



HP Z220, Z420, Z620, and Z820 Workstations Microsoft® Windows® XP Installation Reference Guide

Important information on installing the Windows XP Operating System on HP Z220, Z420, Z620 and Z820 Workstations.

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Introduction

This document provides important information for customers planning to install the Windows® XP Operating system on newest HP workstations the HP Z220, Z420, Z620, and Z820. The information includes HP's role in the overall support of Windows XP on these platforms, describes where to find HP recommended drivers and patches for Windows XP on these platforms, and list other important installation notes and errata.

HP's Role in Supporting Windows XP

For customers unable to migrate to later versions of Microsoft® Windows® operating systems now, HP will make reasonable efforts to provide hardware support for Microsoft® Windows® XP on certain configurations of HP Z220, Z420, Z620, and Z820 Workstations that were introduced in 2012. The list of tested hardware is limited and may change. The current list can be found:

Windows XP Hardware Support Matrix for Z series workstations: www.hp.com/support/workstation_manuals

HP's ability to provide hardware support for Microsoft® Windows® XP is dependent on support from Independent Hardware Vendor (IHV) partners, such as Intel®, nVidia® and AMD®. Over time, it is expected that it will become increasingly difficult to resolve Microsoft® Windows® XP specific issues and resolution in some cases may not be forthcoming. Microsoft® has announced that only security fixes will be issued for Microsoft® Windows® XP going forward. Other vendors have indicated that resources applied to Microsoft® Windows® XP related issues will decrease over time and end at some unidentified point in the future. Microsoft "Extended Support" for Windows® XP ends August 4, 2014.

For these reasons, HP strongly recommends migration to Microsoft® Windows® 7 as soon as possible.

Important information about Windows XP Distribution Options

HP and other Microsoft OEMs were previously permitted to distribute Workstations pre-installed with the Microsoft Windows® XP Professional on Workstations with Windows® Vista Business or Windows® 7 Professional COAs. These downgrade facilitation rights were granted to all Microsoft OEMs. The facilitation rights expired on October 22nd, 2010 and since that date, HP and all other OEMs are no longer allowed to ship any PCs pre-installed with the Windows® XP.

The exception to this rule is for systems on which HP installs a customer-provided software image that contains Windows XP as part of a contracted service in our factory.

The ability to provide Restore Media for Windows XP for new systems has also been discontinued.

HP suggests visiting these websites for detail on Microsoft's Lifecycle for Windows® XP:

<http://www.microsoft.com/windows/lifecycle/default.mspx>

<http://support.microsoft.com/gp/lifecycle>

Locating HP Recommended Drivers and Patches

HP has compiled drivers for selected hardware. They are located at – www.hp.com/support/workstation_swdrivers

Installation Notes / Errata

System BIOS

Microsoft® Windows® XP Pro (32 bit) and Microsoft® Windows® XP Pro x64 require a system BIOS of version 1.07 or later.

This and later BIOS include many features specific and necessary for proper operation under Microsoft® Windows® XP Pro (32 bit) and Microsoft® Windows® XP Pro x64.

QFE Installation Recommendations

HP recommends installing the following Microsoft® QFEs to reduce risk of effects due to known/resolved issues:

- Microsoft® Windows® XP Pro (32 bit)
 - QFE 958244 – Resolves issues with 8+ Logical Cores
- Microsoft® Windows® XP Pro x64
 - QFE 932755 – Assists in resolution of RAID loading issues

BIOS Setting Change Recommendations

When installing Microsoft® Windows® XP Pro x64, set the SCU Controller to hidden Path: F10 > Security > Device Security > SCU Controller (Change to Hidden).

Installation of Intel RST GUI may result in loading of Unsigned RST Drivers

OS Version: Microsoft® Windows® XP Pro (32 bit)
Workstation Model: Z420, Z620, Z820

Observation: Installing the Intel RST GUI through the setup executable and accepting defaults will result in replacement of the Signed version with an unsigned version.

