Administrator's Guide for Microsoft® Windows® on HP ProLiant WS460c G6 Workstation Blades with WS460c Graphics Expansion Blade

Abstract

This guide provides information for using Microsoft® Windows® on the HP ProLiant WS460c G6 Workstation Blade with WS460c Graphics Expansion Blade. This guide is for technicians that install, administer, and troubleshoot servers and storage systems.



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Introduction

Overview

For an overview of the HP Workstation Blade Solution, including its architecture, see the following documents available on the HP website (http://www.hp.com/#Support). When prompted for a product, enter **WS460c.**

- *HP ProLiant Workstation Blades*
- *HP Remote Graphics Software User Guide*
- *HP Workstation Blade Client Series—Embedded OS Version 9.xx Manual*
- Administrator guides

This Administrator Guide provides information for Microsoft® Windows® XP Professional SP3, Microsoft® Windows® XP Professional x64 Edition, Windows Vista®, and Windows 7® (32-bit and 64-bit versions).

Contacting HP technical support or an authorized reseller

Before contacting HP, always attempt to resolve problems by completing the procedures in this guide.



IMPORTANT: Collect the appropriate server information and operating system information before contacting HP for support.

For United States and worldwide contact information, see the Contact HP website (http://www.hp.com/go/assistance).

In the United States:

- To contact HP by phone, call 1-800-334-5144. For continuous quality improvement, calls may be recorded or monitored.
- If you have purchased a Care Pack (service upgrade), see the Support & Drivers website (http://www8.hp.com/us/en/support-drivers.html). If the problem cannot be resolved at the website, call 1-800-633-3600. For more information about Care Packs, see the HP website (http://pro-aq-sama.houston.hp.com/services/cache/10950-0-0-225-121.html).

Workstation blade video subsystem

WS460c video subsystem overview

This chapter describes the workstation blade video subsystem. Because the workstation blade contains two types of video controllers, you must be familiar with their functionality and operating modes.

- ATI RN50 video controller (ATI video controller)—The ATI Video controller is built into the workstation blade.
- NVIDIA Quadro graphics adapter (NVIDIA graphics adapter)—The WS460c Workstation Blade supports NVIDIA graphics adapters in full-length graphics cards, and single- and dual-card mezzanine configurations. For more information, see *Hardware and Software Supported by HP ProLiant Workstation Blades*.

HP offers the HP Graphics Expansion Blade (expansion blade), which comes attached only to the workstation blade. The expansion blade supports the installation of qualified PCI-Express cards.

If an expansion blade is not attached to the workstation blade, mezzanine graphics adapters are installed in the WS460c Workstation Blade. If an expansion blade is attached, graphics adapters can only be installed in the expansion blade, not in the workstation blade. Unless otherwise noted, no distinction is made in this chapter based on where the graphics adapters are installed internally to the WS460c Workstation Blade or in the expansion blade, because installation location is not visible to the Windows® operating system.

Video subsystem architecture and operating modes

The key features of the video subsystem are:

- The workstation blade boot console is generated by the ATI video controller. The boot console can be viewed either by connecting a monitor to the video output of the Local I/O Connector or can be viewed over the network using the iLO 2 Ethernet port.
- The Windows® desktop runs on the NVIDIA graphics adapter in User Mode only. The iLO 2 console and the Local I/O Connector cannot be seen in User Mode.
- You can view the Windows® desktop on internally installed NVIDIA graphics adapters using RGS. If the graphics connectors are present, you can view the video directly.
- Operation of the workstation blade ATI video controller and NVIDIA graphics adapter is governed by the BIOS parameter Remote Console Mode, which can be set to the following modes:
  - User Mode (default setting)
  - Admin Mode
  - Server Mode
  - Setup Mode

Remote Console modes

IMPORTANT: Workstation blades using Windows Vista® x32 and x64 with Westmere 2 processors display the incorrect processor speed and type in the Device Manager. To resolve this issue, from the Control Panel, access either System Information or Welcome Center to see the correct processor speed and type.

NOTE: HP ProLiant WS460c G6 Workstation Blade with WS460c Graphics Expansion Blade supports remoting protocols such as Microsoft® Remote Desktop Protocol 7.1 or later.

Mode	Description
User Mode	User Mode is the production mode. The ATI video controller generates the boot console and the NVIDIA graphics adapter generates the Windows® console. In User Mode, the Windows® console can only be viewed using remote protocols (for example, using Microsoft® Remote Desktop Connection (RDC)). Because the ATI video controller is inactive after the operating system starts, the Windows® desktop is not visible on the Local I/O Connector or through iLO 2. The screen displays a message stating that the blade is in User Mode.
Admin Mode	When Remote Console Mode is set to Admin Mode, the ATI video controller first generates the boot console during POST, and then generates the Windows® desktop. In this mode, the NVIDIA graphics adapter is not visible to any Windows® operating systems and is not used. In Admin Mode, the boot console and the Windows® desktop generated by the ATI video controller can be viewed by using: • A monitor connected to the Local I/O Connector video signal • The iLO 2 Remote Console by pointing your browser to the iLO 2 IP address • RDC
Server Mode	When Remote Console Mode is set to Server Mode, the ATI video controller generates the boot console during POST and then generates the Windows® desktop. In this mode, the NVIDIA graphics adapter is not visible to any Windows® operating systems and is not used. In Server Mode, the boot console and the Windows® desktop generated by the ATI video controller can be viewed by using: • A monitor connected to the Local I/O Connector video signal • The iLO 2 Remote Console by pointing your browser to the iLO 2 IP address • RDC
Setup Mode	Setup Mode is similar to Admin Mode. In Setup Mode, both the ATI video controller and the NVIDIA graphics adapter are visible to a Windows® operating system. Visibility of the NVIDIA graphics adapter enables the Windows® operating system to install the NVIDIA graphics adapter driver. In Setup Mode, the Windows® desktop can be viewed by using: • A monitor connected to the Local I/O Connector video signal • The iLO 2 Remote Console by pointing your browser to the iLO 2 IP address • RDC

Setting Remote Console mode

Remote Console Mode can be viewed or changed during POST, when the boot console is generated by the ATI video controller in all Remote Console modes. To view or set Remote Console Mode during booting:

1. Using either the Local I/O Connector or the iLO 2 Ethernet port, view the boot console using iLO 2, which provides direct control of the workstation blade power.
2. When prompted during booting, press the **F9** key. The ROM-based Setup Utility appears.

3. Select **System Options > Remote Console Mode**. The current Remote Console Mode appears.
4. To change the Remote Console Mode, press **Enter**. The Remote Console Mode menu appears. Use the Up and Down arrow keys to select the desired mode. When Admin Mode has been selected, press **Enter** when done and perform the steps indicated to exit the ROM-based Setup Utility.

   The workstation blade performs a reboot, and then the Remote Console Mode appears.

Operating the workstation blade

Workstation blade management overview

HP offers management and diagnostic software for the workstation blade with graphics expansion blade. For more information, see the *HP ProLiant WS460c G6 Workstation Blade with WS460c Graphics Expansion Blade User Guide*.

The workstation blade design is based on the design of the corresponding server blade, and most of the manageability features are common between workstation blades and server blades. The following documents contain information about the manageability of the systems:

- *HP ProLiant BL460c Server Blade User Guide*
- *HP BladeSystem c7000 Enclosure Setup and Installation Guide*
- *HP BladeSystem c3000 Enclosure Setup and Installation Guide*
- *HP BladeSystem c3000 Tower Enclosure Setup and Installation Guide*
- *HP BladeSystem Onboard Administrator User Guide*
- *HP Integrated Lights-Out 2 User Guide*

WS460c installation process overview

This chapter describes the following process to install, power on, boot and validate the HP Workstation Blade Solution:

1. Set up the client computer.
2. Install and power on the first workstation blade by performing these steps:
   a. Prepare the blade enclosure and the networking infrastructure.
   b. Configure the workstation blade hardware.
   c. Install the workstation blade into the enclosure and then boot the operating system.
3. Configure the operating system.
4. Verify network connections to the workstation blade Ethernet ports: NIC1, NIC2, and iLO 2.
5. Install RGS on the workstation blade, and then verify RGS operation between the workstation blade and the client computer.
6. Install the required applications on the workstation blade.
7. Validate the solution consisting of the workstation blade, the applications, RGS, and the client computer.

