IBM

IBM eNetwork Communications Server for OS/2 Warp

Highlights

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

Offers secure access to 3270 SNA applications from SSL-enabled TN3270 clients

Strengthens security for TN3270E with new centralized administration and control facilities

Provides easy access to 3270 SNA application from Java-enabled Web browsers

Offers extensive wide area network connectivity, including APPN and HPR support

Streamlines SNA-IP network integration through the enterprise extender function

Increases the capacity of APPN networks through the branch extender function

Eases migration between SNA Gateway and TN3270E server with new configuration options for session termination

Supports access to host data by custom-developed applications on OS/2 Warp, Windows NT, Windows 95 and Windows 98

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

An enterprise-proven solution

IBM® eNetwork™ Communications Server for OS/2® Warp (Communications Server) is enterprise-class software that provides a highly stable platform for your critical applications—regardless of where they reside—enabling and promoting growth of e-business applications. With a wide choice of connectivity and application programming interfaces (APIs), Communications Server offers robust support for network integration, including local area network (LAN)-to-LAN, LAN-to-host, LAN-to-wide area network (WAN), the Internet and intranets.
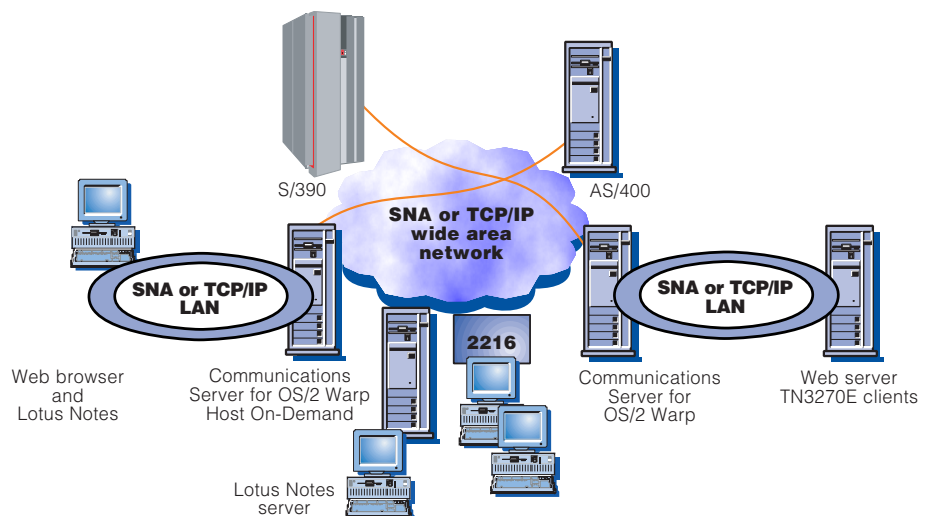
IBM eNetwork Communications Server is a powerful communications gateway, connecting diverse applications and networking environments.

e™

e–business

Industrial-strength solutions for the enterprise-class environment

A single Communications Server supports network growth of up to 2,000 connections and 20,000 simultaneous communication sessions. Communications Server brings you the reliability, open standards, scalability and security that you've come to expect from IBM.

Network integration
Perhaps the most fundamental issue facing 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); 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 and new core business systems. To accommodate this diversity, many networking organizations have implemented parallel networks—a costly, complex method that creates as many problems as it solves. Communications Server offers several solutions for uniting these diverse network types.

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 to printers attached to the TCP/IP network.

The TN3270E server provides robust, standards-based security. TN3270E includes Secure Sockets Layer (SSL) support, providing server authentication and session encryption. Centralized administration and control over *which* clients use the server and *what* SNA resources are accessed is also provided to further strengthen protection against unauthorized access to critical enterprise information.

You can now configure the way SNA Gateway, TN3270E server or other LU Application Interface (LUA) sessions are terminated. This allows SNA applications

to be migrated from one access type to another—for example, from SNA Gateway to TN3270E server—without change to the application.

New in Communications Server, Enterprise Extender is a leading-edge solution for SNA users accessing SNA applications over TCP/IP networks. It extends the reach of SNA applications and data to include IP networks and IP-attached clients with levels of reliability, scalability and control that are similar to those enjoyed by SNA users. Enterprise Extender uses standard IP technology; it requires no new hardware or software in the IP backbone network. Because it is available to the industry through both the APPN Implementers' Workshop and the Internet Engineering Task Force, the integration functions are seamless and interoperable.

IBM AnyNet® technology, based on the open, industry-standard multiprotocol transport networking (MPTN) architecture, allows new applications to run on existing networks without modification or change to hardware configurations.

For example, sockets and Internet Protocol (IP)-based applications—Lotus Notes®, Web browsers, SAP R/3, File Transfer Protocol (FTP) and Simple Network Management Protocol (SNMP)—can run absolutely unchanged over your existing SNA networks. Or you can extend SNA applications—Customer Information Control System (CICS®), DATABASE 2™ (DB2®) or terminal emulation—to TCP/IP network users without the expense and complexity of a separate network or modification to the SNA applications.

With the multiprotocol ability of Communications Server, you can effectively create a single, integrated network. The Communications Server gateways allow you to:

- Connect TCP/IP LANs across an SNA network, SNA LANs across a TCP/IP network or both

- Enable IPX and NetBIOS applications 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 the IBM industry-leading host integration strategy, Communications Server includes IBM SecureWay™ Host On-Demand. Using industry-standard Telnet 3270 protocols, this 100% pure Java™ solution gives you fast and easy intranet or Internet access to 3270-based information through any Web browser with the appropriate level of Java support; no programming or additional hardware is required. When the user environment requires more than two sessions per user or SSL support, the full-function Host On-Demand product is recommended.

