

Open For Business

HP 9000 Series 800
Business Servers
Buyer's Guide to Success

July 1993

**SIXTH
EDITION**



Jacquelyn Stronberg

Foreword

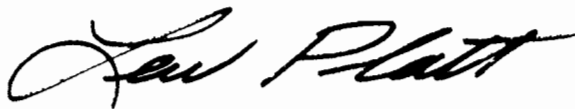
In today's fast-moving global marketplace, timely access to meaningful and accurate information can make the difference between profits and losses. So it's more important than ever to maximize the efficiency and productivity of the computing resources that manage this business critical information. The catalyst to sustaining a competitive advantage is ensuring your business strategy drives your information technology (IT) strategy and implementation—not vice versa. This can only be achieved by ensuring that the IT strategy is inherently flexible, allowing your company to respond to the changes in your business environment.

In addressing your IT strategy, the choice of strategic vendors for your computer systems can be complex: different operating systems, software architectures—and conflicting vendor philosophies. As a business manager myself, I believe that, in the final analysis, the system you choose is not going to be successful solely because of its performance, innovative technology, or software solutions. It must help you solve your business problems.

Today, more and more leading companies are solving their business problems through Open Systems.

Open Systems protect your investment in software, hardware, and training. These systems also contribute to increases in productivity and quality, ultimately transforming your business into a prosperous enterprise. With seamless communications across heterogeneous platforms, providing greater access to business data and improving teamwork, open standards further help to reduce costs and increase flexibility. You can integrate old and new computer systems and choose innovative products from a variety of vendors. What's more, with an open and flexible information system, people can make faster, more effective decisions. Consequently, your company can improve its responsiveness to market conditions, which increases your competitive position and impacts your bottom line.

HP is committed to Open Systems. As your information technology partner, I believe our commitment distinguishes us from other suppliers as clearly as the capabilities and quality of our systems and services.



Lew Platt
President and Chief Executive Officer
Hewlett-Packard Company



HP Computer Museum
www.hpmuseum.net

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How to Use This Overview

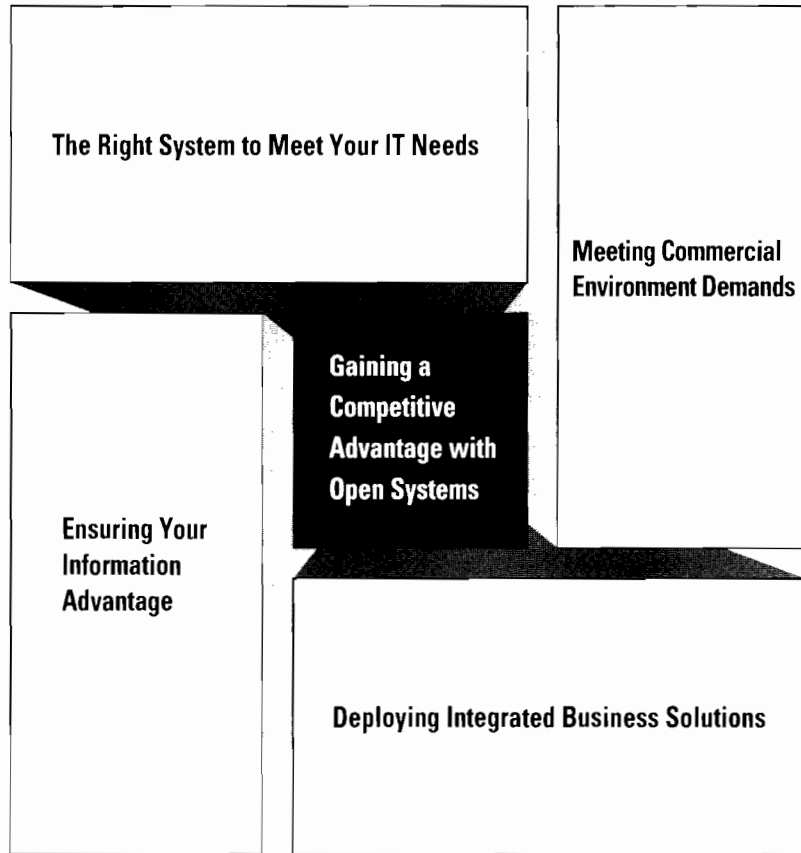
If you are involved in the evaluation or purchase of computer systems, this overview of HP 9000 Business Servers is written for you. It provides a comprehensive overview of the business benefits of HP 9000 Open Systems capabilities and solutions. And it shows you how HP 9000 systems can help you create a more competitive and profitable business.

The Executive Overview summarizes the business advantages of HP 9000 Series 800 systems in addressing business challenges with Open Systems, and provides a series of industry successes showing how HP solutions helped to solve customers' business problems.

Sections 1-4 provide Information Technology Managers with a more detailed look at HP 9000 systems and solutions, consulting services and support, and suggestions on your next steps to success.

Gaining a Competitive Advantage with Open Systems

Executive Overview



Addressing Business Challenges

HP: Open Systems Leadership


Proven Successes

Addressing Business Challenges

It is vitally important for the continued success of your corporation to seek strategic alternatives to help your organization remain competitive and profitable in this challenging business environment. Today's business challenges span everything from a recessionary business climate and tighter budgets to increased global competition with smaller profit margins, all within the context of higher customer expectations.

To help address these business demands, companies are reshaping business processes with creative innovative implementations of their information technology. The key to gaining a competitive edge in today's business climate is flexibility in responding to market conditions, which can be addressed via easier access to meaningful information.

The flexibility of Open UNIX*-based Systems is the critical component which will enable change for your success. Thus, the primary advantage of an Open Systems approach to computing is that it has the capability to adapt




your information systems quickly to a dynamic business environment. This allows for faster, better informed decision making, shorter product development cycles, and improved responsiveness to customers.

Hewlett-Packard's business is open information systems. So for almost any challenge you're likely to encounter, we can help—with innovative Open Systems products and proven solutions, services, and support, while maintaining quality business relationships with customers and partners. We've been successful with businesses around the world in improving productivity and efficiency, controlling costs, increasing flexibility, and enhancing competitiveness. And your company can profit from our unequalled experience in open client/server systems.

Reshaping business processes with information technology

Many companies have found that the old ways of doing business do not apply to the highly competitive 1990s. The enhanced communication from Open Systems is conducive to a successful interdepartmental teamwork approach in solving business problems. At HP, we partner with our customers in applying Open Systems technology to improve these processes which form the core of their business operations.

Aligning information systems with corporate goals



Historically, computer technology has focused on automating repetitive tasks, such as payroll and financials. Today, executives are looking beyond automation, and into the information technology community to provide systems which augment the decision making process and proactively

support the overall goals of the business. In short, using information as a competitive weapon. Because Open Systems can provide meaningful enterprise-wide information to the people that need it, they are better empowered to make well informed decisions. HP's comprehensive, yet modular approach to Open Systems allows companies to focus their IT investments toward creating and reinforcing a competitive advantage.

Controlling costs while leveraging past IT investments

A compelling benefit of the Open Systems paradigm is that businesses are no longer held

hostage by computer vendors which try to "lock in" customers to their systems. The fiercely competitive nature of the Open UNIX Systems marketplace is driving the costs of computers down, yet does not require customers to sacrifice functionality. With the extensive scalability and interoperability of the HP 9000 platform, customers are free to choose the most cost-effective systems to meet current business requirements, while leveraging past investments in legacy systems.

HP's best-in-class hardware, software, and support provide you with all the benefits of Open Systems and more:

- Broadest range of compatible servers in the industry allows your business room to grow
- Robust distributed network and system management capabilities streamline operations
- Broad range of clients and peripherals provides one-stop shopping for single vendor purchase and support
- Multi-level security safeguards your data assets
- Selection of thousands of software solutions enables you the choice of the perfect application
- High availability solutions protect mission critical applications
- Industry-leading price/performance reduces your cost of ownership
- Integrated office solution bundles increase end user productivity
- Customized consulting ensures IT alignment with your corporate goals
- Support services assures maximum uptime

"We feel HP is clearly the leader in Open Systems and we're very comfortable with their ability to deliver an excellent solution on time and within budget. With these solutions, the system can expand and adapt to meet our needs, which means our investments in hardware, software and training will be protected."

—Jim Sage, VP of Information Systems, Camelot Music

HP: The Open Systems Leader

HP Is Open for Business

HP's family of RISC-based HP 9000 Business Servers and workstations represents the most comprehensive Open Systems product line in the industry. Period.

HP 9000 Business Servers can transform your complex network of information and resources into a single, coherent, and well orchestrated business enterprise—with exciting power and flexibility. You can select powerful systems from a single, compatible product line to meet the total needs of your business—from desktop computers, to workgroup or department servers, to high-performance mainframe class systems.

Open operating system of choice

UNIX has become the open operating system of choice as companies today are looking at issues such as vendor independence, Open Systems, client/server architectures, mainframe alternatives, and cost reductions with continued demands for increased performance.

Because of HP's proven commitment to Open Systems and standards, we have paved the way for you to integrate old and new computer systems and applications, choose innovative products from a variety of vendors, and link everything into a cooperative network that supports your business goals.

¹ Based on survey of 1,250 VARs. The overall winner in 18 categories on products, pricing, support, and partnership. *Varbusiness*, 1987-1992.

² Based on 1992 worldwide commercial multiuser RISC/UNIX revenue. Aberdeen Group Market Viewpoint, "Commercial Multiuser RISC/UNIX: Hewlett-Packard Leads the Downsizing Transformation in 1993." February 1993.

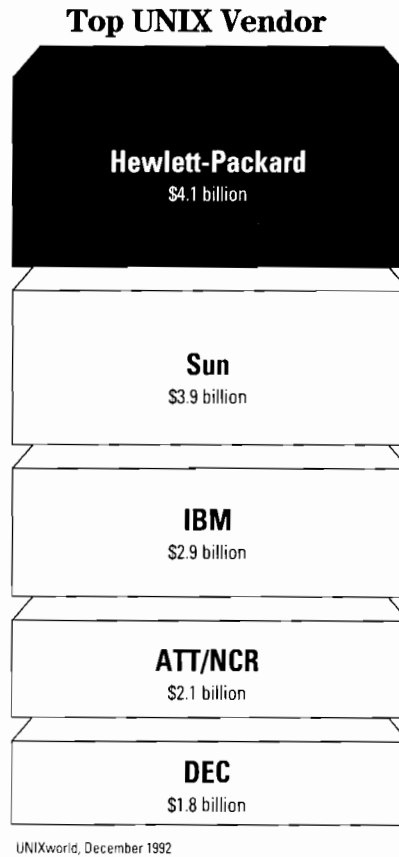


Figure 1 As the top UNIX vendor, HP brings you the unmatched expertise and safety of a leader.

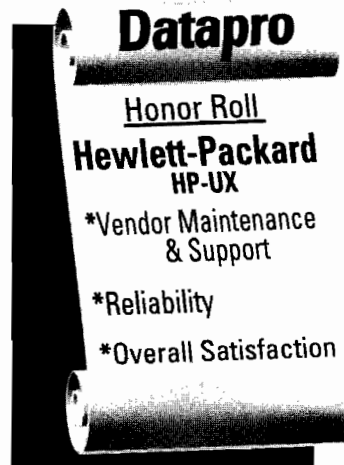


Figure 2 Datapro's most prestigious award recognizes HP's superior UNIX offering.

Proven Open Systems leadership

Hewlett-Packard is the pioneer in developing and promoting Open Systems which bring together people and information from all corners of your organization. HP customers can benefit from our extensive experience in Open Systems leadership:

- Customer preference for HP's top notch product offering has earned HP a position as the largest supplier of UNIX-based systems in the world (see figure 1).
- HP's customized consulting services provide a comprehensive roadmap to Open Systems.
- Datapro's newest survey, focusing on UNIX implementations from IBM, Sun, DEC, and HP, ranked HP-UX #1 in 11 out of 15 separate categories including maintenance and support, reliability and ease of use. HP-UX's highest UNIX implementation score in overall user satisfaction is indicative of the importance HP places on its customers (see figure 2).
- For over six years, HP has been the most attractive major computing platform for Value Added Resellers (VARs) and ISVs, topping DEC, IBM, and Sun.¹ Thus, HP customers can choose from more than 5,000 best-in-class applications for their HP 9000 Business Servers (see figure 3).
- In the commercial multiuser RISC/UNIX market, customer preference for HP solution has merited HP the number one vendor position, well ahead of DEC, IBM, Sun, and others, with a 46.5% market share (see figure 4).²
- HP has been endorsed by the industry as the technology and Open Systems leader with their adoption of HP's innovative technologies such as those included in the Common Open Software Environment (COSE) unified-UNIX desktop standard.

HP Receives Top Honors from HP Channel Partners



Figure 3 HP received top honors for overall score and overall impression from VARs in the 1992 VARBUSINESS Annual Report Card Review.

Committed to standards

With the emergence of distributed, client/server computing environments, HP's pervasive commitment to standards is more relevant than ever for multivendor integration and application migration. HP believes that the best way to protect our customers is to carefully innovate new technologies with business benefits that best meet our customer's needs, while driving them into wide usage through licensing and standards. Coupling this approach with HP's compliance to hundreds of industry standards, our track record is indisputable.

HP's leadership in standards not only portrays our corporate commitments, but further demonstrates our ability to transform innovative technology into mainstream products that solve IT problems.

- HP technologies are consistently selected as industry standards (i.e. components of DCE, DME, OSF/Motif™, CORBA, etc.).
- HP systems are among the first to be compliant with new standards, such as X-Open and POSIX.
- HP has over 300 employees on standards committees to drive the development of new standards with HP contributed technology and ensure compliance to new standards.
- Founding sponsor of Open Software Foundation (OSF) and contributing member of the COSE initiative.

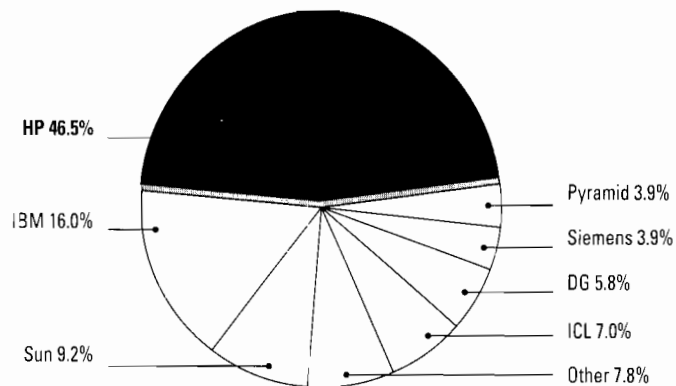
In support of our long-term commitment, HP continues to recognize future computing trends and contributes technologies to

support them. HP is a leading contributor of technology to develop standard building blocks for distributed computing, such as the OSF Distributed Management Environment (DME) for simpler management of distributed, multivendor networks. HP also played a key role in the development of foundation technologies for OSF's Distributed Computing Environment (DCE), which provides transparent interaction of applications in multivendor and client/server environments.

Superior multivendor integration

HP's extensive multivendor experience and networking products enable you to easily link HP 9000 Business Servers into many vendors' networking environments including those of IBM, DEC, Novell, Banyan, and more. This allows you to take advantage of HP's superior reliability and performance in multivendor computing environments.

#1 RISC/UNIX Vendor in Commercial Multiuser Environments



1992 Revenue = \$5.16B

Source: Aberdeen Group

Figure 4 HP dominates the market for commercial UNIX.

The completeness of HP's networking products and services is sure to support your broad spectrum of applications and systems. Industry reports consistently note that HP offers the widest range of network protocols in the industry, which enables interoperability with your existing computer networks and helps eliminate costly customization.

Forging cooperative partnerships

At HP, we're committed to forging successful and cooperative partnerships with our customers.

We understand organizations use information technology to solve business problems. As such, HP has organized itself around key industries to develop the expertise to team with you in identifying your business goals, inhibitors, and critical success factors.

Our field sales force has been extensively trained to understand not just our products, but your business challenges, and to offer long-term solutions that leverage your existing data and applications, while providing a solid foundation for your future.

Best-in-class applications

In order to ensure our customers have the best application to run their business, HP works closely with key software providers to equip our customers with the leading business applications.

Implementation services

Through its Professional Services Organization, as well as relationships with key systems integrators with specialized expertise, HP ensures you of a successful and creative implementation.

Channel of choice

To leverage our capabilities to your further advantage, we've also aligned ourselves with a team of HP Channel Partners that includes distributors, dealers, value-added businesses, systems integrators, and consultants. All because we're interested in developing a mutually beneficial long-term relationship with your company. Consequently, you can acquire the HP product you want from the source that provides you the best combination of price, availability, service, and support.

Providing the safety of a leader

We've built a strong company by devoting ourselves to high-quality products, customer relationships, and support. And the evidence of our success is well documented.

With computer companies today facing insurmountable difficulties, having a financially stable computer partner like Hewlett-Packard is essential to long-term IT competitiveness.

With revenues at \$16.4 billion in 1992, consistent profitability, and R&D expenditures an aggressive 10% of sales, HP's financial stability and technical innovation provide a reassurance that we will continue to provide solutions to help solve customers business problems, today and in the future (see figure 5).

Open for business

If you're looking for the one company that provides all of the advantages of Open UNIX Systems and solutions required to run your business profitably, choose HP. HP has demonstrated leadership with our broad offering of HP 9000 Open Systems, rich commercial environment for business applications, superior integrated solutions, premier customer support, and a corporate commitment to high quality standards. All of this proves that as your information technology partner, *HP is open for business—your business.*

"HP is not only defining the standards for excellence that its competitors—especially IBM—are trying to follow, but it has also gained the overwhelming acceptance of the most discriminating judges in the industry—real buyers reengineering their enterprises' mission critical applications to gain an increased competitive advantage."

