



Sun's Enterprise Workgroup Solutions

Revitalize the Workgroup Without Replacing the LAN





© 1998 Sun Microsystems, Inc. All rights reserved.
2550 Garcia Avenue, Mountain View, California 94043-1100 U.S.A.

This document is protected by copyright and distributed under licenses restricting its use, copying, and distribution. No part of this document or related documentation may be reproduced in any form by any means without prior written authorization of Sun and its licensors, if any.

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the United States Government is subject to the restrictions set forth in DFARS 252.227-7013 (c)(1)(ii) and FAR 52.227-19.

TRADEMARKS

Sun, the Sun logo, Sun Microsystems, Java, and Solaris are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and certain other countries. UNIX is a registered trademark in the United States and other countries, exclusively licensed through X/Open Company, Ltd. All other product names mentioned herein are the trademarks of their respective owners.

All SPARC trademarks, including the SCD Compliant Logo, are trademarks or registered trademarks of SPARC International, Inc. SPARCstation, SPARCserver, SPARCengine, SPARCstorage, SPARCware, SPARCcenter, SPARCclassic, SPARCcluster, SPARCdesign, SPARC811, SPARCprinter, UltraSPARC, microSPARC, SPARCworks, and SPARCcompiler are licensed exclusively to Sun Microsystems, Inc. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

THIS PUBLICATION IS PROVIDED “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT.

THIS PUBLICATION COULD INCLUDE TECHNICAL INACCURACIES OR TYPOGRAPHICAL ERRORS. CHANGES ARE PERIODICALLY ADDED TO THE INFORMATION HEREIN; THESE CHANGES WILL BE INCORPORATED IN NEW EDITIONS OF THE PUBLICATION. SUN MICROSYSTEMS, INC. MAY MAKE IMPROVEMENTS AND/OR CHANGES IN THE PRODUCT(S) AND/OR THE PROGRAM(S) DESCRIBED IN THIS PUBLICATION AT ANY TIME.



Contents

Executive Summary	5
Workgroup Computing is Maturing	6
New Services Create Volatile Network Loads	6
Increased Demand for Anytime, Anywhere Data Access. . . .	7
Increased Pressure on IT Departments	7
Sun's Solution: Merge the Benefits of Traditional Alternatives	7
Solution Overview	8
Cornerstone Technologies	8
Powerful, Scalable Servers	9
Enterprise 450 Server	9
Enterprise 250 Server	9
Mission-Critical Availability Features	9
Solaris Operating Environment	10
SunLink Connectivity Products	11
Integrated Network Services: Solaris for Intranets	11
Best-of-Breed Applications	12
Integrated Solution Suites	12
World-Class Service and Support	12
Upgradeable Warranty Coverage	13



A New Class of Capabilities	13
Host Mission-Critical Applications at the Workgroup Level . . .	14
Build Scalable Networks that Respond to Changing Demand . .	14
Achieve Unprecedented Cost Efficiency.	14
Customer Example: J. Crew	14
Customer Example: Net-Temps	15
Proven Technology from a Trusted Vendor.	16
Conclusion	16



Executive Summary

New technologies and trends are redefining traditional workgroup computing. With the growth of Web-based environments to support intranets, extranets, and Internet-based services, a new set of requirements has emerged for groupware, ecommerce, database, and enterprise resource planning (ERP) applications. At the same time, the design of corporate computing infrastructures is changing rapidly, with more workload being pushed toward the workgroup environment.

With these changes, it is no longer acceptable to arbitrarily draw distinctions as to where and how to deploy specific hardware and operating environments. The ideal solution must provide the flexibility to deploy heterogeneous technologies that interoperate seamlessly. And from a business perspective, the ability to recognize and respond to change, to accommodate unforeseen surges in demand for new services, and to extend services to a broader user group are keys to success.

Sun has developed a solution that delivers maximum flexibility in the enterprise and in the corporate workgroup--without requiring the replacement of existing systems. Our solution meets the rigorous requirements of the IT department for performance, scalability, availability, interoperability, security, and cost-effectiveness. It delivers the ease of use and convenience users require. And it replaces the limitations of the old workgroup model with scalable, adaptable technology.

This paper will introduce you to the key concepts and the core products that comprise Sun's Enterprise Workgroup solution, and show you how our solution can improve workgroup productivity and deliver new business opportunities for your company.



