An enterprise-class solution for e-business

eNetwork Communications Server for OS/390 Version 2 Release 6

Highlights

Features continued dramatic gains in TCP/IP performance

Provides improved routing efficiency, performance and security using TCP/IP OSPF protocol

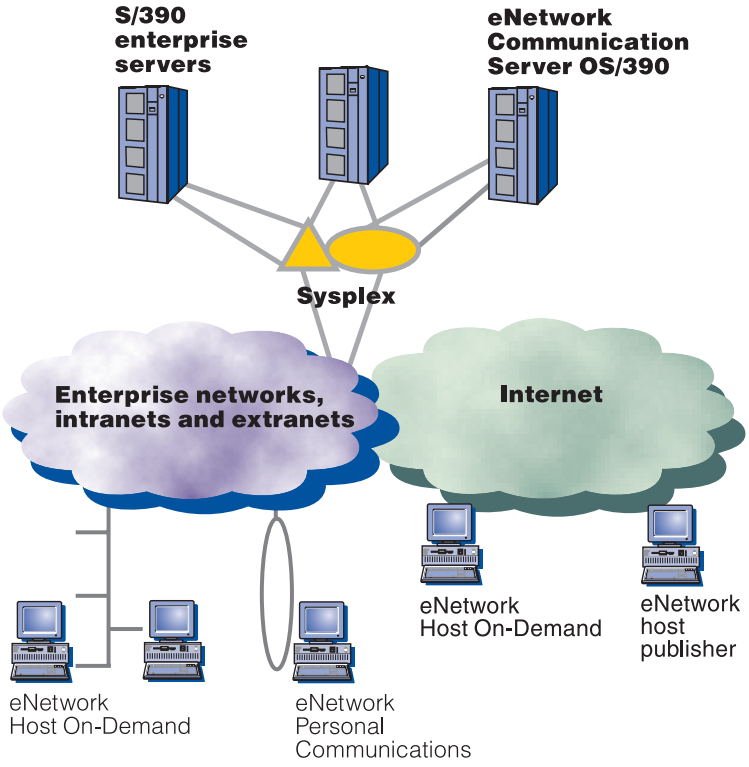
Provides SSL secure access for TN3270 clients to S/390 applications

Optimizes data throughput for "long fat pipes," such as satellite and fiber optic links

Extends HPDT to improve throughput for OS/390 UNIX applications, such as FTP

Provides multicast for Web push and Web casting

Provides sendmail support for e-business and mail consolidation on S/390 servers




Corporate and remote offices


Business partners


Customers

Communications Server for OS/390, Version 2 Release 6

e-business

Build on what you have

IBM® eNetwork™ Communications Server for OS/390™ is a powerful, secure communication infrastructure for System/390® (S/390®) enterprise servers supporting e-business. It provides enterprise-class dependability, scalability and performance, universal access to enterprise applications and data and effective utilization of network assets.

Building on the classic strengths of IBM S/390 networking, Communications Server for OS/390, Version 2 Release 6, (Communications Server) securely extends the business reach of S/390 to employees, customers, business partners and suppliers anywhere in the world whether they are connected over TCP/IP, SNA, intranets, extranets, the Internet or a mixture of these networks.

Enterprise-class performance, scalability and security

Communications Server offers the performance, scalability and security required for e-business.

Continued dramatic gains in TCP/IP performance
TCP/IP performance continues to be a key focus for Communications Server for OS/390. Communications Server test results on a 9672-RX5 three-way processor showed improvements of:

670% for Web-serving workload
470% for interactive workload
170% for file transfer

Test results run on a 9672-RY5 ten-way processor showed even more remarkable improvements of:

1520% for Web-serving workload
1430% for interactive workload
540% for file transfer

Improved routing efficiency, performance and security with OSPF
Open Shortest Path First (OSPF) Protocol is an IETF standard for Internet Protocol (IP) network routing and is superior to its predecessor, Routing Information Protocol (RIP). When network topology changes, for example, a communication link fails or a router is added, OSPF recalculates routes faster and more efficiently than RIP. Network changes are discovered and accommodated more quickly, helping to maintain maximum network performance. Further, OSPF provides security that ensures network information is sent only to authorized systems and servers.

Secure communication for TN3270 users
TN3270E server for Communications Server is enabled for Secure Sockets Layer (SSL) for secure communication between it and an SSL-enabled client, such as Host On-Demand, Version 2. SSL security ensures that clients communicate with an authorized server, provides data privacy through encryption and ensures message integrity – a critical requirement for commerce over the Internet. The TN3270E server allows multiple ports to be used to establish separate ports for SSL and non-SSL based on installation security policy.

Effective utilization of network assets

Communications Server maximizes your return on investment in network resources.

TCP/IP throughput optimization for satellite and fiber optic links
"Long fat pipes" – network links that either have a large bandwidth or are long-distance sensitive – require a larger

window size for maximum TCP/IP throughput. Communications Server implements the window scale option of RFC 1323, extending the window size field in the TCP header to allow more efficient use of the capacity of high bandwidth or long-delay transmission links, such as satellite or long-distance fiber. This optimally utilizes the capacity for maximum throughput for TCP/IP data. When used with Communications Server high-performance data transfer (HPDT) services, even more efficiency and throughput is gained.

