

More cost-effective network computing solutions



eNetwork Communications Server for AIX

Highlights

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

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

Provides an integrated TN3270E server, with load balancing

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

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

Includes Host Access Class Library API for Java, enabling easy development of platform-independent host access applications

Provides simplified configuration and management through new easy-to-use Motif graphical user interface

Allows dependent LUs to take advantage of APPN networks

Supports direct S/390 channel and ESCON attachment

Improves network reliability and performance with High-Performance Routing (HPR)

Includes a single session license for IBM 3270 Host Connection Program for administrative use

Step up to enterprise networking

Do you have a variety of equipment and protocols — new client/server technology, SNA and TCP/IP networks, web users, and 3270 and 5250 terminals all connected to mainframe servers and midrange systems? If you do, then you understand the need to combine your SNA and TCP/IP networks. You also understand that it's a challenge to



More cost-effective network computing solutions

connect them so that they look and feel like one efficient, seamless network. IBM® eNetwork™ Communications Server for AIX®, Version 5, (Communications Server) gives you the solution to your challenge. Communications Server offers a total enterprise networking solution, SNA-to-TCP/IP connectivity, and a whole lot more. Communications Server brings the reliability, performance, scalability, and efficiency of SNA to your enterprise network.

Communications Server runs on the AIX platform and extends the communication capability of the IBM AIX Base Operating System, by acting as an enterprise server for TCP/IP and SNA networks.

Seamless integration and scalability

Communications Server was designed with AIX and RS/6000™ in mind. By taking advantage of system facilities, this design enables maximum performance and

data throughput. From a network of just a few nodes to a network of tens of thousands of nodes, Communications Server integrates applications and protocols seamlessly.

Protocol independence

With the explosion of TCP/IP networks and UNIX® systems, integrating a diverse environment of mainframe servers, midrange computers, and workstations across SNA and TCP/IP networks can be a formidable task. However, now you can use IBM eNetwork Communications Server for AIX to share data or applications across multiprotocol networks.

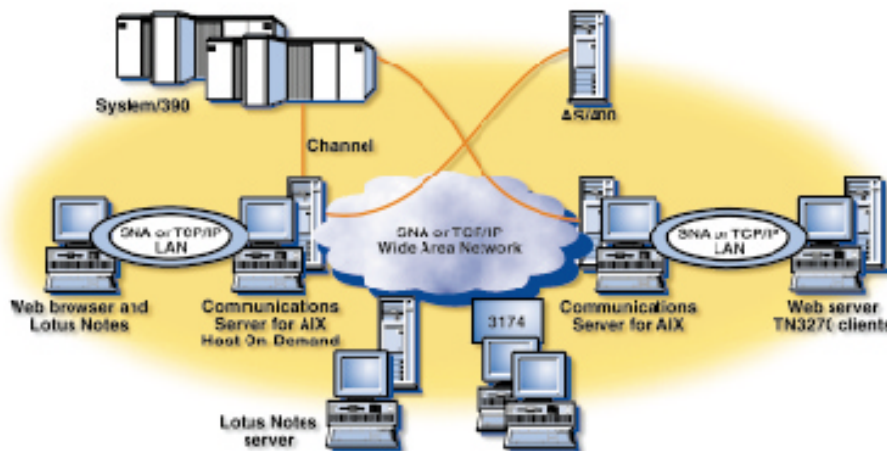
Communications Server offers several solutions for your diverse environment. IBM AnyNet® functions, based on multiprotocol transport network (MPTN) technology, an open industry-standard architecture, is designed to allow any application to run over any network protocol. This means you can add

applications designed to run over different protocols — without modifying applications or changing hardware.

For example, with AnyNet Sockets over SNA, you can run sockets applications over existing SNA networks without adding a separate TCP/IP network. Such applications include File Transfer Protocol (FTP), Telnet, Simple Network Management Protocol (SNMP), Lotus Notes™, SAP R/3, Web browsers, and TME 10®.

Likewise, with AnyNet APPC over TCP/IP, you can extend advanced program-to-program communication (APPC) or Common Programming Interface for Communications (CPI-C) applications to TCP/IP users, without adding a separate SNA network. This allows AIX APPC or CPI-C applications, such as Transaction server or DB2 Database Server, to communicate with centralized computers and workstations across a TCP/IP network, without changing the applications.

