



eNetwork Communications Server for OS/2 Warp

Highlights

Lets you make application decisions based on business needs and not on underlying network protocols

Offers a cost-effective, scalable solution for small to large enterprise networks

Provides easy 3270 SNA application access from any Java-enabled Web browser

Enables remote, integrated cross-server administration capability through the Web

Offers extensive wide area connectivity and APPN support

Provides a reliable, high-performance gateway server for SNA and TCP/IP clients

Increases the reach of APPN networks through a new feature known as branch extender

Improves utilization of network assets to deliver cost-effective computing

Provides flexible access to any TCP/IP, network computing, or SNA application

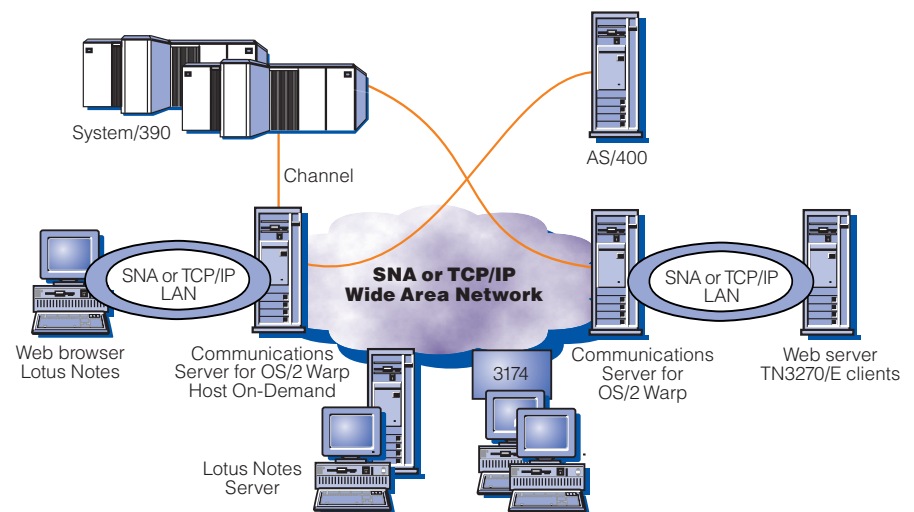
Improves network reliability and performance with High-Performance Routing

Supports access to host data by custom-developed applications on OS/2, Windows 3.1, Windows NT, and Windows 95 platforms

Protocol independence

It's no longer good enough to have a grasp of the technical issues in business computing. For your company to succeed, you must focus on the business issues that surround network computing: How can we rapidly assimilate newly acquired businesses? What new tools can boost the productivity of our information workers? How can we leverage our investment in existing information and network resources to gain a competitive edge?

First, it's critical that your company's network computing architecture is flexible. With a reliable and adaptable networking infrastructure in place, you're free to introduce new applications and



With your existing SNA network and the Sockets over SNA capability of Communications Server for OS/2 Warp, you can access other Sockets applications, such as Lotus Notes, or even connect to the Web.

Industrial-strength solutions for the enterprise-class environment

link them to crucial corporate systems without concern for the underlying network protocols. IBM® eNetwork™ Communications Server for OS/2® Warp, part of the powerful IBM eNetwork Software family, provides such protocol independence, as well as all the dependability, ease of use, and security you've come to expect from the most trusted name in computing.

IBM eNetwork Communications Server for OS/2 Warp is enterprise-class software that provides a highly stable platform for your critical applications regardless of where they reside, while enabling growth in emerging network computing applications. With a wide choice of connectivity and APIs, Communications Server offers robust support for network integration, including LAN-to-LAN, LAN-to-host, LAN-to-WAN, Internet, and intranets. And a single Communications Server supports network growth of up to 2000 connections and 20000 simultaneous communication sessions.

If you want to spend less time dealing with conflicting protocols, insufficient network resources, and a general inability to move forward while maintaining current systems, consider how Communications Server allows you to see networking technology as the solution, not the problem.

Network integration

Perhaps the most fundamental issue for network managers today is the growth of multiple network types within the enterprise. Crucial business applications have often been developed to run over networks based on Systems Network Architecture (SNA), and these applications remain vital to the smooth and efficient operation of the enterprise. At the same time, users are clamoring for newer applications, such as collaborative computing or new core business

systems. To accommodate such diversity, many networking organizations have implemented parallel networks—a costly, complex method that creates as many issues as it resolves.