You can integrate other workstation blades and client computers into the solution.

Installing and powering on the workstation blade

For an overview of the installation and powering processes, see the *HP ProLiant WS460c G6 Workstation Blade with WS460c Graphics Expansion Blade Installation Instructions*. Because the workstation blade shares many components with the server blade, for details on the installing and turning on the workstation blade, see the following server blade documents:

- *HP BladeSystem c7000 Enclosure Setup and Installation Guide*
- *Power Supply Installation Instructions for HP BladeSystem c7000 Enclosures*
- *HP BladeSystem c3000 Enclosure Setup and Installation Guide*
- *HP BladeSystem c3000 Tower Enclosure Setup and Installation Guide*
- *HP ProLiant WS460c G6 Workstation Blade with WS460c Graphics Expansion Blade User Guide*
- *HP BladeSystem Onboard Administrator User Guide*
- *Integrated Lights-Out 2 User Guide*
- Interconnect device documentation

Preparing the workstation blade infrastructure

To prepare the workstation blade infrastructure (enclosure, power supplies, Onboard Administrator modules, and networking):

1. To set up the enclosure, including wiring the PDUs, follow the instructions in the *HP BladeSystem c7000 Enclosure Setup and Installation Guide.*
2. Install power supplies in the enclosure according to the HP BladeSystem power guidelines on the HP website (http://www.hp.com/go/bladesystem/powercalculator).
3. Install and configure the Onboard Administrator modules according to the *HP BladeSystem Onboard Administrator User Guide.*

Configuring the workstation blade hardware

The workstation blade hardware is configured before installing the blade in the enclosure. Unless otherwise noted, the hardware listed can be configured on the WS460c Workstation Blade.

- Intel® Xeon® processors—The workstation blade supports Intel® Xeon® processors, offering multiple frequencies of each processor type. In dual processor configurations, both processors must be identical. For a description of the processors that are available for each workstation blade, see *Hardware and Software Supported by HP ProLiant Workstation Blades*.
- Memory—Up to 12 memory DIMMs can be installed in the workstation blade, supporting up to 192 GB of memory for the WS460c Workstation Blade. For a description of per-OS memory limitations, see *Hardware and Software Supported by HP ProLiant Workstation Blades*.
- HP Graphic Expansion Blade—The graphics expansion blade comes attached to the top of the workstation blade and accommodates full length PCI-Express graphics cards.

  The graphics expansion blade can only be purchased factory-attached to the workstation blade.
- NVIDIA graphics adapter—The WS460c Workstation Blade supports a number of graphics adapters, which can be ordered factory-installed or as after-market option kits. For a list of the NVIDIA graphics

adapters that are available, see *Hardware and Software Supported by HP ProLiant Workstation Blades*.

- Disk drives—The WS460c Workstation Blade supports one or two SAS or SATA disk drives.
- BBWC—The WS460c Workstation Blade can be ordered with:
  - 256 MB of memory
  - 512 MB of memory

  For the latest information about BBWC, see the HP website.

Connecting media to the workstation blade

The workstation blade architecture supports three primary methods of connecting media to the blade (such as a CD/DVD drive).

- Connecting media to one of the USB connectors on the Local I/O Cable
- Connecting a shared network drive to the blade
- Using iLO 2 virtual media to mount PC media (such as a CD/DVD drive) to the workstation blade

In addition, the c3000 Enclosure supports an optional DVD drive that can be used to install the operating system or software on a workstation blade. Using the c3000 Onboard Administrator, the DVD drive can be attached to any or all workstation blades in the enclosure.

Powering on the workstation blade

The workstation blade powers on in User Mode. For more information, see "Remote Console modes (on page 6)".

You can power on the workstation blade manually by pressing the power button on the front of the workstation blade, by using the iLO 2 Remote Console, or by Onboard Administrator.

To power on the workstation blade locally using the Local I/O Cable:

1. Install the workstation blade in the c3000 or c7000 Enclosure. The blade is hot-pluggable and can be inserted and removed while the enclosure is powered.
2. Connect the Local I/O Cable to the Local I/O Connector on the front of the workstation blade. Connect a monitor, USB keyboard, and USB mouse to the Local I/O Cable.

   Depending on how you interact with the workstation blade and how many USB devices you have connected to the Local I/O Cable (such as a keyboard and mouse), you might have to add a USB hub to connect additional USB devices, such as a USB CD/DVD drive.
3. Power on the blade by pressing the front panel Power On button. The boot sequence appears on the monitor. Set Remote Console Mode to Setup Mode, save the BIOS setting, and then continue with the boot process.
4. If using the Graphics Expansion Blade, allow the Onboard Administrator to power up the blade.

Workstation blade sleep states

The workstation blade supports two sleep states: S0 (fully on) and S5 (off but connected to power). Do not use any other power management states (such as Hibernate or Standby). From sleep state S5, WOL is supported by both NIC1 and NIC2. However, a workstation blade in sleep state S5 is unable to respond to an RGS

connection request from a client computer, which results in an RGS connection failure appearing on the client computer. When WOL occurs, the workstation blade boots into your operating system, an RGS connection can be established by the client computer.

Configuring and verifying networking

You must verify that the workstation blade is accessible over the network using NIC1, NIC2, and iLO 2. By default, the NIC1, NIC2, and iLO 2 IP addresses are set by DHCP. Therefore, ensure that the workstation blade can connect to a DHCP server.

Configuring NIC 1 and NIC 2

The following steps are based on continued use of a keyboard, mouse, and monitor connected to the Local I/O Cable.

To verify NIC1 and NIC2:

1. Choose one of the following options:
   - From a Windows® operating system, use the `ipconfig` command to verify that the NIC1 and NIC2 IP addresses have been set by DHCP.
   - Specify a static IP address and Subnet mask for each NIC.
2. To verify NIC1 and NIC2 operation, access the blade SMH from your PC. Point a browser window at each IP address using HTTPS protocol and port 2381. The SMH page appears using each NIC.

Verifying iLO 2 network

1. Obtain the iLO 2 IP address by choosing one of the following methods:
   - Reboot the blade. During the reboot, the boot console displays the iLO 2 IP address.
   - Log in to SMH, and click **Embedded NEC98431** under Management Processor, which displays the iLO 2 IP address.
   - Use Onboard Administrator.
2. Point your PC browser window to the iLO 2 IP address (using HTTPS). The login screen appears.

Installing, configuring, and verifying RGS

RGS (specifically, the RGS Sender) is not factory-installed on the workstation blade. You must obtain RGS from HP, and then have it installed on your workstation blade. A License Agreement Certificate is shipped with your workstation blade that enables you to download RGS at no cost from HP. See the certificate for downloading instructions.

You can also purchase RGS 5.3.0 on the RGS homepage (http://www.hp.com/go/rgs). RGS requires installation of a license to operate. For details, see the *HP RGS Licensing Guide,* available on the RGS homepage.

For installation instructions, see the *HP Remote Graphics User Guide*.

Verifying RGS operation

RGS connections are initiated from the client computer. For more information about establishing an RGS connection, see the *Remote Graphics Software User Guide,* which you can access by accessing the HP website (http://www.hp.com/#Support), and entering **Remote Graphics Software**.

Installing applications

The workstation blade might not contain any removable-media storage devices (such as a CD/DVD drive or diskette drive). Therefore, you must first make the application installation package accessible by the workstation blade when installing applications. The four most common methods to make the package accessible are:

- Blade hard drive—Copy the application installation package over the network to the workstation blade hard drive, and run the installation from the hard drive.
- PC hard drive—Copy the application installation package to the hard drive of your PC. Log in to the workstation blade from your PC using RGS, and then map the PC hard drive to the blade. Using RGS, run the installation package on the blade using the mapped network drive from the PC. A variation of this method is to save the installation package on a shared network drive, map the shared drive to the blade, and then install the application from the network drive.
- Local I/O Cable CD/DVD drive—Connect a USB CD/DVD drive to the Local I/O Cable, and install the application from a CD or DVD.
- iLO 2 virtual media—From your PC, use iLO 2 to connect to the workstation blade. Use the iLO 2 Remote Console and Virtual Media capabilities to connect the required media device from the PC to the workstation blade.

