COMPAQ
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Prepared by ISS Technology Communications

Compaq Computer Corporation

Contents

History of Innovation and Value-Add in Compaq Industry Standard Servers

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

This white paper supplies information about Compaq industry standard servers, features, and options, as well as providing historical references to communicate the rich heritage of Compaq innovation and leadership in the industry.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, total cost of ownership (TCO), intelligent manageability, and security. It examines the industry standard server families.

The appendices provide a description of Compaq solution partners, 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.

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

Important: All hardware and software products described in this document are pre-merger Compaq server products only and were either included or updated in this paper prior to the HP and Compaq merger in May 2002.

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Notice

History of Innovation and Value-Add in Compaq Industry Standard Servers
White Paper prepared by ISS Technology Communications

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Features

Compaq innovations enhance the quality, reliability, maintainability, performance, and total cost of ownership (TCO) of its server products. 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 to contribute to your success. Over the years, Compaq often pioneered new technologies subsequently adopted as industry standards. Several vendors now market features like Automatic Server Recovery once found only on Compaq servers. Compaq engineered PCI Hot Plug technology, now adopted as an industry standard. Compaq, through its partnership with Corollary, developed the ProFusion 8-way chipset architecture. Expect research occurring at Compaq today to become industry-standard features tomorrow.

This document examines both the tangible and intangible features that make Compaq servers the number one choice for customers who demand quality, reliability, and manageability. For additional descriptions of these and other features, please refer to Appendix B–Feature Options and Descriptions.

High Availability

You employ systems to accomplish mission-critical functions central to the success of your operation and 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 (fault management)
- Features designed to prevent problems from occurring (fault prevention)
- Features designed to reduce the time it takes to recover from failures (fault resilience)

Fault Management

Fault management provides 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, fault management features incorporate redundancy. The features listed in Table 1 enable Compaq systems to work around potential failures without requiring immediate intervention or downtime.

Table 1. Fault management features

Feature	Description
Advanced Network Control Utility (discontinued)	Merges two similar network controllers into a controller pair allowing failover if a fault occurs
Cluster Verification Utility (discontinued)	Helps determine if a configuration is suitable for use with Microsoft Cluster Service

continued

Table 1. Fault management features *(continued)*

Feature	Description
On-line Recovery Server (discontinued)	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 array controllers	Supplies a failover array controller in case a primary array controller fails
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 NICs/NIC teaming	Permits two NICs to share the same device driver code for failover in case a primary NIC fails
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 (discontinued)	Allows two servers to act as a redundant pair, one acting as the hot spare for the active server
Virtual power-on button	Permits remote control of the power to a managed server

Fault Prevention

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 2 lists features that improve uptime by preventing server failures.

Table 2. Fault prevention features

Feature	Description
Dynamic sector repair	Provides hardware diagnostics and automatically re-maps bad sectors for Compaq drive arrays
ECC memory	Enables detection and correction of all single-bit memory errors
Offline processor recovery	Reboot capability if a processor fails
Power down manager	Gives the administrator an advanced level of flexibility in configuring the behavior of I_2C power switches
Power safety interlock	Turns system power off automatically when you remove the case cover

Fault Resilience

Fault resilient 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 3 enable recovery from component failures without shutting down the server. Others protect the server and the information stored on it in the event of failure.

Table 3. Fault resilience features

Feature	Description
Advanced Memory Protection	Advanced Memory Protection provides increased fault tolerance for applications requiring higher levels of availability: Online Spare Memory, Hot Plug Mirrored Memory, and Hot Plug RAID Memory. All three levels maintain server availability and memory reliability without service intervention.
Automatic Server Recovery (ASR)	Allows the server to reboot, call the administrator, and report critical problems
Automatic Server Recovery-2 (ASR-2)	Offers the same features as ASR with environmental recovery features, thermal shutdown and UPS shutdown
Clustering	Provides mutual automatic backup of servers. Clustering protects against a wide variety of software or hardware failures and operator errors.
Enclosure Self Recovery (ESR)	ESR, similar to ASR-2, is unique to the ProLiant BL e-Class system and is a self-monitoring reliability feature of the Integrated Administrator. If the Integrated Administrator does not boot or hangs during operation, ESR automatically resets the Integrated Administrator for an attempted self-recovery.
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 keyboard	Provides the ability to replace keyboards on a server without the need to restart the system
Hot spare boot	Allows reboot of the server without having to replace the failed processor
PCI Hot Plug	Allows add, removal, replace, and upgrade of PCI controllers without shutting down the system
Temperature Detect and Shutdown	Detects when the temperature of the system exceeds the caution level and invokes shutdown
Temperature monitor	Utilizes the Intelligent Interface Control to pass temperature information
Voltage/current monitoring	Tracks voltage and amperage fluctuations through the power supplies
Windows NT HAL Recovery	Replaces the Windows NT HAL should the HAL become corrupted

Total Cost of Ownership

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 cost of ownership include server maintenance and investment protection.

In this section, we describe some 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. Server maintenance features

Feature	Description
Asset tag number	Allows storage of company-specific asset numbers in a firmware repository for easy tracking
Auto-default ROM	Detects non-configured hardware and provides default configurations
Boot block ROM	Allows the system to boot over the network
CD-ROM boot	Provides the option of booting from the CD-ROM
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 (ROMPaq)	Provides the ability to upgrade drive firmware with software available over the Internet from Compaq
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
Intelligent power switch	Provides an increased level of flexibility in powering down the server by allowing choices, such as locking the power switch and shutting down the system gracefully when the power switch goes to Off
Internal diagnostic display (IDD)	Numerically indicates specific DIMM or processor failure
Online configuration utility for NetWare	Allows configuration of controllers without shutting down the operating system
PCI card guide	Assists in guiding and locking PCI cards in place
Rack Builder/Rack Builder Pro	Offers planning and configuration tools for building racks
RAID online expansion	Adds a new disk to a RAID array without destroying the data held in the array
Remote flash-redundant ROM	Allows administrators to flash the ROMs of remote systems
ROM-based setup	Eliminates the system configuration utility
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	Contains diagnostic tools and utilities for Compaq servers
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
Tool-free design	Includes components such as chassis covers, hot plug slots, power supplies, processor fans, and hard drives

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 do not 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 5 describes some other features Compaq offers to protect your investment.

Table 5. Investment protection features

Feature	Description
ACPI ready	Offers a cross-platform architecture for device control of system power that integrates power management features
CarePaq	Provides enhanced warranty services
Industry-standard components	Ensures that standard components, such as, memory and disks are interchangeable between platforms
Long operating system life support	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

Intelligent Manageability

Compaq pioneered manageability in the early 1990s and has led the industry since then by developing and driving industry standards. Compaq intelligent manageability solutions surpass minimum requirements and enhance management functionality to provide you with the best-managed systems. Compaq provides information products and service professionals to assist you with every step in your system deployment and management. Deployment tools manage both the configuration and integration of your server.

After deploying your system, Compaq tools manage your hardware and software and keep your network running at optimal levels. Table 6 lists deployment features available through Compaq and Table 7 describes the management features accessible through Compaq Intelligent Manageability.

Table 6. Deployment features

Feature	Description
Array Configuration Utility	Facilitates online capacity expansion with a graphical user interface
ProLiant Essentials Rapid Deployment Pack	Automates multi-server deployment and enables remote deployment through remote console
Compaq SmartStart	Simplifies configuration and installation of Compaq servers and options for fast, flexible server setup and configuration with leading operating systems, providing reliable, consistent server configurations of any size or complexity
Remote Deployment Utility (RDU)	Deploys driver and management agent updates out to servers on a network running Microsoft Windows NT or Microsoft Windows 2000, targeting remote servers for software updates
Compaq SmartStart Scripting Toolkit	Delivers an unattended installation for high-volume server deployments. Extends the power of SmartStart across large-scale deployments of hundreds or thousands of servers.

Table 7. Management features

Feature	Description
Active Update and Remote Deployment Utility	Providing direct and proactive notification and delivery of the latest Compaq software updates along with deployment of software updates throughout the customer's network.
Automatic Revision Tracking	Allows you to review recent changes to the server's configuration.
Availability Agents	Increase Microsoft Windows server availability by effectively preventing common system failures and by automating responses to well-understood issues.
Insight Manager 7 SP1 and Insight Manager Agents	Provides comprehensive management and control for ProLiant servers, exploiting Lights-Out capabilities, proactively screening problems before they occur, and maximizing system uptime to the fullest.
Disk system tracking	Monitors the hard disk to predict problems and possible failures
Drive parameter tracking	Monitors over 20 operational factors to predict impending drive failures
Integrated Lights-Out	Provides server health and remote server manageability as a standard component of selected ProLiant servers that can be accessed from a network client using a supported Web browser.
Insight Manager Alerts	Sends alerts to designated pager numbers in case of an impending problem with a server.
Integrated Administrator	Provides a single management console to manage an enclosure with up to 20 ProLiant BL e-Class server blades that integrates with Compaq Insight Manager 7 and SNMP tools.
Integrated Management Display (IMD)	Provides a view of information in the Integrated Management Log and other user-defined text
Integrated Management Log (IML)	Provides a log of system events including Power-On Self-Test (POST) results. This is part of the Health driver. See below.
Integration Agents for Compaq Insight Manager	Integrates Intelligent Management capabilities into popular frameworks by utilizing individual agents to monitor specific server functions.
Integrated Remote Console (IRC)	Allows out-of-band management capabilities such as remote console and remote reset
Legacy Intelligent Manageability products	Many legacy products that originally shipped on the Compaq SmartStart or Management CDs can still be downloaded from the web.
ProLiant Essentials Foundation Pack	Contains the setup, management, and support tools to simplify the Configuration and operation of ProLiant servers as part of an adaptive Infrastructure.
ProLiant Essentials Integrated Lights-Out Advanced Pack	Delivers sophisticated virtual administration features for full control of servers in dynamic data centers and remote locations
Management Agents	Provide direct access to the in-depth instrumentation built into Compaq servers, workstations, desktops, and portables to monitor more than 1000 parameters
Memory fault recovery tracking	Tracks operations of the memory subsystem for uncorrectable errors
Monitor Utility for Smart Array	Displays physical drive status for drives connected to Compaq array controllers
NIC fault recovery tracking	Tracks over twenty failure indications of Ethernet and Token Ring network interfaces
PCI Plug and Play	Supports the Plug and Play standard for PCI devices
Power-on error log	Records errors that occur during Power-On Self Test (POST)
Proactive Remote Service	Provides detailed service event information to Compaq service professionals allowing them to minimize potential problems and maximize service response

(continued)

Table 7. Management features *(continued)*

Feature	Description
Product change notification	Notifies you 30-60 days in advance of upcoming critical changes that may impact your computing environment
Remote alpha/numeric paging	Sends alpha/numeric pager alert text via Remote Insight/Insight Manager 7 when it detects problems
Remote asset management	Allows collection or setting of asset management information remotely by way of Insight Manager 7
Remote diagnostics	Analyzes the condition of the server remotely using Insight Manager 7
Remote Insight Manager	Offers the most complete, out-of-band server management solution with all the features of Compaq Insight Manager 7
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 threshold settings	Sets alert threshold parameters remotely
ProLiant Essentials Workload Management Pack	Enables workload optimization and server consolidation through partitioning of CPU and memory resources among specific application groups
Revision history table	Stores board revision information in non-volatile memory
Health and Wellness Driver	Provides the Compaq Health and Wellness Driver that monitors operational data of the server and logs abnormal conditions. Provides the Compaq IML Viewer Application, which allows monitoring and manipulation of logged system events, critical errors, power-on messages, memory errors, and any catastrophic hardware or software errors that typically cause a system to fail. Provides the Compaq IML Viewer Application, which allows monitoring and manipulation of logged system events, critical errors, power-on messages, memory errors, and any catastrophic hardware or software errors that typically cause a system to fail.
Smart Array Controller family support	Utilizes a standard set of management and utility software that minimize Total Cost of Ownership (TCO) by reducing training requirements and technical expertise. Smart Array controllers allow for simple and easy upgrades any time customers require higher performance, greater capacity, and increased availability. With form factor compatibility across many enterprise platforms, you can deploy and re-deploy these drives to quickly deliver increased storage capacity, migrate data between systems, and attain easier to manage spare drives.
Software upgrades via Internet	Software updates are available for many operating systems via easy to navigate Web pages
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 8 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 8. Security features

Security Feature	Description
Administrative password	Prevents changes to the configuration until 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 boot control	Enables and disables booting abilities for the diskette drive
Diskette drive control	Enables and disables the diskette drive; no read, write, or boot functions are available when enabled
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
Hot-plug access security	Locks PCI hot plug and hot-plug access doors
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
Power supply security bar	Protects the power supply from access by unauthorized personnel
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

Compaq Value-Add Solutions

Compaq continues to invest in and deliver essential software products to extend its leadership in management, deployment, version control and fault management while at the same time redefining server value to new levels of customer economic advantages and lower lifecycle operational costs.

Compaq Insight Manager 7 Service Pack 1

The Compaq Insight Manager 7 SP1 builds upon the industry-leading features of Compaq Insight Manager 7 by providing comprehensive management for the ProLiant BL e-Class blade servers and a inventory reporting engine. In addition to its ease of use, flexibility and scalability, this secure management tool comes with additional features tailored to blade management providing blade server visualization that pinpoints the exact position of blade servers within the enclosure and rack. The discovery filters enable customers to exercise granular control over the set of devices that they choose to manage.

ProLiant BL e-Class Integrated Administrator

The Integrated Administrator is a centralized management and monitoring system for the ProLiant BL e-Class enclosure and server blades. The Integrated Administrator acts as a combination terminal server and remote power controller, enabling out-of-band, secure, serial

console connections to all server blades in the enclosure as well as provides enclosure health, server blade health, interconnect switch health and remote server manageability.

ProLiant Essentials Software Value Packs

Software value packs can activate advanced intelligence embedded in ProLiant servers to help your business excel. These software options help you adapt, conserve and respond to your customer needs in a dynamic IT environment. Packages include Rapid Deployment, Integrated Lights-Out Advanced, and Workload Management.

Compaq / Check Point Security SolutionPaq

Compaq has partnered with Check Point Security to deliver the Check Point Security SolutionPaq; an easy to deploy High Availability firewall/VPN solution based on Industry Standard ProLiant Servers and Industry leading Check Point Security Software. The SolutionPaq comes with a hardened Linux operation system, Rainfinity Rainwall software and WireX Management GUI. The software is all pre-loaded on the hard drive and the base configurations are orderable through one part number.

ProLiant Essentials Software Foundation Pack

Formerly the ProLiant Setup and Management Software Pack, these package ships at no cost with every ProLiant server. It includes Compaq SmartStart software for server deployment, Compaq Insight Manager 7 for server management, Version Control and Fault Management. It is the foundation for Adaptive Infrastructure.

Proactive Remote Service

Proactive Remote Service is a monitoring and problem reporting capability that enables ProLiant servers to automatically and proactively report service problems directly to Customer Support Centers. This service is available at no extra charge with qualified HP service contracts and provides detailed service event information to service professionals allowing them to minimize potential problems and maximize service response.

Proactive Remote Service for ProLiant servers is made possible through the integration of the fault monitoring and alerting capabilities of Insight Manager 7 with services technology. This offering contributes to delivering intelligent fault resilience in an Adaptive Infrastructure. Management Agents already installed on ProLiant servers gathers data on key system parameters and forwards alerts to the centralized management server with Compaq Insight Manager 7. Compaq Insight Manager 7 continuously monitors your environment for problem alerts and forwards the service-related events to Compaq Intelligent Services Link. Compaq Intelligent Services Link ensures a secure, reliable Internet connection to Compaq for notification, diagnosis, and resolution of system problems.

Proactive Remote Service reduces IT support, labor and management costs by reducing time to repair, more efficiently allocating a customer's scarce resources and maximizing availability of a system. The end result is lower total cost of ownership and better return on IT investments.

Adaptive Infrastructure Framework

The Compaq strategy for delivering the Adaptive Infrastructure builds on the rich heritage of developing innovative products using open industry standards. The Adaptive Infrastructure blueprint illustrates the areas where Compaq is investing effort and expertise to deliver the next generation of technologies to our customers. This is translated in the evolution of the ProLiant family of products. Figure 2 illustrates the Compaq Adaptive Infrastructure Framework.

As part of its Adaptive Infrastructure framework, Compaq developed an innovative strategy for meeting customer requirements for rapid deployment, increased server density, and remote manageability. Compaq has developed a complete portfolio of modular, blade servers: the ProLiant BL™ product line. This line of products is specifically designed for adaptive computing and optimized for rapid deployment and automated provisioning. Compaq ProLiant BL e-Class systems are the first power-efficient, ultra-dense front-end server blades engineered to address the needs of space-constrained enterprises and service providers.

Later in 2002, Compaq plans to complete the BL portfolio by introducing the ProLiant BL p-Class systems that are designed for higher levels of performance and availability for mid-tier and back-end applications.

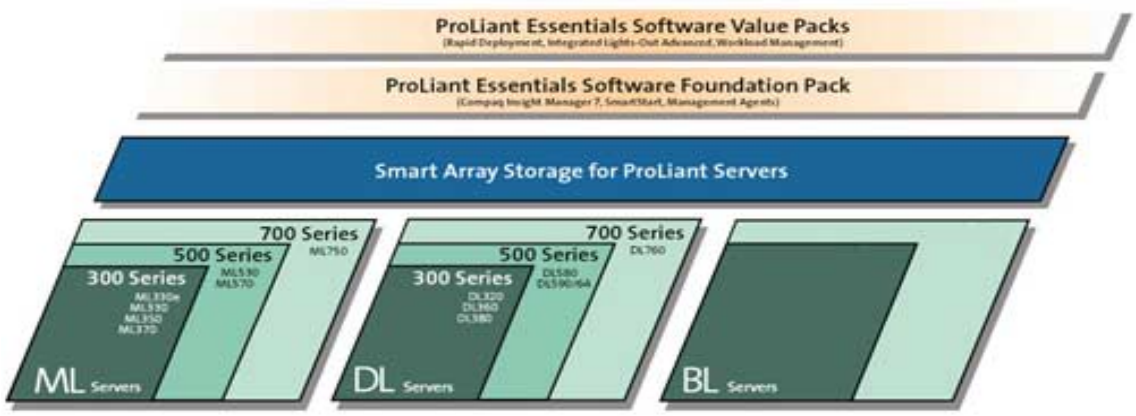

Figure 2. Adaptive Infrastructure blueprint

The Adaptive Infrastructure is integrated with value-added solutions and services from Compaq and third-party providers that will enable businesses of all sizes to scale up or down to meet changing IT demands.

ProLiant Essentials Software Foundation Pack is the foundation for Adaptive Infrastructure. Formerly the ProLiant Setup and Management Software Pack, these package ships at no cost with every ProLiant server. It includes Compaq SmartStart software for server deployment, Compaq Insight Manager 7 for server management, Version Control and Fault Management. It is the foundation for Adaptive Infrastructure. Compaq tightly integrates Compaq Insight Manager 7 Service Pack 1, ProLiant Essentials Software Value Packs, Compaq Content Delivery Solution and Compaq / Check Point Security SolutionPaq with industry standard servers and the Adaptive Infrastructure Framework.

Overview of Compaq Server Families

Compaq has developed both general-purpose and appliance servers for small, medium, and enterprise businesses with a range of products to meet customers' server needs. In this section, we examine the Compaq server families and describe their hardware configurations and features. Compaq ProLiant ML and DL servers ship standard with Compaq SmartStart and Compaq Insight Manager 7. Compaq SmartStart makes system configuration and software installation faster, easier, and more reliable.

The ProLiant BL server blades ship with a trial version of the ProLiant Essentials Rapid Deployment Pack as well as scripts to install major operating systems and the Compaq management agents and drivers. Compaq Insight Manager 7 presents an intuitive systems management tool delivering fault, performance, and configuration management for Compaq servers and desktop clients.

