



Software Announcement

IBM US Software

October 8, 1996

IBM Communications Server for OS/2 Warp, Version 4.1 an IBM Software Server

IBM Communications Server for OS/2® Warp, Version 4.1 is part of IBM's family of modular application servers, known as IBM Software Servers. These servers enable you to rapidly implement client/server applications.

Communications Server offers flexible, reliable, high-speed support for LAN-to-LAN and LAN-to-Host communications. It enables PCs running OS/2, Windows† 3.1, Windows 95, Windows NT, and DOS to communicate with S/390®, AS/400®, and with each other, over TCP/IP and SNA WANs. It supports token-ring and Ethernet LANs, leased and switched lines, Frame Relay, FDDI, ISDN, SDLC, and X.25.

Communications Server provides a powerful multiprotocol communications platform. You can mix and match SNA and TCP/IP-based network protocols as your networks evolve. Applications written to either SNA, SOCKETS, IPX, or NetBIOS can run unchanged on mixed network backbones. It provides flexibility in adapting network support to your changing business needs.

Communications Server delivers **superior 3270 performance** compared to the Microsoft† SNA Server. The results of a Tolly Group study show that Communications Server delivers **superior transaction throughput and faster response time**, while requiring less CPU resources. Communications Server throughput with one processor is more than double SNA Server's throughput with dual processors, and Communications Server has better response time than all configurations of SNA Server!

Planned Availability Date: October 11, 1996

Description	Part Number
Communications Server for OS/2 Warp, V4.1	84H1802

IN BRIEF . . .

Communications Server offers:

- Superior performance compared to the Microsoft SNA Server (according to The Tolly Group)
- Complete multiprotocol support
 - TN3270E Server for 3270 emulation, and print services, over TCP/IP **(New)**
 - LAN Gateway providing IPX and NetBIOS over TCP/IP and SNA **(New)**
 - Sockets over SNA Gateway and access nodes **(Enhanced)**
 - SNA over TCP/IP Gateway and access nodes
- OS/2 Access Feature V4.1 with a 5MB footprint **(New)**
- SNA support
 - SNA Gateway pooling and load balancing **(New)**
 - SNA Transmission priority
- Complete Advanced Program-to-Program Network (APPN®) node support with:
 - APPN backup link **(New)**
 - High Performance Routing
 - Dependent LU Requester
 - Multiple PU support
- Robust 32-bit APIs and support for Windows CPI-C applications on OS/2 **(New)**
- Connectivity
 - Frame Relay support **(New)**
 - SDLC support for 16 or more physical connections
 - SDLC Multipoint Primary Server
- Robust LAN and WAN adapter support

Marketing Information

Demonstrations: There will be no demonstrations for this product.

Promotional Material: The following materials are available:

Title	Order Number
Product Brochures	
IBM Communications Server for OS/2 Warp	G325-3596
IBM Communications Server for OS/2 Warp, OS/2 Access Feature	G325-3568
IBM Communications Server for OS/2 Warp, Windows Access Feature	G325-3566
IBM Communications Server	G325-3565
10 Reasons to Use the IBM Communications Server	G325-3564
IBM Software Servers Overview Brochure	G520-8000
IBM Communications Server Family Brochure	G520-5207
Positioning IBM's Family of OS/2 Desktop Communications Software Products	G325-3642
Use Your SNA Network for Internet Access Brochure	G325-5102
SAP R/3 Over SNA Brochure	G325-3650

Application Briefs

German Retailer Benefits from Multiprotocol Solution	G325-3624
Turner Broadcasting System Benefits from Communications Server	G325-3538
Retailer Supplier Implements Lotus Notes Over APPN	G325-3648

INEWS will contain references to any promotional materials in support of this announcement.

Promotional materials, as applicable, will also be available on MKTTOOLS under the CS2MKT package and include the following:

Title	File Name
Lotus Freelance Graphics for Windows — CS/2 Product Overview Presentation — 60 pages	CS2PITCH PREBIN
CS/2 Product Overview Presentation Script	CS2PITCH SCRIPT
IBM Communications Server Specification Sheet (OS/2 and AIX, an IBM Software Server)	COMSRVRS TERS3820
Communications Server for OS/2 Warp Specification Sheet	CS2 TERS3820
Communications Server for OS/2 Warp, OS/2 Access Feature Specification Sheet	CS2AF2 TERS3820

Communications Server for OS/2 Warp, Windows Access Feature Specification Sheet	CS2AFW	TERS3820
10 Reasons to Use IBM Communications Server for OS/2 Warp Brochure	CS210REA	TERS3820
IBM Communications Server White Paper	WHITECS	TERS3820
Positioning IBM's Family of Desktop Communications Software Products — White Paper	DESKPOS	TERS3820
Use your SNA network for Internet Access Brochure	SNAINTER	TERS3820
Text file of modems supported by CS/2	CS2MODEM	TEXT

- Information about the Communications Server for OS/2 Warp product can also be obtained via the World Wide Web (WWW) URL:
<http://www.raleigh.ibm.com/cm2/cm2prod.html>
- Information on IBM Software Servers by reviewing can also be obtained via the WWW URL:
<http://www.software.ibm.com/is/sw-servers>
- If more information is needed on the Communications Server for OS/2 Warp product, contact Rich Hillman at RALVM12(HILLMANR), tie line 444-5663, or 919-254-5663.

HONE Information

Proposal material is not available through HONE.

Configurator Information: The CFPC and PSC-USA configurator aids support this announcement.

Installation Information

Installation Support

Installation and technical support is provided by the IBM Networking Support Center in Raleigh. The vehicle for this support is World Wide Question and Answer, formerly ASKQ, use keyword CMSRV.

Field Support: Area personnel should contact area specialists for technical marketing assistance. IBM representatives are provided installation and technical support through World Wide Question and Answer, formerly ASKQ. Questions should be researched in World Wide Question and Answer using the search word CMSRV, with the area specialists and in publications before submitting a new Ask Questions — Support question.

SupportLine, IBM's fee based voice and electronic support offering, is available to assist customers with installation, usage, documentation or code related support.

For more information about this service, contact your local IBM representative, or the Personal Systems Support Family Marketing Center at 800-799-7765, or facsimile at 800-426-6495. Business hours: 8:00 a.m. to 6:00 p.m. eastern time.

Direct Customer Support: Installation and technical support is provided via the Personal Systems Support Family of Services. These new fee services enhance customer productivity by providing voice and electronic access into IBM for answering customers' networking questions related to installation and/or usage. For more details on the Personal Systems Support Family of Services contact the Personal Systems Support Family Project Office at 800-799-7765.



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This announcement is provided for your information only and is subject to change without notice. For additional information, contact your IBM representative.

Description

IBM Communications Server for OS/2 Warp, Version 4.1 and OS/2 Access Feature for OS/2 Warp are the follow-on to IBM Communications Server for OS/2 Warp, Version 4. These products are based on the very popular Communications Manager/2 and AnyNet® products. Refer to USS 96-033, dated March 12, 1996.

The following is a summary of the new functions and enhancements. Unless otherwise noted, the functional description applies to both Communications Server and OS/2 Access Feature for OS/2 Warp.

- **LAN Gateway** (Communications Server only)

The LAN Gateway function, working in paired gateway configurations, allows Novell NetWare Internet Packet Exchange (IPX) applications and NetBIOS applications running on one LAN to communicate over SNA or TCP/IP WANs with like applications running on another LAN. This function is available in English and has not been translated.

- **TN3270E Server** (Communications Server only)

The TN3270E Server function delivers 3270 terminal and printer emulation to TCP/IP users using open standards and multivendor solutions.

- **Sockets over SNA gateway enhancements** (Communications Server only)

- A maximum of 2,000 connections
- Route Backup and Load Balancing

Enables multiple (or parallel) gateways to service the same site, providing balancing and backup support

- Route Discovery

Helps you reduce the number of explicitly defined route statements in your network

- Routing Information Protocol

Updates routing table entries for nodes in IP networks when more direct routes are discovered

- Datagram Retry Delay

Enables you to limit the number of failed SNA allocates in your network

- Variable Subnetting

Enables you to specify a subnet mask when you configure routes

- **Programming support**

- **CPI-C support for Windows applications on OS/2**

Communications Server supports the CPI Communications (CPI-C) API for WIN-OS/2™, enabling the use of Windows (3.1x) CPI-C applications in a WIN-OS/2 session. Communications Server has tested and provided header files for the C programming language for use with this API. Windows CPI-C applications that use NS/Windows are binary compatible with Communications Server's WIN-OS/2 CPI-C support.

- **User Control of Unlocked Shared Storage limit**

OS/2 has a block of storage that applications share. This support allows users to control how much of the OS/2 storage Communications Server uses and reduces the default amount to 4MB.

