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# Installing Microsoft Windows NT Workstation 4.0 on Compaq Armada Products

**Abstract:** *This white paper focuses on the steps necessary for the successful installation of Microsoft Windows NT Workstation (NTW) 4.0 with Service Pack 3 on Compaq Armada Portable Products. The steps outlined provide you with complete installation procedures and work regardless of the currently installed operating system.*

*For details on Compaq's overall operating system strategy, operating system features, and the installation of additional Service Packs, please refer to the white paper titled "Operating System Support for Compaq Portable Platforms."*

*This document is intended for Compaq personnel and customers needing information on installing Microsoft NT Workstation 4.0 on selected Compaq Armada portable products.*

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Installing Microsoft Windows NT Workstation 4.0 on Compaq Armada Products  
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## Introduction

This white paper discusses installing Microsoft Windows NT Workstation (NTW) 4.0 with Service Pack 3 (SP 3) on Compaq Armada portable products. This white paper provides step by step instructions for the installation process. When you have completed all of the procedures outlined for your specific platform, you will have successfully installed Windows NTW and all Compaq provided software deliverables to extend functionality and enhance the overall user experience.

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**NOTE:** *You must back up all data and applications prior to installing Microsoft NTW.*

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## Installation Requirements and Dependencies

Before beginning the installation scripts for any of the platforms, obtain the items listed below.

The following items can be obtained directly from Microsoft:

- Microsoft Windows NTW 4.0 CD and the three setup diskettes
- Microsoft Windows NTW Service Pack 3 CD
- Microsoft MS-DOS v6.22 Boot Disk with FDISK utility

The following items can be obtained from Compaq:

- The latest Compaq Support Software CD containing all updated drivers and deliverables needed in the section, "Installation of Compaq Drivers and Enhancements." The Compaq Support Software CD is updated monthly and is available either via an annual subscription or as a one-time purchase. The user interface mirrors the Compaq Website.

Alternatively, all files may be obtained from the Compaq Website at <http://www.compaq.com/support/files/portables/us/index.html>. See Appendix 1, "Downloading Software from the Compaq Website" for instructions on using the Compaq Website if you are unfamiliar with obtaining SoftPaqs.

- You **must** obtain the latest version of the drivers and enhancements that are compatible with Windows NTW. Previous versions may not work or may produce anomalies.

Alternatively, you may use the Compaq Software CD. **However**, many of these drivers and enhancements have been updated. Therefore, Compaq strongly suggests you obtain the latest versions from the current Compaq Support Software CD or the Compaq Website **before** you begin these installation procedures.

- The most current available ROM for your platform. See Appendix 4, "Determining your ROM Version and Upgrading if Needed" for information on determining your current ROM version and how to update if necessary.
- A blank, high-density floppy diskette if you choose to make the recommended Emergency Rescue Diskette.

## Terms and Assumptions

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**NOTE:** *Attempt the installation of Windows NTW only while on AC Power. This prevents the unit from abruptly shutting down if it runs out of battery power, which could corrupt the installation.*

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- Secondary-click - The term secondary-click is used throughout the scripts. For right-handed mouse users, this is the right mouse button. For left-handed mouse users, this is the left mouse button.
- Drive Letters – All drive letters used for hard drives and CD-ROM drives are examples only. Your individual configuration may make the examples incorrect. For example, you are told to click CD-ROM drive D: when actually your CD-ROM drive letter is E:.
- Drivers and Enhancement File Locations – Most drivers and enhancements are assumed to be in the directory C:\~COMPAQ\XXXXXXXXX where XXXXXXXXX is the subdirectory name created by the SoftPaq utility for these scripts. See Appendix 2, “Using the SoftPaq Utility” if you are not familiar with the SoftPaq utility and how to extract files from them. One possible exception is the Real Mode CD-ROM drivers that may be on diskette, normally the A: drive.
- Restarting the Computer – During the Windows NTW installation, and the installation of several drivers and enhancements, you are prompted to restart the computer. Please ensure that you have removed any floppy diskettes from the diskette drive and the Windows NTW disc from the CD-ROM drive as applicable before restarting the computer.
- Real Mode CD-ROM Drivers – Depending upon your platform, these can be found on the Web, either under Windows 3.1, Windows 95 or Windows 98. They will be listed as either “IDE CD-ROM Drivers” under the Storage section or as “Real Mode Support” under the Utilities section.
- When the term Web is used, it is synonymous with the [www.compaq.com/support/files/portables/us/index.html](http://www.compaq.com/support/files/portables/us/index.html), the Support Software CD, the Compaq BBS, or the Compaq FTP site. It is important that you obtain the latest Windows NTW compatible drivers and enhancements from one of these sites.
- Instructions for using the Compaq Website and Compaq SoftPaqs are located in the appendices at the end of this document.

# Installation Scripts

## NTW Installation – Armada 1500, 4100, & 4200 Families

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**NOTE:** *Make sure that the system is undocked (Standalone) and there are no PC Cards in the PCMCIA slots when installing the operating system.*<sup>1</sup>

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1. Prior to installing Windows NTW, the original operating system should be removed from the system. To remove the original operating system, boot the system with an MS-DOS v6.22 Boot Disk. Next, delete the all DOS partitions using the FDISK utility. If you are unsure how to use the FDISK program, refer to the Microsoft KB article Q76802 for instructions. This article may be found online at <http://support.microsoft.com/support/kb/articles/q76/8/02.asp>.