Note: Compaq ProLiant BL e-Class and ProLiant p-class server blades do not ship with Compaq SmartStart.

Compaq Insight Manager 7 offers a Web-based browser interface to monitor Compaq servers and any HTTP, SNMP MIB-2, or DMI v2 compliant device.

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 telephone support.

Note: Compaq ProLiant ML330 and Compaq ProLiant BL e-Class servers are shipped with a 1-year Pre-Failure Warranty provided by Compaq Services.

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

NeoServer Family (retired)

The 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, or mouse.

ProLiant Family

In 2001, Compaq shipped its fifth-millionth ProLiant server exhibiting 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 IT environments. Leading software companies often develop their applications on ProLiant platforms, providing you the most stable and interoperable environment available.

The positioning framework developed for the ProLiant line makes it easy to select the correct ProLiant server for your needs. You can choose from three lines based on your environment:

- Compaq ProLiant BL Line Advantage consists of ultra-dense server blades optimized for rapid deployment and provisioning, ideal for space-constrained enterprises and service providers. The Compaq ProLiant BL e-Class server blades introduced in early 2002 are the first power-efficient, ultra-dense edge server blades engineered for the enterprise and are part of the ProLiant BL portfolio. Integrated infrastructure design allows deployment in industry standard racks. The modular BL servers are optimized for use with the ProLiant Essentials Rapid Deployment Pack for automatically configuring and installing operating systems and applications up to hundreds of servers simultaneously.

  This line of products is specifically designed for adaptive computing and optimized for rapid deployment and automated provisioning. Compaq ProLiant BL e-Class systems are the first power-efficient, ultra-dense front-end server blades engineered to address the needs of space-constrained enterprises and service providers

  ProLiant BL server blades are divided into 2 classes:

  ◊ e-Class – ultra-dense server blades designed for space- and power-efficiency at the front-end

  ◊ p-Class – server blades optimized for higher performance and availability for mid-tier and back-end applications.

- Compaq ProLiant DL Line Advantage is the industry leader in the dense rack server market. The open, serviceable chassis provides tool-free entry and easy access to critical components. A number of racking solutions supports various customer server environments, including rapid deployment and serviceability in Compaq racks, deployment in telecommunication and third-party racks, and a stackable desktop solution. Embedded technologies, such as Integrated Smart Array controllers, embedded network interface controllers and Integrated Lights-Out maximize functionality while minimizing server size. Upgrades to future server technology protect your server investment, while component commonality across the ProLiant line, including drives and memory, reduces spare parts inventory costs.

- Compaq ProLiant ML Line Advantage is maximized for internal system expansion and is ideal for remote and branch office environments. The Compaq ProLiant ML line of servers is future proof with drive, slot, and memory expansion to provide investment protection. Large internal expansion eases server consolidation and a large slot count maximizes the number of high performance Smart Array Controllers, NICs, and HBAs that can be installed. An open, serviceable chassis with easy access to critical components using limited tools ensures an easy upgrade to future server technology. Outstanding manageability features including Compaq SmartStart, Compaq Insight Manager, Front Panel LED status indicators, and support for Remote Insight Lights-Out Edition provide a lower total ownership cost. Unsurpassed software integration enables rapid deployment All ML Line servers are available in both tower and rack configurations.

You can choose from three series numbers within each of the ML and DL lines for the server designed to fit the needs of your applications:

- 300 - File/print and domain server, web servers, small databases and applications
- 500 - Complex web applications, large databases and critical file server applications
- 700 - Very large databases, server consolidation and multi-application tasks

The many options available on every Compaq ProLiant server offer you the best fit for your individual requirements for cost, performance, and availability. For additional information visit http://www.compaq.com/products/servers/technology/ai/deliver.html.

Prosignia Family (retired)

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 met file, print, database, and communication and expanded as your business grew. Prosignia servers came standard with Compaq SmartStart and Compaq Insight Manager.

Systempro Family (retired)

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.

TaskSmart Family

The TaskSmart Servers, a family of appliance servers tuned and optimized for specific applications, complements the ProLiant general-purpose servers. These servers advance smarter solutions from the original Compaq SmartStart and Compaq Insight Manager 7 through *ActiveAnswers* and Intelligent Cluster Administration as well as driving high-volume, standards-based hardware innovation.

History of Compaq Server Families

The sections that follow present the history of Compaq innovation in industry standard servers by year of announcement and server family. You can quickly access these sections by clicking the years featured in Figure 1.

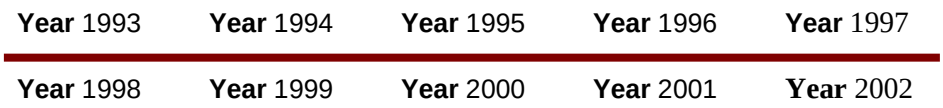

Figure 1. Industry Standard Server Timeline

Year 1993

The Compaq ProLiant server was built upon the EISA bus architecture and FlexSMP System Architecture. The ProSignia was the first Compaq server to offer Compaq Insight Manager as a standard feature.

ProLiant 1000 (retired; announced September 1993)

The Compaq 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.

ProLiant 2000 (retired; 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-plug drive bays. An optional redundant power supply was also available for the system.

ProLiant 4000 (retired; 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. The ProLiant 4000 shipped with a standard 64 MB of Advanced ECC memory expandable to 512 MB.

ProSignia (retired)

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 CD-ROM drive attached to the integrated EIDE bus. The ProSignia was the first Compaq server to offer Compaq Insight Manager as a standard feature.

Systempro (retired)

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 (retired)

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 (retired)

The Systempro XL included 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.

Year 1994

Compaq introduced the first member of the ProSignia family, the ProSignia VS server.

ProSignia VS (retired; announced March 1994)

The ProSignia VS was one of the first members of the ProSignia family. The system design utilized 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 with five EISA bus-master expansion slots. The ProSignia VS came standard with 16 MB of RAM, expandable to 128 MB using industry-standard SIMMs.

ProSignia 500 (retired; announced November 1994)

A high-performance server, the ProSignia 500 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. The ProSignia 500 came standard with 16 MB of ECC memory, expandable to 208 MB using industry-standard SIMMs.

Year 1995

Compaq introduced the Standby Recovery Server and On-line Recovery Server adding even more fault management to ProSignia 300 servers.

ProLiant 1500 (retired; 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.

ProSignia 300 (retired; announced February 1995)

The ProSignia 300, a 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. The ProSignia 300 supported the Standby Recovery Server and On-line Recovery Server adding even more fault management to ProSignia 300 servers.

Year 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.

ProLiant 4500 (retired; 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.

ProLiant 5000 (retired; 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 for improved system throughput.

ProLiant 2500 (retired; 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 Pentium Pro processors. The system came standard with Automatic Server Recovery-2 to improve system availability and Integrated Remote Console. Some of the other server management features of the ProLiant 2500 included server health logging, Revision History Table, offline backup processor, and the Compaq Remote Insight Board (optional).

Year 1997

Compaq ProLiant servers contained Pentium III and Pentium III Xeon processors. The Compaq ProLiant 850R was the first low-profile server to combine affordability and a unique space-saving design tailored exclusively for rack environments.

ProLiant 800 (retired; announced January 1997)

The ProLiant 800 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 could grow with your business. The ProLiant 800 architecture was the basis for the ProLiant ML350.

ProSignia 200 (retired; announced January 1997)

The Compaq ProSignia 200 offered powerful uniprocessor performance in an aggressively priced package using the PCI System Architecture. The system included the Automatic Server Recovery-2 feature. The ProSignia 200 Small Business (SBS) models came equipped with Intel Pentium II processors operating at 300 MHz with 512 KB L2 cache. The system board offered three PCI expansion slots—one video, one shared PCI/ISA slot, and one ISA slot. A 32-bit Wide-Ultra SCSI-3 Controller was available pre-installed in a PCI slot, providing data transfer rates up to 40MB/s. The SBS system shipped with 64 MB ECC memory, expandable to 192 MB. The SBS had a 4.3 GB Wide Ultra SCSI-3 hard drive and a 4/8 GB SLR SCSI tape drive. The ProSignia 200 SBS included a 16X-CD-ROM drive.

ProLiant 850R (retired; 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.

ProLiant 6000 (retired; announced May 1997)

The ProLiant 6000 delivered breakthrough enterprise performance and the highest levels of expansion for the best value in business-critical environments. The system came standard with 256 MB of ECC buffered EDO DIMM memory, expandable to 8 GB. The system board provided 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 shipped on some models, allowed all three drive cages to be configured as one contiguous 218.4 GB array.

The DualPort 64-bit NC3131 PCI 10/100 MB Auto Sensing NIC (upgradable to Gigabit) came standard, providing a high degree of network reliability. The integrated PCI-based video controller (Cirrus 5430) had 512 KB of video RAM, expandable to 1 MB. Other features of the ProLiant 6000 included hot-plug fans, redundant processor power modules, redundant RAID controllers, and 64-bit I/O.

ProLiant 6500 (retired; announced August 1997)

Compaq ProLiant 6500 systems could be configured with up to four Pentium III Xeon processors, and came standard with 256 MB ECC protected buffered EDO DIMM memory expandable to 4 GB. The ProLiant 6500 introduced the first industry-standard PCI Hot Plug bus. The chassis offered six 64-bit PCI Hot Plug expansion slots. It came 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.

The system contained two 750-watt redundant, hot-plug, load-sharing power supplies. It included a single integrated Dual Channel Wide Ultra SCSI-3 Controller, providing a data transfer rate up to 40 MB on each of the two channels. It's DualPort 64-bit NC3131 PCI 10/100 MB Auto Sensing NIC could be upgraded to Gigabit Ethernet. The 6500 features also included RAID controllers, redundant hot-plug system fans, optional redundant NICs, and redundant processor power modules.

ProLiant 7000 (retired; announced August 1997)

The ProLiant 7000 was 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. The ProLiant 7000 offered up to four 500 MHz Pentium III Xeon processors. The system came equipped with 256 MB ECC buffered EDO memory, expandable to 8 GB. A cableless Smart Array 3100ES Controller provided three channel RAID support for all of the internal hot-plug drive cages, offering up to 436.8 GB internal storage. The ProLiant 7000 provided five 64-bit PCI slots, four 32-bit PCI slots, and one ISA modem slot. The system included a DualPort 64-bit NC3131 PCI 10/100 MB. Auto Sensing NIC that supported redundant NIC failover in PCI Hot Plug slots.

ProLiant 1200 (retired; announced November 1997)

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.

ProLiant 1600 (retired; announced November 1997)

The Compaq ProLiant 1600 was the ultimate workgroup server. 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 ProLiant 1600 evolved into the ProLiant ML370.

ProLiant 3000 (retired; announced November 1997)

The Compaq ProLiant 3000 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. ProLiant 3000 systems shipped in tower or rack-mount form factors and featured up to two Pentium III processors with 512-KB L2 Cache. 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 NC3120 10/100 TX PCI UTP Network Interface Controller came standard and used a PCI slot. This award-winning server evolved into the ProLiant ML530.

Year 1998

ProLiant 1850R (retired; 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 GTL bus architecture, 128 MB 100 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. This popular server was the basis for the ProLiant DL380.

ProLiant 5500 (retired; announced September 1998)

The ProLiant 5500 supported up to four 550 or 500 MHz Pentium III Xeon processors with 100 MHz front-side bus and full-speed cache. The 5500 shipped with 512 K or 1 MB L2 cache with 2 MB optional. The dual-peer PCI architecture eliminated the need to balance I/O. The system shipped with 256 MB of ECC EDO memory expandable to 4 GB using industry-standard DIMMs. The system came 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 on each channel. The ProLiant 5500 provided up to 91 GB of storage. A Compaq NC3120 10/100 TX PCI UTP Network Interface Controller shipped standard and occupied a PCI slot. This server was the foundation for the ProLiant ML570.

Prosignia Server 720 (retired; announced November 1998)

This Compaq Prosignia Server 720 utilized Pentium III processors running at speeds of 600-, 550-, and 500 MHz providing the performance and power needed to serve the most demanding applications. The processors included 100 MHz front-side bus and 512 KB of L2 cache. The system offered six total expansion slots, including three PCI, one ISA, one shared PCI/ISA, and one AGP. Prosignia Server 720 supported ASR-2. Prosignia Server 720 shipped with 128 MB of ECC SDRAM upgradable to 384 MB. The server offered an integrated Netelligent 10/100 TX network interface and an integrated Wide Ultra2 SCSI Controller that provided 80 MB/s throughput when used with Ultra2 SCSI drives.

Prosignia Server 740 (retired; announced November 1998)

The Prosignia Server 740 utilized a Pentium III processor running at 600, 550, or 500 MHz providing both performance and power. 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 upgradeable to 1 GB. The server offered an integrated Netelligent 10/100 TX network interface and an integrated Wide Ultra2 SCSI controller that provided 80 MB/s throughput. The internal hard drive capacity for this system totaled 54.6 GB.

Year 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. Compaq introduced the ProLiant CL line of servers packaged for simplified clustering and ideal for high-availability environments as a rack or stand-alone tower solution.

ProLiant 400 (retired; announced January 1999)

This server joined the 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 ProLiant 400 came standard with 64 MB, 100 MHz unregistered ECC SDRAM DIMM memory (up 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. This server evolved into the ProLiant ML330.

ProLiant 6400R (retired; announced March 1999)

The ProLiant 6400R ran demanding business applications, implemented clustering solutions, and operated active Intranet, Internet, and e-commerce sites. It supported up to four Intel Pentium III processors with 512 K, 1 MB, or 2 MB L2 cache. Its ECC EDO DIMM memory could expand to 4 GB. It provided six 64-bit slots (five PCI Hot Plug and one shared PCI/ISA). The system shipped 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 included an Integrated Dual Channel Wide-Ultra SCSI-3 Storage Controller, and a 24X Max IDE CD-ROM Drive (slim line).

Prosignia NeoServer (retired; announced March 1999)

The Prosignia NeoServer came standard with a 6.0 GB EIDE hard drive, a 10/100 TX Network Interface Controller (NIC), an 8-port 10 MB/s hub, a 56K modem, and the Prosignia NeoServer Control Center.

TaskSmart C1200R (retired; 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 1000 requests per second in server acceleration mode. It ships with a 450 MHz processor, 256 MB of memory, one 9.1 GB hard drive, and two 10/100 Ethernet ports.

TaskSmart C1500R (retired; announced July 1999)

Targeted to regional ISPs and e-Commerce focused medium-sized businesses, the TaskSmart C1500R supports disk cloning and disk mirroring. The standard shipping configuration includes a 450 MHz processor, 512 MB of memory, two 9.1 GB hot pluggable hard drives, and three 10/100 Ethernet ports.

TaskSmart C2000R (retired; announced July 1999)

Intended for ISPs and enterprise networks, the TaskSmart C2000R manages up to 1200 requests per second in client acceleration mode. It shipped with a 450 MHz processor, 1 GB memory, six 9.1 GB hot pluggable hard drives, and five 10/100 Ethernet ports.

ProLiant 8500 (retired; 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.

The ProLiant 8500 supports one to eight Intel 700 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 (Ultra2 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 100 MHz SDRAM DIMM 2-way interleaved memory expandable 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.

ProLiant 8000 (retired; 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 700 MHz Pentium III Xeon processors with 1 MB or 2 MB L2 cache. It ships with 100 MHz SDRAM DIMM memory expandable to 16 GB.

The ProLiant 8000 supports 21 one-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 upgradeable to Gigabit Ethernet.

ProLiant CL1850 (retired; announced October 1999)

The ProLiant CL1850 consisted of two Compaq server nodes sharing pre-packaged storage giving customers an affordable clustering solution for Microsoft Windows NT and Windows 2000 networking software. The ProLiant CL1850 included 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.

Year 2000

Compaq introduced the ProLiant ML line of servers maximized for internal system expansion and in-chassis flexibility. The ProLiant ML line is ideal for remote, branch office environments and all-inclusive server/storage solutions. This same year Compaq developed the ProLiant DL line of servers and pioneered the development of the dense rack server. The first of the TaskSmart Servers, the C-Series was introduced in the year 2000.

NeoServer 150 (retired; announced January 2000)

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.

ProLiant DL360 (announced June 2000)

The ProLiant DL360 offers a solution for customers focused on saving space in the data center but planning to scale their environment by adding servers in the tens, hundreds, or even thousands. Its incredible, ultra-thin 1U chassis houses up to two 1.26 GHz Pentium III processors in both single pack and 3-pack SKUs, 128 MB of 133 MHz ECC registered SDRAM DIMM memory expandable to 4 GB, and a 133 MHz GTL bus to deliver uncompromising performance.

Other state-of-the-art components include dual peer-PCI bus architecture with 64-bit/33-MHz and 32 bit/33 MHz PCI, standard Integrated Smart Array Controller, and two embedded Compaq NC3163 Fast Ethernet 10/100 WOL (Wake on LAN) NICs, and a total internal storage capacity up to 145.6 GB.

The ProLiant DL360 offers unsurpassed expansion capability and deployment flexibility. It supports four total bays, two full-length expansion card slots, and two removable media bays–one for the diskette drive and one for the low profile 24X Max IDE CD-ROM drive. The hot-plug drive area supports two 1-inch 7200-rpm, 10,000-rpm, or 15,000-rpm Ultra2 or Ultra3 hot-plug drives, with up to 72.8 GB of standard capacity.

Deployment environments for the ProLiant DL360 include massive data centers needing server management or regional data centers requiring remote management.

ProLiant DL380 (retired; announced 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 1-GHz Pentium III processor scalable to dual processors. Standard features also include 128 MB of 133 MHz ECC registered SDRAM DIMM memory (expandable to 4 GB) and a 133 MHz GTL bus to deliver excellent performance.

The dual peer PCI bus architecture, three 64-bit PCI slots, one 32-bit PCI slot, and Integrated Smart Array Controller offer additional performance and availability. The ProLiant DL380 ships standard with a Compaq NC3163 10/100 MB/s Fast Ethernet NIC with WOL capabilities and up to 145.6 GB hot-plug storage capacity. The highly serviceable chassis houses four 1-inch Wide-Ultra2/Ultra3 hot-plug SCSI drive bays, supporting Web hosting, mail, file/print, or small database applications with no functionality tradeoffs. This server offers an optional two-drive expansion bay.

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 (announced 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 1-GHz processors, support for 64-bit PCI cards, and 128 MB of 133 MHz ECC registered SDRAM memory (upgradable to 4 GB), and a 133 MHz front-side bus. The integrated Dual-Channel Wide-Ultra3 SCSI Controller meets the most demanding performance requirements.

This platform, developed from the ProLiant 800 and Prosignia Server 740, features four hard drive bays, four removable media bays, four 64-bit PCI slots, two 32-bit PCI slots (three available), and one dedicated ISA slot. The ProLiant ML350 offers hot-plug hard drive support on certain models and all models support 10,000 rpm 36 GB one-inch drives. Other standard features include an integrated Compaq NC3163 Fast Ethernet PCI 10/100 WOL NIC and RJ-45 connector and a 300-watt power-factor correcting power supply. The ProLiant ML350 serves as a file/print, Web, email, or small database application platform.

ProLiant ML370 (retired; announced 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 house state-of-the-art components, such as the dual 1-GHz Pentium III processors, 128 MB of 133 MHz registered SDRAM ECC DIMM memory (expandable to 4 GB), and a 133 MHz front-side bus to deliver high performance.