Comments: HP recommends utilizing Signed RST Drivers.

Resolution: HP suggests utilizing the “nodrv” command line option for overriding this default. See “**Locating HP Recommended Drivers and Patches**” above. Example: RSTe_3.1.0.1085_PV.exe -nodrv

TPM Support

OS Versions: Microsoft® Windows® XP Pro (32 bit) and Microsoft® Windows® XP Pro x64
Workstation Models: Z220, Z420, Z620, Z820

Notification: Trusted Platform Module operation is not supported.

Logical Core Limit

OS Version : Microsoft® Windows® XP Pro (32 bit)
Workstation Model: Z620, Z820

Observation: Microsoft® Windows® XP Pro (32 bit) does not function properly with more than 24 logical cores.

Solution: Disable Hyper Threading for all Dual Processor configurations with 8 or more Physical Cores per processor.

Availability of RAM

OS Version: Microsoft® Windows® XP Pro (32 bit)
HP Workstation Models: Z220, Z420, Z620, Z820

Observation: Memory available to the user/applications after system set up may be less than on earlier HP Workstations.

Solution: None. This behavior is expected and is not an indication of a technical issue.

Missing PCI Device Driver - VEN_8086&DEV_1D6B

OS Versions: Microsoft® Windows® XP Pro x64
HP Workstation Models: Z420, Z620, Z820

Observation: Device Manager shows a driver missing for the device named VEN_8086&DEV_1D6B

Comments: The behavior is expected. This device (SCU HDD Controller) is not supported under Microsoft® Windows® XP Pro x64.

Solution: During system startup, hit the F10 key to enter BIOS Setup and disable the SCU. Path: F10 > Security > Device Security > SCU Controller (Change to Hidden)

Slower than expected HDD and/or system performance

OS Version: Microsoft® Windows® XP Pro (32 bit)
HP Workstation Models: Z220, Z420, Z620, Z820 equipped with 512e HDDs.

Observation: Hard Disk Drive (HDD) and/or Overall system performance slower than expected.

Comments: A recent industry change in HDD sector sizing may cause reduced hard disk performance and therefore a reduction in system performance for Hard Disk Drive focused applications, etc. Microsoft® Windows® XP Pro (32 bit) does not support the new standard directly.

Resolution: Determine if the image applied to the HDDs is properly aligned. Align the image if necessary. Additional information can be found in an HP White Paper titled "Preparing Advanced Format hard drives for Microsoft Windows installations on HP Business Notebook PCs, Workstations, and Desktop PCs"

This document is located at: www.hp.com/support/workstation_manuals

Intel® vPro™/AMT manageability features unavailable

OS Version: Microsoft® Windows® XP Pro (32 bit) and Microsoft® Windows® XP Pro x64
HP Workstation Models: Z220, Z420, Z620, Z820 equipped with 512e HDDs.

Observation: When running Windows® XP, Intel® vPro™/AMT, OS centric manageability features are missing.

Comments: This behavior is expected. When running Windows® XP, Intel® vPro™/AMT manageability features are limited to those available independent of the Operating System ("out-of-band" features).

Resolution: None. The behavior is expected.

Device Manager shows an "Unknown Device"

OS Version: Microsoft® Windows® XP Pro (32 bit)
HP Workstation Models: Z420, Z620, Z820

Observation: Device Manager shows an "Unknown Device" with Device ID: ACPIACPI0004\CPUSCK0 (and CPUSCK1 on dual-CPU systems).

Comments: The condition does not affect system performance.

