# Dell Opti745 Workstation
# HW Config and Ghost Install

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## 1. SCOPE

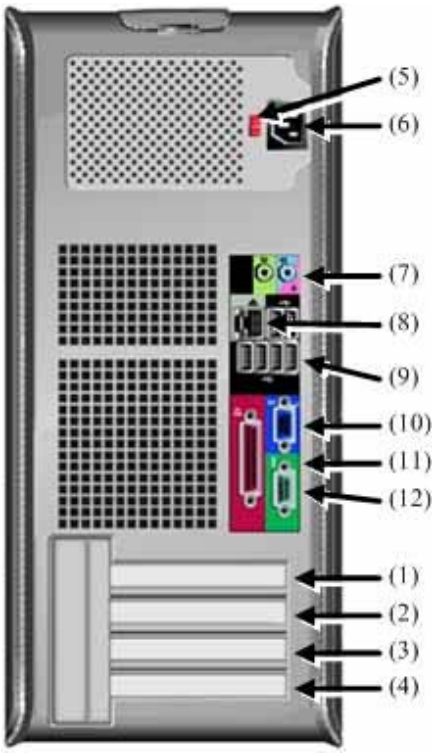
This doc will describe how to setup the Optiplex 745 and how to install the Baseline Windows 2000 Ghost. This baseline will prepare the Workstation for Print Console to be applied.

## 2. HARDWARE CONFIGURATIONS

This section describes current Optiplex Workstation/Windows 2000 Professional hardware platform configurations. It includes peripheral connection diagrams to help connect the workstation and peripherals.

## 2.1 Dell Optiplex 745 Workstation

Figure 2-1: Optiplex 745 Workstation peripheral connection diagram




1. PCI Express x16 connector (slot 1)
2. PCI 3.3v 32 Bit (slot 2)
3. PCI 3.3v 32 Bit (slot 3)
4. PCI Express x1 connector (slot 4)
5. 110v/22v Voltage Selector
6. IEC320 Power
7. Audio
8. NIC, Broadcom 10/100/1000BT
9. USB2.0 Connectors (8 for 745 including 2 on front).
   1 for Keyboard
   1 for Mouse)
10. Video
11. Parallel Port (LPT1)
12. COM1

Table 2-1: PCI Assignments: Refer to the **Slots** tab in XX0119A in TechPlanet for more detailed supported adapters and slot locations for the Opti Workstation and other platforms.

| Slot # | Slot Type | Supports |
|---|---|---|
| 1 | ePCI 16x | No cards supported at this time. Reserved for Graphics Adapters. |
| 2 | PCI 32bit, 3.3v | • Adaptec 39u160 (Output device only)<br>• Adaptec 39U320 (non Output device only)<br>• LSI 8751D (HVD SCSI connection)<br>• Intel Pro 1000-MF<br>• Digi Acceleport 4p<br>• Digi Acceleport 2p |
| 3 | PCI 32bit, 3.3v | • Adaptec 39u160 (Output device only)<br>• Adaptec 39U320 (non Output device only)<br>• LSI 8751D (HVD SCSI connection)<br>• Intel Pro 1000-MF<br>• Digi Acceleport 4p<br>• Digi Acceleport 2p |
| 4 | ePCI 1x | • Moxa CP-104EL<br>• Intel Pro 1000-PT |

Table 2-2: Optiplex 745 Standard Components

| Item | Type | Comments |
|---|---|---|
| PC | 1x 1.86Ghz Cor2Duo | 2MB cache |
| RAM | 2048 MB Non-ECC 667 DDR2 SDRAM | 4 banks total<br>2x 1024MB pre-installed |
| Hard disk | 2x 80 GB SATA2 disk. | No additional disk options. Port0 and Port4 only. |
| DVD | SATA, DVD-ROM 16x | Port1 only |
| Video | Intel® Integrated GMA 3000 graphics | |
| Network | Single Broadcom 10/100/1000 BCM5754 | |
| Keyboard | USB Keyboard | English |
| Mouse | USB 2-Button Optical Mouse with Scroll | |
| External modem | Optional USR56K Ext. PnP | North America, connected to COM1 |
| Monitor | 17", Flat LCD monitor | |
| Software + documents | Windows XP Professional | EULA downgrade license to Windows 2000 PRO. |
| Software + documents | GHOST 8 | English |

