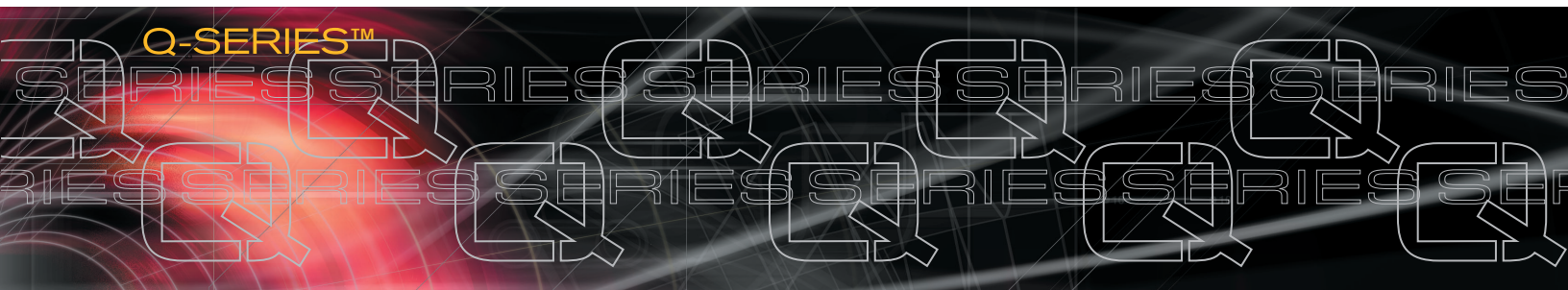


Q2200 T1 QoS Access Router



Simplified Remote Office Networking

Combining the features of an IP router, QoS appliance, IPSec VPN appliance, firewall, T1 DSU/CSU, and Ethernet switch, the Q2200 QoS Access Router saves you money right out of the box. Setup and maintenance become far less time-consuming and expensive with an integrated device. And the Q2200 router's intuitive graphical user interface (GUI) helps remote offices get up and running quickly.

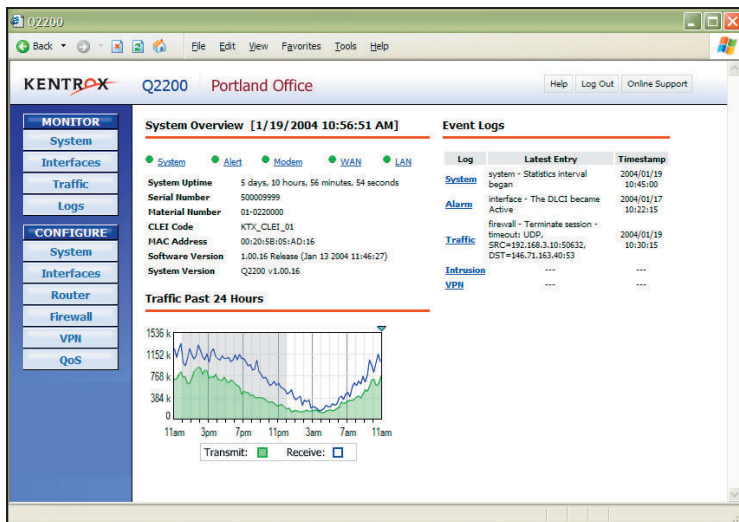


Figure 1: The Kentrox Q2200 router offers an intuitive, Web-style GUI to simplify setup and management.

Simple, low-cost installation

Traditional routers, security devices, and network access equipment can be difficult to set up, and often require special training. That can be problematic for many branch offices and small businesses that are trying to reduce support costs or do not have on-site expertise.

The Kentrox Q2200 router is designed to simplify installation with its intuitive GUI, making it faster and easier for both network administrators and less experienced installers. Advanced feature configurations, such as VPN tunnels, firewall, and QoS policies, are also made simpler by the router's GUI.