IBM eNetwork Communications Server offers several solutions for uniting diverse network types. These solutions employ IBM AnyNet® technology, based on the open, industry-standard multiprotocol transport networking (MPTN) architecture, to allow new applications to run on existing networks without modification or change to hardware configurations. Unconstrained by network protocols, you're then free to add applications that make your company more competitive.

For example, Sockets and Internet Protocol (IP)-based applications, such as Lotus Notes®, Web browsers, SAP R/3, TME 10™ NetFinity®, File Transfer Protocol (FTP) and Simple Network Management Protocol (SNMP) applications can run absolutely unchanged over your existing SNA networks.

Or you could also extend SNA applications, such as Customer Information Control System™ (CICS™), DATABASE 2™ (DB2®), or terminal emulation to TCP/IP network users without the expense and hassle of a separate network. With Communications Server, communication between a centralized SNA computer and IP-based LAN workstations requires no modification to the SNA applications.

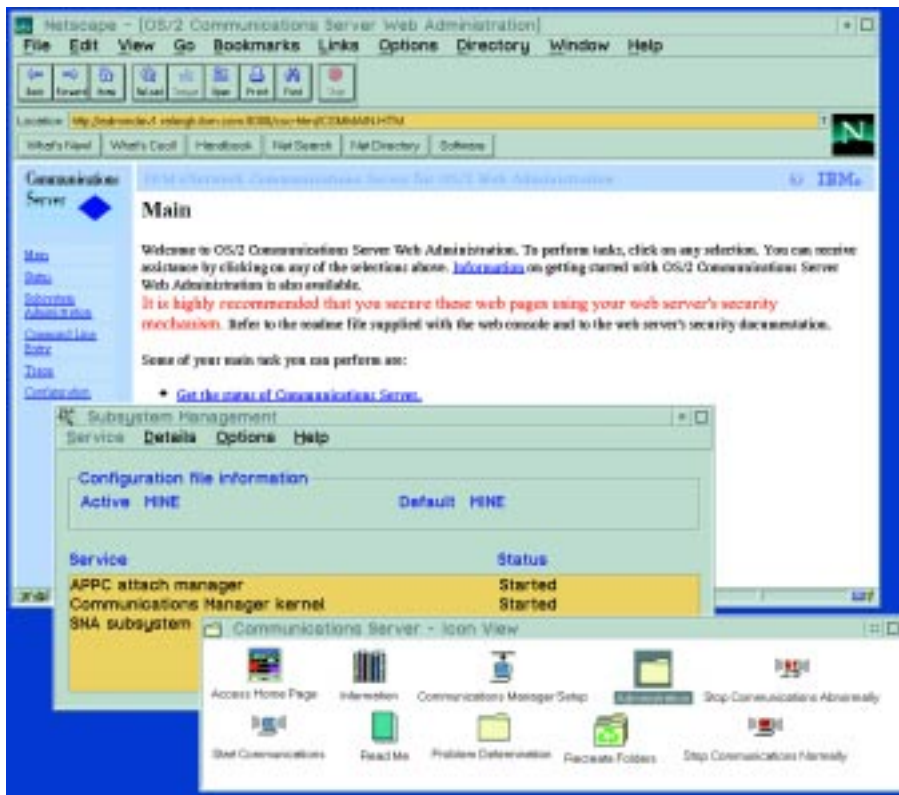
With the multiprotocol ability of Communications Server, similar applications can communicate over dissimilar networks to effectively create a single, integrated network. For example, users in remote branch offices can communicate with an existing central network. The Communications Server gateways allow you to:

- Connect TCP/IP LANs across an SNA network
- Connect SNA LANs across a TCP/IP network, or
- Connect SNA and TCP/IP LANs across either protocol
- Enable IPX and NetBIOS applications running on one LAN to communicate over a WAN with like applications on another LAN
- Connect IPX or NetBIOS applications over TCP/IP and SNA
- Enable TCP/IP user access to 3270 applications and print services through TN3270E server function

Internet solutions

As part of IBM's industry-leading network computing strategy, Communications Server includes Host On-Demand. This "100% Java™-certified" solution gives you fast and easy intranet or Internet access to 3270-based information. Using industry-standard Telnet 3270 protocols, Host On-Demand provides easy access for intranet and Web users needing occasional access to host applications and data. Any Java-enabled browser is capable of downloading the Host On-Demand application from Communications Server with the click of a mouse. No programming or additional hardware is required.