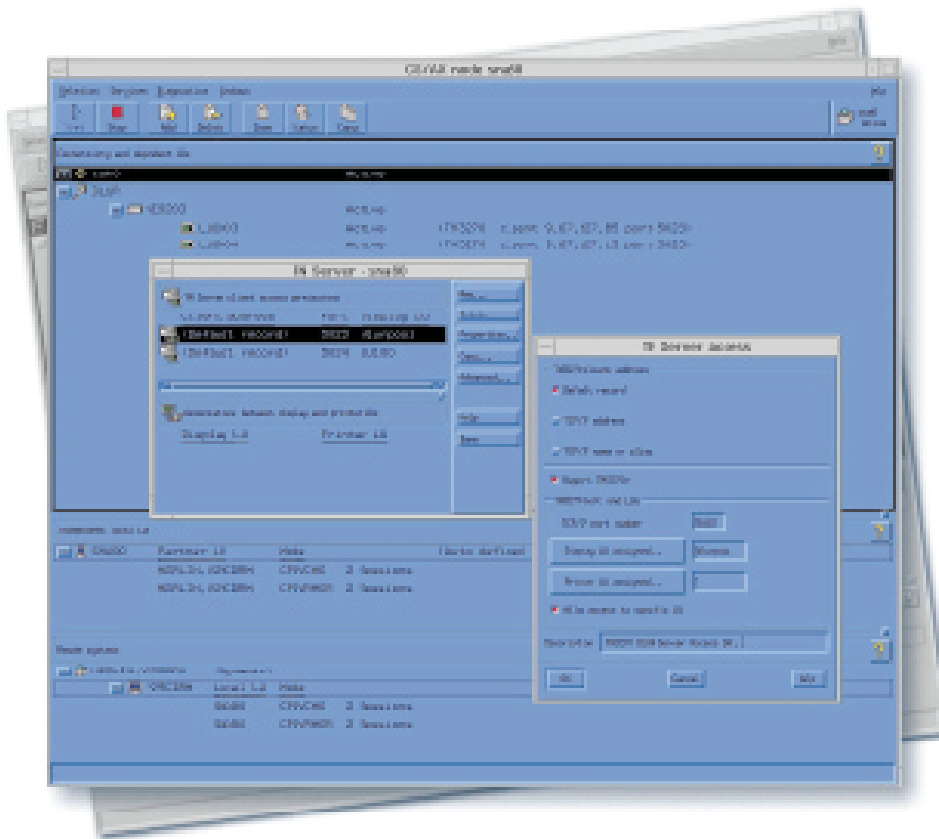
Communications Server acts as a multiprotocol gateway, allowing similar applications to communicate over unlike networks. Users in remote branch offices can communicate over an existing central network. Paired gateways allow you to connect two TCP/IP LANs across an SNA network or two SNA LANs across a TCP/IP network.



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

TN3270E solution

IBM eNetwork Communications Server for AIX, Version 5, addresses the explosive growth in TN3270 by providing an integrated TN3270E server. This function provides access to SNA networks for a wide range of TCP/IP clients. Communications Server provides SNA network access to client applications running anywhere in your TCP/IP network.



Example of the easy to use Motif Administration Tool, showing dynamic configuration of TN3270 access.

The TN3270E server supports any TN3270/TN3270E-compliant client and enables users to print from 3270 applications to locally attached printers or network printers residing anywhere in the TCP/IP network.

Internet solutions

As part of IBM's industry-leading network computing strategy, Communications Server includes Host On-Demand Version 1. This 100% Pure 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 V1 provides easy access for intranet and Web users needing access to host applications and data. Any Java-enabled browser is capable of downloading the Host On-Demand application with the click of a mouse. No programming or additional hardware is required.

Enterprise-class functionality

Communications Server 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 enables a highly robust, low-maintenance networking backbone that offers a number of benefits, including improved bandwidth utilization, reliability, scalability, performance, and ease of configuration and administration. Bandwidth is maximized through dynamic logical unit (LU) session routing and more powerful application programming features. Furthermore, APPN lowers your network administration and maintenance costs by using

dynamic and simplified configuration. Since Communications Server supports DLUR, dependent LUs and 3270 applications can also benefit from APPN networking.

Network reliability and performance are also improved by the High-Performance Routing (HPR) ability to nondisruptively reroute traffic around network failures and congestion.

High performance

Communications Server exploits the parallel processing capabilities of the symmetrical multiprocessing systems (SMP), improving performance up to three times over non-SMP systems.

Using the efficiency of APPN and HPR with the robust and powerful AIX platform, Communications Server consistently and reliably delivers peak performance from your network. With APPN, Communications Server can achieve effective data transfer rates up to 90 percent of the available bandwidth of a token ring or FDDI ring during file transfer.

Complete connectivity

Whether you want to connect networks over a wide area network (WAN) using SDLC, frame relay, or X.25; over a local area network (LAN) using token ring, Ethernet, Fiber Distributed Data Interface (FDDI), asynchronous transfer mode (ATM) LAN emulation, or direct-attached S/390® channel or ESCON® adapter, Communications Server is the solution for you.