—Aberdeen Group, February 1992

The Financial Strength of a Leader

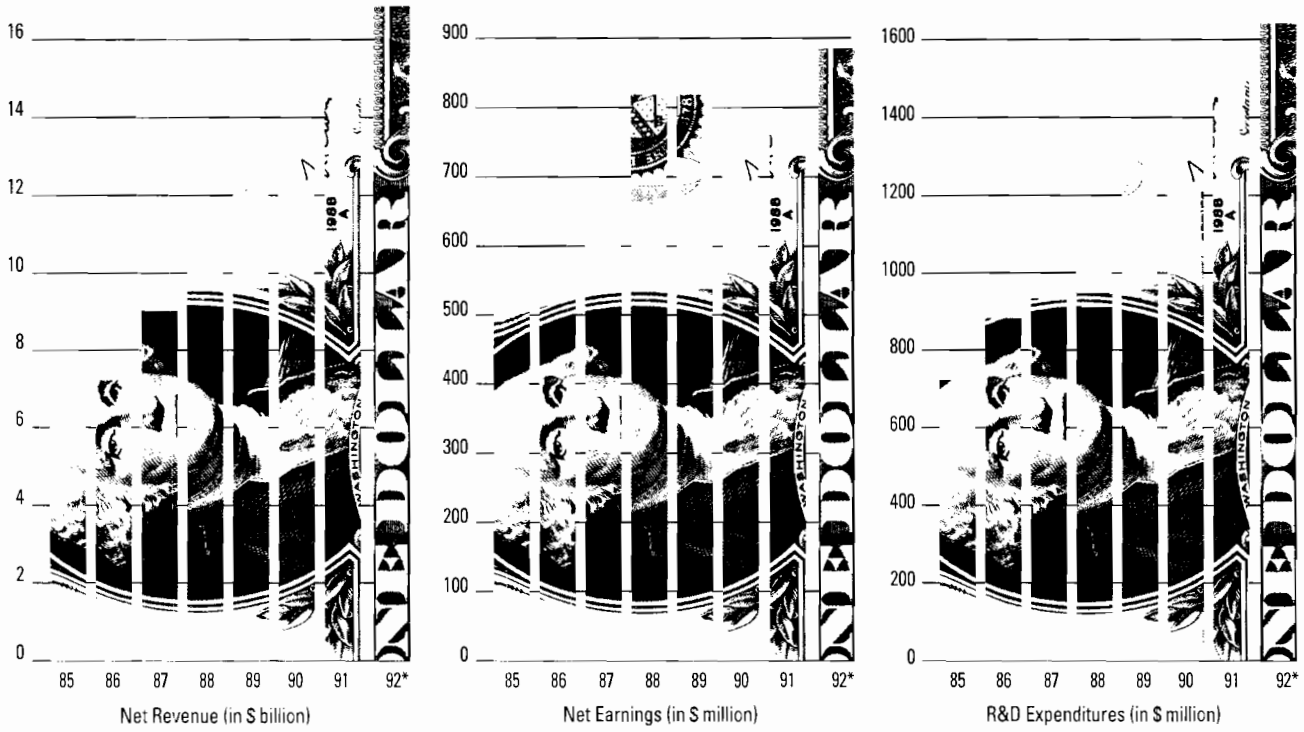


Figure 5 HP's financial strength makes us the safest choice for a UNIX system.

“And, simple as it sounds, it is easy to work with HP: the company knows how to develop and maintain successful business relationships with customers and suppliers.”

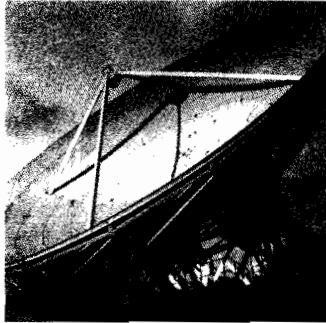
—InfoCorp, July 1991



* Net earnings for 1992 exclude the effects of one-time accounting charges for retirement benefits.

HP CHANNEL PARTNERS :

- Allen-Bradley •
- American Software •
- Andersen Consulting •
- Answer Computer •
- ASK/Ingres •
- Banctec •
- CAP Gemini •
- CGI Group •
- Cincom Systems •
- Collier-Jackson •
- Computer Associates •
- Computron •
- Comshare •
- Consilium •
- Cellular Technical Services •
- CyCare •
- Dun & Bradstreet Software •
- Datalogix •
- EDS •
- FileNet •
- Fourth Shift •
- HBO •
- Information Builders •
- Informix •
- Lawson Software •
- Legent •
- Manugistics •
- McHugh-Freeman •
- Micro Focus •
- Novell •
- Oracle •
- PDX •
- PeopleSoft •
- Plexus Software •
- PRC •
- Price Waterhouse •
- Progress •
- PSI •
- Ross Systems •
- SAP AG •
- SAS Institute •
- Software AG •
- Software Alliance •
- Software Alternatives •
- Sterling Software •
- Sybase •
- Symix Computer Systems •
- Systematics •
- TeleSciences •
- Texas Instruments •
- Unify •
- Wang •
- Xerox Computer Services •



TELECOMMUNICATIONS AT&T

Application:
Network Surveillance System

Benefit:
Revenue enhancement and protection through increased network availability, improved service quality, minimal service disruption, and efficient use of skilled resources. Capital savings through modular architecture, highly reliable equipment and multi-vendor network element support.

"Hewlett-Packard technology is ideal for a company like AT&T which does business all over the world. HP's wide range of compatible systems reduces time-to-market and gives us flexibility to offer a line of operations systems with varying capabilities and capacities."

Linda Nardelli
Manager, Operations Systems

AT&T's TRANSVU II provides sophisticated alarm tracking and network performance monitoring using HP 9000 Series 800 Servers with HP's robust high availability solutions. Also, the Datakit VCS provides flexible multi-host and inter-host communications. HP's state-of-the-art platform will support AT&T's evolving transmission network.



RETAIL Home Depot

Application:
Store Automation and Point-of-Sales System Network Gateway

Benefit:
Improved customer satisfaction from increased automation allows employees more time with customers.

"Proprietary systems can limit flexibility and growth. We want to keep our application cost-effective and our vendors competitively honest."

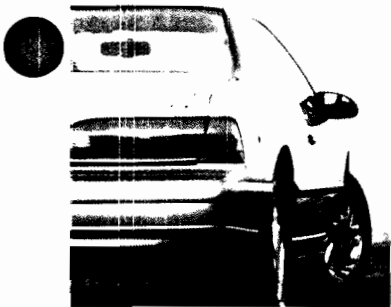
"Home Depot is committed to the concept of Open Systems. We need store automation support and technology from a company that shares that commitment. That led us to select Hewlett-Packard."

Andy McKenna
Sr. VP, Information Services

Home Depot selected HP based on Hewlett-Packard's systems flexibility, price/performance, value, and support.

Advanced technologies like PA-RISC, RDBMS, client-server computing, and network management will streamline operations, improve customer service, and enable Home Depot to react more quickly to changing customer needs.

Hewlett-Packard for Success



AUTOMOTIVE
Ford Electronics

Application:
 Inventory Management—Local Location Tracking System

Benefit:
 Improved quality tracking and inspection, reduced work-in-process (WIP), parts substitutions, and fewer changeovers from inventory shortages.

“HP’s leadership position in Open Systems is strategically right for us. Their hardware and software are very good at communicating with different vendor’s equipment.”

Larry Granger
 Manager, Information Systems

Reaching over 99 percent inventory accuracy allowed Ford’s North Penn plant to move closer to just-in-time operation with its suppliers. Key to this success were the HP 9000 systems and an inhouse “Local Location Tracking System.”

Ford Electronics and Refrigeration Corporation has a well-deserved reputation for quality. Logically, it turned to another high-quality vendor for its computer systems and related expertise in configuring advanced computer technologies: Hewlett-Packard Company.



PACKAGED GOODS
Chesebrough-Pond’s USA

Application:
 Consumer Information System

Benefit:
 Aids in the effective resolution of all consumer issues, minimizes liability, contributes to operating division product support, and assists the corporation with an accurate assessment of consumer perceptions about their products.

“Chesebrough-Pond’s USA recognized that in order to address the challenges that we face in utilizing information systems effectively, dramatic information technology changes were needed. We selected Hewlett-Packard to provide the Open Systems architecture and solutions, because they understood our business, and were willing to make the investment, creating a strategic alliance between our two companies to achieve a competitive advantage.”

Gene Goodmaster
 Director, Management Information

Implementing HP’s Open Systems client-server architecture, which embraces industry standards and adheres to the corporate IT policies, will improve customer service, brand loyalty, and the company image while providing critical information across the enterprise.

SOLUTION CATEGORIES:

- Accounting
- Aerospace
- Application Development
- Artificial Intelligence
- Automotive
- Banking/Insurance
- Chemical/Pharmaceutical
- CASE
- Construction
- Corporate Services
- Data Communications
- Distribution for Resource Planning
- Document Image Management
- Education
- Electronics
- Electronic Data Interchange
- Energy
- Financial Services
- Food and Packaged Goods
- Government/Nonprofit
- Graphics
- Health Care Information Systems
- Hotel Management
- Human Resource Management
- Languages/Operating Systems
- Legal Services
- Libraries
- Logistics
- Manufacturing Execution Systems
- Marketing, Sales & Service
- Materials Resource Planning
- Math/Statistics
- Media
- Office Information
- Oil and Gas
- Payroll
- Project Management
- Property Management
- Public Utilities
- Publishing
- Quality Control
- Real Estate
- Retail Trade
- Securities
- Software Engineering
- System Management
- Telecommunications
- Transportation
- Utilities/User Interface
- Voice Communications
- Warehouse Management
- Wholesale Distribution
- Workflow

The Right System to Meet Your IT Needs

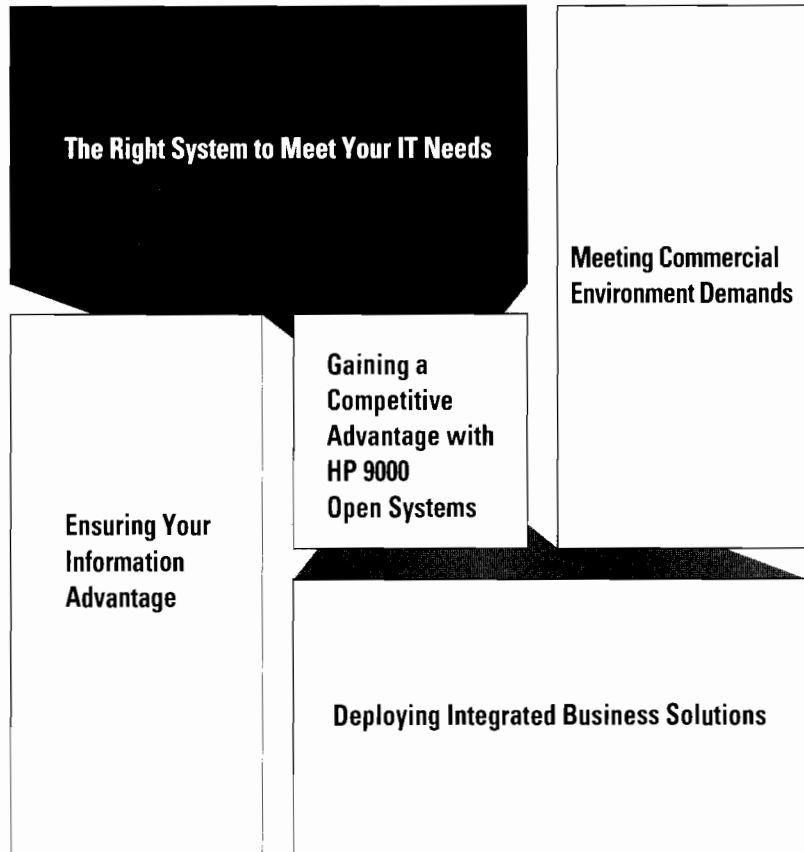
Section 1.

Broadest System Offering

Flexible Networking Solutions

Complete Choice of Clients

Superior Peripherals



The following sections of this guide are targeted at Information Technology (IT) professionals for a more comprehensive technical overview of the HP 9000 Business Server Solutions.

The HP 9000 family represents complete business solutions offering a depth and breadth of enabling technologies for your data processing environment, including:

- The most extensive line of compatible UNIX-based RISC servers and workstations in the industry—with high performance, modularity, and object-code compatibility from the desktop to the data center.
- Excellent multivendor networking—for communication over

local- and wide-area networks, giving you easy access to IBM, DEC, and other vendors' systems throughout your distributed environment.

- The widest selection of commercial application solutions—including thousands of business applications across a range of functions and industries.
- A comprehensive line of all the supporting components needed to build a complete client/server solution, including workstations, PCs, terminals, X-terminals, mass storage, and printers.

This section will focus on the flexibility HP offers in choices of hardware from servers and clients to peripherals, and the networking capabilities to fully integrate your business enterprise.

A System Suited to Every Environment

No matter whether your organization is a small department, a branch office, a large distributed or centralized computing environment, you can find an HP 9000 Series 800 Business Server that meets your needs (see figure 1.1).

With systems supporting up to 4500 users, HP 9000 Business Servers are suitable for everything from small work groups to large data centers. In addition, a variety of packages and configurations enables you to take advantage of HP 9000 premium performance in client/server or traditional host/terminal environments.

Integrated Business Servers

The HP 9000 Series 800 Models F/G/H/I Class Business Servers are designed to provide the most powerful, reliable performance for

diverse application areas in a multiuser, multitasking environment. These servers deliver industry leading performance—from 50 TPS to over 400 TPS.

Corporate Business Servers

The HP 9000 Corporate Business Server 890s are the industry's most robust and expandable high-end UNIX servers for diverse and demanding data center applications. In particular, these high-end servers provide the most cost-effective computing alternative to proprietary mainframe computers, with performance over 750 TPS at a fraction of the cost.

Symmetric multiprocessing as your needs grow

The HP 9000 G/H/I Class Systems and the Corporate Business Servers support tightly coupled symmetrical multiprocessing,

allowing economical, modular growth of processing power as your business needs grow. HP's UNIX servers offer a transparent multiprocessing implementation that provides both superior on-line transaction processing performance and industry leading batch throughput.

Serving your IT needs

HP 9000 Business Servers support a wide variety of performance and expandability alternatives to easily map into your business. Combined with the best investment protection in the industry to grow with you as your business grows, the HP 9000 family's aggressive pricing brings you an unsurpassed value. Thus, with the HP 9000 Series 800's unique combination of technology, the opportunity is available to make a tremendous impact in meeting your IT needs today and tomorrow.

Choose the HP 9000 Series 800 That Best Meets Your Needs

	Branch			Department										Corporate									
	F Series			G Series				H Series						I Series				Corporate Servers					
HP 9000 Series 800 Business Servers	F10	F20	F30	G30	G40	G50	G60	G70 2CPU	H20	H30	H40	H50	H60	H70 2CPU	I30	I40	I50	I60	I70 2CPU	890 1 CPU	890 2 CPU	890 3 CPU	890 4 CPU
Relative Performance	1.0	1.7	2.5	2.5	3.0	3.9	5.7	8.0	1.7	2.5	3.0	3.9	5.7	8.0	2.5	3.0	3.9	5.7	8.0	4.8	8.5	12.0	15.4
Maximum Memory (MB)	384	384	384	512	512	512	512	512	768	768	768	768	768	768	768	768	768	768	768	2048	2048	2048	2048
Maximum Disk (GB)	42	42	42	100	100	100	100	100	186	186	186	186	186	186	228	228	228	228	228	1300	1300	1300	1300
Available I/O Slots	2	2	2	4	4	4	4	4	8	8	8	8	8	8	12	12	12	12	12	112	112	112	112
	<p>Integrated low end to midrange Ideal for office/department environments Small footprint Smooth and convenient upgrades Simplified installation</p>																			<p>High end Designed for data center environments Maximum configurability Industry leading multi-processing performance</p>			

Figure 1.1 Choose the HP 9000 Series 800 that best meet the needs of your company within the branch, department, and corporate organizations. The HP 9000 Series 800 is the broadest family of commercial UNIX servers with systems supporting thousands of users.

The Advantages of PA-RISC Servers

PA-RISC Delivers Top Reliability and Performance

HP 9000 Business Servers are all based on HP's leading-edge Precision Architecture RISC (PA-RISC), first introduced in 1986. Seven generations of the PA-RISC architecture have consistently delivered top price/performance solutions to HP 9000 customers. PA-RISC provides businesses with the highest performance possible for an integrated circuit technology at a fraction of the cost of other architectures.

PA-RISC delivers the industry's best tuned instruction set for real-world business applications, offering distinct advantages to commercial users (see figure 1.2). HP's use of leading VLSI technologies enables entire CPUs to be integrated onto a single chip, and contributes to reducing costs and increasing reliability. PA-RISC also preserves your investment with forward-compatibility to each successive generation of systems and architecture improvements.

PA-RISC is supported by a worldwide consortium, the Precision RISC Organization (PRO), whose core members include: Convex, Hewlett-Packard, Hitachi, Hughes, Mitsubishi, Oki, Samsung, Sequoia, Stratus, Winbond, and Yokagawa. This increases the availability of PA-RISC systems across a broad range of industries while further extending your choice of leading HP Channel Partner applications.

*“There is no **single** reason why PA-RISC systems have been so successful. Clearly HP is listening to its customers and prospects and responding.”*

—InfoCorp

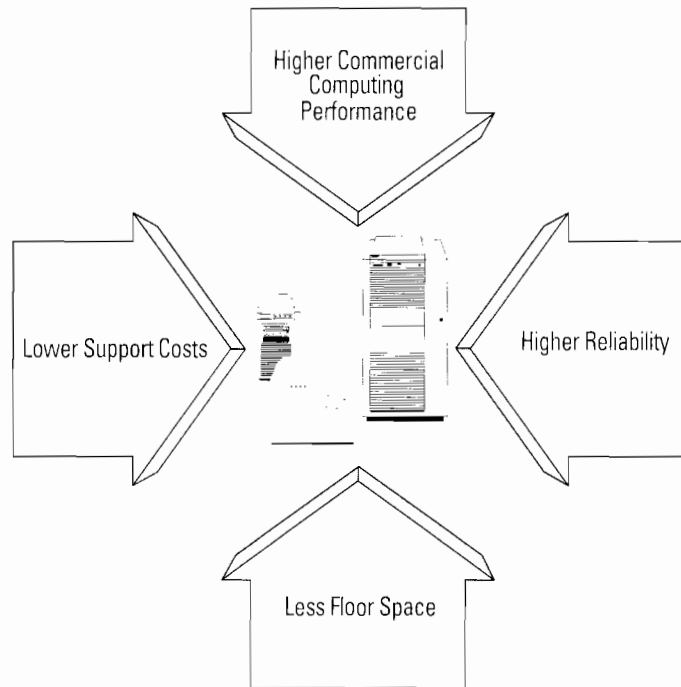


Figure 1.2 HP brings the advantages of PA-RISC to its entire HP 9000 Series 800 family of business servers.

PA-RISC: Designed for commercial computing

While most RISC architectures were designed primarily for engineering applications in technical environments, PA-RISC was designed from the beginning for both the commercial and technical marketplace.

HP analyzed millions of lines of code from a variety of applications, including business and corporate computing environments. Then we implemented the most critical instructions directly into hardware. We combined this reduced instruction set with optimizing compilers to deliver systems with the best performance.

PA-RISC is also designed to support large amounts of main memory (up to 4 Gbytes today) and virtual addresses up to 64 bits, making it ideal for the most demanding commercial applications for today and the flexibility and investment protection for the future.

Lower cost of ownership

PA-RISC, together with advanced VLSI technology, dramatically reduces the number of components required for a single system. Consequently, HP 9000 Series 800 Business Servers are smaller and take up less floor space, consume less power, and require less cooling than competitive systems—which reduces your cost of ownership while increasing overall system reliability.

