

Dell Server

PE R200 Hardware Setup

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Revision History

Revision	Date	Author	Comments
A	Jan 8, 2008	Gary Tanaka	Created for the PE R200 Server

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1. SCOPE

This document outlines the procedures for setting up the Dell PE R200 Server hardware. This is to make the Server ready for installing Windows 2003 R2 SP2 for various Kodak workflows:

1.1 Other related documentation

Kodak P#	Title	Overview
709-00997A	PE R200 Server Hardware Setup	This document
72-2125A	Workflow Hardware Site Prep	Power, Environmental, and Dimension specs for all DEC Alpha, DG Aviion, HP, Dell, Servers, Tap Libraries, and RAIDs.
XX0119A	Server Specs and Slot Location Matrix	Overview specification matrix for all DEC, DG, Dell, HP Servers along with recommended PCI slot locations
XX0396A	ResourceCD Matrix	Listing of all supported Firmware, Drivers, and Utilities for DG, Dell and HP Servers.
707-00722A	PE R200 Product Specification	Specifications of Server

1.2 Firmware Sources

For driver updates:

- **Tech Planet** contains the latest supported versions for all platforms.
  http://techplanet.creo.com/software_solutions/workflow_hardware

- **Ghost Image DVD for PE R200**: contains a snapshot of the latest qualified versions at the time of release of the CD(Kodak P/N# 651-00915A order from CD.requests@kodak.com.
- **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

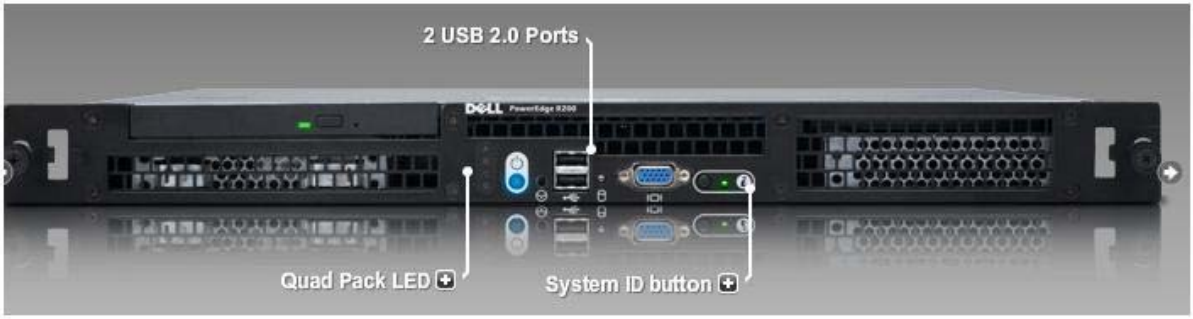
Assemble hardware	1. Check delivered parts against sales order. 2. Add any optional cards, memory, or drives in the correct locations. 3. Connect external hardware (RAID, modem, UPS). 4. Power on server.
Check and configure bios, firmware.	1. Setup SATA controller(s). 2. Setup disks (write cache, containers). 3. Check BIOS, and ESM levels against Tech Planet 4. Configure BIOS.

3. HARDWARE CONFIGURATIONS

Front with Bezel



Front without Bezel



Rear View



Expansion slots - Top slot is PCI-X and the bottom slot is PCIe(8x).

3.1 Drive Designations

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

Table 3-1: Drive letter designations

Drive	Partition	Type	Information
0	Dell	Custom	Used for Dells Utility Partition. Used for System Tests and Configuration.
0	C:	NTFS	W2K3 NT Loader, boot files, paging, operating system, Workflow executables, third-party executables, temp files.
1	D:	NTFS	Data Drive volume 1. A Single physical drive.
	H:	N/A	DVD-ROM

3.2 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 3-2: 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. PE R200 HARDWARE SETUP

This section describes how to set up a new PowerEdge R200 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 PE R200 will come configured as per the following workflows.

	Print Console
CPU	1x 2.66Ghz
Memory	4GB
Disk	2x 160GB 7.2Krpm ****1**
Monitor	17" LVD
Other	39u160, Digi Accel 2p

Note: **1 – Configured as Non-Mirrored by default.

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

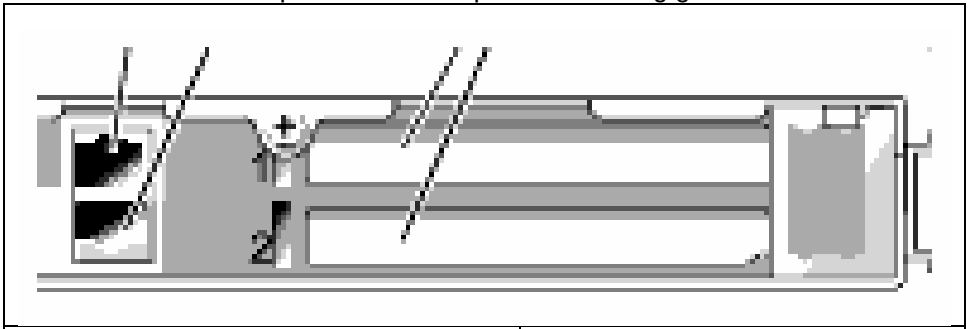
Standard System Components for PE R200 Servers			
Item	Type	Manufacturer	Comments
PC	PE R200, 1 x 2.66 Ghz CPU Dual Core 3075	Dell	4MB L2 cache
RAM	4GB (4x 1GB) 667Mhz DDR2 DIMM, 2R	Dell	
Hard disk	2x 160 GB SATA2 disk, 7.2K RPM	Dell	Disk 0 and Disk 1 slots.
DVD ROM/FLPY	SATA	Dell	
Network	On-board Broadcom 5721J (10/100/1000) Copper Gigabit NIC Controller	Broadcom	
Miscellaneous Components for PE R200 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", LCD monitor	608-00053A	
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	GHOST 11	Symantec	English