Resolution: Upgrade system to BIOS 1.07

Wake on USB with Keyboards and Mice

OS Version: Microsoft® Windows® XP Pro (32 bit)
HP Workstation Models: Z420, Z620, Z820

Observation: System does not wake up on USB activity from Keyboards and Mice

Resolution: Connect keyboards and or mice to USB 3.0 ports

ReadFile failure on 1394 HDDs during heavy system stress

OS Version: Microsoft® Windows® XP Pro (32 bit)
HP Workstation Models: Z420, Z620, Z820

Observation: An error may occur when reading from 1394 HDD when connected to the onboard 1394A controller. "ReadFile Failure (1450) - Insufficient system resources exist to complete the requested service.".

Comments: This error will only occur under heavy system stress. The command is expected to complete without error if retried.

Resolution: Retry the command.

BSOD 0x0A or 0xF4 during Reboot

OS Version: Microsoft® Windows® XP Pro (32 bit)
HP Workstation Model: Z820

Observation: System may exhibit a BSOD 0x0A or 0xF4 when booting into Windows® after a reboot when both a 1394 HDD is connected and a network cable is connected.

Resolution: Power cycle the system using the system power button on the front panel.

RAID Installations

Installing Operating System Directly to a RAID Array

OS Version : Microsoft® Windows® XP Pro x64
HP Workstation Models: Z420, Z620

Observation: Load failures may occur when installing Microsoft® Windows® XP Pro x64 directly onto a RAID array.

Solution: Install to a non-RAID drive, install QFE 932755 and then build the Array.

Attempting Installation Prior to completion of RAID initialization

OS Versions : Microsoft® Windows® XP Pro (32 bit) and Microsoft® Windows® XP Pro x64
HP Workstation Models: Z220, Z420, Z620, Z820

Observation: Unexplained load failures

Solution: Ensure that RAID initialization has completed prior to starting OS load

Performing a clean install of Windows XP on HP Z Workstations

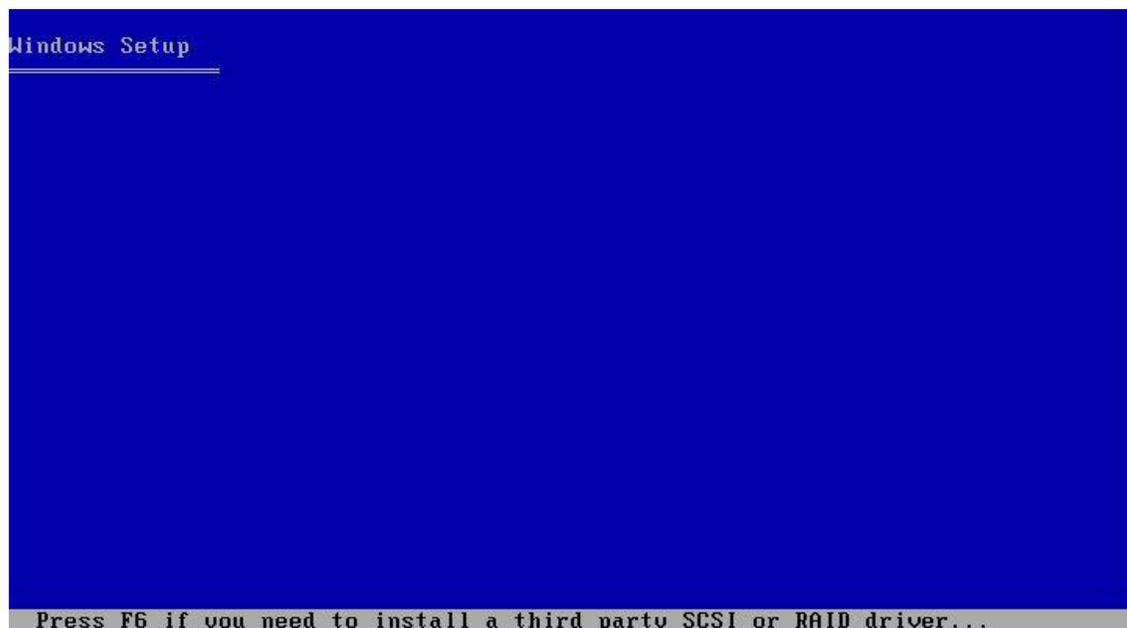
A clean installation consists of removing all data from your hard disk by repartitioning and reformatting your hard disk and reinstalling the XP operating system and programs to an empty hard disk.