Table 2-3: Optiplex 745 Optional Components

| Item | Part # | Comments |
|---|---|---|
| RAM | 518-02170A | 2GB (2x 1MB DIMMs ) |
| RAM | 518-02171A | 4GB (2x 2GB DIMMs) |
| Disk | 518-01508A | 160GB SATA2 Disk. Note! Existing 80GB Disk in slots 2 must be removed. |
| Disk | 518-01509A | 250GB SATA2 Disk. Note! Existing 80GB Disk in slots 2 must be removed. |
| SCSI | 94-3220 | Adaptec 39u160 LVD, PCI-X 3.3/5v |
| SCSI | 609-00404 | Adaptec 39u320 LVD, PCI-X 3.3/5v |
| SCSI | 609-00434 | LSI 8751D HD68, HVD, PCI-E1 |
| Network | 609-00431 | Intel Pro1000-PT RJ45 PCI-E1 |
| Network | 609-00430 | Intel Pro1000-PF Opt LC PCI-E4 |
| Network | 94-3221 | Intel Pro1000-MT Cu PCI-X 3.3/5v |
| Network | 609-00248 | Intel Pro1000-MF Optical LC PCI-X 3.3/5v |
| Serial | 94-3287A | Digi Acceleport 4p, PCI-X 3.3/5v |
| Serial | 609-00376 | Digi Acceleport 2p, PCI-X 3.3/5v |
| Serial | 609-00460 | Moxa CP-104EL-DB9, PCI-E1 |

Table 2-4 Optiplex 745 BIOS Settings

| | |
|---|---|
| System | (**highlighted** items are changes from default) |
| System Info | Show system type, BIOS ver, Dell Tag# |
| Processor Info | CPU speed, Bus Speed, L2 cache, Hyperthreading status |
| Memory Info | Shows type of memory installed in each DIMM slot |
| PCI Info | Shows which cards are installed in which slots |
| **Date/Time** | **Set accordingly** |
| **Boot Sequence** | 1. Onboard or USB Floppy Drive<br>**2. USB Device**<br>**3. Onboard or USB CD-ROM drive**<br>**4. Onboard SATA Hard Drive**<br>**Onboard Network Controller** (hit <space> to disable booting from this)<br>**BEV Device (hit <space> to disable booting from this)** |

| | |
|---|---|
| Drives | |
| Diskette Drive | Internal |
| SATA-0 | On (should show a Drive under Drive Details. Typically 80GB). |
| **SATA-1** | **On (should show a DVD-ROM under Drive Details)** |
| SATA-2 | not available |
| SATA-3 | not available |
| SATA-4 | On (should show a Drive under Drive Details). Typically 80GB). |
| SATA-5 | Off |
| SATA Operation | Normal |
| **SMART Reporting** | **On** |
| Onboard Devices | |
| **Integrated NIC** | **On (do not select PXE or RPL)** |
| **Integrated Audio** | **Off** |
| USB Controller | On |
| Rear Quad USB | On |
| Rear Dual USB | On |
| Front USB | On |
| PCI Slots | On |
| **LPT Port Mode** | **ECP** |
| LPT Port Address | 378h |
| LPT Port DMA | Off |
| Serial Port #1 | Auto |
| Video | |
| Primary Video | Auto |
| Performance | |
| Multiple CPU Core | On |
| SpeedStep | Off (adjusts processor speed depending upon load for power savings) |
| Virtualization | Off |
| Limit CPUID Value | Off |
| **HDD Acoustic Mode** | **Performance** |
| Security | |
| Admin Password | Not Set |
| System Password | Not Set |
| Drive 0 ... 5 Password | Not Set |
| Password Changes | Unlocked |
| TPM Security | Off |
| Execute Disable | On |
| Computrace | Deactivate |
| Power Management | |
| AC Recovery | Off |
| Auto Power On | Off |
| Auto Power Time | 12:00am |
| Low Power Mode | Off |
| Remote Wake Up | Off |
| Suspend Mode | S3 |
| Maintenance | |
| Service Tag | (lists Dell's tag#) |
| ASF Mode | Off |
| SERR Message | On |
| Load Defaults | Cancel (Continue forces defaults of BIOS settings) |
| Event Log | Lists the current system event log. Allows you to clear events |
| POST Behavior | |
| Fast Boot | On |

| | |
|---|---|
| Numlock Key | On |
| POST Hotkeys | Setup & Boot Menu |
| Keyboard Errors | Report |