- **Connectivity enhancements**

- *Frame Relay support*

Communications Server now has support for Frame Relay (implemented to the RFC-1490 standard) to enable the transport of frames over public or private high-speed digital lines. Communications Server provides support for 802.5 (SNA and IP), and HPR over Frame Relay. This function is available in English and has not been translated.

- *SNA Gateway enhancements* (Communications Server only)

The SNA Gateway feature has been enhanced to provide additional pooling capabilities

- *Backup Links*

Communications Server allows you to specify an alternate link to use if activation of the primary link fails.

- *Multiple PU support*

Communications Server provides multiple PU support on a single SDLC link, without Dependent LU Requester (DLUR) support.

- *Non-Limited Resource Connection Network*

This enables the user to define a connection network as a non-limited resource so that the sessions and link will not be dropped if there is a period of time with no conversations.

- **Shallow and deep adapter support**

Communications Server supports nonprogrammable "shallow" and programmable "deep" adapters for ISA, Micro Channel, and PCI-bus PCs using a set of open APIs. These APIs allow IBM and other Original Equipment Manufacturers to provide connectivity for Communications Server for a variety of protocols (SDLC, X.25, Frame Relay, IDLC...) over a variety of connection types (Leased, Switched, ISDN, Async...).

Device drivers from these companies are included the Communications Server CD-ROM (the drivers are supported by these companies).

- IBM
- ARN Informatique
- Eicon Technology Corp.
- Microgate Corporation
- Synaptel

Other adapter vendors also claim support for Communications Server. Refer to the **Technical Information** section for a more complete description of these adapters. The Communications Server Web pages have the most complete and current hardware and software compatibility information. The URL for this page is:

<http://www.raleigh.ibm.com/cm2/cm2mkt.html>

- **DLUR with DLUS-Server LU Registration**

This function allows an end node DLUR to register its LU so that the network node can locate these LUs without having to pass the locate requests to DLUR.

- **Smaller footprint**

Communications Server can now be installed in as little as 5MB. If you have a stable configuration and limited hard drive space, you can reduce the amount of storage Communications Server requires by removing the components that enable you to change your configuration or the functions you have installed. If you later need to change the configuration you will need to reinstall Communications Server.

- **Emulator support** (Communications Server only)

Communications Server includes the IBM Personal Communications AS/400 and 3270 —APPC/LUA Entry Level (Entry-Level Emulator) for administrative use. This emulator provides 3270 and 5250 entry-level emulator functions to personal computers using OS/2 Warp Connect or OS/2 Warp, and allows seamless integration of your personal computer and 3270 host environments. This emulator provides a subset of the features and functions in the full-function IBM Personal Communications family of emulators.

Communications Server Performance

Communications Server delivers superior 3270 performance compared to the Microsoft SNA Server. This is the conclusion of The Tolly Group (Tolly Group Doc. 6273) report that compares the efficiency of Communications Server for OS/2 Warp, V4.1 and Microsoft's SNA Server V2.11 in several PC platforms and gateway configurations. They measured gateway transaction throughput and corresponding CPU utilization and response time of each product.

The results show that Communications Server delivers superior transaction throughput and faster response time while requiring less CPU resources. Communications Server throughput with one processor is more than double SNA Server's throughput with dual processors. Furthermore, Communications Server running on a single Pentium platform has better response time than all configurations of SNA Server!

For more details on The Tolly Group report, visit our Web page:

<http://www.raleigh.ibm.com/cm2/cm2prod.html>

Communications Server Packaging

A CD-ROM contains the following:

- IBM Communications Server for OS/2 Warp, Version 4.1 (Communications Server)

- Multiprotocol gateway support
 - TN3270E Server (New)
 - LAN Gateway to enable IPX and NetBIOS applications to communicate across TCP/IP and SNA (New)
 - SNA over TCP/IP
 - Sockets over SNA (Enhancement)
 - SNA Gateway (Enhancement)
- Frame Relay support (New)

- APPN network, end node and entry networking (LEN) node support with these functions:

- HPR with Automatic Network Routing (ANR) and Rapid Transport Protocol (RTP)
- DLUR —DLUS-Server LU Registration (New)
- Multiple PU support
- APPC full-duplex

- Installation and configuration support
- Local and wide area connectivity support
- Multiprotocol Transport Services (MPTS)
- SNA network support and systems management
- APPN backup link support (New)
- 32-bit OS/2 APIs
- CPI-C support for Windows applications on OS/2 (New)
- User control of unlocked shared storage limit (New)
- IBM Personal Communications AS/400 and 3270 —APPC/LUA Entry Level (Entry-Level Emulator) (New)

- Desktop Access Features for OS/2 and Windows

- The OS/2 Access Features for OS/2 2.11 and OS/2 Warp. These Access Features provide 32-bit OS/2 API support and enable applications written to the Sockets, APPC, CPI Communications, and LUA APIs to run unchanged over either SNA or TCP/IP local and wide area networks.

The Access Feature for OS/2 Warp is based on IBM Communications Server for OS/2 Warp, Version 4.1. It runs on OS/2 Warp, or later. It is also referred to as OS/2 Access Feature Version 4.1. This Access Feature provides:

- Multiprotocol access node support for the desktop with Sockets over SNA and SNA over TCP/IP
- Frame Relay support (New)
- DLUR —DLUS-Server LU Registration (New)
- Backup link support (New)
- APPN end node
- HPR with RTP support
- Local and wide area connectivity support
- SNA network support and systems management
- 32-bit OS/2 APIs
- CPI-C support for Windows applications on OS/2 (New)
- User control of unlocked shared storage limit (New)
- Installation and configuration support
- Smaller footprint —as low as 5MB (New)
- MPTS

The Access Feature for OS/2 2.11 is the same Access Feature included in IBM Communications Server for OS/2 Warp, Version 4. It runs on OS/2 2.11, or later. It is also referred to as OS/2 Access Feature Version 4.0.

- Windows Access Feature Version 4.1 (Windows Access Feature)

The Windows Access Feature is a bundle of two existing products that provide APPC programming support and enable APPC applications to run unchanged over either SNA or TCP/IP local and wide area networks. The products are:

- IBM APPC Networking Services for Windows (NS/Windows) Version 1.0.2 (PSM 94-112, dated September 20, 1994).
- IBM AnyNet APPC over TCP/IP Version 1.0 for Windows (USS 95-033, dated March 21, 1995).

The Windows Access Feature also includes the LAN Support Program.

The CD-ROM also contains:

- Product files
- Documentation
- Productivity aids
- Sample response files
- API support files
- Adapter device drivers

Communications Server License

The license for the IBM Communications Server for OS/2 Warp, Version 4.1 includes:

- The IBM Communications Server for OS/2 Warp, Version 4.1
- One Distributed Feature license for the OS/2 Access Feature for OS/2 2.11 or OS/2 Warp (Version 4.0 or Version 4.1), or the Windows Access Feature Version 4.1.
- The IBM Personal Communications AS/400 and 3270 — APPC/LUA Entry Level emulator for administrative use on the IBM Communications Server for OS/2 Warp, Version 4.1. It is not licensed to be distributed to PCs attached to the server.

The Access Features are designed for use on desktop machines other than the Server. These features may be ordered only after the Communications Server has been ordered or acquired.

Marketing Information

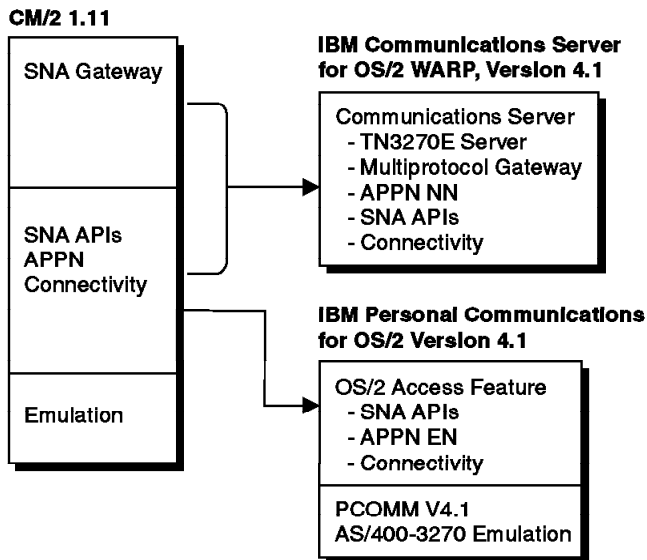
Product Positioning

IBM's Communications Manager/2 and Personal Communications/AS400 and 3270 are the workstation communications products of choice for millions of customers.