Hardware requirements

- HP Z220, Z420, Z620, or Z820 workstations with the supported processor
- 1 gigabytes (GB) of RAM
- At least 900 MB of available disk space during installation
- CD-ROM or DVD drive
- (USB) Floppy Diskette Drive
- Floppy Diskette including XP Storage driver

To perform a clean installation of Windows XP, follow these steps:

1. Back up all important information before you perform a clean installation of Windows XP. Save the backup to an external location, such as a CD or external hard disk.
2. Start your computer from the **Retail Windows XP CD**. To do this, insert the Windows XP CD into your CD drive or DVD drive, and then restart your computer.
3. When you see the "Press any key to boot from CD" message, press any key to start the computer from the Windows XP CD.
4. Setup begins by first inspecting the computer's hardware, displaying the message Setup is inspecting your computer's hardware configuration.
5. Press F6 key to use an original equipment manufacturer's (OEM) device driver to support the new mass storage controller.



- The setup process proceeds with loading files until it reaches the stage where it requires the third-party driver. When setup reaches the stage where it requires the third-party driver, it provides the following interactive display:

```
Windows Setup
-----
Setup could not determine the type of one or more mass storage devices
installed in your system, or you have chosen to manually specify an adapter.
Currently, Setup will load support for the following mass storage device(s):

<none>

* To specify additional SCSI adapters, CD-ROM drives, or special
  disk controllers for use with Windows, including those for
  which you have a device support disk from a mass storage device
  manufacturer, press S.

* If you do not have any device support disks from a mass storage
  device manufacturer, or do not want to specify additional
  mass storage devices for use with Windows, press ENTER.

S=Specify Additional Device  ENTER=Continue  F3=Exit
```

- Pressing the S key on the keyboard will cause Setup to search drive A for a driver. If there is no disk in the drive, Setup displays a message asking for the manufacturer-supplied hardware support disk.
- Insert the floppy disk containing the storage driver and press the Enter key on the keyboard to continue. Setup reads the information about the floppy disk and displays the available driver choices.
- Make sure the proper driver is selected and press the Enter key on the keyboard to continue. Setup begins loading the selected driver. A confirmation of the selected driver will be shown in an interactive display. If additional drivers must be installed, press the S key on the keyboard, otherwise press the Enter key to continue.

10. Setup continues loading files for a short period of time. After the necessary files have been loaded, a message appears for a brief moment: Setup is starting Windows. In the interactive display that follows, the user has the option of selecting whether to setup Windows XP (install), repair an existing installation using the Recovery Console, or exit the Setup process. Press the Enter key on the keyboard to continue.

```
Windows XP Professional Setup

Welcome to Setup.

This portion of the Setup program prepares Microsoft(R)
Windows(R) XP to run on your computer.

• To set up Windows XP now, press ENTER.
• To repair a Windows XP installation using
  Recovery Console, press R.
• To quit Setup without installing Windows XP, press F3.

ENTER=Continue R=Repair F3=Quit
```

