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Prepared by OS Integration

Compaq Computer Corporation

Contents

History of Innovation and Value-Add in Compaq X86 Server Families

Abstract: Compaq systems provide features differentiating them from the competition. The number and variety of options and features available for Compaq servers has grown rapidly and continues to grow.

This white paper supplies information about Compaq servers, features, and options, as well as providing historical references to communicate the rich heritage of Compaq innovation and leadership in the industry.

It describes features for high availability, life cycle cost reduction, performance tracking and optimization, and security. It examines the Compaq server families and storage options. The three appendices provide a description of Compaq industry partnerships, feature and option descriptions, and a matrix of supported features server by server.

This document is intended as a reference aid for those who want to understand how Compaq adds value to products.

Note: Most of the features described in this paper are operating system independent but not all features are available on every operating system.

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History of Innovation and Value-Add in Compaq X86 Server Families
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Overview

Compaq products offer innovations designed to enhance quality, reliability, maintainability, performance, and Total Cost of Ownership (TCO). Even the Compaq quality pledge reflects the commitment to listen to you in order to deliver the highest quality products, services, and solutions to ensure value and contribute to your success.

Over the years, Compaq often pioneered new technologies subsequently adopted as industry standards. Features like Automatic Server Recovery, once found only on Compaq servers, are now marketed by several vendors. Compaq engineered PCI Hot Plug technology, which has been adopted as an industry standard. Compaq, through its partnership with Corollary, developed the ProFusion 8-way chipset architecture. Research occurring at Compaq today is expected to become industry-standard tomorrow.

This document examines many of the tangible and intangible features making Compaq servers the number one choice for customers who demand quality and reliability.

High Availability Features

You employ systems to accomplish mission-critical functions central to the success of your operation. Any loss of availability translates into a loss of time and money. To protect you from such losses, Compaq offers many features that ensure Compaq servers provide maximum uptime with minimal maintenance.

High availability involves providing three major classes of functionality:

- Features designed to work around any failures without service interruption (*NonStop computing*)
- Features designed to reduce the time it takes to recover from failures (*rapid recovery*)
- Features designed to prevent problems from occurring (*fault prevention*)

NonStop Computing Features

NonStop computing technologies provide a first line of defense against failures. These technologies enable you to route around potential faults and continue operating with little or no interruption of service. In many cases, NonStop computing features incorporate some degree of redundancy. The features listed in Table 1 enable Compaq systems to work around potential failures without requiring immediate intervention.

Table 1: NonStop computing features

Feature	Description
Advanced Network Control Utility	Merges two similar network controllers into a controller pair allowing failover if a fault occurs
Automatic Reconstruction	Reconstructs data automatically to an online spare drive or a replacement drive if a drive fails
Cluster Verification Utility	Helps determine whether a configuration is suitable for use with Microsoft Cluster Service
On-line Recovery Server	Allows two servers to act as a redundant pair while handling two separate workloads
Online Storage Controller Recovery	Merges matched SMART-2 controllers into controller pairs providing controller redundancy
Redundant fans	Ensures proper airflow around temperature-sensitive components if a fan fails
Redundant hot-plug power supply	Allows power supplies to be added or replaced without shutting down the server
Redundant power modules	Enables Power Safe Modules to act as hot spares if the primary power module fails
Redundant power supplies	Ensures that the server continues operating even when a power supply fails
Standby Recovery Server	Allows two servers to act as a redundant pair, one acting as the hot spare for the active server

Rapid Recovery Features

Rapid recovery features offer the ability to recover from server or component failure with the least possible impact on uptime. Several of the features listed in Table 2 enable recovery from component failures without shutting down the server.

Table 2 : Rapid recovery features

Feature	Description
Automatic Server Recovery-2 (ASR-2)	Allows the server to reboot, call the administrator, and report critical problems
Fan Detect and Shutdown	Allows the operating system to detect failure of the fan(s) and invoke automatic shutdown
Hot-plug drives	Permits you to plug and unplug SCSI drives from the system while in operation
Hot-plug fans	Allows replacement of fans without shutting the system down
Hot-plug keyboards	Provides the ability to replace keyboards on a server without the need to restart the system
PCI Hot Plug	Allows add, removal, replace, and upgrade of PCI controllers without shutting down the system
Server Failure Notification	Sends a pager alert to notify your system administrator of a server malfunction
Server Recovery Notification	Sends a pager alert to notify your system administrator of recovery from a server malfunction
Temperature Detect and Shutdown	Detects when the temperature of the system exceeds the caution level and invokes shutdown
Windows NT HAL Recovery	Replaces the Windows NT HAL should the HAL become corrupted

Fault Prevention Features

One of the most obvious ways to improve the availability of a server involves including features enabling the system to avoid problems. Such features involve forward-looking technology to

anticipate the likelihood of a situation and prevent the situation from becoming a problem. Table 3 lists features that improve uptime by preventing server failures.

Table 3 : Fault prevention features

Feature	Description
ECC memory	Enables detection and correction of all single-bit memory errors
Intelligent power switch	Allows administrative control of power switch function through software-configurable switches
Memory deallocation	Tests all memory and automatically deallocates any bad memory blocks that it finds
Power safety interlock	Turns system power off automatically when the case cover is removed
Pre-Failure Warranty	Identifies potential problems and provides replacement for critical components before they fail

Life-Cycle Cost Reduction

The most significant costs for owning systems normally come from maintaining and expanding them. Many of the features Compaq incorporates into server products extend their useful life and reduce the maintenance effort and cost. Features that reduce life cycle costs include the following:

- Server maintenance
- Remote capabilities
- Investment protection

In this section, we examine the features in these categories and explain how they protect your investments in hardware, software, and the time and efforts of the people who use, manage, and service the systems.

Server Maintenance

Server maintenance involves tracking system parameters, maintaining various subsystems, expanding capacity, and monitoring status of the systems. Table 4 lists features enabling many functions of server maintenance to be completed while the system continues operating.

Table 4 : Online server maintenance features

Feature	Description
Asset Tag Number	Allows storage of company-specific asset numbers in a firmware repository for easy tracking
Board release levers	Provides quick access to modular, removable components that slide out easily
Corrected Error Log	Allows quick determination of the type and frequency of corrected errors
Integrated Management Display	Provides a view of information in the Integrated Management Log and other user-defined text
Power line monitoring	Tracks fluctuations in external power line connections
RAID Online Expansion	Allows adding a new disk to a RAID array without destroying the data held in the array
Survey Parameter Capture	Captures system parameters, compares with previous captures, and delivers a comprehensive view of the server and any differences between captures
System Partition Administration Utility	Accesses and updates the System Partition online
System serial number	Contains the system serial number in an EEPROM burned at the factory when the system is built
Temperature monitor via I_2C	Utilizes the Intelligent Interface Control to pass temperature information
Voltage/current monitor	Tracks voltage and amperage fluctuations through the power supplies

Some server-maintenance features function during the power-up or shutting down of the system. Table 5 lists these off-line server maintenance features.

Table 5 : Off-line Server Maintenance Features

Feature	Description
Boot block ROM	Allows the system to boot over the network
CDROM boot	Provides the option of booting from the CDROM
Compaq SmartStart for Servers	Simplifies configuration and installation of Compaq servers and options
Compaq utilities partition	Contains diagnostic tools and utilities including the System Configuration Utility in a system partition
Configurable boot order	Determines which mass storage controller services the boot device
Critical error logging	Records catastrophic errors
DOS CPR	Installs MS-DOS on a FAT partition with Microsoft Windows NT already installed
Drive firmware upgrade	Provides the ability to upgrade drive firmware with software available over the Internet
Failure/Status LED	Indicates device status and provides alerts of any device failure
Fibre Fault Isolation Utility	Verifies installation and operation of Fibre Channel Storage System
Flashable ROM	Used to apply software updates from the integration server to the production servers
Integrated Management Log	Provides a log of system events including Power-On Self Test (POST) results
PCI Plug and Play	Supports the Plug and Play standard for PCI devices
Power Down Manager	Gives the administrator an advanced level of flexibility in configuring the behavior of I_2C power switches
Power-On error log	Records errors that occur during Power-On Self Test (POST)
Revision history table	Stores board revision information in non-volatile memory

Remote Capabilities

Remote capability functions allow control of the server via network or modem on a server without actually being at the server. Table 6 lists these features as well as those that communicate with your system administrator via pager to announce problems or changes.

Table 6 : Remote capability features

Feature	Description
Active Update	Provides proactive notification and delivery of the latest software updates from Compaq
Compaq Insight Manager	Delivers fault, performance, and configuration management for servers and desktop clients
Graphical remote	Enables a graphical view of the Windows NT console to be displayed on the remote console
Info Messenger	Notifies via email the availability of new information or software pertinent to your system
Insight Manager Alerts	Sends alerts to designated pager numbers in case of an impending problem with a server
Integrated Remote Console (IRC)	Allows out-of-band management capabilities such as remote console and remote reset
Power Supply Viewer	Views information about I_2C power subsystems remotely
Remote alpha/numeric paging	Sends alpha/numeric pager alert text via Remote Insight/Insight Manager when it detects problems
Remote asset management	Allows collection or setting of asset management information remotely by way of Insight Manager
Remote diagnostics	Analyzes the condition of the server remotely using Insight Manager
Remote Insight Manager	Offers the most complete, out-of-band server management solution
Remote Insight Lights-Out Edition	Provides customers with unmatched and control of ProLiant servers in their data centers and remote offices for more efficient operation and problem resolution
Remote Windows NT SSD upgrades	Enables your system administrators to apply Windows NT SSD upgrades to systems over the network
Remote threshold settings	Sets alert threshold parameters remotely
SmartStart Integration Management	Allows manual upgrade or installation of Compaq products via Integration Server or CD
Software upgrades via Internet	Software updates are available for many operating systems via easy to navigate web pages

Investment Protection

Compaq protects your investment in several ways. Compaq systems provide features that enable the systems to grow as the demands on the equipment grow.

Compaq offers continued feature updates for legacy versions of popular operating systems. This offers customers who cannot upgrade to current versions of the operating systems to take advantage of many of the latest advances in Compaq technology. The commitment to providing ongoing support of legacy operating environments gives you the ability to decide when to upgrade—based upon your own business requirements. Table 7 describes some other features Compaq offers to protect your investment.

Table 7 : Investment protection features

Feature	Description
CarePaq	Provides enhanced warranty services
Industry-standard components	Ensures that standard components, such as, memory and disks are interchangeable between platforms
OS support for older servers	Supports older server platforms with new operating system support software releases (see Appendix C)
Pre-Failure Warranty	Protects your investment by replacing components prior to complete component failure

Performance Tracking and Optimization

Performance analysis features provide information needed to evaluate system performance metrics and allow for tuning and optimization of Compaq systems. Table 8 lists those features.

Table 8 : Performance tracking and optimization features

Feature	Description
EISA bus utilization monitor	Tracks and graphs utilization of the EISA bus
Memory fault recovery tracking	Tracks operations of the memory subsystem for uncorrectable errors
NIC fault recovery tracking	Tracks over twenty failure indications of Ethernet and Token Ring network interfaces
PCI bus utilization monitor	Tracks and graphs utilization of the PCI bus
Server parameter tracking	Provides timely fault, performance, and configuration information about critical server subsystems
Storage fault recovery tracking	Tracks failure parameters of mass storage controllers and attached hot pluggable drives

Security

Compaq servers offer many features that enhance physical and logical security. Table 9 lists security features, broadly defined as features that provide controls over physical access, remote access over the network or modem, and access by other software methods.

Table 9 : Security features

Security Feature	Description
Administrative password	Prevents changes to the configuration unless you enter the password
CD lock	Disables access to the CD-ROM drive
Configuration (NVRAM) lock	Prevents non-volatile memory modifications and disallows configuration changes
Diskette drive control	Enables and disables the diskette drive. No read, write, or boot functions are available
Diskette write control	Enables and disables diskette-write functions. Boot and read functions are still available
Front bezel key lock	Locks the front portion of the server protecting the removable media components
Keyboard password	Locks out the keyboard to prevent unauthorized access to Compaq servers
Network Server Mode	Allows system startup from hard disk or network server while the keyboard and mouse are disabled
Power down lock	Disables the power switch to prevent accidental shutdown
Power-on password	Prevents use of the computer unless you enter the password
Protected power switch	Prevents accidental server shutdown due to incidental contact with the power switch
QuickLock	Disables the keyboard and pointing device without exiting the application
Serial parallel interface control	Prevents unauthorized transfer of data through the integrated serial and parallel ports

Server Families

Compaq develops both general-purpose and appliance servers for small, medium, and enterprise businesses and offers a range of products to meet your server needs. In this section we examine the Compaq server families and describe their hardware configurations and features.

All Compaq servers ship standard Compaq SmartStart and Compaq Insight Manager. Compaq SmartStart makes system configuration and software installation faster, easier, and more reliable. Compaq Insight Manager presents an intuitive systems management tool delivering fault, performance, and configuration management for Compaq servers and desktop clients.

Compaq Services provides a three-year, limited warranty, including Pre-Failure Warranty (coverage of hard drives, memory, and processors). Fully supported by a worldwide network of resellers and service providers, the warranty furnishes lifetime toll-free 24x7 hardware technical phone support. Other service offerings available through Compaq include a full range of CarePaq bundled hardware and software services:

- Installation and start up
- Extended coverage hours and enhanced response times
- System management and performance services
- Availability and recovery services

Additionally, disaster recovery services are available through our partnership with Comdisco.

Compaq NeoServer

Compaq NeoServer provides the easiest way to get a business on the Internet and build a first network. An integrated operating system makes it simple for you to manage all the functionality needed to run your business-without a dedicated keyboard, monitor and mouse.

NeoServer 150 (announced January, 2000)

With file and peripheral sharing, high-speed Internet access, email, automatic removable backup, firewall security, and eCommerce and intranet capabilities, the Compaq NeoServer 150 provides all the functionality and performance needed to network and run a small business. Standard features include built-in networking software and applications optimized to support an office of up to 100 users, ample network storage, and a powerful 500-MHz Intel Celeron processor.

This perfect solution for a growing small business offers all the hardware and software you need to get started.

ProLiant Family

In 1999, Compaq shipped its three-millionth ProLiant server showing the continuing trust of customers in the premier family of Compaq servers. Our engineering expertise and close working relationships with customers and software partners in designing, integrating, and testing servers, allow us to design a comprehensive line of servers that best address customers' needs for their NonStop IT environments. Leading software companies often develop their applications on ProLiant platforms, providing the most stable and interoperable environment.

Designed for maximum in-chassis flexibility ensuring lasting value and future growth, ProLiant offers a full line of servers maximized for internal system expansion. These servers offer headroom and scalability to easily accommodate growing environments.

Compaq continues to set the standard for platform manageability by providing built-in capabilities and industry-leading management tools enabling you to control your assets and prevent problems. Compaq Intelligent Manageability provides comprehensive products and services to simplify the challenges of managing technology in a nonstop world.

ProLiant DL380 Server (introduced January, 2000)

This dense rack server solution, the follow-on to the ProLiant 1850R, offers uncompromising performance, expanded availability, and unprecedented configuration flexibility. The space-saving 3U chassis houses state-of-the-art components, such as a 733-MHz Pentium III processor scalable to dual processors, 128 MB of 133-MHz ECC registered SDRAM DIMM memory, and a 133-MHz GTL bus to deliver excellent performance. The dual peer PCI bus architecture, 64-bit PCI slots, and Integrated Smart Array Controller offer additional performance and availability. The highly serviceable chassis houses eight bays, supporting web hosting, mail, file/print, or small database applications with no functionality tradeoffs.

Ideal for both remote site and data center deployment, the ProLiant DL380 is an unbeatable workgroup rack solution. The performance, availability, and scalability deliver unsurpassed investment protection.

ProLiant ML350 Server (introduced January, 2000)

This dual-processor server meets the needs of both small corporate workgroups and small/medium businesses by delivering manageability, serviceability, and availability features at an affordable price. It features the latest Pentium III processors, support for 64-bit PCI cards, 133-MHz ECC registered SDRAM memory, 133-MHz Front-Side bus, and an integrated dual-channel Wide Ultra2 SCSI controller to meet demanding performance requirements.

This platform, developed from the ProLiant 800 and Prosignia Server 720, features four hard drive bays, four removable media bays, two 64-bit PCI slots, four 32-bit PCI slots (three available), and one dedicated ISA slot.

The ProLiant ML350 serves as a file/print, web, email, or small database application platform.

ProLiant ML370 Server (introduced January, 2000)

Building on the strengths of the benchmark ProLiant 1600, the Compaq ProLiant ML370 multi-purpose server solution delivers uncompromising performance, expanded availability, unprecedented configuration flexibility, and industry-leading manageability. The redesigned 5U chassis houses state-of-the-art components, such as the dual-processor capable 667-MHz and 733-MHz Pentium III processors, 133-MHz registered SDRAM ECC DIMM memory, and a 133-MHz front-side bus to deliver high performance.

Additional features include dual-peer PCI bus architecture for access to high bandwidth 64-bit/33-MHz PCI slots, optional Integrated Smart Array Controller for additional performance and availability, ten bays to support web hosting, mail, file/print, or small database applications without functionality tradeoffs, and optional Remote Insight Lights-Out Edition for full virtual presence from any remote site.

The flexibility of this server makes it an ideal choice for remote site and data center deployment. Its performance, availability, and scalability deliver unsurpassed investment protection.

ProLiant ML530 Server (introduced January, 2000)

Featuring Highly Parallel System Architecture, 133-MHz SDRAM, 64-bit/66-MHz PCI, and the Pentium III 800-MHz Xeon processors, the world's fastest two-way server combines maximum performance with ultimate expansion and manageability features. The ProLiant ML530, the evolution of the ProLiant 3000, features 16 bays, including 12 hot-plug hard drive bays, as well as eight PCI slots. It ships with memory expandable to 4 GB and dual processing support, ensuring expandability to the highest level of investment protection.

With exceptional two-way performance, expansion, and manageability features, the ML350 is the perfect solution for critical file/print, database, and complex web applications.

ProLiant 400 (announced January 1999)

Its impressive combination of features, affordability, expandability, and reliability make the ProLiant 400 an ideal platform for basic file/print, remote access and communications, small database, and firewall applications. With two internal and three external drive bays, six expansion slots, and optimum upgradability in RAM and internal storage, the Compaq ProLiant 400 provides the flexibility to grow your server as your business demands and protect your IT investment. Features, such as Remote Wake-On-LAN and Automatic Server Recovery (ASR) make the experience of managing your server simple.

This server joins either the Intel Pentium II Xeon or Intel Pentium III Xeon processor with a 100-MHz GTL+ front side bus and an integrated Wide Ultra2 SCSI Controller offering performance suited for a variety of applications. The affordable ProLiant 400 comes standard with 64-MB, 100-MHz unregistered ECC SDRAM DIMM memory (upgradable to a maximum of 768 MB), an internal mass storage capacity of 54.6 GB, and a high performance 32X Max IDE CD-ROM drive.