**CAUTION:** Do not delete the Non-DOS partition that contains Compaq Diagnostics and Setup/P.

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2. Restart the system with the first NTW Setup Disk inserted into the diskette drive and the NTW CD inserted into the CD-ROM drive. Windows NTW reads the entire contents of the first disk into memory and prompts you for the second NTW setup disk.
3. Insert Setup Disk Two per the instructions and press **Enter**. The ‘Welcome to Setup’ screen is displayed.
4. Press **Enter**. The next screen describes how Setup automatically detects the computer’s standard controllers.
5. Press **Enter**. You are prompted for NTW Setup Disk Three.
6. Insert disk three into the drive and press **Enter** to continue. You are informed that an *IDE CD-ROM (ATAPI 1.2)/PCI IDE Controller* has been found.
7. Press **Enter**. The Windows NTW Licensing Agreement displays.
8. Read through the agreement by pressing **PgDn**, then press **F8** to agree to accept the terms of the Licensing Agreement. Setup displays any hardware that is detected.
9. Press **Enter** to display a list of hard drive partitions upon which to install the operating system.

If you are not familiar with hard drive partitioning schemes, see the *File Systems and their use on Compaq Armada Portable Products* white paper. For additional information, see Chapter 5 of your Windows NT Workstation manual, “Beginning Installation.”

10. Select the 2<sup>nd</sup> option, Unpartitioned space, and press **Enter**.

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<sup>1</sup> See Appendix 5, “Docking for the First Time” for information on docking your Armada Portable for the first time.

11. Select the best file system for your applications, then press **Enter**. If you are unsure which file system to select, contact your IT department or choose the FAT file system<sup>2</sup>.

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**NOTE:** *The FAT file system can be converted to NTFS<sup>3</sup> at a later time. If you select NTFS as your file system, it can only be changed to a FAT file system on the drive by reformatting the hard drive and reinstalling the operating system*

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12. If you choose FAT and the partition is larger than 2-GB, you are prompted that the size exceeds the amount supported by MS-DOS. You can return to the previous menu and create a 2-GB or smaller partition upon which to install the operating system. To do so:
  - a. Press **Esc** to return to the disk partitioning menu.
  - b. Highlight 'Unpartitioned space' and press **C**.
  - c. Enter the number of the partition you wish to create, then press **Enter**.
  - d. Highlight 'C: New (Unformatted)' and press **Enter**. The hard drive is formatted<sup>4</sup>.
13. Select the directory where the operating system will be installed by typing the appropriate directory name, then pressing **Enter**. It is recommended that the default directory of \WINNT be selected.
14. Press **Enter** to examine the hard disk for corruption, or **Esc** to skip the examination. It is recommended that you allow Setup to perform this step.
15. The system copies files from the NTW CD to the hard drive. This takes several minutes.
16. Remove the floppy disk from the diskette drive and press **Enter** to restart the computer.
15. After the computer restarts, the graphical portion of Setup loads and additional files are copied to the hard drive.
16. The Setup Wizard gathers information about the hardware. Click **Next**.
17. Select the type of installation is to be performed. If you are unsure which type of installation to select, contact your IT department or choose PORTABLE, then click **Next**.
18. Enter your name and, if desired, tab to the organization field and enter your company name. Click **Next**.
18. Enter the Product Key that came with your Windows NTW documentation, Certificate of Authenticity. Click **Next**.
19. Enter the computer name:
  - a. This name **must** be unique on the network.
  - b. The name can be up to 15 characters but should not include spaces.
  - c. If you are unsure what to name your computer, contact your IT department.
  - d. Enter the name and click **Next** to continue.

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<sup>2</sup> FAT partitions are limited to 4-GB under Windows NT Workstation and 2-GB for MS-DOS compatibility. You may need to redo step 11 and create a smaller partition. For more information on file systems, you may refer to the White Paper "File Systems and Their Use on Compaq Armada Portable Products." For additional information also refer to *Chapter 5 – Beginning Installation* in your Windows NT Workstation manual.

<sup>3</sup> If you choose to use NTFS, ensure that you use version 2.0F or later of F10 Setup/P.

<sup>4</sup> If you choose NTFS, the hard drive is formatted with FAT and converted on the next restart.

20. Select an Administrator password:
  - a. Enter, then reenter the password.



**CAUTION:** If you forget this password before setting up additional user accounts, the operating system will have to be reinstalled.

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- b. Click **Next**.

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**NOTE:** *If passwords do not match, you will be prompted to reenter them until they do.*

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21. You are asked if you want to create an Emergency Repair Disk. It is highly recommended that you make an Emergency Repair Disk.

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**NOTE:** *You can create additional Emergency Repair Disks after the installation is complete by running the RDISK program.*

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22. Select the operating system components you want to install, then press **Next**.

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**NOTE:** *If you are unsure, install the most common components.*

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The Installing Windows NTW Network screen is displayed.

23. Click **Next**. You are asked if you are on a network and if so, how you will be accessing the network. Since no two network setups are the same, it is highly recommended that you do not set up any networking components. You should contact your Network Administrators and have them properly set up the networking portions of NTW.
24. Choose 'Do not connect this computer to a network at this time' and click **Next**.
25. This phase is complete. Click **Finish** to continue the setup procedure.
26. Verify that the Date and Time are correct and choose the proper Time Zone, then click **Close**.
27. Verify that your video adapter was properly detected, then click **OK**.
28. Click **Test** and **OK** to test the defaults. A multicolor graphic is displayed for several seconds.
29. You are asked if the graph appeared correctly. Answer **Yes**, then click **OK** twice to continue setup.

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**NOTE:** *You will update the video drivers in the "Installation of Compaq Drivers and Enhancements" section so no changes are necessary at this time.*

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30. Various files are copied from the CD to the hard drive.
31. If you chose to make an Emergency Repair Disk, the configuration is saved and you are prompted to insert a floppy disk. Choose **OK** to make the Emergency Repair Disk.
32. You are prompted to restart the system. **Be sure you have removed any diskettes from the diskette drive.**

The Windows NTW installation is complete. Proceed to “Installing Service Pack 3 from CD.” After installing Service Pack 3, see “Installing Compaq Drivers and Enhancements” to install the additional drivers and support.