Easy-to-use graphical interface

Best-in-class QoS reports

All-in-one T1 business solution

- **High-performance IP Router**
 - Virtual Private Networking (VPN)
 - Network Address Translation (NAT)
 - Intuitive CLI for scripting
 - IP routing—Static, RIP v1, and RIP v2
 - Frame Relay and PPP support
- **QoS Appliance**
 - Traffic reports and graphs
 - Auto DiffServ/ToS priority queuing
 - Class-based weighted fair queuing
 - User-selectable QoS policies
 - Prioritization of VoIP and video
- **VPN Appliance**
 - 100 IPSec tunnels
 - Encryption (DES, 3DES, AES)
 - Hardware acceleration for DES/3DES
- **Stateful Packet Inspection Firewall**
 - Packet filtering (access control lists)
 - Intrusion Detection System (IDS)
 - Denial of Service (DoS) protection
 - Application Layer Gateways (ALG)
- **T1 DSU/CSU**
 - Frame monitoring
 - Alarms and diagnostics
- **Managed Ethernet Switch**
 - Four 10/100 Ethernet ports
 - Auto-sensing, auto-polarity
 - VLAN 802.1Q tag marking



Embedded, Web-style GUI simplifies management

The graphical user interface contains powerful tools to troubleshoot problems, run QoS reports, make configuration changes, set up traffic-shaping policies, or just check the health of the network. Accomplishing these tasks with command-line driven products can be difficult and time-consuming. Arranged logically and intuitively by function, the router's GUI is point-and-click easy.

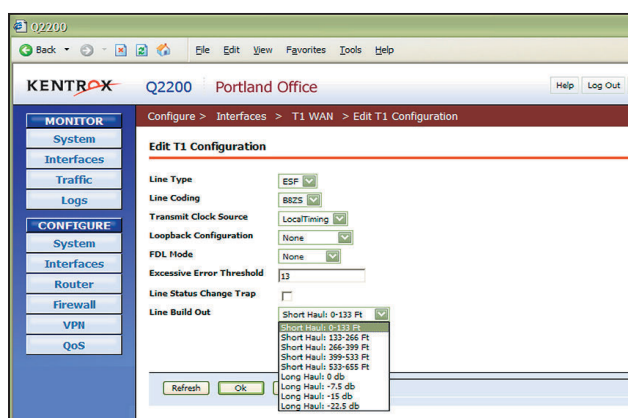


Figure 2: The graphical interface presents configuration options for simpler setup.

Protect internal systems from intrusion

To protect internal networks from outside intrusion, the router conceals LAN IP addresses using Network Address Translation (NAT). It also has an integrated Stateful Packet Inspection (SPI) firewall. The router firewall includes Intrusion Detection System (IDS) capability, which identifies and blocks common attacks. Application Layer Gateways (ALG) pass common traffic types while preventing unwanted traffic from entering the LAN.

VPN support

With Virtual Private Networks (VPNs), you can take advantage of the cost savings associated with transmitting communications over IP services. The Q2200 secures up to 100 VPN tunnels with standards-based IPsec encryption (DES/3DES/AES) and authentication.

Its VPN support is designed for Virtual Private Networks Consortium interoperability and conformance. Dedicated hardware accelerates DES/3DES encryption to ensure full wire-speed performance.

Deliver quality performance for critical business applications

Mission-critical applications and delay-sensitive traffic, such as VoIP and video, often suffer when competing with bursty Web traffic for WAN bandwidth. To ensure these applications get the necessary level of performance, the router provides Quality of Service (QoS) traffic shaping via industry-standard DiffServ queuing, supporting all six of the primary DiffServ QoS priority levels. To prioritize traffic and generate traffic-specific reports, you can establish QoS policies by IP source and destination address, application and DiffServ class.

Fine-tune network performance with QoS monitoring and reports

The Q2200's graphical reports let you monitor traffic performance at each established QoS priority level to see whether the critical traffic flows are getting the bandwidth they need. The report data helps you identify performance problems and modify your QoS policies appropriately. To reduce bandwidth pinches, for example, you would simply view the current and historical performance reports, and adjust QoS policies as necessary to provide the appropriate amount of bandwidth for high priority applications.

The router also provides T1 circuit information to help you identify the source of performance degradation or a network outage. You can remotely determine port status, set loopbacks, view performance reports and change configuration—all through the easy-to-use GUI or via command line using the optional dial-up modem.

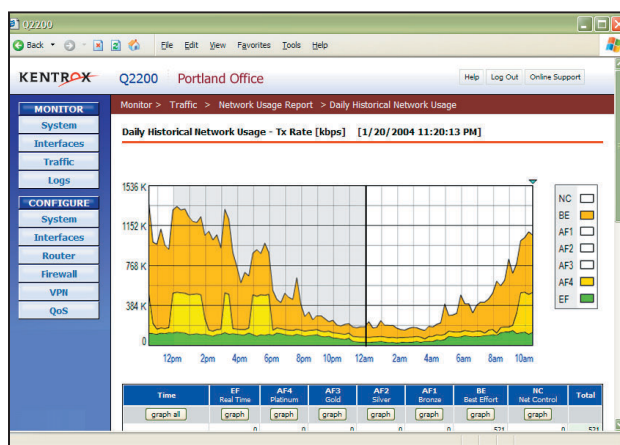


Figure 3: Graphical reports show network statistics and trends at a glance.

