



# IBM Communications Server for AIX Version 4.2

## Overview

IBM further extends the networking capabilities of the Communications Server for AIX®, a member of the IBM Software Server Family.

This new release of the Communications Server includes the function-rich characteristics of the existing Version 4.1, plus the following enhancements:

- High Performance Routing (HPR)
- Dependent LU Requester (DLUR)
- AnyNet® Sockets over SNA Gateway
- API Enhancement — Non-Blocking CPI-C
- Performance Enhancements

## Intended Customers

The Communications Server for AIX provides a full range of communications and connectivity offerings for the RS/6000™ and AIX operating systems if you have:

- Connectivity requirements for existing SNA hierarchical networks or those taking advantage of the peer-to-peer distributed networking capabilities of Advanced Peer-to-Peer Networking® (APPN®)
- Multiprotocol networks (SNA and TCP/IP) and want to use applications written for one protocol in a network using the other protocol

## Key Prerequisites

Communications Server for AIX requires either AIX Version 4.1.2, and later, or AIX Version 4.2. The support includes the uniprocessor and symmetric multiprocessing hardware system environments.

## Planned Availability Date

November 22, 1996

## At a Glance

Communications Server for AIX provides RS/6000 customers with:

- A broad range of communication, connectivity, and networking options
- A powerful gateway
- Multiprotocol support
- Single-session 3270 emulation capability

Enhancements include:

- HPR an end-to-end connection-oriented protocol that improves network availability, performance, and SNA congestion control
- DLUR providing a means of transporting LU traffic through an APPN network
- AnyNet Sockets over SNA Gateway function
- Non-blocking enhancement to CPI-C API
- Performance enhancements providing improved throughput with SDLC and support for an increased number of concurrent sessions

### For ordering, contact:

Your IBM representative, an IBM Authorized Business Partner, or IBM Direct at

**800-IBM-CALL**

Reference: RE001

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## Description

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### ***High Performance Routing (HPR)***

HPR is an end-to-end, connection-oriented protocol that allows you to optimize communications across the network. These capabilities include:

- Improved network availability through end-to-end connections, alternate route calculations, and transmission resumption if an intermediate link or node fails.
- Improved network performance by only performing error recovery at the endpoints of the network and by selectively retransmitting only lost or erroneous packets.
- Improved SNA congestion control by constantly monitoring and adjusting the amount of data flowing between the endpoints, ensuring they do not overload.

This release will provide the HPR base support function, also known as Automatic Network Routing (ANR) over the token-ring, Ethernet, FDDI, X.25, and SDLC physical data transports. The Rapid Transport Protocol (RTP) portion of HPR will not be provided in this release of Communications Server for AIX Version 4.2.

### ***Dependent LU Requester (DLUR)***

Dependent LU Requester/Server (DLUR/S) provides a means of transporting dependent LU traffic through an APPN network. A DLUR is an APPN end node or network node that owns dependent LUs, but requests that a DLUS provide the system services control point (SSCP) for those dependent LUs. A DLUS controls conversion from a subarea environment to an APPN environment, allowing central management control of remote dependent LUs to be maintained while benefiting from an APPN network.

DLUR, in conjunction with VTAM's dependent LU server (DLUS) function, enables dependent LUs (LU0, 1, 2, 3, and dependent LU6.2) to operate unchanged in an APPN network, without changing applications. The DLUS establishes an LU6.2 session with, and provides SSCP services to, the DLUR node. Any number of dedicated physical units (PUs) can be defined on the LU6.2 sessions. The Gateway function of Communications Server can provide services to downstream dependent LUs.

The following functions are supported in this release:

- Local LUs
- Downstream LUs by using SNA Gateway
- SSCP takeover
- Multisubnet
- DLUS Backup — If a DLUS becomes unavailable, LUs are automatically reconnected to a preconfigured backup DLUS

DLUR allows customers to protect their investment in 3270 emulation and other dependent LU applications while migrating new applications to LU6.2 and APPN.