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**NOTE:** *You must install all drivers for your system to have complete functionality.*

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## NTW Installation – Armada 1700, 3500, 6500, and 7000 Families

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**NOTE:** *Make sure that the system is undocked (Standalone) and there are no PC Cards in the PCMCIA slots when installing the drivers.*<sup>5</sup>

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Prior to installing Windows NTW, the original operating system should be removed from the system. To remove the original operating system:

1. Boot the system with an MS-DOS v6.22 Boot Disk.
2. Delete all DOS partitions using the FDISK utility. If you are unsure how to use the FDISK program, refer to Microsoft’s KB article Q76802 for instructions. This article may be found online at <http://support.microsoft.com/support/kb/articles/q76/8/02.asp>.



**CAUTION:** Do not delete the Non-DOS partition that contains Compaq Diagnostics and Setup/P.

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Armada 6500 and 7000 Family users should now power off the system, swap the diskette drive for the CD-ROM drive and then restart the computer.<sup>6</sup>

To install Windows NTW:

1. Restart the system with the NTW CD inserted into the CD-ROM drive. The computer boots from the NTW CD and the system reads several files into memory.
2. Press **Enter** when the ‘Welcome to Setup’ screen displays.
3. You are informed that an *IDE CD-ROM (ATAPI 1.2)/PCI IDE Controller* has been found. Press **Enter**.
4. If you receive an informational screen that Setup has determined that your hard drive has more than 1024 cylinders, press **Enter**. The Windows NTW Licensing Agreement displays.
5. Read through the agreement by pressing **PgDn**.
6. Press **F8** to accept the Licensing Agreement. Setup displays the hardware that is detected.
7. Press **Enter**. A list of hard drive partitions upon which to install the operating system is displayed.

For customers not familiar with hard drive partitioning schemes, please refer to the White Paper titled “*File Systems and Their Use on Compaq Armada Portable Products.*” For additional information also refer to *Chapter 5 - Beginning Installation* in your Windows NT Workstation manual.

8. Select the 2<sup>nd</sup> option, ‘Unpartitioned space’ then press **Enter**.

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<sup>5</sup> See Appendix 5, “Docking for the First Time” for information on docking your Armada Portable for the first time.

<sup>6</sup> See your documentation if unsure how to swap the diskette drive for the CD-ROM drive.



9. Select the best file system for your applications, then press **Enter**. If you are unsure which file system to select, contact your IT department or choose the FAT file system<sup>7</sup>.

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**NOTE:** *The FAT file system can be converted to NTFS<sup>8</sup> at a later time if you choose to do so. If you select NTFS as your file system, the only way to again have a FAT file system on the drive would be to reformat the hard drive and reinstall the operating system.*

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10. If you choose FAT and the partition is larger than 2-GB, you are prompted that the size exceeds the amount supported by MS-DOS. You can return to the previous menu and create a 2-GB or smaller partition upon which to install the operating system. To do so:
  - a. Press **Esc** to return to disk partitioning menu.
  - b. Highlight 'Unpartitioned space' and press **C**.
  - c. You will then be asked to enter the size of the partition you wish to create. Enter that number and then press **Enter**.
  - d. Highlight 'C: New (Unformatted)' and press **Enter**.

The hard drive is formatted<sup>9</sup>.

11. Select the directory where the operating system will be installed, then press **Enter**. It is recommended that the default directory of \WINNT be selected.
12. Press **Enter** to examine the hard disk for corruption (recommended) or **Esc** to skip the examination.
13. Allow the system to copy files from the NTW CD to the hard drive. This takes several minutes.
14. Remove any floppies and CDs from the drives when prompted.
15. Press **Enter** to restart the computer.
16. Re-insert the NTW CD at the boot menu. The graphical portion of Setup loads, and additional files are copied to the hard drive.
17. Allow the Setup Wizard to gather information about the hardware, then click **Next**.
18. Select the type of installation to perform, then click **Next**.

If you are unsure which type of installation to select, contact your IT department or choose PORTABLE.

19. Enter your name and, if desired, tab to the organization field and enter your company name, then click **Next**.
20. Enter the Product Key that came with your Windows NTW documentation, Certificate of Authenticity, then click **Next**.
21. Enter the computer name, then click **Next**.
  - a. This name **must** be unique on the network.
  - b. The name can be up to 15 characters but should not include spaces.
  - c. If you are unsure what to name your computer, contact your IT department.

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<sup>7</sup> FAT partitions are limited to 4-GB under Windows NT Workstation and 2-GB for MS-DOS compatibility. You may need to redo step 11 and create a smaller partition. For more information on file systems, you may refer to the White Paper "File Systems and Their Use on Compaq Armada Portable Products." For additional information also refer to *Chapter 5 – Beginning Installation* in your Windows NT Workstation manual.

<sup>8</sup> If you choose to use NTFS, ensure that you use version 2.0F or later of F10 Setup/P.

<sup>9</sup> If you choose NTFS, the hard drive is formatted with FAT and converted on the next restart.

22. Select an Administrator password:
  - a. Enter, then reenter the password.



**CAUTION:** If you forget this password before setting up additional user accounts, the operating system will have to be reinstalled.

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23. You are asked if you want to create an Emergency Repair Disk. It is highly recommended that you make an Emergency Repair Disk. Armada 6500 and 7000 Family users will not be able to accomplish this step during Setup as there is no floppy drive in the system. You can create additional Emergency Repair Disks after the installation is complete by running the RDISK program.
24. Select the operating system components to be installed, then click **Next**.

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**NOTE:** *If you are unsure, install the most common components.*

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The Installing Windows NTW Network screen displays.

