

Hubs

Modules

## Model 5390 Communications Server



### Streamline Network Operations

The Model 5390 Communications Server Module from Bay Networks integrates remote dial access and terminal service capabilities into System 5000™ networks. As a remote dial access server, the Model 5390 allows telecommuters, mobile users and remote offices to access centralized networked resources. As a terminal server, the module enables local and remote asynchronous serial devices to connect to host-based applications or control programs.

The Model 5390 Communications Server Module provides advanced communications server capabilities for the System 5000 intelligent hub family. The module combines remote access and terminal server capabilities into a single product, concurrently and cost-effectively supporting client/server and terminal-to-host data networking.

### Reduce Network Costs

### Consolidate Network Management

## Benefits

### Streamline Network Operations

Integrated communications server capabilities in a single network center solution improves wiring efficiency, takes advantage of the System 5000 reliability features, and streamlines management of network operations.

### Reduce Network Costs

A powerful dual processor design which, combined with low initial and lifecycle costs, delivers a high-performance, cost-effective solution.

### Consolidate Network Management

Integration with Bay Networks' DOS- and UNIX-based Optivity® network management systems enables the entire network fabric to be managed from a single management station.

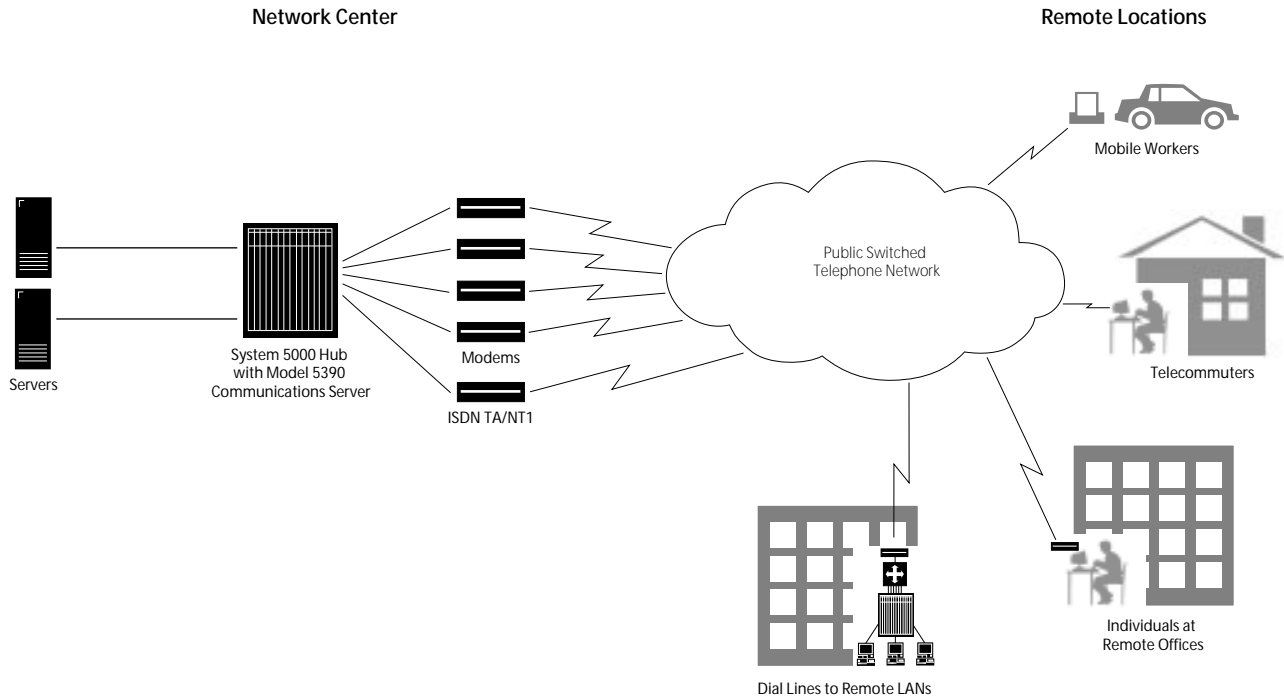
## Features

### Fast, Flexible and Powerful

The Model 5390 features high performance, connection flexibility, processing power, memory capacity and operating efficiency — all in one convenient package.

- The module, featuring a high-density 24-port design, occupies a single slot in the System 5000 chassis for maximum hub space efficiency. In terminal server mode, each port can support up to 16 sessions simultaneously.
  - The high-speed asynchronous ports operate at up to 115.2 kbps, supporting even the most demanding remote user applications with minimal delays.
  - The Model 5390 attaches to any of the 12 Ethernet segments on the hub backplane, delivering configuration flexibility for structured network environments.
  - Dual 486SLC microprocessors deliver a powerful architecture capable of handling the processing requirements of high-performance networks. One processor provides serial port control, while the other is dedicated to managing network data flow and the protocol stack.
- The Model 5390 offers 4 Mbytes of Dynamic RAM, expandable to 8 Mbytes to meet future needs. On-board, non-volatile EEPROM memory retains configuration data, ensuring rapid and uninterrupted operations following module power cycles, resets and hot-swaps.
  - Optional 2 Mbyte Flash EEPROM stores the module's operating image on-board, providing self-booting capabilities.
  - Support for UNIX, IPX, VMS and TFTP boot servers enables users to download the Model 5390 operating image from their existing server. In single-protocol environments, the Model 5390 can boot from UNIX, IPX and VMS servers. In multiprotocol environments, the Model 5390 can download from the main boot server, simplifying integration into the network.
  - Once loaded from a server or from Flash, the Model 5390 can function as a load host for other Model 5390 servers.
  - A comprehensive front-panel LED display provides overall module and individual port status information at a glance.