The ProLiant ML370 supports six one-inch Wide Ultra2 or Wide Ultra3 hot-plug SCSI hard drives and contains an embedded NC3163 Fast Ethernet 10/100 WOL NIC. Additional features include dual-peer PCI bus architecture for access to four high bandwidth 64-bit/33 MHz PCI slots and an optional Integrated Smart Array Controller for additional performance and availability. It provides 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 ProLiant ML370 server, designed for versatile rack and tower deployments is the ideal server for data center and remote site environments. Its performance, availability, and scalability deliver unsurpassed investment protection. Like the ProLiant DL380 server, the ProLiant ML370 server offers the ultimate performance in a 2-way server, and has a rich high availability feature set including hot-plug redundant disk drives, and power supplies. Advanced Memory Protection provides increased fault tolerance for applications requiring higher levels of availability: Online Spare Memory, Hot Plug Mirrored Memory, and Hot Plug RAID Memory. All three levels maintain server availability and memory reliability without service intervention.

Engineered for ultimate flexibility, the ProLiant ML370 server offers customers multiple configuration options to provide maximum investment protection in transitioning to future technologies.

ProLiant ML530 (announced January 2000)

Featuring Highly Parallel System Architecture, 128 MB of 133 MHz SDRAM, 64-bit/66 MHz PCI, and the 1-GHz Pentium III Xeon processors, the world's fastest two-way server combines maximum performance with ultimate expansion and manageability features. It ships with memory expandable to 4 GB and dual processing support, ensuring expandability to the highest level of investment protection. 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. The PCI slots include two 64-bit/66 MHz, five 64-bit/33 MHz, and one 32-bit/33 MHz.

The internal hot pluggable storage capacity of 436.8 GB offers plenty of room for expansion. The ProLiant ML530 ships with support for redundant hot-plug fans, redundant hot-plug power supplies, and redundant NICs. Advanced Memory Protection provides increased fault tolerance for applications requiring higher levels of availability: Online Spare Memory, Hot Plug Mirrored

Memory, and Hot Plug RAID Memory. All three levels maintain server availability and memory reliability without service intervention.

This server features the NC3123 Fast Ethernet PCI 10/100 WOL NIC and an integrated dual-channel Wide Ultra2 SCSI Adapter. With exceptional two-way performance, expansion, and manageability features, the ProLiant ML350 is the perfect solution for critical file/print, database, and complex Web applications.

ProLiant ML330 (retired; announced April 2000)

The Compaq ProLiant ML330 delivers leading file/print and Internet technology for small and medium businesses with the storage capacity you need to grow. The ProLiant ML330 is the next generation of the Prosignia Server 720 and ProLiant 400.

The ProLiant ML330 offers the latest Intel Pentium III 1-GHz processing technology, leading I/O architecture including 64-bit PCI, PC133 MHz ECC registered SDRAM memory and 133 MHz front-side bus, as well as an integrated single-channel Wide Ultra2 SCSI controller. The four DIMM sockets provide a maximum memory capacity of up to 2 GB. With two 64-bit PCI slots and three available 32-bit PCI slots, this server provides expandability options and industry-leading technology to serve your future needs.

The ProLiant ML330 supports 10,000 rpm 36 GB one-inch non-hot plug drives for a total internal storage capacity of 180 GB using two hard drive bays and three available removable media bays. It ships with an embedded Compaq NC3163 Fast Ethernet PCI 10/100 WOL NIC. This server provides an excellent platform for file/print, remote access, email, Internet communication, firewall, or small database applications.

ProLiant DL580 (announced June 2000)

The ProLiant DL580 builds upon the tradition of product excellence found in the ProLiant 6400R. It features the latest generation of Intel microprocessors, ServerWorks Enterprise ServerSet HE chipset and up to 16 GB of ECC SDRAM memory (512 MB standard). This server supports up to four Pentium III Xeon processors at 700 MHz with 1M or 2M L2 cache standard to provide the processing power and scalability needed by your growing data center requirements.

High availability components include an Integrated Smart Array Controller for RAID data protection and advanced ECC memory algorithms that protect your data even if an entire SDRAM component on a DIMM becomes nonfunctional. The ProLiant DL580 provides 6 PCI slots, 4 of which are hot pluggable, and two of the hot pluggable slots run at 66 MHz for increased bandwidth and faster network connections.

The ProLiant DL580 ships standard with the Compaq NC3134 DualPort 10/100 NIC (slot-based), 64-bit/66 MHz, upgradable to Gigabit, with redundant NIC support. The Wide Ultra2/Wide Ultra3-ready drive cages support four 1-inch Wide Ultra2/Wide Ultra3 SCSI hard drives for up to 145.6 GB of internal storage. Hot-plug redundant fans and an optional hot-plug redundant power supply provide protection in the case of component failure and allow replacement without bringing down the server. The ProLiant DL580 provides maximum 4-way performance and the highest levels of availability and serviceability in a 4U-form factor making it an ideal platform for the corporate data center or Internet service provider environment.

ProLiant ML570 (announced June 2000)

The Compaq ProLiant ML570, an all-inclusive server/storage solution for enterprise users, boasts a 7U form factor optimized for internal expansion up to twelve 1.0-inch SCSI disk drives and expandable to 16 GB of SDRAM memory. Available in either tower or rack models, 700MHz, 1M or 2M cache or 900MHz 2M cache, the ProLiant ML570 chassis design and slide-out electronics tray provide easy access to the system internals for tool-free replacement of parts.

Powered by the Compaq Highly Parallel System Architecture and using the ServerWorks Enterprise ServerSet III HE chipset and up to four Intel Pentium III Xeon processors, this server maximizes performance and output. Five 64-bit I/O slots, including two running at 66 MHz, provide increased bandwidth and faster network connections. High availability features include hot-plug redundant fans, power supplies, NICs, and drives in addition to memory error correcting technology built into the chipset.

The ProLiant ML570 ships with a Compaq NC3123 Fast Ethernet PCI 10/100 WOL NIC and an integrated dual-channel Wide Ultra2/Wide Ultra3 ready SCSI Adapter. The ProLiant ML570 supplies the performance, scalability, availability, manageability, and design features needed by large business and enterprise customers, application service providers (ASPs), and Internet Service Providers (ISPs) with business-critical and e-Commerce applications. The ProLiant ML570 has continued to excel in price/performance TPC-C benchmarks. Most recently, it generated a TPC-C rating of 37,100 tpmc with a price/performance of $6.36 ($/tpmc) using 4x 900MHz Xeon CPUs.

ProLiant ML770 (retired; announced September 2000)

The 32-processor, industry-standard server from Compaq, the ProLiant ML770 supports Microsoft Windows 2000 Datacenter. Standard features for the ProLiant ML770 include 32 x 700/2M Intel Pentium III Xeon, 32GB SDRAM for applications and databases requiring large memory footprints, NC3131/NC3134 Dual-port 10/100 TX PCI NIC, Sixteen hot-plug, redundant power supplies per 32P system and PCI slots.

TaskSmart C-Series (retired)

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. The original TaskSmart C-Series models (C600, C900, C1200R, C1500R, C2000R and C2500) are no longer available. Customers who wish to upgrade the ICS software to later versions should contact Volera (http://www.volera.com) directly for purchase of these versions. However, Compaq will not be providing software support for these later versions.

TaskSmart C2500 (retired; announced May 2000)

The most powerful server in the C-Series, intended for enterprise networks and large ISPs, the TaskSmart C2500 manages up to 2400 requests per second in client acceleration mode. In server acceleration mode, it can handle up to 15,000 requests per second. This server included disk cloning as well as disk mirroring and contains a redundant hot pluggable power supply. It shipped with an 866 MHz processor, 4 GB memory, twenty 9.1 GB hard drives including external storage, two 1 GB Ethernet ports, and one 10/100 Ethernet port. This model was the winner of the second Cache Bakeoff.

TaskSmart C600 (retired; announced June 2000)

Designed for small ISP's and remote branch offices, the TaskSmart C600 with its Intel Pentium 677 MHz processor handles 250 requests per second in client acceleration mode and 1,000 rps in Web server acceleration mode. It ships with 256 MB of memory, one 9.1 GB hard drive, and two 10/100 Ethernet ports. The TaskSmart C600 includes the TaskSmart configuration utility for remote deployment and Compaq Insight Manager for easy manageability.

TaskSmart C900 (retired; announced June 2000)

The TaskSmart C900 supported disk cloning, disk mirroring, and clustering required by regional ISPs and medium-sized businesses with e-Commerce applications. This server shipped with 512 MB of memory, two 9.1 GB hard drives, and two 10/100 Ethernet ports.

TaskSmart N2400 (announced July 2000)

The Compaq TaskSmart N2400, a high-performance NAS storage appliance, delivers breakthrough economics and seamless integration of industry-standard technology. Enterprise business can now deploy and manage advanced file storage easily. The TaskSmart N2400, scalable from 72 GB to 10 TB, included all software and hardware needed for high-performance file serving and storage consolidation in an integrated, optimized, and tuned package.

Year 2001

Compaq introduced the ultra dense 1U form factor in the ProLiant DL320 (ultra dense 1U form factor was introduced in June 2000 with the DL360). The ProLiant DL760, with the Intel Pentium III Xeon 700 MHz or 900 MHz processors and PCI-X I/O were introduced. Compaq introduced the ProLiant DL590/64 Itanium-based server. The 64-bit ProLiant DL590/64 provides the ideal combination of the most reliable and cost-effective platform for developing and porting 64-bit applications for the industry-standard computing environment.

ProLiant DL320 (retired; announced January 2001)

The ultra-thin, robust, and affordable ProLiant DL320 provides the unique and innovative features of the Compaq DL line to emerging Internet companies. It includes a 1.13 GHz processor, in addition to the 1 GHz and 800 MHz processor with 128 MB of RAM standard (expandable to 2 GB of RAM). It includes two embedded Compaq NC3163 Fast Ethernet PCI 10/100 WOL NICs, an integrated storage controller, and a total internal storage capacity up to 40 GB.

Its 1U form factor allows rapid deployment in a variety of racking environments and its superior cable management accommodates ultra-dense deployments. Tool-free entry and easy access to critical components simplify maintenance and upgrades. The CD-ROM/diskette drive assembly is removable for greater security.

The ProLiant DL320 provides a low-cost, ultra-dense solution for local service providers and dot-coms that prefer a trusted brand with full 24 x 7 support. Other environments include the front-end servers for Web hosting, video streaming, and media applications. Corporate solutions include domain controllers, gateways, DNS servers, Web applications, firewall servers, and development testing.

ProLiant ML330e (retired; announced April 2001)

The Compaq ProLiant ML330e server manages your network environment, supporting basic file/print, small databases, email/Internet gateways, firewall, and more. It offers the confidence and reliability you expect from the ProLiant family of servers. Built with latest Intel Pentium III technology, the ProLiant ML330e offers small businesses the power to compete in the Internet economy today and the bandwidth to support their growing business needs.

The ProLiant ML330e combines product excellence and industry defining technology simplifying the customer experience with intelligent manageability features that proactively manage your network environment, software integration, and service and support — all at a very affordable price.

ProLiant DL760 (announced June 2001)

Today's mission-critical applications demand ever-increasing scalability and availability from data center servers. The ProLiant DL760, with the Intel Pentium III Xeon 700 MHz or 900 MHz processors and PCI-X I/O, delivers the performance and uptime required to meet the current and future demands of enterprise server consolidation, e-business, ERP, thin client, compute engine, mail and messaging, and data mining applications. Based on the Profusion architecture jointly developed by Compaq, Corollary and Intel, the ProLiant DL760 offers excellent scalability driven by its balanced system architecture.

This server was designed for mission-critical environments and offers an outstanding combination of high performance and high availability features, with eight processors, 16 GB of SDRAM, eleven hot-pluggable 64-bit I/O slots including 8 PCI-X, redundant hot plug power supplies and fans and more.

The ProLiant DL760 has been developed to meet the needs of customers requiring scalability and fault tolerance in a data center environment. With the latest performance, reliability, manageability and serviceability features in a modular, dense 7U form factor design, this server provides an ideal solution for demanding enterprise applications. PCI-X is the next evolution of the PCI I/O standard that runs at speeds up to 133 MHz, providing burst transfer rates above 1GB/s. It is backward compatible with PCI. Customers can install their existing PCI adapters in the ProLiant DL760 while investing in PCI-X adapters.

Beginning December 2001, the ProLiant DL760 and all options are available for certification for customers who require robust performance and stability from a Data Center Solution. Standard ProLiant DL760 models may be used in conjunction with the Data Center Installation and Startup service to install Windows 2000 Datacenter (DL760 DC OS Install Kit Engineering part number 260162-B21 - no factory installed model will be made available).

ProLiant ML750 (retired June 2002 in North America; announced June 2001)

Today's mission-critical applications demand ever-increasing scalability and availability from data center servers. The ProLiant ML750, with The ProLiant DL760, with Intel Pentium III Xeon 700 MHz or 900 MHz processors, delivers the performance and uptime required to meet the current and future demands of enterprise server consolidation, e-business, ERP, thin client and data mining applications. Based on the Profusion architecture jointly developed by Compaq, Corollary, and Intel, the ProLiant ML750 offers excellent scalability driven by its balanced system architecture.

This server was designed for mission-critical environments and offers an outstanding combination of high performance and high availability features, with eight processors, 16GB of SDRAM, eleven PCI slots, next generation PCI Hot Plug, redundant hot plug power supplies and fans and more. The ProLiant ML750 has been developed to meet the needs of customers requiring unprecedented scalability and fault tolerance with large internal storage configurations, providing capacity for 21 internal 1" Wide Ultra2/3 SCSI drives accessible through redundant array controllers. With the latest performance, reliability, manageability and serviceability

ProLiant DL380 Generation 2 (announced July 2001)

The next-generation ProLiant DL380 server, optimized for rack environments has been completely redesigned to offer unparalleled levels of performance, uptime and serviceability, previously only found in high-end servers. The modular design, flexible deployment options, and innovative Compaq management tools make the ProLiant DL380 server the easiest on the market to install, deploy, maintain and service.

The ProLiant DL380 server also introduces the Online Spare Memory, the first implementation of Compaq Advanced Memory Protection architecture. In addition to this industry-defining technology, the ProLiant DL380 server includes hot-plug redundant disk drives, hot plug PCI, hot plug redundant fans, and power supplies to deliver the highest levels of availability in a 2U form factor.

ProLiant DL590/64 (announced July 2001)

The Itanium-based ProLiant DL590/64 server provides the ideal combination of the most reliable and cost-effective platform for developing and porting 64-bit applications for the industry-standard computing environment. With the introduction of the first 64-bit ProLiant platform, Compaq strengthens the enterprise product portfolio by delivering an industry-standard platform with enterprise class performance capabilities. This innovative product will enable ProLiant to drive further into enterprise data centers and compete in more traditional mid-range environments.

ProLiant ML370 Generation 2 (announced July 2001)

From remote sites to the data center, the ProLiant ML370 Generation 2 is the industry's most versatile 2-way rack or tower server that is the first in its class to offer advanced memory protection and high availability features. Delivering more configuration possibilities than its predecessor, the ProLiant ML370 now offers hot plug redundant fans, 1+1 hot plug redundant power supplies, hot plug PCI slots, and multiple tool-free racking solutions. Powered by Intel Pentium III processors, with 512K cache, up to 6 GB of 2:1 interleaved 133MHz ECC SDRAM, and 64-bit/66 MHz PCI slots, the ProLiant ML370 offers unprecedented performance levels never before seen in this class of server product.

The added configuration flexibility, enhanced chassis design, and additional availability features have resulted in a highly versatile 2-way server product that is ideal for a myriad of business scenarios.

ProLiant ML330 Generation 2 (announced October 2001)

The Compaq ProLiant ML330 Second Generation is an entry-level, 2-processor server in the same chassis as the current ML330. The ProLiant ML330 is the first server ever to offer a choice of Ultra3 SCSI or Integrated ATA RAID 0, 1, or 0+1. The ProLiant ML330 G2 is the only non-hot plug server to offer a global, comprehensive pre-failure warranty covering all system

components, including processors, memory, and hard drives. It also offers an optional rack enabling kit for deployment in Compaq or third-party racks.

ProLiant ML350 Generation 2 (announced October 2001)

The ProLiant ML350 2-way server provides the perfect balance of price and performance. State-of-the-art Pentium III technology with 512K on-die cache coupled with 64-bit PCI, 133 MHz ECC SDRAM, and Ultra 3 I/O minimize bottlenecks delivering the processing power needed to satisfy corporate workgroups, remote sites and growing businesses. Essential availability features, such as hot-plug redundant power and hot plug drive bays provide increased uptime enhancing end-user productivity. Expansion features, including six hot-plug drive bays, six available PCI slots and up to 4 GB of memory provide flexible configurations for a multitude of applications including file and print or mail and messaging.

Simple to service 5U design is optimized for both tower and rack environments where it delivers tool-free access to system components and deployment tools designed to reduce ownership hassles. The ProLiant ML350 2-way server delivers affordable performance and essential availability to corporate workgroups and growing businesses that demand expandable, easy to own, tower and rack solutions.

The following models are now available:

- ML350 G2 1.40 GHz Tower
- ML350 G2 1.40 GHz Rack
- ML350 G2 1.40 GHz Array Tower
- ML350 G2 1.40 GHz Array Rack

The ProLiant ML350 G2 Array model adds the Smart Array 532 RAID controller and an additional 128 MB (Total RAM 256 MB) of RAM to the 1.26 GHz version of the ML350 G2 in both tower and rack configurations. The 1.40 GHz versions of the ProLiant ML350 G2 and ML350 G2 Array models offer customers the latest Pentium III technology at an affordable price.

TaskSmart C4000 (announced October 2001)

In March 2001, Compaq became Inktomi's Premier Design Partner to speed the development of optimized appliances for content and media acceleration that easily integrate into existing networks. Based on Compaq's reliable, industry standard platforms and Inktomi's powerful Traffic Server software, the C-series appliance server has the most advanced streaming media capabilities for bandwidth-efficient content delivery.

TaskSmart W-Series

The TaskSmart W-Series appliance servers came pre-configured and optimized with Linux/Apache Web server. These servers can instantly be deployed using the Rapid Launch configuration utility, and optimized usage profiles make them easy to use with simple navigation menus.

TaskSmart W2200 (announced June 2001)

The TaskSmart W2200 is a Web-hosting appliance designed for fast growing, service providers (SP). The TaskSmart W2200 is the first in a family of Web appliances engineered for a single purpose resulting in performance optimization, dependability and manageability.

Intel® NetStructure™ (retired December 2001)

Compaq broadened the appliance server portfolio with Intel NetStructure products, making it easy to select the correct appliance server for your needs. The following three lines were available: the SSL e-Commerce Accelerator, the XML Accelerator, and VPN.

Intel NetStructure 7110/7115 E-Commerce Accelerator (retired December 2001)

Intel NetStructure e-Commerce Accelerator boosted the overall performance of e-Commerce servers, offering customers speed and security during online transactions. Compact and easy to install, it offloads the job of Secure Socket Layer (SSL) encryption/decryption with patent-pending hardware and software improved response times of secure transactions.

Intel NetStructure 7210/7280 XML Accelerator (retired December 2001)

Intel NetStructure 7210/7280 XML appliances dramatically accelerated and better managed business-to-business XML transactions. The NetStructure XML Director/Accelerators relieved Web servers of the CPU-intensive task of encryption/decryption of secure XML transactions. It could handle up to 1200 secure connections per second and 6,000 simultaneous SSL sessions.

IIntel NetStructure VPN Gateway (retired December 2001)

Intel NetStructure VPN products provided the ability to leverage the ubiquitous and openness of the Internet to allow partners, employees, and customers with access to critical business data without compromising security. Compaq tested and qualified the Intel NetStructure VPN.

Year 2002

Compaq ProLiant servers, server options and StorageWorks storage platforms are the modular components customers use to build their unique IT environment. Based on industry standards and powered by industry-defining technologies, these building blocks enable customers to create adaptive infrastructures, scalable to their unique requirements. Compaq ProLiant BL e-Class systems are specifically designed for adaptive computing and optimized for rapid deployment and automated provisioning.

Compaq ProLiant BL e-Class systems are the first power-efficient, ultra-dense front-end server blades engineered to address the needs of space-constrained enterprises and service providers. . Integrated Lights-Out is introduced as a key part of the adaptive infrastructure to provide anytime, anywhere management through virtual presence and control.