25. Click **Next**. You are asked if you are on a network and if so, how you will be accessing the network. Since no two network setups are the same, it is recommended that you not set up any networking components. You should contact your Network Administrators and have them properly setup the networking portions of NTW.
26. Choose 'Do not connect this computer to a network at this time' and click **Next**.
27. This phase is complete. Click **Finish** to continue the setup procedure.
28. Verify that the Date and Time are correct and choose the proper Time Zone, then click **Close**.
29. Click **OK** when the screen displays 'VGA compatible display adapter' has been detected.
30. Click **OK** on the 'Display Properties' tab.

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**NOTE:** *You will update the video drivers in the "Installation of Compaq Drivers and Enhancements" section, so no changes are necessary at this time.*

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31. Various files are copied from the CD to the hard drive.
32. If you chose to make an Emergency Repair Disk, the configuration is saved and you are prompted to insert a floppy disk. Choose **OK** to make the Emergency Repair Disk.
33. You will be prompted to restart the system. **Be sure to remove the NTW disc from the CD-ROM drive before restarting the computer.**

The Windows NTW installation is complete. Proceed to "Installing Service Pack 3 from CD." After installing Service Pack 3, see "Installation of Compaq Drivers and Enhancements" to install the additional drivers and support software.

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**NOTE:** *You must install all drivers for your system to have complete functionality.*

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## Installing Service Pack 3 from CD

1. Log on to the system as Administrator.
2. Click **OK** to close the Tip window.
3. Insert the Windows NTW Service Pack 3 CD into the CD-ROM drive. Internet Explorer starts automatically and displays the initial installation screen.
4. Click 'Install Service Pack 3 for Windows NT 4.0' to start the installation. A Confirm File Open dialog box appears.
5. Choose **OPEN** to continue.
6. Click **Next** from the Welcome screen.
7. Read the Software License Agreement and click **Yes** to accept the terms.
8. Click **Next** to install the Service Pack from the Service Pack Setup screen.
9. It is highly recommended that you choose to create an Uninstall Directory. Make the appropriate choice and click **Next** to continue.
10. Click **Finish** to install Service Pack 3 and wait while the files are copied from the CD to the hard drive.
11. Read the 'Windows NT Service Pack Setup' screen then click **OK**.
12. The system reboots.

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**NOTE:** *If at anytime, you change the configuration of your system including adding or removing any NTW components, you **must** reapply the Service Pack and the Windows NTW 4.0 Support Diskette (installed in the Installation of Compaq Drivers and Enhancements section). You should also update the Emergency Repair disk after ensuring the configuration is correct.*

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## Installation of Compaq Drivers and Enhancements

Table 1 lists the necessary drivers and enhancements, available as of the publication of this white paper. You should always check the Compaq Website for the complete, up-to date list of available drivers and enhancements. The most current SoftPaq file name, as of the publication of this white paper, is also listed. Instructions for obtaining these SoftPaqs may be found in Appendix 1, "Downloading Software from the Compaq Website." After obtaining the necessary files for your Armada portable, proceed to the installation instructions for each deliverable.

### Important Notes

- Make sure that the system is undocked (Standalone) and there are no PC Cards in the PCMCIA slots when installing the drivers.<sup>10</sup>
- Any first step which begins with 'Double-click SETUP' assumes that you have used 'My Computer' or Explorer to navigate to the directory where the files are located after having been extracted from the SoftPaq.
- These SoftPaq numbers are the minimum required for Windows NT Workstation. They may be superseded as noted on the Compaq Website.
- Since no two network setups are the same, it is highly recommended that you do not set up any networking components. You should contact your Network Administrators and have them properly set up the networking portions of Windows NT Workstation.
- It is strongly recommended that after all of the additional software programs and drivers have been installed, you update the Emergency Repair Disk by running the RDISK program.

**Table 1. Compaq Driver and Enhancement SoftPaqs for Windows NT Workstation**

Family	Driver/Enhancement	SoftPaq #
Armada 1500	C&T 68554 Video Drivers	SP5487
	CardWare	SP5443
	Compaq 336 Series Modem INF File	SP3655
	Compaq 560CL Telephony Modem Driver	SP6469
	Diagnostics	SP5644
	Display Support	SP3168
	ESS Audio Drivers	SP5655
	Insight Management Agents	SP5167
	Intel Ethernet Drivers	SP7129
	Netflex-3 Ethernet Drivers	SP2978
	Power Management	SP5490
	Programmable Keys	SP5414
	Security32	SP5628
	Support Software	SP4768

*continued*

<sup>10</sup> See Appendix 5, "Docking for the First Time" for information on docking your Armada Portable for the first time.

**Table 1. Compaq Driver and Enhancement SoftPaqs for Windows NT Workstation** *(continued)*

<b>Family</b>	<b>Driver/Enhancement</b>	<b>SoftPaq #</b>
Armada 1700	C&T 65555 Video Drivers	SP7222
	CardWare	SP7223
	Compaq 560VL Telephony Modem Driver	SP7447
	Diagnostics	SP7237
	ESS 1869 Audio Drivers	SP7248
	Insight Management Agents	SP6573
	Intel Ethernet Drivers	SP7129
	Netflex-3 Ethernet Drivers	SP6599
	Power Management	SP7266
	Programmable Keys	SP7176
	Security32	SP7191
	System Enhancements	SP7281
	Armada 3500	C&T Video Drivers
CardWare		SP8328
Diagnostics		SP8342
ESS1869 Audio Drivers		SP7248
Insight Management Agents		SP7393
Intel Ethernet Drivers		SP7129
Netflex-3 Ethernet Drivers		SP6599
Power Management		SP8355
Programmable Keys		SP7176
Security32		SP8086
System Enhancements	SP7281	
Armada 4100	CardWare	SP5443
	Cirrus Logic 7543/7548 Video Driver	SP2057
	ESS 688/1688/1788 Audio Drivers	SP2354
	Ethernet Drivers	SP2761
	Insight Management Agents	SP3695
	Programmable Keys	SP2787
	Supplemental Programs	SP2759
Armada 4200	C&T 68554 Video Driver	SP5487
	CardWare	SP5443
	ESS 187x Audio Drivers	SP6423
	Ethernet Drivers	SP5387
	Diagnostics	SP4911
	Insight Management Agents	SP5399
	MultiBay Support	SP5504