Multicast for Web push, Web casting and more
Communications Server multicast support, in combination with S/390 OSA-2 features, implement the open standard IP Multicast support defined in RFCs 1112 and 2236. Multicast provides a more efficient means of transmitting the same data or message to a selected group of users. With IP multicast, the same message or data intended for a selected set of recipients can be sent to group members by transmitting only a single copy of the data. By contrast, Unicast, the previous alternative, requires either that the message be sent to each recipient in the group one-by-one or that it be broadcast to all hosts on a subnetwork whether members of the intended group or not. IP Multicast not only saves network resources but improves IP network scalability. An increase in the number of recipients does not require a corresponding increase in network load to communicate copies of the same data or message. Applications that typically benefit from IP multicast include:

- Web-push and Web-casting technologies
- Multimedia
- Live audio-feed and video-feed
- File transfer
- Stock quotes
- OSPF
- RIPv2 (eliminates broadcast storms)

Communications Server provides application programming interface (API) extensions compatible with the de facto standard Berkeley Sockets IP multicast API to ease porting of existing applications.

HPDT for OS/390 UNIX applications and FTP
HPDT, introduced in Communications Server for OS/390, Version 2 Release 3, for SNA applications, is extended to support authorized OS/390 UNIX® System Services applications written to the assembler application programming interface. This provides improved throughput and reduced CPU utilization for applications that move large amounts of data by reducing or eliminating the movement of the data within the S/390. In Release 6, File Transfer Program (FTP) exploits HPDT services for outbound data moves providing improved throughput and lower CPU overhead for transmitting large blocks of data.

Sendmail support for e-business and mail consolidation using S/390
Sendmail is the current leading mail server found on UNIX systems. While Lotus® Domino™ provides rich collaborative workflow processing, Sendmail offers basic mail transport services for the following:

- Users who directly connect to the OS/390 system either through TSO (using OMVS), or remotely with rlogin or telnet function
- Distributed users who use Sendmail POP3 server facility on OS/390 as a store-and-forward vehicle with widely distributed client applications, such as Elm or Pine
- System services based on Simple Mail Transfer Protocol (SMTP), for example, call mail reflector

Cost savings can be achieved through consolidation of mail administration and mail server functions to OS/390. Based on SMTP, the sendmail function is fully compatible with all SMTP clients, including those provided by Web browsers, such as Internet Explorer and Netscape Navigator and client systems. Sendmail and the existing MVS mail server, SMTPPROC, coexist in the same system as connecting mail gateways.

And more ...

Communications Server offers additional functions including:

- Multinode persistent sessions (MNPS) support for dependent LU server/requester (DLUS/R)
- APPN® usability enhancements
- Improved debugging capability
- SNMP Distributed Protocol Interface (DPI) instance level registration
- X-Motif dynamic link libraries (DLL)
- Performance improved for TCP/IP use of cross-system coupling facility (XCF)

Leading-edge TCP/IP technology demonstration downloads

IBM provides working prototypes of new leading-edge TCP/IP networking technologies for trial and evaluation by IBM eNetwork Communications Server for OS/390 customers and independent software vendor (ISV) partners.

ReSerVation Protocol (RSVP) users can confirm and reserve network resources. For example, bandwidth and buffers for applications where and when necessary to improve performance.

IPv6, the next generation evolution of Internet Protocol technology, provides many technological improvements which address the needs of a growing marketplace – the Internet.

To get demonstration code, available only through the World Wide Web, access the Web site at *www.software.ibm.com/enetwork/commserver* and click Downloads.

For more information

For more information about Communications Server for OS/390, visit *www.software.ibm.com/enetwork/commserver/about/csos390.html*.

For more information about OS/390, visit *www.s390.ibm.com/os390/*.

IBM eNetwork Communications Server for OS/390, Version 2 Release 6, at a glance

Features

- SNA, APPN and HPR connectivity
- TCP/IP connectivity
- Virtual Internet Protocol addressing (VIPA) connectivity
- Application interfaces for OS/390 UNIX System Services sockets, C, REXX, Macro API, CALL Instruction, X/Open Transport Interface and Pascal
- Multiprotocol services to connect any application to any network
- Key TCP/IP applications, such as FTP, Telnet, TN3270E, Print and Simple Mail Transfer Protocol (SMTP)
- UNIX Standard Sendmail, such as POP3 mail server and SMTP services
- Secure Sockets Layer (SSL)-enabled TN3270E server
- Integrated Firewall technologies
- Telnet support for unformatted systems services (USS) messages and commands
- Host On-Demand support
- CICS® and IMS®/OTMA Sockets support for TCP/IP users
- HPDT services, including HPDT MPC
- Multinode persistent sessions (MNPS) with planned takeover and DLUS
- Generic resource support
- World-class network management agents and interfaces
- OSPF, RIPv1 and RIPv2 support
- Native ATM support (coupled with OSA-2 adapter)
- Workload balancing
- High-performance Web serving
- Long fat pipes (window scale option of RFC 1323)
- Multicast

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 systems services
  - Easy consolidation of networks
  - Inclusion of FTP, APPC-FTP, Telnet, 3270, APPC-3270 and SMTP
- Widest range of open connectivity of any single server in the industry – SNA, APPN and HPR, TCP/IP and the Internet
  - Support for multivendor networking (APPN, HPR and TCP/IP)
  - Support for connection to networks with integrated high-availability features to ensure full-time server access by all clients
  - Easy management of network resources with APPN, HPR and TCP/IP dynamics
  - Support for all 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
- Enterprise-class dependability for e-business
- Effective use of network assets
- Enterprise-class performance and scalability for TCP/IP and SNA
- Easy access to S/390 applications, using a Web browser

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