Compaq ProLiant BL e-Class (announced January 2002)

The Compaq ProLiant BL e-Class are the first power-efficient, ultra-dense edge server blades engineered for the enterprise and are part of the ProLiant BL line. The ProLiant BL e-Class server blade enclosure provides redundant (hot-plug) power and redundant (hot-plug)

cooling to all installed BL10e server blades. Included with each ProLiant BL e-Class server blade enclosure is the ProLiant BL e-Class Integrated Administrator for remote, out-of-band management.

The ProLiant BL e-Class power-efficient server blades, called ProLiant BL10e, integrate a server-class chipset, ultra-low voltage processor, and other power-saving components in an ultra-dense design that reduces power and cooling costs and saves space. With the ProLiant BL e-Class, customers can install up 280 ProLiant BL10e server blades in a standard 42U rack for better utilization of valuable data center space.

ProLiant BL e-Class servers are optimized for use with the ProLiant Essentials Rapid Deployment Pack allowing automatic configuration and installation of operating systems and applications on tens or hundreds of servers simultaneously. ProLiant BL server blades include Compaq industry-leading technologies such as tool-free mechanical designs, cable reducing interconnect switch, hot-plug redundant components, and integrated management functionality.

Included with each ProLiant BL e-Class interconnect tray is the ProLiant BL e-Class Integrated Administrator -- the first integrated server blade management solution offering remote/local access for monitoring and management of the enclosure and all server blades within it.

ProLiant DL360 G2 (announced January 2002)

The dual processor capable ProLiant DL360 Generation 2 server offers state-of-the-art performance and on-board management with tool-free serviceability in a dense rack-mount chassis. This robust 1U [4.45 cm (1.75 inches)] server supports rapid deployment and configuration flexibility, making it an unbeatable computing solution for high-density server requirements. The ProLiant DL360 Generation 2 supports the latest Pentium III technology. The ProLiant DL360 Generation 2 does not support any slower processors or those with only 256 KB cache, as this is an older technology. As always, mixing of processor speed is not supported.

The ProLiant DL360 Generation 2 is using the ServerWorks HE-SL chipset. This chipset supports a 133 MHz GTL bus; triple peer PCI bus architecture and 2:1 interleaved registered SDRAM ECC DIMM memory. The triple peer PCI bus architecture enables concurrent memory and processor access from both PCI buses, as well as 64bit/66MHz PCI slots for an addition improvement in system performance.

iLO is the next generation of Lights-Out technology integrated on the system board of the new Compaq ProLiant DL 360 G2 server. iLO consists of an intelligent processor and firmware that provides standard and advanced levels of Lights-Out functionality. Basic system board management functions, diagnostics and essential Lights-Out functionality are provided as standard components of the server. The standard features of iLO are referred as iLO Standard. Advanced functionality of the iLO, referred as iLO Advanced, can be licensed with the optional iLO Advanced Pack (Part Number 263825-B21). iLO Advanced offers sophisticated virtual administration features for full control of servers in dynamic data center and remote locations.

Compaq ProLiant DL320 (announced April 2002)

The Compaq ProLiant DL320 is a robust and affordable, 1-way, dense server that brings the density-optimized features of the DL Line to emerging, fast-growing Internet companies. Previously, rapidly growing, emerging ISPs and dot-coms had to rely on incomplete white boxes or closed-box systems that offered little more than a “thin-server”.

In addition to traditional Compaq performance and product quality, the flexible, general purpose ProLiant DL320 offers a comprehensive set of density-optimized solutions that

are proven to solve the unique challenges that customers encounter when they deploy servers in a rack environment.

The ProLiant DL320 includes models with either a 1.26 GHz, 1.13 or 1.0 GHz Pentium III and comes standard with 128 MB of 133 MHz registered SDRAM ECC memory in slot 1 of the four DIMM sockets. Memory can be expanded to a maximum of 2GB by installing four 512 MB PC133-MHz ECC Registered SDRAM DIMMs (one in each DIMM socket). Memory can be expanded 1 DIMM module at a time. The Compaq ProLiant DL320 ships standard with either an Ultra ATA/100 or Ultra2 SCSI controller and the available 64-bit slot allows support for high performance (64-bit) SCSI Controllers, Array Controllers, Gigabit Ethernet Controllers and Fiber Channel Controllers. In addition, most 32-bit cards are supported in the 64-bit slot. The slots in 66MHz cards will work in the 33 MHz slot but they will run at the 33 MHz speed.

Compaq ProLiant ML330 G2 1.26 GHz (announced April 2002)

The Compaq ProLiant ML330 Second Generation is an entry-level, 2-processor server in the same chassis as the original ML330. The ProLiant ML330 is the first server to offer a choice of Ultra3 SCSI or Integrated ATA RAID 0, 1, or 1+0. The ProLiant ML330 G2 is the only non-hot plug server to offer a global, comprehensive pre-failure warranty covering all system components, including processors, memory, and hard drives. It also offers an optional rack enabling kit for deployment in Compaq or third-party racks.

The ProLiant ML330 G2 has several improvements over the previous generation of the ML330 and the ML330e. The ML330 G2 supports both 1.0GHz, 256K cache PIII CopperMine processors and 1.13 and 1.26 GHz, 512K cache PIII Tualatin processors (ML330/ML330e only support 1.0 GHz, 256K cache PIII Coppermine processor. It supports up to 4 GB of maximum memory (ML330/ML330e support up to 2 GB) and contains an integrated, dual-channel Ultra3 SCSI controller in SCSI models (ML330 contains a single-channel Ultra2 SCSI controller). Supports Integrated ATA RAID in ATA models (ML330e supports standard ATA use only).

Compaq ProLiant DL580 G2 (announced May 2002)

The ProLiant DL580 G2 combines outstanding levels of 4-way server performance and integrated management with a flexible, rack-optimized design to deliver outstanding resource efficiencies to the enterprise data center. The ProLiant DL580 G2 provides the highest levels of performance demanded by today's compute intensive applications with high availability features including Compaq Advanced Memory Protection technology, an integrated RAID controller, a duplex drive cage, and hot-plug redundant components guarantee maximum uptime for business critical environments.

Advanced Memory Protection provides increased fault tolerance for applications requiring higher levels of availability: Online Spare Memory, Hot Plug Mirrored Memory, and Hot Plug RAID Memory. All three levels maintain server availability and memory reliability without service intervention.

This server also features Integrated Lights-Out technology that allows remote administration from a standard web-browser. This server also features Integrated Lights-Out technology that allows virtual presence and control for administration from a standard web-browser.

Compaq ProLiant ML530 G2 (announced May 2002)

Designed for maximum application performance and user workload, the ProLiant ML530 G2 offers customers the first 2P-expansion server with Mirrored Memory. Compaq engineering and design expertise optimizes system resources for intensive data center and remote office environments. Processor, memory, and I/O subsystems combine to provide unbeatable price/performance for database engines or server consolidation efforts. Advanced Memory Protection provides increased fault tolerance for applications requiring higher levels of availability: Online Spare Memory, Hot Plug Mirrored Memory, and Hot Plug RAID Memory.

All three levels maintain server availability and memory reliability without service intervention. Hot Plug Mirrored Memory allows failed memory modules to be replaced without shutting down the server. Compaq Hot Plug RAID Memory delivers the highest level of server availability, providing hot-replace, hot-add, and hot-upgrade capability.

Compaq ProLiant ML350 G2 (announced May 2002)

The Compaq ProLiant ML350 G2 is a dual processor capable, expandable server with an attractive low price point that comes in both tower and rack models. Key features are the latest performance 1.13, 1.26 and 1.40-GHz processors (FC-PGA), 133-MHz FSB, 4 GB memory capacity, 6x1" hot-plug hard drive bays, and optional hot pluggable redundant power supply (1+1). Tool-free entry to chassis and access to system components, 6 expansion slots (6 64-bit PCI slots and 1 32-bit PCI slots), an integrated dual channel Wide Ultra3 SCSI controller, and ROM-based BIOS setup.

The ProLiant ML350 G2 is ideal for file/print, small databases, web and e-mail; it is designed to meet the needs of corporations (typically small workgroups or departmental) as well as growing small and medium businesses.

The following models were announced in October 2001 and are currently available.

- ML350 G2 1.266 GHz Rack
- ML350 G2 1.266 GHz Tower

The following models were announced in January 2002 and are currently available.

- ML350 G2 1.266 GHz Array Rack
- ML350 G2 1.266 GHz Array Tower

The following models were announced in May 2002 and are currently available.

- ML350 G2 1.40 GHz Tower
- ML350 G2 1.40 GHz Rack
- ML350 G2 1.40 GHz Array Tower
- ML350 G2 1.40 GHz Array Rack

Appliance Servers

The Compaq Content Delivery Solution is an intelligent end-to-end solution for the distribution, delivery and management of all IP content that enables customers to lower training costs, enhance productivity, and improve internal and external communications.

ProLiant DL320 and DL380 G2 Content Delivery Servers (announced 2002)

As part of the Content Delivery Solution, each ProLiant server is delivered pre-configured and pre-qualified with Inktomi Traffic Edge software for reduced deployment and management costs in a global network. This solution from Compaq and Inktomi provides customers with ease of ownership by providing the entire Content Delivery Solution – hardware, software, services and support. See Year 2002 above for individual details on these ProLiant servers

Compaq Clustering Solutions

Along with its partners and customers, Compaq wants to ensure the right technology, the right services, and the right management process and discipline are applied to each component of the Compaq eBusiness model. Compaq offers several industry-standard clustering solutions, all tested in a wide range of environments to provide you the easiest road to true server clustering. With over 50,000 installations of standards-based clusters worldwide, Compaq has more experience than our top three competitors combined.

Compaq products provide clustered solutions across the entire line of industry standard ProLiant servers on all major operating systems, including Microsoft Windows NT/2000, Novell NetWare, and Linux. Additional information on Compaq Clustering Solutions is available at http://www.compaq.com/solutions/enterprise/highavailability/index.html.

Departmental Clusters

Departmental Clusters are the easiest and most affordable clustering solution.

ProLiant CL380 (retired; announced June 2000)

The Compaq ProLiant CL380 Packaged Cluster consists of two Compaq server nodes and shared storage pre-packaged in a cost-effective, space efficient cabinet giving customers the easiest, most affordable clustering solution for Microsoft Windows NT, Windows 2000, NetWare, Linux, and UnixWare 7 NonStop Cluster.

The ProLiant CL380 Packaged Cluster features up to two 1 GHz Intel Pentium III processors per server, 128 MB standard memory upgradable to 4 GB SDRAM, and the Integrated Smart Array RAID-on-a-Chip (ROC) Controller Module option. It ships with up to 6-1 inch 10,000-RPM hot pluggable SCSI disks. The four standard PCI expansion slots include three 64-bit PCI and one 32-bit PCI. Standard controllers include the following: 10/100 Ethernet Controller–Heartbeat (embedded), 10/100 Ethernet Controller–Public LAN (PCI card), Dual Channel Wide-Ultra SCSI-3–Server boot (embedded), 64 Bit Dual Channel Wide Ultra2–Shared Storage Interface (PCI card), and ATI Rage IIc Video Controller (embedded) with 4 MB of video memory.

Cluster software provides failover capability in case of hardware or software failures and the high performance RAID Array Controller supplies fault tolerant protection of shared data. Other features include redundant power supplies, ECC memory, processor recovery, redundant NIC support, and an extensive variety of internal tape backup support. The ProLiant CL380 Packaged Cluster platform is intended for remote systems requiring unattended high availability, branch office industry applications, and dedicated function servers needing high availability

ProLiant DL380 G2 Packaged Cluster (announced December 2001)

The ProLiant DL380 Packaged Cluster is the next generation of the ProLiant CL380 consisting of two Compaq ProLiant server nodes and Smart Array Cluster Storage Array. It is pre-packaged in a configuration fixture giving customers the most affordable clustering solution for Microsoft NT Enterprise Edition, Windows 2000 Advanced Server, Novell NetWare, and Linux.

Performance, availability and storage capacity have been greatly improved with embedded Ultra3 SCSI controllers, greater memory capacity, numerous redundant features and an improved shared storage cabinet that provides up to 1TB of storage with 14 hot plug drives. Advanced Memory Protection provides increased fault tolerance for applications requiring higher levels of availability: Online Spare Memory, Hot Plug Mirrored Memory, and Hot Plug RAID Memory. All three levels maintain server availability and memory reliability without service intervention.

The ProLiant DL380 G2 Packaged Cluster remains the unsurpassed, entry-level cluster solution that simplifies the purchase, configuration and management of your clustered environment.

Smart Array Cluster Storage

The Compaq Smart Array Cluster Storage is an enclosure for 2-node clustering at SCSI economics, while providing high data availability with redundant controllers. Because Smart Array Cluster Storage is based on the familiar SCSI protocol and there are no additional infrastructure requirements such as hubs, switches, and cables, this allows for a low initial investment for a high availability system. As your storage requirements evolve and you want to implement a Fibre Channel solution, the Smart Array Cluster Storage is easily convertible to a MSA1000 for use in a SAN.

The Smart Array Cluster Storage offers redundancy features to ensure high availability of data. Some of these redundant features are dual controllers, and power supplies, RAID-ADG (Advanced Data Guarding) and Battery Backed Cache. Smart Array technology ensures easy configuration and management through the use of Array Configuration Utility (ACU) and Compaq Insight Management Suite.

Infrastructure Clusters

Infrastructure Clusters are flexible and scalable entry-level fibre channel solutions.

ProLiant HA/N100 - RA4100 or MA8000

Compaq ProLiant Clusters for NetWare (aka ProLiant NetWare Clusters) are Industry Standard Clusters made up of Compaq ProLiant Servers, Compaq StorageWorks RAID Arrays, Fibre Channel Interconnects and the Novell NetWare 5.1 or NetWare 6 NOS with the associated Novell Cluster Services (NCS) software. ProLiant Clusters for NetWare can be configured to meet the needs of every level of enterprise computing from the two-node cluster to large 12 node clusters supporting very large amounts of storage. Up to 32 nodes can be supported with special support agreement through Novell Professional Services.

ProLiant HA/N200 - RA4100

Compaq ProLiant Clusters for NetWare (aka ProLiant NetWare Clusters) are Industry Standard Clusters made up of Compaq ProLiant Servers, Compaq StorageWorks RAID Arrays, Fibre Channel Interconnects and the Novell NetWare 5.1 or NetWare 6 Network Operating System (NOS) with the associated Novell Cluster Services (NCS) software. ProLiant Clusters for

NetWare can be configured to meet the needs of every level of enterprise computing from the two node packaged cluster to large 12 node clusters supporting very lager amounts of storage. Up to 32 nodes can be supported with special support agreement through Novell Professional Services.

ProLiant HA/N500-MA8000

The ProLiant Cluster for NetWare is a high availability solution comprised of ProLiant Servers, StorageWorks Storage Arrays, NetWare NOS (5.1 and 6), and Novell Cluster Services software. Compaq has fully qualified clusters ranging in size from two to twelve nodes. This allows configurations to be deployed with the highest levels of computing power and with the greatest flexibility and efficiency for industry standard clustered environments. ProLiant NetWare Clusters are comprised of standard Compaq ProLiant and Compaq StorageWorks Fibre Channel System components. The Secure Path redundancy manager provides an additional level of protection by eliminating the potential for failures in the path from storage to servers. Two Secure Path licenses are included in the HA/N200 and HA/N500 cluster kits. Additional licenses must be purchased separately. The NetWare NOS and Novell Cluster Services software are available from authorized Novell distributors or dealers.

ProLiant HA/F100 - MSA1000

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 has 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, and the Compaq 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 ProLiant 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 HA/F200 - MSA1000

The Compaq ProLiant Cluster HA/F200, a two-node Microsoft Windows NT or Windows 2000 Cluster, provides 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 interconnect, Intelligent Cluster Administration software, Compaq 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/F100

The Compaq ProLiant Cluster solutions provide high availability for applications and data in a business-critical environment. ProLiant Cluster HA/F100 utilizes industry-leading server products, Fibre Channel Storage, Ethernet interconnect and the leading installation and systems management utilities. The ProLiant Cluster HA/F100 utilizes the industry-standard Microsoft Cluster Server software for cluster operation and management. Compaq provides a cluster kit, which contains the software components that are required to connect two Compaq servers and Compaq Fibre Channel Storage systems together in a cluster. This cluster kit contains documentation and an interconnect cable.

ProLiant Cluster HA/F200

The Compaq ProLiant Cluster HA/F200 uses industry-leading ProLiant servers, Compaq Storage Works RAID Array 4000 or 4100, Ethernet server to server interconnect, and industry-leading installation and systems management utilities. The Compaq Cluster HA/F200 kit delivers a higher level of availability in clusters by enabling multi-path fibre channel connections. Compaq Redundancy Manager or Compaq SANworks Secure Path management software, included with the kit, features support for a redundant fibre channel infrastructure (two paths through the fibre channel hub, fibre channel arbitrated loop switch/FC-AL switch, or fabric switch) utilizing dual Host-Bus-Adapters in each server connected to one or more RA4000/4100 storage subsystems, each with dual RAID controllers.

ProLiant HA/S100 (retired)

This cluster solution, based on Compaq ProLiant SCSI storage, ProLiant servers, the Recovery Server Option hardware, Compaq Smart 2 Array controllers, and Microsoft Cluster Server software, offers two-node high availability. Compaq integrates the clusters and certifies them with Microsoft in specific hardware configurations. This low cost cluster solution targets customers who need a low cost cluster solution and are heavily invested in Compaq server and storage technology. This solution specifically addresses availability and should be considered for deployment at remote sites and branch offices with limited IT expertise. This cluster supports Windows NT Server 4.0 Enterprise only; it does not support Windows 2000.

Enterprise Clusters

Enterprise Clusters are scalable and reliable solutions for the growing corporate environment.

ProLiant HA/F500 - MA8000

This two-node Microsoft Windows NT/ Windows 2000 cluster consists of Compaq ProLiant high-end or high-density servers and Compaq StorageWorks Fibre Channel Storage System RA8000/ESA12000 or MA8000/EMA12000. 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.

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.

HA/F500 DT - MA8000 Stretch Cluster Solution

The Compaq ProLiant Cluster HA/F500 Enhanced DT solution is a 2-node cluster based on Microsoft Windows 2000/NT Server 4.0 Enterprise Edition, Compaq ProLiant Servers, Compaq StorageWorks RA8000/ESA12000 and MA8000/EMA16000 storage subsystem, Compaq StorageWorks Data Replication Manager (DRM) software, and Compaq StorageWorks Secure Path software. This solution combines the failover functionality of MSCS (Microsoft Cluster Server) with the remote data mirroring functionality of DRM, and allows for a distance of up to 100 km between the server nodes and up to 100 km between a primary (local) external storage system, and a mirrored (remote) external storage system. The server to storage interconnect is based on fibre channel switch, short and long wave fibre interconnect, and the server to server communication is over Ethernet and/or FDDI connections.

HA/F500 - Enterprise Virtual Array

The HA/F500 for Enterprise Virtual Array is a scalable and reliable enterprise cluster powered by ProLiant Servers and StorageWorks Enterprise Virtual Arrays that ensures always-on operations of your mission critical applications. Information Technology managers use the Compaq ProLiant Cluster HA/F500 for Enterprise Virtual Array to make the delivery of data and services to clients continuous minimizing downtime and process slowdowns. This is done through the use of redundant hardware from server to storage, the capability of the Microsoft operating system, and through the use of Compaq SANworks Secure Path software to manage a redundant Fibre Channel infrastructure.