11. The Windows XP Licensing Agreement appears in an interactive display. Use the Page Down key on the keyboard to scroll through the text while reading it. After reading the licensing agreement, scroll to the bottom of the page and press the F8 key on the keyboard to agree with the Windows XP Licensing Agreement and continue with the installation.

```
Windows XP Licensing Agreement

Microsoft Windows XP Professional
END-USER LICENSE AGREEMENT

IMPORTANT-READ CAREFULLY: This End-User
License Agreement ("EULA") is a legal agreement between you
(either an individual or a single entity) and Microsoft
Corporation for the Microsoft software product identified above,
which includes computer software and may include associated
media, printed materials, "online" or electronic documentation,
and Internet-based services ("Product"). An amendment or
addendum to this EULA may accompany the Product. YOU AGREE TO BE
BOUND BY THE TERMS OF THIS EULA BY
INSTALLING, COPYING, OR OTHERWISE USING THE
PRODUCT. IF YOU DO NOT AGREE, DO NOT INSTALL
OR USE THE PRODUCT; YOU MAY RETURN IT TO YOUR
PLACE OF PURCHASE FOR A FULL REFUND.

1. GRANT OF LICENSE. Microsoft grants you the following rights
provided that you comply with all terms and conditions of
this EULA:

* Installation and use. You may install, use, access,
display and run one copy of the Product on a single
computer, such as a workstation, terminal or other device
("Workstation Computer"). The Product may not be used
by more than two (2) processors at any one time on any

F8=I agree ESC=I do not agree PAGE DOWN=Next Page
```

12. The next interactive display shows the existing hard disks and partitions that are available in the computer. If there are multiple partitions or multiple hard disks they are identified in the interactive display. Any unpartitioned space on the disk will need to be partitioned and formatted before it can be used. The interactive display example below shows a 120 GB hard disk that is not partitioned. To use all of the existing unpartitioned space, press the Enter key on the keyboard and continue at Step 13 of these procedures. In order to partition the disk for use press the C key on the keyboard and proceed to Step 14.

```
Windows XP Professional Setup

The following list shows the existing partitions and
unpartitioned space on this computer.

Use the UP and DOWN ARROW keys to select an item in the list.

• To set up Windows XP on the selected item, press ENTER.
• To create a partition in the unpartitioned space, press C.
• To delete the selected partition, press D.

120825 MB Disk 0 at Id 0 on bus 0 on atapi [MBR]

  Unpartitioned space          120825 MB

ENTER=Install  C=Create Partition  F3=Quit
```

13. The interactive display might show that the new partition was created, using all of the available disk space, and is ready to be formatted. To format the partition, select **Format the partition using the NTFS file system** and press the Enter key on the keyboard, and proceed to Step 17.

NOTE: On some installations, the screen might show options for formatting the partition using the FAT file system. For the Evaluated Configuration, the FAT file system must not be used. In addition, the Quick format option does not check the hard disk for errors and should not be used when preparing the system for the Evaluated Configuration.

```
Windows XP Professional Setup

A new partition for Windows XP has been created on
120825 MB Disk 0 at Id 0 on bus 0 on atapi [MBR].
This partition must now be formatted.

From the list below, select a file system for the new partition.
Use the UP and DOWN ARROW keys to select the file system you want,
and then press ENTER.

If you want to select a different partition for Windows XP,
press ESC.

Format the partition using the NTFS file system <Quick>
Format the partition using the NTFS file system

ENTER=Continue  ESC=Cancel
```

14. If selecting To create a partition in the unpartitioned space in Step 12, the next interactive display will provide the ability to define the size of the new partition. The default size selected will be the full amount of the unpartitioned space that was previously selected. Either reduce the size for the required partition from the number shown on the screen, or accept the default. Press the Enter key on the keyboard to accept the settings and proceed.

```
Windows XP Professional Setup

You asked Setup to create a new partition on
120825 MB Disk 0 at Id 0 on bus 0 on atapi [MBR].

• To create the new partition, enter a size below and
  press ENTER.

• To go back to the previous screen without creating
  the partition, press ESC.

The minimum size for the new partition is      8 megabytes <MB>.
The maximum size for the new partition is 120817 megabytes <MB>.
Create partition of size <in MB>: 120817

ENTER=Create  ESC=Cancel
```