The combined result of PA-RISC performance, high reliability, and lower support costs provides a demonstrable overall lower cost of computing compared with equivalent systems from IBM (see figure 1.3).

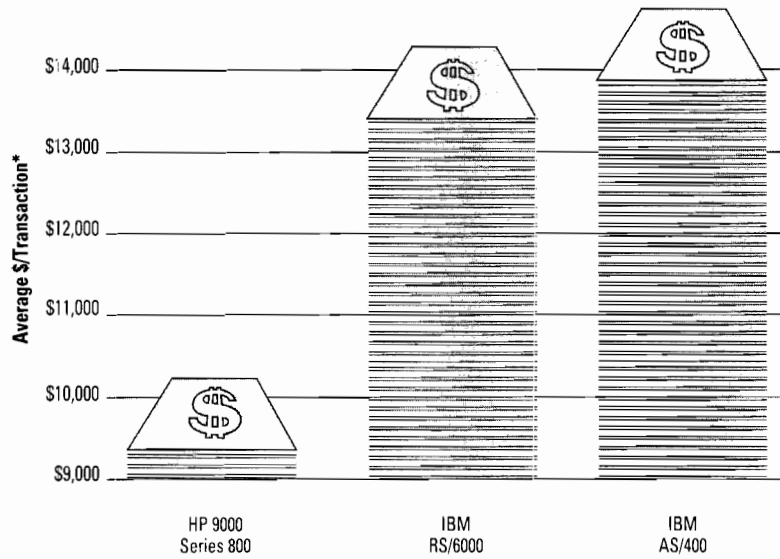
Backed by the commercial RISC system leader

History clearly demonstrates HP's strong success with RISC for the commercial marketplace:

- In 1986, we became the first major vendor to deliver a commercially available RISC-based system.
- We have the largest market share of RISC-based systems in the world (see figure 1.4)¹

With HP's RISC leadership, you can count on our continued enhancement of system throughput and our commitment to object-code software compatibility for years to come.

Lower Overall Cost of Ownership

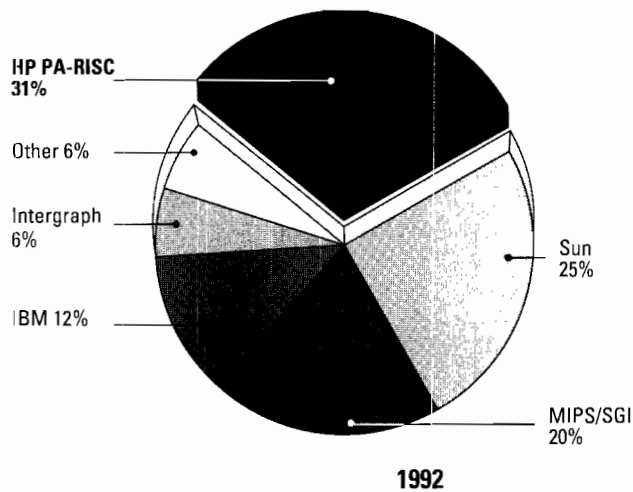


*Average of all industry-standard TPC-A benchmark results published as of 5-1-93 for each vendor. Results based on host-based configurations priced over a 5-year period, including hardware, software, and support

Figure 1.3 HP's PA-RISC design is one reason the average cost of ownership of HP 9000 Series 800 Business Servers is significantly lower than comparable commercial systems from IBM.



Largest RISC Market Share



Source : RISC Management, January 1993
 1992 Worldwide marketshare based on total RISC System Revenues
 Total Revenue = \$17.54 B

Figure 1.4 HP's #1 ranking as the largest manufacturer of RISC-based systems means you have the backing and commitment of the industry leader!

¹ Market share based on revenue dollars of RISC desktop and multiuser systems; Computer Intelligence/InfoCorp. March 1992.

Networking Solutions for Open Environments

HP 9000 Series 800 Networking

HP 9000 Business Servers fit into your existing and your future client/server environment through the widest range of industry and de facto standard networking products (see figure 1.6). These capabilities allow current systems to communicate with each other, without losing the flexibility to grow as new technologies evolve. And network application programming interfaces help you customize applications to meet specific business needs.

HP's industry-leading networking products for the Series 800 give you seamless connectivity to multivendor networks of IBM, DEC, or other UNIX and proprietary systems. Whether you are using a PC to access a local file server or a workstation to transfer data across the globe, you have complete control of your data.

HP's networking products provide the following (see figure 1.7):

- A networking foundation—the enterprise-wide building blocks needed for robust communication links and mission critical response time.
- Mainframe communications—linking Series 800 Business Servers to mainframe environments and IBM midrange systems.
- End-user access and integration—effectively integrating terminals, PCs, Apple Macintoshes, and workstations.
- Server-to-server communications—linking Series 800 Business Servers to other systems using standards-based networking.
- System, network, and performance management tools—giving you comprehensive control over your network.

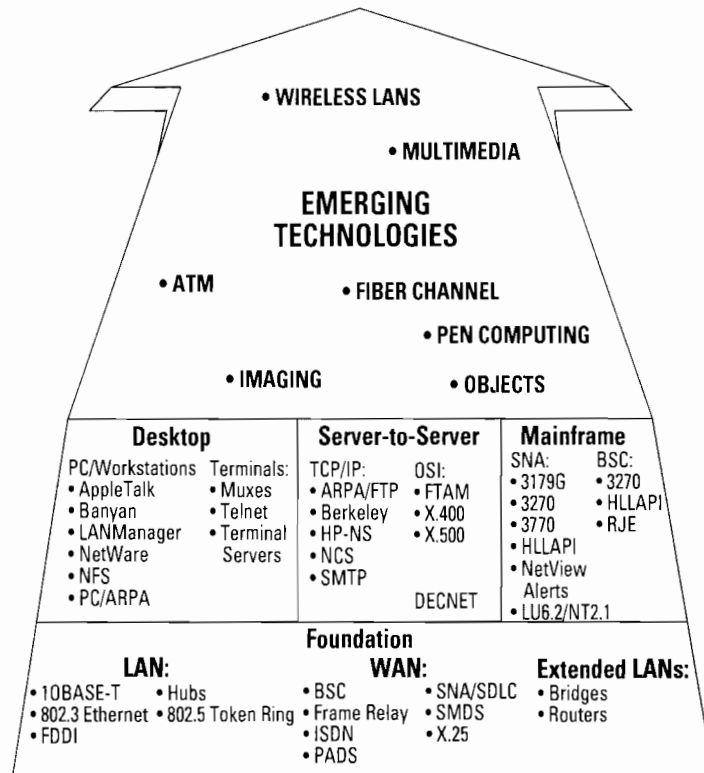


Figure 1.6 HP 9000 Series 800 Networking provides you with the newest technologies for your networking requirements to connect what you have with what you need.

Networking foundation

For local area connectivity, HP offers industry-standard 802.3/Ethernet, 802.5/Token Ring, and FDDI adapters. If you already have a Token Ring Network installed at your site, an HP 9000 Series 800 Business Server can easily be integrated.

HP's Fiber Distributed Data Interface (FDDI) represents the standard for data communications over high performance/high bandwidth local area networks, and combines large capacity with long distance operation.

“HP’s strong commitment to networking technology and to open, multivendor solutions, plus its sensitivity to user requirements for distributed computing, place the company in an excellent position to compete in client/server and enterprise networking.”

HP 9000 Networking: Communication for all Environments

HP uses standards-based wide area networking protocols, such as X.25, ISDN, SMDS, and Frame Relay to enable you to transparently share, exchange, and transfer information between systems worldwide. HP also offers a full range of internetworking devices for extended LAN communications.

Also, HP is committed to emerging high speed networking technologies such as Fibre Channel and Asynchronous Transfer Mode (ATM) to enable handling of today's increasing networking capabilities.

Mainframe communications

In distributed environments, HP 9000 Business Servers make mainframes more effective. Our seamless communication with IBM mainframes and peer systems uses a full range of communications links and services.

HP SNAplus products reduce costs by creating flexible standalone or gateway configurations to IBM systems. They support both hierarchical and peer-to-peer communications within your IBM environment. And they provide network alerts to simplify network management.

Desktop integration

HP's flexibility in end-user access offerings enable you to easily integrate a variety of clients such as terminals, Apple Macintoshes, PCs, X-terminals, and UNIX workstations.

The HP 9000 Business Servers offer the industry's best choices for integrating with your PC LAN environment and building client/server applications. We offer industry-leading solutions such as Banyan, Microsoft® LANManager/U, and Novell NetWare. As the

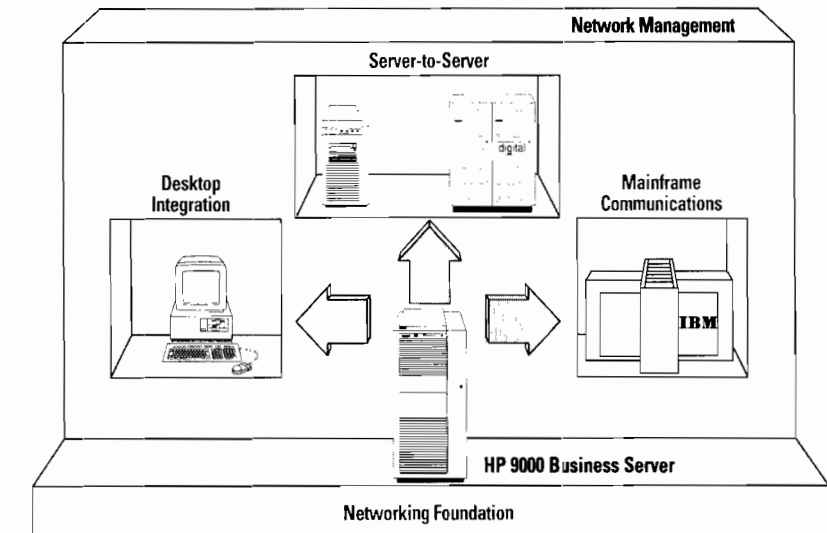


Figure 1.7 HP's networking solutions for Series 800 Business Servers allow you to communicate within distributed, multivendor environments.

first RISC UNIX port of Banyan's OpenVines product, HP further solidifies its commitment to providing industry-leading PC interoperability. LANManager/U provides the added benefit of easier administration, improved security and leveraged investment of hardware, software and networking. HP was not only an early adopter, but also a leading reseller of NetWare for UNIX.

For UNIX workstations, HP 9000 Series 800 Business Servers support Network File System (NFS) and DCE, which enables integration and file sharing.

And for Apple Macintosh networks, Pacer Software, Inc., an HP Channel Partner, offers a variety of products that enable HP 9000 Series 800 systems to function as file, print, and database (DAL) servers within Macintosh networks.

Server-to-server communications

Server-to-server communication products enable Series 800 systems to communicate with systems from other vendors, including IBM, DEC, and Sun. Server-to-server connectivity enhances communications for distributed applications such as electronic mail and Electronic Data Interchange (EDI).

With HP's industry leading X.400 backbone, you can bridge e-mail applications from multiple vendors into an effective corporate-wide communication network.

Other services that support server-to-server communications range from ARPA services such as Berkeley Sockets, FTP, and Domain Name services to a complete set of OSI services, such as X.400, X.500, and FTAM.

HP 9000 Supports Your Choice of Clients

Integrating HP's broad line of HP 9000 Series 800 Business Servers with their support for a wide range of desktop alternatives provides a client/server solution unmatched in the industry (see figure 1.8).

The HP 9000 client support includes: PCs, workstations, X-terminals, Macintoshes, terminals, and Windows Clients. This means you can leverage your existing investments in clients, while maintaining flexibility to choose among many client alternatives to best match your needs.

Top-notch affordable PCs

HP provides a comprehensive line of industry compatible, reliable, and affordable personal computers with true multivendor capability, making them ideal as clients. The HP Vectra PC family offers scalability, expandability, superb security and ergonomics, and leading system and graphic performance for a full range of office productivity or technical applications. HP's aggressively priced PCs have not come at the expense of quality, performance, or the features you want.

Ergonomic terminals

Additionally, HP also offers a comprehensive line of terminals as clients, which embrace everything from ergonomics to economics, readability to reliability, and flexibility to ease of use.

The HP terminals feature the highest combined level of compatibility available today with astounding industry-leading Mean Time Between Failures (MTBF) reaching over 100,000 hours. This means more uptime, more productivity, and a lower cost of ownership. HP terminals have superior display for reduced eye strain,

while maintaining full compliance with international safety and low-emissions standards.

New Windows Client:

The best of two worlds

The HP Windows Client* combines the leading-edge power of a 486 personal computer and its powerful graphics and windowing capability with the low cost, high data integrity, and simplified system management of a terminal. The HP Windows Client comes network ready with all of the necessary hardware and software components built in to deliver you the lowest priced HP solution of any fully configured intelligent client.

This new option in HP's client/server strategy is the perfect growth choice for mission critical environments where high data security, high data integrity, and well controlled system configurations are critical. In addition, the Windows Client provides a low cost upgrade path for users of terminals and under-powered personal computers.

Innovative workstations

As part of a complete UNIX client/server solution, HP 9000 Series 700 workstations bring an unprecedented amount of computational power to the desktop. Using the same PA-RISC architecture and HP-UX operating system as Series 800 Business Servers, Series 700 Workstations deliver industry-leading performance, brilliant 2D and 3D graphics—all within an easy-to-use environment that offers the best price/performance in the industry.

The HP workstations' seamless integration into your existing computing enterprise enables you to take full advantage of the

emerging client/server computing model. While the HP Series 800 is the business server platform of choice for companies moving to a UNIX-based Open Systems environment, the Series 700 is the UNIX-based client of choice. Users can take full advantage of the distributed processing capabilities and the award-winning easy-to-use graphical user interface, HP-VUE. Furthermore, the Series 700 users can choose from a wide offering of the most popular productivity software.

Workstation X-Window performance at X-terminal prices

The HP 700/RX family of monochrome, greyscale, and color graphical X stations, with their industry-leading ease of use and flexibility, provides a more affordable alternative for bringing the power of network computing to every desktop.

HP VUE/RX, the X-terminal industry's only local user environment, lets users manage and navigate through multiple workspaces with the push of a button. It's like having several X stations on your desk at once. Multiple workspaces allow users to logically group applications and to unclutter busy displays into more readable working areas. HP is the leading supplier of color X-terminals in the world.

While the X station offloads the host of user environment and window management functions, the host is freed up to run applications. This allows customers a streamlined form of client/server computing where the client and server resource usage is optimized.

* Summer 1993

HP's Comprehensive Line of Clients

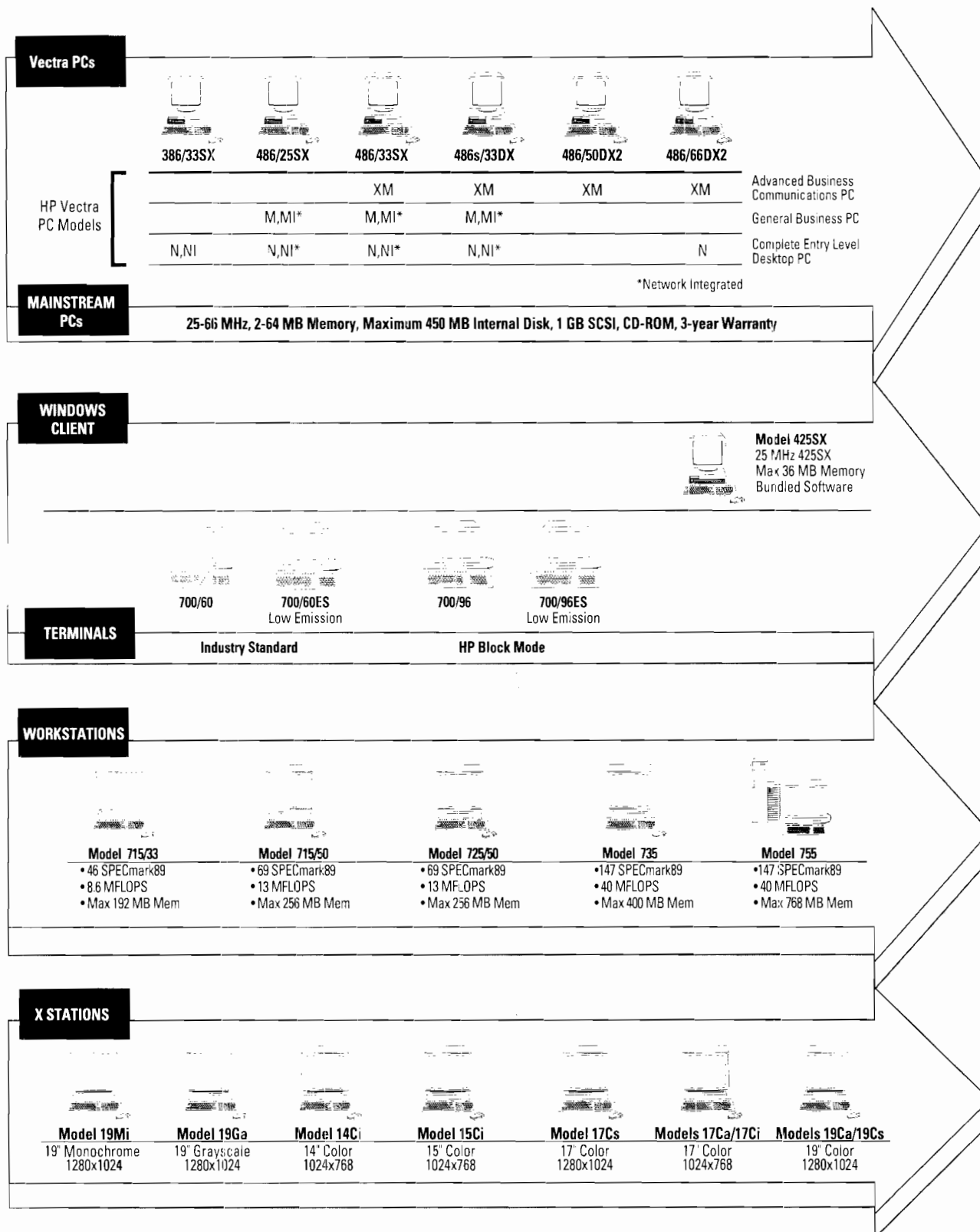


Figure 1.8 HP offers a comprehensive line of clients for a complete client/server solution.

A Matching Line of Superior Peripherals for the HP 9000

HP also designs and manufactures a broad range of industry-leading, fast, reliable, cost-effective computer peripherals and sub-systems tuned to match the HP 9000 product family (see figure 1.9). HP peripherals incorporate advanced technology for superior performance and high reliability to meet specific customer needs and applications.

Storage solutions

HP's disk and mass storage systems offer renowned reliability, performance, large capacities, configuration flexibility, and a small footprint at competitive prices.

These small footprint disk systems minimize the space used in data centers while maximizing disk capacity. In fact, using HP's disk arrays, one 19-inch standard cabinet can provide 27.2 GBytes of data storage.