IBM recently introduced the products that continue the natural evolution of this widely recognized, industry-leading SNA communications software. These products are:

- The IBM Communications Server for OS/2 Warp, Version 4 for customers running OS/2 2.11, or later
- The IBM Communications Server for OS/2 Warp, Version 4.1 for customers running OS/2 Warp Version 3, or later
- IBM Personal Communications Version 4.1 family of products (PCOMM) with powerful client communications for OS/2, DOS, Windows 3.1, and Windows 95 desktop environments.

The evolution for users of Communications Manager/2 to these products is represented in this figure:



Communications Manager/2 (CM/2) Evolution

The introduction of IBM Communications Server for OS/2 Warp, Version 4.1 represent the next phase of IBM communications support for Multiprotocol, SNA and APPN. Communications Server is the natural path for CM/2 customers who need the advanced, all-in-one multiprotocol server support, and the other functions described in this announcement.

With the PCOMM family of client products, IBM offers a line of clients across multiple operating system environments. PCOMM provides customers with 3270 and 5250 emulation, SNA and TCP/IP client support, and automation tools for their workstations running OS/2, DOS/Windows, and Windows 95.

PCOMM for OS/2 Version 4.1 is the natural migration path for CM/2 customers who need the advanced emulation capabilities provided in PCOMM, with APPN and API support for the desktop.

To learn about the PCOMM family of client products, refer to USS 96-041, dated March 19, 1996, or access:

<http://www.raleigh.ibm.com/pcf/pcfprod.html>

To learn more about the Communications Server product go to our WWW Home Page at:

<http://www.raleigh.ibm.com/cm2/cm2prod.html>

Marketing Strategy

The IBM Software Servers and Communications Servers families represent the widest range of servers in the industry. The IBM Communications Server for OS/2 Warp is a member of both of these families.

IBM Software Servers enable you to rapidly implement client/server applications by using modular server technology that supports multiple server and client platforms.

IBM Communications Servers enable you to meet changing network requirements responsively while providing around-the-clock availability. IBM Communications Servers have the broadest functions and connectivity, including solutions for OS/2, OS/390™, AIX®, and NetWare for SAA®.

The marketing strategy for IBM Communications Server for OS/2 Warp is to:

- Leverage IBM Communications Server for OS/2 Warp's role in the server families
- Maintain position with existing customers
- Upgrade Communications Manager/2 Gateway customers
- Provide an alternative for customers migrating to Microsoft NT
- Leverage Communications Server's robust performance advantage over Microsoft SNA Server (as confirmed by The Tolly Group)

IBM Communications Server for OS/2 Warp is a:

- Flexible, modular platform for developing distributed and client/server applications.
- Powerful communications gateway for connecting diverse applications and network environments
- Strategic vehicle for enabling rapid deployment of new and enhanced business applications

The IBM Communications Server for OS/2 Warp has these key advantages:

- High availability
 - High Performance Routing (HPR) provides improved performance and increased availability. HPR quickly and smoothly routes data across the network, selecting optimum routes, avoiding network congestion, and automatically re-routing around network outages without disruption.
 - Load balancing enables multiple (or parallel) gateways to service the same site providing backup and balancing support.
 - Backup links so that your communications don't skip a beat when your connection fails.
- Superior performance
 - Communications Server delivers superior 3270 performance compared to the Microsoft SNA Server. This is the conclusion of The Tolly Group (Tolly Group Doc. 6273) report that compares the efficiency of Communications Server for OS/2 Warp, V4.1 and Microsoft's SNA Server V2.11 in several PC platforms and gateway configurations. They measured gateway transaction throughput and corresponding CPU utilization and response time of each product.

- The results show that Communications Server delivers superior transaction throughput and faster response time while requiring less CPU resources. Communications Server throughput with one processor is more than double SNA Server's throughput with dual processors. Furthermore, Communications Server running on a single Pentium platform has better response time than all configurations of SNA Server!

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- Business flexibility
 - Choose your application- Sockets, NetBIOS, SNA, IPX —without regard to the underlying network.
 - Choose your network, SNA or TCP/IP, to reduce complexity and control costs by not maintaining parallel networks.

For example, if you already have an SNA network, you can connect your business to the Web or use Web Servers and browsers for work group collaboration without adding a duplicate TCP/IP network.
- Investment protection
 - Communications Server smoothly integrates with your existing systems. It protects customers' investments in existing Communications Manager/2 (CM/2) installations and easily migrates existing CM/2 gateway and APPN network installations.
 - Communications Server protects customers' investments in existing emulators by supporting existing IBM and non-IBM 3270 and 5250 terminal emulators.
 - Communications Server protects customers' investment in SNA communications network support while giving them the freedom to adapt to changing network needs. It provides robust multiprotocol support which enable customers to expand the scope of their existing SNA or TCP/IP network to embrace multiprotocol traffic. Investments in networking skills, operating procedures and hardware can be preserved and leveraged. Customers can interconnect networks without impacting applications and reduce operational and management costs at the same time.

Intended Customers: IBM Communications Server for OS/2 Warp, Version 4.1 is the recommended upgrade path if you are a user of Communications Manager/2 gateway function or Communications Server Version 4. It offers:

- Powerful, flexible, and proven communications support for mission-critical environments
- Versatile, high-capacity support for LAN-to-LAN, LAN-to-Host and LAN-to-Internet communications.
- Protocol independence in mixed TCP/IP, SNA, IPX, and NetBIOS environments

Key Selling Points: The key new Communications Server for OS/2 Warp, Version 4.1 functions are:

- Enhanced multiprotocol support with TN3270E Server support for 3270 emulation over TCP/IP and LAN

Title	Order Number
Network Administration and Subsystem Management Guide	SC31-8181
Command Reference	SC31-8183
Frame Relay User's Guide and Reference	GC31-8319
Glossary	SC31-8184
Guide to AnyNet LAN Gateway	GC31-8320
Guide to AnyNet SNA over TCP/IP	GC31-8193
Guide to AnyNet Sockets over SNA	GC31-8191
Problem Determination Guide	SC31-8186
Response File Reference	SC31-8187
AnyNet Guide to APPC over TCP/IP for Windows	SV40-0215

Displayable Softcopy Publications: The Communications Server CD-ROM has the following Communications Server publications in BookManager®, PostScript, and OS/2 INF view formats (except where noted):

Title

32-Bit ACDI Programming Reference
 32-Bit APPC Programming Guide and Reference
 32-Bit Application Programming Guide
 32-Bit Conventional LUA Programming Reference
 32-Bit System Management Programming Reference
 32-Bit X.25 Programming Reference
 Command Reference
 CPI-C Reference Supplement
 Developer's Toolkit for ANDIS
 Developer's Toolkit for Intelligent Adapters
 Frame Relay User's Guide and Reference (BookManager and Postscript only)
 Guide to AnyNet LAN Gateway
 Guide to AnyNet SNA over TCP/IP
 Guide to AnyNet Sockets over SNA
 Message Reference (INF format only)
 Network Administration and Subsystem Management Guide
 Problem Determination Guide
 Response File Reference
 Service Point Application Router and Remote Operations Service Guide
 Up and Running!

These IBM APPC Networking Services for Windows 1.0 publications are on the CD-ROM in BookManager, and PostScript formats:

Title

Getting Started Administrator's Guide
 Application Programmer's Reference
 Configuration Parameters Reference for Administrators and Application Programmers

The IBM AnyNet Guide to APPC over TCP/IP for Windows is on the CD-ROM in BookManager, and PostScript formats.

Education Support

Recently, IBM strengthened the professional certification program. The IBM Certified Enterprise Communications Specialist certification is added for OS/2 and AIX® to the IBM Professional Certification program. To find out more about the Professional Certification program, access:

<http://www.austin.ibm.com/psinfo/profesnl.html>

To become an OS/2 Enterprise Communications specialist you need to pass a single test (number 551). This test is designed to measure the skills of an individual to plan, install, configure, use, and support a total client and server solution. It will be available worldwide by mid-October 1996, through Sylvan Prometric and the IBM Education and Training Test Centers.

To find out more about Sylvan Prometric, call 800-959-3926 or access:

<http://www.austin.ibm.com/psinfo/profesnl.html>

IBM provides a variety of education to help you prepare for this test. You can customize your education by selecting any of the following methods that best meet your needs:

- Interactive Enterprise Communications CD-ROM — Computer-based training for how to plan, install, configure, and solve problems. This comprehensive CD-ROM also includes product demos, sales information, and what customers have to say about the Enterprise Communications products. Check the following web site for instructions on how to get this CD-ROM:

<http://www.raleigh.ibm.com/ecf/ecfover.html>

- Communications Server Study Guides — Information and self-study units on a variety of topics. The guides are available for the OS/2 Communications Server and other IBM Software Servers at the following web site:

<http://issc2.boulder.ibm.com/ibmedu/partner.htm>

- IBM Education and Training Course — IBM offers the Communications Server for OS/2 and PCOMM: Networking Workshop (course number N2028) as preparation for the IBM Certified Enterprise Communications Specialist. This new course includes hands-on labs and lecture topics including Communications Server installation; Personal Communications configuration and operation; SNA 3270 gateway configuration; APPN, APPC, HPR concepts; problem determination and network management. For schedules and availability check the IBM Education and Training web site:

<http://www.training.ibm.com/ibmedu/training.htm>

You can also call IBM Education and Training at 800-IBM-TEACH (426-8322) for education catalogs, schedules, and enrollments.