15. The interactive display shows the available disk partitions. This time it displays the new partition that is available for installation. Select the newly created partition and press the Enter key to proceed with the installation.

```
Windows XP Professional Setup

The following list shows the existing partitions and
unpartitioned space on this computer.

Use the UP and DOWN ARROW keys to select an item in the list.

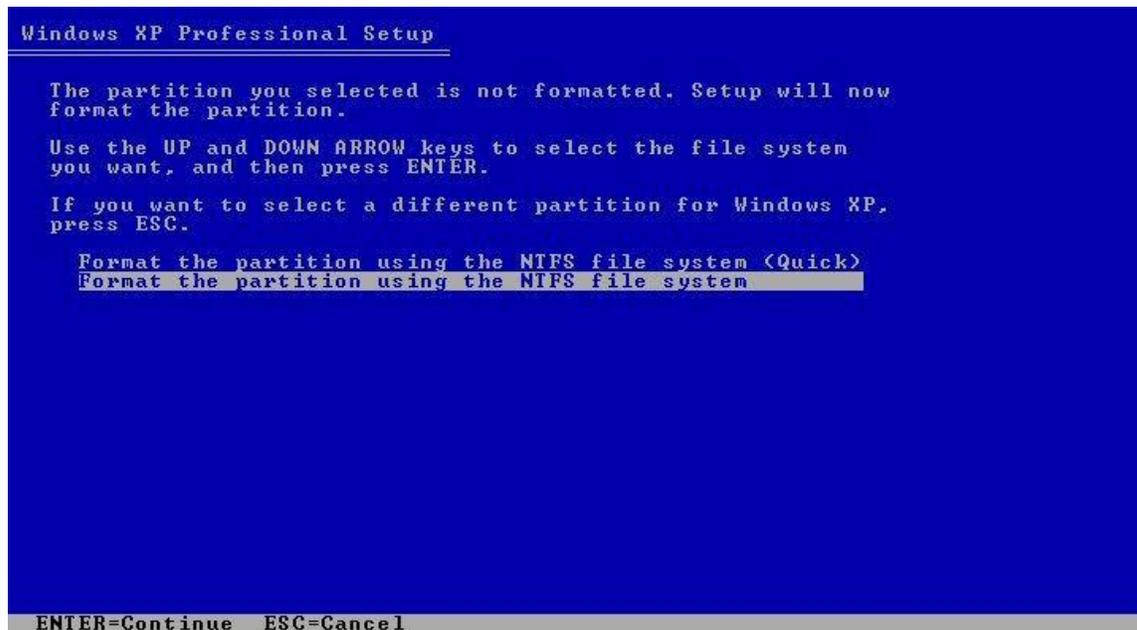
• To set up Windows XP on the selected item, press ENTER.
• To create a partition in the unpartitioned space, press C.
• To delete the selected partition, press D.

120825 MB Disk 0 at Id 0 on bus 0 on atapi [MBR]

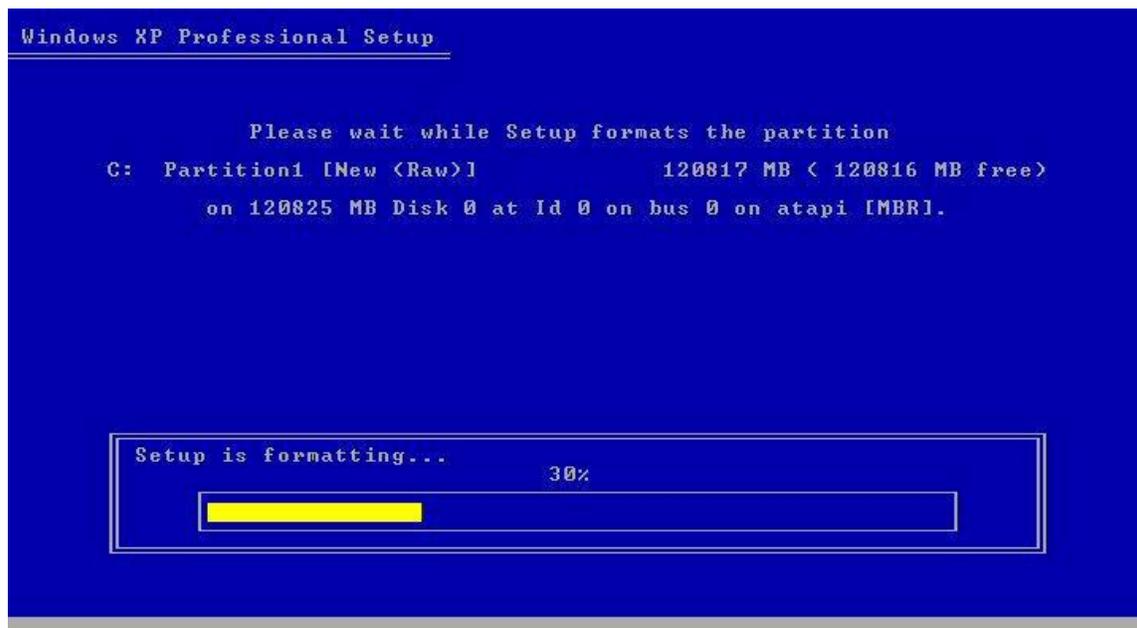
C: Partition1 [New <Raw>]          120817 MB < 120816 MB free>
  Unpartitioned space              8 MB

ENTER=Install  D=Delete Partition  F3=Quit
```

