all but the last two to the UPS:
   - Server
   - Monitor
   - Modem (to COM 1)
   - Tape library or Single AIT-3 tape drive (if one is installed)
   - UPS (use the appropriate power cord to meet the specific country requirements at the customer site.). Connect the UPS Monitor Port to the USB Port of the Server.
   - Prinergy USB Dongle (to USB1 port, for primary servers).

5) Power on the server. Go on to configure the SCSI controllers, setup the hard drives, and configure the BIOS.

5.2 Setting Up the SCSI Controller

5.2.1 Configuring the PCI Adaptec 39u160

PCI Adaptec 39u160 SCSI Controller (if installed in PCI slot 1)

1) Ensure the 39u160 BIOS is at a rev listed in the Last Known Good spreadsheet or from 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 **both** 39160s found 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).

iii) Press <**ESC**> to the controller A/B select and repeat for controller B.

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

5.2.2 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 in the Last Known Good spreadsheet or from 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.

5.3 Setting up Disks

Summary of RAID settings

Number of Disks	PERC Channel	LUN	RAID settings	Advanced RAID settings
2 System Disks	0	A00	RAID = 1	Stripe Size = 128 KB Write Policy = WRBACK Read Policy = READAHEAD Cache Policy = Cached IO
1 internal data disk	1	A01	RAID = 0	
2 internal data disks (both 73GB)	1	A01	RAID = 1	
3+ internal data disks (all 73GB)	1	A01	RAID = 5, SIZE = (NumDisks-1) * 73GB	
2 data disks, different sizes	1	A01 + A02	Each RAID = 0	
3+ internal data disks (all = size)	1	A01	RAID = 5, SIZE = (NumDisks-1) * DiskSize	

Instructions

1) Press <**CTRL**>**+M** during the Dell PowerEdge Expandable Raid Controller boot up prompt to run the DELL PERC 4e/Di Controller Configuration Utility. From the PERC BIOS Configuration Utility's Main Menu screen:

2) Select **Configure** (to initiate configuring logical drive(s)).

3) Select **Clear Configuration** > **Yes** to delete any existing pre-defined RAID sets (i.e. containers).

4) Select **New Configuration** and then select **Yes** to go to the Proceed prompt. The New Configuration – ARRAY SELECTION pop-up window will appear.

5) For each LUN in the table above do the following.

   a) Include a disk for a LUN by selecting the disk and pressing the <**Space**> bar.
   Note that the selected disks show as ONLIN and flash A0x-0y.
   0x – Is the LUN number for the selected RAID Set starting with 0.
   0y – Is the Disk Number in the LUN starting with 0.

   b) Select the rest of the disks (1 disk for RAID0, 2 for RAID1, 3+ for RAID5) for the LUN with the <**Space**> bar.

   c) Once all your disks for your particular LUN are flashing hit <**Enter**> to complete the selection for this LUN. notice that the A0x-0y has stopped flashing.

   d) Repeat the above steps for each additional LUN. Your 1st LUN will be A00, your 2nd LUN A01, etc.

   e) Once all disks show ONLIN and are not flashing continue.

6) Hit F10 to configure the LUNs. For each LUN listed (A00, A01, ...) do the following.

   a) Select one LUN with the <**Space**> bar (should now show as Span-1) and hit <**F10**> to configure it.

   b) Select the following. **Highlighted** items are non default items.

RAID	1x Disk LUN = RAID 0 2x Disk LUN = RAID 1 3+ Disk LUN = RAID 5
Size	Should automatically default to the max size
Advanced	
StripeSize	**128KB**
Write Policy	WRBack
Read Policy	**Readahead**
Cache Policy	**Cached IO**

   c) Hit <**Escape**> and hit **Accept** to save the LUN configuration.

   d) Press <**Enter**> to accept the drive configuration.

   e) Repeat the process for each additional LUN.

7) Select **Yes** to accept the Save Configuration prompt.

8) Initialize the drives.

   a) From the Management Menu select **Initialize**.

   b) Select all drives with <**F2**> and begin initialization with <**F10**> > **Yes**. Note that your 1st LUN is already set for background initialize so it will not be included in your selection.

9) Hit <**Esc**> until you are prompted to reboot. Press <**Enter**> to reboot.