Additional Information

Open Blueprint™

Communications Server provides the desktop screen look and feel. Its implementation is consistent with the User Interface function described in IBM's Open Blueprint. It provides the OS/2 Presentation Manager® interface from IBM to facilitate open, distributed, multivendor interoperability.

IBM Communications Server for OS/2 Warp, Version 4.1 enables distributed parts of an application to "converse" with one another. Its implementation is consistent with the conversational function described in IBM's Open Blueprint. It provides the CPI-C industry-standard interface from X/Open. It supports the APPC protocol

from IBM to facilitate open, distributed, multivendor interoperability.

Communications Server enables Sockets applications to communicate across a SNA network. These Sockets applications can provide the Remote Procedure Call function that enables distributed parts of an application or applications to request service from the other part and await reply.

Communications Server provides the ability to synchronize services and have them retain integrity. Its implementation is consistent with the Transaction Manager function described in IBM's Open Blueprint.

This Systems Network Architecture Sync Point support function allows distributed transaction coordinators, such as IBM DB2® for OS/2, to provide products that implement two-phase commit protocols. These protocols, referred to as Syncpoint Managers, can be invoked by an application program to define synchronization points (sync points) where all changes to distributed resources are consistently either committed or backed out, even if errors or failures occur. Sync Point Managers make it easier for programmers to write reliable, distributed applications programs by reducing the application logic required to recover from application errors, system failures, and network failures.

IBM has announced the following Sync Point Managers built on the LU6.2 Sync Point support. Refer to USS 96-011, dated January 30, 1996.

- Distributed Relational Database Architecture™ (DRDA®), Sync Point Manager support of DB2 for OS/2 Version 2.1.1
- Distributed Database Connection Services (DDCS), for OS/2 Multi-User Gateway Version 2.3.1

Communications Server provides the ability to insulate applications from the underlying communication network. Its implementation is consistent with the Common Transport Semantics function described in IBM's Open Blueprint. It provides the Transport Layer Protocol Boundary (TLPB) industry-standard interface from X/Open.

To facilitate open, distributed, multivendor interoperability Communications Server supports the Multiprotocol Transport Network (MPTN) industry-standard protocol from X/Open.

Communications Server provides the ability to transport information over wide area and local area networks. Its implementation is consistent with the Transport Services function described in IBM's Open Blueprint. It provides the Berkeley Sockets interface from the University of California at Berkeley. Communications Server also provides these protocols:

- TCP/IP industry-standard protocol from the Internet Engineering Task Force (IETF)
- APPN industry-standard protocol from the APPN Implementers Workshop

With the LAN Gateway function Communications Server also enables Novell NetWare IPX applications and NetBIOS applications running on one LAN to communicate over SNA or TCP/IP WANs with like applications running on another LAN.

Communications Server provides for the manageability of hardware and software resources. Its implementation is consistent with the Systems Management function

described in IBM's Open Blueprint. Communications Server provides:

- Network Architecture/Management Services (SNA/MS) protocol from IBM
- Common Management Information Protocol (CMIP) industry-standard protocol from the International Telecommunications Union — Telecommunications (ITU-T) and the International Organization for Standardization and its associated technical committee (ISO/IEC).

Communications Server provides support for building distributed or client/server applications. Its implementation is consistent with the Development Tools function described in IBM's Open Blueprint. It supports the building of applications and solutions that use the standard interfaces associated with the various components and resource managers of the Open Blueprint. The applications and solutions can be distributed across the various parts of the network to facilitate open, distributed, multivendor interoperability.

Communications Server provides the collection of procedures used to dynamically establish, maintain, and terminate connections in a communications network. Its implementation is consistent with the Signalling and Control Plane function described in IBM's Open Blueprint. It supports the Integrated Services Digital Network (ISDN) industry-standard protocol from the ITU-T and the Conferencing industry-standard protocol from the ITU-T to facilitate open, distributed, multivendor interoperability.

Communications Server provides the structure to let networks accommodate and exploit high-speed and highly-reliable transmission technologies. Its implementation is consistent with the Subnetworking function described in IBM's Open Blueprint. It supports these standards:

- LAN (Ethernet, token ring) industry-standard protocol from the ISO/IEC
- ISO Data Link Control (ISO DLC) industry-standard protocol from ISO/IEC
- Frame Relay industry-standard protocol from the ITU-T
- Asynchronous Transfer Mode (ATM) industry-standard protocol from the ITU-T and the ATM Forum

Technical Information

Specified Operating Environment

Hardware Requirements: Communications Server supports IBM and non-IBM Intel-processor-based PCs that are supported by IBM's OS/2 Warp Server, Version 4 or by IBM's OS/2 Warp, Version 3, or later, operating system. PCs must have an Intel 80386SX processor, or later, adequate RAM, and adequate hard drive storage capacity. If Communications Server is to be locally installed, the PC must also have a CD-ROM drive.

Memory and hard-drive resource capacity required to install and run Communications Server and OS/2 Access Feature will depend on a number of factors including:

- The OS/2 configuration
- Other installed user applications
- The Communications Server and OS/2 Access Feature configuration

The following estimates of Communications Server and OS/2 Access Feature (exclusive of OS/2) memory and hard drive resource requirements are provided as a guide. Customers should consult OS/2 documentation and their application documentation to determine the memory and hard drive storage required for those parts of their overall installation.

- Memory requirements
 - Communications Server memory requirements
 - About 4MB RAM for a small gateway configuration with approximately 20 downstream PCs
 - About 10MB RAM for a robust gateway configuration with approximately 300 downstream PCs
 - OS/2 Access Feature requires approximately 3MB RAM for an APPC, or LUA, or DLUR configuration.

- Hard drive requirements

Communications Server hard drive requirements for the base product:

Component	Hard Drive (MB)
Typical Communications Server	16.9
Typical OS/2 Access Feature	15.9
Minimum installation	5.0 ¹

¹ The OS/2 Access Feature can now be installed in as little as 5MB. If you have a stable configuration and limited hard drive space, you can reduce the amount of storage Communications Server requires by removing the components that enable you to change your configuration or the functions you have installed. If you later need to change the configuration you will need to reinstall.

- Hard Drive Requirements

Communications Server Hard Drive requirements for the base product:

Component	Hard Drive (MB)
Communications Server base code	10.4
MPTS	1.8
FFST™	0.55
UPM	0.8

Communications Server Hard Drive requirements for additional features:

Component	Hard Drive (MB)
Configuration Services	4.2
Keylock	0.04
Problem Determination Aids	1.3
Productivity Aids	4.1
Remote Operations	0.4
Subsystem Management	0.7
16-bit Toolkit Samples and Examples	5.0
32-bit Toolkit Samples and Examples	2.7

WIN-OS/2 CPI-C Toolkit and Samples	0.3
WIN-OS/2 CPI-C	0.2

Communications Server Hard Drive requirements for documentation:

Component	Hard Drive (MB)
Command Reference	0.17
Documentation — Administration	1.6
Documentation — Programming	5.7
Glossary	0.3
Message Reference	1.3
Problem Determination Guide	0.6
Response File Reference	0.4
Up and Running!	0.6

Keyboards: Keyboards are supported via the base operating system for Communications Server and OS/2 Access Feature.

Printers and Plotters: Printers and plotters are supported via the base operating system.

Communications Adapters: A Communications Server PC may require one or more communications adapters (and appropriate cables). The PC may also require a modem for SDLC, Asynchronous, or X.25 communications. The number of slots on a PC available for communications may also be affected by the other devices that the PC requires.