*continued*

**Table 1. Compaq Driver and Enhancement SoftPaqs for Windows NT Workstation** *(continued)*

<b>Family</b>	<b>Driver/Enhancement</b>	<b>SoftPaq #</b>
Armada 4200 (continued)	Power Management	SP5490
	Programmable Keys	SP5414
	Security 32 Support	SP5429
Armada 6500	ATI Video Driver	SP8208
	ESS Audio Driver	SP8201
	ESS Audio Rack 32 Driver	SP8203
	IDE CD-ROM Driver	SP8200
	CardWare	SP8204
	Plug and Play Management Driver	SP8206
	Power Management	SP8205
Armada 7300/7700	CardWare	SP5443
	Diagnostics	SP4911
	External Display Configuration Utility	SP4840
	ESS 1878 Audio Drivers	SP4767
	Insight Management Agents	SP5167
	Modem Information File	SP3716
	MultiBay Support	SP5834
	Netflex-3 Ethernet Drivers	SP2978
	Power Management	SP5490
	Programmable Keys	SP5414
	S3 Display Drivers	SP6301
	Security 32 Support	SP6284
	Support Software	SP4768
Armada 7400/7800	CardWare	SP6656
	Compaq Series II Modem Driver	SP6471
	Diagnostics	SP6700
	External Display Configuration Utility	SP6586
	ESS 1879 Audio Drivers	SP6671
	Insight Management Agents	SP6573
	MultiBay Support	SP6685
	Netflex-3 Ethernet Drivers	SP6599
	Power Management	SP6686
	Programmable Keys	SP5414
	S3 M5 Video Drivers	SP6672
	Security 32 Support	SP6284
	System Enhancements	SP6670

## Installing the C & T 68554 Video Driver (1540, 1560, 1570, 1571, 1573, 1590, 1592, 1598, 4210, & 4220)

1. Secondary-click on an open area of the desktop and select 'Properties'.
2. Click on the 'Settings' tab.
3. Click on 'Display Type'.
4. Click **Change**.
5. Click on 'Have Disk'.
6. Enter the path to the video driver extracted from the SoftPaq, then click **OK**.
7. Click **OK** to select the highlighted 'Chips Video Accelerator (64300/10 65535/40/45/48/50/54/55)'. You are told that you are installing a third-party driver.
8. Click **YES**. The necessary drivers are installed.
9. Click **OK** on the successful installation dialog.
10. Click **Close** to close the 'Change Display type' and 'Display Properties' windows.
11. Click **YES** to restart the system.
12. After the system reboots and you log on, you are shown that you have installed a new graphics driver. Click **OK** to close this dialog and **OK** again to close the 'Display Properties' window.

## Installing the C & T NT 4.0 Video Driver

1. Secondary-click on an open area of the desktop and select 'Properties'.
2. Click the 'Settings' tab.
3. Click 'Display Type'.
4. Click **CHANGE**.
5. Click 'Have Disk'.
6. Enter the location of the video driver 'C:\~COMPAQ\VIDEO' and click **OK**.
7. Click on **OK** to select the highlighted 'Chips Video Accelerator (64300/10 65535/40/45/48/50/54/55)'. You are told that you are installing a third-party driver.
8. Click **YES**. The necessary drivers are installed.
9. Click **OK** on the successful installation dialog.
10. Click **Close** to close the 'Change Display type' and 'Display Properties' windows.
11. Click **YES** to restart the system.
12. After the system reboots and you log on, you are shown that you have installed a new graphics driver. Click **OK** to close this dialog and **OK** again to close the 'Display Properties' window.

## Installing Display Support or Cirrus Logic 7543/7548 Video Driver (1510, 1520, 1530, 1535, 1550, 1580, 1585, & 4100 Family)

1. Secondary-click on an open area of the desktop and select 'Properties'.
2. Click the 'Settings' tab.
3. Click 'Display Type'.
4. Click **Change**.

5. Click 'Have Disk'.
6. Enter the location where the video driver was extracted to from the SoftPaq and then click **OK**.
7. Click **OK** to select the highlighted 'Cirrus Logic CL-GD 754x 1.40E Graphics Adapter'. You are told that you are installing a third-party driver.
8. Click **YES**. The necessary drivers are installed.
9. Click **OK** on the successful installation dialog.
10. Click **Close** to close the 'Change Display type' and 'Display Properties' windows.
11. Click **YES** to restart the system.
12. After the system reboots and you log on, you are shown that you have installed a new graphics driver. Click **OK** to close this dialog and **OK** again to close the 'Display Properties' window.

## Installing the ATI Video Driver

1. Secondary-click on an open area of the desktop and select 'Properties'.
2. Click the 'Settings' tab.
3. Click 'Display Type'.
4. Click **CHANGE**.
5. Click 'Have Disk'.
6. Enter the location of the video driver 'C:\~COMPAQ\VIDEO' and click **OK**.
7. A list of ATI graphics accelerators is displays. Select the one you are using, then click **OK**.
8. Click **YES**. The necessary drivers are installed.
9. Click **OK** on the successful installation dialog.
10. Click **Close** to close the 'Change Display type' and 'Display Properties' windows.
11. Click **YES** to restart the system.
12. After the system reboots and you log on, you are shown that you have installed a new graphics driver. Click **OK** to close this dialog and **OK** again to close the 'Display Properties' window.

