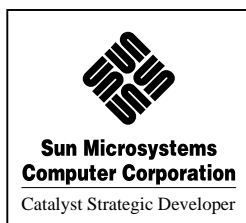


Enterprise Network Services

ENS[®] for the Solaris[®] Platform
Product Brief



B A N Y A N[®]

The Power of Banyan's Enterprise Network Services

Banyan's Enterprise Network Services deliver the four essential services upon which all other network services depend:

- **Directory** - the StreetTalk® Directory names, describes and locates resources throughout the enterprise
- **Security** - Authenticates network users and determines their authorization to perform certain network operations or use various network resources
- **Messaging** - Intelligent Messaging™ enables enterprise applications by providing electronic mail connectivity between network users and by providing a manageable platform for other messaging-based applications, such as forms routing and workflow
- **Management** - Provides fully integrated services to manage both the physical network and the overall system of users, resources and services, making it practical for a small set of centralized or decentralized administrators to keep the enterprise network operating smoothly and effectively

Effective enterprise-wide computing requires a set of tightly integrated services delivered consistently across existing network environments. This allows users to easily identify and locate resources throughout the network, implement effective security, facilitate messaging and ensure comprehensive management of the network and attached systems. Banyan leads the industry in this regard with its proven Enterprise Network Services (ENS).

Differentiating Banyan's ENS is a unique set of tightly integrated network services designed expressly for growing, complex enterprise-wide networks. These services are designed to work across the entire enterprise and provide consistent capabilities across multiple network environments. They integrate heterogeneous environments into an easy-to-use and easy-to-manage system.

For example, these services allow users to easily find resources on enterprise-wide networks without knowing their physical location, and allow managers to efficiently administer passwords and security for the entire network from a single location.

They also support applications running on a desktop machine by providing the entry point to the multiple networks in the enterprise. Good examples of these applications include file and printer sharing, database services and calendar services.

The benefits of ENS have been widely proven:

- Ease of administration of large networks through the integration of these services
- Increased user productivity resulting from simple, logical access to resources anywhere in the enterprise network through the StreetTalk Directory service

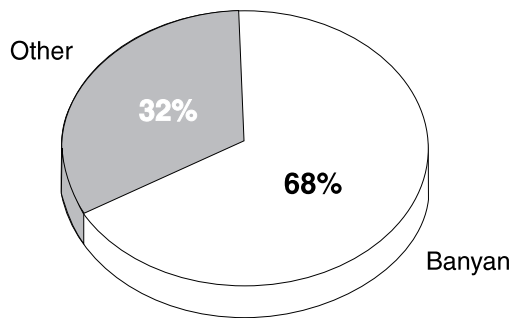
- Leveraging of customers' investments in existing systems through the tight integration of multiple network environments within the enterprise
- Support for non-disruptive growth and easy, cost-effective scalability because servers work together to provide a single network image
- Greater flexibility and choice resulting from the wide range of Banyan and third-party application services together with the wide range of UNIX applications tightly integrated with Banyan's Enterprise Network Services

Banyan extends its approach to enterprise-wide computing to Sun® Microsystem's RISC/UNIX platform with Enterprise Network Services now available for Sun's Solaris operating system. ENS combines the benefits of Banyan's tightly integrated core services with the performance, cost-effectiveness, scalability and broad software and standards support available on the Sun SPARC platform running Solaris.

The Sun version of Enterprise Network Services reflects Banyan's continuing commitment to UNIX® connectivity. Banyan's proven UNIX-based architecture and integrated network services have enabled Banyan to dominate the UNIX network services market by providing customers with an easy-to-use, easy-to-manage PC-UNIX networking solution.

