COMPAQ

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Portables Software Marketing

Compaq Computer Corporation

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Microsoft Windows NT and Windows 2000 - The Armada Advantage

Compaq provides industry-leading performance and support for Microsoft Windows NT throughout the current Compaq Armada product line. Armada notebooks are designed for Windows NT 4.0 and Compaq provides utilities and drivers to complement the Windows NT operating system to provide the mobile benefits that the Windows 95 and Windows 98 operating systems provide.

Compaq has provided best-in-class support and a comprehensive mobile feature set for Windows NT 4.0 on the Armada family. This same commitment extends to Microsoft's Windows 2000 operating system.

Compaq and Microsoft have a unique partnership to develop and deliver industry-standard information technology in both core businesses and new strategic markets that provides the customer with the greatest total ownership satisfaction and value. Through the Compaq Microsoft Frontline Partnership, Compaq is working closely with Microsoft on the design, development and testing of Windows 2000.

This white paper describes the support and features of the Compaq Armada notebook family with Microsoft Windows NT 4.0 and Windows 2000.

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Compaq Armada and Windows NT 4.0

Today notebook computing with Microsoft Windows NT 4.0 requires additional software enhancements to provide key mobile functionality not available in the operating system. This functionality includes power management, plug and play, and PC Card support, all of which must be provided by the notebook manufacturer to enable mobile capabilities for the Windows NT 4.0 environment.

Compaq provides leadership-class mobile support for the Microsoft Windows NT Workstation 4.0 for the Compaq Armada family of notebook computers. The Armada family provides mobile extensions to Windows NT including power management enhanced PC Card support, 32-bit CardBus support and both PC Card and MultiBay hot swapping support. These mobile enhancements and the Armada industry-leading performance benchmarks with Windows NT make the Armada family a logical choice for business customers deploying Windows NT.

The Compaq Armada products are among the only notebooks in the industry to fully integrate power conservation features into the Windows Control Panel and System Tray, making for the most intuitive power management solution for Windows NT 4.0 today. The Armada family also provides the most comprehensive suite of power management features for Windows NT 4.0. For instance, Compaq provides hibernation support for the NTFS file system, an important advantage to consider for businesses that want to take full advantage of the enhanced performance and security features of Windows NT.

Compaq provides comprehensive PC Card support, including 32-bit CardBus support with Windows NT 4.0. CardWare® from Award Software is pre-installed or pre-loaded on select Armada models and available across the entire Armada product line. CardWare is designed in strict accordance with the industry-wide PCMCIA specification providing robust PC Card support when used in conjunction with compliant PC Card device drivers.

Another mobile-specific feature is hot swapping of MultiBay devices which provides the ability to hot swap a DVD, CD-ROM, Floppy, LS120, or even a second battery without having to power down. All of these features provide mobile performance and convenience when taking Windows NT 4.0 on the road with Armada notebooks.

Many customers evaluating NT capabilities agree: The award-winning Compaq line provides the best mobile support under NT of any notebook in the industry.

Windows NT 4.0 is offered as a pre-installed option on selected Armada models and is also supported throughout the Armada product line. These notebook families meet Microsoft's Designed for Windows NT certification. Software deliverables for Windows NT support on Compaq notebooks are available on the Compaq Support Software CD and on the Compaq Web site at http://www.compaq.com.

Windows 2000

Compaq has worked closely with Microsoft to design, co-develop and test many of the key Windows 2000 technologies for mobile clients, including Advanced Configuration and Power Interface (ACPI), hot docking, hot swapping of MultiBay devices, PC Card support and USB. Compaq has been in an exclusive position to test these innovations with customers through its unique involvement in the Microsoft Rapid Deployment and Joint Development Programs for Windows 2000, both as a customer and partner

Windows 2000 promises premier mobile support with such features as integrated power management and plug and play capabilities. Plug and play support for PC Cards, docking stations, and multibay devices will be provided by the new Windows 2000 plug and play architecture.

Advanced Configuration and Power Interface - ACPI

The Advanced Configuration and Power Interface (ACPI) is part of the OnNow initiative, a comprehensive, system-wide approach to system and device power control. Compaq worked closely with Microsoft and Intel on the implementation of ACPI, and provided Microsoft with the Armada 4200 as an reference platform for ACPI development. Compaq later released the Armada 4200 as one of the industry's first ACPI hardware-ready platforms.