### ***AnyNet Sockets over SNA Gateway***

The AnyNet Sockets over SNA Gateway function connects SNA and TCP/IP networks to allow sockets applications data to flow freely across both environments. Workstations and hosts in SNA networks can run sockets applications and appear to be directly connected to the TCP/IP network. In addition, dual gateways can be used to connect TCP/IP networks across an SNA network. All of the connections are to be made with no changes to the

sockets applications, TCP/IP network, or SNA network. This capability provides the benefits of the SNA network to the TCP/IP applications and eliminates the need for parallel networks.

The AnyNet Sockets over SNA Gateway will support the following socket connection types:

- Stream sockets connection
- Datagram sockets connection

### ***Performance Enhancements***

Communications Server for AIX, Version 4.2 now supports V.35 communication links up to 1.54 Mb/second for SDLC. This support has achieved throughput of up to 100 KB/second, a 20 times increase over 56 Kbps lines.

Communications Server for AIX, Version 4.2 supports up to 50,000 concurrent sessions. Various session types require varying amounts of processor and memory resources. The maximum number of sessions will vary depending on the mix of session types and the hardware configuration. Refer to the Communications Server for AIX Planning and Performance Guide for system information.

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## Product Positioning

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Communications Server for AIX is positioned to meet a wide range of customer requirements by providing APIs, such as LU0, LUs 1, 2, and 3, LU6.2, and CPI-C to allow user-written applications to communicate with other applications using IBM's SNA as the communications protocol.

The full implementation of APPN (end node and network node), along with the integrated gateway capabilities, positions the RS/6000, via Communications Server, as a participant in either a host (hierarchical) or peer-to-peer distributed network environment.

Communications Server for AIX provides customers with the benefit of a single product that supports both UP and SMP hardware.

With the integrated AnyNet capabilities, Communications Server for AIX is positioned for customers with multiprotocol networking environments. The TCP/IP Sockets applications can run over SNA networks and APPC applications can run over TCP/IP networks without changing the applications or modifying the hardware.

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## Publications

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One copy of the following publications is supplied automatically with the basic machine-readable material:

Title	Order Number
Communications Server for AIX:	
Up and Running	SC31-8247
User's Guide	SC31-8211
Configuration Reference	SC31-8213
Commands Reference	SC31-8214
Diagnosis Guide and Messages	SC31-8215

The following optional hardcopy publications can be ordered for a fee immediately after product availability:

Title	Order Number
Communications Server for AIX:	
General Information	SC31-8198
Transaction Program Reference	SC31-8212
CPI-C Programming Guide	GG31-8210
Planning and Performance Guide	SC31-8220
Gateway User's Guide	SC31-8216
AnyNet Guide to Sockets over SNA	SC31-8217
AnyNet Guide to APPC over TCP/IP	SC31-8221
APPC Application Suite for AIX User's Guide	SC31-8218

**Displayable Softcopy Publications:** Publications for Communications Server for AIX are provided in displayable softcopy form, available in English only. All unlicensed manual are included.

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## Technical Information

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### Specified Operating Environment

**Hardware Requirements:** Communications Server for AIX, Version 4 runs on RS/6000 systems. These programs can be used on all RS PowerPC™, and SP2® systems that support AIX Version 4.1.2, and later, or Version 4.2, and later.