## Installing the Display Driver Support

1. Secondary-click on an open area of the Windows desktop and select 'Properties'.
2. Click the 'Settings' tab.
3. Click 'Display Type'.
4. Click **CHANGE**.
5. Click 'Have Disk'.
6. Enter the location of the video driver 'C:\~COMPAQ\VIDEO\_NT4' and click **OK**.
7. Highlight '7548' then click **OK**.
8. Highlight 'Cirrus Logic CL-GD 754x 1.40 Graphics Adapter' and click **OK**. You are told that you are installing a third-party driver.
9. Click **YES**. The necessary drivers are installed.
10. Click **OK** on the successful installation dialog.
11. Click **Close** to close the 'Change Display type' and 'Display Properties' windows.



12. Click **YES** to restart the system.
13. After the system reboots and you log on, you are shown that you have installed a new graphics driver. Click **OK** to close this dialog and **OK** again to close the 'Display Properties' window.

## Installing the S3 Display Driver

1. Secondary-click on an open area of the Windows desktop and select 'Properties'.
2. Click the 'Settings' tab.
3. Click 'Display Type.'
4. Click **CHANGE**.
5. Click 'Have Disk'.
6. Enter the location of the video driver 'C:\~ COMPAQ\VIDEO' and click **OK**.
7. Click **OK** to select the highlighted 'S3 Incorporated Display Driver v1.02.21.' You are then told that you are installing a third-party driver.
8. Click **YES** to proceed. The necessary drivers are installed.
9. Click **OK** on the successful installation dialog.
10. Click **Close** to close the 'Change Display type' and 'Display Properties' windows.
11. Click **YES** to restart the system.
12. After the system reboots and you log on, you are shown that you have installed a new graphics driver. Click **OK** close this dialog and **OK** again to close the 'Display Properties' window.

## Installing the Windows NT Display Refresh Utility

1. Open an Explorer window and highlight the C:\~COMPAQ\REFRESH directory.
2. Locate the file S3\_M1.INF and secondary-click it.
3. Highlight and click **INSTALL** to add a Compaq tab in the 'Display Properties' to control the refresh rates.

## Installing the NonDDC Monitor Configuration

1. Double-click SETUP in the C:\~COMPAQ\CRTCFG directory.
2. Click **Next** from the Welcome screen.
3. Click **OK** to restart the computer.

## Installing CardWare<sup>11</sup>

1. Double-click **SETUP** in the directory where CardWare was extracted from the SoftPaq.
2. Click **Next** from the 'Welcome to CardWare' setup screen.
3. Ensure that there are no PC Cards currently in the system, then click **Next**.
4. Confirm the directory choice, then click **Next**.
5. Ensure the correct Compaq family is highlighted and the 'Express' option is selected. Click **Next**.
6. Click **Finish** and allow the computer to restart.

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**NOTE:** Only user accounts with Administrator rights have access to PCTray functions of CardWare. Once installed, PC Cards are useable by all users regardless of the user rights.

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## Installing the Compaq 336 Series Modem INF (1510, 1520,1530, 1535, 1540, 1550,1580, 1585, 1590)

1. Select Start → Settings → Control Panel.
2. Double-click the Modem icon.
3. Highlight 'Don't detect my modem' and click **Next**.
4. Click 'Have Disk'.
5. Enter the location where the modem INF file was extracted to from the SoftPaq and click OK.
6. Choose **Next** to select 'Compaq Armada 1500 Series 336 Telephony Modem'.
7. Highlight COM2 and click **Next**.
8. Check the country and correct it if necessary.
9. Enter your area code and, if needed, what number to dial to get an outside line.
10. Verify that the phone system is tone or pulse dial and click **Next**.
11. Click **Finish**, then **Close** to complete the installation.

## Installing the Compaq Armada 1500 Series 560CL Telephony Modem (1560, 1570, 1571,1573, 1592, 1598)

1. Double-click **SETUP** in the directory where the SoftPaq was extracted.
2. Click **Next**.
3. Click **Next** to 'Install new modem driver and components.'
4. Select the appropriate county and click **YES**.
5. Click **Finish** to restart the computer.

## Installing the Armada 7000 Family 336 Modem INF

1. Select **Start** → **Settings** → **Control Panel**.
2. Double-click the Modem icon.

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<sup>11</sup> Prior to installing CardWare, install Power Management or the Supplemental Programs as applicable for your system.

3. Highlight 'Don't detect my modem' and click **Next**.
4. Click 'Have Disk'.
5. Enter the location of the modem INF file 'C:\~COMPAQ\MODEM' and click **OK**.
6. Choose **Next** to select 'Compaq Armada 7000 Series Global SpeedPaq Telephony Modem'.
7. Highlight COM2 and click **Next**.
8. Check the country and correct it if necessary.
9. Enter your area code and, if needed, which number to dial to get an outside line.
10. Verify that the phone system is tone or pulse dial and click **Next**.
11. Click **Finish** and then **Close** to complete the installation.

## Installing Diagnostics

1. Double-click SETUP in the directory where Diagnostics was extracted to from the SoftPaq.
2. Click 'Yes, I want to restart my computer now.'
3. Click **OK** to restart the computer.

## Installing the ESS Audio Drivers

1. Select **Start** → **Settings** → **Control Panel**.
2. Double-click the Multimedia icon.
3. Click the 'Devices' tab and click **Add**.
4. Click **OK** to select 'Unlisted or Updated Driver'.
5. Enter the location where the audio driver was extracted to from the SoftPaq and click **OK**.
6. Choose **OK** again to select (for example) 'ES1878 AudioDrive 2.00.85'.
7. Click **Restart Now** to restart the system so the new driver can take effect.