When the application installation package is accessible by the workstation blade, the installation can be initiated from your PC from the following devices:

- RGS (requires User Mode)
- iLO 2 Remote Console (requires Admin Mode, Setup Mode, or Server Mode)
- Windows® Remote Desktop Connection
- A keyboard, mouse, and monitor connected to the Local I/O Cable

Each installation method has advantages and limitations:

- Local installation using USB devices connected to the Local I/O Cable-This is generally the most reliable method, particularly for installations requiring multiple media. However, this method requires that you be physically present at the blade. A variation of this approach is to only attach the media using the Local I/O Cable, and then interact with the workstation blade remotely using RGS, RDC, or the iLO 2 Remote Console. However, manipulating media locally at the workstation blade while interacting remotely can be cumbersome.
- Copying the installation package to a hard drive (either on the workstation blade or the PC)-This method might not be possible, depending on the application installation procedure used. In particular, installations requiring multiple CDs or diskettes may not work with this method.
- Applications that depend on detection of the NVIDIA graphics adapter-The iLO 2 Remote Console and Local I/O Cable environments both require that the ATI video controller is displaying the Windows® desktop. If application installation depends on detection of the NVIDIA graphics adapter, an incorrect installation might result.

- Using RDC—If application installation depends on detection of the NVIDIA graphics adapter, an incorrect installation might result.
- Application installations that require a midway reboot-Both the Windows® RDC and RGS environments terminate their connections when the blade reboots. If application installation requires a midway reboot, RDC or RGS reconnection is required after the reboot.

After selecting the application installation method, install the applications using the installation process specified by each application.

Verifying functionality

1. Launch the workstation blade applications from the client computer.
2. Verify the applications work correctly, and provide the functionality, performance, and interactivity.

Integrating additional workstation blades and client computers

To ensure that each added device operates correctly with the existing solution components, HP recommends that you perform verification after each workstation blade and client computer is installed. For example, after integrating a new workstation blade into the solution, you can verify that RGS operates between the new workstation blade and an existing client computer.

Creating a custom Windows image

Creating a custom Windows image for the WS460c Workstation Blade

This chapter describes how to create a custom Windows® image for the WS460c Workstation Blade. You must include factory-installed components in your custom Windows® image.

Creating a custom Windows® image process

There are several ways to create a custom Windows image. This section describes creating the image by using the Windows® CD and adding the required software such as device drivers. All interactions are accomplished using a keyboard, mouse, CD/DVD drive, and monitor connected to the Local I/O Cable.

Required components

To create a custom Windows® image, the following software and hardware components are required:

- A method of connecting a diskette drive and a CD/DVD drive to the blade. This connection can be made in any of the following:
  - Local I/O Cable—Connect a USB hub, USB keyboard, USB mouse, USB CD/DVD drive, USB diskette drive, and a monitor to the Local I/O Cable. The USB hub is required, because the Local I/O Cable only has two USB connectors while four are required.
  - PC—From a PC, use iLO 2 Remote Console and virtual media to connect a diskette drive and CD/DVD drive to the blade.
- Microsoft® Windows® media—The Microsoft® Volume License media or a retail version can be used. You do not need to activate Volume License media.
- HP Remote Graphics Software
- If you are running Windows® XP 32-bit Edition, you must store the following files in the root directory of a diskette containing the HP Smart Array P410i SAS controller drivers:
  - hpcissm2.cat
  - hpcissm2.sys
  - hpcissx2.inf
  - txtsetup.oem (created by the software component for Windows® XP 32-bit Edition)

To extract these folders from the HP Package Setup window, select **Extract**. You are prompted to specify the folder in which you want the files to be extracted.



- Install the HP Blade Workstation Support Pack, which includes:
  - ATI ES1000 graphics driver
  - NVIDIA graphics driver
  - HP NC-Series Broadcom 10GbE Multifunction driver
  - HP ProLiant Integrated Lights-Out 2 Management Interface driver
  - HP ProLiant iLO 2 Advanced and Enhanced System Management Controller health driver

Optional software

SMH is optional, and can be downloaded from the workstation blade software and drivers website. SMH enables the status of the blade to be remotely monitored.

Creating the Windows® XP image

1. Connect a monitor, USB hub, keyboard, mouse, diskette drive, and CD/DVD drive to the Local I/O Cable.
2. Cycle power on the blade to initiate a reboot. When the BIOS console appears, change the BIOS Remote Console Mode to Setup Mode. Setup Mode causes the NVIDIA graphics adapter and ATI video adapter to both be visible to the Windows® operating system to ensure correct driver installation.
3. Boot to the ISO image with both the floppy and diskette driver (HPcissm2) mounted using the virtual media.
4. Boot the workstation blade from the Windows® XP CD.
5. Immediately after booting the Windows® operating system from the CD into the setup process, to install third-party drivers, press the **F6** key when prompted. The HP Smart Array P410i SAS controller driver installs. If using the remote console, you might experience a short delay between when you press the **F6** key and when the installation occurs.
6. When prompted, press the **S** key to indicate the availability of a diskette with the P410i SAS controller driver. Press **Enter.**
7. When prompted for the driver diskette, insert the diskette containing the HP Smart Array P410i SAS controller drivers, and then press **Enter.**
8. Select the Windows® 2000 Driver for Smart Array P410i SAS controller driver. Press **Enter** to install the driver.

9. When prompted, press **Enter** to begin the Windows® XP installation.
10. When prompted, select the manual installation option.
11. When prompted, press **F8** to accept the Microsoft® End-User Agreement.
12. Partition the hard drive. If your drive is bigger than 80Gb, verify that the partition to which you are installing the OS is 80Gb or less.
13. Install Windows® XP Professional in this newly-created partition.
14. Enter C to proceed with manual installation.
15. If the Windows® setup GUI prompts you for unsigned drivers, click **Yes** to install drivers that have not passed Windows® Logo testing.
16. Customize Windows® XP Professional by answering the questions, such as the time zone and computer name.
17. Enter the 25-character product key that identifies your copy of Windows® XP Professional.
18. Set the regional and language options.
19. From the Computer Name and Administrator Password screen, enter an Administrator password (required for the workstation blade). Both RGS and Windows® Remote Desktop Connection require access to a password-protected account. The password enables most of the remaining system configuration and application installation tasks to be performed over the network using RGS or Remote Desktop Connection.
20. Install and configure SNMP as follows:
    a. Open the **Windows Components Wizard.** Select **Management and Monitoring Tools,** and then click **Details.** Select **Simple Network Management Protocol,** and then click **OK.**
    b. Verify that SNMP Service in the Windows Component Services box displays `Started`. Right click **SNMP Service,** select **Properties,** and then click the **Security** tab. Ensure that the properties appear. If not, modify the Accepted community names. Other community names can be used. To modify the Integrated Management Log with the management agents, you must have a READ WRITE community defined.
21. When the installation process has been completed and the workstation blade has been rebooted, install the remainder of the required components HP Workstation Blade PSP Support Pack. Make note of the IP addresses for connections through RGS and RDC.
22. Update Windows with Microsoft service packs as required. If you are prompted during the Microsoft service pack installation to override an old driver, do not enable the override, and select **No.**

Configuring the operating system

After the Windows® operating system starts, configure it as follows:

1. Configure a solid-color Windows® wallpaper to maximize RGS performance.
2. If needed, configure WOL.
3. Turn off all power management functions (for example, hibernation) so that the workstation blade is powered on and available to respond to requests.
4. Configure the **Start>Shut Down** menu to have two options, Restart and Log off. Remove the Shut down, Stand by, and Hibernate options, because they require administrator intervention to power up the blade.

5. Configure the Windows® Firewall. The Windows® XP Professional SP3 Internet Connection Firewall has default settings that are too restrictive for many of the remote access and management functions. HP recommends the following firewall exceptions:
   - Windows® Remote Desktop Connection—Remote Desktop program exception
   - Windows® Remote Assistance—Remote Assistance program exception
   - Windows® File and Print Sharing (required for HP Insight Control server deployment)—File and Printer Sharing program exception
   - HP Remote Graphics Software—Add C:\Program Files\Hewlett-Packard
   - Remote Graphics Sender—\rgsender.exe program exception
   - SMH—Add the port exceptions listed in the table.