Range of backup solutions

Backup solutions are available in a variety of technologies to meet specific customer needs and applications.

HP's tape drives provide off-line storage at a low media cost. Available today are 1/4-inch cartridge tapes for low cost, 1/2-inch tapes for high speed and industry-standard formats, and Digital Audio Tape (DAT) for unattended backup.

The HP family of optical drives provides vast amounts of reliable, low-cost storage for unattended backup and on-line archive applications.

HP has also partnered with StorageTek to support IBM 3480 compatible tapes and auto-changers on HP 9000 Series 800 Business Servers.

These tape drives offer high-speed backup and data interchange with 3480 cartridge tapes. With the compression/compaction capability, three times the storage capacity of a 200 MB 3480 cartridge tape can be attained.

World leading printers and plotters

As the world's leading supplier of printers, HP offers a full line of reliable printers, including the well-known HP LaserJet printer series, which can now be used in local area networks, as well as the cost-effective HP DeskJet printers and HP PaintJet color printers product families.

For production printing, the HP 5000 printer family provides data center-class production printer performance, ranging from 100 to 210 pages-per-minute printing capabilities. These printers also offer IBM mainframe connectivity, including HP PCL providing desktop to data center compatibility.

HP offers line impact system printers for commercial, industrial, or data processing environments with power paper stackers for unattended printing and multi-part forms.

HP's serial printers are not only designed for multiuser environments, but are also very effective as dedicated printers for transaction applications.

In addition, HP offers a full line of pen and electrostatic plotters.

A Full Range of Peripherals for HP Servers

Desktop to Data Center Peripherals

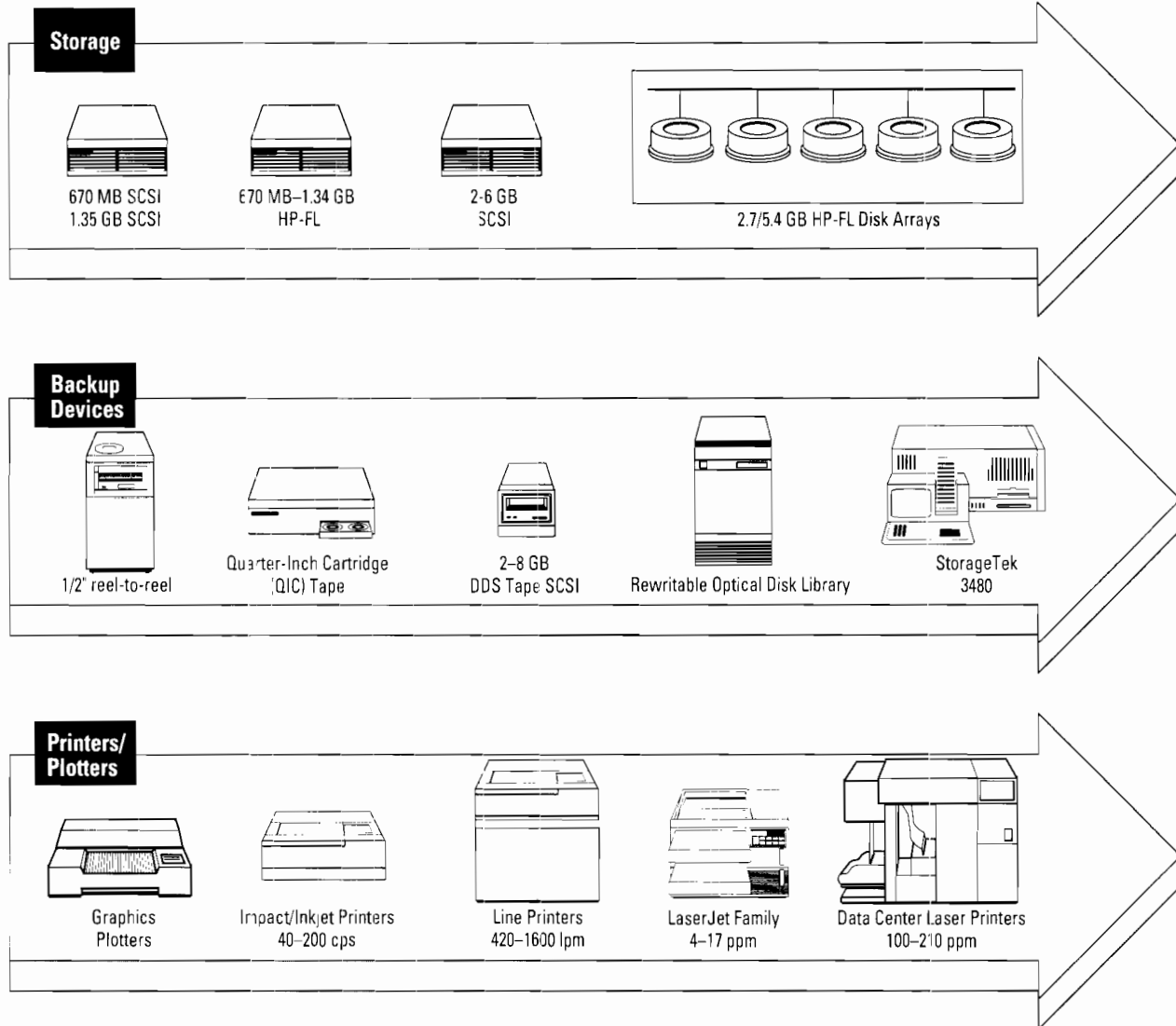


Figure 1.9 HP's complete line of peripherals complement the HP 9000 Series 800 Business Servers in performance and reliability.

Meeting Commercial Environment Demands

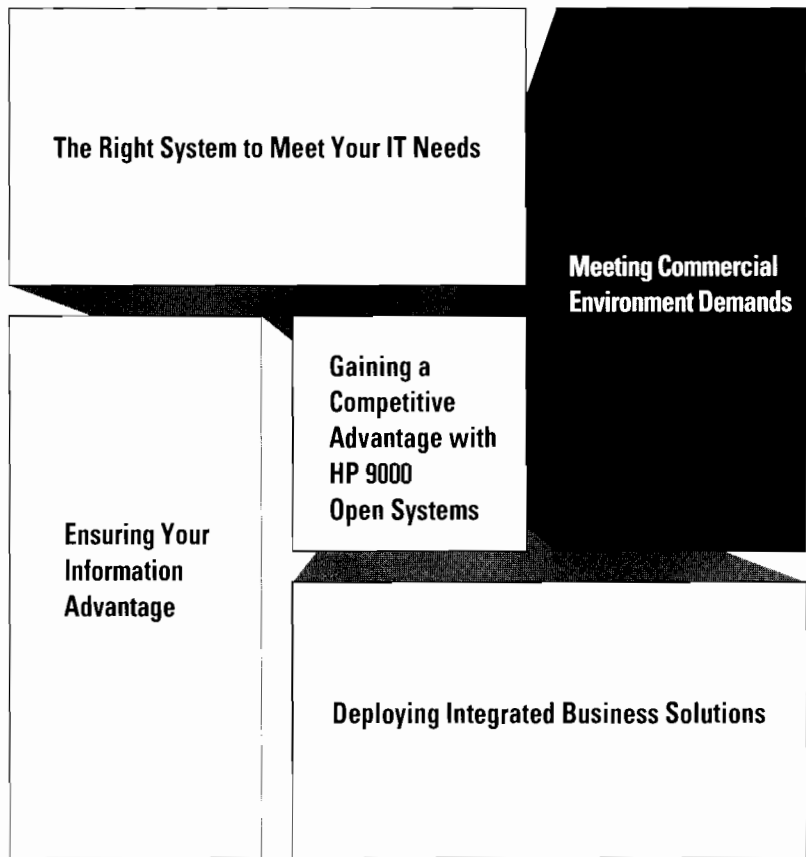
Section 2.

Rich Operating Environment

Distributed Computing

System and Network Management

High Availability and Security



In the Open Systems arena, HP's combination of servers, networking, clients, and peripherals is unparalleled. But, computing solutions encompass more than hardware and networking. An equally important component to a successful computing enterprise is an operating environment enriched with the functionality required for the demands of business computing.

HP 9000 Business Servers provide a powerful computing environment to best address your business critical issues. The foundation begins with our robust operating environment, HP-UX. As HP's UNIX foundation is further enhanced with superior high availability, network and system management, security, performance, distributed computing, and transaction processing, the HP 9000 Business Servers can meet even the most demanding commercial requirements.

A Robust Operating Environment

With IT executives today looking at issues such as downsizing, Open Systems, client/server architectures, cost reductions and increased performance as ways to improve organizational efficiency, UNIX has become the operating system of choice for most companies.

The HP 9000 operating system, HP-UX, provides a flourishing environment within a base of standards for superior interoperability and portability.

HP's commitment to standards
That Open Systems permits interoperability and portability is not just by chance. It can be explained in a single word. Standards.

HP is committed to all the primary industry standards (see figure 2.1). It is through the diligent efforts of these standards committees, with HP as a major player, that UNIX has become the prerequisite for Open Systems. HP-UX has gained a strong presence in the commercial marketplace.

HP-UX is a superset implementation of AT&T's UNIX System V, incorporating the best capabilities of Berkeley 4.3, plus value-added features from HP and the Open Software Foundation™ (OSF). The unique combination of standards and technology within HP-UX improves interoperability, performance and system management, while facilitating adaptation of software to meet the needs of international markets.

An X/Open branded solution

The HP 9000 family is X/Open® base profile compliant for XPG4, the open system portability

HP Demonstrated Commitment to Industry Standards

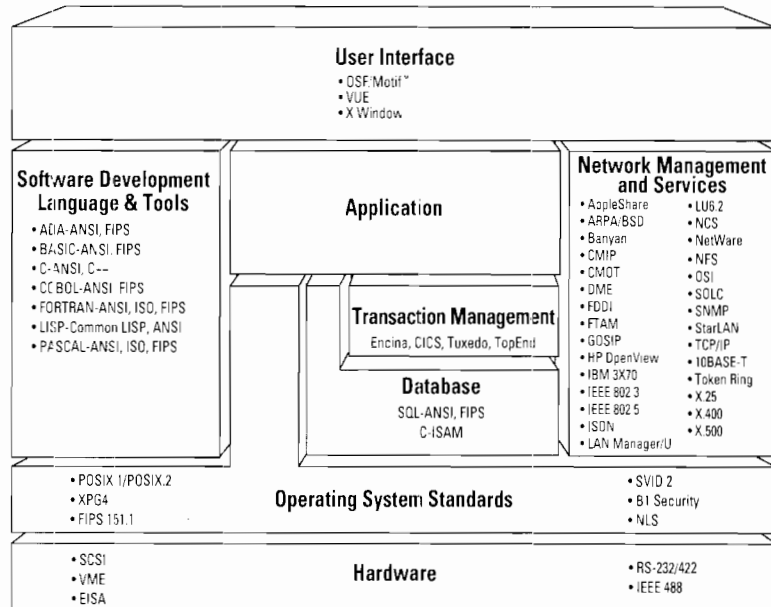


Figure 2.1 HP fortified the HP-UX computing environment, within a base of standards, with enhanced commercial capabilities essential to performance and productivity.

standard backed by OSF, UNIX International (UI), and major computer vendors, including HP, IBM, DEC, NCR, and Sun. HP's support of XPG4, the emerging "all encompassing standard" further exemplifies our commitment to standards.

XPG extends multivendor portability across a broad computing environment to many other systems. So if you need to share data among systems, or move applications, you don't have to rewrite programs, reorganize data, or completely retrain employees.

Versatile operating environment

The power and versatility of HP-UX and its broad range of utilities and communication features also make it excellent for program development. Coupled with tools from HP's leading CASE partners, HP-UX

offers a productive development environment for programmers.

HP-UX is easier to use than other UNIX operating systems, incorporating unique capabilities that enable you to automate procedures and save time.

For example, users with workstations or X-terminals can also take advantage of HP's award-winning Visual User Environment (VUE), a point-and-click desktop manager, built on key industry standards such as OSF/Motif and the X Window system.

A terminal session manager enhances productivity for users connected to HP 9000 Business Servers via ASCII terminals or PCs. Users can participate in as many as ten concurrent sessions—which might include access to applications on the host, a mail session, a word-processing session, a database session, and more.

* X/Open is a trademark of X/Open. Company Limited in the UK and other countries

To save you further time and trouble, integrated Series 800 Business Servers arrive with the operating system preloaded, enabling the server to start up automatically during system installation.

HP-UX localization allows worldwide implementation

HP systems work wherever you do. Our HP-UX products support a wide range of languages, including French, German, Italian, Spanish, and major Asian languages, such as Japanese, traditional and simplified Chinese, and Korean.

HP's Native Language Support (NLS) provides the tools you need for developing international software. NLS supports multiple languages, enabling application developers to localize software for multiple national markets quickly and easily. OSF adopted NLS as their cornerstone for internationalization technology.

Optimized Commercial Processing Performance

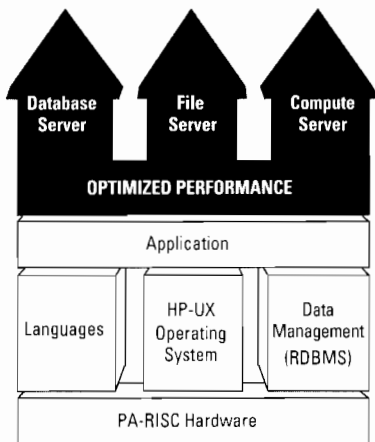
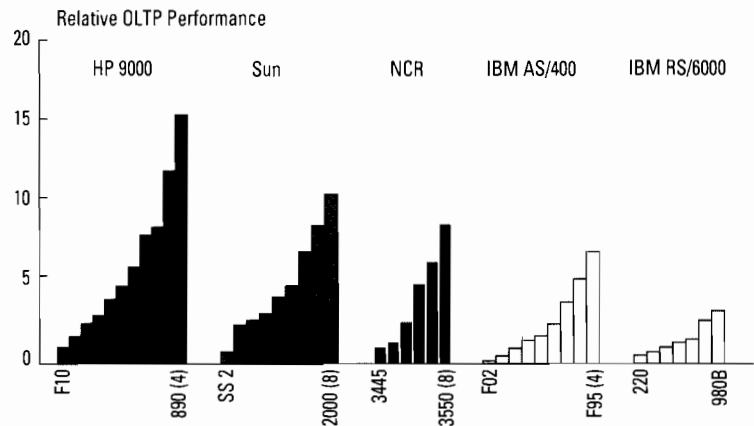


Figure 2.2 HP 9000 Series 800 Business Servers integrate performance enhancements at every level of the environment to give you superior database server, file server, and compute server performance.

Industry-Leading Transaction Performance



Note: Performance based on published benchmarks and OLTP estimates. Note: (N) = number of processors

Figure 2.3 The above chart shows HP as the only major vendor that offers a single coherent platform spanning from desktop to datacenter.

Servers with Unmatched Performance

PA-RISC and HP-UX are highly tuned to provide outstanding performance as a database server, as a file server, and as a compute server. This unmatched performance across these server environments is validated through industry-standard benchmarks designed to allow you to make appropriate comparisons between systems.

As a database server, the HP 9000 excels at both commercial OLTP and batch processing. HP's performance leadership is evidenced by both the TPC-A and TPC-C benchmarks for OLTP and TPC-B for batch. Based on real commercial applications, the TPC benchmarks are complete system-level benchmarks that exercise all system components. TPC benchmarks and OLTP estimates demonstrate the HP 9000 Series 800 Business Servers' far broader range of commercial performance than IBM, Sun, or NCR systems

(see figure 2.3). In fact, results show that HP high-end systems are three times more powerful than the largest RS/6000, AS/400, or SPARCserver systems.

HP systems are also excellent choices as file servers. LADDIS, a new benchmark that measures Network File System (NFS) server performance demonstrates HP's leadership. LADDIS emulates a software development environment with a heavy NFS workload. Like TPC-A, the HP 9000 has the industry's best LADDIS performance for any system available today.

As compute servers, HP systems also shine. Benchmarks such as SPECint92 and SPECfp92 show HP's strong performance in integer and floating point environments, respectively.

Thus, whether you need a database server, a file server, a compute server, or all three, the HP 9000 Series 800 Business Servers can provide you with the highest performance available.

Leading Distributed Computing Solutions



Many businesses are finding that traditional centralized computing systems are not able to keep pace with their business requirements. Furthermore, newest technological advances of mainframe power at the desktop, and easier to use desktop software allows users to be more productive and responsive in distributed computing environments. Thus, IT managers are leveraging this power by turning to distributed systems to better map their business needs to their IT infrastructure, while gaining significant competitive advantages.

The Series 800 provides a solid foundation for distributed, client/server applications in an open environment (see figure 2.4). HP's Distributed Computing Environment (DCE/9000) is the industry's most comprehensive implementation of the Open Software Foundation's (OSF) DCE suite.

HP DCE/9000 provides a high-quality, fully-functional, standards based framework to develop, administer, manage, and use distributed applications. In addition to a robust and high performance offering, HP DCE/9000 also offers industry leading development, debugging, and management tools as well as comprehensive support, training, and education.

With DCE/9000, users can have enterprise-wide, fully distributed applications with security, resource management, and file sharing handled transparently and automatically.

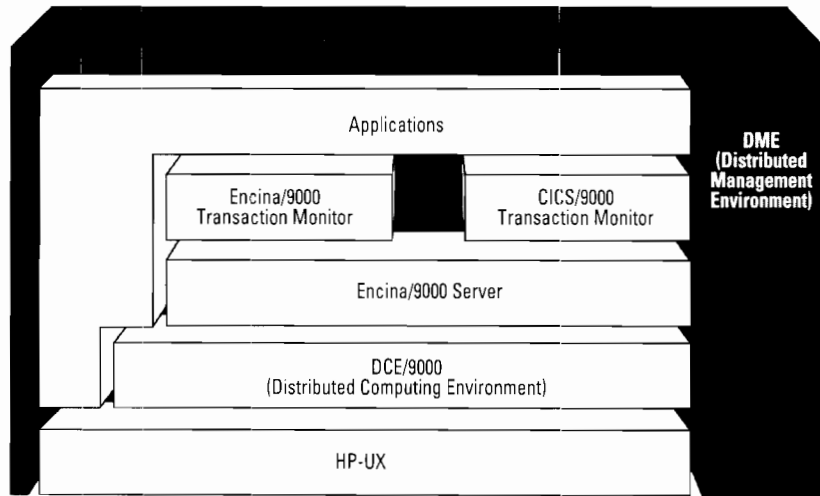


Figure 2.4 These cornerstone technologies provide a foundation for HP's distributed client/server architecture for HP-UX.

