

July 1999  
0152-0899-A

Prepared by Portables Software  
Marketing

Compaq Computer Corporation

**Contents**

<b>Highlights</b> .....	3
<b>Defining Support</b> .....	3
<b>Support Software</b> .....	3
Compaq QuickRestore .....	3
Compaq Software CD .....	4
Compaq Support Software CD .....	4
System Enhancement Diskette .....	4
<b>Preinstalled Operating Systems</b> .....	4
<b>Supported Operating Systems</b> .....	6
<b>Compaq Value-Added Features</b> .....	7
Windows 95 .....	9
Windows 98 .....	10
Microsoft Windows NT Workstation 4.0.....	12
Windows 2000 Professional ....	14
Linux .....	17
DOS 6.2x & Windows 3.1x .....	19
Microsoft Windows NT 3.51 .....	20
IBM OS/2 Warp 3.0 & 4.0 .....	20
<b>Frequently Asked Questions</b> ....	21
<b>List of Tables</b> .....	22

# Operating System Support for Compaq Portable Products – July 1999

**Abstract:** The purpose of this White Paper is to present operating system features supported on Compaq portable computers. Compaq supports Microsoft Windows NT 4.0, Windows 98, Windows 95, across all products and Windows 2000 Beta 3, Windows for Workgroups 3.1x, Windows 3.1x, DOS 6.2x, and IBM OS/2 Warp across selected platforms.

In addition to features inherently supported in the operating system itself, Compaq also provides software to enhance the user experience and usability of the mobile PC. Features supported through Compaq software are described in this paper.

This is the seventh edition of the document. This edition includes information about:

- Operating system support for the new Armada E700, M700, and M300, as well as newer models of the Armada 1500c, Armada 1750, Armada 7400 and Armada 7800 families.
- Support for Microsoft Windows 98 Second Edition and Windows 2000 Beta 3.
- Support for the Linux operating system on the Armada 7400 and 7800 families.

## Notice

The information in this publication is subject to change without notice and is provided "AS IS" WITHOUT WARRANTY OF ANY KIND. THE ENTIRE RISK ARISING OUT OF THE USE OF THIS INFORMATION REMAINS WITH RECIPIENT. IN NO EVENT SHALL COMPAQ BE LIABLE FOR ANY DIRECT, CONSEQUENTIAL, INCIDENTAL, SPECIAL, PUNITIVE OR OTHER DAMAGES WHATSOEVER (INCLUDING WITHOUT LIMITATION, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION OR LOSS OF BUSINESS INFORMATION), EVEN IF COMPAQ HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

The limited warranties for Compaq products are exclusively set forth in the documentation accompanying such products. Nothing herein should be construed as constituting a further or additional warranty.

This publication does not constitute an endorsement of the product or products that were tested. The configuration or configurations tested or described may or may not be the only available solution. This test is not a determination of product quality or correctness, nor does it ensure compliance with any federal state or local requirements.

Product names mentioned herein may be trademarks and/or registered trademarks of their respective companies.

Compaq, Compaq Insight Manager, LTE, ROMPaq, DirectPlus, QuickFind, RemotePaq, are registered United States Patent and Trademark Office.

Netelligent, Armada, LTE Elite, SoftPaq, MultiLock, QuickBlank, QuickLock, UltraView, and Compaq PC Card Solution logo are trademarks and/or service marks of Compaq Computer Corporation.

Microsoft, Windows, Windows NT, Windows NT Server and Workstation, Microsoft SQL Server for Windows NT are trademarks and/or registered trademarks of Microsoft Corporation.

NetWare and Novell are registered trademarks and intraNetWare, NDS, and Novell Directory Services are trademarks of Novell, Inc.

Pentium is a registered trademark of Intel Corporation.

Copyright ©1999 Compaq Computer Corporation. All rights reserved. Printed in the U.S.A.

Operating System Support for Compaq Portable Products  
White Paper prepared by Portables Software Marketing

Seventh Edition (July 1999)

Document Number 0152-0899-A

## Highlights

This is the seventh edition of the document. This edition includes information about:

- Operating system support for the new Armada E700, M700, and M300, as well as newer models of the Armada 1500c, Armada 1750, Armada 7400 and Armada 7800 families.
- Support for Microsoft Windows 98 Second Edition. and Windows 2000 Beta 3.
- Support for the Linux operating system on the Armada 7400 and 7800 families.

## Defining Support

Compaq supports all operating systems that are currently factory preinstalled on its portable computers. Today, the preinstalled operating systems are Windows 98, Windows 95 and Windows NT 4.0. Refer to Table 1 for information about the specific versions that are preinstalled. These operating systems support most hardware features.

---

**Note:** In this White Paper, all references to Microsoft Windows NT 4.0 refer to Windows NT Workstation 4.0. Likewise, all references to Windows 2000 refer to Windows 2000 Professional. Microsoft Windows NT Server 4.0 and Windows 2000 Server are not supported on Compaq Armada portables.

---

For legacy operating systems such as Windows 3.1x, Windows 95 Retail and OSR1, Windows NT 3.51 or IBM OS/2 Warp 3.0 & 4.0, Compaq provides support on selected product families; however, limitations in the operating system may prevent enabling of new hardware functionality included on newer hardware platforms.

## Support Software

Compaq provides BIOS, drivers and applications to enable hardware features, extend functionality help manage your PC, or add functionality not provided by the native operating system. This Compaq software support is available to customers in a number of different ways including various support CD-ROM (CD) disks, individual SoftPaq diskettes and the Compaq Web site. See the white paper titled *Alternative Software Delivery for Armada Portables* for more information.

## Compaq QuickRestore

The Compaq QuickRestore Kit is provided with models of the Armada 7400 and Armada 7800 announced in 1999 and Armada 1500c, Armada 1750, Armada E700, Armada M700, and Armada M300 families. The QuickRestore Kit consists of a System Recovery CD (SRCD) and an Application Recovery CD (ARCD). The SRCD allows customers to fully restore or refresh the original factory installed image. The ARCD allows customers to selectively refresh drivers, utilities, or applications included on the original factory installed image excluding the operating system.

The Compaq QuickRestore CD is provided with models of the Armada 7400 and 7800 announced in 1998 and Armada 1500<sup>1</sup>, 1700, 3500, 4200<sup>2</sup>, 6500, and notebooks. The CD provides an easy to

---

<sup>1</sup> On selected models only.

<sup>2</sup> On selected models only.

use and complete restore solution. The solution allows customers to perform a complete restore by reformatting the hard drive and restoring the image to its original pre-install state.

## Compaq Software CD

The Compaq Software CD is made available for each portable product at the time of announcement beginning with products introduced in 1997. The Software CD contains all drivers, utilities and Compaq software for all supported operating systems including those that have been preinstalled. The Software CD does not include the operating system itself. Customers can purchase the Software CD by contacting Compaq Customer Service & Support.

The Compaq Software CD is not available for products announced in 2Q98 or later. The Compaq QuickRestore CD includes all software included on the factory installed hard drive image as well as the operating system itself. Together these two aspects provide a more comprehensive recovery solution than was previously provided by the Compaq Software CD.