OnNow refers to a PC that is turned on but appears to be off, yet responds immediately to user or system requests. Delivering transparent power management and improved system integration to the PC, OnNow allows the operating system to respond to events and manage the power for the entire system and its devices. OnNow relies on the ACPI-defined hardware interface for power management and configuration control.

Prior to ACPI, Compaq portable computers used the Advanced Power Management (APM) standard, which manages power using the computer BIOS (Basic Input/Output System). With ACPI, the operating system no longer communicates directly with the hardware via the BIOS, but rather with the ACPI-defined interface between the hardware and the operating system. This allows the operating system to determine the required power state for each device and turn off any components not in use in order to save valuable battery life.

Windows 98 was the first operating system to take advantage of the ACPI interface with its OnNow technology. Windows 2000 will also support ACPI, making the Windows 2000 operating system inherently more effective for mobile users than Windows NT 4.0.

ACPI and Compaq Armada Notebooks

ACPI – the ultimate power management and configuration control technology for today's increasingly complex portable computers – will allow Compaq to deliver optimum mobile performance in conjunction with Microsoft Windows 98 and Microsoft Windows 2000. All currently-shipping Armada products are ACPI-hardware ready. All new Armada portable products will also be ACPI hardware ready and Compaq is readying ACPI support in all product BIOS's in anticipation Windows 2000.

Compaq Armada and Windows 2000

Compaq is working closely with Microsoft to ensure optimum mobile support for Compaq Armada notebooks running Windows 2000. This includes support for ACPI-compliant notebooks and those Armada notebooks introduced prior to the ACPI specification. While Windows 2000 will provide additional features for ACPI-compliant notebooks, Compaq is working with Microsoft to ensure that mobile functionality for pre-ACPI (or APM) notebooks will be equivalent or superior to the support provided by Compaq for Windows NT 4.0.

- **Power Management** - Windows 2000 will inherently support power management for ACPI-compliant systems. This includes support for hibernation, battery status and low battery alerts. For Armada notebooks that were introduced prior to the ACPI specification, Compaq is working to ensure that Compaq Armada power management capabilities are available to Windows 2000 customers so that these systems will have power management support equivalent to what they experienced under Windows NT 4.0.

- **PC Card and CardBus support** – Windows 2000 provides both PC Card and 32-bit CardBus support for both ACPI-compliant and APM-compliant portables.

- **Plug and Play support** – Plug and play support for PC Cards, docking stations and multibay devices will be provided by the new Windows 2000 plug and play architecture.   Plug and play for multibay provides the ability to swap MultiBay devices such as DVD, CD-ROM, floppy LS120 and second batteries without having to power down the notebook. Plug and play for docking stations allows the user to hot and warm dock and undock their Armada notebook from Armada docking stations and convenience bases. Plug and play support for PC Cards allows users to swap PC cards without powering down the notebook. Hot swapping is supported on a variety of cards, including LAN, SCSI, and modem PC cards.

Compaq - Your Partner for Windows 2000

Through the Compaq Microsoft Frontline Partnership, Compaq and Microsoft uniquely provide customers with information technology that provides the greatest ownership satisfaction and value at the lowest total cost of ownership. The Frontline Partnership's foundation lies with our two companies' commitment to cooperative engineering, customer support, joint training, excellence in marketing and dedication to customer satisfaction.

A long-time premier Microsoft Windows NT provider, Compaq continues to lead the way with its commitment to Windows 2000 – from development through testing, to delivery and support. To demonstrate that commitment, Compaq is investing resources in Microsoft proof-of-concept laboratories to engineer and test Windows 2000 and will be among the first companies to deploy Windows 2000 across the enterprise.

With this combined research and first-hand experience, Compaq continues to offer the best choice of highly optimized and integrated solutions that minimize risk for customers. Compaq is committed to provide leadership support for Windows 2000. Together Compaq and Microsoft will provide the greatest total ownership satisfaction and value with Windows 2000 on Armada notebooks.