## Installing the ESS1788 Audio Driver

1. Select **Start** → **Settings** → **Control Panel**.
2. Double-click the Multimedia icon.
3. Click the 'Devices' tab and click **Add**.
4. Click **OK** to select 'Unlisted or Updated Driver'.
5. Enter the location of the audio driver 'C:\~COMPAQ\1788\_\_NT4' and click **OK**.
6. Choose **OK** again to select 'ES688/ES1688/ES1788 AudioDrive 2.00.04'.
7. Click **Continue** to confirm the I/O Address.
8. Change the Interrupt from 7 to 5 and click **OK** to confirm the additional configuration settings.
9. Restart the system for the new drivers to take effect.

## Installing the ESS Audio Rack 32 Driver

1. Double-click **SETUP** in the directory where Audiorac.32 was extracted to from the SoftPaq.
2. Click **Next** on the 'Welcome' screen.
3. The 'Choose Destination Location' dialog box appears.
  - a. Click **Next** to install the AudioRack32 in the default directory or **Browse** to choose a different directory.
  - b. When you are done click **OK**, or **Cancel** to return to the Choose Destination Location dialog box.
  - c. If the directory you designate doesn't exist, you are asked to confirm your selection. Click **YES** to proceed or **NO** to go back and enter a new destination directory.
4. Once you have chosen the default directory or entered a directory of your own choosing, the Setup program installs the AudioRack32. Click **OK**.
5. Click **OK** again to restart the computer.

## Installing the Insight Management Agents

1. Double-click **SETUP** in the directory where the Insight Management Agents where extracted to from the SoftPaq.
2. Click **Next**.
3. Click **OK** when prompted for Disk 2.
4. Click **Next** from the DMI dialog box.
5. Click **Next** to confirm the destination directory.
6. When the program finishes, highlight **YES** and click **Finish** to restart the computer. You are shown the IM Agents Help File the next time the unit is rebooted and you log on. The file may be closed by clicking on the 'X' in the upper right-hand corner of the window.

## Installing Power Management<sup>12</sup>

1. Double-click **SETUP** in the directory where Power Management was extracted from the SoftPaq.
2. Click **Finish** to restart the computer.

## Installing the Programmable Keys

1. Double-click **SETUP** in the directory where the Programmable Keys were extracted to from the SoftPaq.
2. Click **Next** from the 'Welcome' screen.
3. Click **OK**.
4. Click 'Yes, I want to restart my computer now.'
5. Click **OK** to restart the computer.

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<sup>12</sup> WinNT Powercon must be installed prior to installing PCMCIA CardWare.

## Installing Security32

1. Double-click SETUP in the directory where Security32 was extracted to from the SoftPaq.
2. Click **Next** on the 'Welcome' screen.
3. Click **OK**.
4. Click **OK** again to restart the computer.

## Installing the Windows NT Support Disk

1. Double-click WINNTSPD in the C:\COMPAQ\~NT\_SPD directory.
2. When the program finishes, click **YES** to restart the computer.

## Installing the Active Movie Filter for Windows NT 4.0

1. Double-click SETUP in the C:\~COMPAQ\MVFIL or C:\~COMPAQ\MOVIE directory.
2. Click **Next** from the 'Welcome' screen.
3. Click **I AGREE** if you agree with the licensing statement.

## Installing the Plug and Play Management Driver (Armada 6500)

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**IMPORTANT:** *You must remove any previously installed PNP Manager before installing a new version. PNP Manager can be un-installed through the **Add/Remove Programs** Control Panel applet.*

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1. After successfully Un-Installing PNP Manager, reboot your machine before re-installing.
2. Double-click SETUP in the directory where CPQPNP was extracted to from the SoftPaq.

## Installing Compaq MultiBay

1. Double-click SETUP in the C:\~COMPAQ\MTBAY or C:\COMPAQ\MULTBAY directory.
2. Click **Finish** to restart the computer.

## Appendix 1: Downloading Software from the Compaq Website

1. The base URL for all Compaq Portables software is [www.compaq.com/support/files/portables/us/index.html](http://www.compaq.com/support/files/portables/us/index.html). Enter this location into the browser of your choice.
2. You are presented three drop-down dialog boxes for Family, Model, and Operating System. Fill in each box as appropriate and click **Locate**.
  - a. Family – which series of Armada are you trying to find software for; e.g. Armada 7700, Armada 4200, etc.
  - b. Model – the specific portable; e.g. 42XX where XX represents the last two digits – as in 42100 or 4220. For the 7800 Armada series, it is in the form of XXXX/Z/XXXX/Z/Z/Z – e.g. 6266/T/5000/D/M/1. See the bottom of your portable to obtain the proper model number.
  - c. Operating system – in this case “Windows NT Workstation 4.0”
3. A list of currently available files is displayed. Click on each sub-bulleted item to display information on that particular deliverable.
4. Click **Download**.<sup>13</sup>
5. Place all of the files into a common directory so that they may be extracted for use in the scripts. A common directory used is C:\~COMPAQ.

See Appendix 2 for instructions on using the SoftPaq utility.

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<sup>13</sup> Consult your browser's help for instructions on how to download files if necessary.

## Appendix 2: Using the SoftPaq Utility

There are currently two versions of the SoftPaq utility on the Compaq Website<sup>14</sup>. As drivers are updated and released as SoftPaqs, they are released using the most current version of the utility. You can determine the version by looking at the application title-bar at the top of the screen. The procedure for using either version is outlined below.

### SoftPaq 2.x

When you run the application, you are first presented with information as to which software driver or program you are going to extract to floppy.

1. Press **PgDn** to view the Licensing Agreement.
2. Type **AGREE** to show how many diskettes this extraction will take.
3. Type the drive letter to specify the destination for the software extraction.
4. Insert a 3.5" 1.44 MB diskette into the drive and press **Enter**.

