Chapter 1
Terminal Server Product Overview

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Cisco Systems designs, manufactures, and markets high-performance computer data network subsystems. These network subsystems make it easy to use networks effectively in modern business environments.

Cisco Systems products are based on advanced implementations of microprocessor technology, providing some of the highest data throughput rates available today. Because Cisco Systems products are interproduct-compatible, customers can use them to develop indefinitely large and complex networks that support mainframe and personal computers, workstations, terminals, and other network computing devices and peripherals.

The terminal servers described in this manual can efficiently connect many terminals and devices to multivendor local area networks. In addition, the terminal servers are network-compatible with the Cisco Systems routers and protocol translators, which you can use to extend your network to any size you need.

The Terminal Server Series

The Cisco Systems terminal servers include the ASM, MSM, and STS-10x series. These communications processors provide interconnection of multivendor systems and devices using the Ethernet local area network. The ASM and MSM series may optionally use remote synchronous serial or Token Ring network attachments.

Cisco Systems designs the terminal servers to be an integral part of any distributed systems application. Although communications servers may be used as a distributed data switch or PBX, the Cisco Systems terminal servers can provide direct communication to hosts that support LAT, SLIP, TCP/IP, and TN3270 protocols in their system operating software.

Note: The STS-10x does not support TN3270 connections.

Flexible Interfaces for Convenient Use

The Cisco Systems terminal servers handle multiple device interfaces. They multiplex asynchronous RS-232 serial lines onto a high-speed network interface. ASCII terminals, modems, printers, and host serial ports are among the devices you can connect to the

terminal servers. You can use a number of methods to connect serial devices, including RJ-11, and 50-pin Telco connectors.

The Cisco Systems network interfaces for the terminal servers provide easy connectivity. The network interface is typically to Ethernet, but the ASM-supported interfaces and MSM-supported interfaces can also support alternative media such as synchronous serial lines and Token Rings.

Using terminal servers, any RS-232-compatible device—serial laser printer, film recorder, plotter, and the like—can become a shared resource to your organization over a local network.

You can adapt the terminal servers to changing business environments. If you do not need the number of lines or the flexibility of the ASM or the MSM, you can choose the STS-10x physical configuration terminal server. A 10-line terminal server, the low-cost STS-10x is ideal for installing a few terminals or modem lines in an office. It is also useful in environments where clusters of devices require a more distributed topology. The MSM series supports from 16 or 32 serial lines, as well as the optional non-volatile configuration memory. The ASM physical configurations series starts at 32 serial lines, but you can add up to four more line cards to expand to 96 lines in 16-line increments.

The terminal servers include software that increases their utility to network designers and managers. For example, individually selectable line parameters allow you to connect the widest possible variety of equipment.

More Software Features for More Utility

The Cisco Systems terminal servers can initiate an unlimited number of concurrent connections from data terminals to different hosts, and can handle any speed, delay, and format incompatibilities.

Distributed network management facilities include performance monitoring, runtime error logging, and the Simple Network Management Protocol (SNMP). These features allow the network manager to examine and adjust the terminal servers for optimum performance.

Full network access control helps the network manager ensure effective system use. Remote configuration is also available through Telnet and MOP connections to virtual ports on the terminal servers.

Security features allow restrictions to resources on the network. The network manager can specify access lists to establish which users have access to which computers. A user-name-and-password-pair authentication scheme is also supported.

The Protocol Translator

The Cisco Systems protocol translator allows users of X.25, DEC Local Area Transport (LAT), and TCP/IP networks to make virtual terminal connections between each of these environments. In addition, access to IBM hosts via TN3270 terminal emulation is also available through the protocol translator and XRemote is supported, as well.

Example uses of protocol translators: A TCP user can make a connection to the protocol translator using TCP/Telnet; the protocol translator then makes an outgoing connection using the X.25 PAD protocols (X.3 and X.29). Similarly, an X.25 PAD user can establish a connection to the protocol translator, which then uses TCP/Telnet to make a connection to a TCP host.

The protocol translator automatically establishes the appropriate connections and converts between X.3 option negotiations and Telnet option negotiations. If you prefer, you can use the protocol translator commands to customize connection parameters that will supersede the X.3 parameters. The protocol translator can conduct up to 100 concurrent translation sessions.

The CPT-based protocol translator hardware system includes a processor, the non-volatile configuration memory, an Ethernet interface, and a high-speed serial interface with X.25 support. No other interfaces or peripherals can be added for the CPT. Protocol translation is also available for the IGS product and the Cisco Routing Module (CRM) for Cabletron MMAC hubs.

The protocol translator is documented in the Cisco *Protocol Translator Configuration and Reference* publication.

The TRouter

The Cisco Systems TRouter, a combination terminal server and router, is ideal for providing a small number of asynchronous serial lines to remote "leaf" networks that have low traffic.

The TRouter includes IP terminal server capabilities. Its routing support includes TCP/IP, DECnet, XNS, AppleTalk, Novell, ISO CLNS, Banyan Vines, and Apollo Domain. You can add X.25, which permits attachment to commercial public data networks and the Defense Data Network (DDN). However, bridging support is not available.

The TRouter hardware system includes a processor, the non-volatile configuration memory, a 16-line asynchronous serial card, and two network interfaces (Ethernet and/or high-speed serial) on a single MCI controller card. This configuration is available only in the M-chassis and cannot be expanded or modified. No other interfaces or peripherals can be added.

The complete TRouter software documentation consists of the Cisco *Router Products Configuration and Reference* publication as well as this manual.