ProLiant 800 (discontinued; announced January 1997)

The Compaq ProLiant 800 Server combined performance-enhancing technologies with an affordable workgroup server. The ProLiant 800 Server provided Pentium III processors, 100-MHz GTL + bus design, and an integrated Dual Channel Wide-Ultra SCSI-3 Controller to meet the performance requirements of the most demanding networks. With four internal and four external drive bays, six available expansion PCI slots, and dual-processor capability, the ProLiant 800 offered the expandability to grow with your business. In addition, with such features as Compaq Integrated Remote Console and ASR-2, the ProLiant 800 maintained the standard of reliability and manageability unique to Compaq.

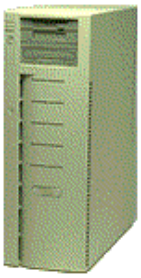
The ProLiant 800 delivered exceptional performance with up to two Pentium III 600-, 550-, 500-MHz processors with 512-KB L2 cache. It shipped standard with 64 MB of registered ECC SDRAM memory ships standard, expandable to 1 GB using industry-standard DIMMs. The 800 supported up to four 1-inch or 1.6-inch non hot-plug hard drives for a maximum 72.8-GB internal storage capacity. The ProLiant 800 architecture is the basis for the ProLiant ML350.

ProLiant 850R (discontinued; announced May 1997)

The Compaq ProLiant 850R was the first low-profile server to combine affordability and a unique space-saving design tailored exclusively for rack environments. The ProLiant 850R featured up to two, 200-MHz Pentium Pro processors and the latest technology in network and disk controllers in a 3U rack-mount form factor. Features included PCI Hot Plug drive capability, Integrated Remote Console, and full support for dual processing.

This server was designed for medium-to-large businesses requiring an affordable, space-efficient rack-mount solution for communications, Internet/intranet, gateway, or file and print applications.

ProLiant 1000 (discontinued; announced September 1993)



The first member of the ProLiant family, the ProLiant 1000 was built upon the EISA bus architecture and provided eight expansion slots, consisting of seven 8/16/32-bit EISA bus-master expansion slots and one management modem slot. The system board provided an integrated Fast-SCSI-2 Controller, as well as integrated SVGA video controller. The system shipped with 16 MB of RAM, expandable to 144 MB (Pentium models) or 128 MB (486 models) using industry-standard SIMMs. The system included a pre-installed NetFlex-2 Ethernet controller and CD-ROM drive. The chassis provided space for eight total internal storage device bays, six of which were internal hot-pluggable drive bays.

ProLiant 1200 (discontinued; announced November 1997)

The Compaq ProLiant 1200 was designed for workgroup and remote office applications. It was ideally suited for price-sensitive users who needed an easy-to-use, high-availability server platform.

The system architecture based on dual-peer PCI buses made this a powerful server. Integrated Remote Console delivered seamless remote console and full remote server reboot capabilities by adding a modem. This impressive combination of features–affordability, expandability, and reliability–made this an ideal platform for basic file/print, remote access and communications, small database, and firewall applications. Hot-plug drives gave workgroups and remote sites the uptime they needed while providing plenty of disk space for ever-growing file demands.

ProLiant 1500 (discontinued; announced February 1995)

This affordable, mission-critical server was intended for departmental file and application services. FlexSMP System Architecture allowed the ProLiant 1500 to upgrade to dual processing and a 6/200 FlexSMP Dual Processor Board option expanded to a second 200-MHz Pentium Pro processor. The 512-KB secondary write-back cache provided enhanced system performance. The 32 MB of ECC memory was located on the processor board was expandable up to 256 MB.

The eight-drive bay included three removable drives and five hot pluggable drives. A quad-speed CD-ROM drive was standard and connected to an integrated EIDE interface on the system board. A redundant power supply upgrade was available.

ProLiant 1600 (discontinued; announced November 1997)

The Compaq ProLiant 1600 was the ultimate workgroup server. This high-performance server for workgroup and remote-office application came with uptime features unmatched in its class. A state-of-the-art Pentium III 600-, 550-, or 500-MHz processor with 512-KB L2 cache, the 100-MHz GTL bus design, and dual-processing capability provided exceptional performance. The integrated Dual Channel Wide-Ultra SCSI-3 Controller offered 80 MB/s aggregate performance with plenty of expansion room for growing network demands.

The system came standard with 128 MB of registered SDRAM memory, expandable to 1 GB using 100-MHz registered SDRAM DIMMs. The system supported up to six one-inch hot-plug hard drives, providing 109.2 GB of internal storage capacity. The ProLiant 1600 incorporated Highly Parallel System Architecture, providing improved system bandwidth. It came standard with an I_2O Connector and Integrated Remote Console. A pre-installed high speed IDE CD-ROM shipped with the standard configuration. The system could be ordered with Integrated Management Display.

The system was equipped with a hot-pluggable power supply and could be ordered with a redundant hot-plug power supply to enhance system availability. The ProLiant 1600 evolved into the ML370.

ProLiant 1850R (discontinued; announced August 1998)

The Compaq 1850R was a space-saving, 3U, high performance, full-featured rack server designed to meet the needs of ISPs, corporate data centers, and remote sites. Compaq manageability made it an unbeatable platform for file/print, email, web, or small database applications.

The Pentium III 600-, 550-, or 500-MHz processor incorporated into this design offered state-of-the-art performance in a rack-optimized server. Features included dual-processor capability, 100-MHz GTL bus architecture, 128 MB100-MHz, registered ECC SDRAM DIMM memory expandable to 1 GB, and an integrated Dual Channel Wide-Ultra SCSI-3 Controller. The standard system came with four full-length slots and accessibility to major components without tools or removing the system from the rack.

The system supported up to four 1-inch Wide Ultra2 SCSI hot-plug drives for a standard internal capacity of 72.8 GB or up to 109.2 GB with two additional 1-inch drive cages in the removable media slots. Compaq software included Compaq Intelligent Manageability and ASR-2. Security features included power-on password, hot-plug keyboard password, QuickLock, and a disk configuration lock.

This popular server is the basis for the ProLiant DL380.

ProLiant 2000 (discontinued; announced September 1993)

The ProLiant 2000, a high-end server, delivered unmatched system availability. It offered symmetric multiprocessing through its FlexSMP System Architecture. Additionally, it provided full-spectrum fault management.

The chassis had eight total internal storage device bays, five of which were hot-pluggable drive bays. An optional redundant power supply was also available for the system.

ProLiant 2500 (discontinued; announced October 1996)

A mid-range server capable of supporting medium- to large-sized database applications, the ProLiant 2500 provided full support for dual processing with two Pentium Pro processors. Designed for high performance in departmental and Internet/intranet applications, it delivered power, scalability, and reliability at an affordable price.

The system came standard with Automatic Server Recovery-2 to improve system availability. Some of the other server management features of the ProLiant 2500 included Server Health Logging, Revision History Table, Off-Line Backup Processor, and the Compaq Remote Insight Board (optional).

ProLiant 3000 (discontinued; announced November 1997)

The Compaq ProLiant 3000 delivered performance and expandability levels that you could not outgrow. This high-performance server used its Pentium III (600-, 550-, or 500-MHz) processor and system architecture technology to deliver best-in-class performance while providing increased expansion capabilities to meet the ever-increasing requirements of high-volume file services or entry-level applications. Compaq offered a 4-way Pentium III Xeon upgrade program for customers wanting to increase processing power while maintaining the asset life of the server. Additionally, the Compaq ProLiant 3000 included advanced fault-tolerant capabilities and rapid recovery features providing maximum uptime and reliable server operation while lowering TCO.

ProLiant 3000 systems shipped in tower or rack-mount form factors and featured up to two Pentium III processors with 512-KB L2 Cache. It included dual-peer PCI buses. The integrated Dual Channel Wide-Ultra SCSI-3 Controller provided support for up to six 1.6-inch or ten 1.0-inch hot-plug SCSI drives, offering an internal storage capacity of 254.8 GB. The Smart Array 3200 Controller with a Wide Ultra2 SCSI drive cage came standard on the Array Model. The Smart Array 3200 supported ten 1-inch 18.2-GB drives.

The system shipped with 128-MB memory, expandable to 4 GB using 100-MHz SDRAM. It provided a hot-pluggable, 750-watt power supply with optional redundant power supply. Eight expansion slots came standard, five PCI and three shared PCI/EISA. The ProLiant 3000 came equipped with a standard 32X MAX IDE CD-ROM drive.

The system also included an integrated Cirrus 54M30 video controller. The NC3120 10/100 TX PCI UTP Network Interface Controller came standard and used a PCI slot. The system could be equipped with optional redundant fans. Other standard features of the ProLiant 3000 included the Integrated Remote Console and Integrated Management Display with support for network controller pairing and SMART-2 Array Controller pairing providing a very high degree of fault tolerance for mission-critical applications.

This award-winning server evolved into the ProLiant ML350.

ProLiant 4000 (discontinued; announced September 1993)

ProLiant 4000 servers offered highly extensible performance by using the FlexSMP system architecture. It included full-spectrum fault management, an off-line backup processor with automatic processor recovery, and a 2-MB Transaction Blaster option for high-end multiprocessing applications. The I/O board included an integrated Fast-SCSI-2 Controller and provided eight 8/16/32-bit EISA bus-master expansion slots. ProLiant 4000 shipped with a standard 64 MB of Advanced ECC memory expandable to 512 MB.

ProLiant 4500 (discontinued; announced February 1996)

The ProLiant 4500 provided up to four processors including support for an offline back-up processor with automatic processor recovery. The I/O board included an integrated Fast-Wide SCSI-2 Controller and offered eight 8/16/32-bit EISA bus-master expansion slots. The system shipped with 64 MB (32 MB in Model 1) of Advanced ECC RAM, expandable to 1 GB using industry-standard SIMMs. The system included a pre-installed NetFlex-3 Controller and CD-ROM drive. The chassis provided seven storage device bays, four of which were internal hot-pluggable drive bays. Some models were equipped with an optional redundant power supply. A 2-MB Transaction Blaster option was available for those interested in running high-end, multiprocessing applications.

ProLiant 5000 (discontinued; announced June 1996)

The award winning ProLiant 5000 system was the first to integrate dual-peer PCI bus architecture and redundant NIC technology on industry-standard architecture. The system had a 4-GB memory with industry-standard DIMMs. The system included ECC memory data bus and L2 cache. An optional redundant processor power module provided continued availability if one power module failed. Support for optional off-line backup processors allowed near-maximum availability in case of processor failure. Dual-peer PCI buses delivered an aggregate 267 MB/s for improved system throughput.

ProLiant 5500 (announced September 1998)

The ProLiant 5500 is the ideal server for large business and enterprise customers requiring an affordable, high-performance, multi-purpose server for business-critical applications. This enterprise-class server, designed to support increased computing power, requires the least amount of space in the server or data center. The ProLiant 5500 combines excellent expansion capacity, legendary fault tolerance, and full management capabilities to deliver outstanding value while lowering ownership costs.

The ProLiant 5500 Server supports up to four 550- or 500-MHz Pentium III Xeon processors with 100-MHz front-side bus and full-speed cache. The 5500 ships with 512-K or 1-MB L2 cache with 2 MB optional. The dual-peer PCI architecture eliminates the need to balance I/O. The system ships with 256 MB of ECC EDO memory expandable to 4 GB using industry-standard DIMMs. The system supplies seven expansion slots, including six PCI and one shared PCI/ISA slot.

It comes in either tower or rack-mount (5500R) models. The system utilizes Highly Parallel System Architecture for improved system bandwidth and provides dual-memory controllers and dual-peer PCI buses for improved throughput to I/O devices resulting in increased overall system performance. The system comes equipped with an integrated Compaq 64-bit Dual Channel Wide Ultra2 SCSI Controller providing support for up to ten 1.0-inch hot-plug SCSI drives with data transfer rates of up to 40 MB/s on each channel. The ProLiant 5500 provides up to 91 GB of storage. A Compaq NC3120 10/100 TX PCI UTP Network Interface Controller ships standard and occupies a PCI slot.

The ProLiant 5500 also includes a 750/500-watt hot-plug power supply and an optional redundant power supply. It comes standard with Automatic Server Recovery-2 (ASR-2), the Integrated Management Display LCD panel, and the Integrated Remote Console. In addition, the system offers support for redundant fans, network controller pairing, and Smart Array 3200 Controller pairing providing a high degree of fault tolerance for mission-critical applications.

ProLiant 6000 (announced May 1997)

The ProLiant 6000 delivers breakthrough enterprise performance and the highest levels of expansion for the best value in business-critical environments. The ProLiant 6000 offers up to four 500-MHz Pentium III Xeon processors providing industry-leading performance for CPU-intensive applications such as Terminal Server and database applications. Older models could be configured with up to four 400-MHz Pentium II Xeon processors. The ProLiant 6000 provides leadership performance and unparalleled expansion in an easy-to-service, industry-standard platform.

The system comes standard with 256 MB of ECC buffered EDO DIMM memory, expandable to 8 GB. The ProLiant 6000 supports up to three hot-plug power supplies. The Pentium III Xeon system has ten expansion slots, including nine PCI slots and one ISA modem slot. All expansion slots use board release levers for quick access to modular, removable components.

The system board provides an integrated Dual Channel Wide-Ultra SCSI-3 Controller with two SCSI channels with double the data transfer rates of the Fast-Wide SCSI-2 Controller. The cableless Smart Array 3100ES Controller with three Wide-Ultra SCSI-3 channels and 64-MB L2 cache, which ships on some models, allows all three drive cages to be configured as one contiguous 218.4-GB array. The optional redundant, enhanced Smart Array 3100ES Controller delivers failover support as well as higher availability.

The DualPort 64-bit NC3131 PCI 10/100 Mb/s Auto Sensing NIC (upgradable to Gigabit) comes standard, providing a high degree of network reliability. The integrated PCI-based video controller (Cirrus 5430) has 512 KB of video RAM, expandable to 1 MB.

The server includes Integrated Management Display and Integrated Remote Console making the server easy to manage and service. ProLiant 6000 supports redundant NIC failover and Automatic Server Recovery-2 (ASR-2). The system offers easy conversion to 19-inch rack mount, using 14U per server and allowing three to be installed in a 42U rack, which maximizes configuration flexibility. An optional hot-plug redundant power supply ships on base models, offering N+1 redundancy support for maximum load configuration. The system supports up to six 1-inch drives or four 1.6-inch drives on each backplane, with a maximum of three SCSI backplanes. Duplexing can be accomplished by adding a second SCSI backplane.

Other features of the ProLiant 6000 include hot plug fans, redundant processor power modules, redundant RAID controllers, and 64-bit I/O.

ProLiant 6400R (announced March 1999)

The ProLiant 6400R runs demanding business applications, implements clustering solutions, and operates active intranet, Internet, and e-commerce sites. This makes it the perfect platform for data center customers using external storage and back-up solutions and wanting the maximum 4-way system performance. With the latest performance, reliability, manageability, and serviceability features in a space-saving 4U (7") design, this server provides an ideal solution for the space-constrained data center customer.

Front accessible power supplies and tool-free internal design simplify access to components for quicker maintenance. Other features include optional Smart Array Controllers, 64-bit I/O, 10/100 Ethernet NIC (upgradable to Gigabit), and 10,000-RPM hot-plug hard drives.

The ProLiant 6400R supports up to four Intel Pentium III processors with 512-KB, 1-MB, or 2-MB L2 cache. Its ECC EDO DIMM memory can expand to 4 GB. It provides six 64-bit slots (five PCI Hot Plug and one shared PCI/ISA).

The system ships with industry-standard, push-button PCI Hot Plug, hot-plug drives, redundant hot-plug fans, ASR-2, Online Recovery Server Option, and Integrated Remote Console. Other standard features include an Integrated Dual Channel Wide-Ultra SCSI-3 Storage Controller, and a 24X Max IDE CD-ROM Drive (slim line). Available options include redundant hot-plug power supplies, redundant power processor modules, and redundant NICs.

ProLiant 6500 (announced August 1997)

Compaq delivers the most trusted standards-based server for 24x7 multi-server environments with breakthrough performance. Featuring the Pentium III Xeon processor, the ProLiant 6500 offers superior performance and high-availability features to keep your business running 24 hours a day, 7 days a week. You can trust your most critical database, OLTP, messaging, and web hosting needs to the latest in high-availability technology including PCI Hot Plug. The ProLiant 6500 also meets the needs for flexibility and space efficiency desired in modular rack environments. The ProLiant 6500 slim 7U profile makes it ideal for multi-server and external storage implementations, such as clusters or server farms. With leading server management capability, legendary Compaq quality, and comprehensive service, Compaq and the ProLiant 6500 provide you with superior TCO.

ProLiant 6500 systems can be configured with up to four Pentium III Xeon or Pentium II Xeon processors, providing the performance necessary for the most demanding applications. The system comes standard with 256-MB ECC protected buffered EDO DIMM memory expandable to 4 GB. ProLiant 6500 sets new standards for system availability by introducing the first industry-standard PCI Hot Plug bus. The chassis offers six 64-bit PCI Hot Plug expansion slots. It comes with modular drive bays (five 1.6-inch or seven 1-inch hot-plug drive bays) for a total storage capacity of 127.4 GB. It ships ready for rack installation with its 7U form factor.

The system contains two 750-watt redundant, hot-plug, load-sharing power supplies. ProLiant 6500 also offers enhanced system management features (Integrated Remote Console, Integrated Management Display LCD, Enhanced Event logs). The system includes a single integrated Dual Channel Wide Ultra SCSI-3 Controller, providing a data transfer rate up to 40 Mb/s on each of the two channels. Its DualPort 64-bit NC3131 PCI 10/100 Mb/s Auto Sensing NIC can be upgraded to Gigabit Ethernet.

The 6500 features also include RAID controllers, redundant hot-plug system fans, optional redundant NICs, and redundant processor power modules.

ProLiant 7000 (announced August 1997)

The ProLiant 7000 is the ultimate standards-based server, delivering the most scalable performance and highest levels of availability and expansion for 24x7 environments with critical database, OLTP, and web serving needs. This server meets the needs of customers seeking a highly expandable server for the data center.

The ProLiant 7000 offers up to four 500-MHz Pentium III Xeon or 450-, 400-MHz Pentium II Xeon processors with upgrades planned for eight-processor capability. The system comes equipped with 256-MB ECC buffered EDO memory, expandable to 8 GB. A cableless Smart Array 3100ES Controller provides three channel RAID support for all of the internal hot-plug drive cages, offering up to 436.8-GB internal storage. The ProLiant 7000 provides five 64-bit PCI slots, four 32-bit PCI slots, and one ISA modem slot. All slots use board release levers for quick access to modular, removable components. Pre-installed internal cabling provides improved reliability and manageability. The system includes a DualPort 64-bit NC3131 PCI 10/100 Mb/s Auto Sensing NIC that supports redundant NIC failover in PCI Hot Plug slots.

The ProLiant 7000 comes standard with Integrated Remote Console and Integrated Management Display. The 7000 also offers hot plug drives, redundant hot plug power supplies, redundant processor power modules, and redundant RAID controllers. Combined with the latest high-availability features, including PCI Hot Plug, the ProLiant 7000 offers superior investment protection for your most demanding business-critical applications.

ProLiant 8000 (announced August 1999)

The ProLiant 8000 delivers the performance and uptime required to meet both current and future demands of enterprise server consolidation, eBusiness, ERP, thin client, and data mining applications. Based on the Profusion architecture jointly developed by Compaq, Corollary, and Intel, the ProLiant 8000 offers the highest levels of internal fault tolerance storage for 24x7 performance. This ultra-capacity data center server operates with up to eight Intel 550-MHz Pentium III Xeon processors with 512K, 1-MB, and 2-MB L2 cache. It ships with 100-MHz SDRAM DIMM memory expandable to 8 GB (future upgradability to 16 GB).

