

WHITE PAPER

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Compaq Computer
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Compaq and SCO: Confidence without Compromise

Building on its reputation as the leader in new technology and price:performance, Compaq partners with SCO, Inc. to deliver leadership platforms to the demanding UNIX on Intel market. This paper describes how Compaq and SCO are offering the best platform solutions for the UNIX on Intel market.



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EXECUTIVE SUMMARY

Building on its reputation as the leader in new technology and price:performance, Compaq partners with SCO, Inc. to deliver leadership platforms to the demanding UNIX on Intel market. Compaq continues to be the platform leader in the growing UNIX on Intel markets for all sizes of organizations and all computing requirements.

SCO is the UNIX on Intel operating system pioneer and market leader, with 85% market share. Compaq server customers worldwide take advantage of the close relationship between the two companies in a variety of ways such as installation assistance using Compaq SmartStart, powerful systems management with Compaq Insight Manager, optimally tuned and integrated software drivers and more.

Whether your needs are related to small and medium business or to the enterprise, Compaq UNIX platforms meet them with high performance and highly manageable industry standard platforms. For small and medium businesses and replicated sites, Compaq server products are ideally matched with SCO OpenServer and applications from a variety of industry-leading software partners. At the midrange and enterprise levels, Compaq ProLiant servers running SCO UnixWare provide manageable, available, and scalable solutions that meet or exceed the performance of traditional UNIX offerings. With continued Compaq and SCO investments around SCO UnixWare as the standard high volume UNIX for Intel architecture-based servers and advancements in Compaq server technology, your future growth with UNIX and Compaq systems is assured.

This paper describes how Compaq and SCO are offering the best UNIX platform based on Intel-architectures available in the marketplace today.

THE UNIX MARKETPLACE

Between 1996 and 1997, IDC reports UNIX sales growth of 15.8%. This outstanding growth represents license shipments of 619,000 in 1996 and 717,000 in 1997, and clearly exceeded the forecasted growth of 11.1%. Based on Gartner Group projections, the UNIX on Intel market will continue to expand significantly through the year 2002.

The UNIX marketplace is comprised of several segments, including:

- Small- and medium-sized businesses
- Replicated sites, including point-of-sale, remote operations, specialized needs and branch offices of larger corporations
- Enterprise-class organizations

The continuing growth of UNIX systems comes mainly from very strong server sales in the entry server (less than \$100,000) arena and midrange segment (\$100,000 - \$1M). Small and medium sized businesses depend on these systems to run their core business applications including accounting systems, inventory control databases, human resources systems, manufacturing, web services, document management and others. The midrange segment, which grew at a rate of nearly 26.7% worldwide during 1997, is dominated by small and medium scale systems including industry standard Intel-based platforms running UNIX products from SCO.

In the enterprise market, Intel-based UNIX systems support mission critical production environments, especially running databases, and offer a more cost effective solution than proprietary midrange systems from RISC vendors such as SUN, Hewlett Packard, IBM and others.

SCO

COMPANY OVERVIEW

SCO developed its business on the powerful concept: “to combine the power and capabilities of the UNIX system with the power and economics of the Intel platform”. This strong combination allows SCO to be the leading supplier of UNIX servers with 40% market share, shipping more than twice the number of RISC UNIX servers of any other supplier including SUN, HP, and IBM (figure 1). On the Intel platform alone, SCO dominates by an even wider margin with over 85% market share. SCO achieved this position through its long-standing OpenServer product and its acquired UnixWare product.