## 2.2 UPS Options

The following shows the recommended optional UPS for the Optiplex Workstation:

Table 2-5: UPS plug types

| UPS Type | | | Plug Type | | | |
|---|---|---|---|---|---|---|
| **Vendor** | **Model** | **Power Type** | **North American** | **Europe** | **Asia** | **Australia** |
| APC | SmartUPS 1000 | 1K VA | 125v 15A nema 5-15 | 230v 10A iec 320 c14 | 100v nema 5-15p | 240v 10A iec 320 c14 |
| | SmartUPS 1400 | 1.4 KVA 100V – (Japan) | 125v 15A nema 5-15 | 230v 10A iec 320 c14 | 100v nema 5-15p | 240v 10A iec 320 c14 |
| TrippLite | SMART 1050 | 1050VA | 125v 15A nema 5-15p | not supported | not supported | not supported |
| TrippLite | SMART 1500 | 1500VA | 125v 15A nema 5-15p | not supported | not supported | not supported |

## 2.3 Items Required

Before loading the Ghost Baseline, check against the software tables and make certain that the hardware is configured as described in *Section 2, Hardware Configurations*.

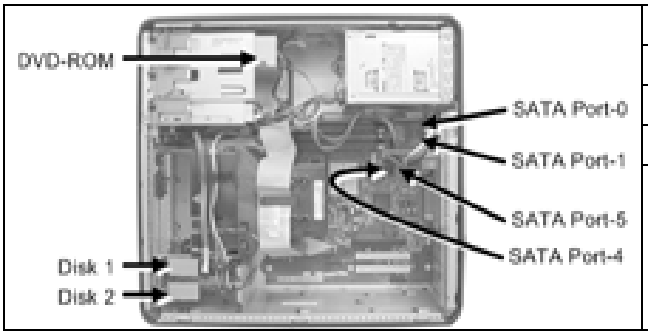
Table 2-5: Necessary software

| Disk | Type | Version | Comments |
|---|---|---|---|
| Opti745 Ghost | DVD | A | Windows 2000 Pro Ghost Image Baseline |
| Print Console software | CD | 2.x | Print Console software |

# 3. HARDWARE SETUP

## 3.1 Verify Drive connections

In order to boot the Opti745 from DVD it is important to ensure that the DVD is connected to SATA bus 1.




| Device | SATA Port |
|---|---|
| DVD-ROM | Port-1 |
| Hard Disk 1 | Port-0 |
| Hard Disk 2 | Port-4 |
| | |

## 3.2 Add Hardware Components

1) Power the Server down

2) Add the components as listed in *Table 2-3: Optiplex 745 Optional Components*. Refer to *Table 2-1: PCI Assignments:* for appropriate slot location.

3) Connect external Serial connections as follows:

| | COM1 (Embedded) | COM3 (Digi P1) | COM4 (Digi P2) | COM5 (Digi P3) | COM6 (Digi P4) |
|---|---|---|---|---|---|
| **MODEM** | **X** | | | | |
| **Workstation Serial Interface** | | **X** | | | |
| **Recorder Diagnostic** | | | **X** | | |
| **Head Diagnostic** | | | | **X** | |
| **Harmony Densitometer i/f** | | | | | **X** |

4) Connect the UPS control cable to a USB port.

# 3.3 Configure BIOS Adapters

## 3.3.1 Configuring the BIOS Settings

1) Boot the Workstation and hit **<F2>** to Enter Setup.

2) Compare the settings as listed in *Table 2-4 Optiplex 745 BIOS Settings* and adjust as necessary.

## 3.3.2 Configuring the PCI Adaptec 39u160

The Adaptec 39U160 is for Output Device connectivity only. You do not need to follow this for an Adaptec 39U320.

1) Ensure the 39u160 BIOS is at a rev listed in 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** 39160 ports 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).

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

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

## 3.3.3 Configuring the Differential Adaptec 2944UW

Note! The Adaptec 2944 is a 5v adapter and is **not** supported in this Workstation.

# 4. APPLYING WINDOWS 2000 GHOST

This section will lay down the Windows 2000 Workstation OS from a Ghost image. After you complete the procedures in this section, your system will be ready for Print Console software installation.