Robust Transaction Management

In addition to providing a solid platform for DCE based applications, HP is enhancing its distributed computing solution with complementary OLTP products. Distributed OLTP computing environments can be greatly enhanced with the use of transaction processing monitors that increase data integrity and system performance. It should come as no surprise that the industry's leading TP monitors are all available on the HP 9000 platform.

Encina/9000

HP provides the Encina[®] transaction manager for data integrity in heterogeneous distributed OLTP environments. Encina/9000 is a breakthrough technology in several ways. While distributed processing is not a new concept, data integrity across *different* databases and hardware is new. And, HP's Encina offers this flexibility within a distributed multivendor environment.

What's more, Encina/9000 offers this flexibility on a foundation of standards-based DCE services.

CICS/9000[®]

CICS is the dominant transaction monitor in traditional IBM mainframe environments and has been licensed to HP by IBM. IBM chose HP as the first non-IBM platform for CICS because of HP's leading market position in Open Systems.

CICS/9000 will allow the many businesses with existing CICS applications and expertise to easily migrate and enjoy the open flexibility of the HP 9000 Series 800 platform. CICS/9000 leverages current investments in applications and people.

Additional transaction processing solutions

USL's Tuxedo System/T[®] and NCR's TopEnd[®] transaction processing monitors are also available for the HP 9000 through Independent Technologies, Inc. Integris and VSystems also offer CICS emulators for the HP 9000 Business Server.

Powerful System and Network Management

As computing power continues to migrate from centralized to distributed environments towards client/server environments, the need to simplify network and system integration becomes increasingly essential. To address this new paradigm, HP provides a comprehensive set of integrated systems and network management tools called HP OpenView.

The unique and powerful features of OpenView have earned this product recognition as one of the top 20 products of the past 20 years.* The award recognized HP OpenView's significance in setting a new direction for the industry and establishing a de facto standard. With industry endorsements from OSF, IBM, Groupe Bull, and over 100 others, it brings together the products, partnerships, and expertise needed

to manage performance, backup, and operations control.

HP system and network management tools are designed to facilitate corporate enterprise IT planning and resource allocation.

HP OpenView: The Quickest and Smoothest Path to DME

OSF's Distributed Management Environment (DME) will answer a huge challenge by providing a unified approach to managing systems, networks, and applications in multivendor, heterogeneous networks. Components of the HP OpenView Distributed Management Platform are the key components of DME and allow you to purchase with confidence, solutions based on DME-selected technologies today.

The HP OpenView Network Management Architecture (NMA), for example, provides a modular distributed network management solution for managing an entire network of distributed multi-vendor computers and devices (see figure 2.5).

HP OpenView NMA features include:

- Management of TCP/IP, SNMP, Novell, and OSI networks
- An open application development environment, ensuring interoperability for today's and tomorrow's products
- An advanced, yet intuitive graphical user interface using OSF/Motif
- Multivendor flexibility, with HP OpenView available on HP-UX, MS-DOS[®], IBM, Sun, and Groupe Bull systems.

HP OpenView Framework: The Quickest and Smoothest Path to DME

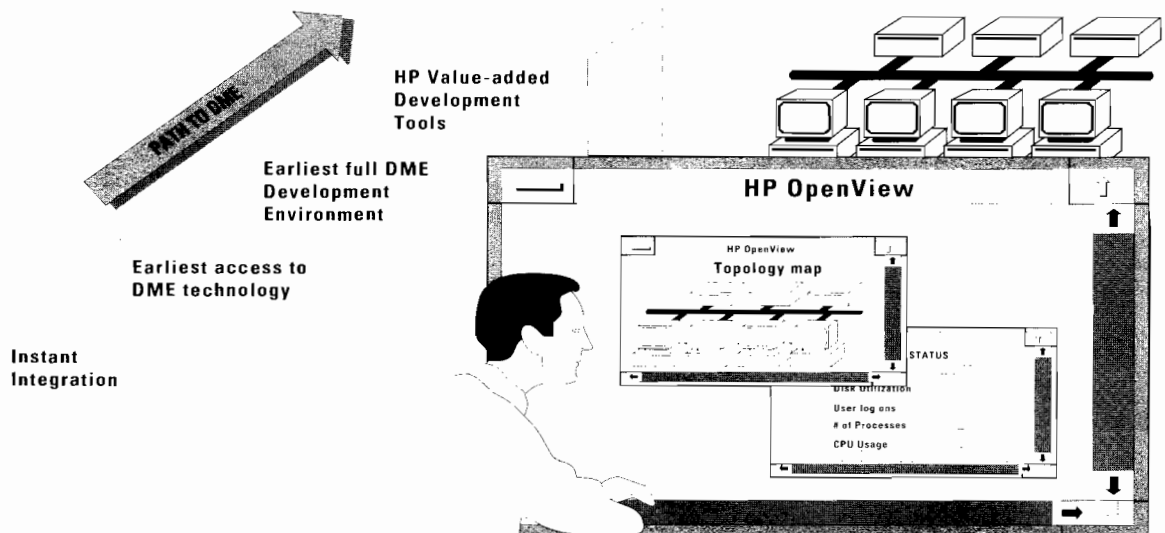


Figure 2.5 Starting with HP's OpenView Framework will pave the way to a fully distributed network management solution. HP's comprehensive network and system management capabilities from HP OpenView handle everything from simple, local-area networks to complete enterprise networks.

* Data Communications, DataCom User Survey, September 1992

HP OpenView

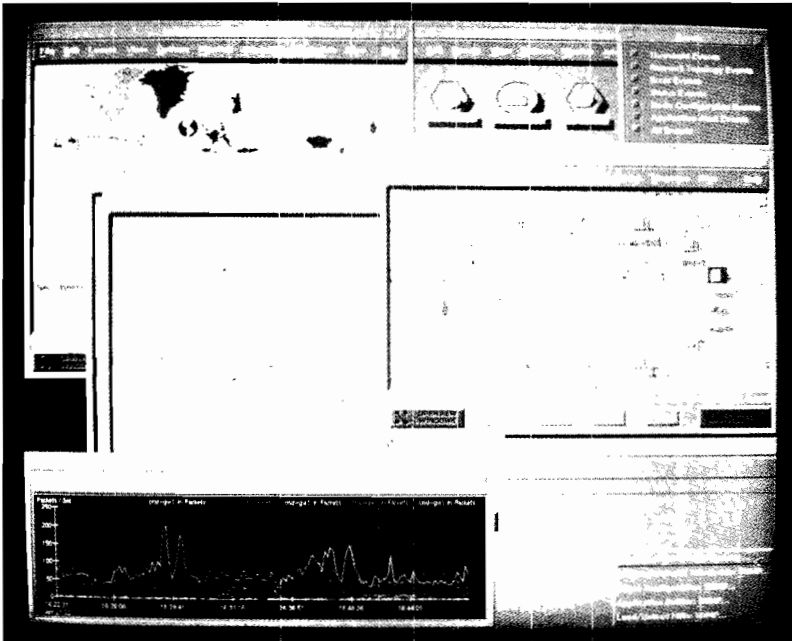


Figure 2.6 HP OpenView Windows-based screens simplify system and network management.

Powerful local network management

The HP OpenView Network Node Manager, which works on the Simple Network Management Protocol (SNMP) standard, enables a system administrator to configure, troubleshoot, and monitor performance for a network of TCP/IP nodes—all from a central workstation. The administrator can retrieve information from all TCP/IP hosts or devices on the network and display a network map, events, trends, and statistics graphically.

HP OpenView's platform supports many applications, including OpenSNA from Peregrine Systems, which provides direct management of SNA networks from HP OpenView.

Other HP OpenView products extend the power, resources, and security of HP 9000 Business Servers to PC users on local area networks.

With all of these capabilities available on an economical HP 9000 Series 800 Business

Server, instead of a mainframe, you can reduce your overall network management expense.

Centralized enterprise network management

The HP OpenView suite of network management utilities lets you use a Series 800 Business Server to host multiple network management applications. As a central point of administration, the HP OpenView platform integrates and routes management information transparently across the network, over routers and bridges, and stores it for immediate or deferred analysis or reporting.

Using dynamic network mapping to locate and display all devices on the network, system administrators can maximize network availability, isolate and correct problems, and dramatically reduce administration time.

Graphical user interface provides consistency

HP OpenView incorporates a graphical user interface based on OSF/Motif. By providing an open view of the entire network, including all types of vendor and network elements, this interface enables the network manager to see the interaction between multiple components of the network and control different subnetworks through multiple windows and multiple displays as desired (see figure 2.6).

“HP excelled not just in price/performance but in quality of support, integration, and communications expertise.”

—Ken Richardson, Technology Infrastructure Unit Project Manager, United Kingdom Post Office, (United Kingdom Post Office migrated from multiple AS/400's to the Series 800).

Managing Multivendor Distributed Systems

HP OpenView gives you a foundation for complete system management. Using HP OpenView OperationsCenter, a data center operator can manage networked systems from a single console so remote sites can run completely unattended. The HP OpenView OperationsCenter handles the monitoring and control of distributed operations through centralization, integration, and automation of these management activities. Thus, efficient operation of large distributed computing environments is easily managed with the HP OpenView OperationsCenter (see figure 2.7).

Software distribution made easy

HP OpenView Software Distributor facilitates single point software deployment for client/server distributed environments. This centralized management provides distributed installation, updates, and removal of software across a network. The result is easier software distribution which minimizes the total cost of software.

Obtaining Timely Performance Information

To maximize productivity from your existing hardware, software, and staff, you need concise, timely performance management information to help you anticipate problems before they arise and plan for future applications with confidence.

HP performance solutions reduce information overload. Instead of burdening you with reams of performance data, they provide concise reports with meaningful recommendations. And presentation-quality graphic overviews help you analyze situations quickly and easily.

Monitoring and diagnostic solutions resolve performance problems

HP's on-line performance monitoring and diagnostic products help you isolate and resolve system performance bottlenecks.

HP GlancePlus/UX gives you the system activity information you need to quickly identify and restore satisfactory service levels when occasional problems occur.

HP's Powerful OpenView OperationsCenter Easily Manages Distributed Operations

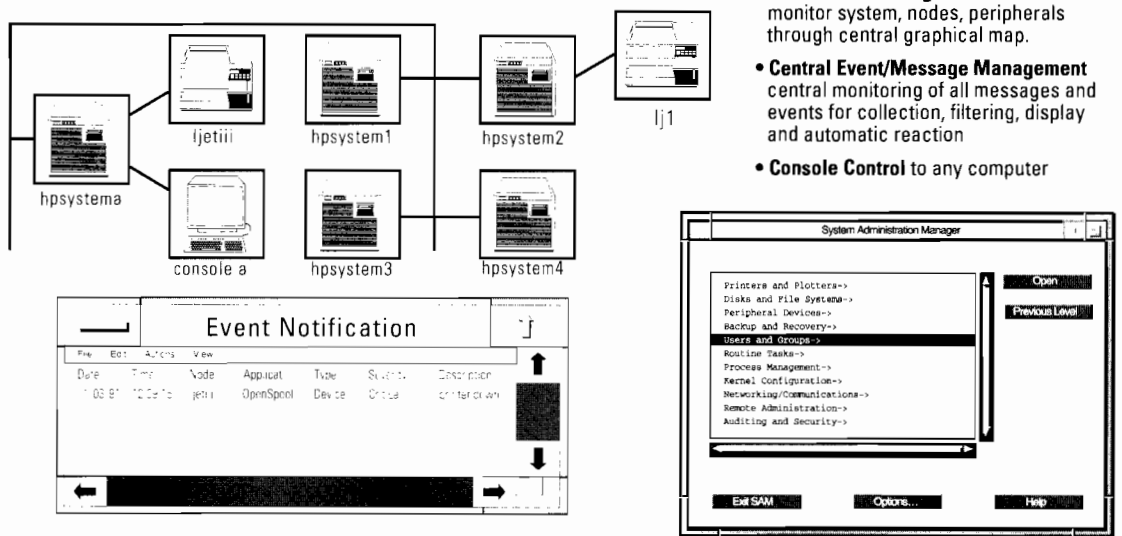


Figure 2.7 Management of distributed computing environments is simple and efficient with HP's OpenView OperationsCenter, with a centralized approach to monitoring, event management, and console control.

HP Performance Monitoring Solutions

HP's diagnostic solution, HP LaserRX/UX, combines historic performance data collection with graphic analysis software to help you analyze current and past system bottlenecks, manage service levels, and control resource costs.

Capacity planning with confidence

With HP capacity management solutions such as HP RXForecast, you can analyze workloads, forecast system resource requirements, and predict future performance.

Enterprise performance management

HP PerfView provides centralized performance management of distributed systems using management-by-exception techniques. Both graphic and textual notification appear on the HP OpenView map. In addition, the graphical user interface can be used to characterize and isolate performance problems. If you require more detail, HP GlancePlus can be used within the same user interface.

HP PerfView, together with HP's other performance management products, helps you to identify and correct existing and potential performance problems before users notice.

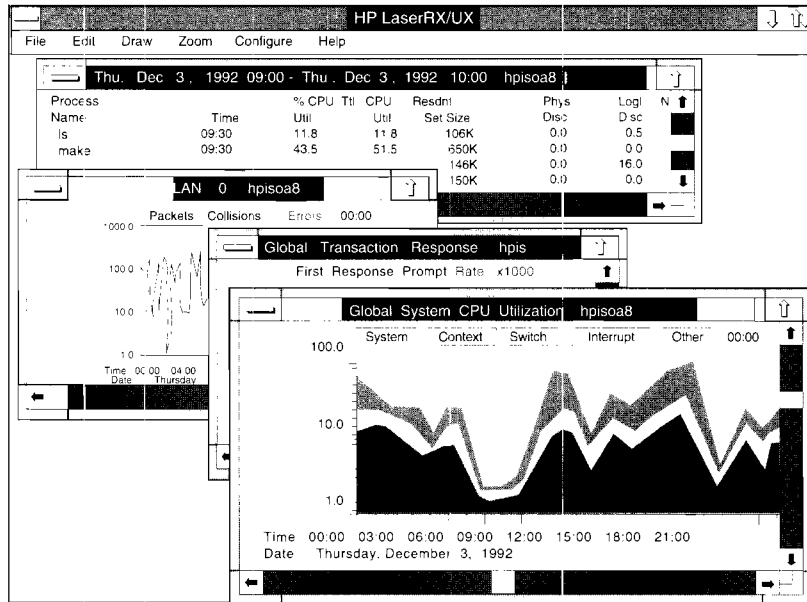


Figure 2.8 Interactive performance monitoring software can provide quick and easy access to dynamic information regarding system performance and resource utilization.

Cost-Effective Operations Control

HP's innovative and standards-based spooling software, HP OpenSpool, enables users to easily perform complex local and remote spooling procedures (see figure 2.8). OpenSpool is the only commercial spooler available based on MIT's Palladium Toolkit selected by the OSF for DME. Together with HP LAN Manager/X, or HP NetWare/9000, HP OpenSpool provides networked spooling for PCs.

Versatile Backup Facilities

To protect data against loss, reduce the system manager's archiving responsibility, and give users more control over archiving and retrieval of files, HP offers a robust set of backup solutions.

HP OmniBack is a full-featured and versatile central and network backup system that can automate backup operations across a distributed network.

"Hewlett-Packard has learned from its history of extremely high customer satisfaction what users need and want in a commercial system."

—Aberdeen Group

High-Performance Backup with HP OmniBack/Turbo

System administrators can manage backup from any of the nodes on the network. HP OmniBack also provides sophisticated journaling and scheduling capabilities.

HP OmniBack/Turbo is the industry leading high performance backup solution with a backup rate of up to 15 to 20 Gbytes per hour. Rewritable optical library systems support lets you perform unattended backup and recovery of up to 2000 Gbytes of data (see figure 2.9).

Powerful System Administration

As systems grow in complexity and size, simplifying system administration becomes more essential. To manage HP 9000 Business Servers, HP's powerful Motif-based System Administration Manager (SAM) enables you to perform system administration tasks quickly and easily.

SAM's powerful features include:

- Context-sensitive help—simplifies operation for novice system administrators
- Information validity check—protects against potentially harmful errors
- Customization/extensibility—enables system administrators to perform tasks specific to their environment.

Complementary HP Channel Partner Solutions

The combination of both the HP OpenView portfolio and the HP Channel Partner solutions provides our customers the industry's broadest choice of solutions for network and system management.

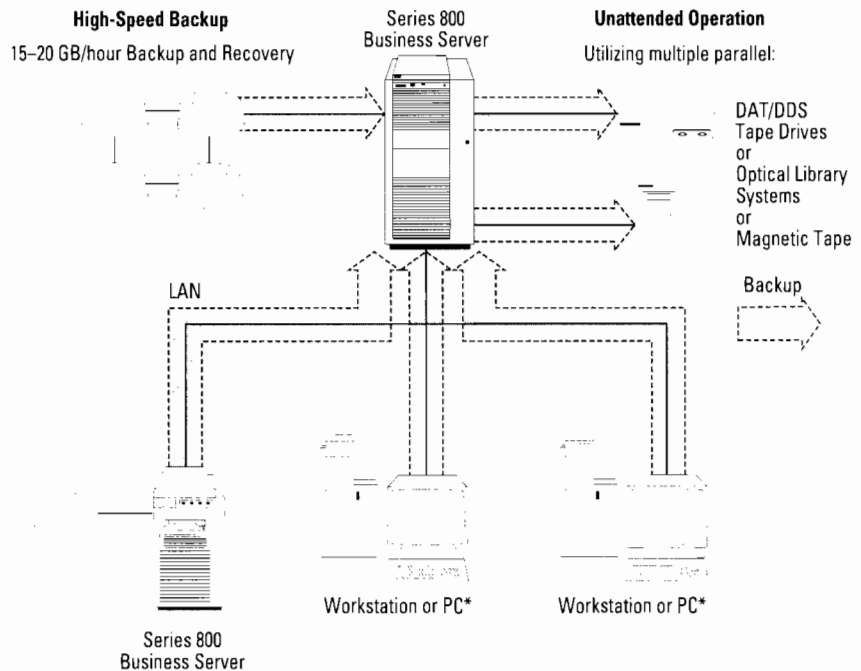


Figure 2.9 Our versatile HP OmniBack/Turbo solution delivers the high performance backup and recovery capability you need.

Computer Associates

data center management

Through HP's strategic partnership with Computer Associates (CA), the largest software vendor in the world, the HP 9000 Series 800 family has become the first UNIX platform to take advantage of CA's rich data center systems management solutions, CA-UNICENTER for UNIX.

CA's UNICENTER for UNIX is a comprehensive, integrated solution that addresses fundamental management areas, including security, control and audit; automated storage management; automated production control; performance management and accounting; and data center administration.

Tivoli Systems distributed system management

The HP 9000 platform coupled with the Tivoli Management Environment (TME) can help customers dramatically reduce the cost and complexity of managing distributed computing networks of workstations and servers from HP and other vendors. TME's object-oriented technology, applications, and graphical-user interface simplifies and automates the time-consuming administration and management tasks for complex multivendor distributed environments.