The Compaq ProLiant Cluster is a basic SAN in which there are two servers backing each other up with the ability to take over applications processing in the event one server or applications on that server fails. The introduction of the native fibre based Enterprise 1 (E1) storage systems provides additional performance characteristics not found in SCSI based fibre channel systems

Oracle *9i* RAC ProLiant Clusters

Compaq continues to demonstrate the strength and level of commitment of their partnership with Oracle to deliver the most highly available and scalable solutions for Oracle database environments. Compaq was the first vendor to have Oracle certified cluster configurations for Oracle9i Real Applications Clusters on Microsoft 2000 Advanced and Data Center Server. Both the Compaq PDC/O2000 and PDC/O5000 are available today, providing choices in StorageWorks subsystems and operating systems that best meet unique customer requirements for high-end, No-Single-Point-of-Failure Oracle solutions.

PDC/O2000 - MSA1000 Compaq Parallel Database

The Compaq Parallel Database Cluster specifically designed and tested for use with either Oracle8i Server and Oracle8i Parallel Server or the Oracle 9 or Oracle9*i* Parallel Server option supports database opportunities such as data warehousing, web back-end databases, custom database application development, packaged applications and database migration from other platforms. The Compaq Parallel Database Cluster delivers highly available, scalable, and manageable database services for enterprise-class applications.

Running on industry-standard hardware and software, the Compaq Parallel Database Cluster provides significantly improved uptime and lower operating costs, and lower hardware,

maintenance, and support costs. Unlike single-server solutions, the Parallel Database Clusters give you multiple ways to expand your processing power, storage capacity, and connectivity limits without making any major modifications to your application. Clustering offers high performance and scalability while protecting the application from both unplanned and planned outages. The automatic recovery capabilities of Oracle Parallel Server software ensure that access to critical data is maintained in the event of a hardware failure. Servers can be taken offline or brought online, without disrupting access to the data stored in the Oracle database. Customers can add nodes to the cluster or upgrade processors and memory as needed to extend performance beyond the limitations of a single system. With only one database to manage, operations costs are reduced. Further, all database management tasks can be performed from a single workstation console, which is configurable and easy to use.

Compaq has extensive customer experience with certified solutions for every release of OPS, and at present Compaq offers Parallel Database Cluster solutions certified for the Microsoft Windows NT 4.0, Microsoft Windows 2000 Advanced Server, and Microsoft Windows 2000 Datacenter Server operating systems.

PDC/O2000-MSA1000 for Oracle9i Real Application Parallel Database Cluster
(announced April 2002)

The Compaq Parallel Database Cluster Model PDC/O2000-MSA1000 for Oracle9*i* Real Application Cluster (PDC/O2000-MSA1000) delivers high availability and scalability of Oracle® database environments, using industry-standard components and software. It provides significantly improved uptime and lower operating costs than multiple single-server database implementations, and lower hardware, maintenance, and support costs. The PDC/O2000-MSA1000 cluster solution is based on industry standard hardware and can be implemented at a much lower cost, without compromising availability. It is the perfect solution for business critical applications such as data warehousing, web back-end databases, custom database application development, packaged applications and database migration from other platforms.

This high availability solution is backed by a portfolio of Compaq enterprise class services and support offerings, including guaranteed up time, to give customers greater reassurance that Compaq will continue to provide them with the broadest range of solutions necessary to keep critical information and applications available whenever needed.

PDC/O5000 Compaq Parallel Database Cluster

The PDC/O5000 is the high-end performance and scalability configuration that is specifically designed, tested and certified to work with Oracle8i Server and Oracle8i Parallel Server. The PDC/O5000 Clusters utilize Compaq ProLiant servers, Compaq RAID Array RA8000/ESA12000 or MA8000/EMA12000 storage subsystem with multiple redundant loops as shared storage, and 100BaseTX Ethernet technology as dedicated cluster interconnect. This configuration features fully redundant I/O paths and Compaq I/O fail-over software to ensure No single Point of failure. The operating systems supported on this model include: Microsoft Windows NT 4.0, Microsoft Windows 2000 Advanced Server, and Microsoft Windows 2000 Datacenter Server.

PDC Compaq Parallel Database Cluster on Linux

The Compaq Parallel Database Cluster for Oracle9*i* Real Application Cluster on SuSE Linux SLES7 is a two to four-node cluster of ProLiant DL580 servers specifically tested and certified for Oracle9*i* Real Application Cluster on SuSE Linux, and StorageWorks RA4100 storage arrays in a FC-AL configuration. The Compaq Parallel Database Cluster for Oracle9*i* Real Application Clusters on SuSE Linux delivers high availability and scalability of Oracle database

environments, using industry-standard components and software. Since this Parallel Database cluster solution is based on industry standard hardware, it can be implemented at a much lower cost, without compromising availability, making it the perfect solution for business critical applications such as data warehousing, web back-end databases, custom database application development, and select packaged applications.

The Compaq Parallel Database Cluster for Oracle9*i* Real Application Clusters on SuSE Linux is delivered using the Compaq Certified Integration Program (CIP), which provides the end user a fully assembled and installed Compaq Parallel Database Cluster Certified configuration for Oracle9*i* Real application Cluster on SuSE Linux. This delivery model of "pre-installed" packages of hardware and software not only improves end user acceptance and satisfaction but significantly reduce their support costs and implementation time. At present The Compaq Parallel Database Cluster for Oracle9*i* Real Application Cluster on SuSE Linux offering is available in EMEA and NA only and is sold and delivered exclusively by Compaq CIP partners.

Oracle *8*i OPS ProLiant Clusters

PDC/O1000 Compaq Parallel Database Cluster

The PDC/O1000 is the low-end configuration that is specifically designed, tested and certified to work with Oracle8i Server and Oracle8i Parallel Server. The PDC/O1000 Clusters utilize Compaq ProLiant servers; Compaq RAID Array RA4000/RA4100 with a single Fibre Channel Arbitrated Loop (FCAL) as shared storage, and100BaseTX Ethernet as dedicated cluster interconnect. The operating systems supported on this model include Microsoft Windows NT 4.0 and Microsoft Windows 2000 Advanced Server.

PDC/O2000 Compaq Parallel Database Cluster

The PDC/O2000 is the mid-range configuration that is specifically designed, tested and certified to work with Oracle8i Server and Oracle8i Parallel Server. The PDC/O2000 for Clusters utilize Compaq ProLiant servers, Compaq RAID Array RA4000/RA4100 with multiple redundant loops as shared storage, and100BaseTX Ethernet as dedicated cluster interconnect. This configuration features fully redundant I/O paths and Compaq I/O fail-over software to ensure No single Point of failure. The operating systems supported on this model include: Microsoft Windows NT 4.0 and Microsoft Windows 2000 Advanced Server.

Linux ProLiant Clusters

Compaq has strengthened its relationship with SteelEye™ Technology to extend Linux into the ProLiant Cluster strategy and fabric of certified solutions. Compaq now supports LifeKeeper for Linux Version 4 cluster software across the complete line of ProLiant servers to now include the ProLiant 8500, DL760, DL580, and the 64-bit Itanium server, the DL380 Packaged Cluster as well as the StorageWorks MA8000 Enterprise Storage Subsystem.

LifeKeeper for Linux 4.0 with an intuitive Java-based GUI allows for efficient application linkage to LifeKeeper as well as a remote client management feature that enables IT managers to easily administer their clusters via remote log in using either NetScape or Internet Explorer browsers. Compaq has announced support for up to 16 cluster server nodes in a LifeKeeper for Linux Cluster providing unlimited scale for customers needing this level of processing power.

Linux Clusters for ProLiant provide solutions for Linux customers interested in a scalable high availability application and data solution as well as UNIX literate customers searching for a more cost-effective solution. Refer to the Compaq Parallel Database section later in this section.

ProLiant Cluster for UnixWare 7.1 (retired; December 2001)

The Compaq ProLiant Clusters for UnixWare 7.1 is a two- to six-node clustered high availability and application scaling solution developed by Compaq and licensed to Caldera. Compaq products certified for this clustering solution can be found at our website at http://www.compaq.com/solutions/enterprise/highavailability/sco/cpqnsc-cert.html.

This solution offers cluster-wide tape backup, load balancing across all server nodes within the cluster, failover of Fibre Channel Host Bus Adapters, Web-based cluster management, and 1-way up to 8-way SMP support. The cluster can be configured for tower or rack deployments. Shared storage configurations can be internal or external with storage from 9.1 GB to many TB. The ProLiant NonStop Clusters for UnixWare 7.1 offers 64 MB storage controller cache coherency, 7-port and 12-port FCAL hub support, and dynamic storage attach support.

Appendix A– System Vendor Solution Partners

Compaq partners with key system vendors to address customers' needs for solutions at the edge of the network and to take content acceleration to the next level with unprecedented intelligence and performance. 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. 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 focus on joint development, marketing, support, testing, and training.

Compaq and Linux Partnerships

Compaq support for Linux and the broader open source community reflects the belief that open technologies encourage innovation and competition, expanding the choices available to the market. Compaq has been working with the Open Source software community longer than any other computer hardware vendor. Compaq Open Source projects include the Open Source Database Benchmark, drivers for Linux, PPTP Client Project, and PCI Hot Plug for Linux. Compaq maintains alliances with Caldera, Red Hat, and SuSE to make certain that its ProLiant platforms and storage solutions provide you the best hardware for your Linux solution.

Compaq and Microsoft Frontline Partnership

Developing and delivering low cost, high-value computing solutions with data center power and reliability is the primary goal of the alliance between Compaq and Microsoft – the Frontline Partnership (FLP). Compaq and Microsoft share technology and engineering resources to create value-added solutions based on industry-standard computing and storage platforms, combined with services that enable enterprise customers to confidently leverage the attractive price/performance of the Windows® technologies. Compaq received the Microsoft 2001 Support Services Partner Award. Some of the essential pieces of the Frontline Partnership include Joint Development, Marketing, Support, Testing and Training.

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. The Enterprise Computing Partnership delivers compatibility, reliability, optimized performance, manageability, cross-trained technical support, and smooth deployment of networking solutions. This partnership delivers in the following areas: Development, Marketing, Support Testing and Training.

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 you can optimize your systems using Compaq platforms.

Compaq and Baan Partnership

Compaq partners with Baan Company to deliver an industry-standard Enterprise Resource Planning (ERP), Customer Relationship Management, and Supply Chain Management solutions for the Microsoft Windows NT and UNIX server environments. These solutions feature performance with new levels of integration, affordability, and ease of implementation.

Compaq and Check Point Partnership

Compaq and Check Point are introducing an integrated firewall solution including Check Point firewall software bundled on Compaq ProLiant servers and running on Red Hat Linux. As more and more business-critical applications move to the Internet, security of VPNs and data Check Point is the worldwide leader in securing the Internet. The company’s Secure Virtual Network (SVN)™ architecture provides the foundation to meet the Internet security challenges facing companies in the age of e-Business.

Compaq and Citrix Partnership

Together with Citrix, Compaq provides one of the most complete solutions for your thin client server-computing environment. Compaq provides the hardware, knowledge and services essential to your business success today to achieve: rapid return on investment, unmatched simplicity, continuous data access, lower total cost of ownership and faster time to solution. For example: Compaq is continuously undergoing solution testing in our labs on *ProLiant* servers running MetaFrame XP. Testing results from Compaq make configuration and installation of the newest Citrix MetaFrame XP products on Compaq Industry Standard Servers a snap. In addition, Citrix is working with Compaq to port their Citrix MetaFrame XP product to the Itanium Processor Family (IPF). The larger memory footprint of the DL590/64 (64GB) will enable more users on a single platform.

Compaq and Clarify Partnership

Clarify's eFrontOffice eliminates multiple point-of-contact approaches that create chaos and confusion for customers. Clarify's eFrontOffice is the first truly comprehensive and integrated suite of front office technology -- and is the only complete solution for attracting and acquiring customers, sustaining their loyalty, and maximizing add-on sales. Clarify solutions are among the most scalable in the industry, automating complex, enterprise-wide sales and support organizations as well as departments and workgroups

Compaq and Computer Associates Partnership

Compaq and Computer Associates join forces to provide you with a consolidated view of your enterprise network. In addition, the Compaq StorageWorks Enterprise Backup Solution, comprised of a consolidated fibre channel-based backup and recovery system, was designed in conjunction with Computer Associates. This partnership has delivered the following applications; integrated workstations and servers for enterprise management, channel program to support resellers in pre-configuring Unicenter TNG on Compaq servers, integration of Unicenter TNG with Compaq Insight Manager 7, certified solutions and cost-effective solution bundles for fibre channel-based backup solutions with ARCserveIT and ARCserver2000.

Compaq and Ensim Partnership

Compaq and Ensim are working together to provide solutions that enable rapid deployment, provisioning, and re-provisioning of servers and service plans in Linux and Microsoft Windows 2000 environments. Ensim Hosting Automation products simplify the implementation and operation of hosted services for ISP's, hosting providers, and Internet Data Center operators. These products allow Service Providers to build and operate more scalable and profitable hosting businesses.

Compaq and i2 Partnership

The Compaq and i2 partnership evolved out of cooperation on the development of solutions for the Compaq worldwide supply chain. 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 Inktomi Corp. Partnership

Compaq is Inktomi’s Premier Design Partner for the Content Networking Platform. Compaq and Inktomi have collaborated on key engineering and solution initiatives for the development of this platform. The Compaq ProLiant server hardware platform is Inktomi’s reference hardware platform for the development of this software. Compaq and Inktomi continue to engage closely on key engineering and marketing initiatives for the content delivery market.

Compaq and Legato Partnership

Compaq and Legato built a strong global partnership based on products and services. This partnership integrates the Legato essential storage management products with a new generation of Compaq StorageWorks backup solutions for the enterprise. The fully certified, Compaq supported SAN solution originated by this partnership proves to IT executives that leading edge, interoperable SAN technologies can be deployed into their existing infrastructures. Legato is also in the process of porting their Networker product to the Itanium Processor Family on the ProLiant DL590/64 server.

Compaq and Lotus Partnership

Compaq and Lotus partnership offers exceptional compatibility, reliability, and performance with low TCO through fast, easy deployment, integration management, high availability, and scalability. This partnership offers several benefits: easy implementation and management of

Internet and Intranet solutions, a 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.

Compaq and Macromedia Partnership

Compaq *ActiveAnswers* for Macromedia ColdFusion 4.0 in Compaq DISA Environment Macromedia ColdFusion, combined with the Compaq Distributed Internet Server Array (DISA) architecture and Compaq *ProLiant* servers, offers users the best environment for rapid development and deployment of scalable, highly available and manageable e-business applications for the Web.

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. This partnership fully leverages the power and flexibility of industry standards and delivers solutions that easily integrate into existing systems. Together, Compaq and Netscape offer the most powerful integrated Internet and Intranet solutions for organizations of all sizes.

Compaq and Oracle Partnership

Compaq and Oracle together offer a complete set of Internet application services provided by Oracle9i, including clustering, data management, portal, wireless, and caching services which are optimized for Compaq servers. By delivering a complete set of web application services and deployment flexibility in the middle tier and 7x24 environments on the back end. Oracle 9i, 9iRAC and 9iAS deliver a complete set of clustering, data management and web applications services for building dynamic, scalable web sites, portals and applications. Oracle is also in the process of porting their 9i RAC product to the Itanium Processor Family on the DL590/64.

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 and human resources to customer relationship management. Benefits from this partnership include the broadest range of PeopleSoft solution platforms and operating systems in the industry, reduced risk, enhanced reliability and innovative support tools.

Compaq and Red Hat Interchange Partnership

Red Hat Interchange, an enterprise-class, Linux-based e-commerce application, is designed to support dynamic, online catalogs, hundreds of simultaneous users and thousands of e-commerce transactions. Certified to run on Compaq ProLiant servers that are optimized for Red Hat, this application is an e-commerce platform designed to leverage the open platform of Linux for all stages of e-commerce.

Compaq and Rainfinity Partnership

Rainfinity is a leader in high availability and traffic management software for IP applications. Their patented core technology, RAIN (Reliable Array of Independent Nodes) was developed to meet NASA's strict requirements for reliability and scalability. As a member of Check Point's

OPSEC alliance, Rainfinity provides OPSEC-certified high availability and load balancing solutions for mission-critical Check Point firewalls and VPN gateways. The RainWall HA software adds powerful reliability features to the DL320 Network Security SolutionPaq. For more company information, please visit http://www.rainfinity.com/us/eng/rainfinity/index.html.

Compaq and SAP Partnership

Compaq and SAP are committed to delivering new and better ways for businesses to use and profit from the Internet. This partnership now integrates the performance, reliability, scalability, and simplicity of Compaq eBusiness solutions with the innovative mySAP.com™ business environment. Compaq platforms consistently set new benchmarks for SAP performance on Microsoft Windows NT and Windows 2000 as well as UNIX systems. Compaq is the #1 SAP partner with over 8,000 joint implementations around the world. SAP is also in the process of porting their R/3 and APO/Live Cache product to the Itanium Processor Family using the DL590/64 as one of their development and test platforms.

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. 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 correlation, gain insight into production efficiency and find new answers to old questions.

SAS is also in the process of porting their product to the Itanium Processor Family using the ProLiant DL590/64 server as one of their development and test platforms.

Compaq and Siebel Partnership

Compaq and Siebel Systems, Inc. extended and fortified their relationship by signing as Global Strategic Alliance partners, the highest tier of joint commitment. Both companies deliver the right combination of eBusiness solutions and services to businesses looking to dramatically increase customer satisfaction, reduce the cost and risk of implementation, accelerate deployment, and improve return on investment when implementing an enterprise-wide business solution.

Compaq and SteelEye Technology Partnership

Compaq enhances its clustering solutions on ProLiant servers and StorageWorks storage units by entering into a joint marketing agreement with SteelEye Technology to promote the SteelEye LifeKeeper for Linux cluster software on a range of ProLiant servers and StorageWorks storage options. This agreement provides customers new clustering options for application and data availability.

The LifeKeeper for Linux software running on ProLiant servers is targeted at users looking for a more cost-effective solution, or Linux customers who are interested in a scalable, high-availability application and data solution. SteelEye is also in the process of porting their LifeKeeper product to the Itanium Processor Family using the DL590/64 as their development and test platforms.

Compaq and Sybase Partnership

Together, Compaq and Sybase deliver database and business intelligence solutions that enable enterprises around the world to better utilize their information assets. We've jointly made substantial investments to bring customers like you leading edge solutions that meet the scalability and performance requirements of large-scale, internet-enabled applications.

Compaq and VERITAS Partnership

Compaq and VERITAS provide storage solutions optimized for today’s data storage and management requirements. This solution 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 well-tested, integrated, and highly reliable storage solutions from the exchange of dedicated resources and joint engineering efforts between the two companies. Compaq and VERITAS are committed to providing the best storage solutions for business-critical environments. Veritas is also in the process of porting their NetBackUp product to the Itanium Processor Family using the DL590/64 as their development and test 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. Compaq Systems Management Partnerships facilitate the optimum integration and use of Compaq systems event, performance, and configuration information into partners' tools. This information is available from Management Agents installed on Compaq systems. Compaq has integrated this information into HP OpenView, IBM NetView, Sun NetManager, Microsoft SMS, and Novell ManageWise.

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 and Axent Technologies Partnership

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.

Compaq and BroadVision Partnership

Compaq and BroadVision have partnered to provide customers with easy-to-deploy, highly scalable, reliable e-business solutions at a lower cost than comparable UNIX-based solutions. Compaq and BroadVision are committing engineering, marketing, and professional services resources focused on benchmarking and technology optimization, joint go-to-market programs, and expanded field engagement. BroadVision has also named the Compaq *ProLiant*™ server as its Preferred Windows Platform and Compaq Global Services as its Preferred Windows Infrastructure Services Provider.

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 is also in the process of porting their Patrol product to the Itanium Processor Family using the DL590/64 as their development and test platforms.

Compaq and CheckPoint Software Technologies Ltd. Partnership

Compaq and Check Point Software Technologies Ltd. Jointly developed Virtual Private Network (VPN) primers, performance documents, solution sizes, 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 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.