## 4.1 Apply the Ghost

1) Insert the bootable Server Image CD into the drive and boot the system off this DVD. The DVD will boot you directly into Ghost.

2) Press the TAB key to move the cursor to a desired image file and press **ENTER**.

3) Highlight the first hard disk from the drive list and press **ENTER**. Verify/change the partition sizes to the following according to desired platform:

   - 1st Partition = 17200MB (NTFS), 2nd Partition = LeftoverSpace (NTFS)

4) Press the TAB key to move the cursor to the **OK** button, and press **ENTER**.

5) Press the TAB key to move the cursor to the **Yes** button and press **ENTER** to proceed with loading the disk image (takes approximately 5 minutes).

6) Remove the CD from the drive and press **ENTER** to accept the Reset Computer prompt after the download is completed. The system will boot into a baseline W2K Professional operating system.

## 4.2 System Preparation Mini-Setup

1) Power up the system. A Windows 2000 mini-setup screen will appear. Select **Next**.

2) If you agree to the license terms select **I Accept this Agreement** and then select **Next**.

3) Select **Next** in the *Regional Settings* window.

4) In the **Name** field, type **PrintConsole Workstation**. In the **Organization** field, type the customer name. Select **Next**.

5) Enter the following license key and select **Next**.

   **M8G6J – FFVB4 – CKYY8 – 7JYYF – THQD8**

6) Type in an appropriate **Computer Name** and **Password**, then select **Next**.

7) Set the correct **Date/Time** and select **Next**.

8) Enter a **Workgroup Name** (default Workgroup) or select "*make this a computer a member of the following domain*" and enter in the name of the Domain.

9) Select **Next** and **Finish** to reboot the system.

## 4.3 After Mini Setup

### 4.3.1 Detecting New Hardware

Once the system is booted up, it may detect hardware changes in the target system (compared to that of the source system where the ghost image was created) and display the **Found New Hardware Wizard** dialog. **Respond to these dialogs accordingly ONLY if they appear**.

Additional Drivers can be found in these locations:

- **%SystemDrive%\Drivers** on your Workstation
- Ghost Image Baseline DVD 651-00667A (bootable, supplied with the Workstation)
- Tech Planet

- Suppliers website (use as last resort as many drivers/firmware are version locked).

For each new device detected hit **Next** to the **Found New Hardware** prompt. You will see either:

| Found new hardware prompt | Follow Section |
|---|---|
| PCI Simple Communications Controller | Digi Acceleport controller |
| Ethernet Controller | IntelPro (the Broadcom driver is already installed adn should automatically pickup). |

**IntelPro Card Detection:**

This typically shows up if an additional PCI NIC is added to the Workstation.

a) Hit **Cancel** to the "*detect new drivers*" prompt.

b) Browse to **%SystemDrive%\Drivers\IntelPro\vx.x** and run **Autorun.exe**.

c) Select **Install Drivers** and follow the default prompts. This will take a couple minutes to complete. Hit **OK** when done and **Exit**.

**Digi AccelePort 2P/4P**:

This will be prompted as "PCI Simple Communications Cotnroller".

a) Select "Search for a suitable driver" and hit **Next**.

b) Clear all options and enable "Specify a location" and hit **Next**.

c) Browse to **%SystemDrive%\Drivers\Digi\AccelePort\vx.x**, select **DGAPORT.INF** and hit **Open**.

d) Hit **OK / Next** / **Finish** to complete the installation.

### 4.3.2 Remove unused Modems

1) Start **Control Panel > Phone and Modem Options** and select the **Modems** tab.

2) Select either the USRobotics or MultiTech Modems that are **not** connected to your Server and hit **Remove > Yes**.

### 4.3.3 Setting Virtual Memory

1) In *Control Panel* select **System > Advanced**.

2) Select **Performance Options…**

3) Set *Application Response* to **Background Services**.

4) Set **Virtual Memory.**

   a) Select **Change…**, then selecting you OS drive set
   **Initial Size = Maximum Size** ( = 1.5 x of physical RAM installed) and hit **Set**.
   For example, if the system has 2GB RAM installed, then enter 1536).

   b) If a second physical disk is used, create **an additional** paging file on this drive where Maximum Size = Initial Size = 1.5x Physical RAM.

   c) Close *Virtual Memory* window.