You can use Communications Server to connect multiple physical units (PUs) across a single physical adapter for token ring, Ethernet, X.25, Synchronous Data Link Control (SDLC), FDDI, and channel. Support for multiple PUs extends the number of supported LUs per adapter port for all link types. This allows you to connect one or more centralized computers across the same adapter.

Multiple PU support saves you money by reducing the number of adapters required and costly links needed in your network.

SNA gateway support

The SNA gateway function of Communications Server allows many SNA clients to access multiple S/390® and AS/400® computers through one or more physical connections. It also allows clients to dynamically access a backup computer that shares the workload and improves availability of resources. SNA gateway allows you to preset and manage sessions, automatically logging off unattended workstations to free up access for other users.

The SNA gateway function of Communications Server supports the SNA protocols LU types 0, 1, 2, 3, and dependent LU 6.2 (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 start-up requirements at the central computer.

Easy-to-use MOTIF Administration Tool

Communications Server includes a graphical user interface which can be used to configure, view, and manage SNA resources. Extensive help screens provide guidance to perform specific tasks and also include overview and reference information. Dynamic updates to configuration can be made while the SNA node is active. Up-to-date status is displayed, and resources can be activated and deactivated through this same easy-to-use interface.

Problem determination

When problems occur, you can find and fix them quickly using a range of diagnostic tools and resources. These vary from low overhead logs of critical events, such as link failures, to a detailed interpreted trace of the actual SNA flows.

Systems management

In addition to the Motif Administration Tool, support is provided for character mode configuration and management through SMIT, scripted control with an extensive command line, and program access with a full-function node operator facility (NOF) API. These are further supplemented by support for configuration from the host through NetView® and the ICF/RCF services.

Power programming

Communications Server is not just a powerful stand-alone network server; it is a sophisticated programming interface that makes it an excellent platform for programming and application integration. Communications Server provides a number of application programming interfaces (APIs) which enables you to easily develop applications across multiple platforms. APIs included are:

- LUA-RUI, supporting dependent LU types 0, 1, 2, 3
- CPI-C and APPC APIs supporting both dependent and independent LU 6.2
- SNA management services
- Generic SNA interface
- Node operator facility
- Host Access Class Library API

The eNetwork Host Access Class Library (Host Access API) is a new Java application programming interface. It provides

the ability for you to develop your own 3270, 5250, or VT Java applications. The Host Access API for Java provides a core set of classes and methods that allow the development of platform-independent applications that can access host information at the data stream level.

Communications Server also provides the APPC Application Suite, a set of applications that demonstrates the distributed processing capabilities of APPN networks, including AFTP, APING, AEXEC, ATELL, ACOPY, and ANAME. Also included is an SNA interactive transaction program generator (SNAPI) that provides assistance for developing APPC and CPI-C transaction programs. You can use this tool to quickly develop programs that interact with existing programs on any remote system that supports LU 6.2, including AIX, CICS®, Information Management System (IMS™), OS/400®, and IBM Communications Servers on other platforms.

Applications supported

Some of the applications supported by Communications Server include:

- SNA Client Access for AIX
- 3270 Host Connection Program for AIX
- DB2/6000: DDCS/6000 and Client Support/6000, SNA Support Feature
- Transaction Server for AIX
- IBM Connection Program/400 for UNIX Environment
- Tivoli™ TME 10™
- ADSTAR® Distributed Storage Manager for AIX
- CallPath® Server
- DirectTalk® for AIX