5.4 Configuring Hardware System Settings

5.4.1 Checking BIOS / ESM Versions

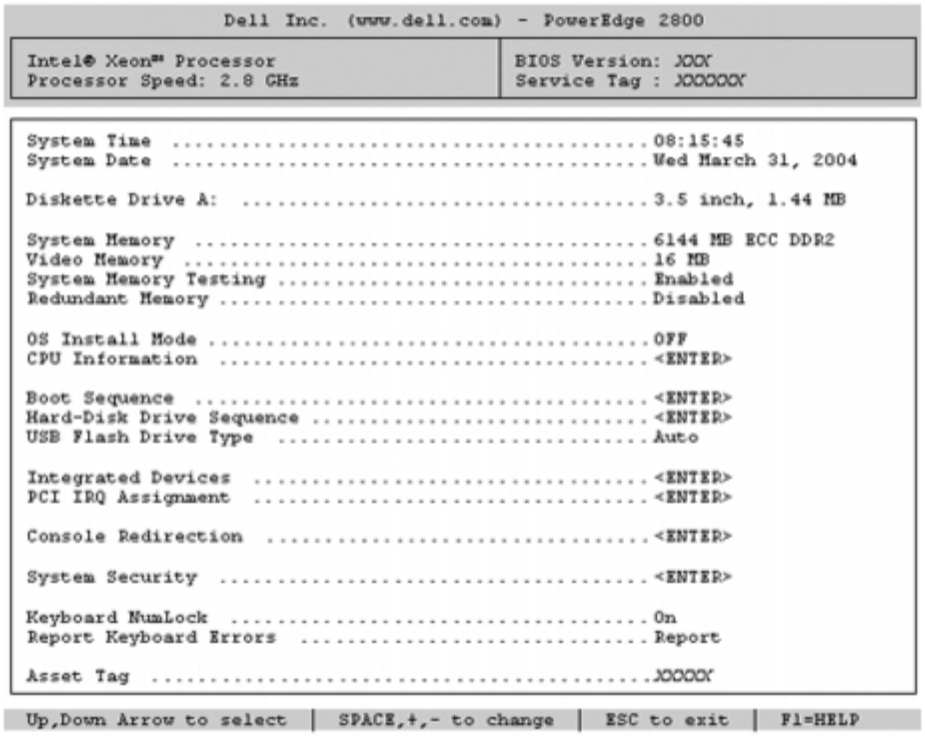
1) Power up the system and check the version level of different hardware components. Latest supported revs can be found under Tech Planet under the PE2800 Server. Revs at the time of this writing are:

Component	Rev	Found
Server BIOS	A01	Entering the BIOS Setup with hitting <F2>
ESM	1.07	Labeled Basedboard Management Controller during BIOS boot
Perc 4e/Di	5130	During BIOS Boot under the line Standard FW
Adaptec 39u160	3.10.0	During BIOS Boot

2) Most BIOS revs can be applied from the OS Desktop. Just note any items requiring updates at this time.

5.4.2 Configuring BIOS Settings

1) Press the <F2> key whenever prompted to get to the BIOS setup screen shown below:



2) The following options or information fields appear on the main System Setup screen. Anything **highlighted** are changes from default:

Bios Settings

Bios Setting	**Value**
System time and date	**Set to current values**
Diskette Drive A:	3.5 inch, 1.44 MB
System Memory	2048 MB ECC DDR2
Video Memory	16 MB SDRAM
System Memory Testing	Enabled
Redundant Memory	Disabled
OS Install Mode	OFF