IBM eNetwork Communications Server for OS/2 Warp can also be administered over an intranet or the Internet. Either from a remote or local workstation, the administrator can manage Communications Server through a Web browser.



Enterprise-class functionality

IBM eNetwork Communications Server for OS/2 Warp supports SNA connectivity in traditional hierarchical subarea networks and in peer-to-peer environments. In subarea networks, you can use Communications Server to enhance connectivity and simplify configuration.

In a peer-to-peer environment, Communications Server manages connectivity using the Advanced Peer-to-Peer Networking®(APPN®) protocol. The full-function network node offers a highly robust, low-maintenance networking backbone that offers a number of benefits, including improved bandwidth utilization, reliability, performance, and ease of configuration and administration. Bandwidth is maximized through dynamic logical unit (LU) session routing.

Network reliability and performance are also improved by the High-Performance Routing (HPR) ability to reroute traffic around network failures and congestion. Furthermore, APPN lowers your network administration and maintenance costs by using dynamic and simplified configuration. Because Communication Server

supports DLUR, dependent LUs and 3270 applications can also benefit from APPN networking.

Extensive wide area support

IBM eNetwork Communications Server for OS/2 Warp offers robust connectivity for the distributed enterprise. Communications Server supports ATM, X.25, HPR, and frame relay across a wide area network. Frame relay can also be transported over ISDN lines.

Another noteworthy feature for wide area environments is MultiLink Transmission Group (MLTG). This feature allows you to more cost-effectively utilize multiple low-cost communication lines. Several low-speed, low-cost lines can function as a single transmission group at less cost than a single high-speed line.

Branch extender is a new feature in Communications Server that extends the breadth of APPN networks. Because less network topology information needs to be transmitted and overhead is reduced, your network can continue to grow significantly.

TN3270E solution

A wide range of TCP/IP clients can access SNA applications through the TN3270E capability of Communications Server. Engineered for ease of use, Communications Server works as a Telnet server, providing SNA network access to client applications running anywhere in your TCP/IP network. The TN3270E server supports any TN3270- and TN3270E-compliant client and enables users to print from 3270 applications to workstation printers or printers attached to the TCP/IP network.

SNA gateway support

IBM eNetwork Communications Server for OS/2 Warp provides a full-function SNA gateway, which allows multiple LAN-attached workstations to access multiple hosts, both S/390® and AS/400®, through one or more physical connections. This reduces the cost per workstation of central computer connections.

The Communications Server gateway supports the SNA protocols LU 0, 1, 2, 3, and dependent LU 6.2 advanced program-to-program communication (APPC). The LUs defined in the gateway can be dedicated to a particular workstation or pooled among multiple workstations. Pooling allows workstations to share common LUs, which increases the efficiency of the LUs and reduces the configuration and startup requirements at the central computer.

You can also define multiple LU pools, each pool associated with a specific application. And you can define common pools that are associated with multiple hosts. When a link is defined through the gateway, the LU is established and returned to the pool for access by other workstations when the session is ended.

In addition, Communications Server supports the forwarding of network management vector transports between the workstations and the central computer, which enables enterprise network management.

Each central computer views the Communications Server gateway as an SNA PU 2.0 node, supporting one or more LUs per workstation. As far as the host computer is concerned, all LUs belong to the SNA gateway PU. The SNA gateway can have multiple simultaneous host connections and can direct different workstation sessions to specific hosts.

Communications Server also provides the ability to configure a backup link that is activated when the primary link fails. This backup feature provides high availability.

Custom application support

Support for custom applications written for workstations needing server or host access is available with IBM Access Feature, a separately licensed optional feature for IBM eNetwork Communications Server for OS/2 Warp. Also available for OS/2, Windows® 3.1, Windows 95, or Windows NT™, Access Feature offers an ideal solution for rapidly changing network environments because of network protocol independence, flexibility of connectivity, and investment protection.

Windows 95 and Windows NT Access Feature

The Windows 95 and Windows NT Access Feature uses AnyNet technology, providing a way for you to communicate with applications on a wide range of processor platforms. You can interconnect networks without impacting applications.

The Windows 95 and Windows NT Access Feature provides SNA services and APIs to LAN-attached, 32-bit Windows workstations, capable of operating independent of Communications Server. The Access Feature offers

programming support for APPC and Common Programming Interface for Communications™ (CPI-C)™ applications.