For the purpose of rightsizing or in pursuit of client/server strategies, organizations today are seeking the performance, openness, cost-effectiveness and access to databases and other software that is available with RISC/UNIX systems like Sun's. However, when they try to combine UNIX networks with existing PC networks, they encounter a variety of integration barriers

Share of Worldwide UNIX Network Services Market - 1992



Source: IDC August, 1993

Banyan's well-integrated UNIX-based architecture and Enterprise Network Services have enabled Banyan to dominate the UNIX network services market.

that prevent users from effectively accessing resources across both environments.

ENS overcomes such barriers, allowing all users to access databases, applications and network resources on both UNIX and PC networks while giving administrators an effective means of managing systems and networks throughout the organization. Banyan thus brings together the benefits of both UNIX systems and PC networks.

The Sun Platform

The Sun platform, on which this version of ENS runs, consists of the Sun SPARC workstation or server, ranging from the desktop Sun SPARCclassic to the data center class Sun SPARCcenter 2000.

Solaris is Sun's UNIX operating system. It features advanced, standards-based UNIX technology enhanced for distributed client/server computing that is supported by thousands of software vendors including the leading relational database vendors and developers of key commercial applications in manufacturing, financial services, healthcare, telecommunications and more. Application vendor partners include Andersen Consulting®, Com-

puter Associates®, Dun & Bradstreet®, PeopleSoft®, SAP® and more. The leading vendors of relational database management systems include Ingres®, Oracle®, Informix® and Sybase®. (Enterprise Network Services directly supports the Oracle relational databases with others soon to follow.)

The Sun platform supports host as well as client/server environments. The SPARCserver line encompasses more than a dozen models ranging from entry-level systems to multiprocessor data center systems. Sun uses a variety of advanced RISC processors: microSPARC, microSPARC II, and SuperSPARC microprocessors. The Sun SPARCservers incorporate the latest advances in hardware technology, including a highly parallel superscalar design for faster and more precise processing and symmetrical multiprocessing for greater throughput and better performance.

The benefits of the Sun platform include:

- Support for client/server computing—Complete CASE environments, 3GLs and 4GLs and tools and enhanced distributed computing through its ONC set of tools for building, deploying and controlling heterogeneous distributed applications

- Support for rightsizing—The availability of leading commercial applications, particularly relational databases, along with tools such as transaction monitors make Solaris an ideal computing environment
- Reliability—proven experience in RISC design
- Performance—competitive results on key performance benchmarks
- Cost effectiveness—excellent performance on cost-per TPS, SPEC and other benchmarks
- Room to grow—the broad, highly scalable, multiprocessing model lineup allows an organization to easily increase processing power as needed

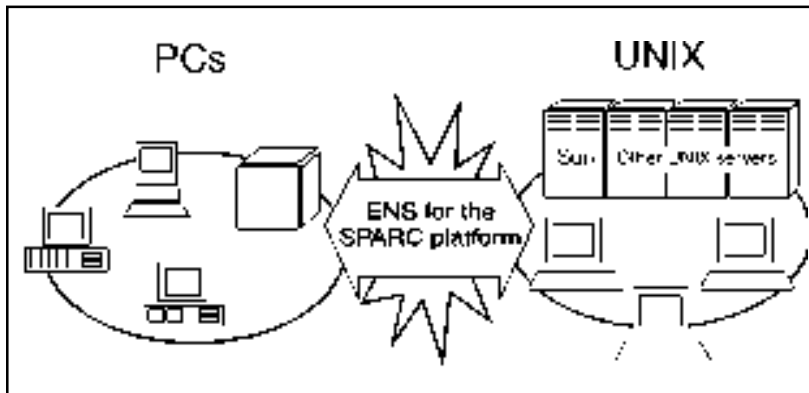
ENS and Sun—A Winning Combination

By combining Banyan's industry-leading network services with Sun's widely supported UNIX software and powerful RISC hardware, ENS delivers a number of important business benefits:

- Greater productivity through ease of use provided by Banyan's proven enterprise services extended to the Sun platform
- Greater efficiency and cost saving through consistent, easy enterprise-wide management capabilities
- Leveraging of systems investments through the full integration of PC and Sun's Solaris networks, providing transparent cross-network access to all information resources
- Cost savings through the advantageous price/performance of the Sun platform when running applications such as databases
- Room to grow within the highly scalable, multiprocessing entry-level to data center Sun product line

- Better support for rightsizing and client/server computing through access to the full set of UNIX services and a broad variety of UNIX applications, tools and relational databases, including those from almost all leading vendors
- Better support for open systems through a commitment to official and de facto standards

In short, the Sun version of ENS breaks the barrier by allowing organizations to effectively combine PC and UNIX networks into a true enterprise computing environment in which PC and UNIX users share files and printers, send and receive mail, and access applications and databases anywhere on the enterprise network. Organizations benefit through better leveraging of valuable computing resources, ease of management and ease of access to the entire UNIX environment with its wide variety of applications.



ENS allows organizations to integrate their PC and UNIX networks, giving them the combined advantages of both worlds.

Enterprise Network Services Technical Summary

Enterprise Network Services employs a layered architecture that provides both access to Banyan's industry-leading services and full access to the underlying Solaris operating system, services, tools, databases and applications.

ENS includes a complete set of network services equivalent to the services that have always been available with Banyan's VINES product. Users have full access to

the StreetTalk Directory, Intelligent Messaging and file and print sharing. Through virtual terminal services, PC users can access the ENS server and applications on other UNIX hosts.

In terms of management, Sun supports performance monitoring, operations control, storage management, security and both centralized and remote systems management. Through Sun's partnership with Banyan, Solaris applications can take advantage of ENS' powerful suite of network services to improve ease of use and management when deployed in enterprise-wide environments.

Solaris can be preloaded onto all Sun SPARC servers and workstations. The core Solaris software includes NFS (Sun's basic TCP/IP connectivity software), ONC+, and general programming tools. ONC+ consists of a broad set of distributed computing utilities.

The Sun SPARCserver line represents a highly scalable family of servers spanning from entry-level to multiprocessing data center configurations. At the introduction of ENS for the Sun platform, clock speed for the SPARCserver models ranged from 40 MHz to 85 MHz. Standard memory ranges from 32 MB to 512 MB, with maximum memory of up to 5 GB in some models. Internal disk storage for servers starts at 512 MB and expands to over one terabyte (1.3 TB) at the high end of the series. Sun regularly upgrades the performance and configurations of the SPARCserver line, and ENS will support such upgrades. ENS supports the Sun multiprocessor architecture. (Consult your local Banyan Sales Office or reseller regarding exact model configurations).

The SPARCserver line offers superior multi-vendor interoperability by supporting a wide array of hardware, software and network standards including SCSI-2, RS-232, System V, IEEE POSIX, X/Open, SNMP, FDDI, OSI, ANSI C and other widely used hardware and software standards.

UNIX Integration

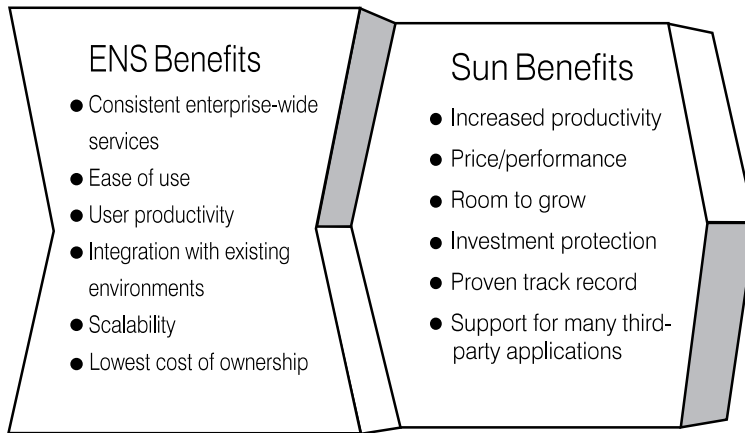
By providing ENS on the Sun platform Banyan extends the integration of PC and UNIX environments.