The Armada 6500 ships with the Compaq Software CD. This CD provides additional software not included as part of the factory pre-install. Applications included on the CD are described in the White Paper titled *Armada 6500 Software Overview*, First Edition, September 1998.

## Compaq Support Software CD

The Compaq Support Software CD set is another way for customers to get access to the latest drivers and software for their computer. This set of CDs is updated monthly with new files that are also made available on the Compaq Web site. This CD contains support files for Compaq commercial portables, desktop and workstation computers. It is the ideal tool for the corporate IS professional responsible for maintaining a number of different types of Compaq personal computers. The Software Support CD set can be purchased via an annual subscription or as a one-time purchase.

Customers who do not need the additional convenience of having all drivers and other support software on single CD can download individual software drivers and utilities, called SoftPaqs, from the Compaq Web site at <http://www.compaq.com/>.

## System Enhancement Diskette

On some platforms, Compaq provides the System Enhancements diskette. This utility is available as a SoftPaq on the Compaq Web site or on the Compaq Support Software CD. This utility features an automated installation and includes all operating system fixes from Microsoft, registry modifications, and INF changes included on the hard drive image pre-installed by Compaq. For customers who create their own hard drive image, it is important that this utility be installed.

## Preinstalled Operating Systems

Compaq currently gives customers the choice of Microsoft Windows 95, Windows 98 or Windows NT 4.0 as the preinstalled operating system. All three operating systems are provided on select models in select regions. See Table 1 for details by product family.

**Table 1. Pre-Installed Operating Systems**

Armada Product Families	Windows NT 4.0 with SP4	Windows NT 4.0 with SP3 <sup>3</sup>	Windows 98 Second Edition <sup>4</sup>	Windows 98 <sup>5</sup> Retail	Windows 95 OSR 2.1 or 2.5 <sup>6</sup>	Windows 95 OSR1	Windows 95 OSR 2.1 and Windows NT 4.0 SP2 Dual Installation	DOS Windows 3.1x and Windows 95 OSR 1 Dual Installation
Armada E700	YES	NO	YES	NO	YES	NO	NO	NO
Armada M700	YES	NO	YES	NO	YES	NO	NO	NO
Armada M300	YES	NO	NO <sup>7</sup>	YES <sup>7</sup>	YES	NO	NO	NO
Armada 7800 and 7400	NO	YES	NO	NO	YES	NO	NO	NO
Armada 7700 and 7300	NO	YES	NO	NO	YES	NO	YES <sup>8</sup>	NO
Armada 6500	NO	YES	NO	YES	YES	NO	NO	NO
Armada 4200	NO	NO	NO	NO	YES	NO	NO	NO
Armada 4100	NO	NO	NO	NO	YES <sup>9</sup>	YES <sup>10</sup>	NO	NO
Armada 3500	NO	YES	NO	YES	YES	NO	NO	NO
Armada 1750	NO	YES	NO	YES	YES	NO	NO	NO
Armada 1700	NO	YES	NO	YES	YES	NO	NO	NO
Armada 1500c	NO	YES	NO	YES	YES	NO	NO	NO
Armada 1500	NO	NO	NO	NO	YES	NO	YES <sup>11</sup>	NO
LTE 5000	NO	NO	NO	NO	NO	NO	NO	YES

<sup>3</sup> Windows NT 4 Service Pack 3 is available on selected models in selected regions.

<sup>4</sup> Windows 98 Second Edition is recommended to fully utilize Advanced Configuration and Power Management (ACPI).

<sup>5</sup> Windows 98 is available on selected models in selected regions.

<sup>6</sup> Compaq currently installs OSR2.1 and IE4.01 on the Armada 1500c, 1700 and 3500 providing a consistent preinstall base for customers transitioning from the Armada 1500 family. Compaq currently installs OSR 2.1 and IE4.01 on the Armada 6500, providing a consistent preinstall base for customers transitioning from the Digital Ultra 2000 family. The latest QFEs from Microsoft are always included as part of the preinstall.

<sup>7</sup> The Armada M300 will be released with Windows 98 Retail preinstalled and with Advanced Power Management (APM) enabled. A Windows 98 Second Edition CD from Microsoft will be included in Armada M300 product shipments for customers wishing to upgrade to Windows 98 Second Edition.

<sup>8</sup> Compaq discontinued dual installations on the Armada 7710MT, 7730MT, 7750MT, 7330MT and 7350MT beginning in 3Q97.

<sup>9</sup> Windows 95 OSR 2.1 was installed on the Armada 4150, 4150T, and 4160T.

<sup>10</sup> Windows 95 OSR1 was preinstalled on the Armada 4100, 4110, 4115, 4110D, 4120, 4125D, 4120T, 4125T, 4130T, 4136T, 4135T, 4131T only.

<sup>11</sup> Compaq discontinued dual installations on the Armada 1530DM, 1550DMT and 1580DMT beginning in 3Q97.

## Supported Operating Systems

In addition to supporting preinstalled operating systems, Compaq offers support for legacy operating systems that are not preinstalled. Table 2 summarizes support offered for each operating system by product family.

**Table 2. Supported Operating Systems**

Armada Product Families	Windows 2000 Beta 3	Windows NT 4.0 with SP5	Windows NT 4.0 with SP4	Windows NT 4.0 with SP3	Windows 98 Second Edition	Windows 98 Retail	Windows 95 OSR 2.1 or OSR 2.5	Windows 95 OSR 1	Windows NT 3.51	DOS/Windows 3.1x	OS/2 Warp 3.0 & 4.0
Armada E700	YES	YES	YES	NO	YES	YES	YES	NO	NO	NO	NO
Armada M700	YES	YES	YES	NO	YES	YES	YES	NO	NO	NO	NO
Armada M300	YES	YES	YES	NO	YES	YES	YES	NO	NO	NO	NO
Armada 7800 and 7400	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	NO
Armada 7700 and 7300	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Armada 6500	NO	NO	YES	YES	YES	YES	YES	NO	NO	NO	NO
Armada 4200	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	NO
Armada 4100	NO	YES	YES	YES	YES	YES	YES <sup>12</sup>	YES <sup>13</sup>	YES	YES	YES
Armada 3500	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	NO
Armada 1750	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	NO
Armada 1700	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	NO
Armada 1500c	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	NO
Armada 1500	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	NO
LTE 5000	NO	NO	YES	YES	YES	YES	NO	YES	YES	YES	YES

The following sections list major Compaq software enhancements for each supported operating system. Customers should refer to the Compaq Web site or Compaq Support Software CD for the latest revisions and information regarding these software components.

<sup>12</sup> Extended feature support for Windows 95 OSR2 on the Armada 4150, 4150T and 4160T

<sup>13</sup> Standard Windows 95 OSR1 feature support is offered for the Armada 4150, 4150T and 4160T. Extended feature support for Windows 95 OSR1 is offered on all other Armada 4100 models.

## Compaq Value-Added Features

Table 3 summarizes major software functionality and hardware supported on Compaq portable computers for each operating system. Some of this support is provided through Compaq device drivers and utilities, while other support is inherent to the operating system. Refer to the legend at the end of the table for a description of the entries. The list is not intended to be exhaustive; only a high level review of functional areas found to be of most interest to Compaq portable customers are noted.