Description	Port	Protocol
HP SMH Web Server	2301	HTTP
HP SMH Secure Web Server	2381	HTTPS
WBEM/WMI Mapper	5988	HTP
WBEM/WMI Mapper (Secure)	5989	HTTPS
SSH Port	22	SSH
SNMP Agent	161	SNMP
SNMP Agent	162	SNMP Trap
Ping Discovery (ICMP)	—	ICMP
Ping Discovery (TCP)	80	HTTP
Management Processor	443	HTTPS

When configuring ports for HP SMH and HP SIM, see the HP Customer Advisory *HP Systems Insight Manager and HP System Management Homepage Do Not Function Properly After Upgrade to Microsoft Windows XP SP2*. This advisory can be found by entering the Customer Advisory number, `c01202170`, in the search box at the HP website (http://www.hp.com).

Description	Port	Protocol
RGS Sender	42966	SSL

If Insight Control server deployment is used, enable the **File and Print Sharing program** exception. Also add the port exceptions listed in the following table to enable Insight Control server deployment access to the workstation blade.

Port	Type	Description
53	TCP	Insight Control server deployment DNS and SQL
53	UDP	Insight Control server deployment DNS
67	TCP	Insight Control server deployment DHCP REQ
68	TCP	TDP DHCP REP
69	TCP	Insight Control server deployment M-TFTP
80	TCP	Insight Control server deployment iLO and HTTP
88	TCP	Insight Control server deployment

		Kerberos
88	UDP	Insight Control server deployment Kerberos
123	UDP	Insight Control server deployment SNMP
135	TCP	Insight Control server deployment AeXNS, DCOM, and SQL
135	UDP	Insight Control server deployment AeXNS and DCOM
137	TCP	Insight Control server deployment Netlogon SMB and SQL
161	TCP	Insight Control server deployment SNMP
162	TCP	Insight Control server deployment SNMP
389	UDP	Insight Control server deployment LDAP ping
401	TCP	Insight Control server deployment WOL
402	TCP	Insight Control server deployment Dep Agents
445	UDP	Insight Control server deployment MS-DS
636	TCP	Insight Control server deployment SSL LDAP
750	TCP	Insight Control server deployment Windows® 2000 AD
751	TCP	Insight Control server deployment Windows® 2000 AD
752	TCP	Insight Control server deployment Windows® 2000 AD
753	TCP	Insight Control server deployment Windows® 2000 AD
754	TCP	Insight Control server deployment Windows® 2000 AD
1010	TCP	Insight Control server deployment PXEConfig
1433	TCP	Insight Control server deployment SQL
1500	TCP	Insight Control server deployment RPC
1758	TCP	Insight Control server deployment TFTP
1759	TCP	Insight Control server deployment TFTP
2381	TCP	Insight Control server deployment, Insight Control server deployment Web Agent
2500	TCP	Insight Control server deployment RPC

4011	TCP	Insight Control server deployment Ext DHCP PXE

For more information about creating the Windows® XP image, see "Creating the Windows® XP image (on page 16)".

Deploying the Windows image

1. Run the `sysprep` command to generate new security IDs on each target system. For more information, see the Microsoft documentation.
2. Capture the image.
3. Deploy the image to the workstation blades.

Using Windows XP Professional x64 Edition on the workstation blade

Windows® XP Professional x64 Edition on the workstation blade

While Windows® XP Professional x64 Edition is supported on the workstation blade, this OS is not available factory-installed. Windows® XP Professional x64 Edition must be acquired, installed, and configured by your IT department. Because so many of the Windows® XP Professional x64 Edition processes are similar to the processes for Windows® XP 32-bit Edition, this chapter focuses on those processes that are different or unique for Windows® XP Professional x64 Edition.

Windows® XP Professional x64 Edition processes

This section assumes you are familiar with the chapter "Creating a custom Windows® XP image ("Creating a custom Windows image" on page 15)." This section describes the key differences in how Windows® XP Professional x64 Edition is deployed compared to Windows® XP. The key aspects are:

- Acquire the Windows® XP Professional x64 Edition installation media from Microsoft®.
- For a list of hardware and software that is supported on Windows® XP Professional x64 Edition:
  - see *Hardware and Software Supported by HP ProLiant Workstation Blades*, and
  - see the HP website (http://www.hp.com/#Support), and then when prompted for a product, enter **WS460c.**
- The Windows® XP Professional x64 Edition software and drivers must be downloaded from HP. When prompted to select the operating system, select **Microsoft® Windows® XP Professional x64 Edition.** To extract the files to create the diskette you will use during the Windows® XP Professional x64 Edition installation from the HP Package Setup window, click **Extract.**



To install the Windows® XP image, see "Creating the Windows® XP image (on page 16)".

In some setups, the identical SoftPaqs are available on both the 32-bit and 64-bit version download pages. For example, for the Broadcom Multifunction Drivers, the 32-bit and 64-bit SoftPaqs are identical. In other setups, such as the SATA/SAS Controller Driver, unique 32-bit and 64-bit SoftPaqs are located. This information might enable some efficiencies in your management of SoftPaqs if you are supporting workstation blades running both Windows® XP 32-bit Edition and Windows® XP Professional x64 Edition.

- Version 2.2 of the HP SAM SoftPaq is required for Windows® XP Professional x64 Edition. The previous SAM release, version 2.1, is not supported on Windows® XP Professional x64 Edition.
- The BIOS version is not dependent on the operating system that you are using. To see a list of supported operating systems, see the HP website (http://www.hp.com/#Support). When prompted for a product, enter **WS460c.** HP recommends updating your workstation blades to the latest BIOS version available.
- QFEs are OS-specific. Install the Windows® XP Professional x64 Edition QFEs required by your IT department. 64-bit QFEs are available on the HP download webpage. Also, search the Microsoft® website (http://www.microsoft.com) for 64-bit QFEs.

Using Windows Vista on the workstation blade

Installing Windows Vista®

The installation process partitions and formats the workstation blade hard drive. Because all files are deleted from the hard drive during this process, be sure to archive all important files before beginning the installation.

You can install Windows Vista® with two methods:

- Run the installation process using devices attached to the Local I/O Cable-A USB hub (with a keyboard, mouse, and CD/DVD drive), and a monitor.
- Run the installation process using iLO 2 virtual media from your local PC. This is the slower method, and is susceptible to network issues.

Installing Windows Vista® on a workstation blade

1. Install Windows Vista® according to standard Microsoft® installation instructions.
2. Install the HP Workstation Blade PSP Support Pack.

Viewing the Windows Vista® desktop

To view the Windows Vista® desktop, you must have RGS 5.3.0.

Using Windows 7 on the workstation blade

Installing Windows 7

The installation process partitions and formats the workstation blade hard drive. Because all files are deleted from the hard drive during this process, be sure to archive all important files before beginning the installation.

You can install Windows® 7 with two methods:

- Run the installation process using devices attached to the Local I/O Cable-A USB hub (with a keyboard, mouse, and CD/DVD drive), and a monitor.
- Run the installation process using iLO 2 virtual media from your local PC. This is the slower method, and is susceptible to network issues.

Installing Windows 7 on a workstation blade

1. Install Windows® 7 according to standard Microsoft® installation instructions.
2. Install the HP Workstation Blade PSP Support Pack.

Viewing the Windows 7 desktop

To view the Windows® 7 desktop, you must have RGS 5.3.0.

Capturing a workstation blade image using HP Insight Control server deployment

Using HP Insight Control server deployment

HP Insight Control server deployment can be used to capture the OS image of the workstation blade for both the Windows® XP x32-bit and Professional x64 Editions. This chapter assumes you are familiar with Insight Control server deployment. For more information on Insight Control server deployment, see the HP website (http://h18013.www1.hp.com/products/servers/management/rdp.html?jumpid=reg_R1002_USEN).

The following procedure provides an overview of the process used to capture the OS image. The first procedure step depends on whether you plan to use Altiris to run Sysprep or plan to run Sysprep manually.

Step 1: Configure the workstation blade (reference computer) from where the image is captured.

Prepare the workstation blade where the image is located:

a. Install, update, and configure the OS—Ensure that the OS is configured, including updates and patches.

b. Change Remote Console Mode—If you must view the capture process using the iLO 2 Remote Console or the Local I/O Connector of the workstation blade, then Remote Console Mode must be set to Admin Mode or Setup Mode. For information on setting Admin Mode or Setup Mode, see "Setting Remote Console Mode (on page 7)".