The ProLiant 8000 supports 21 x 1-inch hot plug Wide Ultra2 SCSI drives, a Smart Array 4250 ES Controller (cableless) with optional redundancy available. It comes with ten 64-bit PCI and one 32-bit PCI I/O expansion slots, all PCI Hot Plug as well as a DualPort 64-bit NC3131 PCI 10/100 Mb/s Auto Sensing NIC upgradable to Gigabit Ethernet.

Other features include PCI Hot Plug with push button functionality and Rack Builder Pro, as well as hot-plug redundant fans, hot-plug load balancing redundant power supplies, Remote-Flash Redundant ROM, and Remote Insight Board.

ProLiant 8500 (announced August 1999)

The ProLiant 8500, based on the Profusion architecture–jointly developed by Compaq, Corollary, and Intel–offers excellent scalability driven by its balanced system architecture. Designed to meet the demands of data mining, thin client, ERP, and eBusiness, this system provides 8-way scalable performance for 24x7 multi-server rack environments. The ProLiant 8500 provides push-button hot-plug, tool-free internal design, and integrated lift handles and power bay covers for ease of maintenance.

Its system interconnect status indicators furnish quick resolution to unseated component issues. The ProLiant 8500 supports one to eight Intel 550-MHz Pentium III Xeon processors with 100-MHz front-side bus and full-speed cache. It ships with eleven 64-Bit PCI I/O expansion slots (all PCI Hot Plug), an integrated Smart Array Controller (Ultra 2 Support, RAID 0, 0 + 1, 1, and 5 support), and a DualPort 64-bit NC3131 PCI 10/100 Mb/s Auto Sensing NIC (upgradable to Gigabit Ethernet). The ProLiant 8500 includes 10-MHz SDRAM DIMM 2-way interleaved memory expandable to 8 GB with future upgradability to 16 GB. In addition, it supports an internal hot-plug drive storage of 72.8 GB and 35.2 TB of external storage using Fibre Channel Host Adapters, hubs, and Array Storage Subsystems.

The ProLiant 8500 contains hot-plug drive bays, redundant hot-plug fans and power supplies, and support for ECC memory, redundant NICs, and ASR-2. It includes Integrated Remote Console, and Remote Redundant ROM, and Remote Insight Board.

ProLiant Clustering Solutions

ProLiant CL1850

The ProLiant CL1850 consists of two Compaq server nodes sharing pre-packaged storage in a cost-effective, space efficient cabinet giving customers the easiest, most affordable clustering solution for Microsoft and Novell networking software. This innovative, low-cost, space-saving design offers deployment flexibility for rack or tower mounting as well as an integrated switch to share the keyboard, mouse, and monitor between server nodes. It provides easy component access for serviceability, hot-plug power supplies, and shared storage disks.

The ProLiant CL1850 includes two 550-MHz Intel Pentium III processors on each server, up to 1-GB SDRAM memory per server, high performance 10,000 rpm SCSI disks, four PCI expansion slots, and up to 252 GB of high performance SCSI storage.

This clustering solution offers an ideal solution for remote systems requiring unattended high availability, branch office industry applications, dedicated function servers needing high availability (Microsoft Exchange, Novell GroupWise, Lotus Notes), and space-constrained data centers and business offices.

ProLiant Cluster HA/F100

The Compaq ProLiant Cluster HA/F100 integrates the hardware and software to provide a total solution for business-critical environments. Compaq servers, Compaq Fibre Channel Storage, interconnect options, system management software, and implementation documentation have all been thoroughly tested in cluster configurations. Because they are built from industry-standard components, Compaq ProLiant Cluster HA/F100 platforms deliver high levels of application availability at a much lower cost than traditional, proprietary cluster solutions.

The Compaq ProLiant Cluster HA/F100 exploits Compaq's industry-leading servers, Compaq Fibre Channel Storage, Ethernet, or ServerNet interconnect and Compaq's leading installation and systems management utilities. Both existing and new Compaq servers are certified for Compaq ProLiant Cluster HA/F100 configurations. This means that clusters can be built using existing servers, or a mix of old and new servers.

The Compaq ProLiant Cluster HA/F100 is a robust, integrated cluster solution providing high availability for applications and data in business-critical environments. An ideal platform for business-critical databases, large business applications, email or file/print services, the Compaq ProLiant Cluster HA/F100 offers Fibre Channel-based clustering at a fraction of the cost of proprietary cluster solutions.

ProLiant Cluster HA/F200

The Compaq ProLiant Cluster HA/F200 is a two node Microsoft NT Cluster providing a Dual Loop Configuration cluster solution for customers needing high levels of uptime for business-critical databases, large business applications, and email or file/print services.

The Compaq ProLiant Cluster HA/F200 utilizes Compaq industry-leading ProLiant servers, Compaq StorageWorks RAID Array 4000 (RA4000) previously known as Compaq Fibre Channel Storage System (FCSS), Compaq StorageWorks RAID Array 4100(RA4100), Ethernet or ServerNet interconnect, intelligent cluster administration software, Compaq's leading installation and systems management utilities, and the industry-standard Microsoft Cluster Server (MSCS) software.

This high availability solution is also backed with comprehensive service and support partnerships through Compaq Systems Service Providers to meet customer needs. Service and support offerings can be tailored to meet a customer's most stringent requirements covering implementation planning and consulting, as well as mission critical application support.

ProLiant Cluster HA/F500

This two node Microsoft Windows NT cluster consists of Compaq ProLiant high end or high density servers and Compaq StorageWorks fibre channel storage system RA8000/ESA12000. This system, when configured in a dual loop, provides the highest level of availability with no-single-points-of-failure for customers using Microsoft Cluster Server. The Compaq ProLiant Cluster HA/F500 can be configured utilizing many of the Compaq standard servers and components that might already be on site with our customers. This means that customers can achieve high availability systems through clusters assembled using their existing servers.

The Compaq ProLiant Cluster HA/F500 offers system configurations integrated and heavily tested to Compaq standards of quality and leverages the work of the High Availability ISV Partner program to integrate Partner databases and applications with the hardware. Disaster-tolerant configurations are supported with Fibre Channel Switched Fabric and long wave fibre channel interconnect support.

Because the solution is based on industry-standard hardware, it can be implemented at a much lower cost than other cluster solutions, making it the perfect solution for business-critical applications such as email, enterprise resource planning (ERP), web servers, and database applications.

ProLiant NonStop Clusters for SCO UnixWare 7.1

The Compaq ProLiant NonStop Clusters for SCO UnixWare 7.1 is a two to six node clustered high availability and application scaling solution developed by Compaq and licensed to SCO. Compaq certifies the ProLiant 800, ProLiant 1850R, ProLiant 1600, ProLiant 3000, ProLiant 5500, ProLiant 6400, ProLiant 6500, and the ProLiant 8500 for SCO UnixWare 7.1 NonStop Clusters.

This solution offers cluster-wide backup to tape, load balancing across server nodes, failover of Fibre Channel Host Bus Adapters, web-based cluster management, and 8-way SMP support. The cluster can be configured for tower or rack deployments. Shared storage configurations can be internal or external with storage for 9.1 GB to 6.0 TB. The ProLiant NonStop Cluster for SCO UnixWare 7.1 offers 64-MB storage controller cache coherency, 7-port and 12-port hub support, and dynamic storage attach support.

As a clustering solution, the ProLiant NonStop Clusters for SCO UnixWare 7.1 are ideal for business-critical applications.

Prosignia Family

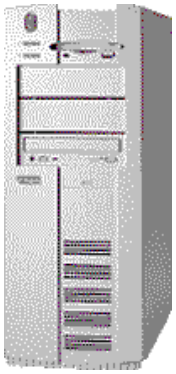
The Prosignia system architecture built on the success of the Systempro family, while providing more compact packaging. Designed to match the computing needs and budgets of growing businesses, Prosignia servers can meet file, print, database, and communication needs now and expand as your business grows. Prosignia servers come standard with Compaq SmartStart and Compaq Insight Manager.

ProSignia (discontinued)

The original ProSignia utilized the EISA-bus architecture with several integrated components that left the expansion slots available to fulfill customer requirements. The system supported up to eight mass storage devices internally allowing a full complement of SCSI disks to be attached to the integrated Fast-Wide SCSI Controller. ProSignia came standard with an IDE CDROM drive attached to the integrated EIDE bus. The ProSignia was the first Compaq server to offer Compaq Insight Manager as a standard feature.

ProSignia 200 (announced January 1997)

The Compaq ProSignia 200 delivers high performance and true server functionality at a desktop price. This server, simple to buy and easy to own, is designed for small- and medium-sized businesses requiring an inexpensive, feature-rich workgroup server. Compaq advantages include Wide-Ultra SCSI support and 512-KB L2 cache for enhanced file and print performance in server environments.



The ProSignia 200 offers powerful uniprocessor performance in an aggressively priced package. The system uses the PCI System Architecture, which maximizes server performance of PCI systems. It contains a upgradable to Wide-Ultra SCSI-3 Controller in a PCI slot or an integrated Enhanced IDE on the PCI local bus. It comes standard with 32-MB ECC memory and supports up to 192 MB using industry-standard SIMMs.

The ProSignia 200 offers an integrated Netelligent 10/100 PCI UTP/Coax Controller delivering reliable, high-performance network throughput. The system includes the Automatic Server Recovery-2 feature.

The ProSignia 200 Small Business (SBS) models come equipped with Intel Pentium II processors operating at 300 MHz with 512-KB L2 cache. The system board offers three PCI expansion slots—one video, one shared PCI/ISA slot, and one ISA slot. A 32-bit Wide-Ultra SCSI-3 Controller is available pre-installed in a PCI slot, providing data transfer rates up to 40MB/s. A 1024x768 video controller ships standard with 1 MB of video memory, upgradable to 2 MB.

The SBS system ships with 64 MB ECC memory, expandable to 192 MB. The SBS has a 4.3 GB Wide Ultra SCSI-3 hard drive and a 4/8 GB SLR SCSI tape drive.

ProSignia 200 SBS comes in tower configuration only and includes a 16X-CD-ROM drive. Additionally, these servers include the Microsoft BackOffice Small Business Server 4.0 software.

ProSignia 300 (discontinued; announced February 1995)

The ProSignia 300, the small workgroup server, offered an integrated 32-bit Fast-SCSI-2 Controller and an integrated 32-bit Ethernet controller that delivered faster response time when users accessed files from the server. Instead of a computer optimized for running Windows desktop applications, the ProSignia 300 was optimized for running network operating systems like NetWare. Users found true server features, such as Automatic Server Recovery and ECC memory, that desktop computers lacked and made the ProSignia 300 a more dependable server platform.

The ProSignia 300 supported the Standby Recovery Server and On-line Recovery Server adding even more fault management to ProSignia 300 servers. A rack-mounting kit was available as an option allowing you to install ProSignia 300 servers in rack enclosures.

ProSignia 500 (discontinued; announced November 1994)

A high-performance server, the ProSignia 500 provided a robust and expandable platform which was board and chip upgradable and which offered uniprocessor and dual-processor configurations using the FlexSMP architecture. The system offered 256 KB of shared secondary write-back cache. The system board included an integrated 32-bit NetFlex-L Ethernet controller, integrated 32-bit Fast-SCSI-2 Controller, and integrated 1024x768 video graphics. The ProSignia 500 contained six total expansion slots, including one processor expansion slot, three EISA slots, one shared EISA/PCI, and one PCI slot.

ProSignia 500 came standard with 16 MB of ECC memory, expandable to 208 MB using industry-standard SIMMs. The chassis provided eight total storage device bays allowing internal storage expandability up to 30.1 GB. The system was equipped with a pre-installed CD-ROM drive. ProSignia 500 shipped standard with Automatic Server Recovery (ASR) and Server Health Logs.

Prosignia NeoServer (discontinued; announced March 1999)

A ready-to-go server, the Prosignia NeoServer put your small business on the fastest and most efficient path to networking. Its integrated operating system made it simple to manage sharing of files and peripherals, backing up data automatically, accessing your server remotely, and accessing email and the Internet.

The Prosignia NeoServer came standard with a 6.0-GB EIDE hard drive, a 10/100 TX network interface card, an 8-port 10-Mb/s hub, a 56K modem, and the Prosignia NeoServer Control Center.

Prosignia Server 720 (announced November 1998)

This Compaq server for small businesses allows you to increase business efficiency and still meet a demanding budget. The Prosignia Server 720 utilizes Pentium III processors running at speeds of 600-, 550-, and 500 MHz providing the performance and power needed to serve your most demanding applications. The processors include 100-MHz Front Side Bus and 512 KB of L2 cache. The system offers six total expansion slots, including three PCI, one ISA, one shared PCI/ISA, and one AGP. Prosignia Server 720 supports ASR-2.

Prosignia Server 720 ships with 128 MB of ECC SDRAM upgradable to 384 MB. The server offers an integrated Netelligent 10/100 TX network interface and an integrated Wide Ultra2 SCSI Controller that provides 80 MB/s throughput when used with Ultra2 SCSI drives. The integrated video controller provides 1024x768 resolution with 256 colors. The chassis utilizes service friendly, tool-free design allowing for quick and easy removal of all mass storage devices via the new Compaq Drivelock mechanism.

Prosignia Server 740 (discontinued; announced November 1998)

The Prosignia Server 740 allowed you to extend server performance to meet business growth. It utilized a Pentium III processor running at 600, 550, or 500 MHz providing the performance and power needed to serve your most demanding applications. The processors were equipped with 100-MHz Front-Side Bus and 512 KB of L2 cache. The system offered six expansion slots, including two PCI and four shared PCI/ISA. It supported ASR-2 and Integrated Remote Console.

Prosignia Server 740 shipped with 128-MG ECC SDRAM that can be upgraded to 1 GB. The server offered an integrated Netelligent 10/100 TX network interface and an integrated Wide Ultra2 SCSI controller that provides 80 Mb/s throughput. The internal hard drive capacity for this system totaled 54.6 GB. The integrated video controller provided 1024x768 resolution with 256 colors. The chassis utilized service friendly, tool-free design, allowing for quick and easy removal of all mass storage devices via the new Compaq Drivelock mechanism.

ProSignia VS (discontinued; announced March 1994)

The ProSignia VS was one of the first members of the ProSignia family. The system was designed to utilize the 486 processor to produce a highly serviceable design. The system board provided an integrated 32-bit Fast-SCSI-2 Controller and an integrated NetFlex-L Ethernet Controller. There were five EISA bus-master expansion slots. The ProSignia VS came standard with 16 MB of RAM, which was expandable to 128 MB using industry-standard SIMMs. The chassis provided room for five mass storage bays.

ProSignia VS was among the first servers to come standard with Automatic Server Recovery.

Systempro Family

The Systempro family represented the first Compaq server family. Innovative features, such as eight standard internal drive bays and the FlexSMP multiprocessor architecture laid the foundation upon which other Compaq server products were built.

Systempro (discontinued)

The original Systempro provided the ability to configure server-class systems using Intel processors. Systempro was designed using the FlexSMP architecture enabling dual-processor configurations. The chassis provided space for eleven devices including up to eight disk devices. The system board offered integrated EIDE and SVGA video.

Systempro LT (discontinued)

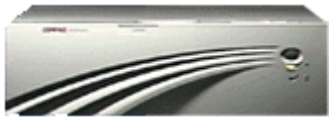
Systempro LT provided a lower cost member of the Systempro family in a uniprocessor configuration. The chassis provided the same number of storage device bays and the system board included integrated EIDE and SVGA video.

Systempro XL (discontinued)

The Systempro XL enhanced the Systempro family by providing improved processor options including 486DX2 and Pentium processors, available in either uniprocessor or dual-processor configurations. This system was the first to use ECC memory. Built within the Systempro chassis, the XL provided eleven storage device bays, eight of which were available for internal IDE devices. The system board included integrated EIDE, SVGA video, and Fast SCSI-2 Controllers, leaving the EISA expansion slots available for your use.

TaskSmart Family

The Task Smart Servers, a new family of appliance servers tuned and optimized for specific applications, complements the ProLiant general-purpose servers. These servers advance smarter solutions from the original SmartStart and Compaq Insight Manager through *ActiveAnswers* and Intelligent Cluster Administration as well as driving high-volume, standards-based hardware innovation. Compaq TaskSmart appliance servers offer customers the flexibility, cost advantages, and performance enhancements delivered by other Compaq server platforms with application integration expertise produced through long-term industry partnerships.



The first of the TaskSmart Servers, the C-Series provides a faster and more efficient way to move information from the Internet to your employees, customers, or site visitors. These Internet appliance servers offload 50% to 80% of web requests by caching static web content so traffic is reduced to dynamic content only. These appliance servers are designed to be *plug and forget* units after installation. The remote deployment utility allows unattended setup at a remote branch office and all the TaskSmart Servers can be managed with Compaq Insight Manager.

TaskSmart C1200R (announced July, 1999)

The TaskSmart C1200R, designed for small ISPs and remote branch offices, handles up to 250 requests per second in client acceleration mode and up to 1800 requests per second in server acceleration mode. It ships with 256 MB of memory, one 9.1-GB hard drive, and two 10/100 Ethernet ports. It comes with an optional redundant power supply.

TaskSmart C1500R (announced July, 1999)

Targeted to regional ISPs and eCommerce focused medium-sized businesses, the TaskSmart C1500R supports disk cloning and disk mirroring. This server manages up to 500 requests per second in the client acceleration mode and up to 3000 requests per second in server acceleration mode. The standard shipping configuration includes 512 MB of memory, two 9.1-GB hot pluggable hard drives, and three 10/100 Ethernet ports. A redundant power supply comes as an option.

TaskSmart C2000R (announced July, 1999)

The most powerful server in the C-Series, intended for large ISPs and enterprise networks, the TaskSmart C2000R manages up to 1275 requests per second in client acceleration mode. In server acceleration mode, it can handle up to 7200 requests per second. This server includes disk cloning and disk mirroring and contains a redundant hot pluggable power supply. It ships with 1 GB memory, six 9.1-GB hot pluggable hard drives, and five 10/100 Ethernet ports.

Storage Options

Compaq offers a complete portfolio of enterprise storage and backup solutions designed to work with Compaq servers. Compaq configures its storage products to work with industry-leading applications including software that instantly backs up and restores data at any point with no disruption of operations. Compaq solutions include both its Fibre Channel and Smart Array storage systems.

Fibre Channel

Fibre Channel, the next generation in storage technology, combines the reliability and low latency of a serial channel with the flexibility and connectivity of a network. The result is a 100 MB/s storage network that supports simultaneous transfer of many different data protocols including SCSI, IPI, and IP. Compaq is one of the sponsors of the American National Standards Institute committee responsible for developing the Fibre Channel standards. These standards have been adopted as an enabling technology for high-availability storage networks and server clusters by over two-thirds of the storage industry.