**Table 3. Compaq Value-Added Features**<sup>14</sup>

	Windows 2000 Beta 3	Windows 98	Windows NT 4.0	Windows 95	Windows NT 3.51	DOS & Windows 3.1x	OS/2 Warp 3.0 & 4.0
Audio Drivers	OS <sup>15</sup>	CVA	CVA	CVA	CVA	CVA	CVA
Video Drivers	OS <sup>16</sup>	CVA	CVA	CVA	CVA	CVA	CVA
Power Management							
Standby	OS	CVA	CVA	CVA	CVA	CVA	CVA
Hibernation	OS	CVA	CVA	CVA	CVA	CVA	CVA
Power conservation timers <sup>17</sup>	OS	CVA/OS	CVA	CVA	CVA	CVA	CVA
ACPI Support <sup>18</sup>	CVA/OS	CVA/OS	NA	NA	NA	NA	NA
APM Support	CVA/OS	CVA/OS	CVA/OS	OS	NA	OS <sup>19</sup>	NA <sup>20</sup>
Programmable Keys	NA <sup>21</sup>	CVA	CVA	CVA	CVA	CVA	CVA
PC Card 16 Support	OS	OS	CVA/OS	OS	OS	CVA	OS
PC Card CardBus (32-bit) Support	OS	OS	CVA	OS	NA	CVA <sup>22</sup>	NA
Plug-and-Play Support for PC Cards	OS	OS	CVA <sup>23</sup>	OS	NA	CVA	NA
Compaq Ethernet Network Drivers	CVA	CVA	CVA	CVA	CVA	CVA	OS

<sup>14</sup> Some features are not supported on all platforms where limitations in the hardware prevent a feature from being enabled.

<sup>15</sup> Audio drivers with Compaq value added features will be available for selected Armada models to support commercial versions of Windows 2000.

<sup>16</sup> Video drivers with Compaq value added features will be available for selected Armada models to support commercial versions of Windows 2000.

<sup>17</sup> Includes all activity-based timers that power down used components after a user-defined period of inactivity.

<sup>18</sup> ACPI requires support in the hardware, in the BIOS, and in the operating system. Most Armada models have hardware and BIOS support. See Table 6 for a list of Armada families that support ACPI. Windows 2000 and Windows 98 Second Edition offer ACPI support in the operating system.

<sup>19</sup> Microsoft Windows 3.1x does support APM version 1.1.

<sup>20</sup> Customers interested in power management support under IBM OS/2 Warp should contact IBM directly for more information.

<sup>21</sup> CVA support for programmable keys will be available to support commercial versions of Windows 2000.

<sup>22</sup> Armada 1500 and Armada 7000 families only.

<sup>23</sup> For Plug-and-Play support, some limitations exist with some PC Cards and are dependent on the PC Card drivers. Contact your PC Card vendor for more information about Plug-and-Play support under Windows NT 4.0.

	Windows 2000 Beta 3	Windows 98	Windows NT 4.0	Windows 95	Windows NT 3.51	DOS & Windows 3.1x	OS/2 Warp 3.0 & 4.0
Compaq Intelligent Manageability	CVA	CVA	CVA	CVA	NA	NA	NA
Hot Docking <sup>24</sup>	OS <sup>25</sup>	OS	NA	OS	NA	NA	NA
MultiBay Hot Swapping Support <sup>26</sup>	OS <sup>27</sup>	NA <sup>28</sup>	CVA	NA <sup>29</sup>	NA	NA	NA
Infrared Support							
1.15 Mbps Transfer	OS	OS	NA	OS	NA	CVA	NA
4 Mbps Transfer	OS	CVA	NA	CVA	NA	NA	NA
Compaq Software MPEG Support	OS	OS	CVA	CVA/OS	NA	NA	NA
Communications							
Data Support	OS	OS	OS	OS	OS	OS	OS
Facsimile Support	OS	CVA <sup>30</sup>	CVA <sup>31</sup>	OS	NA	NA <sup>32</sup>	NA <sup>33</sup>
Battery Calibration <sup>34</sup>	CVA	CVA	CVA	CVA	NA	NA	NA
DVD Movie Playback <sup>35</sup>	NA <sup>36</sup>	CVA	NA <sup>37</sup>	CVA	NA	NA	NA

**Legend:**

“CVA” = Compaq value-added software or firmware enhancements.

“OS” = functionality provided by the native operating system.

“CVA/OS” = functionality supported by the operating system but enhanced through Compaq value-added software or firmware.

“NA” = functionality not available on Compaq portable platforms.

<sup>24</sup> Hot docking refers to hot or warm docking and undocking in ArmadaStation docking stations.

<sup>25</sup> Windows 2000 supports Hot Docking on ACPI systems only.

<sup>26</sup> MultiBay hot swapping support refers to hot or warm swapping support for CDROM, DVD, floppy drive, LS-120, and batteries in the Compaq MultiBay.

<sup>27</sup> Windows 2000 supports MultiBay hot swapping support on ACPI systems only.

<sup>28</sup> MultiBay hot swapping is offered on the Armada 6500, E700, M700, and M300.

<sup>29</sup> MultiBay hot swapping is offered on the Armada 6500, E700, M700, and M300.

<sup>30</sup> For the Armada 7800, Armada 7400 and Armada 1700 RingCentral Fax is preinstalled. This software application is not available for download from the Compaq web site.

<sup>31</sup> Compaq provides the Trio Communications Suite for Windows NT 4.0 on the Armada 7300 and 7700 families. For the Armada 1700, 3500, 7400 and 7800, RingCentral Fax is preinstalled. This software application is not available for download from the Compaq web site.

<sup>32</sup> Requires third-party software not provided by Compaq.

<sup>33</sup> Requires third-party software application not provided by Compaq.

<sup>34</sup> The Battery Calibration utility allows Armada 7400 and 7800 users with high-capacity SMART batteries to calibrate their batteries while on AC power. Refer to the white paper titled *Armada 7400 and 7800 Battery Calibration* for more information.

<sup>35</sup> Refer to the white paper titled *DVD Software Support for Compaq Armada Portables*.

<sup>36</sup> DVD movie players are not yet available for Windows 2000, but are expected to be available in late 1999 or early 2000.

<sup>37</sup> Microsoft Windows NT 4.0 does not support movie playback of MPEG2 movie clips



## Windows 95

Windows 95 is currently being preinstalled on most Armada product families. The version being used on current platforms is the OEM Service Release 2.1 or 2.5 (OSR2). Refer to Table 1 for information on preinstalled operating systems by product family.

Compaq offers full support across the LTE 5000 and Armada product families. Refer to Table 2 for information on which OSR version is supported on which product families. In general, Compaq supports OSR1 across most product families and OSR2.x on the Armada 1500 and later.

Compaq software enhancements extend functionality or enhance the overall user experience. Refer to Table 3 for general information on Compaq software enhancements provided for Windows 95. For information on specific Compaq software enhancements for Windows 95 by product family, refer to the *Armada Software Overview* and *Armada Pre-install Refresh* white papers available for each product family.