Figure 1 | Remote Dial Access

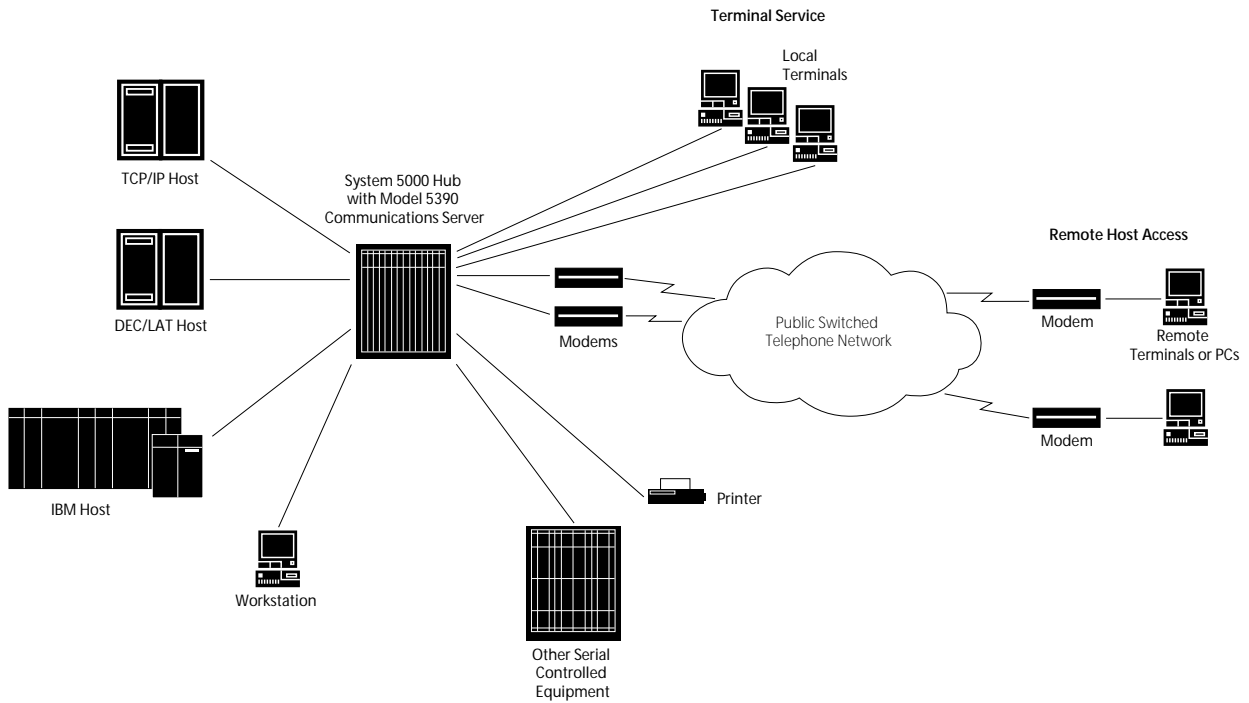


### Remote Dial Access

The Model 5390 Communications Server is a cost-effective, full-featured solution that allows telecommuters, mobile users and individuals at remote offices to access central corporate LAN services and applications. By extending corporate network resources to remote users, the Model 5390 improves productivity and worker efficiency throughout the organization.

- Support for TCP/IP, Appletalk and Netware networks using IPCP, ATCP, and IPXCP makes it possible for distributed users to access the corporate database, share and transfer files, or make e-mail connections through the Model 5390.
- The Model 5390 is bundled with the Fastlink II client Software for IPX networks. Fastlink II allows connection as a remote node or for remote control. The Fastlink II software is provided with an unlimited right-to-copy license.
- The communications server module provides dial access at data rates up to 115.2 kbps, allowing networks to use the latest V.34 modem technology or digital services, such as Integrated Services Digital Network (ISDN).
- Comprehensive security features help control network access. User name and password verification, dial-back features, Security Dynamics™ SecurID verification, and Kerberos authentication prevent intruders from entering the system. Additional security features keep unauthorized users from gaining access to protected hosts or other parts of the network.
- The Model 5390 supports dial IP LAN-to-LAN connections using PPP, SLIP or CSLIP. IP users can also run active RIP to communicate across LAN segments.
- Low per-port costs, high-speed operations, automatic WAN circuit set-ups and take-downs, and the efficiency of network wiring center integration all contribute to the Model 5390's economical performance.