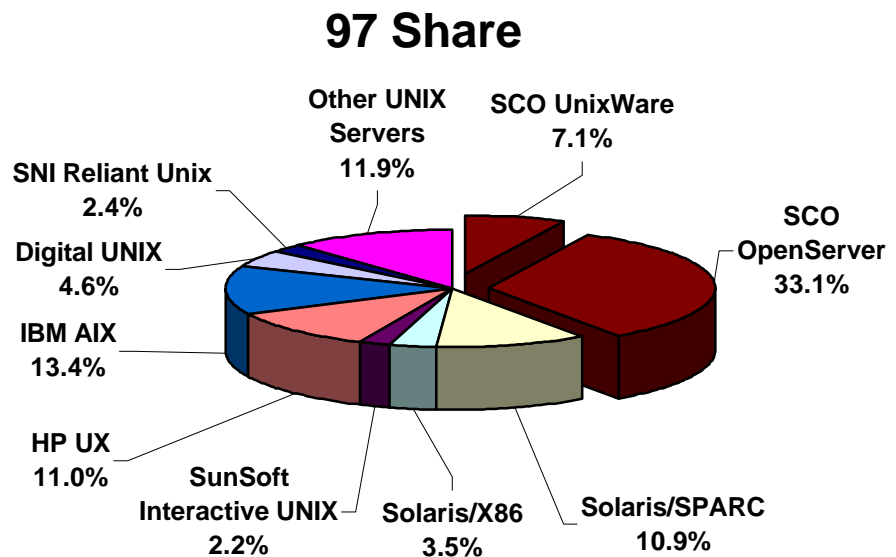


Figure 1 - Worldwide Server/Host UNIX Shipments for 1996 & 1997 (Source: IDC, Jan 1998)

UNIXWARE 7

Announced in March 1997, UnixWare 7 is the latest UNIX operating system from SCO. The UnixWare 7 system delivers a multifunctional, scalable UNIX operating environment based on the System V Release 5 (SVR5) kernel, with tightly integrated enterprise networking services ideal for business critical computing. UnixWare 7 is designed to support diverse clients, to scale from small office server configurations to large scale enterprise servers and to provide high levels of reliability, availability and serviceability. UnixWare 7 provides Compaq server customers a powerful UNIX platform, not only today, but also in the future with the planned delivery of a full 64-bit version concurrent with the Intel IA-64 processor release.

Product Configurations

UnixWare 7 has been optimized for medium to large organizations looking for highly reliable, scaleable and high-performance departmental and enterprise business server solutions. The UnixWare 7 product family consists of “purpose-built” operating system configurations that are complimented by a range of optional services and development tools. UnixWare 7 operating system configuration include:

- **Enterprise Edition:** For high-end enterprise servers to run large-scale business applications and databases for decision support and on-line transaction processing.

- **Departmental Edition:** For departmental servers in medium or large organizations to run applications and reliably share business critical information with any client including PCs, NCs, terminals and any Java-enabled browser client.
- **Intranet Edition:** An industrial strength intranet/Internet server for enterprise wide web publishing and is an ideal foundation or e-commerce, extranet and Internet applications.
- **Messaging Edition:** For departmental and enterprise-wide Internet mail and messaging servers with powerful and reliable remote messaging capabilities, universal client access and simplified administration via built-in directory services.
- **Base Edition:** A solid foundation for building dedicated or specialized server environments, such as telecommunications equipment and other embedded systems. It also excels as a powerful graphical workstation.

In the second half of 1998, a “purpose-built” configuration of UnixWare 7 will be available for the small and medium business and replicated site markets (the primary focus of today’s SCO OpenServer Release 5 business).

OPENSERVER 5

SCO OpenServer is the world’s best selling UNIX server operating system. SCO OpenServer systems excel at running businesses which need multi-user, transaction-based DBMS and business applications, Internet and web services, mail and messaging services, communications gateways and integrating PC LAN environments and legacy systems into a single efficient environment. SCO OpenServer is delivered in two configurations: Enterprise System and Host System.

- **SCO OpenServer 5 Host System** - Small business offices or replicated sites where the solution can be provided by a single server connected to several character terminals can use the Host System. The Host System provides a lower cost of ownership solution by eliminating the complexities of networking.
- **SCO OpenServer 5 Enterprise System** - The Enterprise System supports a broad set of UNIX applications and delivers Windows file and print services. The Enterprise System is an excellent solution for small to medium businesses, departmental application servers, workgroup servers and Internet servers.