   Insight Control server deployment contains jobs that can be used to automatically set Remote Console Mode to the desired state.

   Setting Remote Console Mode to Admin Mode or Setup Mode is not required for capturing an image. Setting Remote Console Mode to Admin Mode or Setup mode enables you to view the capture process using iLO 2. If Remote Console Mode is in User Mode, you cannot view the Windows® desktop until after the image is captured, and you use RGS or Remote Desktop Connection to log into the workstation blade.

   If you do set Remote Console Mode to Admin Mode or Setup Mode, you must change the mode back to User Mode after the image is captured.

   To capture an OS image and deploy it to multiple other computers, the Sysprep tool must be run to set a new SID and to apply new system settings, such as the computer name. If you plan to use Altiris Deployment Server to run Sysprep, continue with step 2. If you plan to run Sysprep manually, proceed to step 5.

Step 2: If required, configure the Altiris Deployment Server to run Sysprep.

Depending on your Insight Control server deployment configuration, this step might have already been completed. To configure the Altiris Deployment Server to run Sysprep, refer to the Deployment Solution documentation available from Altiris at http://www.altiris.com (http://www.altiris.com).

Step 3: Configure the A-Client (Altiris Agent) so that it is installed on the workstation blade.

If you are using Altiris to run Sysprep, you must configure the A-client (Altiris Agent) so that it is installed on the workstation blade:

a. On the Altiris Deployment Server, click **Tools > Remote Agent Installer**. The Remote Agent Installer screen appears. Select **Use this username and password for client/s**. Using an Administrative account local to target, click **Next**.

b. Accept the default install directory path or choose your own, and then select **Enable this agent to use SIDgen and/or Microsoft Sysprep**.

c. To configure optional settings on the A-client, click the **Change Settings** button, and then click **Next.**

d. Click the dropdown arrow, and then select **Use only Microsoft Sysprep utility**. Locate the DEPLOY.cab file you downloaded in step 2, and in the XP/2003 box, using the browse button next to Windows® XP/2003, click **Next**.

e. Select **Add client(s) to default group**, or select the group to add them to.

f. On the Selecting Clients screen, select or add the Names or IP address of the workstation blades you want to install A-clients on by using the Add button. You can select multiple workstations at a time. When finished adding workstations, select **Finish**. The progress and results of the Altiris Agent installation appear.

Step 4: Create a job that captures the image using Altiris to run Sysprep.

To create a new job that captures the OS image using Altiris to run `Sysprep`:

a. Under the jobs pane in the white area, right-click and select **New Job**. Enter a unique name for the job. Double click the new job, click **Add>>,** and then select **Create Disk Image**.

b. On the Save Disk Image to a file screen next to the name field, click the **browse** button, locate the images folder (<Express Share>\Images), and then enter a unique image name for your image. Click **Save**.

c. Select **Prepare using Sysprep,** and then enter the Product key to be used. If you have a specific pre-boot environment you want to run the image in, select it at the bottom of the screen. The default is WinPE.

d. Accept the defaults on the Return Codes screen.

Continue to step 7.

Step 5: Run Sysprep manually.

To run Sysprep manually, see the article *"How to use the Sysprep tool to automate successful deployment of Windows® XP,"* available at http://support.microsoft.com/kb/302577 (http://support.microsoft.com/kb/302577). If you run Sysprep manually, you must run it, shut down the computer, and then boot directly to PXE manually (F12 on POST) to run the image process without booting to the OS first.

Step 6: Create an Altiris job to capture the image that does not use Altiris to run Sysprep.

To create an Altiris capture job that does not run Sysprep:

a. Under the jobs pane in the white area, right-click and select **New Job.** Enter a unique name for the job. Double click the new job, click **Add>>,** and then select **Create Disk Image.**

b. On the Save Disk Image to a file screen, next to the name field, click the **Browse** button, locate the images folder (<Express Share>\Images), and then enter a unique image name for your image. Click **Save.**

c. Click the **Advanced** button next to the pre-boot select. In the middle of the screen, select **Do not boot to production**. Altiris A-Client does not run the system image preparation procedure that includes Sysprep. Choose one of the following:

— If you are running Sysprep manually

— If you are not using Sysprep at all and want to make a carbon image of you computer

d. Accept the defaults on the Return Codes screen.

Step 7: Apply the new Altiris job to computers whose images you are capturing.

- You can drag and drop that job to computers in the Insight Control server deployment console.
- Select the computer in the Computers pane of the Altiris Console. In the right pane, you can see all running jobs and their status.

Deploying a workstation blade image using HP Insight Control server deployment

Using HP Insight Control server deployment for Windows® XP Professional x64 Edition

HP Insight Control server deployment can be used to deploy an operating system image to the workstation blade for both the Windows® XP 32-bit Edition and Windows® XP Professional x64 Edition. This chapter assumes you are familiar with Insight Control server deployment. For more information on Insight Rapid server deployment, see the HP website (http://h18013.www1.hp.com/products/servers/management/rdp.html?jumpid=reg_R1002_USEN).

The following procedure provides an overview of the process used to deploy an OS image. The first procedure step depends on whether you plan to use Altiris to run Sysprep, or if you plan to run Sysprep manually.

Step 1: If needed, change Remote Console Mode.

If you need to view the deployment process using the iLO 2 Remote Console or the Local I/O Connector of the workstation blade, Remote Console Mode must be set to Admin Mode or Setup Mode. for information on setting Admin Mode or Setup Mode, see "Setting Remote Console Mode (on page 7)."

Insight Control server deployment contains jobs that can be used to automatically set Remote Console Mode to the desired state.

Setting Remote Console Mode to Admin Mode or Setup Mode is not required for deploying an image. Setting Remote Console Mode to Admin Mode or Setup Mode enables you to view the deployment process using iLO 2. If Remote Console Mode is kept in User Mode, you cannot view the Windows® desktop until after the image is deployed, and you use RGS or Remote Desktop Connection to log in to the workstation blade.

If you do set Remote Console Mode to Admin Mode or Setup Mode, you must change the mode back to User Mode after the image is deployed.

Step 2: If required, configure the Deployment Server to run Sysprep.

Depending on your Insight Control server deployment configuration, this step might need to be completed. To configure the Altiris Deployment Server to run Sysprep, see the Deployment Solution documentation available from Altiris at http://www.altiris.com (http://www.altiris.com).

Step 3: If needed, install A-Client (Altiris Agent) on the target computer (this agent will use Sysprep).

If the target computer currently has an OS installed, you can optionally install the Altiris A-client to automate the system shutdown and PXE boot. If the target computer already has A-client installed, and is seen by the Altiris deployment console, you do not need to perform this step. To install the Altiris A-client, perform the following steps:

a. Click **Tools>Remote Agent Installer**. The Remote Agent Installer screen appears. Select **Use this username and password for client/s**. Using an Administrative account local to target, click **Next**.

b. Accept the default install directory path or choose your own.

c. Because you are using Altiris to run sysprep, select **Enable this agent** to use SIDgen and/or Microsoft® Sysprep.

d. To configure option settings on the A-client, click the **Change Settings** button. Click **Next**.

e. Click the arrow, and then select **Use only Microsoft Sysprep utility**. Locate the DEPLOY.cab file you downloaded in step 2, and in the XP/2003 box using the browse button next to Windows® XP/2003, click **Next**.

f. Select **Add client(s) to default group**, or select the group you want them to be added to.

g. On the Selecting Clients screen, select or add the Names or IP address of the workstations you want to install A-clients to. Use the Add button to select multiple at a time. When finished adding systems, select **Finish**. The progress and results of the installation appear.

Step 4: Create a new job (that uses Altiris to run Sysprep) to deploy the OS image.

To create a new job that deploys the OS using Altiris to run Sysprep:

a. Under the jobs pane, right-click in the white area and then select **New Job**. Enter a unique name for the job. Double click the new job, click **Add>>,** and then select **Distribute Disk Image**.

b. Use the browse button next to the name field to locate the image file you want to use. This file must be located on the Altiris express share or a location manually mapped for Altiris and pre-boot environment to use.

c. Select **Prepared Using Sysprep**. Add the appropriate operating system and key.

d. To specify the Sysprep answer file, select **advanced**. Select **Use default answer file** to use the Altiris default file (this can be modified), or **Use the following answer file** to enter your own.

e. Select the appropriate boot environment, click **Next**, accept the defaults, and then click **Finish**.