WAN Communications Adapter Support: The adapters and device drivers are supported by the adapter vendors. The Communications Server Web pages have the most complete and current hardware and software compatibility information. The URL for the compatibility page is:

<http://www.raleigh.ibm.com/cm2/cm2mkt.html>

Communications Server is compatible with these ISA/EISA bus WAN adapters:

- IBM Adapters
 - ISA SDLC/ASYN Communications Adapter switched and asynchronous connections (IRQ 3 and 4 only)
 - Wide Area Connector for SDLC, X.25 over leased and switched connections
 - Wide Area Connector for Frame Relay over leased connections
 - Multiprotocol Communications Adapter for ISA for SDLC over leased, switched and asynchronous connections
 - X.25 Co-Processor for X.25 over leased connections
 - WAVERUNNER™ Digital Modem for SDLC, X.25 and IDLC over ISDN
 - ATM (LAN Emulation) adapters for LAN protocols
 - ISDN Interface Co-Processor for SDLC, X.25, IDLC over ISDN
 - SDLC Adapter for SDLC over leased and asynchronous connections
 - Serial/Parallel Adapter (Asynchronous port) for SDLC over asynchronous connections

- Realtime Interface Co-Processor Multiport (supported via RTIC support Program)
- Realtime Interface Co-Processor Multiport Model 2 (supported via RTIC support Program)
- Realtime Interface Co-Processor Multiport Model 2 (supported as a shallow adapter) for SDLC over leased, switched and asynchronous connections
- Coax adapters for LAN over coax (3174 Peer):
 - Advanced 3278/79 Emulation Adapter
 - 3278/79 Emulation Adapter
- Twinax adapters for LU6.2 applications
 - Enhanced 5250 Display Station Emulator Adapter over Twinax
- Non-IBM Adapters
 - ARN for X.25 over ISDN
 - Diehl (subsidiary of Eicon Technology) for SDLC, X.25, IDLC over ISDN
 - Digi International for SDLC over leased and switched connections
 - Eicon Technology Adapters for SDLC, X.25, Frame Relay over Leased, Switched and ISDN
 - MicroGate Digital Services Adapter (DSA) for SDLC over leased, switched and asynchronous connections
 - Synaptel for SDLC, X.25, IDLC, DLSW, over leased, switched and ISDN
 - Coax adapters for LAN over coax (3174 Peer):
 - DCA IRMA 3 Convertible
 - Advanced 3270 Adapter by Attachmate
 - Twinax adapters for LU6.2 applications
 - Affinity Systems

Communications Server supports these Micro-Channel bus WAN adapters²:

- IBM Adapters
 - Wide Area Connector for SDLC, X.25 over leased and switched connections
 - Wide Area Connector for Frame Relay over leased connections
 - WaveRunner Digital Modem for SDLC, X.25 and IDLC over ISDN
 - ATM (LAN Emulation) adapters for LAN protocols
 - ISDN Interface Co-Processor/2 Model 2 for SDLC, X.25, IDLC over ISDN
 - PS/2® Dual Asynchronous Adapter/A for SDLC over asynchronous connections
 - X.25 Interface Co-Processor/2 for X.25 over leased connections
 - IBM PS/2 Multiprotocol Adapter/A for SDLC over leased, switched and asynchronous connections
 - IBM Asynchronous/SDLC V.32 Modem/A (MPA Card with modem) SDLC over asynchronous connections

- IBM P370 and P390 Adapters containing VTAM® support
- IBM Realtime Interface Co-Processor Portmaster® Adapter/A (supported via RTIC Support Program)
- IBM Realtime Interface Co-Processor Portmaster Adapter/A (supported as a shallow adapter) for SDLC over leased, switched and asynchronous connections
- ARTIC 960 adapter for SDLC and X.25 over leased and switched connections
- Coax adapters for LAN over coax (3174 Peer)
 - IBM 3270 Connection (DFT)
 - DCA IRMA 3 Convertible (MCA and ISA bus adapter)
 - Advanced 3270 Adapter/2 by Attachmate
- Twinax adapters for LU6.2 applications
 - IBM S/36/38 Workstation Emulation Adapter/A
 - IBM 5250 Emulation Adapter/A

- Non-IBM Adapters
 - ARN for X.25 over ISDN
 - Diehl (subsidiary of Eicon Technology) for SDLC, X.25, IDLC over ISDN
 - Digi International for SDLC over leased and switched connections
 - Eicon Technology Adapters for SDLC, X.25, Frame Relay over Leased, Switched and ISDN
 - Synaptel for SDLC, X.25, IDLC, DLSW, over leased, switched and ISDN

Communications Server supports these PCI bus WAN adapters²:

- IBM Adapters
 - ARTIC 960 adapter for SDLC and X.25 over leased and switched connections
- Non-IBM Adapters
 - Synaptel for SDLC, X.25, IDLC, DLSW, over leased, switched and ISDN

² Because of machine interrupts and DMA usage conflicts, not all combinations of communications adapters can be used concurrently by Communications Server.

Modems: Communications Server supports these types of modems:

- Asynchronous modems (both 14.4 and 28.8 Kbps).
 - Modems 100% compatible with the Hayes AT® command set.
 - IBM modems that conform to the ITU-T (CCITT) V.24/V.28 (EIA RS-232-D) and V.35 interface standards.
 - Non-IBM asynchronous modems are also supported, as well as the base function of ITU-T (CCITT) V.24 (EIA RS-232-D) standard data terminal equipment (DTE) to data circuit-terminating equipment (DCE) interface for asynchronous communications.

- Modems that conform to the RS232D standard DTE to DCE interface.
- Synchronous Modems and CSU/DSU units that support the V.25bis command set
- Modems 100% compatible with the Hayes AutoSync protocol
- Cellular modems
- PCMCIA modems

X.25 users will require a synchronous connection to the Link Access Protocol Balanced (LAPB) link. Contact your network supplier for the recommended connection type and modem.

Communications Server provides initialization strings for, and has been tested with, a wide variety of asynchronous and Hayes AutoSync-compatible modems. A list of the modems, which is regularly updated, may be obtained online from the CM/2 section of the OS2DF2 forum on CompuServe (file name CMMODM.TXT). The Communications Server Web pages have the most complete and current hardware and software compatibility and modem information. The URL for the compatibility page is:

<http://www.raleigh.ibm.com/cm2/cm2mkt.html>

PCMCIA Adapter Support: Communications Server is compatible with these PCMCIA adapters. The adapters and device drivers are supported by the adapter vendors. The Communications Server Web pages have the most complete and current hardware and software compatibility information. The URL for the compatibility page is:

<http://www.raleigh.ibm.com/cm2/cm2mkt.html>

- ARN for X.25 over ISDN
- Diehl (subsidiary of Eicon Technology) for SDLC, X.25, IDLC over ISDN
- IBM 5250 PCMCIA card for APPC applications
- IBM ISDN Active 2000 PCMCIA adapter

LAN Adapter Support: Communications Server is compatible with a variety of LAN adapters. The adapters are listed in the Communications Server Web pages at this URL:

<http://www.raleigh.ibm.com/cm2/cm2adap.html>

LAN Support Through MPTS: Communications Server uses the LAN Adapter and Protocol Support (LAPS) transport. This support is provided via the Multiprotocol Transport Services (MPTS) (included in the package). MPTS can also be included as part of the operating system package that you use.

Security: Users are responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities. To assist the user in this effort, Communications Server has implemented the following optional facilities:

Session Level Encryption is enabled as an optionally configured function for all LU types. It operates as an exit facility that is compatible with the IBM Transaction Security Services (TSS) available with the IBM 4755 Cryptographic Adapter. The 4755 facility provides key management and data confidentiality services compliant with the IBM Common Cryptographic Architecture. Other

adapters compliant with the IBM Common Cryptographic Architecture are also supported.

Users of functions/applications should also rely on the host application for security, audibility, and control.

Supported Security Adapters

- IBM 4755 Cryptographic Adapter models 3, 13 (ISA bus)
- IBM 4755 Cryptographic Adapter models 4, 14 (MCA bus)
- Other adapters compliant with the IBM Common Cryptographic Architecture

Controllers: Communications Server supports these IBM host communication controllers:

- 2217 Nways™ Multiprotocol Concentrator
- 3172 N Ways Interconnect Controller
- 3174 Establishment Controller
- 3274 Control Unit
- 3705 Communications Controller
- 3720 Communications Controller
- 3725 Communications Controller
- 3745 Communications Controller
- 3746 Nways Multiprotocol Controllers Models 900 and 950
- 4702 Processor
- 5294 Control Unit
- 5394 Remote Controller (AS/400)
- 5494 Remote Controller (AS/400)
- 7845 ISDN Network Terminator Extended
- 9370 Telecommunications and Workstation Subsystem Controllers

Protocol Converters: Communications Server supports these protocol converters:

- IBM 7820 ISDN Terminal Adapter (Basic Rate)
- IBM 7830 ISDN Terminal Adapter (Basic to Primary Rate)
- IBM 8209 LAN Bridge (token ring 802.2 to Ethernet 802.3)
- IBM RouteXpander/2 V1.0 and V2.0
- IBM X.25 Xpander/2 V1.0

Communications Server supports these asynchronous protocol converters for ACPI APIs:

- IBM 3708 Model 001
- IBM 3710 Network Controller
- IBM 7171 Model 001
- Series/1™

Note: With Yale ASCII Version 2 IUP

- IBM 3174 Models 51R or 52R
- IBM 9370 ASCII Subsystem
- IBM 3172 SDLC (SNA over async)

Windows Access Feature Hardware Requirements

The IBM APPC Networking Services for Windows Version 1.0.2 and IBM AnyNet APPC over TCP/IP Version 1.0 for Windows support IBM and non-IBM Intel processor based PCs supported by Microsoft Windows 3.1 or Microsoft Windows for Workgroups 3.1, or later. These systems include but are not limited to: IBM ThinkPads, PS/Notes, PS/1s, PS/2s, PS Value Points, PC 300s, PC 500s, PC 700s, Aptiva™, IBM Industrial Computers, PC Servers, PS/55s, and non-IBM PCs, including SMP machines, or any 100% IBM-compatible system with a minimum 386 processor and 4MB RAM (8MB recommended). An appropriate communications adapter is required to support the selected connectivity type.