ROADMAP

Throughout 1998 and beyond, SCO will enhance UnixWare 7 through a series of additional system services required by specific target segments. UnixWare 7 is also designed to provide the easiest path to the 64-bit, next generation UNIX system being developed by SCO for the Intel Merced processor and will deliver 64-bit features such as larger files and file systems, large physical memory and a 64-bit ready API. The SCO roadmap ensures that the benefits of performance and scalability of 64-bit computing are delivered in UnixWare 7 concurrent with Intel’s Merced processor.

As for OpenServer, SCO’s long-term goal is to transition the SCO OpenServer operating system installed base to the newer and more powerful UnixWare 7 platform. However, to enable SCO OpenServer customers to move to the new operating environment in a planned fashion when it makes sense from a business operations and investment perspective, SCO will continue to provide enhancements to the SCO OpenServer operating system. (Figure 2)

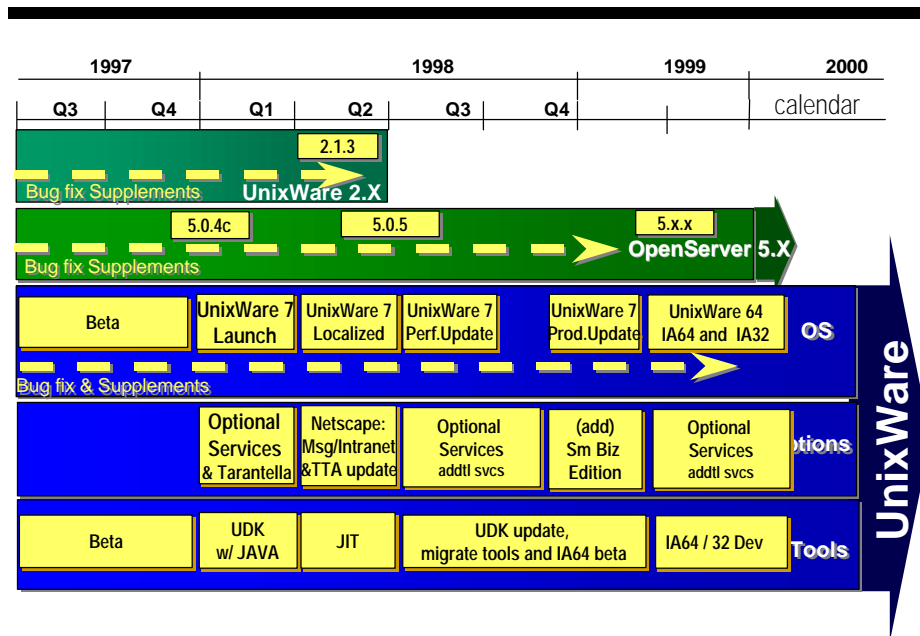


Figure 2 – SCO Roadmap (Source: SCO)

COMPAQ IN THE UNIX MARKETPLACE

STRATEGY

Intel-based UNIX servers have traditionally been the stronghold in the small and medium business and replicated site market segments. As the leading server platform in this market segment, Compaq client/server UNIX solutions bring traditionally midrange class capabilities and application sophistication to the smaller businesses. Compaq servers running SCO OpenServer and SCO UnixWare provide unmatched price/performance, reliability, cost of ownership and choice of applications to small, medium, and replicated site customers.

As an industry standard platform, Compaq servers support a broad range of enterprise-class server operating systems, including SCO UnixWare. These open solutions provide greater flexibility, a more extensive portfolio of available applications and a lower total cost of ownership than alternative platforms.

Compaq and SCO have partnered to leverage their combined strengths and deliver best-of-breed solutions in the highly competitive UNIX market.