Bios Setting	Value	
CPU information	Bus speed:	800 MHz
	Logical Processor:	Enabled
	Sequential Memory Access:	Enabled
	Processor 1 ID: F34	
	Core speed:	3.20 GHz (or faster)
	Level 2 Cache:	1024 KB
	Processor 2 ID: F34	
	Core speed:	3.2 GHz
	Level 2 Cache:	1024 KB
Boot Sequence	√ **Diskette drive A:**	
	√ **IDE CD-ROM Device**	
	√ **Hard drive C:**	
Hard disk drive sequence	System BIOS boot devices	
	Embedded PERC 4e/Di Adapter	
USB Flash Drive Emulation	Auto	
Integrated Devices		
Embedded RAID Control	**RAID Enabled**	
Channel A	**RAID**	
Channel B	**RAID**	
IDE CD-ROM Controller	Auto	
Diskette Controller	Auto	
USB Controller	On with BIOS Support	
Embedded Gb NIC1	**Enabled without PXE**	
MAC Address	as displayed	
Embedded Gb NIC2	**Disabled**	
MAC Address	**Not Present**	
Serial Port1	COM1	
Parallel Port	278h	
Parallel Port Mode	PS/2	
Speaker	On	
PCI IRQ assignment	Let the Server determine the best assignments. For diagnostic reference only a sample follows:	
	Embedded ATI Technologies Inc VGA adapter	IRQ 7
	Embedded Intel Corp USB adapter	IRQ11
	Embedded Intel Corp USB adapter	IRQ10
	Embedded Intel Corp USB adapter	IRQ7
	Embedded Intel Corp USB adapter	IRQ3
	Embedded RAID Controller	IRQ 7
	Slot 4: Adaptec SCSI adapter	IRQ 7
	Slot 4: Adaptec SCSI adapter	IRQ 10
	Slot 2: Digi International comm adapter	IRQ 11
	Embedded Gb NIC1	IRQ 11
Console Redirection	Console Redirection	Off
	Failsafe Baud Rate	115200
	Remote Terminal Type	VT100/VT200
	Redirection After Boot	Enabled
Embedded Server Mgmt	Front Panel LCD Options:	**User-Defined String**
	User Defined LCD String: Line 1:	**Creo**
	Line 2:	**Premium Workflow**
System Security	System Password:	Not Enabled
	Setup Password:	Not Enabled
	Password Status:	Unlocked
	Power Button:	Enabled
	NMI Button:	Disabled
	AC Power Recovery	Last

Bios Setting	Value
Keyboard Numlock	On
Report Keyboard Error	Report
Asset Tag	leave alone

3) Press ESC, and select "**Save Changes and Exit**" <**ENTER**> to exit and reboot the system. You are now ready to install the Ghost Image.

6. PE2850 HARDWARE SETUP

The PE2850 is the Rack Optimized (2U) version of the PE2800. It contains basically the same chipset and features as the PE2800 with a reduced Disk and PCI slot count. This section describes how to set up a new PowerEdge 2850 based server that has not been pre-configured for Creo Workflow. It'll show the user how to perform the following:

- Hardware configuration
- BIOS Settings
- Disk Setup

6.1 Installing Hardware

1) The following is a typical workflow configuration for a PE2850.

	Prinergy	Evo	InSite	Print Console
CPU	2x 3.2Ghz	2x 3.2Ghz	2x 3.2Ghz	n/a
Memory	2GB	2GB	2GB	
Disk	3x 73GB 10Krpm (1 mirror + 1 jbod)	3x 73GB 10Krpm (1 mirror + 1 jbod)	4x 73GB 10Krpm (2 mirrors)	
Other	39u160	39u160	39u160	

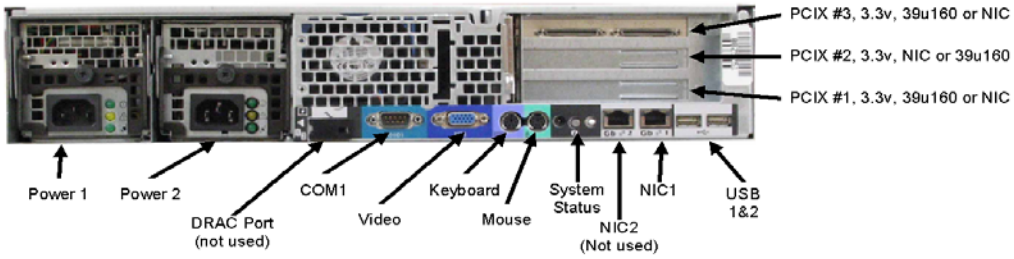
2) Please verify the delivered hardware against the sales order and the specifications below.