One or more of the following network communication adapters are required:

- Token-Ring:
  - Token-Ring High Performance Network Adapter (#2970)
  - IBM 16/4 PowerPC Token-Ring Adapter (#2971)
  - Auto Token-Ring LAN Streamer® 32 MC Adapter (#2972)
  - PCI AutoLANStreamer Token-Ring Adapter (#2979)
- Ethernet:
  - High-Performance LAN Adapter (#2980)
  - IBM ISA Ethernet Adapter (#2981)
  - IBM PCI Ethernet BNC/RJ-45 Adapter (#2985)
  - IBM PCI Ethernet AUI/RJ-45 Adapter (2987)
  - Ethernet/FDX 10 Mbps TP/AUI MC Adapter (#2992)
  - Ethernet/FDX 10 Mbps BNC/AUI MC Adapter (#2993)
  - Integrated Ethernet Adapters
- SDLC:
  - 4-Port Multiprotocol Communications Controller (#2700)
  - ISA MPQP Adapter (#2701)
  - Single port, Multiprotocol Adapter/A (#2959)
- X.25:
  - X.25 Interface Co-Processor/2 (#2960)
  - X.25 Interface Co-Processor —ISA (#2961)
  - Portmaster® Adapter/A —1MB (#7006)
  - Portmaster Adapter/A —2MB (#7008)
  - Multiport Model 2 —ISA (#2701)
  - ARTIC960 Co-Processor —4MB (#2924)
  - ARTIC960 Co-Processor —8MB (#2928)
- IBM Fiber Distributed Data Interface (FDDI) Adapters plus appropriate cables for attachment to a FDDI network:
  - FDDI Single-Ring Adapter (#2720)
  - Fiber Single-Ring Adapter (#2724)

- FDDI Dual-Ring Upgrade (#2722)
- Fiber Dual-Ring Adapter (#2723)
- STP Single-Ring Adapter (#2725)
- STP Dual-Ring Upgrade (#2726)
- ESCON® Channel Adapter (#2756) plus:
  - ESCON optional cooling fan (#6506) is required for RS/6000 Model 7013
  - ESCON fiber optic cabling and connectors
- Block Multiplexer Channel Adapter (#2755) plus:
  - Block Multiplexer Adapter Cable (#2757)
  - Block Multiplexer Interface Assembly (#2758)
  - Bus and Tag cable of appropriate length

For additional on-going information pertaining to adapter support, contact: snaserv@vnet.ibm.com or RALVM12(SNASERV).

**Memory Requirements:** A RS/6000 workstation running Communications Server for AIX, Version 4 needs the following minimal fixed-disk storage capacity:

- 16MB for Communications Server for AIX (plus an additional 5MB of temporary storage during installation)
- 0.5MB to 1.0MB per language for messages, depending on the language.

**Note:** An average installation could require the following:

- 28MB for Communications Server for AIX (plus an additional 7MB of temporary storage during installation)
- 0.5MB to 1.0MB per language for messages, depending on the language.

The following additional storage requirements apply for optional packages that can be installed in addition to the base Communications Server program:

- 3MB for SNA Gateway capability
- 1MB for the Xsna graphical user interface
- 0.5MB for APPC Application Suite for AIX
- 0.8MB for APPC Interactive Application Development Toolkit (SNAPI)

The following additional storage requirements apply when the publications are installed in softcopy form:

- 19.8MB for the DynaText browser for Communications Server
- 0.2MB for the first Communications Server softcopy publication installed (storage required for DynaText style definitions shared by all of the SNA Server softcopy publications)
- 1.4MB for Up and Running Guide
- 2.6MB for Communications Server: User's Guide
- 3.1MB for Configuration Reference
- 2.7MB for Diagnosis Guide and Messages
- 1.7MB for Command Reference
- 4.3MB for Transaction Program Reference
- 1.4MB for SNA Gateway: User's Guide
- 1.0MB for APPC Application Suite for AIX: User's Guide
- 1.2MB for AnyNet Guide to APPC over TCP/IP
- 1.3MB for AnyNet Guide to Sockets over SNA

- 1.2MB for CPI-C Programming Guide
- 1.2MB for Channel Connectivity User's Guide
- 1.2MB for ESCON User's Guide
- 1.2MB for Block Multiplexer Channel Adapter User's Guide

Communications Server for AIX, Version 4 functions in 16MB of real memory, but most typical configurations need 32MB for effective performance.