With Compaq Fibre Channel Storage Systems, you can build highly scalable and modular storage architectures using Compaq Fibre Channel Host Controllers, Fibre Channel Array, and Fibre Channel Hub 7 Modules. The Fibre Channel Host Controller is the Fibre Channel Arbitrated Loop (FC-AL) host interface enabling users to attach multiple storage devices to a single PCI or EISA host slot. The Fibre Channel array contains the RAID functionality and disk drives. This provides simultaneous scalability of capacity, processing power, and cache. The Fibre Channel Hub 7 Module can connect multiple devices to the FC-AL providing a very high degree of connectivity and simplicity of storage growth.

Smart Array Controllers

The Smart Array Controllers are comprehensive PCI or EISA intelligent array controllers that combine configuration flexibility with intelligent storage management to ensure continuous high-performance access to network data. Compaq Smart Array Controllers have compatible data formats between each successive generation of controller, resulting in an unparalleled upgrade capability. The Smart Array controller family utilizes the same powerful Array Configuration Utility, giving a consistent, easy-to-use method for configuring Smart Array controllers that does not require learning a new user interface for each successive product generation. With Compaq Insight Manager, Compaq provides the best-managed platforms in the industry, providing customers with a consistent management console included with every Compaq server. Compaq Smart Array solutions are designed by Compaq engineers for the Compaq ProLiant server and are vigorously tested from the first prototype board through the life of the product. This strategy results in more productive customer deployments with fewer data problems and lower sustained cost of ownership.

Appendix A–Solution Partners

Compaq develops and maintains strategic relationships with industry leaders to provide total solutions offering the highest level of service and support. Solution partners include vendors of operating systems, applications, systems management, and others. These partnerships ensure your solutions are engineered, tested, tuned, and optimized on Compaq platforms. Compaq experience, enterprise technology leadership, and strategic industry partnerships provide you with unprecedented choice and confidence in the deployment of your network.

Most of these strategic relationships participate in Compaq NonStop™ partnerships bringing you the world's most comprehensive eBusiness technologies and services. For additional information on any of the Compaq partnerships, access http://www.compaq.com/partners.

Operating System Vendor Solution Partners

Compaq cultivates partnerships with leading operating system vendors to assure you that the quality and features of Compaq products fully integrate with the most popular operating systems. Compaq and its operating system partners, Microsoft, Novell, and SCO, focus on joint development, marketing, support, testing, and training.

Compaq and Microsoft Frontline Partnership

Leadership, teamwork, experience, and commitment characterizes the relationship that has existed for more than a decade between Compaq and Microsoft. The Frontline Partnership develops and delivers industry-standard information and offers ownership satisfaction and value. The Compaq and Microsoft Frontline Partnership provides leadership to move the industry forward, teamwork to develop the technology you need, experience to provide continuity and secure solution benefits, and commitment to create and support the information technology you need.

Some of the essential pieces of the Frontline Partnership include the following:

- ***Joint Development****:* Compaq and Microsoft work closely together in the development of innovative new solutions that deliver record-breaking performance and value. Cooperative engineering efforts have resulted in numerous shared patents including Plug and Play, Advanced Configuration and Power Interface (ACPI), and Device Bay. Windows 2000 was designed, tested, and deployed on Compaq servers at Microsoft.
- ***Joint Marketing****:* Through joint seminars, shows, account briefings, communications, and messaging, the Frontline Partnership marketing programs help communicate the value of this partnership to you.
- ***Joint Support****:* By providing joint training, technical tools, information databases, and dedicated personnel, Compaq and Microsoft provide superior customer service and support to you.
- ***Joint Testing****:* Compaq and Microsoft extensively test solutions to ensure performance and reliability and to provide confidence in your choice of a Compaq and Microsoft solution.
- ***Joint Training****:* Compaq and Microsoft provide their personnel with sales and technical training to insure the proper level of expertise in communicating the advantages of our joint solutions. This training is provided to groups ranging from corporate technical support teams to field sales and engineering as well as our resellers and solution providers.

Compaq operates 29 Microsoft Authorized Support Centers and is one of only two service providers authorized by Microsoft to support its enterprise customers.

Compaq and Novell Enterprise Computing Partnership

Building on the foundation of introducing the first network operating system, the Compaq and Novell Enterprise Computing Partnership provides one of the most responsive and integrated approaches to technical support in the industry. Over the last decade, we continually refined our escalation methodology and enhanced the reciprocal training of technical support staff. This ensures efficient resolution of compatibility issues, reduces duplication of effort, and speeds issue resolution. The Enterprise Computing Partnership delivers compatibility, reliability, optimized performance, manageability, cross-trained technical support, and smooth deployment of networking solutions. The bottom line—when you need answers fast, Compaq and Novell deliver.

This partnership delivers in the following areas:

- ***Joint Development***: Compaq and Novell joint developments include the first high-availability solution, SFTIII; as well as SmartStart Integration for all versions of NetWare, NHA-S, the first full support for PCI Hot Plug, and NDS for the Internet.
- ***Joint Marketing:*** Compaq and Novell offer solutions in their joint marketing efforts and have since the introduction of their first network operating system in 1989 (Novell NetWare running on a Compaq Systempro server).
- ***Joint Support:*** More than two-thirds of Compaq Accredited System Engineers are also Certified Novell Engineers providing an exceptionally well-trained support staff to provide solutions to your networking challenges.
- ***Joint Testing:*** Novell software is developed on and optimized for Compaq servers providing unparalleled compatibility. Additionally, new products for both test comprehensively on the other's equipment/software.
- ***Joint Training:*** Compaq and Novell staff receive sales, technical, and other training to support each other's products. This insures that corporate technical support teams, engineering, and field personnel understand the solutions provided by both partners.

In 1998, Compaq received the first annual Novell Support Connection Service Excellence Award that recognizes Novell allies making service excellence an integral part of their business. Compaq was the only OEM provider of the 18 recipients. Compaq received this award again in 1999.

Compaq and SCO Partnership

The Compaq and SCO Partnership enables Compaq to work closely with the industry leading Intel based UNIX developer to ensure that the latest Compaq products and features operate in UNIX environments. Through close cooperation with SCO, Compaq has even released some product enhancements in the UNIX environment before they became available in any other environment. The Compaq and SCO Partnership is committed to providing you with all the benefits of a flexible, easily deployed, enterprise-level UNIX system on industry-standard servers and at price points significantly lower than those of RISC UNIX systems.

The relationship between Compaq and SCO includes several initiatives benefiting you:

- ***Joint development:*** The partnership focuses on strategic planning and development of integrated solutions with faster time to market; easier implementation and maintenance; enhanced availability, manageability and scalability, and improved price:performance. Compaq and SCO work together on such leading technologies as PCI Hot Plug, UnixWare clustering, and intelligent I/O.
- ***Joint marketing*:** Compaq and SCO combine worldwide joint marketing funds to deliver joint seminars, trade show participation, and account briefings.
- ***Joint support*:** Dedicated personnel at Compaq and SCO share technical tools and information to better help you with technical issues. Compaq and SCO support joint solutions through their Technical Support Alliance, Engineering Services Agreement, and Service and Support programs provided by the Compaq worldwide network of service partners.
- ***Joint testing*:** Compaq and SCO test solutions extensively in a laboratory environment before customer delivery, ensuring that you get highly integrated, fully tuned solutions that meet your business needs.
- ***Joint training:*** Compaq and SCO provide training of personnel to deliver a full range of expertise to our joint customers.

Compaq supplies the largest number of SCO UNIX systems with a 37 percent share of the worldwide SCO UNIX market. SCO has a 41 percent share of the worldwide UNIX server market and over 80 percent of the UNIX on x86-worldwide-server market.

Application Vendor Partners

Compaq forms partnerships with strategic applications vendors to provide you with a high degree of support and reliability when implementing applications on Compaq products. These partnerships ensure that your ability to optimize systems using Compaq platforms is maximized.

Compaq and Allaire Partnership

Compaq and Allaire provide customers with seamless technology integration and high-quality information so they can deliver and scale enterprise and eBusiness applications. Allaire ColdFusion combines with Compaq Distributed Internet Server Array (DISA) architecture and Compaq ProLiant servers to offer users the best environment for rapid deployment of scalable, highly available, and manageable eBusiness applications for the Internet.

Look to Compaq *ActiveAnswers* for information on Allaire products with Compaq hardware including:

- Planning, deploying, and operating the products
- Sizing, configuring, and installing products for the fastest time to solution

Compaq and Baan Partnership

Compaq partners with Baan Company to deliver an industry-standard Enterprise Resource Planning (ERP) solution for the Microsoft Windows NT server environment. This solution features performance with new levels of integration, affordability, and ease of implementation. Through committed resources and joint engineering efforts, Compaq and Baan have produced a predefined, integrated solution that is tested, optimized, and ready to go—increasing your return and decreasing your costs of ownership substantially.

Compaq combines high availability; record TPC-C benchmark numbers; and tools for intelligent integration, management, and security. Compaq and Baan deliver a tightly integrated BAAN IV solution optimized for the Compaq platform. Some of the highlights of this partnership include the following services:

- Reference platform definition, validation, and certification
- Platform integration engineering, performance testing, and benchmarking
- Platform sizing, configuration, and installation tools
- Proof-of-concept or custom platform testing

The Compaq and Baan partnership is committed to providing you with proven solutions that offer the reliability and affordability needed in today's ever-changing computing environments.

Compaq and Click Interactive Partnership

Compaq and Click Interactive offer an outstanding single solution for eBusiness including hardware, software, and services. This partnership concentrates on business-to-business extranet solutions for the manufacturing industry. The combination of Compaq servers and Compaq Services with the Click Interactive Click Commerce™ Extranet Manager and Click Commerce Applications extend manufacturers' systems to provide their partners, dealers, distributors, and consumers with the core operational functionality necessary for success in today's high-stakes environment.

Leveraging the power of industry-standard Microsoft NT architecture and award-winning servers from Compaq, the solutions from this partnership include maximizing:

- Scalability
- Availability
- Manageability
- Security

This eBusiness solution reduces operating costs and improves product cycle time. Customers are more satisfied with real-time information, 24x7 availability, and an easy-to-use, multilingual, multicurrency system.

Compaq and Commerce One Partnership

Compaq and Commerce One provide highly scalable and available business-to-business eCommerce solutions and specialized services. Compaq teams with Commerce One in the labs to create valuable sizing, configuration, and installation content to make it available on the Compaq *ActiveAnswers* website. With Commerce Chain Solution and Compaq servers, companies can significantly reduce operational costs and increase efficiency by automating the entire indirect goods and services supply chain.

For customers needing help over and above that provided by *ActiveAnswers*, Compaq Services provides the following assistance with Commerce One products:

- Needs analysis
- Planning
- Integration
- Implementation

These solutions and services ensure the procurement system is up and running quickly and fully integrates with existing business systems.

Compaq and Computer Associates Partnership

Compaq and Computer Associates join forces to provide you with a consolidated view of your enterprise network. The Compaq Enterprise Backup Solution, comprised of a consolidated fiber channel-based backup and recovery system, was designed in conjunction with Computer Associates. Compaq and Computer Associates provide robust storage management solutions with manageability, automation, scalability, availability, and performance characteristics that enable you to migrate from proprietary systems to standards-based open systems.

This partnership has delivered the following applications:

- Integrated workstations and servers for enterprise management
- Channel program to support resellers in preconfiguring Unicenter TNG on Compaq servers and workstations
- Integration of Unicenter TNG with Compaq Insight Manager

Jointly targeting the market for application storage management, the partnership delivers storage and storage management solutions that are vertically integrated with databases, applications, web servers, and messaging systems.

Compaq and CyberCash Partnership

Compaq and CyberCash bring you the most secure and easily managed payment solutions for your eBusiness. Compaq eBusiness solutions combined with CyberCash technology for payment handling provide high-end eCommerce functionality to meet the needs of world-class ISPs and Internet businesses.

The partnership jointly develops guides to enable you to easily plan, deploy, integrate, and manage CyberCash payment systems with Compaq industry-standard Distributed Internet Server Array (DISA).

Compaq and Genesys Partnership

Together, Compaq and Genesys provide scalable customer interaction center solutions. Compaq is the only provider of native integration for EIM application platform management and Genesys solutions. The partnership enables outbound campaign management, predictive dialing, and workflow automation. For an enterprise-wide solution, Genesys T-Server is interoperable with SAP, Siebel, and other CRM applications.

At Compaq *ActiveAnswers*, you can find many tools to help you plan, deploy, and operate your Compaq and Genesys solutions. These tools include a sizer, a configurator, and management/operation guides.

Compaq and iXL Partnership

Compaq and iXL combine their strengths to deliver eBusiness solutions to Fortune 1000 and dot-com companies. Compaq leadership in product technologies and extensive experience with the Internet combine with iXL Internet services to transform how eBusiness gets done. Together iXL and Compaq integrate technologies to form best-of-breed solution sets, providing clients pre-configured, pre-tested, and proven eBusiness solutions.

Compaq and Lotus Partnership

Through cooperative testing and engineering, Compaq and Lotus provide proven solutions to your Internet and intranet needs. Since 1993, the Compaq and Lotus partnership has offered exceptional compatibility, reliability, and performance with low TCO through fast, easy deployment, integration management, high availability, and scalability.

The Compaq and Lotus partnership offers several benefits to you, such as the following:

- Easy implementation and management of Internet and intranet solutions
- Wide range of proven products to meet your unique requirements
- Seamless integration of hardware, operating systems, and application software
- Proven expertise in network design, development, systems integration, training, support, and consulting
- The Compaq and Lotus partnership delivers unparalleled performance and reliability as demonstrated in thousands of customer sites around the world.

Compaq and Lucent Partnership

The Lucent Octel Unified Messenger software on industry-leading Compaq ProLiant servers provides a scalable solution that saves your business time and money while increasing productivity and customer satisfaction. This solution consolidates voice, email, and fax messages into a single, unified mailbox. To access proven solutions for reducing the complexity and time required to deploy an Octel Unified Messenger eBusiness solution, visit Compaq *ActiveAnswers*.

Compaq and Netscape Partnership

Netscape, a pioneer and market leader in software for the Internet, provides proven solutions for Web hosting, email, and collaborative communications. Together with Compaq, they offer powerful, integrated Internet and intranet solutions. This partnership fully leverages the power and flexibility of industry standards and delivers solutions that easily integrate into existing systems.

This partnership has produced the following solutions:

- Reduced costs through fast, easy deployment, management tools, high availability, minimal downtime, and protection of current investments
- Fast, transparent exchange of information between applications for users due to industry-standard solutions that easily integrate with existing systems and networks

- Seamless integration of hardware, operating systems, and application software through cooperative development and testing in dedicated labs
- Highest-quality service and support to you through expert field personnel
- Together, Compaq and Netscape offer the most powerful integrated Internet and intranet solutions for organizations of all sizes.

Compaq and Nortel Networks Partnership

The Compaq and Nortel Networks partnership helps you implement the next-generation networks, the foundation of eBusiness and Internet-based transactions. Customers can have mission-critical Unified Networks solutions composed of Nortel Networks and Compaq product and services.

Compaq and Nortel Networks deliver

- WAN consolidation integrating voice, video, and data over a common IP infrastructure
- Virtual Private Network (VPN) security supporting tunneling, encryption, and authentication protocol standards
- Voice over IP (VoIP) confronting a wide range of voice/data convergence requirements
- Unified Messaging combining voice, fax, and email messages into one application

Assistance for deploying these solutions is available through Compaq Network and Systems Integration Services.

Compaq and Oracle Partnership

Compaq and Oracle deliver high performance solutions by optimizing Oracle databases for Compaq platforms. Compaq and Oracle have worked together since 1989 and, in 1997, reinforced their commitment by signing a Global Technical Support Agreement. In 1998, Compaq and Oracle released the first system sizing tool, Oracle8 OLTP applications.

Compaq and Oracle work together to bring you

- Low-cost, high-performance, fault-tolerant database and enterprise solutions,
- Flexibility and economy through a truly open system,
- Scalability from the desktop to the data center, and
- Integration and optimization of your configuration.
- Support analysts from both companies cross-train on each other’s products. This allows you to deploy Compaq and Oracle solutions with the confidence of knowing that these products are jointly supported. The Compaq and Oracle Partnership offers worldwide services, support, and integration capabilities to build a complete solution for you.

Compaq and PeopleSoft Partnership

Compaq and PeopleSoft offer the ideal combination of innovative thinking and enterprise experience to deliver solutions that improve business processes from distribution to finance to human resources. The partnership wants to deliver the highest customer satisfaction and, toward that end, invests time, manpower, and resources to understand your evolving needs. We want to maximize the performance, availability, and reliability of your enterprise solution.

Benefits to you from this partnership include the following:

- Broadest range of PeopleSoft solution platforms and operating systems in the industry
- Reduced risk
- Enhanced reliability
- Innovative support tools
- Compaq and PeopleSoft deliver solutions built on a solid foundation of years of enterprise experience and hundreds of successful implementations.

Compaq and SAP Partnership

Compaq and SAP work closely together to offer a tightly integrated, tested, and optimized R/3 platform. Compaq R/3 solutions offer you a low TCO with a high level of service and support. Compaq SAP Competency Centers test, pilot, and optimize R/3 on Windows NT solutions. Compaq was the first company to demonstrate failover capabilities for the SAP R/3 using a preliminary version of the Microsoft Wolfpack clustering extensions. Compaq was also the first company to support failover capability in R/3 and Windows NT environments with Compaq On-line Recovery Server and Standby Recovery Server.

Some of the benefits of this partnership include the following:

- Eleven state-of-the-art Competency Centers around the world
- Global service and support infrastructure
- Demonstrated leadership
- Faster time to solution

Compaq was the first to achieve 5,000 SAP R/3 implementations worldwide. In November 1998, Compaq also received two distinguished SAP awards for excellent customer satisfaction ratings with customers running SAP R/3 on Compaq ProLiant and Compaq AlphaServer systems.

Compaq and SAS Institute Partnership

The Compaq and SAS Institute partnership supplies enterprise customers the broadest range of business intelligence solutions running on the hardware platform of their choice. Your organization generates, collects, and stores data necessary to do business. Compaq and SAS solutions help you harness and integrate your data, structuring it into useful information. You can rapidly and confidently bring together current data, historical data, and external data even from legacy systems.

The partnership enables you to use the integrated information in the following ways:

- Identify significant relationships and patterns
- Discover unexpected purchase correlations
- Gain insight into production efficiency
- Find new answers to old questions

The unique strengths of these partners help you maximize technology and achieve a competitive advantage.

Compaq and Siebel Partnership

Compaq and Siebel Systems, Inc. formed a global partnership to provide integrated enterprise solutions for automating sales, telemarketing, and call-center information systems. The companies participate in joint testing, performance optimization, and technology sharing, as well as coordinating field sales and support activities. This partnership allows you to rapidly and cost-effectively develop and deploy customized sales information systems worldwide, based on Compaq platforms and Siebel Systems software.

The Compaq Siebel International Competency Center in San Mateo, CA

- Conducts performance and benchmark tests,
- Offers you pre-sales system sizing,
- Provides integration and optimization services,
- Delivers post-sale service and support, and
- Tests and integrates systems management software and utilities.

This partnership provides you the opportunity to build powerful, flexible, standards-based solution packages that provide distributed access to business-critical sales information across the largest enterprises. Siebel 99 was developed on Compaq hardware and 70% of Siebel users operate on Compaq platforms.