Besides meeting stringent internal criteria for Windows 95 compatibility, all Compaq portable products have passed the rigorous Microsoft Windows Hardware Compatibility Test (WHQL). Information on Compaq portable computer certifications can be found on the Microsoft Web site at <http://www.microsoft.com/hwtest/hcl>.

### Windows 95 Feature Considerations

Windows 95 OSR2 offers enhancements over the Windows 95 OSR1 release and the retail version of Windows 95. Windows 95 OSR2 enables key hardware in the latest portable products and provides support for Compaq software that is not available under OSR1. For customers who choose to downgrade to OSR1 or the retail version of Windows 95, Compaq only supports those features inherent in the operating system. Table 4 lists new features and hardware support introduced with Windows 95 OSR2, which are not supported under Windows 95 OSR1.

**Note:** Customers who downgrade from the preinstalled version of Windows 95 OSR2 to an earlier version of Windows 95 (OSR1 or Retail versions) will lose key functionality. Compaq strongly recommends that customers do not downgrade.

**Table 4. New Feature & Hardware Support Under Windows 95 OSR2**

Feature	Description
FAT32	Enhancements to the Windows 95 FAT file system designed to efficiently support large hard disks, up to 2 Terabytes in size. Includes updates to FDISK, Format, Scandisk, and Defrag disk utilities to support FAT32 partitions.
DriveSpace Update	Windows 95 DriveSpace compression utility now supports compressed volumes up to 2 GB in size. Note: DriveSpace compression is not supported on FAT32 volumes.
Power Management Improvements	Support for Advanced Power Management (APM) 1.2 BIOS, wake-on-ring for modems, multi-battery PC's, drive spin down, and powering down of inactive PCMCIA modems.
Storage Enhancements	Support for IDE Bus Mastering, 120M Floptical disk drives, removable IDE media, Zip drives, and CD Changers. Also adds the SMART predictive disk failure API's.
PC Card Enhancements	Adds support for new PC Card 32 (CardBus) bridges, PCMCIA cards that operate at 3.3 volts rather than 5 volts, multifunction PCMCIA network/modem cards, and PCMCIA Global Positioning Satellite (GPS) devices.
CDFS Enhancements	Support for ISO 9660 disks up to 4 GB in size, and CD-I format CD-ROMs.
PCI Bridging & Docking	Support for PCI devices for use in PCI docking stations.

Feature	Description
IRQ Routing	Support for new PCI interrupt routers.
Intel MMX Support	Support for third parties to build software that exploits the Intel Pentium Multimedia Extensions (MMX) for fast audio and video support.
NDIS 4.0 Support	Support for new NDIS 4.0 network interface card drivers.
Automatic Scandisk On Boot	In situations where the PC was not shut down normally, Scandisk will automatically run at the next reboot in order to check for damaged files.
Online Service Folder	Client software for America Online 3.0, CompuServe 3.0, CompuServe WOW!, and AT&T Worldnet.

## Windows 98

Compaq offers Windows 98 as a preinstalled operating system on most Armada product families. Windows 98 Second Edition is preinstalled on selected Armada models. Refer to Table 1 for information on preinstalled operating systems by portable family.

Compaq offers full support of both Windows 98 and Windows 98 Second Edition on all models within the LTE 5000 and Armada product families. Refer to Table 2 for information on supported operating systems by portable family.

Compaq software enhancements extend functionality or enhance the overall user experience. Refer to Table 3 for general information on Compaq software enhancements provided for Windows 98. For information on specific Compaq software enhancements for Windows 98 by product family, refer to the *Armada Software Overview* and *Armada Pre-install Refresh* white papers available for each product family.

Besides meeting stringent internal criteria for Windows 98 compatibility, Compaq portable products have passed the rigorous Microsoft Windows Hardware Compatibility Test. Information on Compaq portable computer certifications can be found on the Microsoft Web site at <http://www.microsoft.com/hwtest/hcl>.

### Windows 98 Feature Considerations

In addition to providing enhanced performance and a more stable 32-bit operating environment, Windows 98 provides many new features and support for new hardware technologies over its predecessor, Windows 95. Refer to Table 5 for more information on what is new in Windows 98. See <http://www.microsoft.com/windows98> for additional information about Windows 98 and Windows 98 Second Edition.

**Table 5. New Feature & Hardware Support under Windows 98**

Feature	Description
Windows Update	Includes the Update Manager. This feature keeps users' systems up-to-date by providing easy access to the latest drivers and operating system files on an on-going basis.
Dial-Up Networking Improvements	Includes Multilink Channel Aggregation enabling users to combine all available dial-up lines for higher transfer speeds. Supports Dial-up scripting, which can automate the process of connecting to bulletin boards and online services. User interface enhancements simplify setting up and using dial-up connections.
Client Support for Virtual Private Networking (VPN)	Networking support tool for remote users to access their corporate network via a secure connection. Utilizes the Point-to-Point Tunneling Protocol (PPTP).

Feature	Description
Universal Serial Bus (USB)	Allows up to 127 devices off a single port. Supports Plug-and-Play of these devices. . USB also offers greater speed over traditional serial buses (up to 12 Mbs). The connector provides power across the bus.
Setup Enhancements	Decreases setup time while increasing setup reliability. The setup interface shows the user how far along in the setup process they are.
Faster Shutdown	The shutdown time has been dramatically reduced from Windows 95 to Windows 98.
FAT32 Conversion Utility	A graphical utility which can quickly and safely convert a hard drive from the FAT16 to FAT32.
Power Management	Windows 98 is the first Microsoft operating system to feature ACPI (Advanced Configuration and Power Interface). ACPI is an open industry specification that is an integral part of the Microsoft OnNow initiative. <sup>38</sup>
Win32® Driver Model (WDM)	A new, unified driver model for Windows 95 and Windows NT that will enable new devices to have a single driver for both operating systems. It allows Windows 98 to maintain full legacy device driver support while adding support for new WDM drivers.
Windows Maintenance Wizard	Allows users to schedule regular maintenance for their systems. The Windows Maintenance Wizard includes: Disk Defragmenter; ScanDisk; and Disk Cleanup.
Version Conflict Manager	Detects file version conflicts with installed programs and will install the Windows version of the driver.
Remote Access Server	Enables the users' desktop to act as a dial-up server. Allows dial-up clients to remotely connect to a Windows 98 machine for local resource access.
Multiple Display Support	Allows the user to display different images on multiple monitors using multiple graphics adapters on a single PC. This feature effectively expands the size the Windows desktops extending beyond a single monitor.
Support for New Generation of Hardware	In addition to the USB and ACPI support mentioned above, Windows 98 supports additional new hardware features including IEEE 1394, Accelerated Graphics Port (AGP), and DVD.

Some of the new features with Windows 98 have particular appeal to some commercial notebook users. However, all features of Windows 98 are not supported across all Compaq notebook families. In addition, some Compaq unique features are not supported across all notebook families under Windows 98. Refer to Table 6 for more information on which notebooks support key Compaq unique and Windows 98 features.