Communications Server can also be administered over an intranet or the Internet. From either a remote or local workstation, the administrator can manage Communications Server through a Web browser.

Enterprise-class functionality
Communications Server supports SNA connectivity in traditional hierarchical sub-area networks and in peer-to-peer environments.

In a peer-to-peer environment, Communications Server dynamically manages connectivity using the Advanced Peer-to-Peer Networking® (APPN®) protocol. This simplifies network configuration, reducing network administration and maintenance. The full-function network node provides a highly robust, low-maintenance networking backbone that delivers 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. Because Communication Server supports dependent LU requester (DLUR), dependent LUs and 3270 applications can also benefit from APPN networking.

Extensive wide area support
Communications Server offers robust connectivity for the distributed enterprise. Communications Server supports ATM,

X.25, HPR and frame relay across a WAN. Frame relay can also be transported over ISDN lines.

MultiLink Transmission Group (MLTG) allows you to utilize multiple, low-cost communication lines more cost-effectively. Several low-speed, low-cost lines can function as a single transmission group, which can cost less than a single high-speed line.

The branch extender feature in Communications Server extends the breadth of APPN networks. Less network topology information needs to be transmitted so overhead is reduced and your network can continue to grow.

Classic SNA Gateway support

Communications Server provides a full-function SNA Gateway—allowing multiple LAN-attached workstations to access multiple hosts, both IBM S/390® and IBM AS/400®—through one or more physical connections. This can reduce the cost per workstation of central computer connections.

The Communications Server gateway supports the SNA protocols LU 0, 1, 2, 3 and 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, increasing the efficiency of the LUs and reducing the configuration and startup requirements at the central computer.

You can also define multiple LU pools, where each pool is 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.

Each central computer views the Communications Server gateway as an SNA physical unit (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 connections to multiple hosts simultaneously and direct different workstation sessions to specific hosts.

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

Easily managed

Communications Server is now a Tivoli Ready™ product, offering immediate out-of-the-box manageability with Tivoli, the industry leader in enterprise systems management.

Communications Server also makes managing licenses easier, allowing you to track usage by the number of concurrent connections to workstations and nodes in the network.

Custom application support

Support for custom workstation applications requiring server or host access is available with IBM Access Feature, a separately licensed, optional feature for Communications Server. Also available for Microsoft® Windows® 95, Windows 98 or Windows NT® and OS/2, Access Feature offers an ideal solution for rapidly changing network environments because of its network protocol independence, connectivity flexibility and investment protection.

The Windows 95, Windows 98 and Windows NT Access Feature uses AnyNet technology to communicate with applications on a wide range of processor platforms. You can interconnect networks without impacting applications.

The Windows 95, Windows 98 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 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.

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

The OS/2 Warp Access Feature multiprotocol support allows you to communicate with applications on IBM AIX®, OS/2, IBM OS/400®, IBM 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.

For more information
To learn more about Communications Server products, contact your IBM representative or IBM Business Partner.

Or visit our Web site at:
www.ibm.com/software/secureway

IBM Communications Server for OS/2 Warp features and benefits

Feature	Benefit
Multiprotocol gateway	• Allows SNA applications to run over TCP/IP networks and sockets (TCP/IP) applications to run over SNA networks without change to the applications • Enables IPX and NetBIOS applications to communicate over TCP/IP and SNA WANs • Enterprise extender enables SNA over IP while retaining benefits similar to those experienced in pure SNA networks • Allows TCP/IP users easy, secure access to IBM 3270 applications and print services through TN3270E server with SSL security • Provides centralized administration and control of which clients use the server
SNA Gateway support	• Permits a workstation to function as a gateway, providing centralized-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	• 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 for both incoming and outgoing calls • Supports SDLC, X.25 and ISDN
Application programming interfaces (APIs)	• Lets application developers utilize any 32-bit language compiler • Continues to support 16-bit applications written to APIs in Communications Manager/2
Advanced program-to-program communication (APPC)	• Delivers distributed processing capabilities by enabling different network nodes to share resources and tasks • Supports 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 20,000 simultaneous LU 6.2 sessions
Common Programming Interface for Communications (CPI-C)	• 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)	• 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 DLUR enablement • Provides network node for intermediate routing services • Delivers HPR for increased data routing performance and nondisruptive routing
Configuration installation options	• Includes IBM 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 Tivoli® NetView® program to issue OS/2 commands to remote servers, gateways and workstations
Problem determination and systems management	• 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® 486 (or compatible microprocessor) or higher
Media	CD-ROM
Software requirements	IBM OS/2 Warp Version 3.0 or higher
Memory requirements	4MB to 9MB of system random access memory (RAM)
Hard drive requirements	17MB
APIs supported	Upward compatibility for applications written to utilize the APIs of OS/2 Extended Edition and Extended Services Communications Manager and CM/2 • APPC • Common Services • Conventional LUA RUI/SLI • CPI-C • Management services • Network operator facility
Communication line speeds supported	• 19.2-Kbps switched SDLC • 57.6-Kbps asynchronous • 64-Kbps ISDN • 2-Mbps leased SDLC
Workstation and gateway capacities	• 16 LAN adapters per workstation • 254 active workstations per LAN adapter • 20,000 active sessions • 2,000 active connections
Supported communication services and protocols	• ACDI • APPN (network node, end node and LEN node) • Asynchronous • ATM • Coaxial (LAN over coaxial) • Ethernet • FDDI • Frame relay • GDLC/ANDIS • Hayes Autosync • IBM PC network • IEEE 802.2 • ISDN • NetBIOS • PCMCIA LAN adapters and modems • SSL • Synchronous Data Link Control (SDLC) • Token-Ring network • Twinaxial • X.25

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