

# Router Product Overview

---

Complex internetworks have grown past the point where they can depend on equipment from a single vendor. At the same time, 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 allow them to 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 forward packets concurrently from any combination of the following:

- WAN protocols
  - X.25 and its derivatives, including LAPB and DDN X.25
  - Frame Relay
  - Switched Multimegabit Data Service (SMDS)
  - Dial-on-Demand Routing (DDR)
  - Integrated Services Digital Networks (ISDN)
  - Point-to-Point Protocol (PPP)
  - High-level Data Link Control (HDLC)
  - SLIP (for asynchronous lines)
- LAN protocols
  - Apollo Domain
  - AppleTalk (Phase 1 and Phase 2)
  - Banyan VINES
  - DECnet Phase IV/Phase V
  - Internet Protocol (IP)

- ISO Connectionless Network Services (CLNS) and Connection Mode Network Services (CMNS)
- Novell IPX
- XNS and Ungermann-Bass
- Bridging types
  - Source-route transparent (SRT) bridging
  - Transparent bridging (TB)
  - Source-route bridging (SRB)
  - Remote source-route bridging (RSRB)
  - Source-route translational bridging (SR/TLB)
- Support for IBM networking
  - Serial tunneling (STUN)
  - Synchronous Data Link Control (SDLC)
  - LLC2
  - 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 T3, E3, and SONET rates

## Using the Router

Your router comes with its software already installed. You normally connect an ASCII terminal to the router's console port, and it is from this terminal that you configure and manage the router. 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. You also can use 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 Chapter 3 of this manual.

You can build most straightforward configurations of the router and create a configuration file using the **setup** facility. This facility is described in the *Router Products Getting Started Guide*. To enhance the configuration, use the protocol-specific commands described in Chapters 7 through 24 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 after an enabling password has been given by the operator. Context-sensitive help gives information about command syntax. The command interpreter and its help feature are described in Chapter 2 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 interfaces is described in Chapter 6 of this manual; the routing, bridging, and IBM protocols you can configure on these interfaces are described in Chapters 7 through 24 of this manual. Configuring terminal sessions and asynchronous communications lines is discussed in Chapter 4 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 Chapter 5 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 notes that accompany it.