<sup>38</sup> Compaq recommends that customers planning to utilize ACPI upgrade to Windows 98 Second Edition or later.

**Table 6. Key Windows 98 Feature Support by Compaq Portable Family**

Notebook Family	Compaq Intelligent Manageability	Multilink <sup>39</sup>	USB <sup>40</sup>	Multiple Monitor Support <sup>41</sup>	ACPI <sup>42</sup>
Armada E700	✓	☐	✓	☐	☐
Armada M700	✓	☐	✓	☐	☐
Armada M300	✓	☐	✓	☐	☐
Armada 7800	✓	☐	✓	☐	☐
Armada 7700	✓	☐	☐	☐	✗
Armada 7400	✓	☐	✓	☐	☐
Armada 7300	✓	☐	☐	☐	✗
Armada 6500	✗ <sup>43</sup>	☐	✓	✗	✗
Armada 4200	✓	☐	☐	✗	☐
Armada 4100	✓	☐	✗	✗	✗
Armada 3500	✓	☐	✓	✗	☐
Armada 1750	✓	☐	✓	✗	☐
Armada 1700	✓	☐	✓	✗	☐
Armada 1500c	✓	☐	☐	✗	☐
Armada 1500	✓	☐	☐	✗	✗
Armada 1100	✗	☐	✗	✗	✗
LTE 5000	✗	☐	✗	✗	✗

**Legend:**

✓ = Supported without requiring additional hardware or software.

☐ = Supported with additional optional hardware, software, or firmware.

✗ = Not supported on the specified notebook family.

**Microsoft Windows NT Workstation 4.0**

Windows NT 4.0 with Service Pack 3 (SP3) or Service Pack 4 (SP4) is currently being preinstalled on select models in select regions on select Armada product families. Refer to Table 1 for information on preinstalled operating systems by portable family.

<sup>39</sup> Multilink requires multiple modems. Some Armada notebooks include an integrated modem while others do not. At a minimum a second PC Card or serial modem is required to take advantage of Multilink.

<sup>40</sup> Integrated USB is supported on selected models beginning in 2Q98. Models without integrated USB require optional USB hardware such as the Compaq USB PC Card.

<sup>41</sup> Multiple Monitor Support requires multiple video controllers. Only some Armada products feature a dual video controller architecture that enables this feature. Compaq notebook families listed as not supporting Windows 98 multiple monitor features may support it using a second video card in a docking station. For the purposes of this table, only those notebooks capable of supporting the feature without a second video card were noted as such.

<sup>42</sup> ACPI is supported under Windows 98 on selected Armada portable families but requires an ACPI-enabled BIOS. Check [www.compaq.com/support](http://www.compaq.com/support) to determine if the BIOS installed on your Armada model supports ACPI or if a BIOS upgrade is required.

<sup>43</sup> The Armada 6500 has ClientWORKS, which offers similar functionality.

Windows NT 4.0 with Service Pack 3, Service Pack 4, and Service Pack 5 (SP5) are supported on most models within the LTE 5000 and Armada families. Refer to Table 2 for information on supported operating systems by portable family.

Microsoft periodically releases updates to the Windows NT 4.0 operating system in the form of Microsoft Service Packs. To date, there have been five Service Packs released. Each Service Pack typically includes upgrades, patches, and new software components that introduce new functionality. Once a Service Pack has been installed it is integrated into the operating system.

---

**Note:** Each version of a Microsoft Service Pack typically includes all necessary upgrades, patches and functionality enhancements included in prior releases. In order to have the latest update from Microsoft it is only necessary to install the latest Service Pack. On portable platforms where Windows NT 4.0 is the preinstalled operating system, Service Pack 3 or Service Pack 4 is also preinstalled. All Compaq portable products that support Windows NT 4.0 support both Service Pack 3 and Service Pack 4. Compaq does not support Service Pack 2, Service Pack 1, or the retail version of Windows NT 4.0 without Service Pack 3, Service Pack 4 or Service Pack 5 installed. Compaq recommends an upgrade to Service Pack 4 for customers who have not installed any Service Pack or who are using an earlier Service Pack version.

Refer to [www.microsoft.com/windows](http://www.microsoft.com/windows) for an overview and contents of each Windows NT Service Pack.

---

Besides meeting stringent internal criteria for Windows NT 4.0 compatibility, all Compaq portable products have passed the rigorous Microsoft Windows Hardware Compatibility Test. Information on Compaq portable computer certifications can be found on the Microsoft Web site at <http://www.microsoft.com/hwtest/hcl>.

## Windows NT 4.0 and Compaq-Value-Added Feature Considerations

In addition to providing enhanced performance and a more stable operating environment, Windows NT 4.0 provides many new features and support for new hardware technologies over its predecessor, Windows NT 3.51. Windows NT 4.0 does not support many of the mobile features that Windows 9x customers have come to expect. However, Compaq software enhancements do extend functionality and provide mobile users with critical functionality such as power management and PC Card support.

Refer to Table 7 for general information on Compaq software enhancements provided for Windows NT 4.0. For information on specific Compaq software enhancements for Windows NT 4.0 by product family, refer to the *Armada Software Overview* and *Armada Pre-install Refresh* white papers available for each product family.

**Table 7. Compaq Value Added Features under Windows NT 4.0**

Feature Category	Description
Power Management	System tray accessible battery status
	Power off at shutdown <sup>44</sup>
	Standby and hibernation support
	Power conservation timers
	FAT16 hibernation support under both FAT16 and NTFS
	Control Panel extension
Supported PC Cards	Support for 32-bit CardBus PC Cards <sup>45</sup>

<sup>44</sup> This feature is not available on the LTE 5000 or Armada 4100 products using Windows NT 4.0 Service Pack 4.

Feature Category	Description
	Support for Modem and ATA Storage PC Cards Support for FFS Flash and FTL Flash PC Cards Support for LAN and SCSI PC Cards Support for Multifunction PC Cards
PC Card Support	APM 1.2 Compliant Standby and hibernation with PC Cards Socket Power Management Configuration on card insertion Automatic setup application launch on card insertion System Tray accessible PC Card slot naming Hot swapping of Modem and ATA Storage PC Cards Hot swapping of SRAM and Flash PC Cards Hot insertion of LAN, SCSI and Combo PC Cards Hot removal of LAN, SCSI and Combo PC Cards <sup>46</sup>
Additional Features	Data/Fax Software Hot swapping of MultiBay devices <sup>47</sup> Programmable keys IDE Bus Master support

## Windows 2000 Professional

As 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 increase reliability, improve manageability, and result in a lower total cost of ownership.

Microsoft initiated the Deployment Program for Windows 2000 to create awareness and gain practical feedback from customers on the deployment of Windows 2000 before actual release. Customers who are participants in the Deployment Program have committed to be early adopters of Windows 2000. They are actively evaluating and testing all early releases of the product in their environment. The Deployment Program will help insure that the final release of Windows 2000 is robust and ready to deploy in corporate environments.

Compaq has been Microsoft's chosen premier platform partner in the development and deployment of Windows 2000. Compaq provided equipment from portables to servers in the test labs on the Microsoft campus and to the early participants in the Deployment Program. This

<sup>45</sup> This feature is not available on the LTE 5000 or Armada 4100 products using Windows NT 4.0 Service Pack 4.

