An enterprise-class solution for e-business

eNetwork Communications Server for OS/390 Version 2 Release 4

Highlights

Features a new high-performance TCP/IP stack for applications using OS/390 UNIX services

Gives easy access to host applications from any Java-enabled Web browser with Host On-Demand

Allows TCP/IP sysplex users workload balancing and higher availability with new DNS

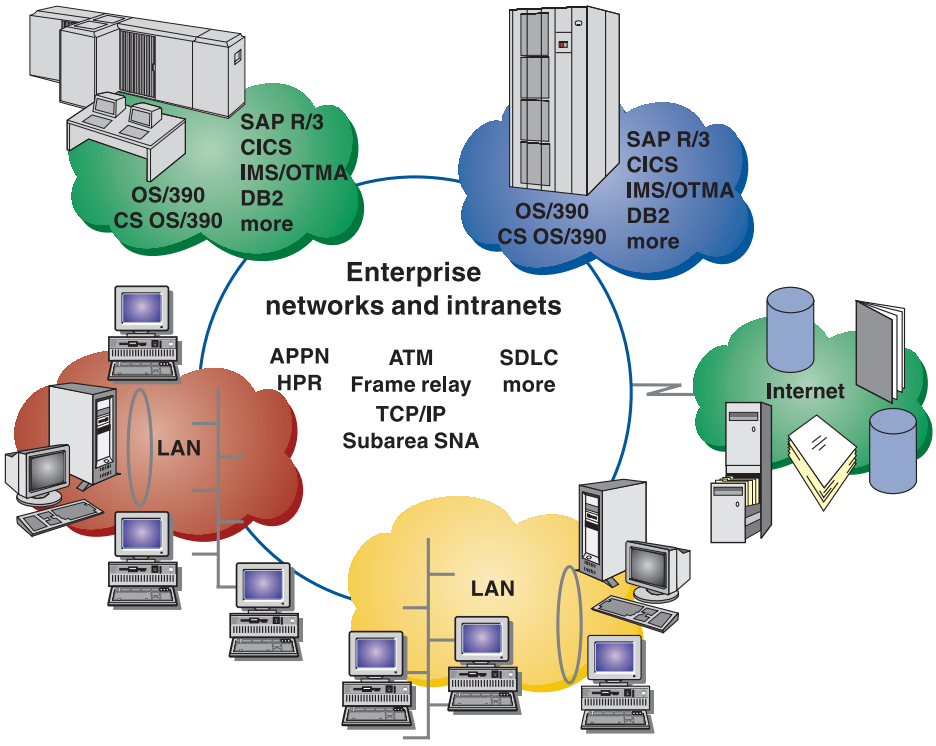
Offers a more cost-effective interface for CICS applications through CICS sockets performance and usability improvements

Includes operations and management software for IBM Network Station, IBM's cost-effective network computer

Improves availability and performance with RIPv2

Extends HPDT and HPR performance and availability benefits to more environments

Serves as your communication infrastructure for electronic commerce



Communications Server for OS/390, Version 2 Release 4, is a powerful communication infrastructure, connecting diverse application and network environments for the enterprise.

Your communication infrastructure for e-business

IBM® eNetwork™ Software is an integral part of the IBM Network Computing Framework for e-business. Providing leading-edge TCP/IP solutions, next-generation Advanced Peer-to-Peer Networking® (APPN®), and High-Performance Routing (HPR) technologies, eNetwork Communications Server for OS/390™, Version 2 Release 4 (CS OS/390), provides a powerful infrastructure for e-business networks. CS OS/390 packs a punch by delivering enterprise-class dependability, end-to-end universal access, ease of implementation and use, and effective network asset utilization.

CS OS/390, built on the classic strengths of System/390®, is the best solution available for mission-critical applications. With support for SNA, TCP/IP, and multiprotocol networking services, CS OS/390 is equipped like no other solution to provide the networking infrastructures you require today as you explore e-business opportunities. In addition, IBM—the force behind SNA, APPN, HPR, and Multiprotocol Transport Networking (MTPN), and a leading developer of TCP/IP networking solutions—is uniquely qualified to provide the networking infrastructure you need when extending vital business applications across the Internet.