Workgroup Computing is Maturing

Once narrowly defined as groups of 20 or fewer colleagues sharing basic file and print services over a LAN using desktop PCs, the workgroup can now include hundreds or even thousands of individuals who work together using a broad range of applications--including groupware and messaging, ecommerce, data warehousing and data marts, and enterprise resource planning (ERP) applications.

At the same time, many of the new workgroup applications have become mission-critical. Every minute of downtime can be extremely expensive when factors such as missed sales opportunities, idle employees, missed service-level guarantees, and customer dissatisfaction are considered. Workgroup applications must be available at all times.

The evolution of the workgroup has created new requirements for workgroup computing technology. A closer look at recent trends shows why a new model of workgroup computing is needed.

New Services Create Volatile Network Loads

Corporations are eager to use their enterprise networks to create additional commerce and competitive advantages. They want to:

- Roll out Web-based applications such as customer service, data warehousing, call centers, and on-line transaction processing services
- Distribute applications to remote and branch offices so managers can make decisions faster, improve customer responsiveness, and increase productivity
- Use the network to expand into global markets and increase service coverage hours
- Develop new ways of doing business with customers and suppliers

Yet implementing any of these network services can create a volatile and unpredictable network load, and unexpected spikes in demand can thwart IT's planning. For example, a hot new Web site could suddenly increase the load by orders of magnitude. IT needs the ability to scale systems on demand. The challenge is building a network architecture that can manage the peaks at optimized cost.

Increased Demand for Anytime, Anywhere Data Access

At the same time applications are changing, the way users access applications is changing as well. With the advent of telecommuting and nomadic computing, users want faster access to a wider range of network resources. And they want access from

wherever they happen to be, using virtually any device--from laptops and PDAs to cell phones and pagers. They want to tap into the Internet or an intranet--with complete security, and without worrying about compatibility problems. IT must find a way to provide this service at an acceptable cost.

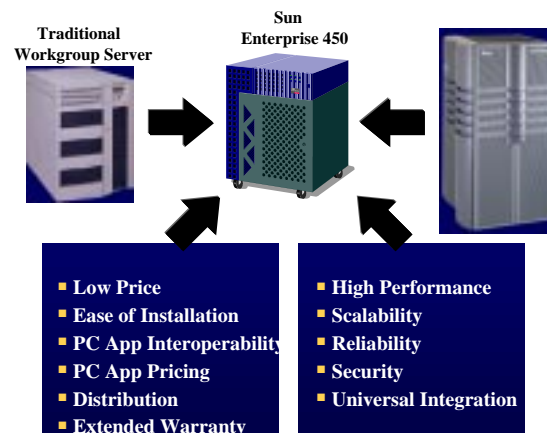
Increased Pressure on IT Departments

Meeting the new requirements of the Enterprise Workgroup can be a daunting challenge for the IT department. IT must find a way to transition to a decentralized, distributed application architecture to deliver required service levels--without compromising security and reliability, without disrupting users, without sacrificing current investments, without handing over control, and without breaking the budget.

Compounding the challenge for IT is the uncertainty and doubt surrounding various technological alternatives. Often IT feels caught in the middle of the battles between technology vendors and their contradictory claims.

Sun's Solution: Merge the Benefits of Traditional Alternatives

Sun has always seen traditional workgroup LAN technology and enterprise networks as complementary resources, not separate worlds. Therefore we have developed a "coexistence" strategy, centered around adherence to standards, that enables us to deliver on the demands of the Enterprise Workgroup without sacrificing the existing technology investment of the workgroup LAN.





Solution Overview

Sun has developed an all-encompassing product line for the Enterprise Workgroup that brings virtually unlimited scalability, PC interoperability, integrated solution “recipes” for specific applications, and enterprise-class RAS to corporate workgroups. Now customers with traditional LAN environments such as Microsoft Windows NT and Novell NetWare can:

- Create full-service workgroup networks that provide not only file, print, and email services, but also groupware and messaging, ecommerce, database and data mart, and ERP applications
- Run business applications on a wide range of highly reliable, secure platforms
- Take advantage of Internet, intranet, and electronic commerce technology without re-architecting their current environment

Cornerstone Technologies

Sun’s Enterprise Workgroup solution is a comprehensive arsenal of hardware, software, networking technologies, and services. The core innovations underlying Sun’s solution are described below.

Scalable, binary-compatible servers

Sun offers the industry’s most complete line of powerful, scalable servers--from \$5,000 to \$5 million. Our entire server line is powered by UltraSPARC processors, so customers can scale up performance as needed, supporting from dozens to hundreds to thousands of users on a single system--with no operating system transitions and no application software recompilation.