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

Optional system components for PE R200 servers			
Item	**Type**	**Kodak P#**	**Comments**
Hard disk	160 GB SATA2 disk, 7.2K RPM (includes cable)	518-02166A	1st 2 slots for default disks.
	250 GB SATA2 disk, 7.2K RPM (includes cable)	518-02167A	
Network	Intel PRO/1000 Gigabit Fibre PCI-E4 NIC Controller	609-00430	Installed in PCI 2
	Intel PRO/1000 Gigabit Copper PCI-E1 NIC Controller	609-00431	
SCSI LVD controller	Optional Adaptec Dual Ch. 39U160, PCI, (for connecting MCE based CTP devices.	94-3220	No battery, no write cache. PCI 1
	Optional Adaptec Dual Ch. 39U320, PCI, (for connecting external SE/ LVD SCSI Device except MCE)	609-00404	Installed in PCI 1
Serial interface	Digi AccelePort 2P (no cable necessary)	609-00363	Installed in PCI 1
	Digi AccelePort 4P (with cable)	94-3287A	Installed in PCI 1

4.2 Install the PCI Controllers

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



Device	Slot
PCI-E Intel Pro 1000 NIC(PCIe)	Slot 2
Adaptec 2944 HVD	Not Supported
Adaptec 39U160	Slot 1
Adaptec 39U320	Slot 1
Digi Acceleport (2p or 4p)	Slot 1
LSI 8751D SCSI HVD PCI	Slot 1
LSI FibreChannel Adapter	Slot 1
Moxa Serial Adapter(PCIe)	Slot 2

4.3 Setting Up the SCSI Controller

We will be using these SCSI controllers for these following configurations:

609-00404	Adaptec 39U320	LVD SCSI Connections to non Output devices. Can be used for SCSI RAID or Tape Drive / Libraries.
94-3220	Adaptec 39U160	LVD SCSI Controller to MCE Output Devices only.
609-00434	LSI 8751D	HVD SCSI Controller for MPE Output Device, or ATL or ADIC Tape Libraries. Not RoHS certified so can not be used in Europe and other RoHS countries.

4.3.1 Configuring the PCI Adaptec 39u160

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.

4.4 Connect External Peripherals

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.)

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 PE R200.

- 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.

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
Memory Information	
System Memory	4.0 GB
System Memory Type	ECC DDR2
System Memory Speed	667MHz
Video Memory	32 MB
System Memory Testing	Enabled
CPU Information	
64-bit	Yes
Core Speed	2.66 GHz
Bus Speed	1333 Mhz
Virtualization Technology	Disabled
Adjacent Cache Line Prefetch	Enabled

Bios Setting	Value
Hardware Prefetcher	Enabled
Demand-Based Power Management	Disabled
Processor 0 Family Model Stepping	06-0F-B
Core Speed	Intel Xeon CPU 3075@ 2.66 Ghz
Level 2 Cache	4 MB
Number of Cores	2
SATA Configuration	ATA Mode
SATA Primary Drive 0(Port A)	**Model**: HDD manufacturer **Drive Type**: Hard drive **Capacity**:160GB
SATA Primary Drive 1(Port B)	**Model**: HDD manufacturer **Drive Type**: Hard drive **Capacity**:160GB
SATA Port C	**Model**: ODD manufacturer **Drive Type**: Optical drive **Capacity**: n/a
Boot Sequence	Checked – 1. SATA CD-ROM Device Checked – 2. Hard Drive C: **Cleared** – 3. Embedded MBA ...
Hard-Disk Drive Sequence	Embedded SATA Port A Embedded SATA Port B
Boot Sequence Retry	Disabled
Integrated Device	
User Accessible USB Ports	All Ports On
Embedded Gb NIC1	**Enabled without PXE**
MAC Address	<unique to each system>
Embedded Gb NIC2	**Enabled without PXE**
MAC Address	<unique to each system>
OS Watchdog Timer	Disabled
Serial Port 1	COM1
Speaker	On
PCI IRQ Assignments	Leave the Server set the assignments automatically. Items listed below are for reference only. Slot 2: Intel Corp NIC IRQ 15 Slot 2: Intel Corp NIC IRQ 14 Embedded NIC 1 IRQ 15 Embedded NIC 2 IRQ 14 Embedded USB UHCI Controller 1 IRQ 11 Embedded USB UHCI Controller 2 IRQ 10 Embedded USB UHCI Controller 3 IRQ 11 Embedded USB EHCI Controller IRQ 11 Embedded Video IRQ 5 Embedded SATA 1 IRQ 6 Embedded South Bridge Device 11 IRQ 6
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
NMI Button	Disabled
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. APPLYING WINDOWS BASELINE OS

You are now ready to install Windows 2003 Ghost Baselines. Refer to the following documents.

709-00230A	Win2K3 Install from Ghost for Dell Prinergy	Applying the Windows 2003 OS Baseline once this document is complete.