IBM Communications Server for AIX features and benefits

Feature	Benefit
Multiprotocol gateway	<ul style="list-style-type: none">• Allows Sockets (TCP/IP) applications to run over SNA networks and allows APPC applications to run over TCP/IP• Provides greater freedom and more choices in mixing and combining network protocols, while protecting investment in user applications
TN3270E server	<ul style="list-style-type: none">• Allows TCP/IP users easy access to IBM 3270 applications and print services through TN3270E server and Host On-Demand Web-based 3270 emulator
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
High-Performance Routing (HPR)	<ul style="list-style-type: none">• Increases data routing performance and reliability• Offers nondisruptive routing around network outages
SNA gateway support	<ul style="list-style-type: none">• Allows many SNA clients to access multiple S/390 and AS/400 computers through one or more physical connections• Brings large computer resources to many users, while keeping adapter and line costs down• Allows you to preset and manage sessions, automatically logging off unattended workstations to free up access for other users.• Allows the LUs defined in the gateway to be dedicated to a particular workstation or pooled among multiple workstations.
Application programming support	<ul style="list-style-type: none">• Provides an excellent platform for programming and application integration.• Includes eNetwork Host Access Class library (Host Access API) for Java that provides a core set of classes and methods that allow the development of platform-independent applications that can access host information at the data stream level.• Provides LUA request unit interface (RUI) API, supporting dependent LU types 0, 1, 2, 3.• Provides CPI-C and APPC APIs supporting both dependent and independent LU 6.2. This commonly used interface makes it easier to develop cross-platform applications.• Provides node operator facility (NOF) API, which allows custom applications to be written to perform system administration tasks.• Provides SNA Management Services API, which enables an AIX system to function as a Management Services (MS) entry point.• Includes an APPC Application Suite, a set of applications that demonstrates the distributed processing capabilities of APPN networks, including AFTP, APING, AEXEC, ATELL, ACOPY, and ANAME.• Provides an SNA interactive transaction program generator (SNAPI) that provides help for developing APPC and CPI-C transaction programs. You can use this tool to quickly develop programs that interact with existing programs on any remote system that supports LU6.2.
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
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 AIX platform to a Communication Server for NT platform)• Supports CPI-C, Release 2
Configuration, installation, and administration options	<ul style="list-style-type: none">• Easy-to-use quick installation option• Provides smooth migration from previous versions of Communications Server for AIX, SNA Server for AIX, SNA Server/6000, and AIX SNA Services/6000• Introduces new easy-to-use Motif graphical user interface, which significantly increases the productivity of system administrators
Problem determination and systems management	<ul style="list-style-type: none">• Offers quick access to integrated problem determination functions• Allows problem determination and systems management functions to be performed under program control through the use of the NOF API• Facilitates management of remote servers; local operators need not be present

IBM eNetwork Communications Server for AIX at a glance

Hardware requirements	<ul style="list-style-type: none">• RS/6000, POWERserver® or Power PC®, POWERstation™ computers, 9076 SP2® Scalable POWERparallel® System or other AIX platform• Appropriate communication adapters, cables, and device drivers
Media	<ul style="list-style-type: none">• CD-ROM, 8-mm tape, 4-mm tape, QIC525 1/4-inch tape, QIC 120 1/4-inch tape
Software requirements	<ul style="list-style-type: none">• IBM AIX, Version 4.1.5, or later• Motif level 1.2 support (part of AIX Base Operating System; required for Motif administration)
Memory requirements	<ul style="list-style-type: none">• 32 MB of real memory
Hard drive requirements	<ul style="list-style-type: none">• 32 to 36 MB of permanent space is required depending on features installed, plus 2 MB of temporary space during installation• 2.5 to 4.0 MB per language is required for messages, depending on language• 8MB is required for softcopy documentation
Application programming interface (API) APIs supported	<ul style="list-style-type: none">• Upward compatibility for applications that are written to utilize the APIs of AIX SNA Services/6000, Version 1.x; AIX SNA Server/6000 Version 2.x; AIX SNA Server for AIX, Version 3.x;• Communications Server for AIX, Version 4.x• CPI-C and APPC supporting both dependent and independent LU6.2• Common Services• Conventional LU Application Interface (LUA) RUI (supports LU 0, 1, 2, 3)• Network management services• Node Operator Facility• Host Access Class Library API
Supported communication services and protocols	<ul style="list-style-type: none">• ATM (LAN emulation)• ESCON and block multiplexer channel• Ethernet• Fiber Distributed Data Interface (FDDI)• Frame relay (using an emulated token ring interface with the TPS®/SoftFRAD™ product)• IBM Token-Ring Network• Synchronous Data Link Control (SDLC)• X.25

For more information

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

<http://www.software.ibm.com/enetwork/commserver/>



© International Business Machines Corporation
1997

IBM Corporation
Research Triangle Park, NC
USA

12-97
All rights reserved

IBM, ADSTAR, Advanced Peer-to-Peer Networking, AIX, AnyNet, APPN, AS/400, Business Partner, CallPath, CICS, CICS/6000, DATABASE 2, DB2, DB2/6000, DirectTalk, eNetwork, ESCON, OS/400, POWER PC, POWERparallel, POWERserver, POWERstation, RS/6000, S/390, System/390, and SP2 are trademarks of International Business Machines Corporation in the United States and/or other countries.

Lotus Notes is a trademark of Lotus Development Corporation in the United States and/or other countries.

Tivoli, TME, and TME 10 are trademarks of Tivoli Systems Inc. in the United States and/or other countries.

Java is a trademark of Sun Microsystems, Incorporated.

Microsoft, Windows and Windows NT, are trademarks of Microsoft Corporation.

UNIX is a registered trademark in the United States and other countries licensed exclusively through X/OPEN Company Limited.

Other company, product, and service names may be trademarks or service marks of others.



Printed in the United States of America on recycled paper containing 10% recovered post-consumer fiber