All Sun servers run the Solaris operating environment, so customers have the flexibility to choose the most affordable workgroup solution today with full confidence that it can scale up cost-effectively as needs change.

For example, customers who purchase a Sun Enterprise 250 server to power a small workgroup can simply add another Enterprise 250 server as their needs grow--or they can upgrade or add an Enterprise 450 system, or move up to an Enterprise 3500 server--all the way up to a 64-CPU Enterprise 10000 server--without ever having to re-architect the environment, without ever having to buy new application software.

Other vendors offer limited scalability but not a fully integrated product line. IBM and Hewlett Packard, for example, have separate non-binary-compatible server lines for workgroup, departmental, and data center environments. With its purchase of Tandem Computers and Digital Equipment Corp., Compaq now has separate server lines at the low end and the high end, but these product families are based on completely different architectures and run different operating systems.

Sun Enterprise 450: the industry's most powerful workgroup server

Sun's Enterprise 450 server is a high-performance symmetric multiprocessing (SMP) system that combines power, storage capacity, fast I/O throughput, and exceptional network I/O speed at an industry-leading price/performance level. With four-way processing, the system supports hundreds of users at a price point that is competitive with "Wintel" offerings and far less than any comparable UNIX system.

The Enterprise 450 server is binary compatible with the entire Enterprise server line and runs all existing packaged Solaris applications seamlessly.

Sun Enterprise 250: an excellent branch office solution

The Sun Enterprise 250 server combines the power, scalability, and availability of Sun's enterprise servers with the low price and ease of use of traditional Wintel solutions. It is the first two-way SMP system with enterprise-class reliability, availability, and serviceability (RAS) features.

The Enterprise 250 server is also Sun's first server with Remote System Control (RSC), which enables access, monitoring, and control of the server from a remote location, using any of a number of client devices. This feature, along with other remote monitoring features, helps make the Enterprise 250 server the ideal branch office or remote office solution.

With the Enterprise 250 server, you can run mission-critical applications such as call centers, database and data marts, ecommerce and groupware locally rather than in the corporate data center, giving your remote offices higher performance and greater flexibility while reducing complexity at the data center.

Mission-critical availability features

Sun is deeply committed to ensuring highest-possible system availability to meet the rigorous demands of the Enterprise Workgroup. For example, the Enterprise 450 and Enterprise 250 servers offer an extensive array of built-in RAS features previously



found only in mission-critical environments--including support for Sun's Enterprise Cluster solutions, automatic system recovery, hot-swappable disks, and redundant power supplies.

Sun workgroup servers also help minimize downtime with features such as hot-plug power for fast online repair, modular parts for easy serviceability, and Enterprise SyMON for predictive failure analysis through remote monitoring.

Together, these and other availability features allow customers to deploy the systems in their most business-critical environments with complete confidence. This capability enables companies to move their business applications to the middle tier of a three-tier environment so that end users can access enterprise data more quickly and make decisions faster without compromising security or privacy.

Solaris Operating Environment

The Solaris operating environment is the established, high-performance, UNIX operating environment that has led the market for many years running. The Solaris platform delivers unmatched flexibility because it is:

- Scalable--The Solaris environment powers everything from laptops, host-based systems, PCs, workstations and servers to multithreaded systems and supercomputers.
- Reliable--The Solaris environment is built for reliable network operation and is the most mature and tested UNIX operating environment on the market today. It is also the most widely deployed UNIX platform.
- Secure--The Solaris environment supports the full range of security solutions, from authentication and encryption to firewalls and privacy solutions for secure business transactions.

To make it even easier to get up and running on Solaris, Sun has developed Sun Enterprise WebStart Server software, a Web-based, graphical installation tool that enables even novices to install all the software that comes with the workgroup server quickly, easily, and painlessly. One-button installation can be performed locally using popular browsers such as Hot Java or Netscape Communicator, and it is equally easy to customize the configuration.

Interoperability products: SunLink PC and Project Cascade

Sun offers comprehensive PC interoperability through its innovative SunLink PC technology. SunLink PC quickly and painlessly connects Windows, Windows NT, NetWare, Macintosh, OS/2, and JavaStation network computers to all intranet services --without requiring the installation of software on the desktop client. SunLink allows PC desktop computers to run popular applications such as WordPerfect, Microsoft Word, PowerPoint, and Excel on their desktop computers and transparently link to Solaris-based servers to print and access files, network services, and intranet services.