* PC backup requires Quest's Plan-B software

High Availability and Security

HP 9000 Business Servers bring traditional UNIX capabilities up to commercial standards, with a complete line of high-availability solutions ranging from high-quality, reliable systems to fault-tolerant computing systems.

HP's complete line of high availability and security solutions meet your mission-critical needs for data security and system availability:

- Security solutions provide added system security, combining flexibility with accountability to safeguard your data.
- Power-fail auto-restart, disk arrays, transparent disk mirroring, and automatic system recovery capabilities ensure high system and data availability for a wide range of environments.
- Fault tolerance is available for uninterruptable on-line processing and maximum availability.

At HP, we recognize that in today's distributed client/server environments, data may be distributed and accessed across a wide variety and geography of systems. This makes the systems availability and security of data more important than ever.

Enhanced data availability

Processing mission-critical applications efficiently requires systems with high availability and data integrity. Unplanned downtime can impact a company's return on investment (ROI) with missed business opportunities, delayed or wasted labor, and disruption to schedules. HP 9000 systems answer the availability challenge with a choice of solutions to protect your investments in existing hardware and software (see figure 2.10).

HP's Reliable Computing Solutions

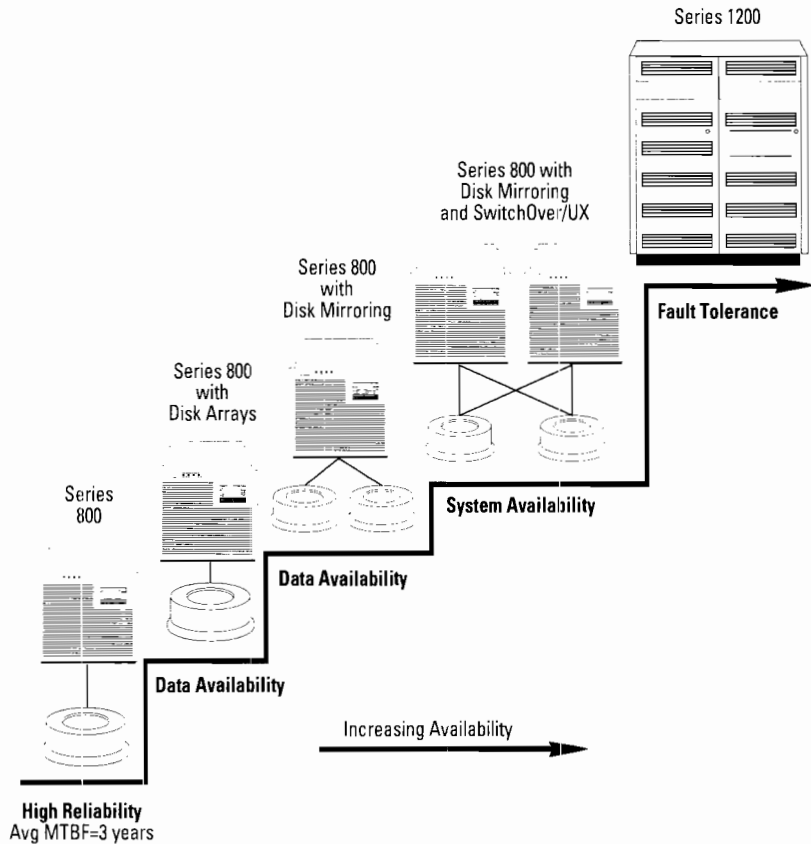
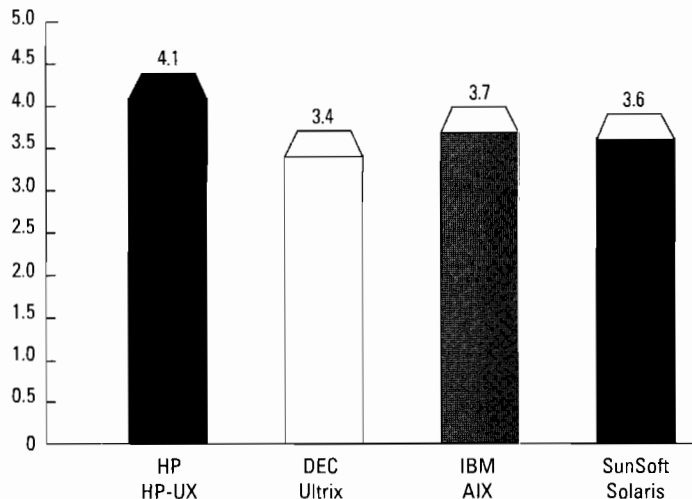


Figure 2.10 HP lets you match your availability requirements with a variety of reliable computing solutions.

Industry-Leading Operating System Reliability



Based on user ratings of UNIX Systems, Datapro 1992

Figure 2.11 As independent studies show, HP leads the industry in reliability for UNIX implementations.

HP Provides Effective Automatic Recovery Solutions

Start with HP's industry-leading, highly reliable Series 800 Business Servers, and increase system availability within the same server family as your needs grow. Or, for continuous operations, choose from HP 9000's robust fault-tolerant Series 1200 family.

Highly reliable systems

HP's leading-edge Precision Architecture RISC (PA-RISC) and advanced VLSI technology dramatically increase reliability. The mean time between failures (MTBF) for systems averages over three years. And uptime typically exceeds 99.7 percent. As a result, HP 9000 Business Servers keep your business running smoothly.

HP-UX, the industry's most reliable UNIX-based computing environment, also contributes to highly reliable systems (see figure 2.11). Intensive and thorough testing before all major releases of our HP-UX operating system ensures that customers can develop and run applications with confidence.

Powerful recovery capabilities prevent data loss

To eliminate data loss from power interruptions, HP offers power-fail recovery products that preserve essential data through battery backup, and then automatically restart operation after power is restored.

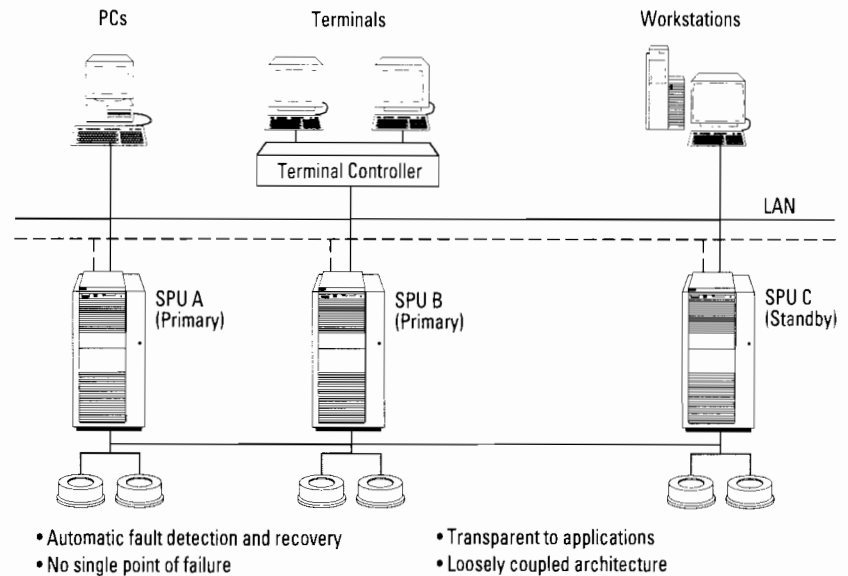


Figure 2.12 HP SwitchOver/UX significantly decreases unplanned server downtime due to processor related problems.

Increased data availability

HP's Disk Arrays protect data and allow uninterrupted access to data in the event of a disk failure. A failed disk drive may be replaced online and the data automatically restored to the new drive without user interruption.

Disk mirroring, available with HP's MirrorDisk/UX, prevents data loss by maintaining up to three copies of data on separate disks. That way, your data is still accessible after any single disk or controller failure. And you can perform on-line backups to maximize uptime.

What's more, each of these capabilities is transparent to the software running on the system.

Automatic system recovery increases uptime

For those mission-critical applications requiring nearly continuous uptime, HP offers an automatic system recovery capability called HP Switchover/UX. You can run mission-critical applications on a primary system, while a standby system, which can also be used for less critical applications, monitors the primary system's health. If the primary system should fail, the standby system takes over automatically (see figure 2.12). A single standby system can monitor up to seven primary systems. Again, these capabilities are transparent to the software running on the system.

"The Hewlett-Packard Business Servers provide us with a very reliable platform for our business and technical applications."

—Klaus Stadler, Manager, Technical Development, BASF, November 1991

Enhanced Security for Commercial Environments

HP 9000 Series 1200 fault-tolerant systems

For demanding on-line transaction processing applications, HP offers a scalable high-performance fault-tolerant solution designed for commercial environments.

This solution allows uninterrupted processing and on-line CPU, disk, and input/output expansion—critical features for businesses that cannot afford anything less than 100 percent computing availability.

Increased information security

HP's enhanced operating system effectively addresses commercial security requirements. HP-UX incorporates features such as auditing, a protected password database, and extensive documentation to help users and systems administrators maintain a secure operating environment. It also provides Access Control Lists to give users the flexibility to authorize or restrict file access on a need-to-know basis (see figure 2.13).

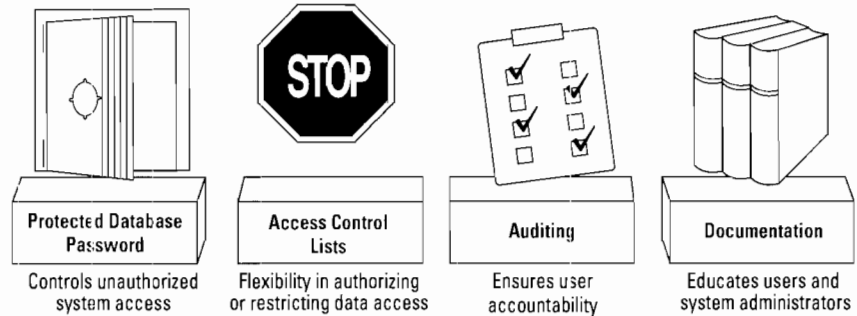


Figure 2.13 HP-UX security solutions provide added UNIX security, combining flexibility with accountability to safeguard your data.

HP-UX is designed to meet the C2 level of security as defined by the Department of Defense (DoD). For customers with more restrictive and complex security requirements, HP provides an enhanced "multi-level" secure version of HP-UX called HP-UX BLS, which exceeds the DoD requirements for a B1 rating.

What's more, security software tools are available that automate the process of identifying and correcting security violations and vulnerabilities in standalone or networked environments. Examples of leading HP Channel Partner Solutions that provide enhanced security solutions for HP-UX include: SecureMax/UX

from DeMax Software, and Security Toolkit from Raxco.

CA-UNICENTER from Computer Associates provides a comprehensive offering which includes a security audit and control module, as well as facilities for all general system administration tasks.

In addition, HP is addressing distributed environment security challenges through its OSF Distributed Computing Environment (DCE) offering.

"The Department's requirement for multiple levels of security on the same system is a high priority, and HP's B-level security, UNIX-System-based solution met our security needs."

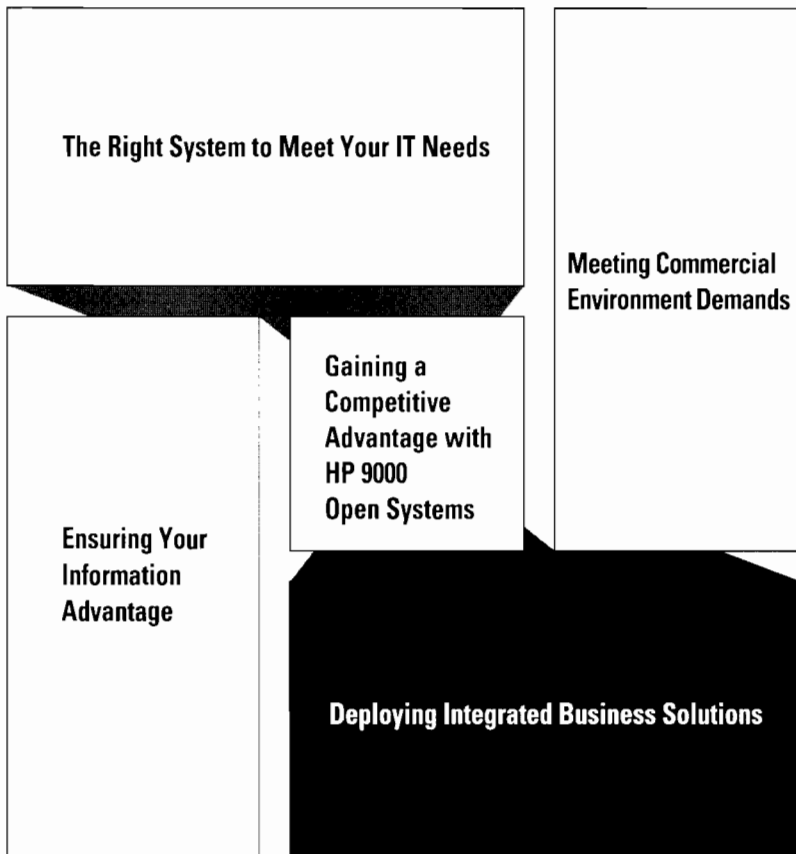
—Tony Skinner, Australian Diplomatic Communications Network Project Manager, Australia Department of Foreign Affairs and Trade

Deploying Integrated Business Solutions

Section 3.

**Best-in-Class
Industry
Applications**

**Superior
Application
Development
Environment**



The HP Business Systems provide a leading technology foundation for implementing a successful IT strategy. Yet it takes the right applications to attain the full payoff of your computing environment.

Your business applications are valuable strategic assets. Because HP understands the critical nature of building and deploying these applications, we offer leading business solutions on our systems, a superior development environment for productive in-house application design, and best in class data management solutions and performance.

Best-in-Class Industry Applications

No single computer company working alone could ever hope to create all the solutions for all markets. To give you a wide array of choices for business solutions, HP has formed strategic alliances with the industry-leading independent software suppliers, systems integrators, and resellers in the industry. Our partners have already recognized the growing demand for Open Systems applications on the UNIX operating system. And we're proud that most software leaders moving to UNIX have chosen HP as their first port.

Currently, we have over 2000 such relationships providing more than 5000 application packages, including applications for client/server environments. You also have access to over 3000 applications for the PICK environment. And the list keeps growing—rapidly.

For example, in the accounting application marketplace, HP has partnerships with the top six leading application vendors: Computer Associates, Dun & Bradstreet Software, Lawson,

Oracle, Ross Systems, and SAP. Also, 5 out of the 10 industry-leading human resource applications run on our platforms. These examples demonstrate how HP, working closely with the industry leaders, ensures that their customers have access to best-in-class commercial solutions. (Refer to pages 8-9 for a partial list of key HP Channel Partners and application categories.)

The strength of HP's value-added business program and market leadership have made us the most attractive system VAR platform in the industry for over five years. As a result, HP is adding new ports of applications for the HP 9000 Series 800 platform at the rate of over 50 per month.

No other UNIX systems provider has as many application solutions for commercial users as HP. Only Hewlett-Packard gives users the best choice in solutions and applications.

Mainframe solutions

Many market-leading solutions, previously available only on proprietary IBM mainframes or DEC systems, can now be found on HP 9000 Series 800 Open Systems. So whether you want to downsize or decentralize your manufacturing, accounting, or other departments to a Series 800 system, you can be confident you'll find the highly recognized, high-quality solutions you need.

The catalyst for industry-leading applications moving to the HP 9000 platform is our industry leading value-added program for HP Channel Partners.

Availability of robust foundation software

Key software partnerships in the area of CASE, system management, and networking enhance Series 800 capabilities to value-added businesses and end users alike. And as the market for client/server applications grows, aggressive programs targeted at Channel Partners will enable them to take advantage of HP's client/server technologies.

"In looking for a strategic Open Systems vendor to form the broadest business relationship we have ever entered, HP was the natural choice. HP is a proven market leader in delivering commercial Open Systems based on a UNIX system."

—Charles B. Wang, Chairman and CEO, Computer Associates

Superior Application Development Environment

Whether your environment is traditional host/terminal or client/server, HP offers a range of choices to optimize productivity for commercial application development. HP's offering includes the industry's top databases, languages and tools, and a set of best-in-class Computer Aided Software Engineering (CASE) solutions.

Close Working Relationships with Top-Tier RDBMS Suppliers

HP's close marketing and engineering relationships with top-tier RDBMS suppliers give you faster availability and higher performing RDBMS releases on the HP 9000 Series 800 platform. These relationships have proved mutually beneficial and have resulted in optimally tuned databases for PA-RISC and HP-UX.

HP supports every leading Open Systems database product in the industry, including:

- ADABAS
- ALLBASE/SQL
- Cognos
- Focus
- Informix
- Ingres
- Interbase
- Oracle
- Progress
- Starbase
- Sybase
- Unify

Best-in-Class Application Development Tools

Tools for building new applications and maintaining existing ones play a crucial role in diminishing a backlog of application projects. For development, HP focuses on helping you manage the productivity and predictability of the software development lifecycle. HP offers a set of well-known, best-in-class commercial CASE tools categorized by development activity (see figure 3.1).

Leading Commercial CASE Solutions

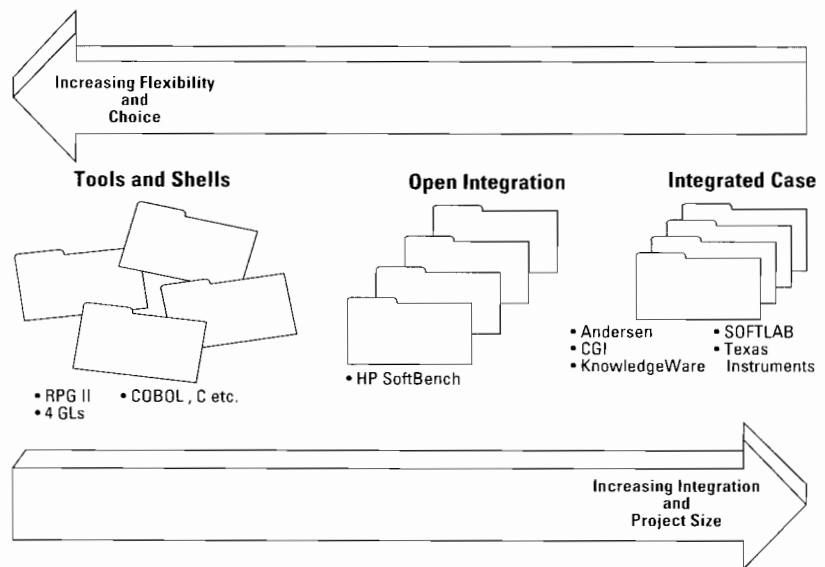


Figure 3.1 HP's comprehensive commercial CASE offering positions HP 9000 Business Servers at the forefront of the commercial UNIX marketplace.