Compaq and Entrust Technologies Partnership

Compaq and Entrust Technologies partner to develop eBusiness security solutions for encryption, digital signature, and electronic transaction authentication. Entrust products and services deliver secure eBusiness transactions and communications over wireless networks, Intranets, extranets, and the Internet.

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.

Compaq and J. D. Edwards Partnership

Compaq, partnering with J. D. Edwards, delivers industry-standard Enterprise Solutions to empower our customers to conduct business at Internet speed. J. D. Edwards delivers robust functionality that allows customers to collaborate with suppliers, customers, vendors, and employees. Compaq ProLiant platforms provide the perfect foundation for J. D. Edwards ActiveEra Solutions, delivering the scalability, high availability, and performance demanded in today's eBusiness economy. Compaq commands over 70% of J. D. Edwards OneWorld customers deployed in a Microsoft environment with unique tools and support to make planning, deploying, and operating your Compaq and J. D. Edwards environment easier. JDE is also in the process of porting their OneWorld product to the Itanium Processor Family using the DL590/64 as their development and test platforms.

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.

Compaq and Tantau Software Partnership

Compaq and Tantau work in close partnership to deliver highly available, scalable, and secure solutions for the eBusiness enterprise. The Tantau Wireless Internet Platform (WIP) solution creates the link for a variety of wireless and wired devices - including smart phones, personal digital assistants, pagers, and Web browsers - to interact with back-end applications and data sources. Users can transact business, such as stock trades, Internet banking, or e-Commerce without a wired connection.

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.

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 and Xerox

Compaq and Xerox are teaming up to focus on the development of new document services and Internet initiatives. A key part of this strategic partnership is the offering of customized personal computers from Compaq with new inkjet printers from Xerox in a joint bundling initiative targeted at small and medium-sized businesses. By including printers with the system and monitor, Compaq is providing a low-cost alternative to our customer's business needs while simplifying the buying process.

Compaq iPAQ Small and Medium Business personal computers, Deskpro desktop PCs, Armada notebooks, and Professional Workstations are available bundled with a number of Xerox color inkjet and laser printers.

Additional Solution Partners

Compaq works closely with all their solution partners. Table 10 lists additional Compaq partners and the joint solutions offered by each.

Table 10. Compaq partnerships with solutions

Partner Name	Solution
Baan	Baan is a leading developer of innovative, integrated software solutions for every major business area. The company's comprehensive solutions portfolio spans the entire value chain, including Web commerce, customer relationship management, supply chain management, and enterprise resource planning. Baan technology helps mid-market and large-scale multinational companies reduce software complexity and cost, enhance ease of use, and bring value to customers and partners.
Compaq and Commerce One	Compaq and Commerce One are working together to develop solutions that support integration with the enterprise applications that form the backbone of how companies operate. Commerce One's latest e-procurement software is designed to support integration with both the Commerce One marketplaces and the emerging marketplace solutions from Commerce One's collaboration with SAP. The sizing, deployment and management guides enable the implementation and management of a procurement solution more quickly, at lower cost and with higher confidence.
i2	The alliance between Compaq and i2 Technologies offers customers a comprehensive solution, combining Compaq AlphaServers running Tru64 UNIX or Compaq ProLiant servers running Microsoft Windows NT Server. Together with the services provided by Compaq Services and the i2 RHYTHM suite of products, customers have everything they need to optimize e-business processes on the Internet.
Intel	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.

continued

Table 10. Compaq partnerships with solutions *(continued)*

KyberPASS Corporation	Compaq Services offers custom planning, design, and implementation for the PKI-centric middleware product. This software PKI-enables any TCP/IP application automatically with no software changes.
OneSoft	Compaq tests and optimizes products with Compaq enterprise server products. Their scalable One-Commerce solution combined with Compaq Distributed Internet Server Array (DISA) architecture lets customers optimize each step of online business
Sybase	Delivers database and business intelligence solutions enabling enterprises around the world to better utilize their information assets.

Appendix B–Supported Features by Server

Most of the features described in this paper are operating system independent but not all features are available on every operating system. To verify that available features work with your operating system, check http://www.compaq.com/products/servers/platforms/. For the latest Compaq ProLiant Operating System (OS) information, check ftp://ftp.compaq.com/pub/products/servers/os-support-matrix-310.pdf.

Available ProLiant Servers	ProLiant BL e-Class	ProLiant DL320	ProLiant DL360 G2	ProLiant DL380 G2	ProLiant DL580	ProLiant DL580 G2	ProLiant DL590/64	ProLiant DL760	ProLiant ML330 G2 1.26 GHz	ProLiant ML350 G2	ProLiant ML370 G2	ProLiant ML530 G2	ProLiant ML570
High Availability													
Fault Management													
Fault Advanced Network Control Utility		√	√	√	√	√	√			√	√	√	√
On-line Recovery Server Option				√									
Online Storage Controller Recovery Option		√	√	√	√	√	√			√	√	√	√
Redundant Array Controllers													
Redundant Fans	√			√	√	√	√	√	√			√	√
Redundant Hot-Plug Power Supply	√			√	√	√	√	√	√			√	√
Redundant NICs/NIC Teaming	√	√	√	√	√	√	√		√	√	√	√	√
Redundant Power Modules					√	√	√		√				
Redundant Power Supply				√	√	√	√		√			√	√
Standby Recovery Server Option				√									
Virtual Power-on Button	√	√	√	√		√	√			√	√	√	√
Fault Management													
Dynamic Sector Repair		√	√	√	√	√			√	√	√	√	√
ECC Memory	√	√	√	√	√	√	√	√	√	√	√	√	√
Offline Processor Recovery		√	√	√	√	√					√	√	√
Power Down Manager													
Power Safety Interlock													

Available ProLiant Servers	ProLiant BL e-Class	ProLiant DL320	ProLiant DL360 G2	ProLiant DL380 G2	ProLiant DL580	ProLiant DL580 G2	ProLiant DL590/64	ProLiant DL760	ProLiant ML330 G2 1.26 GHz	ProLiant ML350 G2	ProLiant ML370 G2	ProLiant ML530 G2	ProLiant ML570
High Availability (continued)													
Fault Resilience													
Advanced Memory Protection												√	
ASR				√			√		√	√	√	√	√
ASR-2		√	√		√	√							√
Enclosure Self Recovery (ESR)	√												
Fan Detect and Shutdown	√	√	√		√	√			√	√	√	√	√
Hot-Plug Drives		√	√	√	√	√	√				√	√	√
Hot-Plug Fans	√			√	√	√	√						
Hot-Plug Keyboard		√	√		√	√							√
Hot Spare Boot		√	√		√	√	√				√	√	√
PCI Hot Plug			√	√	√	√	√	√					
Temperature Detect and Shutdown	√	√	√		√	√	√						√
Temperature Monitor	√	√	√		√	√	√		√	√	√	√	√
Voltage/Current Monitoring													
Windows NT HAL Recovery	√	√	√		√	√			√	√	√	√	√
Total Cost of Operation (TCO)													
Server Maintenance													
Asset Tag Number	√	√	√		√	√		√	√	√	√	√	√
Auto-default ROM													
Boot Block ROM	√	√	√		√	√	√	√	√	√	√	√	√
CD-ROM Boot	√	√	√		√	√		√	√	√	√	√	√
Configurable Boot Order	√	√	√		√	√	√	√	√	√	√	√	√
Critical Error Logging	√	√	√		√	√	√	√	√	√	√	√	√
DOS CPR	√	√	√		√	√		√	√	√	√	√	√
Drive Firmware Upgrade	√	√	√		√	√		√	√	√	√	√	√
Fibre Fault Isolation Utility		√	√		√	√		√	√	√	√	√	√
Flashable ROM	√	√	√		√	√	√	√	√	√	√	√	√
Intelligent Power Switch													
Internal Diagnostic Display (IDD)					√	√							
Online Configuration Utility for NetWare		√	√		√	√		√	√	√	√	√	√
PCI Card Guide		√	√		√	√	√	√	√	√	√	√	√
Rack Builder/Rack Builder Pro	√	√	√	√	√	√	√				√	√	√
RAID Online Expansion		√	√		√	√		√	√	√	√	√	√

Available ProLiant Servers	ProLiant BL e-Class	ProLiant DL320	ProLiant DL360 G2	ProLiant DL380 G2	ProLiant DL580	ProLiant DL580 G2	ProLiant DL590/64	ProLiant DL760	ProLiant ML330 G2 1.26 GHz	ProLiant ML350 G2	ProLiant ML370 G2	ProLiant ML530 G2	ProLiant ML570
Remote Compaq Server Support Software for Windows NT Upgrade		√	√		√				√	√	√	√	√
Remote Flash-Redundant ROM	√		√	√		√	√	√					√
ROM-Based Setup	√			√		√	√	√	√	√	√	√	
Survey Parameter Capture		√	√		√				√	√	√	√	√
System Partition	√	√	√		√								√
System Partition Administration Utility		√	√		√								√
System Serial Number	√	√	√		√	√	√		√	√	√	√	√
Tool-free Design	√	√	√		√	√	√				√	√	√
ACPI Ready	√	√	√		√	√	√		√	√	√	√	√
Industry Standard Components	√	√	√		√	√	√		√	√	√	√	√
Long Operating System Life Support	√	√	√		√				√	√	√	√	√
Pre-Failure Warranty	√	√	√	√	√	√	√	√	√	√	√	√	√
Array Configuration Utility		√	√	√	√	√	√	√	√	√	√	√	√
Rapid Deployment Pack Compaq SmartStart	√	√	√	√	√			√	√	√	√	√	√
Compaq SmartStart Integration Management Utility		√	√		√				√	√	√	√	√
Compaq SmartStart Scripting Toolkit		√	√	√	√				√	√	√	√	√
ActiveUpdate	√	√	√	√	√	√	√	√	√	√	√	√	√
Automatic Revision Tracking	√	√		√								√	√
Compaq Insight Manager 7 SP1	√	√	√	√	√	√	√	√	√	√	√	√	√
Compaq Insight Manager 7	√	√	√	√	√	√	√	√	√	√	√	√	√
Compaq Insight Manager XE	√	√	√	√	√	√	√	√	√	√	√	√	√
Compaq Insight Manager	√	√	√	√	√	√	√	√	√	√	√	√	√
ProLiant Essentials Workload Management Pack	√	√	√	√	√			√	√	√	√	√	√
Disk System Tracking	√	√		√				√	√	√		√	√
Drive Parameter Tracking	√	√	√	√				√	√	√	√	√	√
Integrated Lights-Out			√		√								
Insight Manager Alerts	√	√		√				√	√	√		√	√
Integrated Administrator	√												

Available ProLiant Servers	ProLiant BL e-Class	ProLiant DL320	ProLiant DL360 G2	ProLiant DL380 G2	ProLiant DL580	ProLiant DL580 G2	ProLiant DL590/64	ProLiant DL760	ProLiant ML330 G2 1.26 GHz	ProLiant ML350 G2	ProLiant ML370 G2	ProLiant ML530 G2	ProLiant ML570
Intelligent Manageability													
Management (continued)													
Integrated Management Display							√						
Integrated Management Log	√	√	√	√			√	√	√			√	√
Integrated Remote Console	√	√		√			√						
Memory Fault Recovery Tracking	√	√		√				√	√			√	
Monitor Utility for Smart Array		√	√		√	√			√	√	√	√	
NIC Fault Recovery Tracking	√	√	√		√	√			√	√	√	√	
PCI Plug and Play		√	√		√	√			√	√	√	√	
Power On Error Log	√	√	√		√	√			√	√	√	√	
Remote Alpha/Numeric Paging		√	√		√	√			√	√	√	√	
Remote Diagnostics	√		√		√	√			√	√	√	√	
Remote Insight		√	√		√	√			√	√	√	√	
Remote Insight, Lights-Out Edition		√	√	√	√	√	√	√	√	√	√	√	√
Remote Threshold Setting			√		√	√			√	√	√	√	
Revision History Table		√	√		√	√			√	√	√	√	
Server Health Log	√	√	√		√	√			√	√			
Smart Array Controller Family Support		√	√		√	√		√	√	√	√	√	
Software Updates via Internet	√	√	√		√	√			√	√	√	√	
Storage Fault Recovery Tracking		√	√		√	√			√	√	√	√	
Survey Utility	√	√	√	√	√	√		√	√	√	√	√	√
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 Supply Security Bar													

Available ProLiant Servers	ProLiant BL e-Class	ProLiant DL320	ProLiant DL360 G2	ProLiant DL380 G2	ProLiant DL580	ProLiant DL580 G2	ProLiant DL590/64	ProLiant DL760	ProLiant ML330 G2 1.26 GHz	ProLiant ML350 G2	ProLiant ML370 G2	ProLiant ML530 G2	ProLiant ML570
Security (continued)													
Protected Power Switch					√		√	√	√	√	√	√	
QuickLock		√	√									√	√
Serial/Parallel Interface Control	√	√	√		√	√	√		√		√	√	√
Industry Standard Compliance													
ACPI 1.0 Compliant												√	
ACPI 1.0b Compliant	√	√	√	√				√	√	√	√	√	
ACPI 2.0 Compliant					√	√	√				√		√
DIG64 1.1 Compliant							√						
EFI 1.02 Compliant							√						
PCI 2.1 Compliant												√	
PCI 2.2 Compliant		√	√	√	√	√	√	√	√	√	√	√	√
PCI-X								√				√	
Physical Address Extension (PAE) Support					√	√		√					√
PXE		√	√		√	√			√	√	√	√	
WOL		√	√	√	√	√	√		√	√	√	√	
Microsoft Logo Certifications		√	√	√	√	√	√	√	√	√	√	√	√
Novell Certified												√	

√ Supported

Retired ProLiant Servers	ProLiant CL380	ProLiant CL1850	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 6000	ProLiant 6400R	ProLiant 6500
High Availability																				
Fault Management																				
Advanced Network Control Utility	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Cluster Verification Utility	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
On-line Recovery Server Option		√		√			√	√	√	√	√	√	√	√	√	√	√	√	√	√
Online Storage Controller Recovery Option	√	√	√	√	√		√	√	√	√		√	√			√	√	√	√	√
Redundant Fans		√											√				√	√	√	√
Redundant Hot-Plug Power Supplies	√	*							√	√			√				√		√	
Redundant NICs/NIC Teaming	*	√	√	√					√	√			√				√	√	√	√
Redundant Power Modules	√															√		√		√
Redundant Power Supply		√					√	√	√	√			√		√	√	√	√	√	√
Standby Recovery Server Option	√	√		√	√		√	√	√	√	√	√	√	√	√	√		√		√
Fault Prevention																				
Dynamic Sector Repair	√							√	√	√	√	√	√	√	√	√	√	√	√	√
ECC Memory		√	√	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Offline Processor Recovery	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Power Down Manager	√																√			√
Power Safety Interlock	√				√	√	√	√			√	√	√	√	√	√	√			√
Fault Tolerance																				
ASR			√			√					√			√						
ASR-2	√	√		√	√		√	√	√	√		√	√		√	√	√	√	√	√
Fan Detect and Shutdown	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Hot-Plug Drives	√	√			√	√	√	√	√	√	√	√	√		√	√	√	√	√	√
Hot-Plug Fans	√																		√	√

Retired ProLiant Servers	ProLiant CL380	ProLiant CL1850R	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 6000	ProLiant 6400R	ProLiant 6500
High Availability																				
Fault Tolerance (continued)																				
Hot-Plug Keyboard	√	√	√	√			√		√	√		√	√				√	√	√	√
Hot Spare Boot	√	√		√				√	√	√	√	√	√	√	√	√	√	√	√	√
PCI Hot Plug	√															√		√	√	
Server Health Log	√	√		√	√	√	√	√	√	√	√	√	√	√	√		√		√	
Temperature Detect and Shutdown	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Temperature Monitor	√	√	√	√					√	√			√				√	√	√	√
Voltage/Current Monitoring	√																√	√	√	√
Windows NT HAL Recovery		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Total Cost of Operation (TCO)																				
Maintenance																				
Asset Tag Number	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Boot Block ROM	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
CD-ROM Boot	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Configurable Boot Order	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Critical Error Logging	√	√		√	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√
DOS CPR	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Drive Firmware Upgrade	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Fibre Fault Isolation Utility	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Flashable ROM	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Intelligent Power Switch																		√		√
Online Configuration Utility for NetWare	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Rack Builder/Rack Builder Pro	√	√	√						√	√			√				√	√	√	√
RAID Online Expansion	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Remote Compaq Server Support Software for Windows NT Upgrade	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Survey Parameter Capture	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
System Partition	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
System Partition Administration Utility	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
System Serial Number	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Tool-free design										√									√	
Investment Protection																				
ACPI Ready	√		√										√						√	
Industry Standard Components	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Long Operating System Life Support	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

Retired ProLiant Servers	ProLiant CL380	ProLiant CL1850R	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 6000	ProLiant 6400R	ProLiant 6500
Investment Protection (continued)																				
Pre-Failure Warranty		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Intelligent Manageability																				
Deployment																				
Array Configuration Utility	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Compaq SmartStart	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Compaq SmartStart Integration Management Utility	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Compaq SmartStart Scripting Toolkit	√									√									√	
Management																				
ActiveUpdate		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Automatic Revision Tracking			√						√	√			√				√		√	
Compaq Insight Manager 7 SP1	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Compaq Insight Manager 7	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Compaq Insight Manager XE	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Compaq Insight Manager		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Drive Parameter Tracking		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
EISA Bus Utilization Monitor						√	√				√	√		√	√	√				
Insight Manager Alerts	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Integrated Management Display							√		√			√	√				√	√		√
Integrated Management Log	√	√		√			√		√	√		√	√				√	√	√	√
Integrated Remote Console	√	√		√	√		√		√			√	√				√	√	√	√
Memory Fault Recovery Tracking	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Monitor Utility for Smart Array	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
NIC Fault Recovery Tracking	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
PCI Bus Monitor	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
PCI Plug and Play	√	√	√	√	√		√	√	√	√		√	√			√	√	√	√	√
Power On Error Log	√	√	√	√			√		√	√		√	√				√	√	√	√
Remote Alpha/Numeric Paging	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Remote Diagnostics	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Remote Insight	√	√	√	√	√		√	√	√	√		√	√	√	√	√	√	√	√	√
Remote Insight Lights-Out Edition	√	√	√	√	√		√	√	√	√		√	√	√	√	√	√	√	√	√
Remote Threshold Setting	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Revision History Table	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Software Updates via Internet	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Storage Fault Recovery Tracking	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

Retired ProLiant Servers	ProLiant CL380	ProLiant CL1850	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 6000	ProLiant 6400R	ProLiant 6500
Management (continued)																				
Survey Utility	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
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																				
IBM																				
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				√					√	√			√				√		√	
Linux																				
Caldera Linux eServer 2.3.1									√	√			√				√		√	
Caldera Linux eServer 3.1																				
Red Hat Linux 6.1			√	√					√	√			√				√		√	√
Red Hat Linux 7.0			√	√					√	√			√				√		√	
Red Hat Linux 7.1																				
SuSE Linux 7.0			√	√					√	√			√				√		√	
SuSE Linux 7.2				√						√			√				√		√	
SuSE Linux Enterprise Server 7																				
Turbolinux 6.0.5									√	√			√				√		√	