Sets the new standard for enterprise-class dependability

As companies implement business strategies that rely on Internet infrastructures and technology, they require rock-solid networking solutions they can bet their businesses on. IBM recognizes this need and is committed to provide network solutions that have the performance, availability, reliability, and security necessary for successful e-business initiatives.

CS OS/390 advances enterprise-class dependability by providing a new TCP/IP stack for OS/390 UNIX® services. This completely redesigned stack exploits native OS/390 services and multiprocessing capability, significantly improving performance, reliability, and serviceability. IBM Internet Connection Secure Server (ICSS) tests show connection capacity per second nearly 4 times (300 percent improvement) that of the old stack. Most applications written to OS/390 UNIX services are expected to benefit from improved performance when used with the new TCP/IP stack. The new TCP/IP stack will coexist with TCP/IP, Version 3 Release 2.

Performance is also improved with the extension of high-performance data transfer (HPDT) multipath channel (MPC+) to support IP-IP connections in addition to the HPR connections already supported. IP and HPR traffic can now share the same channels on HPDT MPC (MPC+) capable devices, such as S/390 OSA-2, 2216 and 3746/950 MAE, potentially reducing hardware costs in hybrid SNA and IP networks.

CS OS/390 also allows IP-to-IP communication through the cross-coupling facility (XCF) in parallel sysplex configurations. XCF IP support allows IP and HPR traffic to share the same set of channels in sysplex environments.

In LAN environments, OSA-2, 2216, 3746/950 MAE, and the 3172 also benefit from extending HPR to support the external communication adapter (XCA). XCA is the means by which eNetwork CS OS/390 connects to LANs. CS OS/390 now allows APPN/HPR routes to be established over XCA connections, significantly improving throughput and performance of LAN devices.

HPDT benefits, already available to APPCCMD applications, are now extended to record API (RAPI) applications and user datagram protocol (UDP). Applications that transfer large data objects particularly benefit from HPDT increased throughput and reduced CPU utilization. These same HPDT bonuses are extended to the OS/390 UNIX services UDP interface, improving throughput and CPU utilization for SAP R/3 applications on AIX® or Windows NT® communicating with DB2® on the S/390®. UDP traffic can use HPDT services over ESCON® or OSA-2 Fiber Distributed Data Interface (FDDI) connections.

Workload balancing is improved with a new domain name server (DNS) that exploits the workload manager (WLM) for intelligent distribution of client requests. Operating in an OS/390 sysplex, DNS invokes WLM sysplex routing services to determine the “best available” system to service a particular client request. This capability also improves availability and is similar in function to VTAM® generic resources.

Routing Internet Protocol, Version 2 (RIPv2), improves network performance and availability by allowing more efficient routing. Routing is enhanced by providing variable-length subnet masks and subnetting, improving usability and maintenance through smaller routing tables. Dynamic reconfiguration of interfaces and automatic clearing of IP routing tables are new to RouteD. This improves availability and usability because users can more efficiently route around network failures. Performance is also improved for RouteD and NCPROUTE applications with the addition of RIPv2 multicasting. RIPv2 multicasting reduces the network load produced by broadcasting routing information.

Support for Network Computing

CS OS/390 now provides Web technologies allowing access to host applications from Java™-enabled Web browsers. This capability is provided by Host On-Demand, a 100% pure Java-based solution that incorporates industry-standard Telnet 3270 (TN3270) protocols. Host On-Demand allows Java-enabled Web browsers, such as Netscape, to quickly and easily connect "on-demand" to an OS/390 3270 host application.

CS OS/390 includes new support for IBM Network Station, the IBM cost-effective compact desktop solution for network computing. The Network Station client software is stored on the CS OS/390 server and downloaded on demand when it's powered on or when you activate new functions. This software includes the base IBM Network Station operating system, 5250 and 3270 terminal emulation, and the Java virtual machine (JVM). Because operating software is stored on the server, it's easy to manage and update from a central site, potentially reducing support costs for client workstations. CS OS/390 also includes an enhanced Network Station Manager for OS/390, offering new functions, such as:

- Management and retrieval of terminal, application, and user preferences by users and administrators. Users can manage a subset of these preferences or can customize some IBM Network Station capabilities.
- Enhanced Trivial File Transfer Protocol (TFTP) needed to download to the IBM Network Station.
- Dynamic host configuration protocol (DHCP) and Boot protocol (BootP) that allow you to configure the TCP/IP network information for an IBM Network Station from a server (plug-and-play).
- Time protocol (TimeD) that lets you set the time for the Network Station from the server.