<sup>46</sup> LAN and SCSI PC Cards that have Award CardWare-aware drivers offer hot swapping capabilities. Cards known to offer this support include: Adaptec 1480 SCSI CardBus, TDK Network Flyer 100 CardBus, Madge Token Ring CardBus, Madge TR MK2 (non-CardBus)

<sup>47</sup> Limited to hot swapping of CD-ROM, DVD, floppy drives, and batteries in the Compaq MultiBay.

helps ensure wide and varied testing of Compaq Armada products by Compaq, Microsoft, and joint customers.

For more information about the Compaq / Microsoft partnership, refer to <http://www.compaq.com/partners/microsoft>. For more information about Windows 2000 at Compaq, refer to.

## Windows 2000 Hardware Requirements

Microsoft will publish minimum hardware requirements for running Windows 2000 on portable PCs prior to the commercial availability of Windows 2000. Microsoft is currently promoting a “Windows 2000 READY PC” program that advertises systems that meet recommended standards for running Windows 2000. These recommended standards exceed the minimum requirements, but are considered by Microsoft to be the ideal capabilities for upgrading to Windows 2000. Table 8 shows the READY PC requirements. Compaq was a participant in the early Ready PC program in 1998 and will continue to participate in 1999 on selected Armada models. Many Armada models meet the minimum hardware requirements for running Windows 2000, and a significant subset of those also meet the more stringent READY PC requirements.

**Table 8. Microsoft’s Windows 2000 Ready PC Requirements for Portable PCs<sup>48</sup>**

Category	Ready PC Requirements for Portable PCs
Processor	233 Mhz
Memory	64 MB
Hard Drive	N/A
Operating System	Preinstalled with Windows NT 4.0 Service Pack 3
Power Management	ACPI Ready and Enabled

## Windows 2000 Beta Support

As discussed above, Compaq is actively participating in Microsoft’s Windows 2000 Deployment Program and is working to make Compaq Armada products the premier platforms for running Windows 2000. Compaq is providing support for Windows 2000 Beta 3. Client drivers and utilities will be supported natively in the Windows 2000 Beta release. BIOS releases and white papers are available at [www.compaq.com/partners.microsoft/windows2000/portables](http://www.compaq.com/partners.microsoft/windows2000/portables).

Refer to the white paper *Windows 2000 Beta 3 Support on Compaq Armada Portables* for a list of supported platforms and the required BIOS levels for those platforms.

## Windows 2000 Feature Considerations

Windows 2000 promises to offer premier support for mobile platforms. Many of the features provided by Compaq value-add software in Windows NT 4.0 now become part of the operating system. Most notably, Windows 2000 has full support for ACPI power management and PC Cards. Some of the key features currently planned for Windows 2000 are highlighted in Table 9.

<sup>48</sup> These requirements were taken from [www.microsoft.com/windows](http://www.microsoft.com/windows) and are current as of this writing. These are subject to change by Microsoft without notice. Refer to this Web site for the most up to date information.

**Table 9. New Native Feature Support under Windows 2000<sup>49</sup>**

<b>Feature</b>	<b>Description</b>
Premier Mobile Support	<p>Hot and warm docking and undocking for ACPI platforms.</p> <p>Hot swapping of MultiBay devices (CD-ROM, floppy, DVD, LS-120, battery) and PC Cards for ACPI platforms.</p> <p>Offline files, folders, network drives and web pages, allowing users to take network resources offline then synchronize when reconnected.</p> <p>Synchronization Manager allows mobile users to automatically synchronize resources such as e-mail, calendars, and offline resources when connecting or disconnecting from the network.</p> <p>Battery management features allow hot swapping of batteries, tools to maximize battery life, and the ability to save data before the battery is fully drained.</p> <p>Multiple hardware profiles based on environment, such as being docked or undocked.</p>
ACPI Power Management <sup>50</sup>	The operating system now controls most power management functions rather than the BIOS. These functions include system sleep states, device low power states, processor low power states, device insertion and removal, hot/warm docking and undocking and battery capacity. Having the OS control power management allows better power management of individual devices and power management that takes application usage into account. The end result is better overall power management and longer battery life.
New Hardware Support	<p>Plug and Play support.</p> <p>Operating system supplied thermal management.</p> <p>USB support.</p> <p>Multiple monitors – allows multiple monitors with different resolutions and refresh rates.</p> <p>Accelerated Graphics Port (AGP) support.</p> <p>Smart Card support.</p> <p>Support for Infrared devices<sup>51</sup>.</p>
Improved multimedia	<p>Native DVD support, allowing customers to use a DVD drive as a CD-ROM drive or play MPEG movie clips<sup>52</sup>.</p> <p>Direct X 7.</p>
Enhanced File Systems	<p>Support for FAT16, Enhanced FAT32, Enhanced NTFS.</p> <p>NTFS allows hard drives up to 2 terabytes to be configured into a single partition.</p> <p>Encrypting File System (EFS) allows for the encryption of files under NTFS.</p>
Support for Industry Standards	<p>Web-based Enterprise Management (WBEM).</p> <p>Windows Management Instrumentation (WMI).</p>
Intellimirror	<p>Allows users to completely duplicate their environment (data, applications, and operating system settings) on the network.</p> <p>Allows a mobile user to move about freely, having access to their environment wherever they go.</p> <p>Allows remote maintenance and trouble shooting by a network administrator.</p>
Improved MultiMedia	<p>Native DVD support.</p> <p>DirectX 6.0 support.</p>

<sup>49</sup> Source: [www.microsoft.com/windows](http://www.microsoft.com/windows).

<sup>50</sup> Requires ACPI support in the hardware and BIOS. Refer to Table 6 for a list of Armada product families that support ACPI.

<sup>51</sup> IR is support under Windows 95 and Windows 98 but is not supported in Windows NT.

<sup>52</sup> Additional software not provided with Windows 2000 is required to play MPEG2 encrypted movies (i.e. Hollywood movies).



Feature	Description
Miscellaneous Features	Fully Y2K ready. Support for Euro Key. Data/fax application included.

For more information about these and other Windows 2000 features, refer to <http://www.microsoft.com/windows/professional/>.

## Linux

Linux is fast becoming viewed by some as an acceptable alternative to the Windows NT operating system. As such, Compaq now supports this operating system on many of its servers, workstations, desktops and portables. Many customers are using Linux to perform various functions throughout their corporation.

The Linux operating system was originally developed on desktop Intel Architecture systems. As such, Linux was developed without portable features. Recently, Linux added support for features that portable users expect such as Advanced Power Management (APM), PCMCIA cards, and X-Windows video drivers for LCD panels. Many other features of portables are so implementation-dependent and have no analogy in the desktop world that the Linux developers have not considered adding these features. For example, each portable manufacturer has their own implementation of device swapping and docking stations.