Compaq and VERITAS Partnership

Compaq and VERITAS join together to provide storage solutions optimized for today's data storage and management requirements. It provides compatibility, ease-of-management and integration advantages not found in other products. You can be assured the Compaq and VERITAS solution dedicates itself to providing the following:

- World-class current and next-generation storage-management hardware and software based on a thorough understanding of enterprise storage requirements
- Well-tested, integrated, and highly reliable storage solutions from the exchange of dedicated resources and joint engineering efforts between the two companies
- Lower TCO resulting from the enhanced manageability, scalability, reliability, and performance integration of Compaq and VERITAS technologies

- Easy deployment and operability of the solution from the development of specific systems management tools and innovative product integration efforts with Microsoft Windows NT and Novell NetWare
- Proficient expertise in storage management software and hardware solutions based on market leadership and knowledge

Compaq and VERITAS are committed to providing the best storage solutions for business-critical environments. Through their Global Storage Management Development Agreement, Compaq and VERITAS develop industry-leading solutions for information availability in accessing, protecting, and managing corporate enterprise wide data for client/server platforms.

Systems Management Partners

Compaq continues to drive up the functionality curve, delivering more management capabilities to customers who downsize operations from proprietary midrange and mainframe environments. The goal of Compaq Systems Management Partnerships is to facilitate the optimum integration and use of Compaq systems event, performance, and configuration information into partners' tools. This information is available from Insight Agents installed on Compaq systems. Compaq has integrated this information into HP OpenView, IBM NetView, Sun NetManager, Microsoft SMS, and Novell ManageWise.

The systems management partnerships focus on meeting your most pressing need— enterprise event management for Compaq systems. Event management provides you proactive notification of problems when they happen or before they happen. Further integration with these partners and additional partner applications will provide a broad range of systems management functionality for Compaq systems in other areas that include performance management, change management, production control, help desk operations, and security.

Compaq and ABB Partnership

Compaq and ABB have been partners in providing energy management solutions to the utility industry for over fifteen years. Compaq and ABB solutions include applications addressing bulletproof security and ultra-high availability in distributed configurations. Compaq provides the systems, networks, and internetworking products and services to support ABB solutions.

The partnership includes optimizing ABB applications on Compaq platforms, consulting support on migration of applications, and extensive configuration design.

Compaq and ALSTOM Partnership

The Compaq and ALSTOM partnership offers high availability for real-time control solutions in the utility industry. The integrated solutions provided by this partnership include market, energy, distribution, substation, and generation management platforms. Compaq enhances the ALSTOM solution in a number of ways including optimizing applications, implementing high-availability technologies, consulting support on migration of applications, and collaborating on development.

Compaq and Axent Technologies

The partnership between Compaq and Axent Technologies, founded on the cooperative development of strategic client and server products, provides comprehensive, enterprise-wide security for organization networks with an emphasis on firewalls. The companies collaborate on product certification, channel development, integration engineering, performance optimization, sales and marketing, and service and support.

The partnership delivers solutions such as *ActiveAnswers* for Axent Raptor Firewalls and Secure Pack, a pre-tested and pre-configured firewall offering. The packaged solutions offered by both companies allow customers to purchase and implement Internet security solutions easily and quickly in today's 24x7 marketplace.

Compaq and BMC Software Partnership

Compaq teams with BMC Software to transform your technology investments into a meaningful and manageable competitive advantage by increasing system uptime, accelerating diagnosis of application failures, and automating your IT support. The partnership creates a unique synergy of capabilities focused on integrating your IT solutions so that your investments do more while costing less.

The partnership offers extensive worldwide service featuring integration, installation, and outsourcing as well as 24/7 support resources. BMC Software provides the foundation to proactively manage operating systems and Compaq servers delivering heightened availability, performance, and service assurance.

Compaq and Check Point Software Technologies Ltd. Partnership

Compaq and Check Point Software Technologies Ltd. Jointly developed Virtual Private Network (VPN) primers, performance documents, solution sizers, and installation guides to help you implement a VPN solution on Compaq ProLiant servers. This partnership offers complete Internet security architecture including firewall protection through Check Point Firewall-1, anti-virus software, intrusion detection, and vulnerability assessment.

Compaq *ActiveAnswers* for Check Point VPN-1 provides your fast track to secure VPN for internal, partner, and vendor communications.

Compaq and Cisco Systems Partnership

The Compaq and Cisco Systems partnership enables both companies to leverage their strengths to deliver end-to-end computing solutions in the eBusiness economy. Compaq Services designs Next Generation Network Infrastructure (NGNI) solutions using Cisco technologies for LAN/WAN infrastructure and Internet traffic over an IP network to web-enable the enterprise and service provider. Compaq Network and Systems Integration Telecommunication Management Information Platform (TeMIP), integrated with Cisco Systems Switch Technology, provides superior management capabilities for provisioning, performance management, connectivity and fault management.

You can have confidence in your next-generation infrastructure and applications because Compaq Network Systems Integration Services (NSIS) can help you plan, design, implement, and manage a wide range of services such as unified messaging, video conferencing, advanced intranet-extranet services, local directories, security, and policy-based network management with Cisco Systems technology.

Compaq and CrossWorlds Software Partnership

Compaq was an early investor in CrossWorlds Software and partners with them to help customers integrate disparate applications to create unified eBusiness solutions. Compaq supports CrossWorlds United Applications Architecture (UAA) on all Compaq ProLiant servers. UAA offers a complete set of solutions within the enterprise and between trading partners via the Internet. These solutions work with the leading ERP solutions (SAO, Baan, PeopleSoft, Oracle), CRM solutions (Clarify, Siebel, Trilogy, Vantive), HRMS solutions (PeopleSoft), supply chain solutions (IMI, Manugistics) , telecommunications billing packages (Portal, Kenan, MetaSolv), and eCommerce (Commerce One) applications.

Compaq and CrossWorlds Software deliver a combined solution for application integration allowing customers to form their own global value chains for competitive advantage.

Compaq and Dialogic Partnership

The combination of Compaq platforms, service, and support with Dialogic Computer Telephony (CT) technology allows customers worldwide to develop the tools required to build enhanced communications for eBusiness. Industry-leading performance, worldwide services, and high line count at a low price make this platform for interactive voice response (IVR) a winner. Compaq can integrate the industry leading Dialogic technology for voice, telephony, fax, and voice recognition into its ProLiant servers.

Cost-effective deployment of CT applications on an open-standards based CT server platform is the result of the Compaq and Dialogic collaboration.

Compaq and i2 Partnership

The Compaq and i2 partnership evolved out of the close cooperation between the two companies on the development of solutions for the Compaq worldwide supply chain. Today, the two companies combine resources to provide solutions that deliver on the promise of eBusiness. Attractive, friendly storefronts, robust planning, and scheduling systems deliver what the customer wants when it’s wanted.

The combination of intelligent eBusiness solutions from i2 and the networked system architecture and professional services capability from Compaq removes IT hurdles so companies can focus on what they do best–running their business.

Compaq and INS Partnership

Compaq and INS understand that availability and performance levels must be high for your eBusiness to succeed. The unique combination of services and products provided by this partnership proactively manage and monitor mission-critical applications supporting electronic business. Compaq will be the only provider to offer its eBusiness customers VitalSolution, a product providing real-time performance monitoring for enterprise network applications.

Businesses that rely on electronic transactions will appreciate the return on investment, lower total cost, and increased productivity this partnership brings.

Compaq and INTERSHOP Partnership

Compaq and INTERSHOP team together to create sizing, configuration, and installation content available on Compaq *ActiveAnswers*. An online interactive sizer provides custom recommendations based on the business needs of the customer. INTERSHOP has announced cross-platform compatibility for its enterprise solutions on Compaq Tru64 UNIX, Linux, and Microsoft Windows NT operating systems.

Compaq and Internet Security Systems (ISS) Partnership

The Compaq and Internet Security Systems (ISS) partnership brings you easy management of your network security. ISS RealSecure provides automated, real-time intrusion detection and response; Compaq *ActiveAnswers* simplifies your planning, deployment, and operation of the software. The system automatically analyzes packets of information as they travel across a network, searching for hostile activity by interpreting network traffic patterns. The network administrator determines how to react to the attack once it is identified.

ISS Internet Scanner, running on Compaq servers, identifies network vulnerabilities prior to a security breach. Look to Compaq *ActiveAnswers* for information on planning, deploying, and operating these security solutions.

Compaq and J. D. Edwards Partnership

Compaq and J. D. Edwards provide essential components of powerful systems; together they have integrated the best technologies of both, delivering an optimized and fully tested enterprise resource planning solution. Both companies dedicate engineering staff and resources to develop and test steps for every phase of system implementation. The Compaq J. D. Edwards International Competence Center provides direct access to resources for your sizing needs and Compaq *ActiveAnswers* supplies easy access to tools and information on a 24/7 basis.

By combining expertise and resources, Compaq and J. D. Edwards provide proven, optimized enterprise resource planning solutions that deploy easily.

Compaq and NetIQ Partnership

Compaq and NetIQ Corporation address the need for comprehensive management by joining Compaq Intelligent Manageability with AppManager Suite. This pushes performance analysis and monitoring beyond the operating system and applications into the hardware environment. This product provides a complete environment for correlating application and hardware tuning as well as proactive management. These tools reduce the time required to identify and diagnose performance issues and the cause of system alerts.

The Compaq and NetIQ partnership delivers efficient problem location and identification resulting in a positive impact on the availability and performance of your system.

Compaq and NextPoint Networks Partnership

Compaq and NextPoint Networks help make sure your customers are happy–leading to greater revenue opportunities and long-term business success. With this partnership solution, eBusiness managers can measure performance from the user's perspective, application response time and availability, and benchmark against specific service-level management objectives.

Compaq Professional Services brings you complete solutions for audit, baseline, and assessment services by offering NextPoint S3e Commerce Manager with Compaq servers and services. Providing on-site consulting to deploy these solutions, Compaq is the only service provider to offer turnkey systems to measure user experience on a 24x7 basis.

Compaq and Tantau Software Partnership

Compaq and Tantau deliver highly available, scalable, and secure solutions for eBusiness initiatives. Compaq NonStop eBusiness solutions with the Tantau products for Electronic Service Infrastructure (ESI) ensure scalability and easy integration of multiple standards and platforms. The superior security these solutions offer enable customers to operate continuously.

Tantau Application Server (TAS) enables flexible migration of applications and saves investments in legacy applications, while allowing organizations to quickly connect to the Internet to take advantage of emerging eBusiness opportunities.

Compaq and Tivoli Partnership

Compaq partners with Tivoli Systems to provide you with a greater level of systems management capabilities. Tivoli links Compaq Insight Agents to TME 10 through its Tivoli/Sentry and Tivoli/Enterprise Console (T/EC) applications. The T/EC, a powerful automation application, provides rules-based event correlation for integrating network, systems, database, and applications management. Tivoli/Sentry manages distributed resources by configuring and monitoring parameters and automatically initiating corrective actions.

A Compaq-oriented sentry monitoring collection has been developed to watch more than forty critical performance and system status parameters on each Compaq server managed. When a performance threshold is exceeded, an alert goes to the T/EC for action. Compaq and Tivoli offer the ability to manage your distributed servers from a central point of automated command and control.

Compaq and Trend Micro Partnership

The Compaq and Trend Micro partnership enables centralized security management of the entire enterprise through the Trend Virus Control System (TVCS). Security for your Internet communications begins by stopping viruses at their main points of entry and dissemination–the firewall/gateway and file/application server. Compaq *ActiveAnswers* for Trend Micro server-based virus filtering is a powerful first line of defense.

Compaq and Trend Micro jointly developed guides for planning, deployment, and operations that speed the implementation of this bulletproof security solution on Compaq ProLiant servers.

Other Solution Partners

Compaq and **Banyan** ensure that Compaq servers and peripherals are supported and certified with Banyan VINES operating system products.

Compaq works closely with **Citrix** to provide the most robust and comprehensive thin client/server solution available. The advantages to you are lower costs of application ownership, accelerated application deployment, extended application availability, enhanced security, improved backup and recovery, and more effective user support.

Compaq works with **IBM** to support and certify Compaq servers with the IBM OS/2 Warp Server family of products. Compaq also offers extensive support of Compaq Insight Manager and Insight Agents under OS/2.

Compaq and **Intel** work together on a variety of solutions. Compaq and Corollary, an Intel subsidiary, partnered to develop the ProFusion 8-way chipset architecture. Compaq developed PCI Hot Plug technology and licensed it to Intel making it available on all Intel based systems. Compaq and Intel collaborated on the VI Architecture specification providing a new class of scalable cluster products. Compaq and Intel also worked together to produce imaging and creativity solutions, DVD encryption, and DOS audio support.

Compaq tests and optimizes **OneSoft** products with Compaq enterprise server products. Their scalable OneCommerce solution combined with Compaq Distributed Internet Server Array (DISA) architecture lets customers optimize each step of online business.

Compaq servers are tested and certified on the **Sun** Solaris Intel Platform Edition.

Together, Compaq and **Sybase** deliver database and business intelligence solutions enabling enterprises around the world to better utilize their information assets. Substantial investments from both partners bring you leading edge solutions to meet the scalability and performance requirements of large-scale, Internet-enabled applications.

Compaq *ActiveAnswers* provides an integration and installation guide for the **TanData** Progistics Merchant, a shipping application for eBusiness.

Learn how to simplify your setup of the **Taxware** Internet Tax System in a Distributed Internet Server Array (DISA) through Compaq *ActiveAnswers*. Compaq and Taxware developed integration and installation guides for easy planning, deployment, and management of this invaluable eCommerce solution.

Appendix B–Feature and Option Descriptions

In this section, features and options are listed alphabetically with detailed descriptions.

ActiveAnswers

ActiveAnswers is an online knowledge center available from Compaq via the Internet that enables customers, VARs, and resellers to plan, deploy, and operate eBusiness systems on Compaq platforms.

Active Update

Compaq Active Update keeps IT administrators directly connected to Compaq for proactive notification and delivery of the latest software updates. This web-based application subscription provides updates for server, desktop, workstation, and portable models. On a user-defined schedule, this service proactively delivers software updates to the customer site. No more time wasted searching the web for updates. Active Update provides rapid access to the information IT administrators need when they need it.

Active Update delivers software updates in a new format with easy to understand titles and descriptions. As new updates are delivered, they can be sorted by date delivered, title, and system platform. Detailed software descriptions make it easy for IT administrators to get the information they need for critical bug fixes, to make proactive deployment decisions, or to simply keep systems up and running at peak performance levels.

Compaq Active Update conveniently stores content customized to the customer's environment. The application automatically builds and intuitive directory of information as updates are received. It automatically creates and organizes directory folders by platform and model number. These software updates can be easily stored on a local Windows client or on a network-shared drive for centralized update deployment.

Administrative password

An administrative password prevents changes to the configuration unless you enter the password.

Advanced Network Control Utility

The Advanced Network Control Utility provides the ability to merge two similar network controllers into a controller pair. In such a pair, one controller performs as the active controller and the other remains in standby mode. If the active controller fails, all network traffic switches to the backup controller. In systems that support PCI Hot Plug technology, a failed controller can be replaced and the controller pair restored to complete redundancy without shutting down the system.

Array Configuration Utility

The Array Configuration Utility simplifies array configuration and facilitates online capacity expansion as a graphical user interface. There are two versions of the Array Configuration Utility; one runs from bootable diskettes and the other runs online from the operating system. Each offers the ability to manage the arrays for any of the SMART, SMART-2, and Smart Array controllers.

Asset Tag Number

The Asset Tag Number is used as a repository for storing company-specific asset numbers for easy tracking and is initially set equal to the system serial number. The Asset Tag is stored in a protected section of non-volatile memory, which can be accessed and modified with the System Configuration Utility.

Automatic Server Recovery (ASR)

In case of a critical hardware or software error, Automatic Server Recovery allows the server to reboot to either the operating system or Compaq utilities, call the administrator, or report the problem.

ASR offers a cost-effective means of minimizing unplanned downtime since automatic reboot of the server brings users back on line with minimal interruption of service. ASR consists of three elements:

- Hardware integrated onto the system board that, with the assistance of an operating system driver, detects when a server has malfunctioned and consequently resets the system.
- Server failure notifications that send a pager alert to notify your system administrator of a server malfunction.
- Capability to reboot to the operating system or to Compaq utilities in order to run diagnostics and reconfigure remotely.

Automatic Server Recovery-2 (ASR-2)

ASR-2, a superset of the functionality provided by ASR, adds the environmental recovery features: thermal shutdown and UPS shutdown.

Board release levers

Board release levers can be used to secure and release adapters allowing quick access to modular, removable components without the need for tools. When opened, the levers disable power to the associated slot.

Boot block ROM

Boot block ROM, a read-only section of the ROM, contains a failsafe code to make sure you can always boot a minimum system—even when the ROM code becomes corrupted. It ensures that you can always boot to a ROMPaq diskette to restore the ROM.

CarePaq

CarePaq provides additional services and warranties for your Compaq hardware.

CD lock

The CD lock provides a means of disabling CD-ROM access. This enables the administrator to prohibit the use of the CD-ROM for unauthorized software loading.

CD-ROM boot

Many Compaq servers provide the option of booting from the CD-ROM drive greatly simplifying the process of initial software load by eliminating the need to use floppy diskettes.

Cluster Verification Utility

The Cluster Verification Utility aids your administrator in diagnosing their setup to determine its suitability for use with the Microsoft Cluster Service (MSCS).

Compaq PCI Hot Plug Utility

This utility configures PCI Hot Plug which allow new PCI devices to be added, unused PCI devices to be removed, or PCI devices to be replaced.

Configurable boot order

Compaq servers provide the option of setting a System Configuration Parameter to determine which mass storage controller services the boot device. The Controller Order Parameter, available for every mass storage controller installed in a server, can be accessed through the Compaq System Configuration Utility.

Configuration (NVRAM) lock

The configuration lock disallows configuration changes when in use by not allowing non-volatile memory to be modified.

Corrected Error Log

The Corrected Error Log contains the date, time, frequency, and unique information about errors that were corrected automatically by various server subsystems. It allows quick determination of the type and frequency of corrected errors. For ProLiant 1500s, this log contains error information about corrected ECC memory errors, including which SIMM produced the errors. This log can be read through Compaq Insight Manager and Compaq Diagnostics.

Critical error logging

Critical error logging records catastrophic errors, such as non-correctable memory, expansion board, and expansion-bus attribution errors. After a critical error occurs, the system ROM indicates on boot up that a critical error occurred and prompts you to run Compaq Utilities. The critical error log contains the time and date of the error. When a critical error logs, the server can notify you when it reboots. The critical error log allows quick correlation of server errors and their causes.

Digital linear tape (DLT)

Digital linear tape (DLT) technology uses multi-linear track recording. The DLT tape cartridge is a single spool cartridge that spools the tape to a second take-up spool located inside the drive. DLT places the data on the tape in longitudinal tracks, allowing the drive to read multiple data channels simultaneously.

Diskette drive control

The diskette drive control enables and disables the diskette drive(s). No read, write, or boot functions are available when the diskette drive is disabled.

Diskette write control

Diskette write control enables and disables diskette-write functions. Boot and read functions are still available when diskette writing is disabled.

DOS CPR Utility

The DOS CPR Utility installs minimal MS-DOS on a FAT-formatted partition with Microsoft Windows NT already installed without disabling the Windows NT boot environment.