Retired ProLiant Servers	ProLiant CL380	ProLiant CL1850	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 6000	ProLiant 6400R	ProLiant 6500
Operating Systems (continued)																				
Microsoft																				
BackOffice Small Business Server 4	√		√	√	√	√	√	√												
BackOffice Small Business Server 4.5	√		√	√	√	√	√	√												
Small Business Server 2000			√	√					√											
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 Datacenter Server																				
Windows 2000 Advanced Server	√	√			√		√	√	√	√		√	√		√	√	√	√	√	√
Novell																				
NetWare 4.11, SMP (intraNetWare)			S	√	√		√	√			√	√		√	√	√		√		√
NetWare 4.2, SMP	√	√	√	√	√			√	√	√	√		√				√	√	√	√
NetWare 5	√		√	√	√		√	√	√	√	√	√	√		√	√	√	√	√	√
NetWare 5.1	√	√	√	√	√		√	√	√	√	√	√	√		√	√	√	√	√	√
NetWare 6	√	√		√	√		√	√	√	√	√	√	√		√	√	√	√	√	√
NetWare Small Business Suite 4.2			√	√	√				√	√										
NetWare Small Business Suite 5.0			√	√	√				√	√										
NetWare Small Business Suite 5.1			√	√					√	√										
Sun																				
Solaris 2.6 Intel Platform Edition				√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Solaris 7 Intel Platform Edition				√	√		√	√	√	√		√	√			√	√	√	√	√
Solaris 8 Intel Platform Edition				√					√	√			√				√	√	√	√
UNIX																				
OpenServer 5.0.5, 5.0.6			5	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
UnixWare 2.1.2, 2.1.3				√	√		√	√	√	√		√	√	√	√	√	√	√	√	√
UnixWare 7.1, 7.1.1				√	√				√	√		√	√			√	√	√	√	√

Retired ProLiant Servers (continued from pages 57 through 61)	ProLiant 7000	ProLiant 8000	ProLiant 8500	ProLiant DL380 G1	ProLiant ML330	ProLiant ML330e	ProLiant ML350	ProLiant ML370	ProLiant ML750	ProLiant ML770
High Availability										
Fault Management										
Advanced Network Control Utility	√	√	√	√	√	√	√	√	√	√
Cluster Verification Utility	√	√	√	√	√	√	√	√		√
On-line Recovery Server Option			√		√				√	
Online Storage Controller Recovery Option	√	√	√	√	√	√		√		
Redundant Fans			√						√	
Redundant Hot-Plug Power Supplies	√		*						√	
Redundant NICs/NIC Teaming	*	√	√	√	√				√	
Redundant Power Modules	√									
Redundant Power Supply			√						√	
Standby Recovery Server Option	√		√		√	√		√		
Fault Prevention										
Dynamic Sector Repair	√							√	√	√
ECC Memory			√	√	√	√		√	√	√
Offline Processor Recovery	√		√		√	√	√		√	
Power Down Manager	√							√		
Power Safety Interlock	√					√	√			
Fault Tolerance										
ASR				√			√	√		√
ASR-2	√	√	√		√	√		√	√	√
Fan Detect and Shutdown	√	√	√	√	√	√	√			
Hot-Plug Drives	√	√	√			√	√	√		
Hot-Plug Fans										
Hot-Plug Keyboard	√	√	√	√	√				√	
Hot Spare Boot	√	√	√		√				√	
PCI Hot Plug										
Server Health Log	√	√	√		√	√	√			
Temperature Detect and Shutdown	√	√	√	√	√	√	√	√	√	
Temperature Monitor	√	√	√	√	√			√		√
Voltage/Current Monitoring								√		√
Windows NT HAL Recovery	√	√	√	√	√	√	√			

Retired ProLiant Servers	ProLiant 7000	ProLiant 8000	ProLiant 8500	ProLiant DL380 G1	ProLiant ML330	ProLiant ML330e	ProLiant ML350	ProLiant ML370	ProLiant ML750	ProLiant ML770
Total Cost of Operation (TCO)										
Maintenance										
Asset Tag Number	√	√	√	√	√	√	√	√	√	√
Boot Block ROM	√	√	√	√	√		√			√
CD-ROM Boot	√	√	√	√	√	√	√	√	√	√
Configurable Boot Order	√	√	√	√	√	√	√	√	√	√
Critical Error Logging	√		√		√	√	√	√	√	√
DOS CPR	√	√	√	√	√	√	√	√	√	√
Drive Firmware Upgrade	√	√	√	√	√	√	√	√	√	√
Fibre Fault Isolation Utility	√	√	√	√	√	√	√	√	√	√
Flashable ROM	√	√	√	√	√	√	√	√	√	√
Intelligent Power Switch									√	
Online Configuration Utility for NetWare	√	√	√	√	√	√	√	√		√
Rack Builder/Rack Builder Pro	√	√	√	√						
RAID Online Expansion	√	√	√	√	√	√	√	√	√	√
Remote Compaq Server Support Software for Windows NT Upgrade	√	√	√	√	√	√	√	√	√	√
Survey Parameter Capture	√		√		√	√	√	√	√	√
System Partition	√		√		√	√	√	√	√	√
System Partition Administration Utility	√		√		√	√	√	√	√	√
System Serial Number	√	√	√	√	√	√	√	√	√	√
Tool-free design					√	√	√	√	√	√
Investment Protection										
ACPI Ready				√						
Industry Standard Components	√	√	√	√	√	√	√	√	√	√
Long Operating System Life Support	√	√	√	√	√	√	√	√	√	√
Pre-Failure Warranty	√	√	√	√	√	√	√	√	√	√
Intelligent Manageability										
Deployment										
Array Configuration Utility	√	√	√	√	√	√	√	√	√	√
Compaq SmartStart	√	√	√	√	√	√	√	√	√	√
Compaq SmartStart Integration Management Utility	√	√	√	√	√		√		√	√
Compaq SmartStart Scripting Toolkit				√				√	√	√

Retired ProLiant Servers	ProLiant 7000	ProLiant 8000	ProLiant 8500	ProLiant DL380 G1	ProLiant ML330	ProLiant ML330e	ProLiant ML350	ProLiant ML370	ProLiant ML750	ProLiant ML770
Management										
ActiveUpdate	√	√	√	√	√	√	√	√	√	√
Automatic Revision Tracking				√					√	
Compaq Insight Manager 7	√	√	√	√	√	√	√	√	√	√
Drive Parameter Tracking	√	√	√	√	√	√	√	√	√	√
EISA Bus Utilization Monitor							√		√	√
Insight Manager Alerts	√	√	√	√	√	√	√	√	√	√
Integrated Management Display									√	
Integrated Management Log	√	√	√		√				√	
Integrated Remote Console	√	√	√		√	√		√	√	
Memory Fault Recovery Tracking	√	√	√	√	√	√	√	√	√	√
Monitor Utility for Smart Array	√	√	√	√	√	√	√	√	√	√
NIC Fault Recovery Tracking	√	√	√	√	√	√	√	√	√	√
PCI Bus Monitor	√	√	√	√	√	√	√	√	√	√
PCI Plug and Play	√	√	√	√	√	√		√	√	
Power On Error Log	√	√	√	√	√					
Remote Alpha/Numeric Paging	√	√	√	√	√	√	√	√	√	√
Remote Diagnostics	√	√	√	√	√	√	√	√	√	√
Remote Insight	√	√	√	√	√	√		√	√	
Remote Insight Lights-Out Edition	√	√	√	√	√	√		√	√	
Remote Threshold Setting	√	√	√	√	√	√	√	√		√
Revision History Table	√	√	√	√	√	√	√	√		√
Software Updates via Internet	√	√	√	√	√	√	√	√		√
Storage Fault Recovery Tracking	√	√	√	√	√	√	√	√		√
Survey Utility	√	√	√	√	√	√	√	√		√

Retired ProLiant Servers	ProLiant 7000	ProLiant 8000	ProLiant 8500	ProLiant DL380 G1	ProLiant ML330	ProLiant ML330e	ProLiant ML350	ProLiant ML370	ProLiant ML750	ProLiant ML770
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										
IBM										
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					√					
Linux										
Caldera Linux eServer 2.3.1										
Caldera Linux eServer 3.1										
Red Hat Linux 6.1	√			√	√					
Red Hat Linux 7.0	√			√	√					
Red Hat Linux 7.1										
SuSE Linux 7.0	√			√	√					
SuSE Linux 7.2	√				√					
SuSE Linux Enterprise Server 7										
Turbolinux 6.0.5										

Retired ProLiant Servers	ProLiant 7000	ProLiant 8000	ProLiant 8500	ProLiant DL380 G1	ProLiant ML330	ProLiant ML330e	ProLiant ML350	ProLiant ML370	ProLiant ML750	ProLiant ML770
Operating Systems (continued)										
Microsoft										
BackOffice Small Business Server 4	√	√		√	√	√	√			
BackOffice Small Business Server 4.5	√	√		√	√	√	√			
Small Business Server 2000				√	√					
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 Datacenter Server										
Windows 2000 Advanced Server	√	√	√			√		√	√	√
Novell										
NetWare 4.11, SMP (intraNetWare)	√	√		S	√	√				
NetWare 4.2, SMP	√	√	√	√	√	√				
NetWare 5	√	√		√	√	√				
NetWare 5.1	√	√	√	√	√	√				
NetWare 6	√	√	√		√	√				
NetWare Small Business Suite 4.2	√	√		√	√	√				
NetWare Small Business Suite 5.0	√	√		√	√	√				
NetWare Small Business Suite 5.1	√	√		√	√					
Sun										
Solaris 2.6 Intel Platform Edition	√			√						
Solaris 7 Intel Platform Edition	√	√	√	√						
Solaris 8 Intel Platform Edition	√	√	√	√						
UNIX										
OpenServer 5.0.5, 5.0.6				5	√	√	√	√		
UnixWare 2.1.2, 2.1.3					√	√		√		
UnixWare 7.1, 7.1.1					√	√		√		

Retired ProLiant Servers	ProLiant 7000	ProLiant 8000	ProLiant 8500	ProLiant DL380 G1	ProLiant ML330	ProLiant ML330e	ProLiant ML350	ProLiant ML370	ProLiant ML750	ProLiant ML770
Industry Standard Compliance										
ACPI 1.0 Compliant										
ACPI 1.0b Compliant				√						
ACPI 2.0 Compliant										
DIG64 1.1 Compliant									√	
EFI 1.02 Compliant										
PCI 2.1 Compliant										
PCI 2.2 Compliant									√	
PCI-X									√	
Physical Address Extension (PAE) Support										
PXE									√	
WOL				√						
Microsoft Logo Certifications									√	
Novell Certified										

√	Supported
*	Supported in shared storage
5	OpenServer 5.05 support only
S	No SMP support

Prosignia and Systempro Servers	Systempro LT	Systempro XL	ProSignia	ProSignia 200	ProSignia 300	ProSignia 500	Prosignia Server 720	Prosignia Server 740	ProSignia VS
High Availability									
Fault Management									
Advanced Network Control Utility			√	√	√	√			√
Cluster Verification Utility			√	√	√	√			√
Correctable Memory Log		√		√	√	√	√	√	
On-line Recovery Server Option				√	√	√	√	√	
Online Storage Controller Recovery Option				√	√	√	√	√	
Standby Recovery Server Option				√	√	√	√	√	
Fault Prevention									
ECC Memory		√		√	√	√	√	√	
Fault Tolerance									
ASR		√	√		√	√	√		
ASR-2 (Server Notification)				√				√	√
Fan Detect and Shutdown				√	√	√		√	
Hot Spare Boot		√							
Temperature Detect and Shutdown				√			√	√	
Windows NT HAL Recovery				√	√	√	√	√	√
Total Cost of Ownership (TCO)									
Maintenance									
Asset Tag Number		√	√	√	√	√	√	√	√
Boot Block ROM			√	√	√	√	√	√	√
CD-ROM Boot			√	√	√	√	√	√	√
Configurable Boot Order			√	√	√	√	√	√	√
Critical Error Logging		√	√	√	√	√	√	√	√
DOS CPR			√	√	√	√	√	√	√
Drive Firmware Upgrade			√	√	√	√			√
Fibre Fault Isolation Utility			√	√	√	√	√	√	√
Flashable ROM		√	√	√	√	√	√	√	√
Online Configuration Utility for NetWare			√	√	√	√	√	√	√
RAID Online Expansion	√	√	√	√	√	√	√	√	√
Remote Compaq Server Support Software for Windows NT Upgrade			√	√	√	√	√		
Survey Parameter Capture	√	√	√	√	√	√			√
System Partition	√	√	√	√	√	√	√	√	√
System Partition Administration Utility			√	√	√	√	√	√	√
System Serial Number	√	√	√	√	√	√	√	√	√

Prosignia and Systempro Servers	Systempro	Systempro LT	Systempro XL	ProSignia	ProSignia 200	ProSignia 300	ProSignia 500	Prosignia Server 720	Prosignia Server 740	ProSignia VS
TCO (continued)										
Investment Protection										
Industry Standard Components	√	√	√	√	√	√	√	√	√	√
Long Operating System Life Support	√	√	√	√	√	√	√	√	√	√
Pre-Failure Warranty					√	√	√	√	√	
Intelligent Manageability										
Deployment										
Compaq SmartStart	√	√	√	√	√	√	√	√	√	√
Compaq SmartStart Integration Management Utility				√	√	√	√	√	√	
Management										
ActiveUpdate	√	√	√	√	√	√	√	√	√	√
Compaq Insight Manager 7	√	√	√	√	√	√	√	√	√	√
Insight Manager Alerts	√	√	√	√	√	√	√	√	√	√
Integrated Management Display								√	√	
Integrated Remote Console					√					
Memory Fault Recovery Tracking					√	√	√	√	√	√
Monitor Utility for Smart Array				√	√	√	√	√	√	√
NIC Fault Recovery Tracking					√	√	√	√	√	√
Power On Error Log								√	√	
Remote Alpha/Numeric Paging			√	√	√	√	√	√	√	√
Remote Diagnostics	√	√	√	√	√	√	√	√	√	√
Remote Insight					√	√	√	√	√	
Remote Threshold Setting			√	√	√	√	√	√	√	√
Revision History Table					√	√	√	√	√	√
Software Updates via Internet	√	√	√	√	√	√	√	√	√	√
Storage Fault Recovery Tracking			√	√	√	√	√	√	√	√

Prosignia and Systempro Servers	Systempro	Systempro LT	Systempro XL	ProSignia	ProSignia 200	ProSignia 300	ProSignia 500	Prosignia Server 720	Prosignia Server 740	ProSignia VS
Security										
Administrative Password			√	√	√	√	√	√	√	√
CD Lock				√	√	√	√	√	√	√
Configuration (NVRAM) Lock	√	√	√	√	√	√	√	√	√	√
Diskette Drive Control	√	√	√	√	√	√	√	√	√	√
Diskette Write Control	√	√	√	√	√	√	√	√	√	√
Keyboard Password				√	√	√	√	√	√	√
Network Server Mode	√	√	√	√	√	√	√	√	√	√
Power On Password	√	√	√	√	√	√	√	√	√	√
Protected Power Switch					√					
QuickLock	√	√	√	√	√	√	√	√	√	√
Serial/Parallel Interface Control	√	√	√	√	√	√	√	√	√	√
Operating Systems										
IBM										
OS/2 Warp Server 4					√					
OS/2 Warp Server Advanced 4					√					
OS/2 Warp Server Advanced 4 SMP					√					
Linux										
Red Hat Linux 6.1								√	√	
Microsoft										
BackOffice Small Business Server 4					√			√	√	
BackOffice Small Business Server 4.5						√		√	√	
Small Business Server 2000								√	√	
Windows NT Server 3.51					√	√			√	
Windows NT Server 4.0			√	√	√	√		√	√	
Windows NT Server 4.0, Terminal Server Edition					√			√	√	
Windows 2000 Server					√			√	√	
Windows 2000 Advanced Server					√					

Prosignia and Systempro Servers	Systempro	Systempro LT	Systempro XL	ProSignia	ProSignia 200	ProSignia 300	ProSignia 500	Prosignia Server 720	Prosignia Server 740	ProSignia VS
Operating Systems (continued)										
Novell										
NetWare 3.2					√					
NetWare 4.11, SMP (intraNetWare)					√	√		S	√	
NetWare 4.2, SMP					√			√	√	
NetWare 5					√	√		√	√	
NetWare 5.1								√	√	
NetWare Small Business Suite 4.2					√			√	√	
NetWare Small Business Suite 5.0					√			√	√	
NetWare Small Business Suite 5.1								√		
Sun										
Solaris 2.5x Intel Platform Edition					√	√	√			
Solaris 2.6 Intel Platform Edition					√	√	√			
Solaris 7 Intel Platform Edition					√	√	√			
UNIX										
OpenServer 5.0.4, 5.05			√		√	√	√	5	5	√
UnixWare 2.1.2, 2.1.3					√	√	√			
UnixWare 7.0.1, 7.1					√					

√	Supported
S	No SMP support
5	OpenServer 5.05 support only

Appendix C–Video Controllers

In this section, embedded video controllers, processor speed ranges, types, and chipsets are listed by server.

Table 8. Video Controllers

Compaq Server	Processor Type	Processor Speed Range	Embedded Video Chipset
ProLiant BL10e	ULV Intel Pentium III	700 MHz - 800 MHz	ATI Rage XL
ProLiant DL320	Intel Pentium III	550 MHz - 1000 GHz	ATI Rage XL
ProLiant DL360	Intel Pentium III	933 MHz - 1260 GHz	ATI Rage IIC
ProLiant DL360 G2	Intel Pentium III	1.40 GHz	ATI Rage XL
ProLiant DL380	Intel Pentium III	1 GHz	ATI Rage XL
ProLiant DL380 G2	Intel Pentium III	1.26 - 1.13 GHz	ATI Rage XL
ProLiant DL580	Intel Pentium III Xeon	700 MHz	ATI Rage XL
ProLiant DL580 G2	Intel Xeon Processor MP	1.40 - 1.60 GHz	ATI Rage XL
ProLiant DL590/64	Intel Itanium	733 - 800 MHz	ATI Rage XL
ProLiant DL760	Intel Pentium III Xeon	700 MHz	ATI Rage XL
ProLiant ML330 G2	Intel Pentium III	1000 GHz	ATI Rage XL
ProLiant ML330e	Intel Pentium III	800 MHz - 1.0 GHz	ATI Rage XL
ProLiant ML350	Intel Pentium III	1000 GHz	ATI Rage XL
ProLiant ML350 G2	Intel Pentium III	1.40 GHz	ATI Rage XL
ProLiant ML370	Intel Pentium III	1000 GHz	ATI Rage XL
ProLiant ML370 G2	Intel Pentium III	1.26 GHz	ATI Rage XL
ProLiant ML530	Intel Pentium III Xeon	1000 GHz	ATI Rage IIC
ProLiant ML530 G2	Intel Xeon Processor	2.4+ GHz	ATI Rage XL
ProLiant ML570	Intel Pentium III Xeon	700 MHz	ATI Rage IIC
ProLiant ML750 G2	Intel Pentium III Xeon	700 MHz	ATI Rage XL
ProLiant ML770	Intel Pentium III Xeon	700 MHz	ATI Rage IIC
ProLiant 400	Intel Pentium II & Pentium III Xeon	350 - 450 MHz	ATI Rage IIC
ProLiant 800	Intel Pentium III	500 - 600 MHz	ATI Rage IIC
ProLiant 850R	Intel Pentium Pro	200 MHz	Cirrus 54M30
ProLiant 1200	Intel Pentium II	233 MHz	Cirrus 54M30
ProLiant 1500	Intel Pentium & Pentium Pro		Cirrus 54M30
ProLiant 1600	Intel Pentium III	500 - 600 MHz	Cirrus 54M30
ProLiant 1850R	Intel Pentium III	500 - 600 MHz	Cirrus 54M30
ProLiant 2500	Intel Pentium Pro	200 MHz	Cirrus 54M30
ProLiant 3000	Intel Pentium III	500 - 600 MHz	Cirrus 54M30

(continued)

Table 9. Video Controllers *(continued)*

Compaq Server	Processor Type	Processor Speed Range	Embedded Video Chipset
ProLiant 4500	Intel Pentium 5/133 or 5/166 processors	133 - 166 MHz	Cirrus 54M30
ProLiant 5000	Intel Pentium	166 - 200 MHz	Cirrus 54M30
ProLiant 5500	Intel Pentium III Xeon	500 - 550 MHz	ATI Rage IIC
ProLiant 6000	Intel Pentium Pro & Pentium III Xeon	200 - 600 MHz	Cirrus 54M30
ProLiant 6400R	Intel Pentium III & Pentium III Xeon	500 - 550 MHz	ATI Rage IIC
ProLiant 6500	Intel Pentium Pro & Pentium III Xeon	200 - 600 MHz	Cirrus 54M30
ProLiant 7000	Intel Pentium Pro & Pentium III Xeon	200 - 600 MHz	Cirrus 54M30
ProLiant 8000	Intel Pentium III Xeon	700 MHz	ATI Rage IIC
ProLiant 8500	Intel Pentium III Xeon	700 MHz	ATI Rage IIC
ProSignia 200	Intel Pentium II	233 - 300 MHz	Cirrus 54M46
Prosignia Server 720	Intel Pentium III	500 - 600 MHz	ATI Rage IIC
Prosignia Server 740	Intel Pentium III	500 - 600 MHz	ATI Rage IIC
NeoServer 150	Celeron	500 MHz	N/A
Prosignia NeoServer	Celeron	500 MHz	N/A

Appendix D–Glossary

In this glossary, features and options are listed alphabetically with detailed descriptions for each entry.