Sun's recently announced "Project Cascade" brings native Windows NT networking services to Solaris operating environment servers. Now for the first time you can deliver Windows NT file and print, directory, and security services transparently and more reliably, and you can scale easily with Sun servers to accommodate peak demand. This enables you to save money by consolidating services onto fewer servers and simplifying management and administration.

Integrated network services: Solaris for Intranets

The Solaris for Intranets software package (bundled with the Solaris operating environment) delivers all of the essential intranet services a business requires--including integrated Web, email, security and network management services. It also includes file sharing and printing capabilities for any document, including those created in Windows applications.

Because it runs on the reliable and scalable Solaris operating environment, users have uninterrupted access to the intranet, regardless of the demands being made on the server. Key features include:

- Solaris Web Server, which gives you the same high-performance, highly reliable and scalable Web Server that hosts busy Web sites.
- Hot Java, Sun's Java-based Internet browser
- Sun Internet Mail Server, which provides interoperable and secure email to any client from anywhere
- Remote connectivity, through the industry-standard PPP protocol
- Security through products such as SKIP, which provides the secure pipelines for communications and commerce through the Internet and creates virtual private networks over public, non-secure connections
- Web-based management tools
- File sharing over the Web through WebNFS, the Web version of the industry-standard Network File System.



Best-of-breed applications

The availability of best-of-breed applications is an absolute requirement for any workgroup solution, and that's why Sun has formed strong alliances with the industry's top independent software vendors. In the ecommerce arena, for example, Sun is working with CyberCash, Open Market, and IntraACTIVE; in the groupware market we offer an integrated solution suite for Lotus Domino Mail Server; in the database market we offer IBM DB2 and Oracle8 data mart solutions; and in ERP we have alliances with Baan, Oracle, Peoplesoft, and SAP.

In all, more than 12,000 existing Solaris applications are available from leading software vendors around the world. The availability of these solutions means customers can deploy complex, mission-critical applications quickly.

Integrated solution suites

Sun has developed integrated solution "recipes" with several leading applications providers. These recipes specify all the components of a complete solution--everything customers need to install, configure, and test applications in their environments. This can eliminate the need for customers to contract with multiple vendors individually, simplifying and speeding the deployment of a complete solution.

Currently, the following solution recipes are available:

- Lotus Domino Web Application Server
- Lotus Domino Mail Server
- Oracle8 Data Mart
- IBM DB2/Infospace Data Mart

World-class service and support

In today's competitive business climate, service and support capabilities are every bit as important as products in ensuring success. That is why Sun offers a complete range of support services, education and training services, and professional services to help you in every stage of developing, deploying, and managing your Enterprise Workgroup solution. Offerings include:

- *Systems support:* Unlike most vendors, Sun offers a single point of contact for all service needs. Sun Solution Centers provide fast answers to technical questions, problem resolution, and assistance with contract administration issues. Sun offers any level of support required--including 7x24 mission-critical service.
- *Education and training:* Sun delivers a full spectrum of instructor-led, self-paced, and customized courses, plus custom planning, implementation, and management services.
- *Professional Services:* Sun's industry-leading consultants are available to assist customers with any and every phase of planning, developing, deploying, and managing a workgroup infrastructure.

Upgradeable Warranty Coverage

Sun's service program provides coverage that is upgradeable to meet your exact needs. Four choices are available through the SunSpectrum program:

- The SunSpectrum Platinum program offers mission-critical support for workgroup systems and software
- The SunSpectrum Gold program provides business-critical support to keep workgroup applications up and running
- The SunSpectrum Silver program delivers the core hardware and software support services required in non-critical environments
- The SunSpectrum Bronze program offers basic support for self-sufficient customers

A New Class of Capabilities

Sun's workgroup solutions are the first in the industry that deliver the best of both worlds: all the convenience, ease of use, and familiarity of traditional workgroup applications and the ability to tap into the enterprise network for corporate data, Web and intranet access, database applications, ISP services, ERP and OLTP applications, as well as email, file and print services.

The result is a new class of capabilities that surpass the limitations of traditional Wintel and Novell-based workgroup environments. Examples are described below.



Host Mission-Critical Applications at the Workgroup Level

Sun workgroup servers are able to host mission-critical applications, giving you the flexibility to deploy mission-critical applications virtually anywhere in the organization--at the data center, departmental, or workgroup level. This capability enables you to move key applications closer to the end users and suppliers who need them, cutting costs and improving time-to-market for innovative new customer service applications.