CURRENT MARKET POSITION

Compaq is the leading vendor in worldwide server shipments with over 31% of the server market. Compaq is also the largest supplier of systems running SCO UnixWare and SCO OpenServer with over 25% of the SCO market. In fact, as the chart below shows, Compaq has 10% of the worldwide UNIX market. (Figure 3)

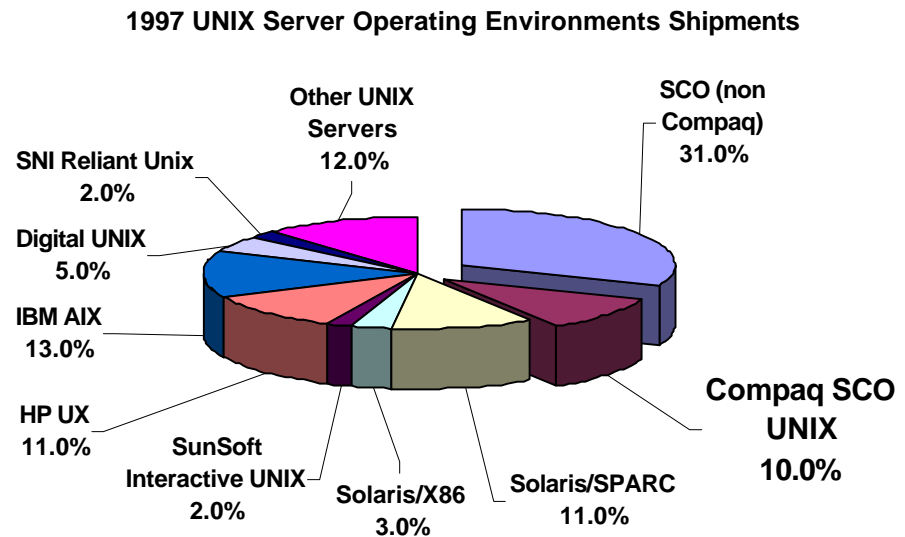


Figure 3 – 1997 UNIX Server Shipments (Source: IDC 12/97, SCO ORD)

INDUSTRY LEADING TECHNOLOGY

With Compaq's long history of innovations in the industry standards marketplace, it's easy to see why Compaq is the number one server for customers' needs. Compaq's server innovations began in 1989 with the Compaq Systempro, the server that was the prototype for Compaq's family of enterprise-based servers built on industry standards. Compaq's innovations continue with the current ProLiant server family, the first in the industry to integrate the latest technology, including PCI Hot Plug on selected models. Some major examples of innovations, which Compaq introduced to the standard-based server marketplace and have been widely adopted by customers, include:

- Compaq Insight Manager
- Compaq SmartStart
- PCI Hot Plug
- Intelligent Hot-Pluggable Power Supply
- Fibre Channel
- Compaq Recovery Server Option
- RAID
- Redundant NIC Technology
- ECC Memory
- Rack-Mount Design

Unlike commodity-based providers, Compaq offers flexible computing platforms today by driving the adoption of useful innovations for higher performance and higher availability into industry-wide standards. Compaq delivers systems that provide total value to the customer, unprecedented design and engineering technology, key management solutions, and strategic partnering to provide seamless integration. This approach is exactly what the customer demands from a world-class company. And this approach is exactly what the customer receives from Compaq. For more information on Compaq's leading innovations, please see the [Compaq Leadership in Server Innovations](#) whitepaper.

- Compaq optimized drivers, ROMPaqs and support software
- Full graphical disk carving capability for SCO OpenServer 5
- Optional automatic installation of the latest CIM agent for SCO OpenServer 5
- Network Interface Card integration

TECHNICAL SUPPORT

Compaq's world class Technical Support centers are available to customers globally on a 24x7 basis. Compaq Technical Support is well equipped to address issues with SCO UNIX on Compaq hardware. Compaq's policy on software version support is to stay in-sync with the actual software vendor. In accordance with this policy, full support on Compaq hardware for all SCO OpenServer 5.x, UnixWare 2.1.x, and UnixWare 7 versions is currently available.

Seamless customer support is ensured to Compaq SCO UNIX customers through Compaq's participation with SCO in the Technical Support Alliance (TSA). "Seamless customer support" means simply that Compaq technical support remains the responsible party and retains ownership of the problem until it is resolved. For the Compaq customers using SCO UNIX, Compaq can act as the single point of contact for technical support questions. In short, Compaq's TSA relationship with SCO ensures a fully supported and integrated solution for our Compaq SCO UNIX customers.