Drive Firmware Upgrade

To keep drives operating at peak capabilities, Compaq introduced Drive Firmware Upgrades as a means of allowing your administrators to install the latest firmware revisions on Compaq disk drives.

ECC Memory

Error Checking and Correcting (ECC) memory enables detection and correction of all single-bit, 2-bit, and 3-bit memory errors and most 4-adjacent-bit memory errors. This ensures that common memory errors can be corrected without interrupting system operation. More severe errors, such as the loss of an entire 4-bit DRAM are detected quickly.

EISA bus utilization monitor

The EISA bus utilization monitor tracks and graphs utilization of the EISA bus.

Event Processor Subsystem (EPS)

The Event Processor Subsystem (EPS) collects and records NonStop Cluster agent information and application events. Based on user-defined event matching criteria, EPS provides notification to a user-defined email location and/or executes user-defined commands.

Failure/status LEDs

Most Compaq hardware products include LEDs used to indicate device status and to alert you of any device failure. Some examples of the products that incorporate these LEDs include server systems, storage systems, disk drives, network interface cards, and even PCI Hot Plug slots. In general, a solid green LED indicates normal operation, flashing green indicates a change of status or activity, solid yellow indicates the system requires some attention, and red indicates device failure.

Fan detect and shutdown

Fan detect and shutdown, a feature of ASR-2, allows the operating system to detect when the fan(s) of the system fails. In order to prevent a potentially serious degradation of thermally sensitive components, the server might shut down automatically. Accompanying data in the log indicates whether an auto-shutdown sequence was invoked by the operating system.

Fibre channel

Fibre channel is a storage technology combining the reliability and low latency of a serial channel with the flexibility and connectivity of a network. The result is a 1 GB per second storage network that supports simultaneous transfer of many different data protocols, including SCSI, IPI, and IP. Fibre channel supports up to 127 devices connected together known as a Fibre Channel Arbitrated Loop or FCAL,

Fibre Fault Isolation Utility

The Fibre Fault Isolation Utility verifies the installation and operation of a new or existing Fibre Channel Storage System. The utility displays all of the devices properly logged onto the fiber channel arbitrated loop and tests for link errors within that loop.

Flashable ROM

Flashable ROMs, included in all of the newer Compaq servers, allow you to download and install the latest versions of firmware (ROMPaqs) at no cost. This ensures that you have access to the latest enhancements without the need for service calls.

Front bezel key lock

This external key lock protects the removable media components of the server and provides an additional layer of security for the internal components, such as the memory and CPU(s).

Graphical remote

Graphical remote enables a graphical view of the Windows NT console to be displayed on a remote console when accessing the Remote Insight Board in a Windows NT server. This feature requires the use of graphical remote console software such as Carbon Copy or pcAnywhere32.

Hot-plug drives

Many Compaq servers are equipped with hot-pluggable SCSI drive cages, which permit you to insert and remove SCSI drives from the system while the system continues to operate. This allows you to replace failed drives in RAID disk arrays without shutting down the server.

Hot-plug fans

Hot-plug fans offer you the ability to replace a fan without shutting down the system.

Hot-plug keyboard

Hot-plug keyboards provide the ability to add or replace a keyboard without the need to reboot.

Info Messenger

Compaq Info Messenger, a proactive Compaq Internet service, provides you with the latest information relevant to your specific computing environments. Compaq Info Messenger searches the Compaq website, collects the information you want, and alerts you via email that it is available on a customized web page on Compaq Access. You can access Compaq Info Messenger at www.compaq.com/infomessenger.

Insight Asynchronous Management

Insight Asynchronous Management provides access to Insight Manager using an out-of-band connection through Point-to-Point Protocol (PPP). This gives remote access to all the alerting data and data collection of Insight Manager as long as the OS functions.

Insight Manager

Compaq Insight Manager presents an intuitive systems management tool delivering fault, performance, and configuration management for Compaq servers and desktop clients. Compaq Insight Management software follows a client-server architecture. The front-end management application, Insight Manager, delivers management capabilities to the user in an intuitive, easy-to-use manner. Meanwhile, the back-end software, Compaq Insight Management Agents (Insight Agents), run on the server providing access to the advanced hardware technologies that make server management possible.

Insight Agents check fault and performance indicators for the server hardware and options, providing the information in the form of a Management Information Block (MIB). Insight Agents also collect asset information and component failure information making these available to administrators even when the server is down or otherwise inaccessible to the network.

Management information passes to Insight Manager through the Simple Network Management Protocol (SNMP), the industry standard for management information communication. This standards-based management scheme also allows SNMP-based management platforms to monitor Compaq Server Management data.

The optional Compaq Remote Insight Board provides an OS-independent remote connection to a managed server, allowing a remote PC to display all phases of server activity (including POST sequences and OS load) without loss of connection. In addition, the administrator can use the Remote Insight Board to perform remote reboots and to receive alphanumeric or digital pages when a problem occurs.

Insight Manager auto alerts

With Compaq Insight Manager, you can designate who will be *on call* for any Compaq server or subsystem performance issue. If Insight Manager detects an unacceptable operating parameter, it sends out pager alerts to those you specify whom, in turn, access the analysis capability of Compaq Insight Manager to obtain a diagnosis and recommendation. Your system administrators can respond to and resolve your server issue, even before you know it exists. Compaq Insight Manager, version 2.0 and later, includes this feature.

Insight Manager XE

Compaq Insight Manager XE provides web-based management for Compaq servers, and any HTTP, SNMP MIB-2, or DMI v2 compliant device. The strength of Compaq Insight Manager XE lies in its ability to provide system administrators real control through an easy-to-use industry standards-based web interface. Feature-rich, intuitive, and extensible, it is designed to unlock the built-in manageability of Compaq hardware.

Insight Manager XE was built from the ground up as a web application to work with industry-standard management agents. With its integrated Cluster Monitor, Compaq Insight Manager XE provides system managers with a single monitor point for both stand-alone systems and Compaq ProLiant Clusters with Microsoft Cluster Server (MSCS). The Cluster Monitor provides aggregated system data and presents it as a single view of the cluster configuration.

The intuitive user interface is packed with functionality. Accessed from anywhere in the Intranet, system administrators can manage devices, manage events, and administer Insight Manager XE. Pre-configured common system views and customizable queries and events provide out-of-the-box productivity. Predictive fault management and Pre-Failure warranty protect your storage, memory, and CPU investment.

Integrated Management Display (IMD)

Integrated Management Display (IMD) provides information about events stored in the Integrated Management Log that occur during Power-On Self Test (POST), as well as system events during normal operation. In addition to event-specific information, the system can be configured to display administrative contact information, as well as system name and address, which can be entered through the Integrated Management Display Utility.

Integrated Management Display Utility

This utility configures the Integrated Management Display to display events and information needed by your system administrator.

Integrated Management Log (IML)

The Integrated Management Log (IML) replaces the Critical Error Log and Correctable Memory Log, recording system events and storing them in an easily viewable form. The IML marks each event with a time-stamp and categorizes events as one of four levels:

- Status (informational only)
- Repaired (corrective action taken)
- Caution (non-fatal error condition)
- Critical (component failure).

Integrated Management Log Viewer (IMLV)

The Integrated Management Log Viewer (IMLV) allows you to view the IML of any machine running the Compaq Remote Monitor Service.

Integrated Remote Console (IRC)

Compaq developed Integrated Remote Console (IRC) to allow out-of-band management capabilities—remote console and remote reset—independent of the state of the network operating system. With the IRC function, an administrator has the ability to access the server, perform diagnostics, reset the system, watch the reset process remotely, and view ASR reset sequences—regardless of whether the server OS is online or offline.

IRC complements Insight Asynchronous Management by providing an easy-to-use remote-console feature while the OS runs. IRC interfaces with Insight Asynchronous Management so that both capabilities are available to you in an out-of-band, online situation.

IRC gives you the ability to access remote servers, monitor and diagnose problems, and protect data with security features through its combination of hardware and firmware integrated onto the server motherboard. The seamless hardware-based remote console, hardware-based remote reset, and reset-sequence replay features are available to your administrator—whether the servers are in multiple remote locations or grouped in a centralized site, yet still away from your administrator.

However, you may need even more capabilities than those available with the IRC function. Compaq also offers the optional Compaq Remote Insight Board if you require access and alerts at all times, regardless of the state of the server hardware or OS.

Integration Maintenance Utility

The Compaq Integration Maintenance Utility for NetWare allows additions or updates of the latest revisions of software and Compaq utilities on a NetWare server without having to restart the server. The Integration Maintenance Utility eases the administrative task of keeping software on the server consistent across the network. It allows software installs and updates from the integration server on the network or from CDs provided by Compaq.

Intelligent Power Switch

The Intelligent Power Switch provides an advanced level of flexibility in powering down the server. You configure the Intelligent Power Switch using the Compaq Power Down Manager Utility; it can be configured to behave in one of three ways:

- Do nothing when the power switch turns off (Power Down Lock)
- Power down as soon as the power switch turns off
- Shut down the operating system gracefully when the power switch turns off

The utility can also be used to set a delay in seconds between the time the power switch turns off and the time the configured action occurs.

Keyboard password

The keyboard password can be used to lock out the keyboard preventing unauthorized access to Compaq servers. This effectively prevents logins or commands until entry of the proper password.

Keyboard-mouse adapter cable

The keyboard-mouse adapter cable provides keyboard-mouse pass-through to a remote console using Remote Insight Lights-Out Edition.

Long operating system life support

Long operating system life support provides support for legacy and less recent versions of operating systems. Compaq understands that you cannot always upgrade all of your servers to the latest release of operating systems as soon as they become available. In support of this, Compaq continues to release support software and driver updates for less recent versions of operating systems, such as Windows NT 3.51, NetWare 4.x, or SCO OpenServer 5, long after newer versions are released. This provides you with the assurance that they can take advantage of the most recent advances in the drivers, firmware, and support utilities released by Compaq.

Memory deallocation

Memory deallocation keeps a bad memory block from being used again. For unattended recovery, ASR-2 logs the error information to the Critical Error Log, resets the server, tests all memory, and automatically deallocates any bad memory blocks that it finds.

Memory fault recovery tracking

Memory fault recovery tracking monitors the operations of the memory subsystem for uncorrectable errors and enables rapid recovery from actual memory failures.

Monitor Utility for Smart Array

Monitor Utility for Smart Array continuously displays the physical drive status for drives connected to one or more Compaq Array controllers. It also provides an audible notification when it detects a drive failure. The audible signal continues until you press a key on the keyboard. This utility works in conjunction with the NetWare Peripheral Architecture (NWPA) driver. The utility detects hot-plugged drives and other changes to array configurations.

Native Graphics Remote Console

This refers to the hardware-based graphics remote capability of Remote Insight Lights-Out Edition. It allows full view and control of a server in a browser, through all stages of server operation–shutting down, starting up, and loading the operating system. It is OS-independent and requires no additional software installation.

Network interface fault recovery tracking

Network interface fault recovery tracking monitors over 20 failure indication parameters, such as alignment errors, lost frames, and frame copy errors of Ethernet and Token Ring network interfaces. The information decreases downtime by enabling diagnosis of network interface failures and is available via the Compaq Insight Manager.

Network Server Mode

Network Server Mode permits system startups from hard disk or network server while the keyboard and pointing device are disabled. This provides security if the server operates unattended. In Network Server Mode, the system starts without asking for the Power-On Password. The Power-On Password must be enabled before you can authorize Network Server Mode. The Power-On Password remains in effect until you delete or disable Network Server Mode. If you attempt to boot from a diskette while Network Server Mode is enabled, you must enter the Power-On Password.

NIC Fault Recovery Tracking

This utility tracks over twenty failure possibilities in Ethernet and Token Ring network interfaces.

NonStop Clusters Management Suite (NCMS)

The NonStop Clusters Management Suite (NCMS) is a graphical interface providing the ability to monitor and control a variety of cluster-wide activities, events, configuration files, and processes.

On-line Recovery Server

On-line Recovery Server, as an implementation of the Recovery Server Option (RSO), pairs two servers and connects them to a pair of independent storage environments. If one of the servers fails, the other server inherits the storage environment and workload of the failed server. For more information on On-line Recovery Server, refer to the white paper entitled *Compaq On-line Recovery Server* (document number ECG027/0598).

Online Configuration Utility for NetWare

The Online Configuration Utility for NetWare allows configuration of SMART-2 and Fibre Channel Array controllers without shutting down the system. You can prioritize, configure, or expand the array as well as monitor and configure redundant NICs with this utility.

Online Storage Controller Recovery Option (OSCRO)

On-line Recovery Server cannot be implemented in conjunction with Online Storage Controller Recovery Option (OSCRO), as both utilize the same type of switched interfaces to the storage environment, and the cable configurations are not compatible.

Compaq Online Storage Controller Recovery Option, as an implementation of Recovery Server Option (RSO), provides mass storage controller redundancy by merging two matched SMART-2 controllers into a controller pair. In such a pair, one controller is active and the other remains in standby mode. Should a problem occur with the active controller, the I/O traffic switches to the standby controller without loss of data or interruption of service. Working in conjunction with RAID technology, OSCRO provides extended fault tolerance for mission critical servers. OSCRO is a natural partner for PCI Hot Plug technology. Together, OSCRO and PCI Hot Plug offer a means of keeping a server running and maintaining the fault tolerant status of the server without shutting down the server.

PCI bus monitor

The PCI bus monitor tracks and graphs utilization of the PCI bus(es) as part of Compaq Insight Manager.

PCI Hot Plug

PCI Hot Plug defines the standard for high availability in Compaq servers by allowing new PCI controllers to be added, unused PCI controllers to be removed, and old or defective PCI controllers to be replaced without shutting down the system. PCI Hot Plug is an extension of the *PCI Local Bus Specification.* Compaq PCI Hot Plug hardware isolates each hot-plug slot from all other devices on the PCI bus. By offering slot-level control, Compaq provides great flexibility. Slot level isolation eliminates interruption to other components and applications using those components enabling the system to continue performing useful work throughout the hot replacement.

PCI Plug and Play

Many Compaq products now support the Plug and Play standard for PCI devices, which offers a means of identifying a PCI device and the system resources it requires through the use of a ROM on the device.

Power down lock

The power down lock disables the power switch to prevent the server from being shut down accidentally. The Intelligent Power Switch includes this functionality.

Power Down Manager

The Power Down Manager allows you to define the behavior of the I_2C power switch of a server locally or remotely. Options include disabling the power switch and imposing a fixed delay between the pressing of the power switch and actual shutdown of the server.

Power line monitoring

Power line monitoring provides information about voltage and current levels in Compaq power supplies.

Power-On Password

The Power-On Password prevents use of the computer until you enter the password. (See also Network Server Mode.) During Automatic Server Recovery (ASR), the system does not prompt for the Power-On Password allowing ASR to perform the necessary reboots in an unattended fashion.

Power-On Error Log

The Power-On Error Log records errors that occur during Power-On Self Test (POST). It allows quick determination of the cause of a server failure to reboot. (See also *Rapid Recovery Features*.)

Power Safe Modules

Power Safe Modules (DC to DC converters) ensure delivery of proper voltage to critical operational components including the processors, the I/O boards, and the PCI buses. There are two types of power safe modules: CPU board converters and I/O system board converters.

Power safety interlock

All ProLiant servers have a built-in power safety interlock switch that automatically turns system power off when you remove the case cover. In addition to protecting your safety by preventing access to high-energy components, this feature also protects thermally sensitive components by ensuring ideal airflow throughout the server. Although the interlock switch does prevent access to the power supply, CPU, memory, and some expansion slots, it does not prevent access to hot-pluggable devices.

Power Subsystem Utility

The Power Subsystem Utility, a system management driver user interface utility for NetWare, displays the redundant power subsystem status. In addition, the utility incorporates the Compaq Power Down Manager to allow configuration of the Intelligent Power Switch.

Power supply viewer

The power supply viewer allows you to locally or remotely view redundancy information of I_2C power subsystems and statistics of individual power supplies.

Pre-Failure Warranty

Compaq Server products using Compaq Insight Manager 2.0 or greater are covered by the Compaq Pre-Failure Warranty. The Pre-Failure Warranty extends the advantage of the Compaq three-year limited warranty by providing coverage on many critical components.

This includes hard drives used in conjunction with SMART Array Controllers and memory as well as Pentium Pro, Pentium II Xeon, and Pentium III Xeon processors before they actually fail. The Pre-Failure Warranty ensures that when you receive notification from your monitoring software that a critical server component might fail, Compaq replaces the component free of charge under the warranty. With the Pre-Failure Warranty, your system administrators can proactively schedule downtime for maintenance and not interrupt critical business operations relying on these servers.

Protected power switch

The protected power switch prevents the server from accidental shutdown due to incidental contact with the power switch cover. The oval-shaped switch covers the normal power switch. The whole assembly can be popped out and rotated 180 degrees so that only the inside switch can be operated.

QuickLock

Using the QuickLock hot-key combination, **Ctrl+Alt+L**, disables the keyboard and pointing device without exiting the application. The application remains in view on the monitor screen but you cannot access it. You can change the QuickLock hot key combination if the default combination conflicts with your application software.

RAID Online Expansion

RAID Online Expansion, an integral function of the Array Configuration Utility, provides the ability to increase the size of a RAID array by adding a new disk to the array without destroying the data held in the array.

Redundant fans

Redundant fans are extra fans installed in the server to ensure proper airflow around temperature sensitive components in case of a single fan failure.

Redundant hot-plug power supply

Newer Compaq servers have the option of being equipped with redundant hot-pluggable power supplies. These servers can accept up to three power supply units. While all units function, the power supplies work together, balancing the load between the active units. If a power supply fails, the remaining unit(s) picks up the load and continues operating. Your system administrator can then replace the failed power supply without shutting down the server or impacting the other power supplies.

Redundant power module

A redundant power module operates only when other converters fail. Up to three CPU board converters (Power Safe Modules) can be installed on each CPU board. This allows for two independent CPU board converters to service two independent CPUs, with the third acting as a redundant converter which operates only when one or both of the other two converters fails.

Up to two I/O system board converters (Power Safe Modules) can be installed on the system board. Both converters should be installed at all times to provide redundancy.

Redundant power supply

Some Compaq servers are equipped with multiple power supplies to ensure that the server continues operating even when a power supply fails.

Remote alert

A remote alert goes out to a designated individual via Insight Manager, ASR-2, or Remote Insight Board if Insight manager detects potential problems with a server.

Remote alpha/numeric paging

Remote alpha/numeric paging sends alpha alert text if Insight Manager detects problems with a server. You program the designated pager number through Remote Insight/Insight Manager.

Remote asset management

Remote asset management allows collection or setting of asset management information remotely by way of Insight Manager.

Remote diagnostics

Remote diagnostics allows analysis of the server remotely using Compaq Insight Manager or Remote Insight Board.

Remote Insight Board

Remote Insight Board offers complete hardware independence from the server, as it is essentially a *computer within a computer*. Because the board has its own processor, memory, and battery backup, it can continue operating should the server have a hardware fault or lose power. The on-board battery backup allows the enhanced alerting features of Remote Insight Board (alphanumeric paging, Insight Manager alerts) to be available at all times, even in the case of power outages.

Remote Insight provides seamless PPP integration so that you can move between Insight Manager/SNMP management and the resident remote-console application without any loss of connection regardless of server condition.