The richest set of application interfaces in the industry

CS OS/390 supports all major network types and application interfaces. Choose from applications written to advanced program-to-program communication (APPC), Common Programming Interface for Communications (CPI-C), and sockets, including ported UNIX applications through UNIX services and Berkeley Software Distribution (BSD).

The CICS® sockets interface, now an integrated function of CS OS/390, is enhanced with significant improvements to performance and usability. The pathlength associated with task initialization and termination, the capability for multiple and user-customizable listeners, and the addition of cache for Internet name-to-address resolution have all boosted performance. Usability increased through an online definition facility with the look and feel of CICS. CICS environments can be tailored to closely match your transaction volumes, accounting practices, and machine configuration. Automatic startup and termination of CICS no longer requires operator intervention. Existing CICS applications can use these new enhancements with no changes.

The IMS™ sockets interface now supports open transaction manager access (OTMA). OTMA saves administrators time because it eliminates the need to rewrite IMS applications to make them work with TCP/IP clients. In turn, TCP/IP clients have easier access to host IMS applications. With OTMA, all output from the IMS transaction is passed to the IMS message queue for routing as in normal IMS processing to preserve data integrity. Resource Access Control Facility (RACF) and MSE transactions are supported and GIVESOCKET/TAKESOCKET logic is eliminated, improving security, performance, and reliability.

Extending the reach of the network for e-business

CS OS/390 allows your business to move forward, taking advantage of leading network technologies while protecting your investments in existing S/390 applications and infrastructures. As you explore e-business opportunities, CS OS/390 will be there providing the networking solutions you need for success.

IBM Communications Server for OS/390, Version 2 Release 4, at a glance

Features

- APPN connectivity
- HPR connectivity
- TCP/IP connectivity
- VIPA connectivity
- Application interfaces for APPC, CPI-C, BSD Sockets, UNIX services, and HPNS
- Multiprotocol services to connect any application to any network
- Key TCP/IP applications like FTP, Telnet, Print, and Simple Mail Transfer Protocol (SMTP)
- Host On-Demand functions
- CICS and IMS/OTMA Sockets support for TCP/IP users
- IBM Network Station support
- HPDT services, including HPDT MPC (MPC+)
- Multinode persistent session (MNPS)
- Generic resource support
- World-class network management agents and interfaces
- RIP v2 support for TCP/IP users
- Native ATM Support (coupled with OSA-2 adapter)

Benefits

- Widest range of application choices—IBM subsystems, user-written applications, and off-the-shelf applications
  - – Easy integration of new applications with existing applications and networking infrastructure
  - – Easy integration of UNIX-based applications through support for UNIX services
  - – Includes FTP, APPC-FTP, TelNet, 3270, APPC-3270, and SMTP
- Widest range of open connectivity of any single server in the industry—SNA (APPN, HPR), TCP/IP, and Internet
  - – Supports multivendor networking (APPN, HPR, and TCP/IP)
  - – Supports connection to networks with integrated high-availability features to ensure full-time server access by all clients
  - – Support for easy management of network resources with APPN, HPR, and TCP/IP dynamics
  - – Support for major physical connectivity requirements, such as ATM, token ring, and frame relay
  - – Continued support for SNA, APPN, and HPR value-add, such as predictable response times, guaranteed data delivery, and class of service
- Open standards-based network management

For more information

If you'd like more information about Host On-Demand, go to

http://www.raleigh.ibm.com/hex/hexprod_en.html

For information about CICS Sockets, go to

http://www.networking.ibm.com/tcm/tcmperf.html

For information about the IBM Network Station, go to

http://www.internet.ibm.com/networkstation

IBM Corporation
Research Triangle Park, NC
USA

9-97

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

G325-5206-02