5) Set Environment Variables.

   a) In *System Properties* window select **Environment Variables**.

   b) Verify that both **TEMP** and **TMP** are set to **C:\Temp** for both your **User Variables** and your **System Variables** then click **OK**.

6) Select Startup and Recovery…
   a) In *System Properties* window select **Startup and Recovery**.
   b) Set Display list of Operating Systems to **5** seconds.
   c) **Uncheck** the **Automatically Reboot** option and then click **OK, OK** to confirm.
7) Close the *System Properties* window and hit **No** to the restart the computer prompt.

### 4.3.4 Verifying NIC Driver Settings

Next, make sure that the Network Interface Card has the correct driver settings.

1) From the desktop, right-click **My Network Places** and select **Properties.**
2) Right-click **Local Area Connection** and select **Properties**.
3) **Enable** the *Show icon in taskbar when connected* check box.
4) Turn off NIC's Power Management.
   a) Under the *Connect Using* click **Configure** and select the **Power Management** tab.
   b) **Uncheck** all options.
   c) Hit **OK** to close the NICs properties window.
5) Modify TCP/IP settings:
   a) Select (highlight) the **Internet Protocol (TCP/IP)** option and select **Properties > Advanced > WINS**.
   b) **Uncheck** the *Enable LMHOSTS* lookup.
   c) Select **Enable NetBIOS over TCP/IP**
   d) Hit **OK > OK** to close the TCP/IP Window.
6) Close the *Local Area Connection* and the *Network and Dial-up Connections* windows.

### 4.3.5 Setting up Disk Configuration

Optiplex Workstations have a consistent drive lettering scheme as outlined below:

| Physical Disk | Partition | Contains |
|---|---|---|
| Disk 0 | 1 | C: NTFS: Boot Files, System Files and Print Console applications. |
| | 2 | D: NTFS: Data1 |
| Disk 1 | 1 | E: NTFS: Data2, Ghost image backup. |
| DVD | n/a | H: |

1) Right-click on **My Computer** and select **Manage**.
2) Select **Disk Management**.
3) If the *Write Signature* and *Upgrade Disk Wizard* dialog box appears, select **Cancel**
4) If a small red **STOP** sign appears on the new/blank disk(s), then right click on the sign and select the **Write Signature** option to put the W2K disk signature on. This needs to be done before volume(s) can be created.
5) Change the Drive letters. If the drive letters don't match the above table, change the drive letters as follows:
   a) Right-click a drive and select **Change drive letter**.
   b) Select **Edit** and change the drive to the appropriate drive latter.

c) Select **OK** and **Yes** to confirm the change.

6) Partition New Drives. If there are any un-partitioned drives format the as follows:

a) Right-click the partition and select **Create Partition**.

b) Follow the prompts with these options:

| | |
|---|---|
| Partition | Primary Partition |
| Disk Space | Leave default (max space is selected) |
| Assigned Drive Letter | As listed in the table above |
| File System | NTFS |
| Allocation Unit Size | Default |
| Volume Label | Data2 |
| Perform Quick Format | Select |

c) Select **Next > Finsh** to complete.

### 4.3.6 Windows Explorer Property Settings

1) Start Windows Explorer.

2) Select **View > Details**.

3) Select **Tools > Folder Options > View** tab.

| | |
|---|---|
| Display compressed files and folders alternate color | Enabled |
| Display full path in address bar | Enabled |
| Display full path in title bar | Enabled |
| Show hidden files and folders | Enabled |
| Hide file extensions for known file types | Disabled |

4) Select **Apply,** then click the **Like current folder** button, **Yes** to confirm.

5) Click **OK** to exit.

### 4.3.7 Customizing Command Prompt Window Properties

Change the DOS command prompt properties according to the following:

1) Font tab: Font size = 7 x12

2) **Layout** tab and set:

Screen Buffer size

| | |
|---|---|
| Width | 200 |
| Height | 1000 |

Let system position Window unchecked

### 4.3.8 Installing UPS Software

There are 2 types of UPS's Kodak supports (APC or TrippLite). You can tell the UPS you have by looking at the manufacturer name on the faceplate. Depending your UPS refer to the following documents:

Both documents are available on TechPlanet under **Software Solutions > APC or TrippLite > Reference**.

| | |
|---|---|
| APC | 719-00223A – Installing APC PowerCute Management software (v7.0.4 minimum) |
| TrippLite | 719-00607A – Installing TrippLite PowerAlert Management software. |