This Access Feature allows your custom-developed workstation applications using the supported application programming interfaces (APIs) to operate without modification over either SNA or TCP/IP networks. These applications can communicate with partner applications on systems that support the APPC or CPI-C APIs.

Windows Access Feature

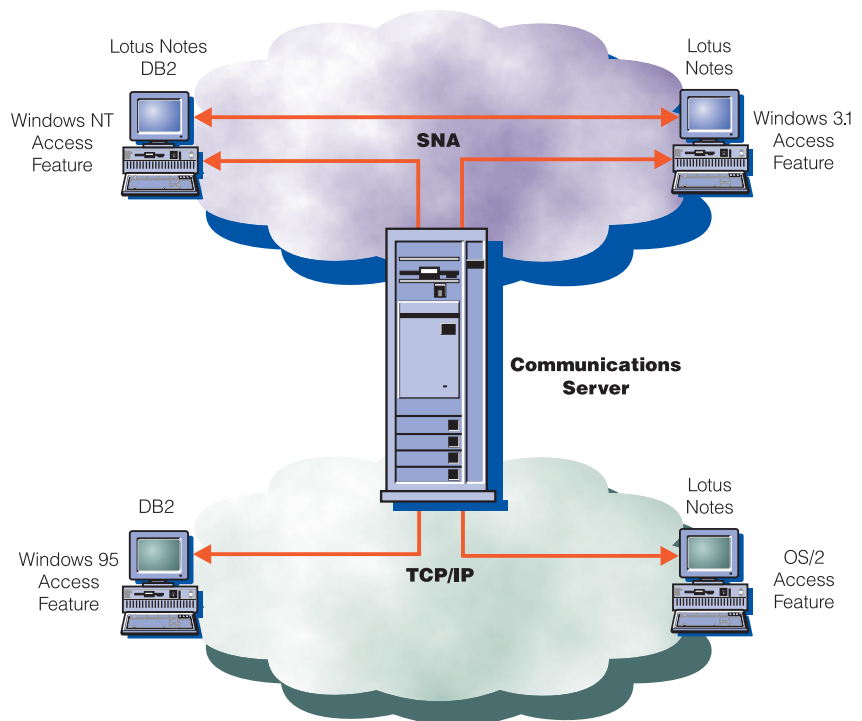
The Windows Access Feature offers SNA services and APIs for LAN-attached workstations, running Windows 3.1 and capable of functioning independent of the Communications Server. This feature provides APPC programming support and enables APPC applications to run unchanged over either SNA or TCP/IP networks.

With the Windows Access Feature, your Windows workstations can participate in many existing networks with IBM and non-IBM systems that support APPC.

OS/2 Access Feature

The OS/2 Access Feature offers the SNA services and APIs for a workstation capable of functioning independent from the Communications Server.

The OS/2 Access Feature multiprotocol support allows you to communicate with applications on AIX®, OS/2, OS/400®, MVS/ESA®, and Windows systems. Applications written for Sockets, APPC, CPI-C, and LUA APIs can run unchanged over either SNA or TCP/IP networks.