Tools and shells

Tools and shells are used for porting code from other platforms (Ex. from RPG to C), writing basic code, or for simply running existing code. This environment includes languages and 4GLs. HP's languages offer a high level of standards-compliance and code optimization for efficient run-time performance on our PA-RISC architecture.

The HP 9000 Series 800 supports all major languages including:


- (Micro Focus) COBOL/HP-UX based on MicroFocus COBOL/2
- C/ANSI C
- C++/HP-UX
- HP Pascal/HP-UX
- FORTRAN 77/HP-UX

Industry-leading 4GLs

HP supports 4GL tool environments from Cognos, Focus, Informix, Ingres, Oracle, Progress, Sybase, Unify, and various other independent tools vendors.

Object-oriented tools

HP offers several alternatives for customers moving to an object-oriented paradigm. In addition to HP's C++ object-oriented language, we support NeXTSTEP from NeXT, designed to increase programmers' productivity. HP and NeXT are providing an open client/server solution for object-oriented enterprisewide computing.



What's more, HP is the only major vendor with a commercial, object-oriented database on the market today. OpenODB is an open object-oriented database for large, multi-user environments that can integrate any data stored anywhere on the network.

**Open integration environment:
HP SoftBench**

HP SoftBench is a windows-based tool integration framework, which creates a unifying environment for developing applications in C, C++, or COBOL. This product, combined with SoftBench services and third-party solutions, addresses the needs of commercial UNIX developers. SoftBench has been endorsed throughout the industry by leading CASE vendors, such as Texas Instruments, KnowledgeWare, and CGI. Moreover, IBM has licensed this technology as its commercial development environment. Consequently, these endorsements have reinforced SoftBench as the de facto industry standard for application development frameworks.

HP SoftBench integrates a variety of existing development software tools without modification. These tools assist in the construction, test, and maintenance phases of the software life cycle, while the integration platform provides the communication framework for ISV tools covering other phases of the cycle. HP SoftBench allows a programmer to pick and choose from among a broad range of solutions incorporating the latest software development technology.

Integrated CASE

HP supports a fully-integrated CASE environment for commercial development through leading products on the market from Andersen Consulting, KnowledgeWare, Texas Instruments, CGI Systems, and Softlab.

These solutions automate the entire application lifecycle, linking tools and data across the life-cycle stages.

Andersen Consulting

Andersen Consulting has selected HP as the first UNIX target platform for their integrated-CASE product, FOUNDATION for Cooperative Processing. This is the first full life-cycle CASE that can be used to develop and generate complete client/server applications.

KnowledgeWare

ADW from KnowledgeWare is one of the largest installed systems for commercial application development. ADW now supports the deployment of new or existing applications on HP 9000 Series 800 Business Servers. ADW Workbench provides for planning, analyst, design, and construction.

Texas Instruments

IEF, from Texas Instruments, is one of the leading integrated CASE (I-CASE) software solutions available today. Developers can use an HP 9000 Series 700 or PCs for a software planning and design workstation. The HP 9000 Series 800 can be used for the repository, providing a complete HP development environment. IEF supports C and COBOL code generation and hooks to Oracle and Ingres RDBMS. Support for other RDBMS transaction monitors will be available soon.

“Oracle uses the HP 9000 as our UNIX development environment because it is our best selling multiuser UNIX system and provides the capabilities our users demand.”

—Jerry Baker, Sr. VP, Products Division, Oracle Corporation

CGI Systems, Inc.

CGI Systems, a premier integrated-CASE vendor, allows developers to take advantage of the Series 800 as a development or target environment. CGI's product, PACLAN/X, supports the Oracle and Informix RDBMS. CGI's target platform support is one of the most comprehensive.

Softlab

Softlab, another premier integrated-CASE vendor, offers Maestro II, which supports Series 800 Business Servers with PC clients. With Maestro II, the Series 800 can be used as a development and target environment.

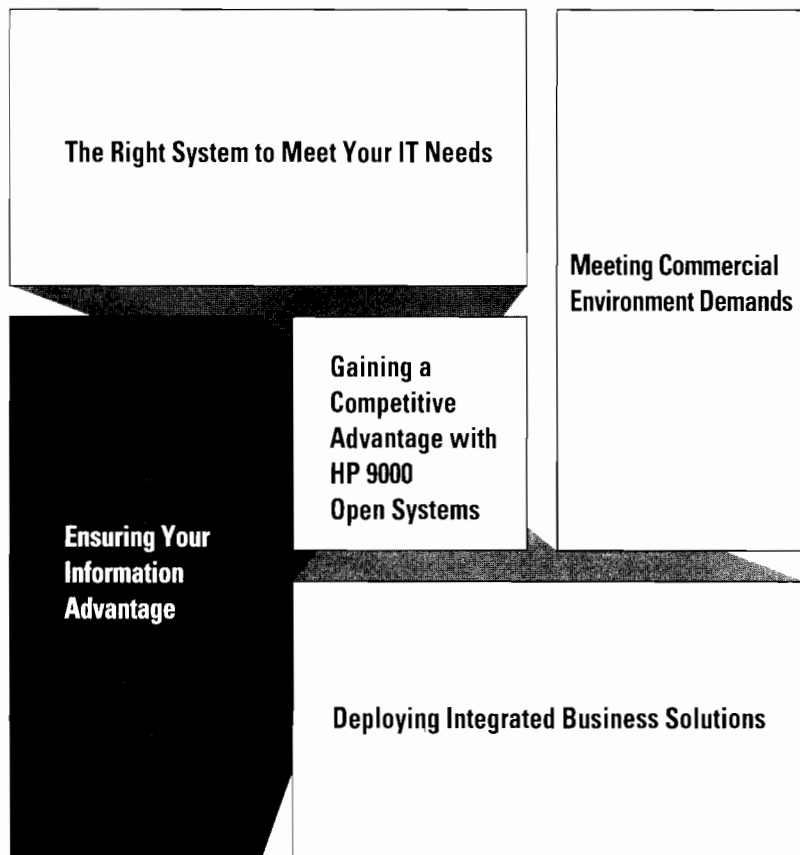
Ensuring Your Information Advantage

Section 4.

The Mainframe Alternative for Data Center Computing

Client/Server Computing

Premier Customer Service and Support



Hewlett-Packard's unique combination of open computing products is unsurpassed in the industry. However, in order to ensure that your business goals are met, the key is a creative and successful implementation.

Although the hardware, software, and networking products are critical components of your information system solution, it is the creative implementation of this technology that dictates your success or failure in achieving a competitive advantage from your technology investment. Also, your ability to have expert support and services accessible anytime of day and anywhere in the world is crucial to your ongoing operations.

HP will assist you in the development of a leading-edge commercial implementation to ensure your information advantage.

Among a wealth of programs offered by HP are two which address the fundamental computing paradigm shifts taking place today: one, the migration toward a more cost-effective alternative from proprietary mainframes and two, the move toward an efficient distributed client/server environment. Furthermore, HP assures your successful execution with round-the-clock world-class services and support.

The Mainframe Alternative for Data Center Computing

Demands of the 90's have forced businesses to look for ways to re-engineer their operations for greater efficiency and competitive advantage. The migration of applications from large proprietary mainframes to flexible, cost-effective and distributed Open Systems has become the most effective response in addressing these needs. The prerequisites for moving these mainframe data centers to Open Systems include robust performance, commercial functionality, and quality support.

"There is no way you can spend over a million dollars on mainframe hardware and software and expect to stay competitive."

—Dr. Graham Free, GM of Information Services, Hamersley Iron.

HP 9000 Business Servers fulfill all these requirements, with the added benefits of offering mainframe-class solutions in an open environment without mainframe-class costs. Thus, HP is truly the open alternative to mainframe computing.

Mainframe-class performance—at a fraction of the cost

HP's high-end Series 800 Corporate Business Servers use HP's PA-RISC and symmetric multiprocessing to achieve true mainframe-class commercial throughput with performance and price/performance advantages that will continue long into the future.

In addition, Series 800 Business Servers are available at a fraction of the price, with significantly lower support costs and less floor space requirements than traditional mainframes. As a result, most companies investing in mainframe alternatives typically achieve at least 50 percent reduction in the overall cost of ownership.

Commercial functionality for the data center

HP's full complement of commercial features meets the needs of today's data centers. Companies with mission-critical information systems can take advantage of HP's complete data center offerings (see figure 4.1).

Everything You Need for Data Center Computing

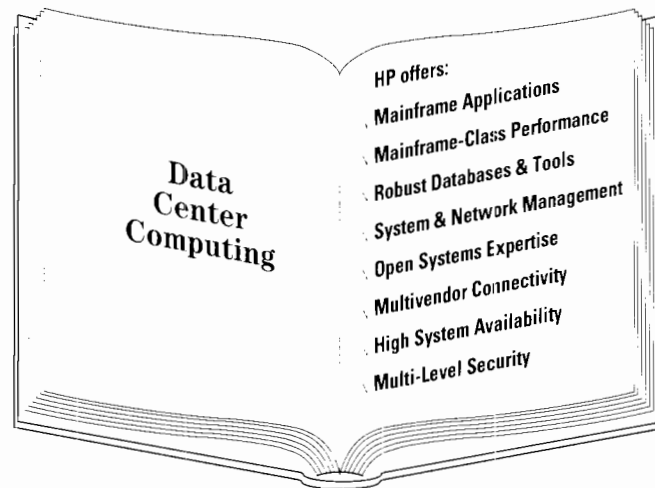


Figure 4.1 HP 9000 Series 800 Business Servers have the mainframe applications, performance, and commercial functionality for data center computing.

"You go to someone and say, 'I've got a computer system that costs one-fifth of an IBM system,' and you get their attention."

—Robert Herwick, Analyst, Hambrecht & Quist

Moving Applications from Mainframes to Open Systems

HP technical expertise can get you from here to there

Often, the biggest question about moving your data center to Open Systems is where to begin. That's where HP's Mainframe Alternative Program can assist you. We have years of experience building and implementing Open Systems. And we have the comprehensive support and range of services your business needs. HP understands the transition process and can ensure a smooth migration that will help you protect your investments in existing data center applications.

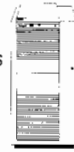
Choosing a first step:

HP's Mainframe Alternative solution uses innovative products and concepts coupled with industry-leading software to help you move to an Open Systems environment. Every solution is flexible, modular, and customized to meet your specific needs. We have identified several methodologies to get you started. (See figure 4.2)

Transfer

A simple cost-effective transfer of your existing applications to an HP 9000 Business Server protects your investment in user training and allows you to offload system resources. For example, you could offload your application development function to an HP 9000 and still continue to use the development tools with which you're comfortable from past development on mainframes.

- American Software
- CINCOM
- Computer Associates
- Cyborg
- Dun & Bradstreet
- FOCUS
- Lawson Associates
- Legent
- PeopleSoft
- Pilot EIS
- SAP
- SAS
- Software AG
- Walker Interactive



- Anderson FCP
- CGI
- CINCOM
- Cognos
- Gupta
- IBI (Focus)
- Infocentre
- Informix
- Ingres
- Oracle
- Powerhouse
- Softlab
- Software AG
- Sybase
- TI/IEF
- Unify

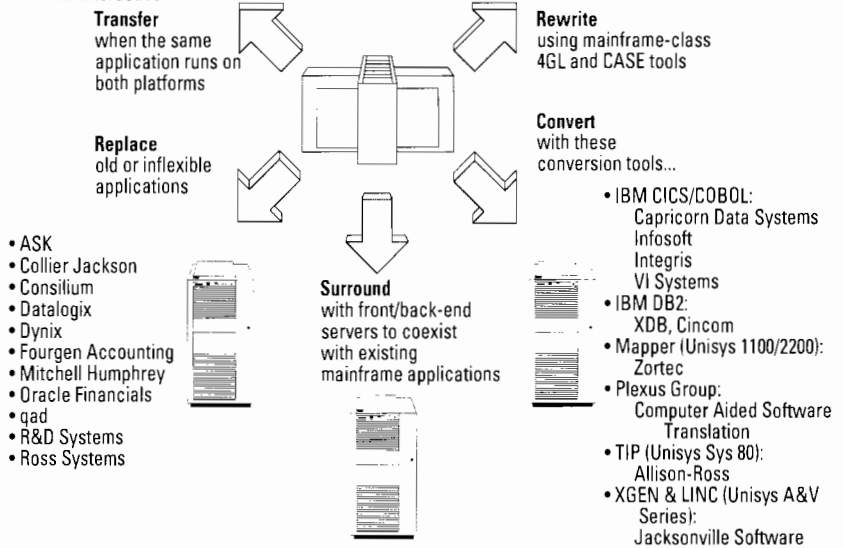
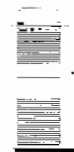


Figure 4.2 HP helps protect your investments in existing data center applications.

“HP has become a leading supplier of UNIX systems to mainframe customers on the strength of its broad line of RISC computers, respected UNIX program, quality and customer support.”


—UNIXworld, June 1992

**Replace**

State-of-the-art third-party packages like Oracle Financials, Datalogix, and SAP, etc. are ideal solutions on the HP 9000 to replace outdated mainframe applications that aren't meeting your demanding business needs.

Rewrite

HP offers best-in-class 4GLs and CASE tools to help you develop customized applications that will ensure the leading edge over your competitors.

Convert/Emulate

HP has developed partnerships with many conversion tool vendors who will convert or emulate your existing custom-written applications to the HP 9000 operating environment. Your investment in applications and training is protected, and you can immediately take advantage of a low-cost, high-performing solution.

Surround

HP's wide range of mainframe communications products provide the capability for HP 9000 Business Servers to seamlessly coexist with your existing mainframes. For example, use an HP 9000 Business Server as a front- or back-end application server to your mainframe. With the added muscle of an HP 9000, you can dramatically improve productivity by adding in new functionality to existing applications.

HP—The right choice

Regardless of the mainframe alternative path you choose, HP has the data center experience to assist you in obtaining your information technology goals. HP 9000 Business Servers provide all the power you need to manage large data center applications and all the capabilities you demand in multi-vendor environments. For mainframe performance at a fraction of the cost, there's only one solution—the HP 9000 Business Server family.

“The RISC processors HP is coming out with are so fast and powerful that, for the money, you can't justify maintenance costs on larger systems anymore. You just gotta change. Otherwise, you are throwing your money away.”

—Kevin Mead, Director of MIS, Paragon Steakhouse Restaurants Inc., *InfoWorld*, 8/24/92

Empower Your Organization with Client/Server Computing

Companies are reacting to the competitive pressures today by creating empowered organizations. They are pushing the authority and shared responsibility for decision-making lower into the organization, eliminating idle time, and ensuring that decisions are made with local customer requirements in mind.

For an organization to be empowered people must have access to the information they need to make sound business decisions that are in the best interest of the company. The best way to make that information available is by moving the source of the information and the tools to use it closer to the user.

The client/server computing model — the notion of a system that requests services, *the client*, and a system that fulfills services, *the server* — is ideal for making both tools and information available to those who need it.

HP's view of client/server computing

HP's client/server strategy is to provide a set of tools and solutions that make it easy for customers to move to a distributed Open Systems computing environment at their own pace. In addition to offering a complete client/server computing solution, HP has broadened the definition of client/server computing to include the following characteristics.

First, client/server solutions must encompass a wide variety of open technologies based on industry and defacto standards. The HP model blends the full complement of technologies needed for the creation and delivery of client/server solutions — advanced

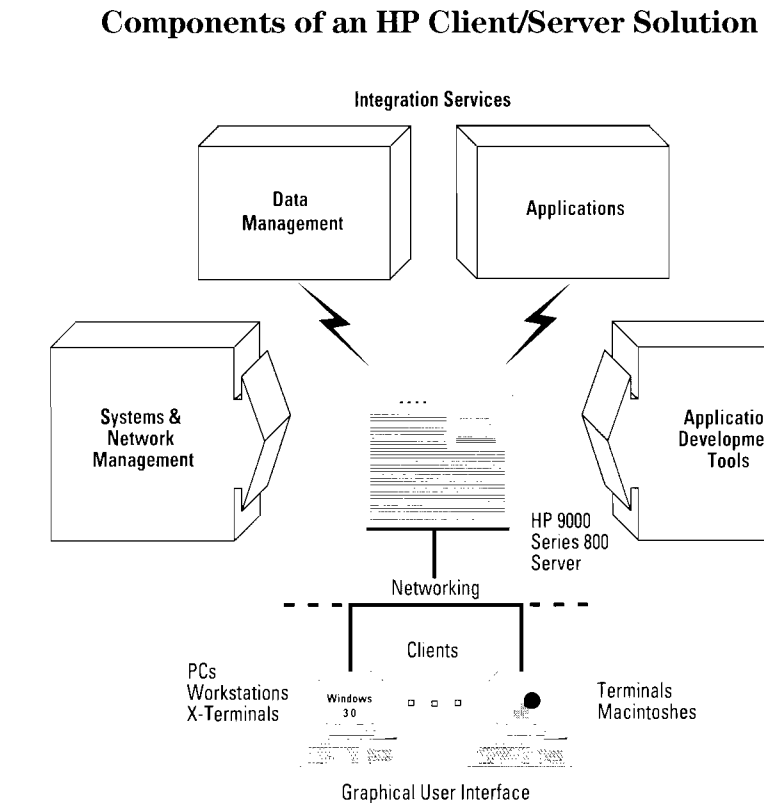


Figure 4.3 HP provides a broad offering of components for a complete client/server solution.

GUIs, networking technology for communicating locally and around the world, object oriented programming, and 4GLs.

In addition to these, HP recognizes the need for "middleware" and DCE and DME components, such as remote procedure calls, license management services, and software to integrate applications. In fact, seven key HP technologies have been chosen to be core components of the OSF's DCE and DME standards.

Second, client/server models must not require you to throw out everything you already have. HP recognizes that companies already have millions of dollars invested in technology. HP allows a client/server computing model to be built on our information structure by redefining where and

how the processing of information takes place — that is, moving it closer to the person who needs the information.

Finally, the client/server model must add real value to the existing investment, such as:

- Improved user interfaces and faster learning
- Easier access to existing data and applications while maintaining data integrity and
- The ability to integrate data from a variety of incompatible sources and transform it into useful information.

HP's offering meets all of these requirements, and HP is convinced that the client/server model is key to successfully rightsizing your information technology investment (see figure 4.3).

Combining the Best of Both Worlds . . .

HP can connect your mainframe environment with your workgroup PC and workstation environment in a manner that preserves the best characteristics of both worlds. With HP's Cooperative Computing Solutions, you preserve the safety, security, and reliability of the mainframe world, and gain the flexibility, responsiveness, and individual power of the workgroup environment. The choice of desktop environment stays with the user. Information access is transparent and enterprise-wide, yet the system is easily managed, maintained, and secured. By moving beyond the data center, our solutions speed information flow from person to person, person to application(s), as well as application(s) to application(s). This critical information flow picture is accomplished with several solutions (see figure 4.4).