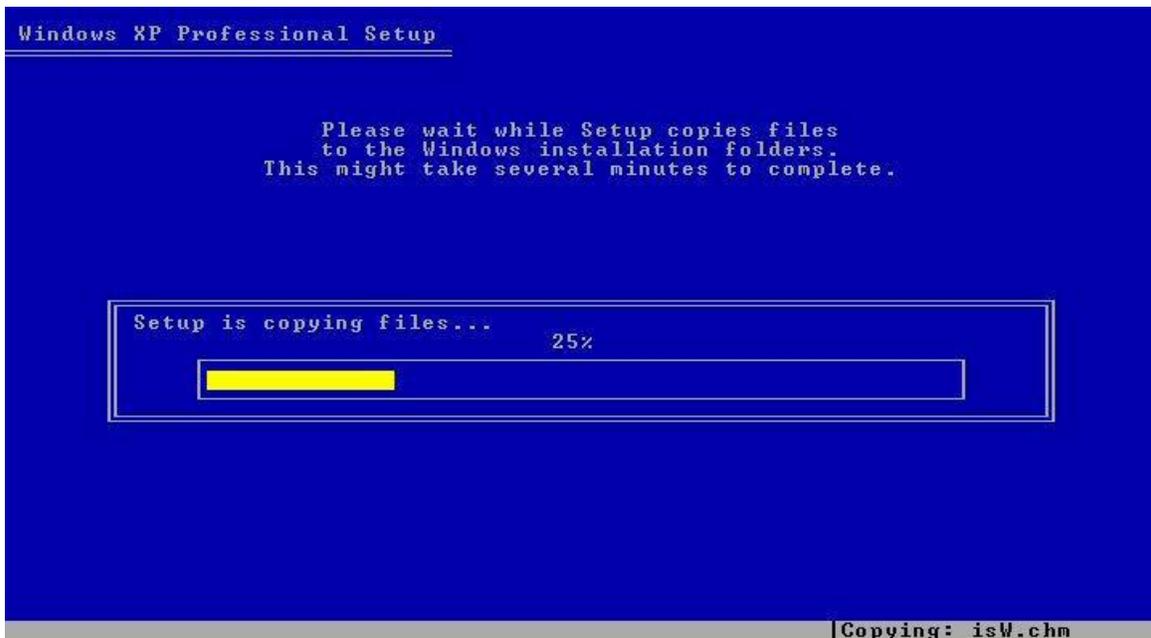
- The interactive display will present the options for formatting the selected partition. Select Format the partition using the NTFS file system and press the Enter key on the keyboard to continue.