Continue with step 7.

Step 5: If needed, install A-Client (Altiris Agent) on the target computer (this agent will not use Sysprep).

If the target computer currently has an OS installed, you can optionally install the Altiris A-client to automate the system shutdown and PXE boot. If the target computer already has A-client installed, and is seen by the Altiris deployment console, you can omit this step. To install the Altiris A-client, perform the following steps:

a. Click **Tools>Remote Agent Installer**. The Remote Agent Installer screen appears. Select **Use this username and password for client/s**. Using an Administrative account local to target, click **Next**.

b. Accept the default install directory path, or choose your own.

c. To configure option settings on the A-client, click the **Change Settings** button. Click **Next**.

d. Select **Add client(s) to default group**, or select the group you want them to be added to.

e. On the Selecting Clients screen, select or add the Names or IP address of the workstations you want to install A-clients. Use the Add button to select multiple at a time. When finished adding systems, select **Finish**. The progress and results of the installation appear.

Step 6: Create a new job (that does not use Altiris to run Sysprep) to deploy the image

Perform the following steps to create a new job that deploys the OS, but does not use Altiris to run Sysprep:

a. Under the jobs pane, right-click in the white area, and then select **New Job**. Enter a unique name for the job. Double click the new job, click **Add>>,** and then select **Distribute Disk Image**.

b. On the first screen, use the browse button next to the name field to locate the image file you want to use. This file must be located on the Altiris express share or a location manually mapped for Altiris and pre-boot environment to use.

c. Select the appropriate boot environment, click **Next**, accept the defaults, and then click **Finish**.

Step 7: Deploy the OS using the new Altiris job.

This step might require a manual PXE boot, depending on whether you have configured the Altiris A-client to automate computer shutdown and PXE boot. To perform a manual PXE boot, press **F12** key during POST.

a. Drag and drop that job to computers in the Insight Control server deployment console.

b. By selecting the computer in the Computers pane of the Altiris Console in the right pane, you can view the job and the status.

Performing an unattended installation of Windows XP

Unattended installations

This chapter provides an overview of the steps to perform an unattended installation of Windows® XP. This chapter describes the essential elements that are specific to workstation blades.

Performing an unattended installation

This section describes the steps to perform an unattended installation of Windows® XP and Windows® XP Professional x64 Edition.

1. Create and update the remote install distribution share.
2. In the distribution share, create a directory structure to store the OS installation files, as well as the HP-specific drivers and software for the workstation blade.
   a. Windows® XP Professional SP3—The OEM folder is created under the i386 directory, which was originally created manually or via Remote Installation Service.
   b. Windows® XP Professional x64—The AMD64 and i386 subdirectories contain the OS files, and the OEM folder must be on the same level as amd64 and i386
3. Download the software and drivers required for unattended installation:
   a. Uncompress the SoftPaq, and copy the folder and contents of the `conrep` and `unsignok` folders to the OEM\$1\HP_Install directory.
   b. Download the latest drivers and software for the workstation blade.
   c. Copy RGS and additional utilities in various distribution sub-folders.
4. Create `regedit` command files in the OEM\$1\HP_Install directory to change registry settings for RGS to work properly.

   The following registry modifications are given as examples only.



IMPORTANT: Editing the registry might cause serious issues with Windows® operating systems. Although these examples have been shown to work, use these examples at your own risk.

   a. Turn off Fast User Switching—In this example, Fast User Switching is turned off by a script file called "FastUserSwitching.reg," which contains the following lines:

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows
NT\CurrentVersion\Winlogon]
  "AllowMultipleTSSessions"=dword:00000000
  "LogonType"=dword:00000000
```

   Where:

`LogonType`—Set to 0 to display the security dialog box, set to 1 to display the new Welcome screen.

`AllowMultipleTSSessions`—Set to 0 to disable fast user switching, set to 1 to enable switching.

b. Turn off Simple File Sharing—In this example, Simple File Sharing is turned off by a script called "Simple File Sharing.reg" with the following lines:

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa]

"forceguest"=dword:00000000

Where:

`forceguest`—Set to 0 to disable and turn off simple file sharing, set to 1 to turn on simple file sharing.

5. Add workstation blade-specific entries to the different sections of the unattended answer file, either unattend.txt or ristndrd.sif (for RIS installation). The following entries are based on the example directories created in step 2, and must be adapted to your configuration if it differs from the directories shown in step 2.

For more details on the creation of the unattended.txt file, see the Microsoft® documentation.

a. Windows® XP Professional SP3

— Add to the [Unattended] section

Plug and Play driver location:

```
OemPNPDriversPath=\textmode;HP_Install\Drivers\chipset\intel;HP_Ins
tall\Drivers\graphics\ati;HP_Install\Drivers\Management\IMA;HP_Inst
all\Drivers\Management\ILO_MC;HP_Install\Drivers\Management\ILO_MI;
HP_Install\Drivers\network\Broadcom
```

Other settings:

```
OemPreinstall=Yes
DisableVirtualOemDevices=Yes
DriverSigningPolicy=Yes
```

— Add to the [MassStorageDrivers] section

```
[MassStorageDrivers]
"Windows 2000 Driver for Smart Array P400 and P410i Controllers"=OEM
```

— Add to the [OEMBootFiles] section

```
[OEMBootFiles]
CISSm2.sys
HpCISSx2.inf
HpCISSm2.cat
```

txtsetup.oem

— Add to the [GuiUnattended] section

```
[GuiUnattended]
AutoLogonCount=2
```

— Add to the [NetOptionalComponents] section

```
[NetOptionalComponents]
SNMP = 1
```

The above entry installs SNMP during setup. This is required in order for the management agents to install.

— Add to the [GuiRunOnce] section

```
[GuiRunOnce]
"%systemdrive%\HP_Install\Driver_Software_Install2.cmd"
```

The previous entry will run the `Driver_Software_Install.cmd` install script that will install drivers and software at first login after install.

— Add to the [WindowsFirewall] section

```
[WindowsFirewall]
Profiles = WindowsFirewall.TurnOffFirewall
[WindowsFirewall.TurnOffFirewall]
Mode = 0
```

In the previous firewall example, the Windows® firewall is disabled see the Windows® documentation on firewall settings). In practice, HP does not recommend disabling the Windows® firewall unless another firewall is in use. For more information, see "Configuring the operating system (on page 17)".

b. Windows® XP Professional x64 Edition

— Add to the [Unattended] section:

Plug and Play driver location:

```
OemPNPDriversPath="\\%SERVERNAME%\RemInst\%INSTALLPATH%\$OEM$\textmode;Drivers\HP_NULL_IPMI;Drivers\HP_SmartArray_P410i_SAS;Drivers\Intel_chipset;Drivers\ "
```

For both Windows® XP 32-bit Edition and Windows® XP Professional x64 Edition, the path for the NVIDIA driver is intentionally omitted. Because the workstation blade contains two video controllers, the workstation makes the NVIDIA driver primary during the install, and if Remote Console Mode is in Setup Mode, the screens go black. This change occurs because the iLO Remote Console and Local I/O Connector displays are controlled by the ATI controller, and are deactivated if NVIDIA is the primary controller. The NVIDIA driver is installed later in the installation process and activated before switching to User Mode.

The ATI drivers that are downloadable from the workstation blade software and drivers web page are not Microsoft® signed. If you do not to use the unsigned drivers, the default VGA driver in the operating system is loaded. Remove the ATI lines in the driver path to prevent the ATI driver from loading.

Other settings:

```
OemPreinstall=Yes
DisableVirtualOemDevices=Yes
DriverSigningPolicy=Yes
```

— Add to the [MassStorageDrivers] section:

```
[MassStorageDrivers]
"Windows Driver for Smart Array SAS/SATA Controllers"="OEM"
```

— Add to the [OEMBootFiles] sections:

```
[OEMBootFiles]
txtsetup.oem
hpcisss2.cat
```

```
hpcisss2.sys
hpcissx2.inf
```

— Add to the [GuiUnattended] section:

```
[GuiUnattended]
AutoLogonCount=2
```

— Add to the [NetOptionalComponents] section:

```
[NetOptionalComponents]
SNMP = 1
```

This entry installs SNMP during setup. This entry must be made must be made, or the management agents will not install correctly.

— Add to the [GuiRunOnce] section:

```
[GuiRunOnce]
"%systemdrive%\HP_Install\Driver_Software_Install2.cmd"
```

This entry runs the install script Driver_Software_Install.cmd, which will install drivers and software at first login after install.

— Add to the [WindowsFirewall] section:

```
[WindowsFirewall]
Profiles = WindowsFirewall.TurnOffFirewall
[WindowsFirewall.TurnOffFirewall]
Mode = 0
```

In this example, the Windows® firewall is disabled (see Windows® documentation on firewall settings). In practice, HP does not recommend disabling the Windows® firewall unless another firewall is in use. See "Configuring the operating system (on page 17)" for recommended firewall settings.

— (Optional) [NetAdapters] sections—To ensure that the network card is enumerated correctly, specifically state them in the unattended file. For example:

```
[NetAdapters]
Adapter01=Params.Adapter01
  Adapter02=Params.Adapter02
[Params.Adapter01]
  InfID="b06bdrv\l2nd&pci_164c14e4"
PciBusNumber = 3
  PciDeviceNumber = 0
  PciFunctionNumber = 0
  ConnectionName = "HP NC373i Multifunction Gigabit Server Adapter #1"
[Params.Adapter02]
  InfID="b06bdrv\l2nd&pci_164c14e4"
  PciBusNumber = 7
  PciDeviceNumber = 0
  PciFunctionNumber = 0
  ConnectionName = "HP NC373i Multifunction Gigabit Server Adapter #2"
```

6. Using an RIS server—If you are using Microsoft® RIS, you must add network drivers to the i386 (Windows® XP Professional SP3) or AMD64 (Windows® XP Professional x64 Edition SP3)

subdirectories. See http://h20000.www2.hp.com/bizsupport/TechSupport/SoftwareDescription.jsp?lang=en&cc=us&swItem=MTX-0ef50f2982c344a189375e2745&jumpid=reg_R1002_USEN (http://h20000.www2.hp.com/bizsupport/TechSupport/SoftwareDescription.jsp?lang=en&cc=us&swItem=MTX-0ef50f2982c344a189375e2745&jumpid=reg_R1002_USEN) for more information.

Download the HP NC-Series Multifunction Drivers for RIS/WinPE. For example, for Windows® XP Professional x64 Edition, the b06nd.inf and b06nd51a.sys files are needed for RIS. Add the files and restart RIS.

7. Connect the target workstation blade to the distribution share per your unattended remote installation process, such as boot floppy, RIS, Insight Control server deployment, or Altiris.

Example Windows® XP Pro GuiRunOnce script

The GuiRunOnce script installs the required software and drivers in the proper order, and runs after the first boot. A sample version of this script is included in the HP Workstation Blade Unattended install support Files downloaded in step 3. This script runs after first boot. Create the following script, name it "Driver_Software_Install.cmd," and then copy it to OEM\$1\HP_Install directory (see [GuiRunOnce], step 5e). Modify as needed.

```
rem @echo off
title HP Driver and Software Install Script
rem Starting - Change Registry Entree for RGS
          regedt32.exe /s %systemdrive%\HP_Install\forceguest.reg
        regedt32.exe /s %systemdrive%\HP_Install\FastUserSwitching.reg
          rem Complete - Change Registry Entree for RGS
rem Starting XPUnsignOK2.exe to automatically push accept button for Unsigned
ATI driver
            echo.
                        echo Starting XPUnsignOK2.exe
                        start
%systemdrive%\HP_Install\unsignok\XPUnsignOK2.exe
                      echo XPUnsignOK2.exe Started
rem Starting ATI driver install
                        echo.
                        echo Starting ATI driver install
                        cd %systemdrive%\HP_Install\Drivers\graphics\ATI
                        cpqsetup.exe /s
            rem Completed ATI driver install
rem Starting NVIDIA driver install
            echo.
            echo Starting NVIDIA driver install
            cd %systemdrive%\HP_Install\Drivers\graphics\nvidia
            setup.exe -s -i
            rem Completed NVIDIA driver install
echo Installing RGS
```

```
            cd %systemdrive%\HP_Install\RGS\
            setup.exe /s
/f1"%systemdrive%\HP_Install\RGS\ReceiverInstall.iss"
            echo Completed Installing RGS
rem Starting Management Agent install
                  echo.
                  echo Starting Management Agent install
                cd %systemdrive%\HP_Install\Drivers\management\IMA
                  agents_32.msi /quiet
                  rem Completed Management Agent install
rem Starting Management Homepage install
                  echo.
                  echo Starting Management Homepage install
                  cd %systemdrive%\HP_Install\Drivers\management\SMH
                  sp36105.exe /s
            rem Completed Management Homepage install
rem Changing to USER mode, next reboot)
rem  Options on this command includes :
rem     -fsetup.dat : change system to setup mode
rem     -fuser.dat : change to user mode
rem     - fadmin.dat : change system to admin mode
            echo.
            echo Starting Management Homepage install
            cd %systemdrive%\HP_Install\conrep
            conrep.exe -l -fuser.dat -xconrep.xml
            rem Completed Changing to USER mode, next reboot
echo.
echo HP Install Script Complete
echo.
echo Init Reboot
start shutdown -r -t 30
exit
```

Example Windows® XP Pro 64 GuiRunOnce script

```
rem @echo off
title HP Driver and Software Install Script
rem Starting XPUnsignOK2.exe to automatically push accept button for Unsigned
ATI driver
            echo.
            echo Starting XPUnsignOK2.exe
```

```
            start %systemdrive%\HP_Install\unsignok\XPUnsignOK2.exe
            echo XPUnsignOK2.exe Started
rem Complete XPUnsignOK2.exe to automatically push accept button for Unsigned
ATI driver
rem Starting ATI driver install
            echo.
            echo Starting ATI driver install
            cd %systemdrive%\Drivers\ATI
            cpqsetup.exe /s
rem Completed ATI driver install
rem Starting NVIDIA driver install
            echo.
          echo Starting NVIDIA driver install
          cd %systemdrive%\Drivers\NVIDIA
            setup.exe  -h"1024" -v"768" -b"24" -j"60" -s
rem Completed NVIDIA driver install
rem Starting Broadcom driver install
            echo.
            echo Starting Broadcom driver install
            cd %systemdrive%\Drivers\Broadcom
            cpqsetup.exe /s
rem Completed Broadcom driver install
rem Starting Management Agent install
            echo.
            echo Starting Management Agent install
            cd %systemdrive%\Drivers\HP_Insight_Management_Agents
            cpqsetup.exe /s
rem Completed Management Agent install
rem Starting HP Proliant iLO2 Management Controller install
            echo.
            echo HP Proliant iLO2 Management Controller install
            cd %systemdrive%\Drivers\HP_iLO2_Management_Controller
            cpqsetup.exe /s
rem Completed HP Proliant iLO2 Management Controller install
rem Starting HP Proliant iLO Management Interface install
            echo.
            echo Starting HP Proliant iLO Management Interface install
            cd %systemdrive%\Drivers\HP_Proliant_iLO_Management_Interface
            cpqsetup.exe /s
```

```
rem Completed HP Proliant iLO Management Interface install
rem Starting System Management Homepage install
            echo.
            echo Starting Management Homepage install
            cd %systemdrive%\Drivers\HP_System_Management_Homepage
            cpqsetup.exe /s
rem Completed Management Homepage install
rem Starting firewall.cmd to punch holes in firewall (see Appendix C in this
whitepaper)
            echo.
            echo Starting firewall.cmd
          start %systemdrive%\HP_Install\firewall\firewall.cmd
          echo firewall.cmd Started
rem Complete firewall.cmd
rem Changing to USER mode, next reboot)
rem  Options on this command includes :
rem     -fsetup.dat : change system to setup mode
rem     -fuser.dat : change to user mode
rem     - fadmin.dat : change system to admin mode
            echo.
            echo Starting Management Homepage install
            cd %systemdrive%\HP_Install\conrep
            conrep.exe -l -fuser.dat -xconrep.xml
            rem Completed Changing to USER mode, next reboot
shutdown -r -t 300 -f
echo.
echo HP Install Script Complete
exit
```

Example firewall punch holes script (firewall.cmd)