A

ACPI ready

The Advanced Configuration and Power Interface (ACPI), a cross-platform architecture for device control of system power, integrates power management features to reduce power consumption.

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. Find it at http://www.compaq.com/activeanswers.

ActiveUpdate

Compaq ActiveUpdate is a web-based application that keeps IT administrators directly connected to Compaq for proactive notification and delivery of the latest software updates for Compaq commercial products. ActiveUpdate simplifies the entire software maintenance process when used in conjunction with the new Compaq Version Control Repository Manager or Compaq Insight Manager 7.

Software updates are available for most Compaq commercial products: including: **servers** (ProLiant, Prosignia, TaskSmart), **desktops** (Deskpro, iPAQ, Prosignia), **workstations** (Deskpro, Evo, Professional), **portables** (Armada, Evo), and **handhelds** (Aero, BlackBerry, C-Series, iPAQ). Users create a customized subscription profile ensuring only those updates relevant to the desired environment are delivered. This free service is part of the Compaq Intelligent Manageability strategy to simplify the management of the IT infrastructure.

ActiveUpdate is available on the Management CD included with the Server Setup and Management package distributed with every Compaq ProLiant server and is also available for download on the Compaq website at http://www.compaq.com/activeupdate.

Administrative password

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

Advanced Memory Protection

Advanced Memory Protection provides increased fault tolerance for applications requiring higher levels of availability: Online Spare Memory, Hot Plug Mirrored Memory, and Hot Plug RAID Memory. All three levels maintain server availability and memory reliability without service intervention.

Advanced Network Control Utility (Windows NT Only)

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.

Array Configuration Utility XE

The Compaq Array Configuration Utility XE (ACU-XE) software for Smart Array controllers and the StorageWorks RAID Array 4x00 family of products makes it easy to configure and expand your disk drive arrays remotely. This Web-based tool is very intuitive: by using its Configuration Wizards, your array controller is set-up and ready to use in minutes! Plus, ACU-XE is versatile: use it to locally or remotely configure your array controller, add additional disk drives to an existing configuration, or completely reconfigure your disk drive array.

ASR

See Automatic Server Recovery.

ASR-2

See Automatic Server Recovery-2.

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.

Auto-default ROM

With auto-default ROM, the system ROM detects the non-configured state of the hardware and provides default configuration settings for most devices. With this initialization, the system can run Diagnostics and other software applications before running the normal Compaq SmartStart and System Configuration applications.

Automatic Revision Tracking

This feature helps you review recent changes to the server's configuration and creates the Revision History Table containing the hardware version of the system board and any other boards that are compatible with this feature.

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.

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.

Availability Agents

Compaq Availability Agents are intelligent Web-based Compaq server agents combining the advantages of Availant Manager from Availant Inc. with industry-leading Web-based management capabilities from Compaq. They increase Microsoft Windows server availability by effectively preventing common system failures. They enhance operational efficiency by automating responses to well-understood issues. You can access them directly from a browser for stand-alone use, or launch from Compaq Insight Manager 7.

B

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.

C

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 administrators in diagnosing their setup to determine its suitability for use with the Microsoft Cluster Service (MSCS).

Compaq Health and Wellness Driver

The Compaq Health and Wellness Driver collects and monitors important operational data on your server ensuring system healthiness. Any abnormal conditions are logged into a non-volatile Health Log and can be inspected by using certain **/proc** entries.

Compaq Insight Manager 7

Compaq Insight Manager 7 helps maximize system uptime and performance and reduces the cost of maintaining the IT infrastructure by providing proactive notification of problems before those problems result in costly downtime and reduced productivity. Compaq Insight Manager 7 is easy to set up and provides rapid access to detailed fault and performance information gathered by the Compaq Management Agents. One-click-access to the Remote Insight Lights Out Edition board allows systems administrators to take full graphical control of ProLiant servers in remote locations or lights-out data centers. This dramatically reduces the need to dispatch valuable IT resources to fix routine problems.

With the combination of Compaq Insight Manager 7, the Compaq Version Control Agent, and the Compaq Version Control Repository Manager, systems administrators are able to version manage their Compaq system software according to corporate system software baselines. Compaq Insight Manager 7 also allows them to quickly isolate ProLiant servers running specific versions of BIOS, drivers, or agents, and update those systems through a single operation.

Compaq Insight Manager 7 auto alerts

With Compaq Insight Manager 7, you can designate who will be on call for any Compaq server or subsystem performance issue. If Compaq Insight Manager detects an unacceptable operating parameter, it sends out pager alerts to those you specify; they, in turn, access the analysis capability of Compaq Insight Manager 7 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 7 and later includes this feature.

Compaq Insight Manager 7 Service Pack 1

Compaq Insight Manager 7 SP1 builds upon the industry-leading features of Compaq Insight Manager 7 by providing comprehensive management for the ProLiant BL e-Class blade servers and an inventory reporting engine. In addition to its ease of use, flexibility and scalability, this secure management tool comes with additional features tailored to blade management providing blade server visualization that pinpoints the exact position of blade servers within the enclosure and rack. Discovery filters enable customers to exercise granular control over the set of devices that they choose to manage.

Compaq PCI Hot Plug Utility

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

Compaq Proactive Remote Service

Compaq Proactive Remote Service is a monitoring and problem reporting capability enabling Compaq ProLiant servers to automatically and proactively report service problems directly to Customer Support Centers. This service is available at no extra charge with qualified Compaq service contracts. Compaq Proactive Remote Service provides detailed service event information to Compaq service professionals allowing them to minimize potential problems and maximize service response.

Compaq Resource Partitioning Manager

Compaq Resource Partitioning Manager is an easy-to-use, GUI-enabled tool that extends the Windows 2000 operating system to give IT administrators the power to dynamically optimize their ProLiant servers. Resource Partitioning Manager increases server utilization by controlling system resources available to individual applications.

Resource Partitioning Manager provides easier management of complex environments, improving overall server utilization and enabling Windows 2000 customers to confidently deploy multiple applications on a ProLiant server. To acquire Resource Partitioning Manager, visit http://www.compaq.com/rpm.

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

When enabled, the configuration lock disallows configuration changes by not allowing non-volatile memory to be modified.

Correctable Memory Log

Now included with the Server Health Log or Integrated Management Log (IML), the Correctable Memory Log provided feedback on memory module thresholds and errors.

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 7 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. The critical error log allows quick correlation of server errors and their causes. The Critical Error Log is incorporated into the Server Health Log or Integrated Management Log (IML).

D

Diagnostic DIMM lighting (Internal Diagnostics Display)

Located on the peripheral board, the Internal Diagnostics Display (IDD) numerically indicates specific DIMM or processor failures reducing the time and effort needed to locate and replace parts in the server.

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.

Disk system tracking

Disk system tracking, an intelligent manageability feature, monitors the hard disk to predict problems and possible failures.

Diskette boot control

This security feature enables and disables the boot capabilities of the diskette drive on Compaq servers.

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 Upgrades (ROMPaqs)

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. They are available through our website, http://www.compaq.com/support/files/server/us/index.html.

Drive parameter tracking

Drive parameter tracking predicts impending drive failures by monitoring more than 20 pre-defined operational parameters. It sends information through Compaq Insight Manager 7 and the Remote Insight Board to allow repair or replacement of a degraded drive before it fails.

Dynamic sector repair

This Compaq drive array controller feature provides background hardware diagnostics, scanning the hard drives and automatically re-mapping bad sectors. Since it performs in the background, dynamic sector repair does not affect disk subsystem performance.

E

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. It quickly detects more severe errors, such as the loss of an entire 4-bit DRAM.

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 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.

F

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 storage technology combines 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 (FCSS). The utility displays all of the devices properly logged onto the fibre 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 (ROMPaq) 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).

G

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.

H

Hot-plug access security

The KeyLock system locks PCI Hot Plug and hot-plug fan access doors and power supplies to maintain physical security to the server.

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.

I

IDD

See Internal Diagnostics Display.

Industry-standard components

This feature ensures that common components, such as memory and disks, are interchangeable between hardware platforms.

Insight Asynchronous Management

Insight Asynchronous Management provides access to Insight Manager and Insight Manager XE 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 Compaq Insight Manager 7 as long as the OS functions.

Integrated Lights-Out

Compaq Integrated Lights-Out is a standard component of selected Compaq ProLiant servers. Integrated Lights-Out (iLO) provides server health and remote server manageability. Integrated Lights-Out features are accessed from a network client using a supported Web browser. In addition to other features, iLO provides keyboard, mouse, and video capability for a server, regardless of the state of the host operating system or host server. The iLO subsystem includes an intelligent microprocessor, secure memory, and a dedicated network interface. This design makes iLO independent of the host server and its operating system. Integrated Lights-Out provides remote access to any authorized network client, sends alerts, and provides other server management functions. Essential features of iLO are provided as a standard part of the ProLiant servers. Advanced features may be enabled by licensing the optional iLO Advanced Pack.

Integrated Administrator

The ProLiant BL e-Class Integrated Administrator is designed for the efficient management of front-end server blades in a very dense configuration and offers a single management console to manage an enclosure with up to 20 ProLiant BL e-Class server blades. The result is a powerful, flexible, easy-to-use application that integrates with Compaq Insight Manager 7 and SNMP tools, while also providing specific functionality for the ProLiant BL e-Class. This functionality includes customizable user and group permission rights for sets of blades within an enclosure, local/remote access, virtual power on/off and health monitoring of blades, enclosure, and more.

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 the system administrator.

Integrated Management Log (IML)

For servers not supporting the Server Health Log, 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.

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.

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 designated integration server on the network or from CD-ROMs 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 , and 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.

Internal Diagnostics Display (IDD)

Located on the peripheral board, the Internal Diagnostics Display (IDD) numerically indicates specific DIMM or processor failures reducing the time and effort needed to locate and replace parts in the server.

K

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.

L

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 operating systems, 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.

M

Management Agents

The Compaq Management Agents form the foundation for Compaq's Intelligent Manageability strategy. These agents provide direct access to the in-depth instrumentation built into Compaq servers, workstations, desktops, and portables. The Compaq Management Agents monitor more than 1000 parameters on the device, and are simply the best in the business. They initiate alarms in case of faults and provide updated information, such as network interface or storage subsystem performance statistics. They can prevent problems even before they affect users, by instigating a Compaq Pre-Failure Warranty alert.

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.

N

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 Compaq Insight Manager 7.

Network Server Mode

Network Server Mode permits system startups from the 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.

NIC teaming

The Compaq redundant Netelligent NIC technology allows two similar NICs to share a single instance of device driver code. One NIC becomes the active network controller and the other NIC acts as a standby controller. If the active NIC fails, the network traffic is automatically switched to the standby NIC. This redundancy eliminates the NIC or cable as a single point of failure. With PCI Hot Plug technology, the failed NIC can be replaced without rebooting the system. Thus, the end user can have continuous service and the administrator can greatly reduce planned and unplanned downtime.

O

Offline backup processor

The offline backup processor reboots to a second processor if the first one fails. The system automatically tries different combinations of processors until a successful combination is found.

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)

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.

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.

P

PCI bus monitor

The PCI bus monitor tracks and graphs utilization of the PCI bus(es) as part of Compaq Insight Manager 7.

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.

PCI Plug and Play

The Plug and Play standard for PCI devices offers a means of identifying a PCI device and the system resources it requires through the use of a ROM on the device.

PCI-X

PCI-X is an immediately available solution designed to meet the needs for increased I/O performance in the server environment. Developed as an extension to the PCI Local Bus, PCI-X is capable of operating at frequencies between 50 - 133 MHz and supports either 32- or 64-bit width adapter cards. PCI-X is capable of delivering over 1 gigabyte/second of bandwidth and maintains backward compatibility with the PCI Local Bus protocol. Compaq designed the PCI-X specification and is a key contributor to the development of PCI-X products.

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.

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

Some 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 security bar

The security bar physically blocks access to the power supply.

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

The Compaq Pre-Failure Warranty covers Compaq Server products using Compaq Insight Manager 7 or greater. 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 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.

Processor recovery

Processor recovery allows a reboot to a second processor if the first one fails. The system automatically tries different combinations of processors until a successful combination is found.

Product change notification service

Compaq offers its Product Change Notification program to notify you 30-60 days in advance of upcoming critical changes that may impact your computing environment. With PCN, you can plan to integrate software and hardware changes and spend less time and money reacting to unexpected change.

ProLiant Essentials Foundation Pack

Compaq delivers the essential software every customer needs to install, configure and manage their Compaq ProLiant servers with the ProLiant Essentials Foundation Pack. Included with every ProLiant server, the Foundation Pack contains the complete suite of the latest industry-leading tools and support software Compaq has provided its customers for years.

Protected power switch

The protected power switch prevents the server from accidental shutdown due to incidental contact with the power switch cover.

Q

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 application software.

R

Rack Builder/Rack Builder Pro

This Microsoft Windows based installation and configuration tool simplifies the process of generating and maintaining rack environments by helping customers plan and configure Compaq racks with rack-mountable products.

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 array controller

Servers with this feature offer a failover array controller if the primary array controller fails.

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 NICs/NIC teaming

The Compaq redundant Netelligent NIC technology allows two similar NICs to share a single instance of device driver code. One NIC becomes the active network controller and the other NIC acts as a standby controller. If the active NIC fails, the network traffic is automatically switched to the standby NIC. This redundancy eliminates the NIC or cable as a single point of failure. With PCI Hot Plug technology, the failed NIC can be replaced without rebooting the system. Thus, the end user can have continuous service and the administrator can greatly reduce planned and unplanned downtime.

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 or Insight Manager XE, ASR-2, Remote Insight Board or Integrated Lights-Out if Insight Manager or Insight Manager XE detects potential problems with a server.

Remote alpha/numeric paging

Remote alpha/numeric paging sends an alpha alert text if Insight Manager 7 detects problems with a server. You can program the designated pager number through Remote Insight/Insight Manager or Insight Manager XE.

Remote asset management

Remote asset management allows collection or setting of asset management information remotely by way of Compaq Insight Manager 7.

Remote Deployment Utility (RDU)

The Compaq Remote Deployment Utility (RDU) deploys driver and management agent updates out to servers on a network. This utility can be operated from an IT administrator’s workstation, running Microsoft Windows NT or Microsoft Windows 2000, to target remote servers for software updates.

Remote diagnostics

Remote diagnostics allows analysis of the server remotely using Compaq Insight Manager 7, Remote Insight Board or Integrated Lights-Out.

Remote flash-redundant ROM

Remote-flash redundant ROM improves manageability by allowing administrators to flash the system ROMs for a wide range of Compaq servers, locally or across the network. The Remote ROM Flash Utility is a combination of components that allows administrators to upgrade the system ROMs on servers from a single point of execution. The ROM upgrades can either be flashed individually or batched together to perform multiple ROM upgrades in a single step.

Compaq remote flash-redundant ROM provides a unique redundancy feature to help ensure system availability by giving the system the ability to recover the last known good system ROM in the event that the current system ROM is corrupted. Through subsequent boots of the server, if the boot block detects integrity errors, the system will automatically launch the redundant image and continue the POST process. If the redundant ROM is launched, the user sees an error message identifying the faulty system ROM.

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 or Insight Manager XE/SNMP management and the resident remote-console application without any loss of connection regardless of server condition. 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 then 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 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 settings allow system administrators to remotely set the alert thresholds. Compaq Insight Manager 7 and ASR-2 to determine when to send alert messages indicating a problem with a server use these thresholds.

Resource Paqs (discontinued)

Compaq has produced Resource Paqs for Microsoft, Novell, and Linux operating systems. Each Resource Paq CD-ROM includes presentations, white papers, SoftPaqs, support software, utilities, and much more to support these operating systems and Compaq ProLiant servers.

Resource Paq CD-ROM	Latest Release Date	End of Life
Novell Resource Paq, v.4	09/01/00	10/31/01
Linux Resource Paq, v.2	08/01/01	12/31/01
Microsoft Resource Paq, v.8	05/01/01	06/30/02

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.

ROM-based setup

This feature allows the server to configure itself, circumventing the System Configuration Utility.

ROMPaq

ROMPaqs offer firmware/BIOS upgrade packages for differing features, such as video controllers, system processors, etc. on Compaq server products.

S

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 Health Log

The Server Health Log contains information to help identify and correct any server failures and correlate hardware changes with server failure. These logs consist of the critical error log and the Revision History Table. The Server Health Log replaces the Integrated Management Display Log on newer ProLiant servers.

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.

Smart Component

A wrapping of a component includes a single driver, ROM, agent or utility, with its installation logic into a single, installable (interactive or silent) executable file.

Compaq SmartStart Integration Maintenance Utility

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

Compaq SmartStart Integration Management

This tool allows the manual upgrade or installation of Compaq products using an integration server or a CD-ROM.

Compaq SmartStart

Compaq SmartStart, 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.

Compaq SmartStart Scripting Toolkit

Compaq SmartStart Scripting Toolkit simplifies high-volume server deployment for businesses that are faced with the need to deploy hundreds to thousands of servers quickly and reliably by delivering a hands-off, unattended installation and configuration solution. Using Compaq SmartStart technology, the Scripting Toolkit provides flexible ways to create standard server configuration scripts and are used to automate many of the manual steps in the server configuration process. This automated process cuts time from each server deployment, making it possible to scale servers to high volumes in rapid fashion. The Scripting Toolkit includes a modular set of utilities and important documentation that describe how to apply these new tools to build an automated server deployment process.

SoftPaq

A collection of bundled support software containing device drivers, configuration programs, flashable ROM images, utilities, agents, and more to keep your server performing at its best.

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 at http://www.compaq.com/support/files/server/us/index.html.

Standby Recovery Server

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

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 Paq

A Support Paq is a logical set of Smart Components, which have been tested together, along with a simple batch script and a simple installer utility

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

Compaq Survey Utility takes the comprehensive reporting functionality of Inspect 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 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 also 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.

System Partition

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

System Partition Administration Utility

The System Partition Administration Utility provides access to the System Partition without having to use Compaq SmartStart.

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.

T

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.

Tool-free design

This feature allows users easier access to and quicker maintenance for the interior parts of a Compaq server. Servers offer different tool-free components that could include chassis covers, PCI Hot Plug slots, power supplies, processor fans, and hard drives.

V

Virtual power button

The virtual power button allows remote control of the power to a managed server using Remote Insight Lights-Out Edition or Integrated Lights-Out. Many current ProLiant and all future ProLiant servers support this feature.

Voltage/current monitoring

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

U

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.

W

Wide Ultra2 SCSI

Wide Ultra2, a SCSI-3 protocol, features data transfer rates of up to 80 MB/s.

Wide Ultra3 SCSI

Wide Ultra3, a SCSI-3 protocol, boasts data transfer rates up to 160 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.