When the software has been extracted, the program exits automatically.

The software is now ready to be installed from diskette. Compaq recommends that you view the README file for any updates.

### SoftPaq 3.x

1. Place the SoftPaq file in a temporary directory in which the files will be extracted.
2. When you run the application, you are presented with information as to which software driver or program you are going to extract to floppy. Press '**C**' to continue.
3. Press '**A**' to agree to the Licensing Agreement.
4. You are asked if the destination directory for extraction is OK. Type '**Y**' to continue.
5. When the software has been extracted, the program exits automatically.

The software is now ready to be installed from diskette. Compaq recommends that you view the README file for any updates.

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<sup>14</sup> SoftPaqs are a way for Compaq to distribute driver and ROM updates as well as product enhancements.

## Appendix 3: Installing Diagnostics and Setup

You need both the Diagnostics and Setup diskettes before beginning. If you do not have them, they can be downloaded from the Compaq Website.

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**NOTE:** *The Armada 6500 does not use standard Compaq Diagnostics and Setup.*

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Ensure that there are no existing partitions on the hard drive with the FDISK utility. If you are unsure how to use the FDISK program, refer to Microsoft's KB article Q76802 for instructions. This article may be found online at <http://support.microsoft.com/support/kb/articles/q76/8/02.asp>.

1. Boot the computer from the Diagnostic diskette.
2. Press **Enter** on the 'Create Diagnostics Partition' dialog.
3. Press **Enter** to reboot the computer.
4. Press **Enter** to confirm that you have both the Diagnostic and Setup diskettes.
5. Insert the Setup diskette when prompted and press **Enter**.
6. Insert the Diagnostics diskette when prompted and press **Enter**.
7. Insert the Setup diskette when prompted and press **Enter**.
8. Press **Enter** to complete the installation.
9. Power cycle your system and resume the operating system installation.



## Appendix 4: Determining your ROM Version and Upgrading if Needed

To determine your ROM revision, use either Compaq's Inspect utility or Compaq Diagnostics for Windows. Table 2 shows the current ROM versions as of the date of this paper.

**Table 2. Current Compaq ROM Versions**

Portable Family	Current ROM Version
Armada 1500 Family	8/31/98
Armada 1700 Family	09/09/98
Armada 3500 Family	09/09/98
Armada 4100 Family	05/04/98
Armada 4200 Family	05/21/98
Armada 6500 Family	v 1.29
Armada 7300/7700 Families	05/13/98
Armada 7400/7800 Families	08/07/98

### Determining your ROM revision with Inspect

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**NOTE:** *The Armada 6500 does not use standard Compaq Diagnostics and Setup. Use the instructions in the next section, "Determining your ROM revision with Compaq Diagnostics for Windows."*

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If you have Compaq's Diagnostics and Setup properly installed on the hard drive, a block cursor is displayed during boot in the upper right-hand corner of the screen. When you see the block cursor, press **F10**. See Appendix 3 for instructions on installing Diagnostics and Setup from diskette.

1. Press **Enter** when the Welcome to Compaq Utilities dialog is displayed.
2. Using the down arrow key, scroll down until 'View system information (INSPECT)' is highlighted and then press **Enter**.
3. Wait while information is gathered about your system.
4. Using the down arrow key to scroll down until 'ROM' is highlighted and then press **Enter**. Your system ROM revision is displayed.
5. Make note of the date to determine if it is the latest available.
6. Press **F3** to exit the ROM information screen.
7. Use the down arrow key to scroll down until 'Exit...' is highlighted and press **Enter**. Repeat this step to exit from the Compaq Utilities.
8. Press **Enter** once again to confirm exiting the Compaq Utilities.

If your ROM requires upgrading and you do not have a ROMPaq diskette for your computer, go to Creating a ROMPaq Diskette; otherwise proceed to Upgrading Your ROM for instructions on how to upgrade your ROM.

## Determining your ROM revision with Compaq Diagnostics for Windows

1. Select **Start** → **Settings** → **Control Panel**.
2. Double-click the Compaq Diagnostics icon.
3. Once Diagnostics is loaded, press **F8**.
4. Click the left most icon.
5. Scroll through this list until you see the System ROM information. Make note of the date to determine if it is the latest available.
6. Close Diagnostics for Windows by clicking on the 'X' in the upper right-hand corner of this window.

If your ROM requires upgrading and you do not have a ROMPaq diskette for your computer, go to *Creating a ROMPaq Diskette*; otherwise proceed to *Upgrading Your ROM* for instructions on how to upgrade your ROM.

## Creating a ROMPaq Diskette

The ROMPaq SoftPaq is a version 2.x SoftPaq. After downloading the appropriate SoftPaq from Compaq's website, follow the instructions in the Appendix 2 to extract the image onto a diskette.

## Upgrading Your ROM

1. Connect your computer to AC power.
2. Place your ROMPaq diskette into your diskette drive and restart the computer.
3. Press **Enter** on the 'Welcome to ROMPAQ' screen.
4. Press **Enter** to select your 'COMPAQ System ROM.'
5. Press **Enter** to select the most current firmware image.
6. Press **Enter** to continue.
7. To start the ROMPaq upgrade, press **E Enter**.
8. When you receive the message that your system ROM has been successfully reprogrammed, power off your system.

## Appendix 5: Docking for the first time

Before docking you need to ensure that all of the specific drivers and support software for your specific Armada have been installed. Please refer to “Installation of Compaq Drivers and Enhancements” for the list of deliverables and instructions on how to install them.

Compaq strongly recommends a ‘cold dock’ for the user’s 1<sup>st</sup> docking under Windows NTW. Properly shutdown Windows NTW by clicking **Start** → **Shut Down** → **Shut Down** and clicking on **OK**. Place the computer in the docking station or convenience base and power the unit back on.