In addition, Remote Insight captures critical information through enhanced video sequence replay, which includes failure sequences as well as reset sequences. These enhanced abilities allow two generations of reset sequence data to be stored and preserved by the on-board battery during power outages.

The optional Remote Insight Board offers the most complete out-of-band server management solution. If a server goes down due to a hardware fault, software fault, or even a power outage, it alerts the administrator who can access Remote Insight to bring the server back up.

Remote Insight Lights-Out Edition

Remote Insight Lights-Out Edition, designed and priced to provide remote server management in corporate data centers and remote sites, allows browser access to Compaq servers through a seamless, hardware-based, OS-independent graphical remote console. Hardware-based, it requires neither additional software nor any host server CPU cycles. The on-board graphical remote console capability turns the client browser into a virtual desktop, no matter what operating system the host server is running or what state it is in.

The Compaq Remote Insight Lights-Out Edition also includes additional new features, such as a virtual power button, DNS/DHCP IP auto-configuration, and ROM-based configuration capability. It also continues to provide the rich suite of remote management features available with the Compaq Remote Insight Board/PCI.

Compaq Remote Insight Lights-Out Edition can be used to deploy "headless" servers that do not require a monitor, keyboard, or a mouse. If deployed in every server in a rack, it eliminates these devices on every server as well as the switchbox and associated cabling complexity.

Remote threshold setting

Remote threshold setting allows your system administrators to remotely set the alert thresholds. These thresholds are used by Insight Manager and ASR-2 to determine when to send alert messages indicating a problem with a server.

Remote updates to Compaq Support Software for Microsoft Windows NT (Compaq SSD for Windows NT)

The Compaq SSD for Windows NT, version 2.01 and later, for the Microsoft Windows NT 4.0 Setup Utility features two interfaces with the ability to perform remote driver and utility installations, updates, removals, and configurations across a network. The two types of interfaces and their features follow.

- **Graphical User Interface (GUI)** provides a visual representation of the Compaq SSD for Windows NT software components relative to hardware present in the system. The GUI allows you to install, update, and remove components through either an Express or Custom setup process. You can also perform both local and remote component modifications, however, only one computer at a time can be modified.
- **Command Line Interface (CLI)** allows you to install, remove, and update the Compaq SSD for Windows NT components via the command line. The CLI should be considered for silent and batch installations or updates to software components. The batch ability allows for simultaneous update of software components on several computers. Command line activities report to a log file instead of to the screen.

The Remote Setup feature uses a push implementation in which drivers and utilities are pushed from the local computer to the remote computer. This push implementation allows administrators to configure one or more remote computers connected to a network.

The Compaq SSD for Windows NT Setup v2.01 is no longer constrained to the local machine. The options available for local setup are also available for remote setup.

Revision history table

The revision history table stores board revision information in non-volatile memory. It logs the system board revision first, then logs other boards that support the Revision History Table, such as the SMART-2 Array Controller, Fast-Wide SCSI-2 Controller, and NetFlex-2 ENET-TR Controller. When you upgrade your server or add new expansion boards, the revision history table records this information. As you troubleshoot server problems, you can use this information to determine if a change to the server configuration might have caused the problem.

Serial parallel interface control

Serial parallel interface control blocks the unauthorized transfer of data through the integrated serial and parallel ports.

Server failure notification

Server failure notification, part of the ASR and ASR-2 functionality, sends a pager alert to notify your system administrator of a server malfunction.

Server recovery notification

Server recovery notification, part of the ASR-2 functionality, sends a pager alert to notify your system administrator of a server malfunction recovery.

SmartStart Integration Maintenance Utility

With SmartStart 3.0 Compaq introduced a new set of functionality called Integration Maintenance for effective setup and maintenance of Novell intraNetWare (NetWare 4.11), NetWare, and Microsoft Windows NT servers.

With Integration Maintenance, your system administrators set up a server to act as the Integration Server; then it services the production servers. The Compaq Integration Maintenance Utility applies software updates from the Integration Server to the production servers.

SmartStart Integration Management

This tool allows the manual upgrade or installation of Compaq products using the Integration Server or a CD.

SmartStart

Compaq SmartStart for Servers, the configuration and software integration tool from Compaq, aids in the installation of Compaq servers by simplifying the process of loading the operating system and installing any specialized device drivers and support utilities.

Software updates via Internet

Compaq offers updates of its software to you at no cost through easily navigated web pages. These updates are available for all of the operating systems Compaq supports. Regular updates of the web pages ensures you always have access to the software and firmware needed to keep your Compaq systems running at peak effectiveness.

Standby Recovery Server

Standby Recovery Server cannot be implemented in conjunction with Online Storage Controller Recovery Option (OSCRO).

Standby Recovery Server, as an implementation of the Recovery Server Option (RSO), pairs two servers and connects them to a single storage environment. One of the servers is active while the other remains in standby mode. If the active server fails, the standby takes the place of the active server. For more information on Standby Recovery Server, refer to the white paper *Compaq Standby Recovery Server* (ECG026/0598).

Storage Automatic Reconstruction

Storage Automatic Reconstruction automatically reconstructs data to an online spare drive or a replacement drive if a drive failure occurs. To use the reconstruction feature you must have your drive configured for Drive Mirroring (RAID 1) or Distributed Data Guarding (RAID 5). Reconstruction reduces downtime by allowing rapid recovery to full system operation if a drive fails.

Storage Fault Recovery Tracking

Storage Fault Recovery Tracking tracks over twelve failure parameters—timeouts, spin-up, and self-test errors—of the SMART-2 Array Controller, the Fast-Wide SCSI-2 Controller, and their attached hot-pluggable drives. The system uses these parameters to accurately pinpoint failed storage subsystem components to enable rapid recovery from controller or hard drive failures.

Support Software Update Utility

The Support Software Update Utility updates Compaq Support Software for Novell Products (Novell SSD) on a NetWare server as a client/server application. The utility has the ability to gather a list of Compaq drivers loaded on the server, the built-in intelligence to decide if those drivers are current, and the option to update those drivers, locally or remotely.

Survey Parameter Capture

This utility captures system parameters, compares the current capture to previous ones, and delivers a comprehensive view of the server and the differences, if any, of the captures.

Survey Utility

Survey Utility builds upon the service tool known as Inspect. Inspect has long been used to capture comprehensive hardware configuration information. Compaq Survey Utility, however, takes this comprehensive reporting functionality and delivers it in an online format. This online capability means that servers running business-critical applications do not require shut down to collect the critical information required for a service call. Not only can Compaq Survey Utility be run while the server is online, but its initial install can be completed without ever having to restart the server. This makes it truly an online service tool.

Compaq Survey Utility not only captures most of the hardware information gathered today by Inspect, but goes a step further and gathers details about the operating system parameters (including NetWare NLMs loaded, Windows 2000 Services running, and others). By combining hardware and software configuration captures, Compaq Survey Utility delivers a comprehensive view of the server with the ease and simplicity of a single tool.

Another important benefit of Compaq Survey Utility relates to its ability to identify recent configuration changes. It stores each configuration snapshot in a file on the server and compares the latest file to the baseline configuration at each snapshot interval. It then highlights any

significant changes and automatically updates the output file to reflect the latest configuration as well as differences relative to the baseline. Recent configuration changes are often the source of the problems manifesting on the server. The ability to quickly generate comprehensive configuration snapshots and highlight specific changes enables problem resolution time to be significantly reduced.

The information gathered by Compaq Survey Utility can be accessed locally at the host server console. From the console, the administrator can initiate an updated snapshot, view the Survey Utility file online, and generate a new output file based on comparing different saved sessions. The output file can also be printed. In addition to user-initiated snapshots, the Survey Utility tool automatically generates and stores updated snapshots upon server restart as well as at user-specified time intervals. This automatic update mechanism helps to ensure that the latest information and change histories are always recorded and available when needed.

System Partition

The System Partition, a special partition created on Compaq disks by SmartStart, contains diagnostic tools and utilities, including the System Configuration Utility. The System Partition varies in size from 2 MB up to about 36.

System Partition Administration Utility

The System Partition Administration Utility accesses and updates the System Partition.

System serial number

Compaq designed the backplane of the computer with an additional serial EEPROM. When the factory builds the computer, it assigns and burns the serial number into the EEPROM. The system serial number can be obtained during asset queries, both locally and remotely.

System Uptime Monitor (SUM)

The System Uptime Monitor (SUM) tracks the availability statistics of the system.

Temp detect and shutdown

The temp detect and shutdown feature of ASR-2 allows the operating system to detect when the temperature of the system exceeds the caution level. Accompanying data in the log notes determines whether the operating system invokes an auto-shutdown sequence.

Temperature monitor via I_2C

This temperature monitor utilizes Inter-Integrated Circuit (I_2C) bus technology to report temperature events for critical components.

Virtual power button

The virtual power button allows remote control of the power to a managed server using Remote Insight Lights-Out Edition. This feature is supported on the ProLiant 1850R, ProLiant 8000, and all future servers from Compaq.

Voltage/current monitoring

The voltage/current monitoring feature tracks voltage and current changes with Compaq power supplies.

UnixWare NonStop Clustering

UnixWare NonStop Clustering enables a group of servers to operate as a single, robust computing resource in a highly scalable clustered operating environment. Its single system image (SSI) capability allows a cluster of servers to appear as one single system, greatly improving manageability by allowing transparent access to all cluster resources. SSI also significantly reduces downtime as applications automatically migrate among nodes, without disruption, when a node failure occurs.

Wide Ultra2 SCSI-3

Wide Ultra2 is the latest SCSI-3 protocol featuring data transfer rates of up to 80 MB/s.

Windows NT HAL recovery

The Compaq SSD for Microsoft Windows NT 4.0 includes—as one of its available features—the ability to retain a redundant copy of the Windows NT Hardware Abstraction Layer (HAL) to be used if the default HAL becomes corrupt. This provides a means of recovering from what would otherwise be a catastrophic corruption problem without the need to re-install the operating system.

Appendix C–Supported Features by Server

	Systempro	Systempro LT	Systempro XL	ProSignia	ProSignia 200	ProSignia 300	ProSignia 500	Prosignia NeoServer	Prosignia Server 720	ProSignia Server 740	ProSignia VS
High Availability											
NonStop Computing Features											
Advanced Network Control Utility				√	√	√	√				√
Cluster Verification Utility				√	√	√	√				√
Hot Spare CPU			√								
On-line Recovery Server Option					√	√	√		√	√	
Online Storage Controller Recovery Option					√	√	√		√	√	
Redundant Fans											
Redundant Hot-plug Power Supply											
Redundant Power Modules											
Redundant Power Supply											
Standby Recovery Server Option					√	√	√		√	√	
Rapid Recovery Features											
ASR			√	√		√	√	√	√		
ASR-2					√					√	√
Fan Detect and Shutdown					√	√	√			√	
Hot-pluggable Drives											
Hot-plug Fans											
Hot-plug Keyboard											
PCI Hot Plug											
Server Failure Notification			√	√	√	√	√		√	√	√
Server Recovery Notification			√	√	√	√	√			√	√
Temperature Detect and Shutdown					√			√	√	√	
Windows NT HAL Recovery					√	√	√		√	√	√
Fault Prevention Features											
ECC Memory			√		√	√	√	√	√	√	
Power Down Manager											
Memory Deallocation			√	√							
Power Safe Modules											
Power Safety Interlock											
Pre-Failure Warranty					√	√	√		√	√	

	Systempro	Systempro LT	Systempro XL	ProSignia	ProSignia 200	ProSignia 300	ProSignia 500	Prosignia NeoServer	Prosignia Server 720	Prosignia Server 740	ProSignia VS
Life Cycle Cost Reduction											
Online Server Maintenance											
Asset Tag Number			√	√	√	√	√	√	√	√	√
Board Release Levers											
Correctable Memory Log			√		√	√	√		√	√	
Online Configuration Utility for NetWare				√	√	√	√		√	√	√
Power Line Monitoring											
RAID Online Expansion	√	√	√	√	√	√	√		√	√	√
Survey Parameter Capture	√	√	√	√	√	√	√				√
System Partition Administration Utility				√	√	√	√		√	√	√
System Serial Number		√	√	√	√	√	√	√	√	√	√
Temperature Monitor via I_2C											
Voltage/Current Monitoring											
Off-line Server Maintenance											
Boot Block ROM				√	√	√	√	√	√	√	√
CD-ROM Boot				√	√	√	√		√	√	√
Configurable Boot Order				√	√	√	√		√	√	√
Critical Error Logging			√	√	√	√	√		√	√	√
DOS CPR				√	√	√	√	√	√	√	√
Drive Firmware Upgrade				√	√	√	√				√
Failure/Status LEDs									√	√	
Fibre Fault Isolation Utility				√	√	√	√		√	√	√
Flashable ROM			√	√	√	√	√	√	√	√	√
Intelligent Power Switch								√			
PCI Plug and Play					√	√	√		√	√	
Power On Error Log									√	√	
Revision History Table					√	√	√		√	√	√
SmartStart	√	√	√	√	√	√	√		√	√	√
System Partition	√	√	√	√	√	√	√		√	√	√

	Systempro	Systempro LT	Systempro XL	ProSignia	ProSignia 200	ProSignia 300	ProSignia 500	Prosignia NeoServer	Prosignia Server 720	Prosignia Server 740	ProSignia VS
Life Cycle Cost Reduction (continued)											
Remote Capabilities											
Compaq Insight Manager	√	√	√	√	√	√	√		√	√	√
Insight Manager Alerts	√	√	√	√	√	√	√		√	√	√
Info Messenger	√	√	√	√	√	√	√	√	√	√	√
Integrated Management Display									√	√	
Integrated Management Log											
Integrated Remote Console					√						
Remote Alpha/Numeric Paging			√	√	√	√	√		√	√	√
Remote Diagnostics	√	√	√	√	√	√	√		√	√	√
Remote Insight					√	√	√		√	√	
Remote Compaq Support Software for Windows NT Upgrade				√	√	√	√		√	√	
Remote Threshold Setting			√	√	√	√	√		√	√	√
SmartStart Integration Management Utility				√	√	√	√		√	√	
Software Updates via Internet	√	√	√	√	√	√	√	√	√	√	√
Investment Protection											
Long Operating System Life Support	√	√	√	√	√	√	√	√	√	√	√
Industry Standard Components	√	√	√	√	√	√	√	√	√	√	√
Ultra Wide SCSI-3					√					√	
Performance Tracking and Information											
EISA Bus Utilization Monitor											
Memory Fault Recovery Tracking					√	√	√		√	√	√
Monitor Utility for Smart Array				√	√	√	√		√	√	√
NIC Fault Recovery Tracking					√	√	√		√	√	√
PCI Bus Monitor											
Storage Fault Recovery Tracking			√	√	√	√	√	√	√	√	√

	Systempro	Systempro LT	Systempro XL	ProSignia	ProSignia 200	ProSignia 300	ProSignia 500	Prosignia NeoServer	Prosignia Server 720	Prosignia Server 740	ProSignia VS
Life Cycle Cost Reduction (continued)											
Security											
Administrative Password			√	√	√	√	√	√	√	√	√
CD Lock				√	√	√	√		√	√	√
Configuration (NVRAM) Lock	√	√	√	√	√	√	√	√	√	√	√
Diskette Drive Control	√	√	√	√	√	√	√		√	√	√
Diskette Write Control	√	√	√	√	√	√	√		√	√	√
Front Bezel Keylock											
Keyboard Password				√	√	√	√		√	√	√
Network Server Mode	√	√	√	√	√	√	√	√	√	√	√
Power On Password	√	√	√	√	√	√	√		√	√	√
Power Down Lock											
Protected Power Switch					√						
QuickLock	√	√	√	√	√	√	√		√	√	√
Serial/Parallel Interface Control	√	√	√	√	√	√	√		√	√	√
Operating Systems											
Banyan											
VINES 7.0					S	√	√				
VINES 8.0					S	√	√				
VINES 8.5, 8.51, 8.6					S	√	√				
IBM											
OS/2 Warp 4					√						
OS/2 Warp Connect 3					√						
OS/2 Warp Server 4					√						
OS/2 Warp Server Advanced 4					√						
OS/2 Warp Server Advanced 4 SMP					√						
OS/2 Warp Server for e-business “Aurora”											
Linux											
Red Hat Linux 6.0, 6.1									√	√	

	Systempro	Systempro LT	Systempro XL	ProSignia	ProSignia 200	ProSignia 300	ProSignia 500	Prosignia NeoServer	Prosignia Server 720	Prosignia Server 740	ProSignia VS
Operating Systems (continued)											
Microsoft											
BackOffice Small Business Server 4					√				√	√	
BackOffice Small Business Sever 4.5						√			√	√	
Windows NT Server 3.51					√	√				√	
Windows NT Server 4.0			√	√	√	√			F	F	
Windows NT Server, Enterprise Edition 4.0											
Windows NT Server 4.0, Terminal Server Edition					√				√	√	
Windows 2000 Server					√				√	F	
Windows 2000 Advanced Server					√						
Novell											
NetWare 3.2					√						
NetWare 4.11, SMP (intraNetWare)					√	√			S	√	
NetWare 4.2, SMP					√				F	F	
NetWare 5, 5.1					√	√			F	F	
NetWare Small Business Suite 4.2					√				√	√	
NetWare Small Business Suite 5.0					√				√	√	
SCO											
OpenServer 5.0.4, 5.05			√		√	√	√		5	5	√
UnixWare 2.1.2, 2.1.3					√	√	√				
UnixWare 7.0.1, 7.1					√						
Sun											
Solaris X86 2.5x					√	√	√				
Solaris X86 2.6					√	√	√				
Solaris X86 7					√						

F	Factory-installed operating system
5	OpenServer 5.05 support only
S	No SMP support
P	Future support planned

For operating systems not listed and for older servers, check www.compaq.com/products/servers/platforms/retired.html.