Refer to the following announcements for detailed hardware requirements:

- PSM 94-112, dated September 20, 1994 (IBM APPC Networking Services for Windows Version 1.0)
- USS 95-033, dated March 21, 1995 (IBM AnyNet APPC over TCP/IP Version 1.0 for Windows)

NLS Support

Communications Server is available in single-byte character set (SBCS) and double-byte character set (DBCS) versions and is enabled for several language groups including Latin I (plus Icelandic), Latin II, and Latin V (Turkey).

Communications Server is available in

- Chinese Simplified
- Chinese, Traditional
- English
- French
- German
- Italian
- Japanese
- Korean
- Portuguese, Brazilian
- Spanish

Software Requirements

Operating System: Communications Server supports IBM's OS/2 Warp, Version 3, or later, operating system, including service packs and translated versions.

Host Communications Programs

Program	Program Number	Version
APPC (LU6.2) Support		
CICS/MVS®	5665-403	2.1.2, or later
CICS/VSE®	5686-026	2.2, or later
ACF/VTAM® for MVS/ESA™	5685-085 5695-117	3.4.2, or later 4.2, or later for DLUR/S, Session Security, Session level Encryption, and/or AnyNet support
ACF/VTAM for VM/ESA®	5684-095 5654-010	3.4.1, or later 4.2 for APPN and DLUR/S support
ACF/NCP	5688-231 5648-063	6.1, or later 7.1, or later
VSE/VTAM	5666-363	3.4, or later
APPC NS/WIN		1.01, or later
RS/6000® AIX	5756-030	3.2.1, or later
OS/400®	5738-SS1	2.3, or later
	5763-SS1	3.0, or later
AIX SNA Gateway/6000	5765-261	2.1, or later
Communications Server for AIX	5765-652	4, or later

APPN Support

OS/400	5738-SS1	3.1, or later
ACF/VTAM for MVS/ESA	5695-117	4.1, or later (Session Security and Session Level Encryption) 4.2, or later for DLUR/S support 4.3, or later for HPR support
ACF/VTAM for VM/ESA	5654-010	4.2, or later for DLUR/S support
VSE/VTAM 3174 Controller AIX SNA	5686-065	4.2 Configuration Support C
Server/6000 AIX SNA	5765-247	2.1, or later
Gateway/6000 Communications Server for AIX	5765-261	2.1, or later
APPCC NS/WIN	5765-652	4, or later 1.02

HPR Support

ACF/VTAM for MVS/ESA	5695-117	4.3, or later
OS/400	5738-SS1	3.0, or later
ACF/NCP AIX SNA	5648-063	7.3, or later
Server/6000 Communications Server for AIX	5765-247 5765-652	2.1.1 4, or later

AnyNet Support

OS/400	5738-SS1	2.3, or later, including AnyNet/400 APPC over TCP/IP AnyNet/400 Sockets over SNA
ACF/VTAM for MVS/ESA	5685-085 features	3.4.2, or later APPC over TCP/IP, Sockets over SNA for both MVS® and OS/2
	5695-117 features	4.2, or later SNA over TCP/IP, Sockets over SNA for both MVS and OS/2, Sockets over SNA Gateway for OS/2 only
	5695-117 features	4.3, or later SNA over TCP/IP, Sockets over SNA for MVS only
AIX SNA Server/6000	5765-247 features	2.1.1 and 2.1.2, or later. AnyNet/6000 APPC over TCP/IP, AnyNet/6000 Sockets over SNA.
Communications Server for AIX	5765-652	4, or later.

LUA (LU0) Support

IMS™ DB/DC	5740-XX2	1.2, or later
	5665-332	2.1, or later
IMS/ESA® DB	5665-408	3.0, or later
	5685-012	4.0, or later
	5695-176	5.0, or later
CICS/VSE	5686-026	2.2, or later
CICS/MVS	5665-403	2.1.2, or later
CICS/ESA®	5685-083	3.3, or later
	5655-018	4.1, or later

Host Communications Controller Programs

Controller	ACF/NCP	Version/Release
3720	5668-738	5.4
3725	5668-854	4.3.1
3745	5668-738	5.4
	5688-231	6.2, or later
	5648-063	7.1, or later
3746-900	5688-231	6.2, or later
	5648-063	7.1, or later

Controller	ACF/NPSI	Version/Release
3720	5668-791	2.1
3725	5688-035	3.4
3745	5688-035	3.4, or later
3746-900	5688-035	3.8

ISDN Connection Support: The following programs are required for support of the IBM ISDN adapters:

- IBM ISDN Interface Co-Processor Support Program 1.2, or later
- IBM WaveRunner Adapter Support Program

Use of the IBM 7830 Primary Adapter requires the associated licensed program:

- IBM 7830 ISDN Primary Gateway (5612-195)

Appropriate programs are also required for:

- 3174 Control Unit with ISDN BRI Adapter
- AS/400 with BRI Feature

Network Management

IBM Products

- NetView® for OS/2
- NetView 3.1, or later, for HPR support
 - For MVS/ESA: 5655-007
- NetView 2.2, or later
 - For MVS/ESA: 5685-111
 - For MVS/XA™: 5685-138
 - For VM/ESA: 5756-051
 - For VM: 5684-111
- SystemView® for AIX: 5765-527 and SystemView Server for AIX (V4)
 - Manages OS/2, DOS, and Windows systems among others
- NetView for AIX 3.0, or later: 5696-731 or 5696-905
- NetView DM for MVS 4.0, or later: 5685-016
- NetView DM for VM 2.0, or later: 5684-017
- AIX NetView DM/6000 1.1, or later: 5765-196
- NetView DM for OS/2 2.1, or later: 53G3941 or 53G3924
- Distributed Console Access Facility (DCAF) 1.1, or later: 5621-414

OEM Products

- Novell NetWare 3.11, or later
- Novell NetWare for SAA® 1.3, or later

LAN Gateway: The LAN Gateway function interoperates with these products:

- LAN-to-LAN over WAN (LTLW) V1.09, or later
- Entry LAN-to-LAN over WAN (ELTLW) V1.03, or later
- AnyNet IPX over SNA Gateway for OS/2 V1.0
- IBM 2217 Nways Multiprotocol Concentrator Release 1 and 2

The LAN Gateway function in Communications Server migrates control files and other pertinent user modified information from these products:

- LAN to LAN over WAN V1.09, or later
- Entry LAN to LAN over WAN V1.03, or later
- AnyNet IPX over SNA Gateway for OS/2 V1.0

TN3270E Server: The TN3270E Server adheres to the following industry standards:

- RFC 1576 — TN3270 Current Practices
- RFC 1646 — TN3270 Extensions for LUName and Printer selection
- RFC 1647 — TN3270 Enhancements

The TN3270E Server supports any downstream TN3270 or TN3270E client which adheres to these RFCs. For example these client applications are supported:

- IBM Personal Communications 3270 for OS/2 Version 4.x
- IBM Personal Communications 3270 for Windows Version 4.x
- IBM TN3270 (OS/2, DOS, and AIX)
- XANT
- Brixton 3270 Open Client (AIX, OS/2)
- PMANT
- Wall Data RUMBA Office (Windows)
- Attachmate Extra! Personal Client (Windows)
- Reflection on Windows 3.11
- Chameleon on Windows 3.11

Windows Access Feature Software Requirements

IBM APPC Networking Services for Windows and IBM AnyNet APPC over TCP/IP for Windows require Microsoft Windows 3.1, or Microsoft Windows for Workgroups 3.1, or later, running in enhanced mode with DOS 5.0, or later.