Standard System Components for 2850 servers			
Item	**Type**	**Mfg.**	**Comments**
PC	2850, 2 x 3.2 GHz Nocona Xeon CPU	DELL	
RAM	2 GB ECC 400Mhz DDR2 SDRAM	DELL	
Hard disks	3x 73GB SCSI u320 SCA in Dell G8 hot swap cases	DELL	2x RAID1, System 1x JBOD, Data
DVD / FLPY	EIDE		
Video	ATI Radeon RageXL 7000-M 16MB	ATI/Dell	
Network	2x Intel Pro Tabor 82541EI Copper Gigabit NIC Controller	Intel	1 Port disabled for default configurations
Internal RAID controller	PERC 4e/Di onboard RAID Controller 256MB cache, battery backed	LSI	Channel-0: Main Bay Channel-1: n/c
SCSI SE/LVD controller	Adaptec 39U160	Adaptec	Installed in PCI 3
Miscellaneous Components for 2850 servers			
External modem	USR or MultiTech External 56K	USR/MultiTech	NA/ROW, connected to COM1
Power cord + documents	North America: IEC320-R to Nema15-P Rest of world: IEC320-R to IEC320-P	DELL	
Software + documents	Windows 2003 Server, 5 client licenses EULA downgrade rights to Windows 2000	Microsoft	English, W2K preload
Software + documents	GHOST8	Symantec	English

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

Optional system components for 2650 servers			
Item	**Type**	**Manufacturer**	**Comments**
RAM	2GB installed by default. OS apps do not directly support over 2GB. But, if customers insist: 120-00070 (2x 512MB DDR2 400Mhz DIMMs)	DELL	2 DIMMs per bank 3 banks max
Hard disk	607-00087A - 73GB 10Krpm U320 HotSwap 8G 607-00088A - 146GB 10Krpm U320 HotSwap 8G 607-00102A – 300GB 10Krpm U320 HotSwap 8G	DELL	Up to 6 disks can be installed in the main bay, 3x 73GB typically installed by default.
Network	609-00248 - Optional Intel PRO/1000 Gigabit Fibre PCI NIC Controller with LC connector	Intel	Installed in PCI 2,1,3
SCSI LVD controller	94-3220 - Optional Adaptec Dual Ch. 39U160, PCI, (for connecting external SCSI SE or LVD Device)	Adaptec/DELL	Installed in PCI 3,1,2
SCSI HVD controller	94-3291 – Optional Adaptec AHA2944UW, PCI, (for connecting MPE based CTP devices)	Adaptec	not supported
FC controller	Optional Emulex LP8000 (EOL) FC Controller (for connecting external FC RAID)	Emulex/DELL	Installed in PCI 1,2
Serial interface	94-3287A - Digi AccelePort 4P + adapter cable (Classic board not supported)	Digi	not supported

PE2850 Back view:



4) Install the Hard Drives as described in the table below:

All Workflows	Disk 0, 1 RAID1	System
Prinergy	Disk 2: RAID0	Jobs1
Evo	Disk 2: RAID0	Jobs1
InSite	Disk 2,3: RAID1	Jobs1
Additional Disks	Disk 4,5: Combine with Disk 2,3 for RAID5	Jobs 1

PE2850 Front

Floppy	DVD ROM	
Disk 1	Disk 3	Disk 5
Disk 0	Disk 2	Disk 4

5) Install the following external devices. Connect all but the last two to the UPS:

- Server
- KVM Adapter and Extension cable to the KVM MUX.
- Modem (to COM 1)
- Tape library or Single AIT-3 tape drive (if one is installed)
- UPS (use the appropriate power cord to meet the specific country requirements at the customer site.). Connect the UPS Monitor Port to the USB Port of the Server.

- Prinergy USB Dongle (to USB1 port, for primary servers).

6) Power on the server. Go on to configure the SCSI controllers, setup the hard drives, and configure the BIOS.

6.2 Setting Up the SCSI Controller

6.2.1 Configuring the PCI Adaptec 39u160

PCI Adaptec 39u160 SCSI Controller (if installed in PCI slot 1)

1) Ensure the 39u160 BIOS is at a rev listed in the Last Known Good spreadsheet or from 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 **both** 39160s found 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).

      iii) Press <**ESC**> to the controller A/B select and repeat for controller B.

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

6.3 Setting up Disks

Summary of RAID settings

Number of Disks	LUN	RAID settings	Advanced RAID settings
2 System Disks	A00	RAID = 1	Stripe Size = 128 KB Write Policy = WRBACK Read Policy = READAHEAD Cache Policy = Cached IO
1 internal data disk	A01	RAID = 0	
2 internal data disks (both 73GB)	A01	RAID = 1	
3+ internal data disks (all 73GB)	A01	RAID = 5, SIZE = (NumDisks-1) * 73GB	
2 data disks, different sizes	A01 + A02	Each RAID = 0	
3+ internal data disks (all = size)	A01	RAID = 5, SIZE = (NumDisks-1) * DiskSize	

Instructions

1) Press <**CTRL**>**+M** during the Dell PowerEdge Expandable Raid Controller boot up prompt to run the DELL PERC 4e/Di Controller Configuration Utility. From the PERC BIOS Configuration Utility's Main Menu screen:

2) Select **Configure** (to initiate configuring logical drive(s)).