Build Scalable Networks that Respond to Changing Demand

Sun workgroup servers scale in terms of performance, number of users supported, and applications supported. Multiple users can access multiple applications all running on a single server. And adding capacity is as simple as adding processors or systems to the network--there is no operating system transition required and no recompilation of application software to take advantage of increasingly powerful servers.

This flexibility means you can scale up on demand--quickly, cost-effectively, and securely--so you can meet unforeseen needs.

Achieve Unprecedented Cost Efficiency

Sun's solution for the Enterprise Workgroup is extremely cost-effective. The initial purchase price of the technology itself is very competitive with traditional solutions that deliver far less performance, scalability, and adaptability; and the total cost of ownership on the Sun platform is less because Sun systems are more dependable and deliver higher levels of availability.

Equally important, third-party application software on the Sun platform is competitively priced with other leading platforms.

Customer Example: J. Crew

J. Crew, one of the leading retailers in the United States, is now running its Web site and workgroup applications on Sun systems. "Sun had the technology, the experience, and the philosophy we were looking for to take us to the next level," said Marc Hansen, Vice President, Systems Architecture for J. Crew. "And they clearly had a better solution for our needs than Microsoft or the other UNIX vendors."

J. Crew purchased three Sun Enterprise 450 workgroup servers to replace 15 servers from another vendor to host key workgroup applications. The servers run DNS, NIS, mail file sharing, and intranet services. Each server accommodates 50-150 users and provides access to enterprise data through a wide-area network.

“Our previous workgroup solution was just running out of gas,” said Hansen. “We couldn’t scale up, and system downtime was a major headache. We had to have an army of support engineers in here all the time fixing the latest problem.”

Sun, on the other hand, builds reliability into all its products. “Sun’s workgroup server has more built-in reliability features than high-end servers from other vendors,” said Hansen.

Another key factor in J. Crew’s selection of Sun was the easy manageability of the systems using Sun’s remote management products. “Now we’ve got a single point of management for all the systems, and we can manage any system from anywhere,” said Hansen.

With the new Sun solutions, J. Crew has consolidated the tasks of more than 30 servers into just five. “Sun products are well thought out; the company and its technology are both mature and stable; and Sun takes care of us when we have questions or problems,” said Hansen.

Customer Example: Net-Temps

To serve the growing net staffing industry, Net-Temps was founded in 1996 in Tyngsboro, Mass. The company’s Web site and client software provides a supercharged job search/resume posting service to the staffing industry and job seekers.

Net-Temps uses Sun servers for a wide range of functions, including email hosting, research and development, and software testing.

“We looked at Microsoft Windows NT servers and even put a demo together,” said Net-Temps partner Kevin Strange. “But with the site running on NT performance was bad. It couldn’t handle the database transactions like Sun could. If a single NT keyboard broke, it could bring down the whole system.”

The scalability and binary compatibility of Sun systems have enabled Net-Temps to add Sun Enterprise 450 workgroup servers to their current environment to run a database that receives millions of queries a day. As Net-Temps continues to grow, Strange is confident that with the Sun systems he will be able to easily add CPUs and memory to an existing machine. “With Sun...everything is compatible,” he said.



Proven Technology from a Trusted Vendor

Sun has consistently led the development of the network computing market, and that is why Sun is now a global enterprise with annual revenues exceeding \$9 billion. Sun is the #1 UNIX system vendor, #1 in UNIX software development, and #1 in systems support, training, and education for UNIX systems. Thousands of customers trust Sun products to run their mission-critical environments. And more than two million PCs already use Sun products to tap into enterprise network resources.

Conclusion

For solving the difficult challenges of today's Enterprise Workgroups, there are two primary alternatives: the Windows NT/Intel platform and the Sun platform. Sun outperforms Windows NT/Intel on virtually every front: performance and scalability, availability, resource management, interoperability, and security.

Sun's solutions for the Enterprise Workgroup are the first in the industry that deliver all the convenience, ease of use, and familiarity of the old workgroup model and high-speed, scalable, secure access to enterprise networking resources. Sun solutions do so at a level of performance, availability, scalability, and cost-effectiveness that will satisfy your corporate requirements and objectives.

Simply put, Sun's solution for the Enterprise Workgroup is:

- The best choice full-service workgroup LAN solution for the network age
- The best mid-tier server solution for enterprise applications
- The stand-out leader for Internet services and electronic commerce applications

We encourage you to find out more about our workgroup server solutions today. Please visit our Web site at <http://www.sun.com>, or call your local Sun sales representative for additional information.

###