IBM AnyNet APPC over TCP/IP for Windows requires IBM APPC Networking Services for Windows (included in the Windows Access Feature) and one of the following TCP/IP communications products:

- IBM TCP/IP for DOS, Version 2.1.1, with CSD UB10718
- FTP PC/TCP Network Software for DOS/Windows, Version 3.0
- FTP PC/TCP OnNet 1.1 for DOS/Windows
- Microsoft TCP/IP 3.11a for Windows for Workgroups, Version 3.11
- NetManage Chameleon TCP/IP for Windows, Version 4.01
- Novell LAN Workplace™ for DOS, Version 4.2

Refer to the following announcements for detailed hardware requirements:

- PSM 94-112, dated September 20, 1994 (IBM APPC Networking Services for Windows Version 1.0)
- USS 95-033, dated March 21, 1995 (IBM AnyNet APPC over TCP/IP Version 1.0 for Windows)

SNA Gateway (Communications Server only)

Communications Server provides a full-function, cost effective, SNA gateway. The gateway enables multiple LAN-attached OS/2, Windows, or DOS PCs to access multiple System/370™ or System/390® hosts through one or more physical connections to one or more hosts. The gateway is optimized to provide cost effective host connectivity by sharing communications resources such as adapters and telephone connections.

The Communications Server gateway has support for:

- SNA protocols LU0, 1, 2, 3, and dependent LU6.2 (APPC). The gateway also supports LU0, 1, 2, or 3 to an AS/400 host using SNA pass-through.
- Multiple physical unit type 2.0 (PU2.0) and up to 254 logical units (LUs) per PU. To increase efficiency, LUs may be dedicated to a PC or pooled among PCs.
- Up to 254 concurrently active PCs per LAN adapter to transparently access one or more System/390 hosts. Implicit PC definitions simplify gateway configurations and management since downstream PCs are not required to be configured on the Communications Server.
- Downstream applications and PCs using standard SNA connectivity protocols for LU0, 1, 2, 3 and dependent LU6.2, and communicating through an SNA Gateway to a host. The downstream PCs include Novell NetWare for SAA and APPLE Macintosh SNAps Gateway.
- Dedicated and pooled LU definitions. The LUs defined in the gateway can be dedicated to a particular PC or pooled among multiple PCs. Pooling allows PCs to share common LUs, which increases the efficiency of the LUs and reduces the configuration and startup requirements at the host. You can also define multiple LU pools, each pool associated with a specific application. When a link is defined through the gateway between a PC and the host, the LU is activated when the session is established and returned to the pool for access by other PCs when the session is ended.
- Automatic host backup, link which enables each primary link to be defined with a secondary or backup link. This backup link is automatically activated when activation of the primary link fails.
- Session inactivity management (auto logoff) which supports configuration of a SNA gateway to automatically stop a session after a specified period of inactivity if there are other PCs waiting. This procedure helps increase the number of shared logical units that are available.
- Pools can be unlimited in size by defining the same pool name on multiple host links.
- The transmission of network management vector transports (NMVTs) between the gateway and the host. For example, commands coming from the NetView program in the host are received in the gateway and may be passed to and used by another application on the gateway, such as IBM LAN Network Manager.

- Each host views the SNA gateway as an SNA PU2.0 node, supporting one or more LUs per PC. As far as the host is concerned, all LUs belong to the SNA gateway PU. The SNA gateway can have multiple host connections simultaneously and can direct different PC sessions to specified hosts. However, only one host (and it must be on a link with a CP PU) can act as the focal point, and the CP name is appended to all NMVTs routed through the gateway.

- Upstream multiple PU over a single SDLC link
- Downstream PU visibility allows run commands and NMVTs to be passed through the gateway to the workstation. This is most useful with DLUR or multiple PUs over a single SDLC link. It allows sharing of a host link while still having host visibility. For example this is used by 470X banking terminals, the gateway.
- SDLC supports 16 or more upstream and downstream physical connections, and two-way simultaneous full-duplex communications.
- The WAN line speed has been increased up to 2.0 Mbps (T1/E1).
- Communications Server can now act as the multipoint primary control for downstream PCs. This support is for PCs and devices connected to the server over SDLC, on a multidrop line over synchronous adapters such as the IBM WAC, MPA, and ARTIC.
- Dependent LU support across a TCP/IP network with SNA Subarea and APPN support upstream from the configured gateway.
- Dependent LU support across an SNA network with TCP/IP support upstream from the configured gateway.

SNA Gateway Summary

The following table summarizes the SNA Gateway function provided by Communications Server.

Feature	Description
Active PCs and printers	2,000 active connections 254 per LAN Adapter (LAN) 128 Virtual Circuits (X.25) Over 20,000 LU6.2 tested
Simultaneous sessions	Yes
Automatic logoff support	Yes
Downstream DLC	AnyNet (SNA over TCP/IP) ATM (LAN emulation) Ethernet PC Network token ring SDLC, X.25, and IDLC (synchronous, asynchronous, and AutoSync)
Downstream PCs	Any product that supports standard SNA connectivity protocols for LU0, 1, 2, 3 and 6.2.
Dynamic additions and changes	Yes
Implicit workstation support	Yes
LU pooling	For single hosts and across multiple hosts

Load balancing	Across active links in the pool
Multiple PU support	Yes, 16 tested
Automatic host backup link	Yes
Maximum number of LUs	254 per PU
Mode of operation	Multiple downstream PUs which are transparent to the host (except when through DLUR)
Segmenting support	Yes
Supported LU types	LU0, 1, 2, 3, and dependent LU6.2
Upstream DLC	AnyNet (SNA over TCP/IP) ATM (LAN emulation) Ethernet token ring SDLC, X.25, and IDLC (synchronous, asynchronous, and Autosync) Twinax (for 3270 passthrough)

and Communications Server information APARs or create electronic problem reports.

To view the information APARs:

1. Select SIS (FASTPATH)
2. In the Service Information Search SISMM1 window, type:
CM2INFO
as the search argument.
3. In the change library selections field, type:
Yes
4. Select AIX, OS/2, PC-DOS, CAD/CAM and other products in the Library Selections SISMM2 window.

The list of information APARs is displayed.

- IBM Communications Server Online Customer Support Bulletin Board

Access this electronic bulletin board to view information APARs and to obtain APAR fixes. To request that an APAR fix be made available, either leave a message for SYSOP on the bulletin board or call 800-992-4777

To access the electronic bulletin board:

- Dial 919-543-8200
- Use protocol N81.
- Follow the instructions. Entering your first name and last name registers you the first time you use the facility.

- The IBM Software Solutions Center

Consult the Customer Service and Support Guide included in the product package.

- The OS/2 Developer's Assistance Program call 800-992-4777

Contacting IBM

- The Internet

- The Communications Server home page on the Internet has general product information as well as service information about APARs and fixes. There are two ways you can get to the home page:

1. In the Communications Server folder select the Access Home Page icon
2. Using an Internet browser such as WebExplorer™, go to the following URL:

<http://www.raleigh.ibm.com/cm2/cm2prod.html>

- The OS2DF2 forum on CompuServe

In addition to a large and active group of users, this forum is monitored by Communications Server Development.

- The OS2CM2 CFORUM

This forum is monitored by Communications Server Development.

- In the U.S., access the OS2CM2 CFORUM on the OS2BBS bulletin board via TalkLink™.

If you do not have access to TalkLink/OS2BBS, call 800-547-1283. TalkLink administration personnel will send you a registration package that lists the available features and the current subscription rates. You should receive the registration package approximately two weeks after calling. Return the necessary documents and TalkLink administration personnel will send you a welcome package that contains the software you need to access TalkLink/OS2BBS.

IBMLink™ customers can register via SMARTLink's new TalkLink selection.

- IBMLink

From IBMLink, you can locate the IBM Communications Server for OS/2 Warp, Version 4.1

Compatibility: IBM Communications Server for OS/2 Warp, Version 4.1 protects the customer's investment in IBM Communications Server for OS/2 Warp, Version 4 and CM/2 (Communications Manager/2) applications by providing upward compatibility for applications written for the CM/2 component of OS/2 Extended Edition, Extended Services for OS/2®, Communications Manager/2 (except for EHLLAPI and SRPI applications), and IBM Communications Server for OS/2 Warp, Version 4

Communications Server will coexist with and interoperate with other OS/2 applications when run in the same system. Communications Server will also interoperate with other OS/2 applications that utilize the Communications Server APIs or utilize the SNA and TCP/IP control and data interfaces. These products can also interoperate with window applications that communicate across the network using the appropriate networking and application protocols.

Communications Server will migrate control files and other pertinent user modified information from EE 1.3, ES 1.0, CM/2 1.0, CM/2 1.1 (including CM/2 1.11), and CS/2 V4. Code will be upgraded from the previously listed releases of CM/2 and AnyNet (except for EE 1.3).