### Linux Hardware Requirements

The Linux kernel's small size and its efficient memory management contribute to Linux's low hardware requirements. If run in a text-based mode, Linux requires less processing power for graphics, unless X-Windows or a Graphical User Interface (GUI) is used. Depending on the type of GUI used, the minimum hardware requirements will vary slightly for each distribution of Linux. Table 10 outlines the minimum hardware requirements for running Red Hat Linux 5.2.

**Table 10 Minimum Hardware Requirements for Red Hat Linux 5.2**

Requirement
Intel 386SX processor
16MB memory
120MB Hard Disk Drive for a minimal custom
Most video cards supported <sup>53</sup>
CD-ROM drive
3.5" floppy disk drive

### Linux Feature Considerations

Linux has most major features and subsystems of a modern-day Unix operating system, including (but not limited to) NFS, TCP/IP, X-Windows, send-mail, BIND, shell command-line interpreters, editors, and other tools that the Unix market expects. Additionally, Linux has a large amount of Microsoft compatibility in the form of file system support, PCX networking, and floppy management utilities.

<sup>53</sup> Refer to <http://www.redhat.com/support/docs/hardware.html> for additional information

**Table 11. Feature & Hardware Considerations under Linux**

Feature	Description
Premier OS Functions	<p>Multitasking: several programs running at the same time.</p> <p>Multi-user: several users on the same machine at the same time.</p> <p>Multi-platform: runs on many different CPUs, not just Intel.</p> <p>Multiprocessor: Symmetric Multi-Processing (SMP) support is available on the Intel and SPARC platforms.</p> <p>Multithreading: Linux has native kernel support for multiple independent threads of control within a single process memory space.</p> <p>Multiple virtual consoles: several independent login sessions through the console.</p>
Free OS	Source code for the kernel, drivers, development tools and user programs is available and can be freely distributed <sup>54</sup> .
Legacy File Support	<p>Supports several common file systems including Minix, Xenix, and all the common system V file systems as well as an advanced file system of its own, which supports large volumes (up to 4 TB) and long file names (up to 255 characters).</p> <p>Transparent access to MS-DOS partitions (or OS/2 FAT partitions).</p> <p>Special file system called UMSDOS which allows Linux to be installed on a DOS file system CD-ROM file system which reads all standard CD-ROM formats.</p>
Support for networking	<p>TCP/IP networking, including FTP, telnet, NFS, etc.</p> <p>Netware client and server.</p> <p>Many networking protocols: the base protocols available in the latest development kernels include TCP, IPv4, IPv6, AX.25, X.25, IPX, DDP (Appletalk), Netrom, and others. Stable network protocols included in the stable kernels currently include TCP, IPv4, IPX, DDP, and AX.25.</p>
<b><i>The following features important to portable customers are not currently available under Linux:</i></b>	
Feature	Description
Premier Mobile Support	<p>Hot-swapping of optional storage components (such as Hard Disk Drives, Floppy Disk Drives, CD-ROM, DVD, LS120 or ZIP drives).</p> <p>Hot-docking into Armada Station docking stations.</p>
Compaq Unique Features	<p>Enhanced audio features.</p> <p>Use of Compaq programmable keys.</p>
Movie Playback	Multi-media support of MPEG-2 Hollywood Encrypted video content designed for Digital VideoDisks (DVD-ROM) drives.
USB	USB support is experimental only.

## Linux Advantages/Disadvantages

The following matrix represents the results of a small, qualitative study conducted in December 1998 by Compaq Computer Corporation's Enterprise Computing Group. The study group consisted of participants from corporations, ISPs, research institutes and academic institutions.

<sup>54</sup> Additional distributor value-added drivers or enhancements are generally provided at additional cost.

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>• Free Open Source OS</li> <li>• Availability of free or inexpensive productivity applications</li> <li>• Runs on most industry standard computers</li> <li>• Minimal hardware requirements</li> <li>• More stable than Windows operating systems</li> <li>• Y2K compliant</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult to install and setup</li> <li>• Linux code updates get released to public while being developed even if they are not considered "production quality"</li> <li>• Lack of a single dedicated technical support infrastructure</li> <li>• Limited availability of commercial applications (although the list is slowly growing)</li> <li>• Numerous commercial distributions (versions)</li> <li>• Lack of advanced mobile computing features</li> </ul>

Compaq has released a white paper *Installation of Linux on Compaq Armada 7400 and 7800 Portables* designed to help customers self install Linux on Compaq Armada 7400 and 7800 portable families. The paper tells customers what hardware features work and do not work, and where to obtain and how to install hardware-enabling drivers.

## DOS 6.2x & Windows 3.1x

Although Microsoft does not plan to continue development for DOS or Windows 3.1x, both operating systems still account for a small share of the installed user base. Some corporate customers have opted to stay with Windows 3.1x until they are ready to deploy Windows 98 or Windows 2000. For this reason Compaq will continue to provide support for DOS 6.2x and Windows 3.1x on the LTE 5000 and older Armada product families. Refer to Table 2 for information on supported operating systems by portable family.

Support for DOS 6.2x and Windows 3.1x means that the operating systems install correctly and enable all hardware supported by Microsoft within the native operating system. In addition to functionality inherently supported by the base operating system, software enhancements are provided to extend functionality or enhance the overall user experience. However, Compaq does not support new hardware features and functionality that is not supported by the operating system.

Examples of unsupported hardware features under DOS/Windows 3.1x include 32-bit CardBus PC Cards and high-speed infrared (i.e. transfer speeds up to 4Mbps). Customers who encounter difficulties that are not directly related to a Compaq-provided driver or utility should contact Microsoft directly.

Compaq software enhancements are available as individual SoftPaqs and can be obtained by contacting Compaq Customer Service & Support or on the Compaq Web site at <http://www.compaq.com>. For additional convenience Compaq software enhancements are also available on CD. See the section titled *Support Software* for more information.

---

**Note:** Standard feature support for Microsoft DOS 6.2x and Windows 3.1x will continue to be provided for several products announced in 1998 and early 1Q99. Support statements for Windows 3.1 on the Armada 1700, 7400 and 7800 are detailed in the White Paper titled *Windows 3.1 Support on Compaq Armada and LTE 5000 Portables*. Refer to this white paper for more information on the level of testing conducted and availability of support software for these platforms.

---

Compaq does not preinstall DOS or Windows 3.1x on any currently shipping Armada platform.

## Microsoft Windows NT 3.51

Although no longer sold by Microsoft, Compaq continues to support Windows NT 3.51 on the LTE 5000, Armada 1500, Armada 4100 and Armada 7700 and 7300 families. Windows NT 3.51 installs correctly and fully enables all hardware supported by Microsoft under the native operating system. Given that hardware technology has advanced since Windows NT 3.51 was first released, some features of the hardware will not be available.

Examples of unsupported hardware features include 32-bit CardBus PC Cards, Plug-and-Play device support and Infrared support. Windows NT 3.51 software enhancements from Compaq are not preinstalled on any portable but are available as individual SoftPaqs and can be obtained by contacting Compaq Customer Service & Support or on the Compaq Web site at <http://www.compaq.com>. For additional convenience Compaq software enhancements are also available on CD. See the section titled *Support Software* for more information.