IBM Communications Server for OS/2 Warp features and benefits

Feature	Benefit
Multiprotocol gateway	<ul style="list-style-type: none">• Allows SNA applications to run unchanged over TCP/IP networks and allows Sockets (TCP/IP) applications to run over SNA networks• Enables IPX and NetBIOS applications to communicate over TCP/IP and SNA WANs• Provides greater freedom and more choices in mixing and combining network protocols, while protecting investment in user applications• Allows TCP/IP users easy access to IBM 3270 applications and print services through TN3270E server
SNA gateway support	<ul style="list-style-type: none">• Permits a workstation to function as a gateway, providing central-computer access to multiple large computers on token-ring, Ethernet, Synchronous Data Link Control (SDLC), integrated services digital network (ISDN), X.25, asynchronous transfer mode (ATM) (LAN emulation), Fiber Distributed Data Interface (FDDI), and frame-relay networks• Helps reduce costs and improves performance through data compression, transmission priority-setting, and full-duplex communication• Brings large-computer resources to many users, while keeping adapter and line costs down• Supports data encryption• Permits 16 (or more) SDLC links
SNA phone connect	<ul style="list-style-type: none">• Allows mobile workers to access a central computer, CM/2, Communications Server, or OS/2 Access Feature• Takes advantage of enhanced WAN connectivity over switched and nonswitched lines, including automatic dialing support• Uses automatic switched call management on both incoming and outgoing calls• Supports SDLC, X.25, and ISDN
Application programming interfaces (APIs)	<ul style="list-style-type: none">• Allows the developer to exploit Windows with 32-bit APIs• Lets application developers utilize any 32-bit language compiler• Continues to support 16-bit applications written to Communications Manager/2 APIs
Advanced program-to-program communication (APPC)	<ul style="list-style-type: none">• Delivers distributed processing capabilities by enabling different network nodes to share resources and tasks• Provides for peer-to-peer interaction and communication among various IBM and non-IBM systems• Supports multiple logical units and multiple concurrent links• Includes persistent verification to improve security• Supports 20000 simultaneous LU 6.2 sessions
Common Programming Interface for Communications (CPI-C)	<ul style="list-style-type: none">• Offers the function of APPC in a consistent form across multiple system platforms for CPI-C• Permits smooth movement of applications from one system platform to another (for example, from an OS/2 platform to an OS/400 platform)• Supports CPI-C, Release 2• Provides CPI-C support for WIN-OS/2®, enabling use of CPI-C applications in a WIN-OS/2 environment
Advanced Peer-to-Peer Networking (APPN)	<ul style="list-style-type: none">• Brings APPN network node and end node support, with the benefits of peer networking—including simplified configuration, better availability, dynamic routing, and easier maintenance• Offers a way for existing APPC and CPI-C applications to take advantage of peer networks• Allows 3270 applications to flow over APPN networks, with dependent LU requester (DLUR) enablement• Provides network node for intermediate routing services• Delivers High-Performance Routing (HPR) for increased data routing performance and non disruptive routing
Configuration installation options	<ul style="list-style-type: none">• Offers quick configuration enhancements• Includes IBM's configuration, installation, and distribution (CID) methodology• Provides smooth migration from previous CM/2 configuration• Enables remote server administration using the Web administration tool and a Web browser• Allows administrators to use the TME 10 NetView program to issue OS/2 commands to remote servers, gateways, and workstations
Problem determination and systems management	<ul style="list-style-type: none">• Offers quick access to integrated problem-determination functions• Allows many problem-determination functions to be performed under program control• Makes it easy to control and obtain status information on SNA communication resources being maintained by Communications Server using a Web browser• Facilitates management of remote databases and servers; local operator need not be present

IBM Communications Server at a glance

System requirements Intel 386 (or compatible microprocessor), or higher

Media CD-ROM

Software requirements IBM OS/2 Warp, Version 3.0, or higher

Memory requirements 4-9 MB of system random access memory (RAM)

Hard drive requirements 17 MB

Application programming interface (API) Upward compatibility for applications that are written to utilize the APIs of OS/2 Extended Edition and Extended Services Communications Manager and CM/2,

APIs supported

- APPC
- Common Services
- Conventional LU Application Interface (LUA) RUI
- CPI-C
- EHNAPPC (Windows clients)
- Management Services
- Network Operator Facility
- WinSock

Communication line speeds supported

- 19.2-Kbps switched SDLC
- 576-Kbps asynchronous
- 64-Kbps ISDN
- 2-Mbps leased SDLC

Workstation and gateway capacities

- LAN adapters per workstation = 16
- Active workstations per LAN adapter = 254
- Active LU 6. sessions = 20000
- Active connections = 2000

Supported communication services and protocols

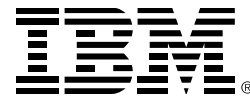
- ACDI
- APPN (network node, end node, and LEN node)
- Asynchronous
- ATM
- Coaxial (LAN over coaxial)
- Ethernet
- Fiber Distributed Data Interface (FDDI)
- Frame relay
- GDLC/ANDIS
- Hayes Autosync
- IBM PC network
- IEEE 802.2
- ISDN
- NetBIOS
- PCMCIA LAN adapters and modems
- Synchronous Data Link Control (SDLC)
- Token-ring network
- Twinaxial
- X.25

For more information

To learn more about the Communications Server product line, contact your IBM representative or IBM Business Partner™. Or visit our World Wide Web home pages at URL:

<http://www.networking.ibm.com/cms/commserv.html>

<http://www.software.ibm.com/is/sw-servers/communications>



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