Enterprise information server

HP's Enterprise Information Server facilitates end-user choice, while providing excellent enterprise system management. It serves as the foundation for base client/server functionality, including networking to existing IT systems, support for a wide variety of clients, and software management, distribution, and configuration support.

Electronic messaging solution

HP's electronic messaging solution provides an industry-standard backbone with all the supporting tools to integrate disparate mail systems worldwide. It includes a standards-based e-mail engine to link users and applications throughout an enterprise, gateways to link into existing e-mail systems, applications and accessories to further improve internal and external business communications, and a flexible choice of clients.

“HP listened to our needs, described how their client/server computing products could help, and worked with us to make our customer service project a success.”

—Win Wade, VP of Technical Services, U.S. West Communications

HP's Cooperative Computing Solution Strategy

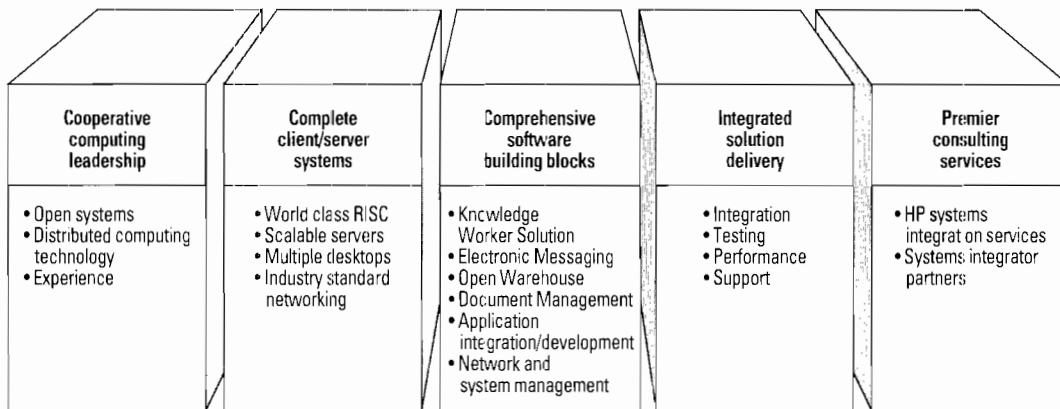


Figure 4.4 HP delivers integrated client/server solutions.

OpenWarehouse solution

HP's OpenWarehouse empowers your knowledge workers with access to a vast array of data sources contained within your enterprise, while simultaneously helping your IT department reduce its backlog of custom report and data extract work. With OpenWarehouse, even non-technical workers will be able to easily pull information into formatted desktop reports and other applications. The result? OpenWarehouse makes your knowledge workers much better decision makers by providing them with the information they need, in a form they can use.

Document and text management solution

In today's enterprise, critical information is often stored on desktop systems and local area networks. To manage this unstructured data, HP's Document and Text Management Solution provides easy storage and retrieval of all types of documents, including word-processing documents, spreadsheets, graphics, and images. Access to these documents is based on their external attributes. In addition, text management allows easy storage and retrieval of text documents using internal attributes as search characteristics.

Application integration solution

HP's Software Integration Sockets provides a development tool that facilitates integration of applications running on multiple heterogeneous platforms. That means that information flow within the enterprise is faster, and your IT application investment is leveraged.

Applications development solution

HP provides a variety of tools for developers who need to create applications that deliver the benefits of the client/server architecture. Our solutions include robust standalone tools, open integration tools like HP Softbench and integrated CASE. These solutions substantially improve the software developer's productivity, while at the same time providing better solutions for business.

Network and systems management solution

HP's network and systems management solutions help your MIS operations staff substantially reduce costs and improve control over your enterprise-wide IT resources. Our solutions offer systems management, client management, and network operations management through a variety of integrated and pre-tested HP and third-party products.

Single source integration, testing, and support

Tomorrow's information technology system is a complex mechanism, but when it comes to service and support, HP's Cooperative Computing Solutions are a single telephone call away. With flexible coverage and response times tailored to fit your business needs and budget, HP's service and support can speed repairs, minimize downtime, and resolve problems even with third-party vendors.

"HP's Cooperative Computing strategy is extremely complimentary to Verity's strategy of providing business professionals with intelligent tools for easy access to the right information at the right time, on their desktop."

—Laura G. Cory, Senior VP of Marketing, Verity.

Professional Services Tailored to Meet Your Needs

To help you get the most from your HP equipment and related software, HP Professional Services cover a breadth of strategic technology areas including Open Systems migration, information management, multivendor integration, networking, and performance management.

HP's Open Systems Roadmap simplifies your IT implementation

The HP Open Systems Roadmap offers a systematic approach and methodology for implementing IT solutions, which addresses planning, development, implementation, and support (see figure 4.5). By following the HP Open Systems Roadmap your business gains an open, flexible, modular, and customized solution.

The following areas are addressed in HP's Open Systems Roadmap to ensure a successful transition to Open Systems:

- Information systems strategy
- Information technology strategy
- Transition planning
- Development/pilot
- Enterprise-wide implementation/deployment
- Implementation and proliferation
- Support/management

HP Open Systems Roadmap

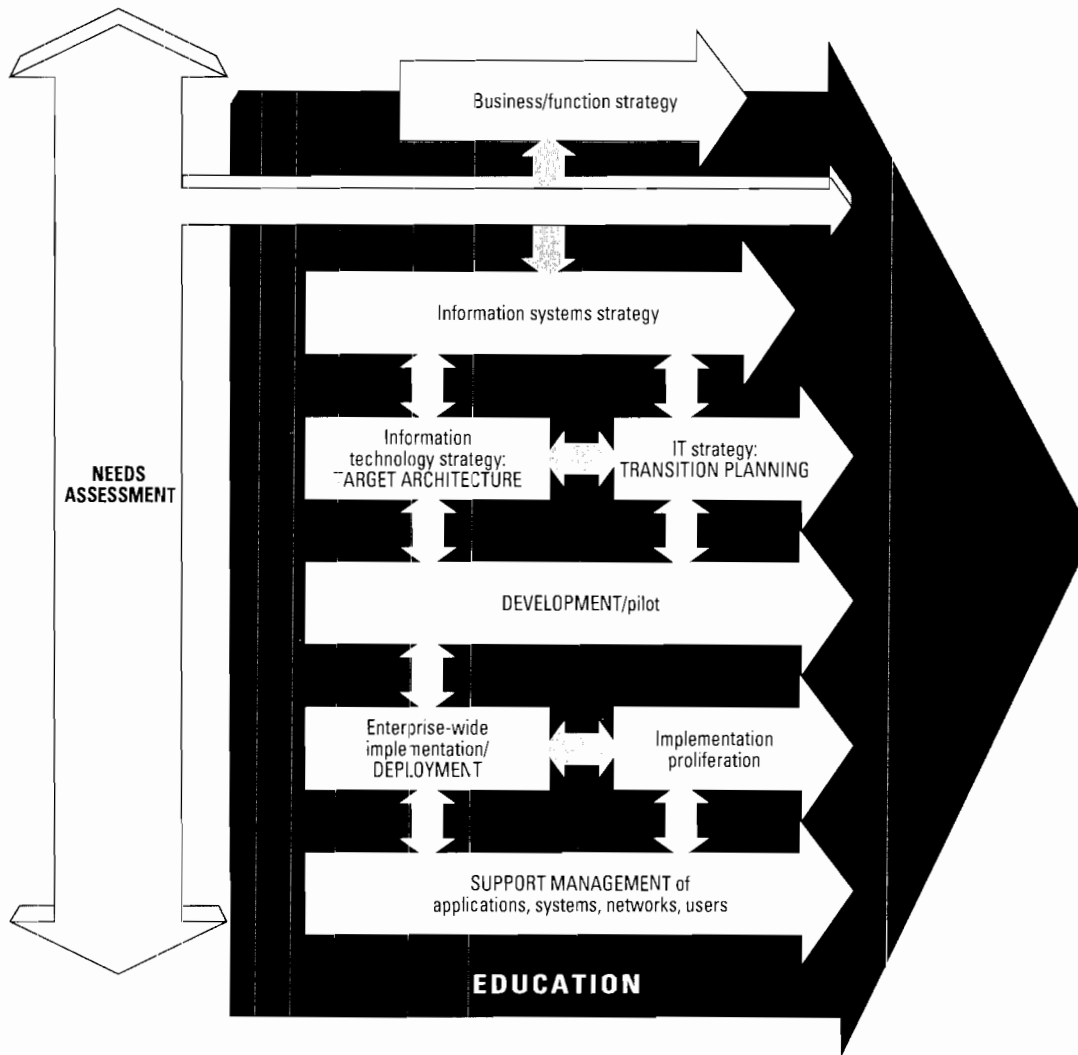


Figure 4.5 HP professional services consultants use the Open Systems Roadmap to plan and implement your migration to Open Systems while leveraging your existing resources and minimizing the impact on your organization.

Major Professional Service Programs

The following are some examples of our service programs from HP's Roadmap to Open Systems.

Open Software Environment (OSE) services

Open Software technologies offer companies the flexibility to introduce greater efficiency and flexibility in application design, integration, and deployment. Open Systems architectures provide several ways to control and reduce company processing costs.

HP Open Systems consultants are leading industry experts in OSF, OMG, and OSI technologies. HP can provide expert advice on choosing between products based on de facto industry standards or selecting products based on emerging technologies. HP offers several Open Software Environment (OSE) services aimed at assisting customers to make informed decisions on Open Systems and to realize immediate benefits through a wider range of application choice, interoperability, and portability. OSE services include:

- Review of your current IT environment
- Development of a custom IT architecture complete with transition plan
- Analysis of how current Open Systems technologies fit your business needs
- Consulting on distributed data bases, distributed transaction processing, application architectures, security, and tools.
- Recommendations for a pilot and implementation plan.

Mainframe Alternative services

It's clear that HP 9000 systems provide "mainframe class" performance and offer the software solutions necessary to support large environments. To help companies select the right route for migration, and assist in moving to the HP 9000, HP Professional Services also offers Mainframe Alternative (MFA) consulting services.

MFA begins with a comprehensive needs assessment to understand your specific requirements. It's our goal to:

- Help you begin to reduce IS/IT operating costs
- Lower the risk of attempting a migration on your own
- Manage the transition from a mainframe environment to the HP 9000 Open Systems environment.

Once we understand your needs, HP defines the target architecture and develops a migration plan, in which HP Professional Services will act as prime contractor and project manager.

Comprehensive networking services

HP Professional Services offers a wide range of network services to help you link HP 9000 Business Servers within your workgroup, departmental, company-wide, or global multivendor networks.

Professional Services offer a full range of support services that cover your network's complete life cycle—from planning your IT architecture through final implementation support, including:

- Network logical design
- Network physical design

- Network implementation
- Network performance monitoring, diagnostics, capacity planning and optimization
- Network management

HP's network specialists can also analyze and recommend customized network solutions to meet your multivendor communication needs.

Performance Consulting services

HP Performance Consulting services provide tailored and fixed-price solutions for your performance and capacity management requirements. Knowledgeable HP performance consultants help you optimize the performance of your current systems and applications, as well as develop plans to meet future business and user requirements. And HP performance consultants are available to assist you in modeling your system, so you can confidently forecast future requirements.

In addition, to augment HP's offering, a select group of systems integrators has been selected to provide complementary services.

Systems Integration Channel Partners

To provide our customers with maximum flexibility, HP has performed strategic system integration alliances with the following HP Channel Partners:

- Andersen Consulting
- Computer Sciences Corp.
- EDS
- IISI
- Systemshouse
- TRW
- Wesson, Taylor and Wells

Premier Customer Support

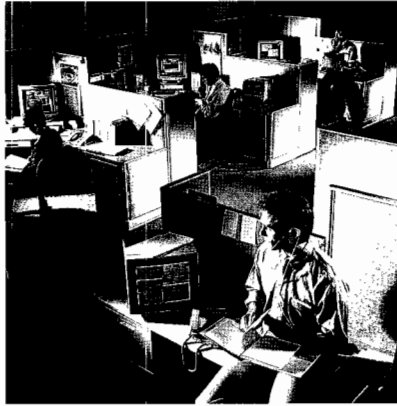
Educational services for novices and experienced professionals

The move to open, client/server computing can significantly change operations throughout your organization. To help you get started quickly, HP offers a wide range of courses tailored for experienced professionals as well as novices.

HP's Open Systems support curriculum includes:

- Overview courses on Open Systems concepts, capabilities, and standards
- Hands-on demonstration workshops with the latest Open Systems technologies
- Implementation classes for specific Open Systems solutions.

Courses are available at any of our HP Customer Education Centers worldwide. Optionally, an experienced HP instructor can conduct classes or customized training at your facility or at a nearby HP sales office.



HP's industry-leading support programs, backed by state-of-the-art technology, enhance your return on investment

Industry-Leading Support

At HP, our established international leadership in customer support satisfaction, backed by state-of-the-art technology, enhances your return on investment. With over 400 service locations worldwide, we offer a breadth of industry-leading support programs to help protect your information advantage.

Flexible hardware support

HP's hardware support services—ranging from hardware maintenance to disaster recovery to data center relocation—help keep HP 9000 Business Servers running at peak performance levels, whether you have a single site or a distributed worldwide network.

HP Response Center engineers use advanced diagnostic technology to return your system to normal in the event of unplanned downtime. And, if the need arises, you can depend on HP's escalation management process to coordinate all necessary HP resources for a speedy resolution.

HP also offers a comprehensive, integrated support package called HP Premier Account support, which provides all the training, hardware, software, and network support your business needs.

Versatile software support alternatives

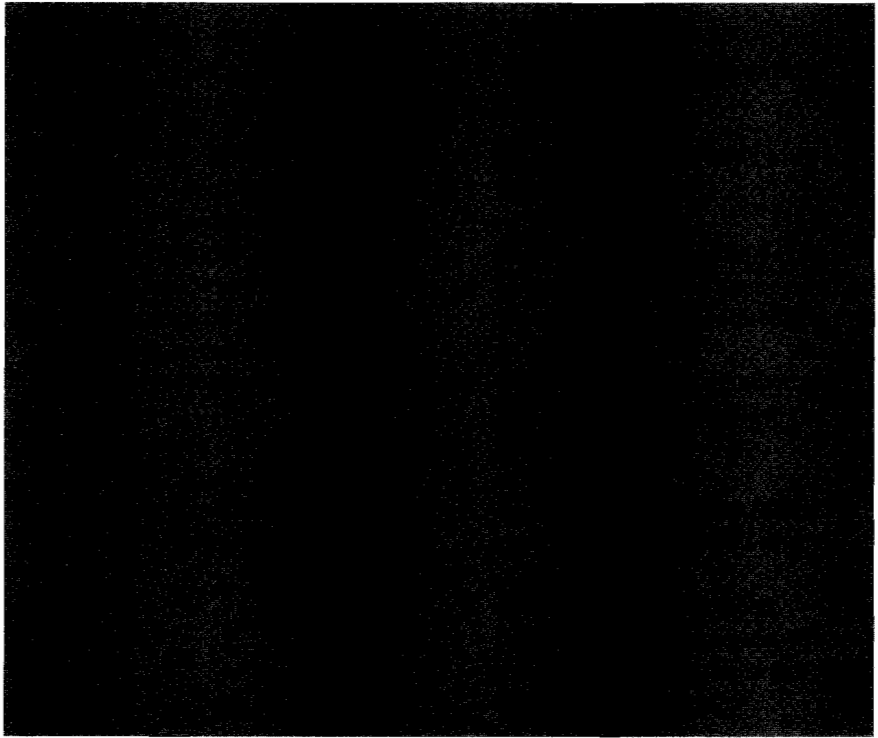
- All HP 9000 Business Server customers receive free, electronic software support for the first year. This gives you access to HP's on-line support database for up-to-date support information and recommended problem solutions based on other customers' experiences.
- Comprehensive software maintenance provides unlimited telephone assistance through the HP Response Center for fast problem resolution.
- Personalized software support assigns a trained HP support consultant to your business, who can provide customized software recommendations.
- Where appropriate, HP also offers self-maintenance support which delivers current, comprehensive support information through access to HP's support database. In addition, HP provides a software license for updates to your HP software.
- HP also offers a powerful combination of valuable support information retrieval software and large storage capabilities from compact disk read-only memory (CD-ROM) technology.

Participate in the Future: Your Next Steps to Success

The future of enterprise computing is distributed Open Systems. The cost benefits and the flexibility offered by Open Systems are causing more and more organizations to begin migrating to an open computing strategy.

Hewlett-Packard is your best partner for an Open Systems solution. By partnering with HP, your business can prosper by becoming more responsive, more effective, and more profitable. HP is eager to work with you in making your future a success. For further details on how you can enhance your business operations with HP's Open Systems solution, the following alternatives are available:

1. Contact your HP sales representative or local HP sales (see back cover) office for more information on how to implement the strategic change most cost-effectively in your enterprise with HP 9000 Series 800 Business Servers.
2. Request specific product literature from your HP sales representative, or use HP's automated support fax program, HP FIRST (Fax Information Retrieval Support Technology) to have literature faxed directly to you (per the directions above).



*“HP's implementation of Open Systems solutions can enhance your company's information advantage. As your information technology partner, **HP is open for business—your business.**”*

—Wim Roelandts, Vice President, Computer Systems Organization,
Hewlett-Packard Company

For the location of the nearest sales office call:

United States of America;
1-800-637-7740

Canada:
Hewlett-Packard Ltd.
5150 Spectrum Way
Mississauga, Ontario L4W 5G1
(416) 206 4725

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Central, Hong Kong
(852) 848 7777

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150, Route du Nant-d'Avril
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Geneva, Switzerland
(22) 780 81 11
European Multicountry: 41 22 780 81 11
Middle East and Africa: 41 22 780 71 11
European Headquarters: 41 22 780 81 11
Refer to country phone numbers

For direct country contact call:

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**East Central Europe, USSR, and
Yugoslavia:** 43 222 2500-0

Belgium and Luxembourg:
Customer Information Center
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Denmark: 45 45 99 10 00

Finland: 358 0 88 721

France: 33 1 69 82 60 60

Germany: 49 6172 16 0

Greece: 30 1 68 28 811

Hungary: 38 61 55 84 72

Iceland: High Performance Systems hf.
354 1 67 10 00

Ireland: 253 12 88 33 99

Israel: Computation and
Measurement Systems (CMS) Ltd.
(03) 5380 333

Italy: 39 2 92 19 91

Netherlands: 31 20 547 6911

Norway: 47 2 87 97 00

Poland: 48 22 36 83 00

Portugal: 35 1 1301 73 30

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Slovenia: 38 61 55 84 72

Spain: 34 1 626 16 00

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41 22 780 41 11 (Suisse Romande)

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United Kingdom: 44 344 360 000

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