Compaq will continue to offer support for Windows NT 3.51 support on product families where support is currently offered. This support will continue to be provided on new products within these families announced prior to 1Q98.

Compaq does not preinstall Windows NT 3.51 on any currently shipping Armada platform.

## IBM OS/2 Warp 3.0 & 4.0

Although OS/2 accounts for a small percentage of installed operating systems worldwide, it continues to maintain a significant presence within the financial services and insurance sector and in Europe in particular. Large banks and other financial services firms are using OS/2 for business-critical applications. In order to satisfy this important market segment, Compaq provides support for OS/2 Warp 3.0 & 4.0 on select portable platforms.

---

**Note:** Compaq does not support OS/2 Warp on the Armada 1500 family given that the performance and mobility characteristics of this platform are not ideally suited to an OS/2 environment.

---

Support for OS/2 Warp is provided for the LTE 5000, Armada 4100, 7300, and 7700 families. Compaq supports basic audio, video and networking functionality. In addition, Compaq provides software to enable Programmable Keys and power management functionality such as standby and hibernation. Customers who encounter difficulties that are not directly related to a Compaq provided driver or utility should contact IBM directly.

OS/2 Warp software enhancements from Compaq are not preinstalled on any portable platform. Software enhancements are available as individual SoftPaqs and can be obtained by contacting Compaq Customer Service & Support or on the Compaq Web site at <http://www.compaq.com>. For additional convenience Compaq software enhancements are also available on CD. See the section titled *Support Software* for more information.

---

**Note:** Compaq does not support all features of OS/2 on all portable products. These features are listed in Table 3 as not being provided by Compaq. Customers who require these features under OS/2 Warp should contact IBM for more information.

---

## Frequently Asked Questions

### **What is the difference between ACPI and APM?**

Windows 98 and Windows 2000 support the Advanced Configuration and Power Interface (ACPI) specification. Advanced Power Management (APM) utilized the BIOS for power management. ACPI places the power management functionality inside of the operating system architecture. When using ACPI-aware software application and hardware devices, ACPI is expected to provide more efficient power management over APM.

ACPI is also a key element of the Microsoft OnNow initiative, which promises to make computers more responsive. ACPI may provide more efficient power management, faster program startup and shutdown times, and quicker computer boot and shutdown to name just a few features of ACPI technology.

ACPI requires support in the hardware, the BIOS, and the operating system. Windows 98 and Windows 2000 are the first operating systems to implement ACPI. Compaq recommends that Windows 98 customers who wish to use ACPI on Compaq Armada products upgrade to Windows 98 Second Edition or later.

Most Armada platforms have ACPI hardware support and BIOS support, although in some cases, a BIOS upgrade may be required to enable BIOS support.

With Windows 98 Second Edition, ACPI will automatically be enabled on ACPI-capable platforms with a BIOS dated after 12/31/99. ACPI can easily be enabled on platforms with an earlier BIOS, provided the BIOS contains ACPI support. With Windows 2000, ACPI will be automatically enabled (on ACPI-enabled platforms) when Windows 2000 is installed.

### **Is Windows 98 a major upgrade to Windows 95?**

Windows 98 is an evolutionary enhancement to Windows 95 that includes some new feature and support for new hardware technologies. Windows 98 features an integrated operating system and browser, faster launch and shutdown times, expanded driver support and update, updated system tools for corporate support, and troubleshooting wizards. With these enhancements, Windows 98 “works better” and “plays better” according to Microsoft. This upgrade is designed to provide the best Internet experience, deliver higher quality computing, make computing more entertaining, and unlock the power of the PC and its accessories.

### **Is Windows 2000 a major upgrade to Windows NT 4.0?**

Windows 2000 is a revolutionary upgrade to Windows NT 4.0 users, particularly mobile users. Many of the features previously offered through Compaq value-add are now inherent in the operating system. In addition, Windows 2000 offers many security and remote management feature not previously seen on any Microsoft operating system.

### **Should I upgrade to Windows 98, Windows NT 4.0 or wait for Windows 2000?**

Microsoft recommends Windows 2000 as the premier operating system for business users. Until Windows 2000 is available, Windows NT 4.0 is the current operating system of choice for many commercial users. That said, Windows 98 may still be appropriate for other commercial users who require new features or hardware support in Windows 98, but who have decided against Windows NT in the near term. Compaq is committed to supporting Windows 98 and Windows

2000 on the Armada family of notebooks. This commitment is based on the premise that customers should be able to choose the operating system that is most appropriate for them and rest assured that Compaq will support their decision.

### **What features are not supported under Microsoft Windows 95 OSR1?**

Compaq only supports those hardware features inherently supported under Windows 95 OSR1. New types of hardware supported under Windows 95 OSR2, such as 32-bit CardBus PC Cards, cannot be supported under Windows 95 OSR1. For customers who require access to the latest hardware functionality it is recommended that they keep the version of Windows 95 OSR2 preinstalled by Compaq.

### **Why isn't OS/2 Warp supported on the Armada 1500 family?**

OS/2 Warp is supported on the Armada 4100, 7300 and 7700 families. For Compaq customers using OS/2 on portable platforms, these products offer performance and mobility features that are better suited to an OS/2 environment than the Armada 1500 family.

### **Does IBM offer support for OS/2 Warp on Compaq portable products?**

Yes, IBM does offer support for OS/2 on Compaq portable products. Customers with questions that relate to specific IBM OS/2 upgrades, enhancements or patches should contact IBM directly. For questions about enabling basic hardware functionality inherently supported by OS/2 Warp 3.0 or questions regarding Compaq software enhancements for OS/2 Warp 3.0, customers should contact Compaq Customer Service & Support.

### **Does Compaq support UNIX on any portable platforms?**

Compaq does not support any version of UNIX on its portable computers. Customers who wish to use UNIX on a Compaq portable should contact the operating system vendor directly for support.

### **Does Compaq support Linux on any portable platforms?**

Compaq does support Linux on Armada 7400 and 7400 product families. Customers who wish to use Linux on a Compaq portable should refer to the white paper titled *Linux Support on Compaq Armada 7400 and 7800*.

## **List of Tables**

<b>Table 1. Pre-Installed Operating Systems</b>	<b>5</b>
<b>Table 2. Supported Operating Systems</b>	<b>6</b>
<b>Table 3. Compaq Value-Added Features</b>	<b>7</b>
<b>Table 4. New Feature &amp; Hardware Support Under Windows 95 OSR2</b>	<b>9</b>
<b>Table 5. New Feature &amp; Hardware Support under Windows 98</b>	<b>10</b>
<b>Table 6. Key Windows 98 Feature Support by Compaq Portable Family</b>	<b>12</b>
<b>Table 7. Compaq Value Added Features under Windows NT 4.0</b>	<b>13</b>
<b>Table 8. Microsoft's Windows 2000 Ready PC Requirements for Portable PCs</b>	<b>15</b>
<b>Table 9. New Native Feature Support under Windows 2000</b>	<b>16</b>
<b>Table 10. Minimum Hardware Requirements for Red Hat Linux 5.2</b>	<b>17</b>
<b>Table 11. Feature &amp; Hardware Considerations under Linux</b>	<b>18</b>