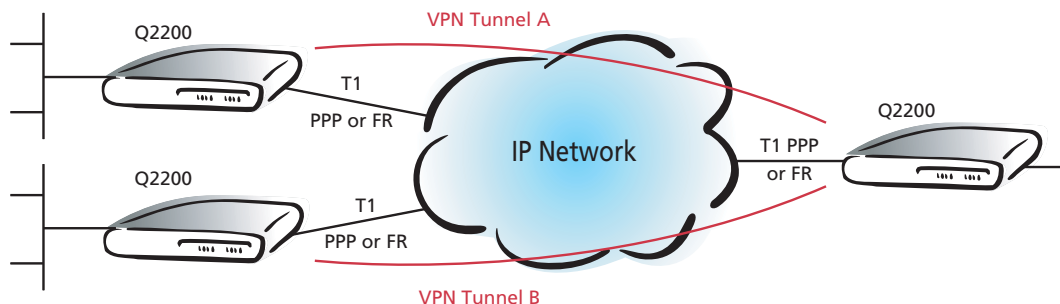


Figure 4: 100 IPsec VPN tunnels mean flexibility and cost savings.

SPECIFICATIONS

INTERFACES

WAN:	One T1 port (RJ48C) with built-in DSU/CSU
LAN:	Four-port 10/100B-TX switch (RJ45) - Auto-sensing, auto-polarity
Control port (CLI):	One RS-232 (RJ45)
Modem (optional):	One V.92 modem (RJ11C) for dial-in management

MANAGEMENT/ADMINISTRATION

GUI:	Intuitive Web-style GUI (accessible from WAN or LAN)
Access Management:	Three levels—admin, configure, view; up to 10 users with passwords
Logs:	Alarm, System, Firewall, Traffic, VPN Syslog support
SNMP:	Traps, MIB II, DS1, I/F MIBs, Frame Relay DTE MIB
Updates:	Software updates via FTP or GUI
CLI:	Intuitive command line interface (CLI) accessible via control port, Telnet, or modem
RT Clock:	SNTP support and 8-hour power failure backup

FIREWALL

Protection Methods:	Stateful Packet Inspection designed for ICASA certification (planned) Denial of Service (DoS) and other protection Intrusion Detection System (IDS) Blacklist TCP and UDP packet filtering NAT Application Layer Gateways (ALG)
Policies:	50 user-configurable policies
Mapped IP:	16 mapped IP (virtual DMZ/port forwarding)

VIRTUAL PRIVATE NETWORK (VPN)

IPSec:	100 IPsec VPN tunnels Internet Key Exchange (IKE) Main and aggressive modes Diffie-Hellman MODP groups 1, 2, and 5 Perfect Forward Secrecy (PFS) IPsec NAT traversal
Authentication:	Pre-shared key and X.509 certificates (RSA) (Call for availability of X.509 Certificates)
Encryption:	DES, 3DES, AES (128), hardware acceleration for DES/3DES
Hash algorithms:	MD5 and SHA-1

WAN PROTOCOLS

Protocols:	Point-to-Point Protocol (PPP) Frame Relay (single DLCI; call for availability of multiple DLCIs)
LMI:	Auto, ITU Q.933 or ANSI T1.617

ROUTER

Routing:	Static, RIP v1, and RIP v2 DHCP server DNS relay, DNS client
----------	--

QUALITY OF SERVICE

Bandwidth Management:	Class-based Weighted Fair Queuing Auto DiffServ/ToS-based priority queuing VoIP and video prioritization All DiffServ classes supported Configurable queue weighting Configurable QoS marking
Marking Policies:	32 user-configurable QoS policies for prioritization by source and destination addresses, port, protocol, DiffServ Code Point (DSCP)
Monitoring:	QoS traffic reports and graphs Configurable WAN Latency report
Standards:	Supports 802.1P user priority and VLAN 802.1Q tags

DIAGNOSTIC LEDS (FRONT PANEL)

System:	System status, security alert, modem status
WAN:	Port status, Tx status, Rx status
LAN:	Port status, Tx status, Rx status