	ProLiant CL1850	ProLiant DL 380	ProLiant ML 350	ProLiant ML 370	ProLiant ML 530	ProLiant 400	ProLiant 800	ProLiant 850R	ProLiant 1000	ProLiant 1200	ProLiant 1500	ProLiant 1600	ProLiant 1850R	ProLiant 2000	ProLiant 2500	ProLiant 3000	ProLiant 4000	ProLiant 4500	ProLiant 5000	ProLiant 5500	ProLiant 5500 Xeon	ProLiant 6000	ProLiant 6000 Xeon
High Availability																							
NonStop Computing Features																							
Advanced Network Control Utility	√	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Cluster Verification Utility	√	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Hot Spare CPU	√	√		√	√						√	√	√	√	√	√	√	√	√	√	√	√	√
On-line Recovery Server Option	√	√		√	√	√				√	√	√	√	√	√	√	√	√	√	√	√	√	√
Online Storage Controller Recovery Option	√	√	√	√	√	√	√	√		√	√	√	√		√	√			√	√	√	√	√
Redundant Array Controllers																						√	√
Redundant Fans					√											√				√	√	√	√
Redundant Hot-plug Power Supply	√	√		√	√					√		√	√			√				√	√	√	√
Redundant NICs	√	√																		√	√	√	√
Redundant Power Modules					√											√			√			√	√
Redundant Power Supply	√	√		√	√					√	√	√	√			√		√	√	√	√	√	√
Standby Recovery Server Option	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Virtual Power-on Button	√	√	√	√	√								√										
Rapid Recovery Features																							
ASR				√		√			√					√			√						
ASR-2	√	√	√		√		√	√		√	√	√	√		√	√		√	√	√	√	√	√
Auto-processor Bus Recovery																							
Fan Detect and Shutdown	√	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Hot-pluggable Drives	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√		√	√	√	√	√	√
Hot-plug Fans																							
Hot-plug Keyboard	√	√		√	√					√		√	√		√	√				√	√	√	√
Off-line Backup Processor	√	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
PCI Hot Plug																					√		
Server Failure Notification	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Server Recovery Notification	√	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Temperature Detect and Shutdown	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Windows NT HAL Recovery	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Fault Prevention Features																							
Dynamic Sector Repair	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
ECC Memory	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Memory Deallocation			√	√					√		√						√	√					
Power Down Manager																						√	√
Power Safe Modules																			√	√	√	√	√
Power Safety Interlock	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Pre-Failure Warranty	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Server Health Log	√	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

	ProLiant CL1850	ProLiant DL 380	ProLiant ML 350	ProLiant ML 370	ProLiant ML 530	ProLiant 400	ProLiant 800	ProLiant 850R	ProLiant 1000	ProLiant 1200	ProLiant 1500	ProLiant 1600	ProLiant 1850R	ProLiant 2000	ProLiant 2500	ProLiant 3000	ProLiant 4000	ProLiant 4500	ProLiant 5000	ProLiant 5500	ProLiant 5500 Xeon	ProLiant 6000	ProLiant 6000 Xeon
Life Cycle Cost Reduction																							
Online Server Maintenance																							
Asset Tag Number	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Board Release Levers					√																	√	√
Correctable Memory Log	√	√	√			√	√	√	√		√		√	√	√		√	√	√	√			
Online Configuration Utility for NetWare	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Power Line Monitoring																						√	√
Push-button PCI Hot Plug																							
RAID Online Expansion	√	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Survey Parameter Capture	√	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
System Partition Administration Utility	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
System Serial Number	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Temperature Monitor via I_2C					√											√						√	√
Voltage/Current Monitoring					√											√						√	√
Off-line Server Maintenance																							
Auto-default ROM																							
Boot Block ROM	√	√		√	√				√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
CD-ROM Boot	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Configurable Boot Order	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Critical Error Logging	√	√	√			√	√	√	√		√		√	√	√		√	√	√	√	√	√	√
DOS CPR	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Drive Firmware Upgrade	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Failure/Status LEDs	√	√		√	√	√			√	√	√	√	√	√	√	√		√	√	√	√	√	√
Fibre Fault Isolation Utility	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Flashable ROM	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Intelligent Power Switch																						√	√
PCI Plug and Play	√	√	√	√	√	√	√	√		√	√	√	√		√	√			√	√	√	√	√
Power On Error Log	√	√		√	√	√				√		√	√		√	√						√	√
Rack Builder/Rack Builder Pro	√	√		√																			
Remote Flash-redundant ROM																							
Revision History Table	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
SmartStart	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
System Partition	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Tool-free Design	√	√	√	√	√																		

	ProLiant CL1850	ProLiant DL 380	ProLiant ML 350	ProLiant ML 370	ProLiant ML 530	ProLiant 400	ProLiant 800	ProLiant 850R	ProLiant 1000	ProLiant 1200	ProLiant 1500	ProLiant 1600	ProLiant 1850R	ProLiant 2000	ProLiant 2500	ProLiant 3000	ProLiant 4000	ProLiant 4500	ProLiant 5000	ProLiant 5500	ProLiant 5500 Xeon	ProLiant 6000	ProLiant 6000 Xeon
Life Cycle Cost Reduction (continued																							
Remote Capabilities																							
Array Configuration Utility	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Compaq Insight Manager	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Insight Manager Alerts	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Info Messenger	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Integrated Management Display				√	√	√				√		√			√	√				√	√	√	√
Integrated Management Log				√	√	√				√		√			√	√				√	√	√	√
Integrated Remote Console	√	√	√	√	√	√	√	√		√		√			√	√				√	√	√	√
Remote Alpha/Numeric Paging	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Remote Diagnostics	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Remote Insight	√	√	√	√	√	√	√	√		√	√	√	√		√	√	√	√	√	√	√	√	√
Remote Compaq Support Software for Windows NT Upgrade	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Remote Threshold Setting	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
SmartStart Integration Management Utility	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Software Updates via Internet	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Investment Protection																							
ACPI Ready																							
Long Operating System Life Support		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Industry Standard Components	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Ultra Wide SCSI-3	√	√	√	√	√		√	√		√		√	√			√			√	√	√	√	√
Performance Tracking and Information																							
Automatic Revision Tracking	√	√	√	√	√		√					√	√			√				√	√		
Drive Parameter Tracking	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
EISA Bus Utilization Monitor	√	√		√	√				√	√		√	√	√	√	√	√	√	√	√			
Memory Fault Recovery Tracking	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Monitor Utility for Smart Array	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
NIC Fault Recovery Tracking	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
PCI Bus Monitor	√	√		√	√	√				√		√	√			√			√	√	√	√	√
Storage Fault Recovery Tracking	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

	ProLiant CL1850	ProLiant DL 380	ProLiant ML 350	ProLiant ML 370	ProLiant ML 530	ProLiant 400	ProLiant 800	ProLiant 850R	ProLiant 1000	ProLiant 1200	ProLiant 1500	ProLiant 1600	ProLiant 1850R	ProLiant 2000	ProLiant 2500	ProLiant 3000	ProLiant 4000	ProLiant 4500	ProLiant 5000	ProLiant 5500	ProLiant 5500 Xeon	ProLiant 6000	ProLiant 6000 Xeon
Life Cycle Cost Reduction (continued)																							
Security																							
Administrative Password	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
CD Lock		√				√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Configuration (NVRAM) Lock	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Diskette Boot Control	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Diskette Drive Control	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Diskette Write Control		√				√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Front Bezel Keylock		√			√	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Hot-plug Access Security																							
Keyboard Password	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Network Server Mode	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Power On Password	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Power Down Lock																						√	√
Power Supply Security Bar																				√	√	√	√
Protected Power Switch		√		√		√		√	√														
QuickLock	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Serial/Parallel Interface Control	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Operating Systems																							
Banyan																							
VINES 7.0					√		S	√		√	√	S	S	√	√	S		√	S	S	S	S	S
VINES 8.0, 8.5, 8.51, 8.6		√		√	√		S	√		√	√	S	S		√	S			S	S	S	S	S
IBM																							
OS/2 Warp 4					√			√		√					√								
OS/2 Warp Connect 3		√		√				√		√		√	√		√	√				√	√	√	√
OS/2 Warp Server 4		√		√	√		√	√		√		√	√		√	√				√	√	√	√
OS/2 Warp Server Advanced 4		√		√	√		√	√		√	√	√	√		√	√				√	√	√	√
OS/2 Warp Server Advanced 4 SMP		√		√	√		√	√		√	√	√	√		√	√				√	√	√	√
OS/2 Warp Server for e-business "Aurora"																							
Linux																							
Red Hat Linux 6.0, 6.1		P	P	P	P	√	√					√	√			√				√	√		

	ProLiant CL1850	ProLiant DL 380	ProLiant ML 350	ProLiant ML 370	ProLiant ML 530	ProLiant 400	ProLiant 800	ProLiant 850R	ProLiant 1000	ProLiant 1200	ProLiant 1500	ProLiant 1600	ProLiant 1850R	ProLiant 2000	ProLiant 2500	ProLiant 3000	ProLiant 4000	ProLiant 4500	ProLiant 6400R	ProLiant 6500	ProLiant 5000	ProLiant 5500	ProLiant 5500 Xeon	ProLiant 6000	ProLiant 6000 Xeon
Operating Systems (continued)																									
Microsoft																									
BackOffice Small Business Server 4						√	√					√	√												
BackOffice Small Business Server 4.5			√			√	√	√	√	√	√														
Windows NT Server 3.51		√		√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Windows NT Server 4.0		F	F	F	F	F	F	√	√	√	√	F	F	√	√	F	√	√	F	√	√	F	F	√	√
Windows NT Server, Enterprise Edition 4.0	F	√	√	√	√			√		√		√	F		√	√			F	√		√	√	√	√
Windows NT Server 4.0, Terminal Server Edition		√	√	√	√	√	√	√				√	√		√	√			√	√		√	√	√	√
Windows 2000 Server		F	F	F	√	F	F	√		√	√	F	F		√	F		√	√	√	√	F	√	√	√
Windows 2000 Advanced Server		√	√	√	√	√	√	√		√	√	√	√		√	√		√	√	√	√	√	√	√	√
Novell																									
NetWare 3.2		√	√	√	√		√	√		√		√	√		√	√			√	√		√	√	√	√
NetWare 4.11, SMP (intraNetWare)						S	√	√		√	√			√	√		√	√		√	√			√	√
NetWare 4.2, SMP	√	√	√	√	√	√	F	√			√	F	F	√		F			√	√		F	F	√	√
NetWare 5, 5.1	√	√	√	√	√	√	F	√		√	√	F	F	√	√	F		√	√	√	√	F	F	√	√
NetWare Small Business Suite 4.2		√	√		√	√	√	√				√	√												
NetWare Small Business Suite 5.0		√	√		√	√	√	√				√	√												
SCO																									
OpenServer 5.0.4, 5.0.5		√	√	√	√	5	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
UnixWare 2.1.2, 2.1.3		√	√		√		√	√		√	√	√	√		√	√	√	√	√	√	√	√	√	√	√
UnixWare 7.01, 7.1		√	√	√	√		√	√				√	√		√	√			√	√	√	√	√	√	√
Sun																									
Solaris X86 2.5x								√	√	√	√			√	√		√	√			√				
Solaris X86 2.6		P		P	P		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Solaris X86 7		P		P	P		√			√	√	√	√		√	√			√	√		√	√	√	√

F	Factory-installed operating system
5	OpenServer 5.05 support only
S	No SMP support
P	Future support planned

For older servers and operating systems not listed, check www.compaq.com/products/servers/platforms/retired.html.

	ProLiant 6400R	ProLiant 6500	ProLiant 6500 Xeon	ProLiant 7000	ProLiant 7000 Xeon	ProLiant 8000	ProLiant 8500
High Availability							
NonStop Computing Features							
Advanced Network Control Utility	√	√	√	√	√	√	√
Cluster Verification Utility	√	√	√	√	√	√	
Hot Spare CPU	√	√	√	√	√	√	
On-line Recovery Server Option	√	√	√	√	√	√	√
Online Storage Controller Recovery Option	√	√	√	√	√	√	
Redundant Array Controllers				√	√	√	
Redundant Fans	√	√	√	√	√	√	√
Redundant Hot-plug Power Supply	√	√	√	√	√	√	√
Redundant NICs	√	√	√	√	√	√	√
Redundant Power Modules	√	√	√	√	√	√	√
Redundant Power Supply	√	√	√	√	√	√	√
Standby Recovery Server Option	√	√	√	√	√	√	√
Rapid Recovery Features							
ASR							
ASR-2	√	√	√	√	√	√	√
Auto-processor Bus Recovery						√	√
Fan Detect and Shutdown	√	√	√	√	√	√	√
Hot-pluggable Drives	√	√	√	√	√	√	√
Hot-plug Fans	√	√	√	√	√	√	√
Hot-plug Keyboard	√	√	√	√	√	√	√
Off-line Backup Processor	√	√	√	√	√	√	√
PCI Hot Plug	√	√	√	√	√	√	√
Server Failure Notification	√	√	√	√	√	√	√
Server Recovery Notification	√	√	√	√	√	√	√
Temperature Detect and Shutdown	√	√	√	√	√	√	√
Windows NT HAL Recovery	√	√	√	√	√	√	√
Fault Prevention Features							
Dynamic Sector Repair	√	√	√	√	√	√	√
ECC Memory	√	√	√	√	√	√	√
Memory Deallocation							
Power Down Manager	√	√	√	√	√	√	√
Power Safe Modules	√	√	√	√	√	√	
Power Safety Interlock	√	√	√	√	√	√	
Pre-Failure Warranty	√	√	√	√	√	√	√
Server Health Log	√	√	√	√	√	√	√

	ProLiant 6400R	ProLiant 6500	ProLiant 6500 Xeon	ProLiant 7000	ProLiant 7000 Xeon	ProLiant 8000	ProLiant 8500
Life Cycle Cost Reduction							
Online Server Maintenance							
Asset Tag Number	√	√	√	√	√	√	√
Board Release Levers	√	√	√	√	√	√	√
Correctable Memory Log							
Online Configuration Utility for NetWare	√	√	√	√	√	√	√
Power Line Monitoring	√	√	√	√	√	√	√
Push-button PCI Hot Plug	√	√	√	√	√	√	√
RAID Online Expansion	√	√	√	√	√	√	√
Survey Parameter Capture	√	√	√	√	√	√	√
System Partition Administration Utility	√	√	√	√	√	√	√
System Serial Number	√	√	√	√	√	√	√
Temperature Monitor via I_2C	√	√	√	√	√	√	√
Voltage/Current Monitoring	√	√	√	√	√	√	√
Off-line Server Maintenance							
Auto-default ROM						√	√
Boot Block ROM	√	√	√	√	√	√	√
CD-ROM Boot	√	√	√	√	√	√	√
Configurable Boot Order	√	√	√	√	√	√	√
Critical Error Logging	√	√	√	√	√	√	√
DOS CPR	√	√	√	√	√	√	√
Drive Firmware Upgrade	√	√	√	√	√	√	√
Failure/Status LEDs	√	√	√	√	√	√	√
Fibre Fault Isolation Utility	√	√	√	√	√	√	√
Flashable ROM	√	√	√	√	√	√	√
Intelligent Power Switch	√	√	√	√	√	√	√
PCI Plug and Play		√	√	√	√	√	√
Power On Error Log	√	√	√	√	√	√	√
Rack Builder/Rack Builder Pro	√	√	√			√	√
Remote Flash-redundant ROM						√	√
Revision History Table	√	√	√	√	√	√	√
SmartStart	√	√	√	√	√	√	√
System Partition	√	√	√	√	√	√	√
Tool-free Design	√						√

	ProLiant 6400R	ProLiant 6500	ProLiant 6500 Xeon	ProLiant 7000	ProLiant 7000 Xeon	ProLiant 8000	ProLiant 8500
Life Cycle Cost Reduction (continued)							
Remote Capabilities							
Array Configuration Utility	√	√	√	√	√	√	√
Compaq Insight Manager	√	√	√	√	√	√	√
Insight Manager Alerts	√	√	√	√	√	√	√
Info Messenger	√	√	√	√	√	√	√
Integrated Management Display	√	√	√	√	√	√	√
Integrated Management Log	√	√	√	√	√	√	√
Integrated Remote Console	√	√	√	√	√	√	√
Remote Alpha/Numeric Paging	√	√	√	√	√	√	√
Remote Diagnostics	√	√	√	√	√	√	√
Remote Insight	√	√	√	√	√	√	√
Remote Compaq Support Software for Windows NT Upgrade	√	√	√	√	√	√	√
Remote Threshold Setting	√	√	√	√	√	√	√
SmartStart Integration Management Utility	√	√	√	√	√	√	√
Software Updates via Internet	√	√	√	√	√	√	√
Investment Protection							
ACPI Ready						√	√
Long Operating System Life Support	√	√	√	√	√	√	√
Industry Standard Components	√	√	√	√	√	√	√
Ultra Wide SCSI-3	√	√	√	√	√	√	√
Performance Tracking and Information							
Automatic Revision Tracking							
Drive Parameter Tracking	√	√	√	√	√	√	√
EISA Bus Utilization Monitor							
Memory Fault Recovery Tracking	√	√	√	√	√	√	√
Monitor Utility for Smart Array	√	√	√	√	√	√	√
NIC Fault Recovery Tracking	√	√	√	√	√	√	√
PCI Bus Monitor	√	√	√	√	√	√	√
Storage Fault Recovery Tracking	√	√	√	√	√	√	√

	ProLiant 6400R	ProLiant 6500	ProLiant 6500 Xeon	ProLiant 7000	ProLiant 7000 Xeon	ProLiant 8000	ProLiant 8500
Life Cycle Cost Reduction (continued)							
Security							
Administrative Password	√	√	√	√	√	√	√
CD Lock	√	√	√	√	√	√	√
Configuration (NVRAM) Lock	√	√	√	√	√	√	√
Diskette Boot Control	√	√	√	√	√	√	√
Diskette Drive Control	√	√	√	√	√	√	√
Diskette Write Control	√	√	√	√	√	√	√
Front Bezel Keylock	√	√	√	√	√	√	√
Hot-plug Access Security	√						√
Keyboard Password	√	√	√	√	√	√	√
Network Server Mode	√	√	√	√	√	√	√
Power On Password	√	√	√	√	√	√	√
Power Down Lock	√	√	√	√	√	√	√
Power Supply Security Bar		√	√	√	√	√	
Protected Power Switch							
QuickLock	√	√	√	√	√	√	√
Serial/Parallel Interface Control	√	√	√	√	√	√	√
Operating Systems							
Banyan							
VINES 7.0	S	S	S	S	S		
VINES 8.0	S	S	S	S	S		
VINES 8.5, 8.51, 8.6	S	S	S	S	S		
IBM							
OS/2 Warp 4							
OS/2 Warp Connect 3		√	√	√	√		
OS/2 Warp Server 4	√	√	√	√	√		
OS/2 Warp Server Advanced 4	√	√	√	√	√		
OS/2 Warp Server Advanced 4 SMP	√	√	√	√	√		
OS/2 Warp Server for e-business "Aurora"							
Linux							
Red Hat Linux 6.0, 6.1						√	√

	ProLiant 6400R	ProLiant 6500	ProLiant 6500 Xeon	ProLiant 7000	ProLiant 7000 Xeon	ProLiant 8000	ProLiant 8500
Operating Systems (continued)							
Microsoft							
BackOffice Small Business Server 4							
BackOffice Small Business Server 4.5							
Windows NT Server 3.51	√	√	√	√	√		
Windows NT Server 4.0	√	√	√	√	√	√	√
Windows NT Server, Enterprise Edition 4.0	√	√	√	√	√	√	√
Windows NT Server 4.0, Terminal Server Edition	√	√	√	√	√	√	√
Windows 2000 Server	√	√	√	√	√	√	√
Windows 2000 Advanced Server	√	√	√	√	√	√	√
Novell							
NetWare 3.2	√	√	√	√	√		
NetWare 4.11, SMP (intraNetWare)		√	√	√	√		
NetWare 4.2, SMP	√	√	√	√	√	√	√
NetWare 5, 5.1	√	√	√	√	√	√	√
NetWare Small Business Suite 4.2							
NetWare Small Business Suite 5.0							
SCO							
OpenServer 5.0.4, 5.0.5	√	√	√	√	√	√	√
UnixWare 2.1.2, 2.1.3	√	√	√	√	√		
UnixWare 7.01, 7.1	√	√	√	√	√	√	√
Sun							
Solaris X86 2.5x							
Solaris X86 2.6	√	√	√	√	√		
Solaris X86 7	√	√	√	√	√	√	√

F	Factory-installed operating system
5	OpenServer 5.05 support only
S	No SMP support
P	Future support planned

For older servers and operating systems not listed, check www.compaq.com/products/servers/platforms/retired.html.