```
netsh firewall add portopening TCP 2381 "HP SMH Secure Web Server (TCP 2381)"
netsh firewall add portopening TCP 5988 "WBEM/WMI Mapper (TCP 5988)"
netsh firewall add portopening TCP 5989 "WBEM/WMI Mapper Secure (TCP 5989)"
netsh firewall add portopening TCP 22 "SSH port (TCP 22)"
netsh firewall add portopening TCP 161 "SNMP port 161 (TCP 161)"
netsh firewall add portopening TCP 162 "SNMP port 162 (TCP 162)"
netsh firewall add portopening TCP 53 "DNS (TCP/UDP 53)"
netsh firewall add portopening TCP 67 "DHCP Request (TCP 67)"
netsh firewall add portopening TCP 68 "DHCP Reply (TCP 68)"
netsh firewall add portopening TCP 69 "M-TFTP (TCP 69)"
```

```
netsh firewall add portopening TCP 80 "HTTP + ILO (TCP 80)"
netsh firewall add portopening TCP 126 "SNMP port 126 (TCP 126)"
netsh firewall add portopening TCP 137 "Netlogon SMB (TCP/UDP 137)"
netsh firewall add portopening TCP 401 "WOL (TCP 401)"
netsh firewall add portopening TCP 402 "RDP dep agents (TCP 402)"
netsh firewall add portopening TCP 636 "SSL LDAP (TCP 636)"
netsh firewall add portopening TCP 750 "Active Directory (TCP 750)"
netsh firewall add portopening TCP 751 "Active Directory (TCP 751)"
netsh firewall add portopening TCP 752 "Active Directory (TCP 752)"
netsh firewall add portopening TCP 753 "Active Directory (TCP 753)"
netsh firewall add portopening TCP 754 "Active Directory (TCP 754)"
netsh firewall add portopening TCP 1010 "PXEconfig (TCP 1010)"
netsh firewall add portopening TCP 1433 "SQL (TCP 1433)"
netsh firewall add portopening TCP 1500 "RPC (TCP 1500)"
netsh firewall add portopening TCP 1758 "TFTP (TCP 1758)"
netsh firewall add portopening TCP 1759 "TFTP (TCP 1759)"
netsh firewall add portopening TCP 2500 "RPC (TCP 2500)"
netsh firewall add portopening TCP 4011 "External DHCP PXE (TCP 4011)"
netsh firewall add portopening UDP 123 "SNTP (UDP 123)"
netsh firewall add portopening UDP 445 "SMB (UDP 445)"
netsh firewall add portopening TCP 53 "DNS (TCP 53)"
netsh firewall add portopening UDP 53 "DNS (UDP 53)"
netsh firewall add portopening TCP 135 "AeXNS+DCOM+SQL (TCP 135)"
netsh firewall add portopening UDP 135 "AeXNS+DCOM+SQL (UDP 135)"
netsh firewall add portopening TCP 88 "Kerberos (TCP 88)"
netsh firewall add portopening UDP 88 "Kerberos (UDP 88)"
netsh firewall add portopening TCP 389 "LDAP (TCP 389)"
netsh firewall add portopening UDP 389 "LDAP (UDP 389)"
netsh firewall set icmpsetting 8
```

User information

User information introduction

This chapter describes how to interact with the workstation blade from the client computer (desktop client, laptop client, thin client, workstation client, and so on). This chapter includes:

- Powering on the client
- Changing the behavior of RGS
- Connecting from the client to the blade
- Sending Ctrl+Alt+Delete to the workstation blade
- Accessing workstation blade desktop windows
- Moving desktop windows between monitors
- Spanning multiple displays with a desktop window
- Using RGS

Powering on the client

To power on the client, press the power button on the blade front panel. The computer cycles through a startup sequence in less than a minute and then displays either an Enterprise Directory authentication window or the remote display control panel. If a Webmin administration screen appears, your client has not been properly configured. Contact your administrator for assistance.

Changing the behavior of RGS

You might have to change the behavior of RGS. This is done using the RGS Receiver Control Panel, the Remote Display Window Toolbar, or the Virtual KVM. The Receiver Control Panel enables you to change all connections between a client and one or more blades. The Remote Display Window Toolbar controls only a single connection. The Virtual KVM allows switching between connections in situations where you have more display area on your blades than you have monitors on the client. For more information about configuring RGS, see the *HP Remote Graphics User's Guide*.

The RGS Receiver must be in Setup Mode (where keyboard and mouse input are directed to the RGS Receiver) to access the RGS controls. When the RGS Receiver is in Setup Mode, the display fades to gray as a visual queue. Setup Mode is activated by entering certain key sequences while the RGS Receiver window is selected. By default, the key sequence to enter Setup Mode is press **Shift**, press **Space**, and release **Space** (or, more simply, hold down the **Shift** key, then press and release the **Space** bar). When in Setup Mode (while still holding the **Shift** key), you can:

- Press the **M** key (Setup Mode + M) to display the Receiver Control Panel.
- Press the **H** key (Setup Mode + H) to display the Remote Display Window Toolbar.
- Press the **Tab** key to access the Virtual KVM.

If these key sequences do not work, contact your administrator.

Connecting from the client to the blade

RGS supports these basic operating modes:

- The Normal Mode enables RGS to connect to a single remote computer.
- The Directory Mode enables RGS to connect to multiple remote computers.

For more information about RGS operation, see the *HP Remote Graphics Software User Guide*.

Sending Ctrl+Alt+Delete to the workstation blade

Using **Ctrl+Alt+Delete,** you can log in, access the Windows® Task Manager, or lock the desktop. If you are accessing a workstation blade from the following clients, the process is identical to a desk side system-the **Ctrl+Alt+Delete** key sequence is forwarded directly to the blade:

- HP Workstation Blade Client
- HP dc72 Workstation Blade Client
- HP dc73 Workstation Blade Client

If you are using a client running Microsoft® Windows®, **Ctrl+Alt+Delete** is intercepted by the Windows® operating system. When this happens, the Microsoft® Windows® Security screen is generated by the client computer, not by the workstation blade. If this occurs:

1. Click **Cancel**.
2. Open the RGS Remote Display Window Toolbar, select **Changing the behavior of RGS,** and then click the **Ctrl+Alt+Del** button.

You can also use the alternate sequence, **Ctrl+Alt+End**, from a Microsoft® Windows® client. If this sequence is disabled in RGS, enable it:

1. Open the RGS Control Panel (Setup Mode + M).
2. Click the **Advanced** button.
3. Click the **Hotkeys** tab.
4. Select **Send CTRL-ALT-END key sequence as CTRL-ALT-DEL**.

Spanning multiple displays with a desktop window

The workstation blade NVIDIA graphics adapter supports a large display area (up to 4x2500x1600). The client computer automatically adjusts its display area to accommodate the blade desktop window, limited by the number and resolution of the monitors. For example, you might want a single workstation blade desktop window to span two client monitors, each with a 1280x1024 resolution, placed side-by-side. The process to size the blade desktop window is the same as changing the display resolution on a traditional PC or workstation running Windows® XP:

1. Right-click in an open space in the workstation blade desktop window, and then select **Properties**.
2. Click the **Settings** tab.
3. Under the Settings tab, adjust the screen resolution slider to 2560x1024, and then click **OK**.

The desktop window now spans two monitors. If the desktop window starts on the right-most monitor, move the desktop window to the left-most monitor to view it in its entirety.

Using RGS

If RGS is your primary protocol, see the Using RGS chapter in the *HP Remote Graphics Software User Guide* ("*Using RGS*" on page 42, *http://bizsupport1.austin.hp.com/bc/docs/support/SupportManual/c01883671/c01883671.pdf*).

Acronyms and abbreviations

BBWC

battery-backed write cache

DHCP

Dynamic Host Configuration Protocol

DNS

domain name system

HP SIM

HP Systems Insight Manager

iLO 2

Integrated Lights-Out 2

OA

Onboard Administrator

PCI Express

Peripheral Component Interconnect Express

PDU

power distribution unit

POST

Power-On Self Test

QFE

quick fix engineering

RDC

remote desktop connection

RGS

remote graphics software

RIS

reserve information sector

SAM

Session Allocation Manager

SAS

serial attached SCSI

SATA

serial ATA

SIM

Systems Insight Manager

SMB

Server Message Block

SMH

System Management Homepage

TFTP

Trivial File Transfer Protocol

USB

universal serial bus

WOL

Wake-on LAN

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