Figure 2 | Host Access/Terminal Service Diagram



### Host Access/Terminal Service

The Model 5390 allows asynchronous devices to join the local area network, extending the System 5000 structured networking solution to local and remote terminals. The module provides connectivity for serial devices, such as PCs, terminals, printers and computer-controlled equipment in manufacturing, process production, medical and other environments.

- Support for TCP/IP, DEC LAT and TN3270 protocols satisfy diverse terminal-to-host requirements in UNIX, DEC and IBM environments.
- UNIX users can run multiple telnet and Rlogin sessions. An Rtelnet utility allows ports on the Model 5390 to perform as a host's local serial port.
- In DEC environments, the Model 5390 supports LAT and Reverse LAT. In addition, TCP/IP-to-LAT protocol translation allows routing to take place across LAN segments, while a VMS interface is available for DEC users.
- Support for IBM TN3270-based hosts provides 3278 display station emulation for asynchronous ASCII terminals, while 7171 transparent mode enables PC file transfers.
- By connecting console ports of other devices to the Model 5390, the network administrator can use telnet to manage and troubleshoot remote networking equipment from a single, central site.

## Technical Specifications

Technical specifications for the System 5000 Model 5390 Communications Server Module are shown in Table 1.

Table 1 | **Model 5390 Communications Server Module Technical Specifications**

<b>Protocol Specifications</b>	<p>Protocols Routed: TCP/PIP, IPX, ARA</p> <p>Routing Protocols: RIP, RIP2, SAP</p> <p>WAN Protocols: PPP (IPCP, IPXCP, ATCP), SLIP, CSLIP ARA 1.0, ARA 2.0</p> <p>Host Connectivity Protocols: Telnet, LAT, ReverseLAT, TN3270</p>
<b>Hardware Specifications</b>	<p>Serial Ports: 24</p> <p>Serial Connector Type: Female RJ45</p> <p>Serial Port Signaling: RS232 signals (RS432 drivers)</p> <p>Serial Port Data Lines:</p> <ul style="list-style-type: none"> <li>TxD (Transmit Data), pin 3</li> <li>RxD (Receive Data), pin 5</li> <li>Gnd (ground), pin 6</li> </ul> <p>Serial Port Control Lines:</p> <ul style="list-style-type: none"> <li>DCD (Data carrier Detect), pin 4</li> <li>DTR (Data Terminal Ready), pin 2</li> <li>CTS (Clear to Send), pin 8</li> <li>RTS (Request to Send), pin 1</li> <li>DSR (Data Set Ready), pin 7</li> </ul> <p>Maximum Asynchronous Data Rate: 115.2 kbps per port</p> <p>Memory: 4 MB expandable to 8 MB</p> <p>Processor Type: 486 SLC (qty 2)</p> <p>Self Boot: Yes (version with flash memory)</p>
<b>Electrical Specification</b>	<p>Power consumption: 37W@48VDC</p> <p>Thermal rating: 120 Btu/hr max</p>
<b>Physical Dimensions</b>	<p>(H) 19.0 in x (W) 1.2 in x (D) 11.0 in</p> <p>(H) 48.3 cm x (W) 3.0 cm x (D) 28.0 cm</p>
<b>Environmental Specifications</b>	<p>Operating temperature: 5°C to 40°C</p> <p>Operating humidity: 85% max. relative humidity, non-condensing</p> <p>Operating altitude: 10,000 ft (3,048 m), 40°C max</p> <p>Storage temperature: -25°C to 70°C</p> <p>Storage humidity: 95% max. relative humidity, non-condensing</p> <p>Free fall/drop: ISO 4180-2, NSTA 1A</p> <p>Vibration: IEC 68-2-6/34</p> <p>Shock/bump: IEC 68-2-27/29</p>
<b>Weight</b>	4.2 lbs (1.9 kg)
<b>Safety</b>	<p>UL 1950 with D3 deviations</p> <p>CSA 22.2 #950 with D3 deviations</p> <p>IEC 950/EN 60 950 (TUV)</p>

Table 1 | **Model 5390 Communications Server Module Technical Specifications (continued)**

<b>Electromagnetic Emissions</b>	Meets FCC Part 15, Subpart B, Class A
<b>Immunity</b>	Electrostatic discharge (ESD): IEC 801-2, Level 2/4 RF susceptibility: IEC 801-3, Level 2 Electrical fast transient/bursts: IEC 801-4, Level 2/3 Electrical surge: IEC 801-5, Level 1/3

## Ordering Information

Ordering information for the System 5000 Model 5390 Communications Server Module is shown in Table 2.

Table 2 | **Ordering Information**

Model	Description
5390	Communications Server with TCP/IP dial remote access and terminal service software, network load Includes CD ROM documentation set, Fastlink II IPX client software, and a network administrator application
5390-FE	Communications Server with TCP/IP dial remote access and terminal service software, and 2 Mbyte Flash memory for self-load capability. Includes CD ROM documentation set, Fastlink II IPX client software, and a network administrator application
L5390-02	LAT software license
L5390-03	IPX Software License
L5390-04	ARA and TN3270 Software License
U5390-FE	2 Mbyte flash EPROM option kit to upgrade units without flash



For more sales and product information, please call **1-800-8-BAYNET**.

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