PHYSICAL

Dimensions:	1.6" H x 11.8" W x 8.6" D (44mm H x 300mm W x 219mm D)
Weight:	3.8 lbs. (1.72 kg)
Power:	Universal AC adapter, 100-240 VAC input, 50-60 Hz; power consumption: ≤ 20W
Mounting Options:	Table-top, wall-mount or optional 19" rack-mount (1RU)

ENVIRONMENT

Operating:	0° to 50°C (32° to 122°F) 5% to 95% RH (non-condensing)
Storage:	-20° to 66°C (-4° to 150°F) 5% to 95% RH (non-condensing)
Lightning:	Withstands lightning surges defined per FCC Part 68

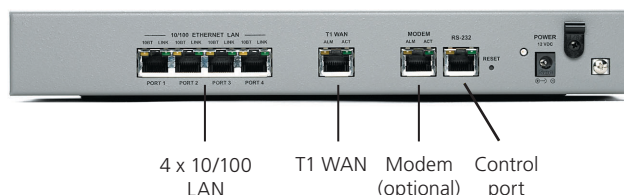
REGULATORY

Emissions:	FCC 47 CFR 15 Class A
Safety:	ANSI/UL 60950-1-2002 CAN/CSA-C22.2 No 60950-1-03
Terminal:	FCC 47 CFR 68 IC CS-03

ORDERING INFORMATION

DESCRIPTION	CATALOG #
Q2200 T1 QoS Access Router	2200
Q2201 T1 QoS Access Router with Modem	2201
Items included with the Q2200: <ul style="list-style-type: none"> - Documentation CD (includes Adobe® Acrobat® PDF versions of the Setup Guide, the User's Guide and the CLI Reference Guide) - AC/DC power adapter and cable for use in North America - One 6' Ethernet LAN cable, Cat 5E, UTP 568B - Two #8 wood screws and anchors for wall-mounting 	
ACCESSORIES	CATALOG #
T1 Network Cable, RJ48C Male to RJ48C Male	930xx143
Q2200 19" Rack Mounting Kit	77912
Q2200 CLI Serial to PC Adapter, RJ45 Female to DE9 Female (for use with external Ethernet cable)	77910
MAINTENANCE PLANS	CATALOG #
Q-Series Software Care Maintenance Plan	13810
Q-Series Urgent Care Maintenance Plan	13802
Q-Series Critical Care Maintenance Plan	13803
Q-Series Shared Care Maintenance Plan	13804
Q-Series Installation Support (On-site)	13820
Q-Series Installation Support (Phone)	13830

Note: xx denotes length of cable; contact factory for available lengths.



Protect your network investment with maintenance plans

To keep your network healthy and productive, Kentrox offers a collection of maintenance plans for our Q-Series™ access routers. These plans provide you with essential protection to help minimize network downtime and maximize network performance. Refer to the following chart for highlights of our maintenance plan options. For additional details, visit our web site at: www.kentrox.com/services.

MAINTENANCE PLAN SUMMARY

Services	Critical Care*	Urgent Care	Shared Care	Software Care
On-site Support				
Response time	4-6 hours	1 business day	Priority	Priority
Price	No charge	No charge	Hourly charge	Hourly charge
Factory Repair Services				
Replacement response time	4-6 hours	1 business day	Priority	n/a
Replacement price	No charge	No charge	No charge	n/a
Toll-free Phone Support				
Hours of coverage*	24 x 7	24 x 7	24 x 7	24 x 7
Response time	<30 min	<1 hour	<1 hour	Priority
Remote diagnostics*	Yes	Yes	Yes	
Price	No charge	No charge	No charge	Published rates
Software Updates	Yes	Yes	Yes	Yes
Product Training*	30% discount	30% discount	30% discount	No discount

*Certain restrictions apply. See www.kentrox.com/services for details.

Kentrox, LLC, 20010 NW Tanasbourne Drive, Hillsboro, OR 97124
Phone 503-643-1681 • Toll Free 800-733-5511

Kentrox is a registered trademark and Q-Series is a trademark of Kentrox, LLC. All other product names are trademarks or registered trademarks of their respective owners. Specifications published here are current as of the date of publication. Kentrox reserves the right to change specifications without prior notice. You may verify information by contacting our headquarters in Hillsboro.

15-00-001 1/04 Copyright © 2003-04 by Kentrox, LLC. All Rights Reserved.

KENTROX
Quality Access