

Router Product Overview

Complex internetworks have grown past the point where network administrators can depend on equipment from a single vendor. At the same time, administrators of small, independent networks are finding it necessary to interconnect and interoperate. Virtually all organizations creating and connecting local-area networks (LANs) and wide-area networks (WANs) today have major commitments to hardware and software from many different vendors. Therefore, current and future internetworking requires products that support multiprotocol and multimedia networks with multivendor products.

Our routers connect LANs and WANs and interoperate with equipment from most vendors over most available media. This chapter describes the protocols and media that our routers support.

Supported Network Protocols

Our routers support many networking protocols, as well as several routing protocols. These protocols are based on both open standards and proprietary protocols from a variety of vendors. Our routers also support a wide set of bridging and IBM connectivity solutions.

Our routers can receive and forward packets concurrently from any combination of the following:

- WAN protocols
 - Asynchronous Transfer Mode (ATM)
 - Frame Relay
 - High-Level Data Link Control (HDLC)
 - Integrated Services Digital Networks (ISDN)
 - Point-to-Point Protocol (PPP)
 - Serial Line Internet Protocol (SLIP)—for asynchronous lines
 - Switched Multimegabit Data Service (SMDS)
 - X.25 and its derivatives, including LAPB and DDN X.25
- Protocol suites
 - Apollo Domain
 - AppleTalk (Phase 1 and Phase 2)
 - Banyan VINES
 - DECnet Phase IV, Phase IV Prime, and Phase V
 - Internet Protocol (IP)

- ISO Connectionless Network Services (CLNS) and Connection Mode Network Services (CMNS)
- Novell IPX
- XNS and two variations developed by Ungermann-Bass and 3Com
- Bridging types
 - Transparent bridging and source-route transparent (SRT) bridging
 - Source-route bridging (SRB) and remote source-route bridging (RSRB)
 - Source-route translational bridging (SR/TLB)
- Support for IBM networking
 - Serial tunnel (STUN)
 - LLC2 and Synchronous Data Link Control (SDLC)
 - SDLLC

Supported Media

Our routers support the following industry-standard networking media:

- Ethernet—IEEE 802.3 and Type II
- Token Ring—IEEE 802.5
- FDDI—single and dual mode
- Synchronous serial—V.35, RS-232, RS-449, RS-530, and X.21
- High-Speed Serial Interface (HSSI)—supports T1, T3, E3, and SONET rates

Using the Router

Your router comes with software already installed. To configure and manage the router, you normally connect an ASCII terminal to the router's console port. For hardware installation procedures, refer to the hardware manual for your router platform.

When you boot the router, it loads a system image that contains a specific version of system software. It also loads configuration files, which contain commands that customize the operation of your router. Alternately, you can use the Trivial File Transfer Protocol (TFTP) to retrieve these configuration files from a remote network device. These files can be stored on the local router, on a remote router that has been configured as a TFTP server, or on a host running TFTP. For information about booting the router, refer to the discussion of loading system images, microcode, images, and configuration files in the “Loading System Images, Microcode Images, and Configuration Files” chapter of this manual.

You can build most straightforward router configurations and create a configuration file using the **setup** facility. This facility is described in the *Router Products Getting Started Guide*. To enhance the configuration, perform the protocol-specific tasks described in the appropriate chapters of this manual.

The router software provides a user interface called a command interpreter, or EXEC, that lets you configure and manage the router. This user interface also provides context-sensitive help. The command interpreter has several different command modes, each of which provides a group of related commands that you can use to configure the router and display its status. Some commands

are available to all users, while others can be executed only after an enabling password has been entered by the operator. Context-sensitive help gives information about command syntax. The command interpreter and its help feature are described in the “Understanding the User Interface” chapter of this manual.

You use the command-line parser to configure interfaces, terminal sessions, and asynchronous communications lines. Interfaces are connections to network media, such as Ethernet, Token Ring, and serial media. You configure them to run different routing protocols and other networking protocols. You configure terminal sessions and modems connected to the router so that other network users can log in to the router. Configuring terminal sessions and asynchronous communications lines is discussed in the “Configuring Terminal Lines and Modem Support” chapter of this manual. Configuring interfaces is described in the “Configuring Interfaces” chapter of this manual; the routing, bridging, and IBM protocols you can configure on these interfaces are described in the protocol-specific chapters of this manual.

You also can configure and manage the router itself, performing such tasks as naming the router, setting the router’s time, configuring SNMP, and setting security. These tasks are described in the “Managing the System” chapter of this manual.

We provide various documentation about your router. Refer to the *Documentation Roadmap* for information about the interrelationship among the various documents. For the latest information about the software, including new features added since the documentation was printed and additional caveats about using the software, refer to the release note that accompanies the software.