SYSTEMS MANAGEMENT

Compaq's industry leading management solution, Insight Manager (CIM), includes agents for the SCO UNIX environment, enabling management of SCO UNIX servers running on Compaq platforms. Insight Manager is a complete management solution designed and built by Compaq, providing full integration with all Compaq servers in the SCO UNIX environment. CIM is a standards-based application (based upon the industry standard SNMP communication protocol) consisting of management agents that run on the managed hardware, and a console application that provides access to the information available on the managed systems. CIM is also capable of providing alerts directly to other popular SNMP-based management applications such as Computer Associates' Unicenter TNG, Sun's NetManager, and IBM's TME 10 NetView, specifically because it is SNMP-based.

In addition to its own management console, CIM is also available in versions that are designed to run under Hewlett Packard's OpenView and Tivoli Systems' TME 10 NetView from IBM. These versions integrate the information provided by the CIM agents directly into the OpenView or NetView console. For more information, please see our [CIM overview for OpenView and NetView](#).

CIM management agents for the SCO UNIX environment enable the console to collect information from servers running SCO UNIX. Performance indicators are available for many installed options on Compaq hardware, including SCSI storage, drive array storage, UPS, system information (such as processor type and asset details), IDE hard drives, and system health indicators (such as ECC memory and critical error logs). These indicators are displayed via a graphical interface on the CIM console. By double-clicking the appropriate icon, the console operator is able to "drill down" to specific details of the system, even to data specific to a particular component. For instance, the console operator may select a SCSI hard drive installed on a particular machine. The console would then display specific information on the configuration and status of that particular hard drive.

CIM is a powerful application for management of hardware resources in many environments, and is one of the best reasons to select Compaq hardware over another Intel-based platform. More information on Insight Manager is available in the latest [Compaq Insight Manager](#) whitepaper.

PRICE:PERFORMANCE

The Compaq ProLiant 7000 server set unprecedented performance records on the industry-standard TPC-C benchmark. Compaq also extended its price:performance lead versus the competition to **10,546** transactions per minute (tpmC) at just over **\$52/tpmC** on a ProLiant 7000 server with four 200 MHz Pentium Pro processors running a beta version of UnixWare 7 and Sybase ASE 11.5. The results represent:

- The best transaction performance ever achieved on a 4-processor Intel-based system
- The best transaction performance ever achieved with SCO UnixWare on the TPC-C benchmark
- The best price:performance ever achieved with SCO UnixWare on the TPC-C benchmark

Compaq Delivers Outstanding Midrange-Class Performance at Superior Price:Performance compared to RISC-based UNIX Servers (figure 4)