3) Select **Clear Configuration** > **Yes** to delete any existing pre-defined RAID sets (i.e. containers).

4) Select **New Configuration** and then select **Yes** to go to the Proceed prompt. The New Configuration – ARRAY SELECTION pop-up window will appear.

5) For each LUN in the table above do the following.

   a) Include a disk for a LUN by selecting the disk and pressing the <**Space**> bar.
   Note that the selected disks show as ONLIN and flash A0x-0y.
   0x – Is the LUN number for the selected RAID Set starting with 0.
   0y – Is the Disk Number in the LUN starting with 0.

   b) Select the rest of the disks (1 disk for RAID0, 2 for RAID1, 3+ for RAID5) for the LUN with the <**Space**> bar.

   c) Once all your disks for your particular LUN are flashing hit <**Enter**> to complete the selection for this LUN. notice that the A0x-0y has stopped flashing.

   d) Repeat the above steps for each additional LUN. Your 1st LUN will be A00, your 2nd LUN A01, etc.

   e) Once all disks show ONLIN and are not flashing continue.

6) Hit F10 to configure the LUNs. For each LUN listed (A00, A01, ...) do the following.

   a) Select one LUN with the <**Space**> bar (should now show as Span-1) and hit <**F10**> to configure it.

   b) Select the following. **Highlighted** items are non default items.

RAID	1x Disk LUN = RAID 0 2x Disk LUN = RAID 1 3+ Disk LUN = RAID 5
Size	Should automatically default to the max size
Advanced	
StripeSize	**128KB**
Write Policy	WRBack
Read Policy	**Readahead**
Cache Policy	**Cached IO**

   c) Hit <**Escape**> and hit **Accept** to save the LUN configuration.

   d) Press <**Enter**> to accept the drive configuration.

   e) Repeat the process for each additional LUN.

7) Select **Yes** to accept the Save Configuration prompt.

8) Initialize the drives.

   a) From the Management Menu select **Initialize**.

   b) Select all drives with <**F2**> and begin initialization with <**F10**> > **Yes**. Note that your 1st LUN is already set for background initialize so it will not be included in your selection.

9) Hit <**Esc**> until you are prompted to reboot. Press <**Enter**> to reboot.

6.4 Configuring Hardware System Settings

6.4.1 Checking BIOS / ESM Versions

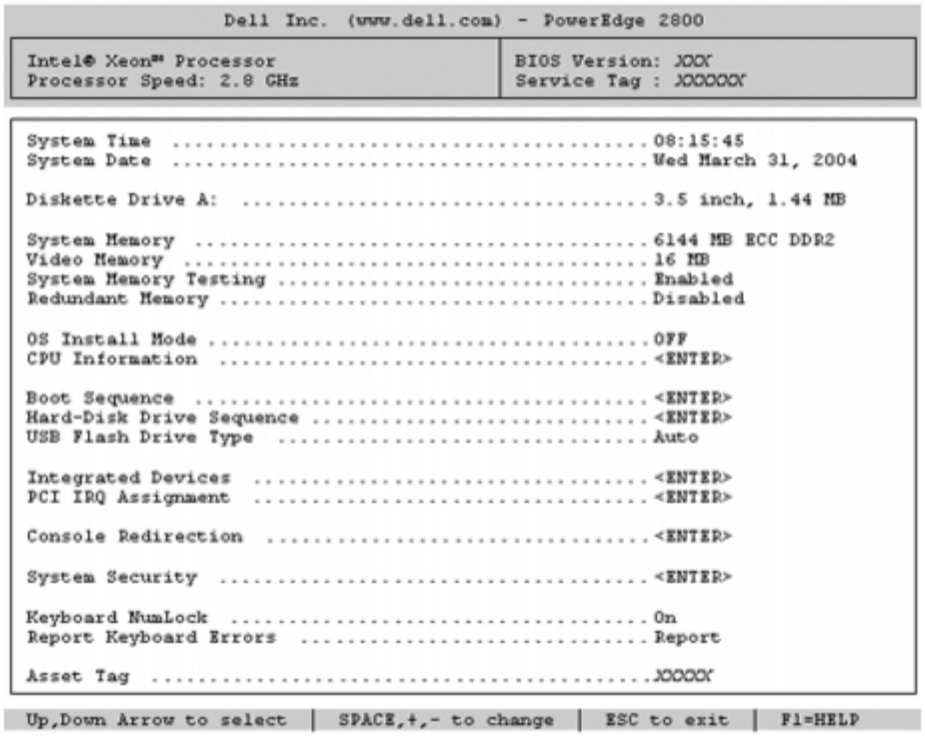
1) Power up the system and check the version level of different hardware components. Latest supported revs can be found under Tech Planet under the PE2800 Server. Revs at the time of this writing are:

Component	Rev	Found
Server BIOS	A01	Entering the BIOS Setup with hitting <F2>
ESM	1.07	Labeled Basedboard Management Controller during BIOS boot
Perc 4e/Di	5130	During BIOS Boot under the line Standard FW
Adaptec 39u160	3.10.0	During BIOS Boot

2) Most BIOS revs can be applied from the OS Desktop. Just note any items requiring updates at this time.

6.4.2 Configuring BIOS Settings

1) Press the <F2> key whenever prompted to get to the BIOS setup screen shown below:



2) The following options or information fields appear on the main System Setup screen. Anything **highlighted** are changes from default:

Bios Settings

Bios Setting	**Value**	
System time and date	**Set to current values**	
Diskette Drive A:	3.5 inch, 1.44 MB	
System Memory	2048 MB ECC DDR2	
Video Memory	16 MB SDRAM	
System Memory Testing	Enabled	
Redundant Memory	Disabled	
OS Install Mode	OFF	
CPU information	Bus speed:	800 MHz
	Logical Processor:	Enabled
	Sequential Memory Access:	Enabled
	Processor 1 ID: F34	
	Core speed:	3.20 GHz (or faster)
	Level 2 Cache:	1024 KB
	Processor 2 ID: F34	

Bios Setting	Value
	Core speed: 3.2 GHz Level 2 Cache: 1024 KB
Boot Sequence	√ **Diskette drive A:** √ **IDE CD-ROM Device** √ **Hard drive C:**
Hard disk drive sequence	System BIOS boot devices Embedded PERC 4e/Di Adapter
USB Flash Drive Emulation	Auto
Integrated Devices Embedded RAID Control Channel A Channel B IDE CD-ROM Controller Diskette Controller USB Controller Embedded Gb NIC1 MAC Address Embedded Gb NIC2 MAC Address Serial Port1 Speaker	 **RAID Enabled** **RAID** **SCSI** Auto Auto On with BIOS Support **Enabled without PXE** as displayed **Disabled** **Not Present** COM1 On
PCI IRQ assignment	Let the Server determine the best assignments. For diagnostic reference only a sample follows: Embedded ATI Technologies Inc VGA adapter IRQ 7 Embedded Intel Corp USB adapter IRQ11 Embedded Intel Corp USB adapter IRQ10 Embedded Intel Corp USB adapter IRQ7 Embedded Intel Corp USB adapter IRQ5 Embedded RAID Controller IRQ 7 Slot 4: Adaptec SCSI adapter IRQ 7 Slot 4: Adaptec SCSI adapter IRQ 10
Console Redirection	Console Redirection: Off Failsafe Baud Rate: 115200 Remote Terminal Type: VT100/VT200 Redirection After Boot: Enabled
Embedded Server Mgmt	Front Panel LCD Options: **User-Defined String** User Defined LCD String: Line 1: **Creo** Line 2: **Premium Workflow**
System Security	System Password: Not Enabled Setup Password: Not Enabled Password Status: Unlocked Power Button: Enabled NMI Button: Disabled AC Power Recovery: Last
Keyboard Numlock	On
Report Keyboard Error	Report
Asset Tag	leave alone

3) Press ESC, and select "**Save Changes and Exit**" <**ENTER**> to exit and reboot the system. You are now ready to install the Ghost Image.

4) FLASHING THE SYSTEM BIOS / ESM

Motherboard BIOS and ESM Firmware are updated from the Windows Desktop.