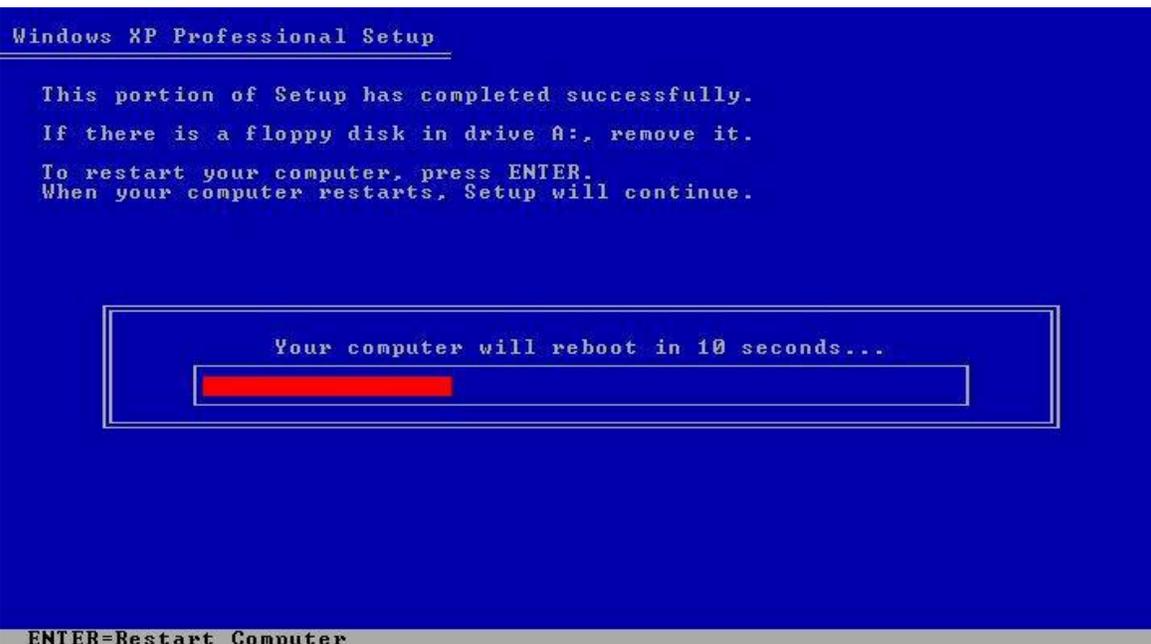
- Windows XP Professional Setup will start formatting the partition.



18. After formatting is completed, Windows XP Professional Setup will examine the disks and then proceed to copy the necessary operating system files to the hard disk.



19. When all files have been copied to the hard disk, Windows XP Professional Setup will restart the computer. Make sure to remove any disk from the floppy drive. Allow Setup to count down to the restart, or press the Enter key to restart the computer.



20. When the computer reboots, the installation will continue in the GUI mode. The GUI mode installation phase is explained in the next section.
21. Follow the instructions on the screen to complete the Windows XP Setup. After completing the Windows XP Setup, drivers, software, and Microsoft® QFEs should be installed.
22. Refer to the Driver List located at www.hp.com/support/workstation_swdrivers for the latest driver set.

23. Install the following Microsoft® QFEs to reduce risk of effects due to known/resolved issues:

•	• Enhancements and QFEs	• Version / QFE #
• 1	• Microsoft® Windows® XP Pro (32 bit) – Resolves issues with 8+ Logical Cores	• QFE 958244
• 2	• Microsoft® Windows® XP Pro x64 - Assists in resolution of RAID loading issues	• QFE 932755

24. Install Video or Storage firmware if needed.

Get connected

hp.com/go/getconnected

Current HP driver, support, and security alerts
delivered directly to your desktop