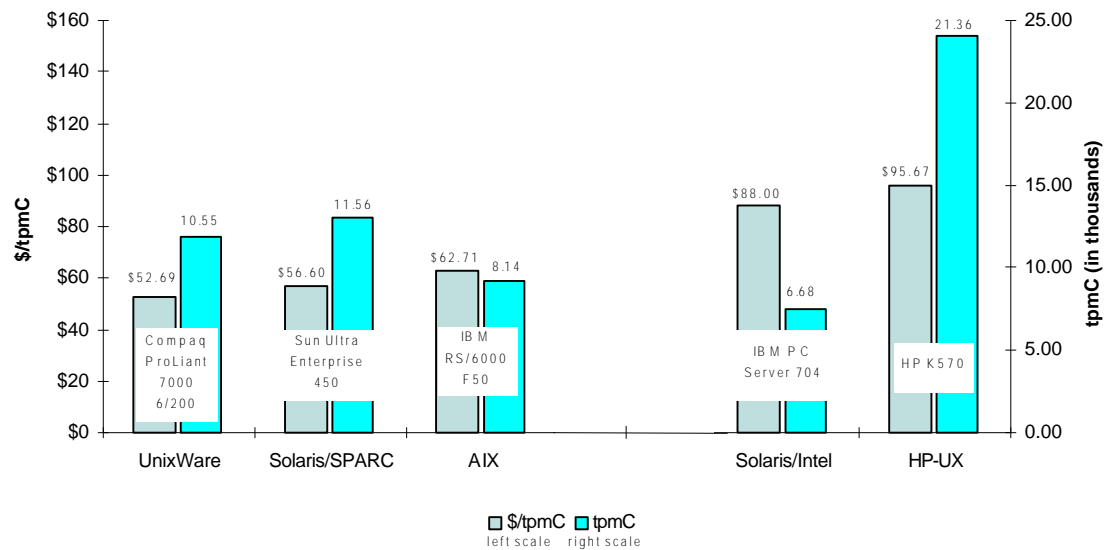


Figure 4 – Compaq ProLiant 7000 posts TPC-C record (Source: Published TPC-C Benchmark Results as of 11/97)

Compaq ProLiant servers with industry-standard Pentium Pro processors and SCO UnixWare outperform the leading midrange RISC servers with UNIX. The results shown above destroy the myth that RISC processors are required for top price:performance. In addition, the results show that Compaq servers and Sybase ASE 11.5 provide the best database performance with SCO UnixWare. Compaq servers running SCO UnixWare deliver the performance today that customers require for their business-critical applications.

CERTIFICATION

All servers and server options currently shipping from Compaq are certified by SCO to run OpenServer 5, UnixWare 2.1 and UnixWare 7. For a complete product certification listing, please see the [SCO compatible hardware listing](#).

COMPAQ & SCO PARTNERSHIP

Compaq and SCO are committed to providing customers with standards-based UNIX systems that are more powerful, easier to use and more affordable than RISC-based systems. This partnership concentrates on joint engineering and development efforts, testing and service and support. By working closely together, customers are assured a high quality, integrated solution that is easily maintained, managed, scalable, and highly available, delivered with better price:performance than competing proprietary systems. This decade-plus strategic relationship provides immeasurable customer benefits explaining why Compaq and SCO have become the leading providers of Intel processor-based UNIX solutions.

Some of the current ways SCO and Compaq provide added value for customers include the following:

- **By endorsing UnixWare 7 as its standard Unix operating system for today's Intel-based platforms:** Compaq engineers are working jointly with SCO on the development of SCO UnixWare 7. This allows customers to run mission-critical applications on a Compaq/SCO solution with the knowledge that both companies have tested, tuned and optimized this solution. Customers receive the performance power associated with RISC-based UNIX systems at a fraction of the cost and with all of the benefits of open standard solutions.
- **Big E:** Compaq has a long history of endorsing standards for enterprise UNIX. As early as April, 1996, Compaq joined SCO, Intel, and six other OEMs in endorsing SCO UnixWare as the industry standard UNIX operating system for Intel architecture servers. At this "Enterprise Summit," these vendors agreed to take a radical departure from the typical development model for the UNIX industry. For the first time, Intel-based UNIX systems benefited from a common core operating system across diverse OEM hardware platforms. The net effect was to change development from a vertically oriented model to the shrink-wrapped model of other high volume operating systems in the server market. Customers benefited by having more applications from which to choose. These applications, developed on industry standard platforms resulted in favorable high-volume economics.
- **Data Center Acceleration Program:** The next step in this standards endorsement came with the creation of the Data Center Acceleration Program. Compaq, Intel and three other OEM's teamed with SCO to create this program that is designed to enhance the ability of SCO UnixWare to compete with RISC UNIX platforms seen most often in the data center, or glass house. This program focuses funds and resources to develop a UNIX that can be confidently deployed throughout the enterprise; at remote locations, departmental servers, or, most importantly, in the data center.

FUTURE UNIX TRENDS

Based on forecasts from IDC, the UNIX market will continue to grow through the end of the century. In fact, IDC predicts Unix server market revenues to grow at an annual rate of 8.9% through the year 2001. (Source: IDC, 10/97). UNIX on Intel will be positioned in direct competition with RISC UNIX in the lucrative enterprise segment.