The LAN Gateway function in Communications Server will migrate control files and other pertinent user modified information from the following products:

- LAN to LAN over WAN (LTLW) V1.09, or later
- Entry LAN to LAN over WAN (ELTLW) V1.03, or later
- AnyNet IPX over SNA Gateway for OS/2 V1.0

The Frame Relay function in Communications Server will not support migration from RouteXpander/2.

Planning Information

Refer to the **Technical Information Hardware Requirements** section for information on the RAM and hard drive resource capacity required.

Customer Responsibilities: Problem determination (PD) is a customer responsibility. PD is an assessment of whether a problem has been caused by hardware or software. PD is not complete until the cause of the problem is identified. This assessment includes examination of available symptoms using the PD procedures documented in the Communications Server publications.

Problem source identification (PSI) is a customer responsibility. PSI begins when software is determined to be the source of the problem. PSI includes tracing the source of the problem to a host system control program (SCP), an application program, or another source. Assisting the customer with PSI is an IBM service and support responsibility.

Installability: Communications Server can be installed from directly from a CD-ROM drive or via the Configuration, Installation and Distribution (CID) process.

Packaging: The Communications Server package also has the following materials:

- The Up and Running! publication
- IBM Personal Communications AS/400 and 3270 brochure
- Registration Card
- IBM International Program License Agreement
- License Information Booklet
- Service entitlement information card
- Proof of entitlement

Security, Auditability, and Control

When using the System/370 Remote Operations Support (ROPS) for NetView, and a RUNCMD is issued, all information is transmitted in the clear and is not secured. This transmitted information may include the user ID and password. Transmitted information is also displayed on the screen and is entered in the NetView log. The display on the NetView operator's screen and in the NetView log can be avoided by using the NetView suppression character when the RUNCMD is issued. If passwords are transmitted to the ROPS service, the user is responsible for securing the NetView terminal and the NetView logs so that sensitive data is not compromised.

User management is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

Administrative Information

Ordering Information

All orders for software are submitted via purchase orders through Electronic Data Interchange (EDI) or fax. For questions about ordering procedures, contact your Customer Operations Account Representative at 800-828-6693.

Distribution/shipment: All shipping charges for IBM licensed programs and publications from an IBM-designated shipping location will be paid by IBM in accordance with IBM's shipping practices. The remarketer is responsible for shipping charges incurred by IBM as a result of requested shipping arrangements that do not conform to IBM's then-current shipping practice.

Terms and Conditions

Licensing

This licensed program will be available on a one-time charge basis to IBM Authorized Software Remarketers and IBM Authorized Software Distributors for remarketing under the terms and conditions of the IBM International Business Partner Agreement.

This program is licensed under the terms and conditions of the IBM International Program License Agreement (IPLA) (Z125-3301). A copy of the IPLA is packaged and shipped with each program. End user customers are advised that their first use of the program constitutes their acceptance of the IPLA. No customer signature is required. Should end user customers not agree to acceptance of the IPLA terms, they are advised to return the complete program to the point of acquisition for a refund.

Additional Licenses: IBM has acceptance terms for Additional License copies for this program. Under these terms, customers may now acquire additional licenses for this program by ordering a "Proof of Additional License." The new Proof of Additional License, which is in the form of a certificate, is the customer's authorization to make a single copy of the program. The certificate may be ordered in any quantity. The customer must have obtained an original program package in order to acquire additional licenses. The terms and conditions of the IPLA supplied with the original program package apply to the Additional License copies. No machine-readable code is included with the new Proof of Additional License package.

Returns

Communications Server for OS/2 Warp, Version 4.1 is a Category 1 product as stated in the Inventory Adjustment Section of the IBM Business Partner Agreement. Quantities may be returned up to the last reported inventory level.

Inventory Adjustments: Communications Server for OS/2 Warp, Version 4.1 may be returned for credit as outlined in the Inventory Adjustment section of the applicable IBM agreement. All licensed programs

returned to IBM will be credited at the remarketer charge. All invoices should be paid in full until credit is received.

If the IPLA package has been opened, but the diskette seal has not been broken, the remarketer must accept the package and refund the money paid to the end user. These packages may be returned to IBM under the returns provisions.

30-Day Money-Back Guarantee: IBM will provide a credit for any program package returned to its point of acquisition, provided it was acquired in the 30 days before the date of return and includes the accompanying documentation and media.

Upon receipt of the program package, the remarketer will sign the Request to Destroy Unsalable Software form and submit it to IBM. IBM will process the credit upon receipt of the form.

Limited Warranty

Programs: Yes. The warranty terms of the IPLA apply.

Program Services: Program services will be available until November 15, 1998.

Upgrades

Upgrades to Communications Server for OS/2 Warp, Version 4.1 from any IBM or other vendor's multiprotocol gateway or server, such as Communications Manager/2, AIX SNA Server, Novell NetWare for SAA, Microsoft SNA Server for Windows NT, DCA Select, Attachmate EXTRA!, and Wall Data Rumba/400, etc. may be obtained through IBM Authorized Software Distributors and IBM Authorized Software Remarketers. The authorized reseller will require validation of license for each upgrade offered. The purchaser must certify the current license for each upgrade or provide an original invoice or proof of purchase (from the program package) with payment to the authorized reseller.

Software Advantage for Workstations Eligible Programs: The additional licenses, additional license upgrades, and distributed features described in this announcement are included in the Eligible Program List for the Software Advantage for Workstations Exhibit.

Charges

Description	Part Number	One-Time Charge*	Remarketer Charge
Communications Server for OS/2 Warp, V4.1 CD-ROM Program Package	84H1802	\$699	\$489

Upgrade Charges

Upgrade To	Upgrade From	Part Number	One-Time Charge	Remarketer Charge
Communications Server for OS/2 Warp, V4.1	Any IBM or non-IBM gateway or communications server	84H1803	\$299	\$209

Additional License Charges

Description	Part Number	One-Time Charge	Remarketer Charge
Communications Server for OS/2 Warp, V4.1 with Certificate			
1-Pack	84H3297	\$ 669	\$ 468
5-Pack	84H3298	3,178	2,225
Software Advantage	84H3299	669	468
OS/2 or Windows Access Feature, V4.1 Distributed Feature with Certificate			
1-Pack	84H3300	69	48
5-Pack	84H3301	328	230
10-Pack	84H3302	642	449
50-Pack	84H3303	3,174	2,222
Software Advantage	84H3308	69	48

Additional License Upgrade Charges

Upgrade To	Upgrade From	Part Number	One-Time Charge	Remarketer Charge
Communications Server for OS/2 Warp, V4.1 with Certificate	Any IBM or non-IBM gateway or communications server			
1-Pack		84H3310	\$269	\$188
Software Advantage		84H3311	269	188
OS/2 or Windows Access Feature, V4.1 Distributed Feature	OS/2 or Windows Access Feature V4.0			
1-Pack		84H5707	29	20
Software Advantage		84H5708	29	20

Customer Education Charge

Part Number	Charge
84H1802	\$650
84H3300	64
84H1803	278
84H3297	622
84H3310	250
84H5707	27

* One-Time Charge reflects the license charge for a single unit acquired from IBM and is subject to change without notice. These charges are for information purposes only and shall not limit in any way the dealers' or industry remarketers' ability to set their own charges for IBM programs.

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**IBM Personal Computer/System Program Remarketer
Upgrade and Certification Form**

Remarketer Information

Authorized Location Number: _____

Remarketer Name/DBA: _____

Street Address: _____

City: _____

State: _____

Zip: _____

Name or Company Name: _____

Street Address: _____

City: _____

State: _____

Zip: _____

Customer Licensee Information

Company Name: _____

Street Address: _____

City: _____

State: _____

Zip: _____

**Old Program Name/
Part Number**

**New Program Name/
Part Number**

Quantity

I certify that _____ has licensed the current programs listed above and agrees to
(Print Customer Name)

destroy all original materials that are replaced by the upgrade and all copies of these materials within 30 days of receipt of the upgrades.

Signed: (Customer Signature) _____

Date: _____

Signed: (Authorized Remarketer Signature) _____

Remarketer Instructions:

1. Your customer may use one or more of these three ways to certify that they have licensed the programs being upgraded:
 - a. Original Proof(s) of License
 - b. Copy of Purchase Invoice
 - c. Customer signature on this form certifying license of the programs being upgraded.
2. Give a copy of the Upgrade and Certification Form to the customer.
3. Retain any supporting documentation and a copy of the invoice for the sale of the upgrades, for a period of one year, for purpose of audit by IBM.

IBM Use Only

Remarketer CMR

Date Audited