**Note:** Memory and fixed disk requirements for other licensed programs, user applications, and data are not included in these requirements.

**Software Requirements:** Communications Server for AIX Version 4.2 requires either AIX Version 4.1.2, or later, or AIX Version 4.2.

**Note:** The Communications Server for AIX is a part of the IBM Software Server Family of products. Version 4 of the Software Servers were certified to work together through integration testing to run on top of AIX Versions 4.1.4 and 4.2. The testing included short and long runs under stressed environments.

**Compatibility:** Communications Server for AIX Version 4 is not compatible with AIX Version 3.2.X.

Communications Server for AIX Version 4 is compatible with:

- ESCON Channel Connectivity for AIX Version 1.1 (5765-603)
- Block Multiplexer Channel Connectivity for AIX Version 1.1 (5765-604)

**Limitations:** The common installation procedures for all software servers for AIX requires AIX Version 4.1.4, and later, including AIX Version 4.2. The normal product installation procedures for SNA Server for AIX Version 3.1 are used for AIX Version 4.1.2 and 4.1.3 systems. Refer to the Communications Server for AIX: Up and Running document for details.

Diskless workstations are not supported.

HPR is only supported on the following versions of AIX when the associated APARs are installed:

- AIX Version 4.1.2, 4.1.3, or 4.1.4 with APAR IX60351
- AIX Version 4.1.5 — No APAR required
- AIX Version 4.2 with APAR IX60672

**Performance Considerations:** Communications Server for AIX, Version 4 contains many performance and tuning recommendations. Refer to *SNA Server for AIX: Planning and Performance Guide* (SC31-8220) for details.

Performance can be affected by:

- Type of connection and network characteristics
- Number of user and concurrent sessions
- Type of tasks
- Available installed memory
- RAS and/or trace activity

### Planning Information

**Packaging:** The following packaging information applies to this program:

- The Communications Server for AIX product can be shipped either preinstalled on system DASD, on 1/4-inch tape, 8-mm or 4-mm tape, or on CD-ROM.

- Entitled documentation to support this product is provided in hardcopy.

### Security, Auditability, and Control

Communications Server for AIX uses the security and auditability features of AIX Version 4.

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

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### Ordering Information

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Orders for new licenses will be accepted now.

Shipments will begin on November 22, 1996.

Orders that ship prior to the planned availability date will receive Communications Server for AIX Version 4.1. Orders that ship after the planned availability date will receive Communications Server for AIX Version 4.2.

Program packages include a program media or other media with documentation.

To order the programs described in this announcement for type model, specify the type model number, asset feature number 9001, media feature number, one-time charge feature number, media, and quantity.

### Current Licensees

Current licensees of Communications Server for AIX Version 4.1 must order this release via MES.

**Note:** A customer-requested arrival date of November 22, 1996, or later, must be specified in the MES order to ensure that Release 2 of Communications Server for AIX is shipped.

When placing an MES order for Communications Server for AIX, Version 4.2, delete and add the following SPO (5692-AIX) feature numbers as appropriate:

Program	SPO Feature Number
Communications Server for AIX	0705
SNA Channel Attachment Feature	0706

A 5692-AIX SPO is mandatory for shipments of program distribution and publications.

### Basic License

For complete ordering information for Communications Server for AIX, refer to Software Announcement 296-073, dated March 12, 1996.

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### Terms and Conditions

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The terms for Communications Server for AIX Version 4, licensed under the terms and conditions of the IBM International Program License Agreement as previously announced in Software Announcement 296-073, dated March 12, 1996, are unaffected by this announcement with the following exception:

- Program Services will be available until November 30, 1998.

A copy of the agreement is included in the program package.

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## Charges

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Charges for Communications Server for AIX are unaffected by this announcement.

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## Call Now to Order

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To identify your local IBM Authorized Business Partner or IBM representative, call 800-IBM-4YOU.

**Note:** Shipments will begin after the planned availability date.

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