To ensure that the operating system, hardware platform and networking software work seamlessly and efficiently together, Sun and Banyan have assembled powerful tools for connectivity and management. Applications, files, printers and messaging are available from any point or platform in the enterprise.

Application Access

Users have common access to the client/server applications and the mission-critical business applications available on Solaris, as well as database products available from Sybase, Oracle, Ingres and Informix.

For building applications, the ENS Applications Toolkit contains application pro-



gramming interfaces and support tools for server, client and network development. Sun also offers stand-alone tools for application development, distributed computing and integrated-CASE.

Printing and File Sharing

PC and UNIX clients can output print jobs to local and remote printer resources. Printers may be attached to ENS or VINES servers, ENS and VINES clients via PC Print, local or remote UNIX hosts or on the network via TCP/IP. The ENS Print service administered through ENS and standard UNIX administrative tools enables complete bi-directional sharing.

With ENS, file sharing is handled through the UNIX Connectivity File Service

(UCFS), which supports Banyan file protocols and NFS, provided by Sun. UCFS allows both UNIX and PC users to share files on the server and other UNIX hosts.

Messaging

UNIX users can run Intelligent Messaging on ENS. They enjoy full access to Intelligent Messaging and StreetTalk functionality. Intelligent Messaging is an integrated, enterprise-wide messaging information service that provides message transport and management functions to electronic mail and mail-enabled applications from a variety of vendors. Organizations with mixed UNIX and PC networks can communicate through Intelligent Messaging. This gives users the freedom to select the electronic mail front-end application that best meets their needs.

Management

UNIX users have access to the full range of ENS management utilities, enabling effective network and system management from any location on the network. Through SNMP, Banyan and Sun will integrate Banyan's enterprise management services with Sun's multi-platform network management software, SunNet Manager.

Support

Sun and Banyan will coordinate support for ENS through a technical support alliance. The alliance ensures that customers will receive prompt, effective service and support for ENS.

Conclusion

The integration of Enterprise Network Services and the Sun platform represents a significant advancement for those who are pursuing the challenges of managing enterprise-wide networks. By combining the power of Banyan's industry-leading network services and the price/performance of the Sun's SPARC servers, users finally are able to break the barriers that traditionally have separated the PC and UNIX worlds and enjoy the full advantages of both environments with a single solution.

Enterprise Network Services (SPARC/Solaris version) Specifications

Enterprise Network Services base services:

- StreetTalk III, StreetTalk Directory Assistance
- Security
- Server
- Network Management
- Communications (VIP/Server-Server LAN/NetBIOS)
- File (Banyan File Service)*
- Print (server-based, PCPrint)*
- Time

Add-on options:

- Unix Connectivity File Service*
- Intelligent Messaging*
- IP Encapsulation of VIP (Server-Server IP)
- Remote Network Management
- Virtual Terminal Emulation
- Toolkit (Service/Client)

Hardware specifications:

- microSPARC, microSPARC II or SuperSPARC processor
- Memory requirement—32 MB minimum
- CD-ROM
- Ethernet or token ring adapter
- Disk storage—80 MB free

Client support:

- DOS 3.x, 4.0, 5.0, 6.0
- Windows 3.x
- Macintosh (file, print, messaging, management access through TCP/IP and NFS connectivity tools)
- OS/2 2.x
- UNIX workstations
- Windows NT

License packages:

- 0 users (application server, no file/print services)
- 20 users
- 50 users
- 100 users
- 250 users
- 500 users
- 1000 users

Language support:

- English
- French
- Spanish
- German

Installation media:

- CD-ROM

* Not available on application servers



Learn More About Banyan's Enterprise Network Services

Learn why so many customers have made Banyan solutions the network foundation for their business applications. Please call:

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In Canada 1 (905) 855-2971 In Asia Pacific (852) 821-9700

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