3COM

Intelligent and secure edge connectivity, ideal for small and medium enterprise and branch office networks and essential business applications.

OVERVIEW

The 3Com® Switch 4500 family of managed, stackable 10/100 Ethernet switches provides secure, flexible LAN connectivity for enterprise and branch office networks. The Switch 4500 family offers Layer 2 switching and dynamic Layer 3 routing, as well as robust security, Quality of Service (QoS) and management features to deliver intelligent edge connectivity for essential business applications.

Four switch models—stackable in any combination up to eight units—include:

> 3Com Switch 4500 26-Port:
  24 10/100 ports plus 2 dual-personality Gigabit ports

> 3Com Switch 4500 50-Port:
  48 10/100 ports plus 2 dual-personality Gigabit ports

> 3Com Switch 4500 PWR 26-Port:
  24 10/100 Power over Ethernet (PoE) ports plus 2 dual-personality Gigabit ports

> 3Com Switch 4500 PWR 50-Port:
  48 10/100 PoE ports plus 2 dual-personality Gigabit ports

KEY BENEFITS

SECURES THE NETWORK

Essential security features provide user and device authentication, enforce access control for switch management and enhance overall network security to protect critical resources and information.

EMPOWERS APPLICATION CONVERGENCE

The Switch 4500 family combines high performance switching, QoS and advanced traffic management features to help ensure essential applications get the appropriate priority for efficient utilization of network resources.

REDUCES DEPLOYMENT COSTS

Two Switch 4500 models provide Power over Ethernet (PoE). PoE provides electrical power and data connectivity over a single Ethernet cable—resulting in significant cost savings when deploying devices like IP phones, wireless access points and IP security cameras.

KEY BENEFITS
(CONTINUED)

INCREASES FLEXIBILITY AND SCALABILITY

Add switches to the stack when needed—without increasing management difficulty and expense—because the Switch 4500 family employs a flexible design with user-configurable "dual-personality" Gigabit Ethernet interfaces and the ability to stack up to eight switch units (384 10/100 ports) that can be managed as a single entity.

ENHANCES MANAGEMENT AND CONTROL

The Switch 4500 family is easy to use and manage, designed to increase business productivity by reliably supporting business applications. Additionally, the PoE models deliver intelligent power management ("smart PoE") with dynamic allocation of available power resources.

MINIMIZES VOICE OVER IP COMPLEXITY

Minimize the cost and complexity associated with adding or moving IP phones: the Switch 4500 detects the presence of IP phones and dynamically assigns switch ports to the voice VLAN, enabling automated configuration and prioritization of Voice over IP (VoIP) traffic.

DELIVERS HIGH PERFORMANCE

No need to buy new switches when additional network performance is needed, as the Switch 4500 family features 26-port and 50-port models, providing aggregate switching capacity up to 8.8 Gbps and 13.6 Gbps, respectively.

REDUCES CONFIGURATION EXPENSE

Automatic updating of Layer 3 network topologies, negotiation of port speed and duplex mode, and detection and adjustment of cable type reduces configuration time and expense.

SUPPORTED BY LIMITED LIFETIME HARDWARE WARRANTY

3Com gives a Limited Lifetime Hardware Warranty on the Switch 4500 10/100 Family. Advance Hardware Replacement, with Next Business Day shipment in most regions, is provided upon product registration. See www.3com.com/warranty for details.

FEATURE HIGHLIGHTS

Feature	Description
IEEE 802.1X network access control	Standards-based security combined with RADIUS authentication
RADIUS Authenticated Device Access (RADA)	Authentication of attached devices via MAC address for additional level of endpoint security
Access Control Lists (ACLs)	Enable usage policies at each point of access to the network via the switch
Bandwidth rate limiting and protocol filtering	Enforce controls on each port for efficient use of network resources and prioritization of delay-sensitive VoIP traffic
PoE support	Internal power supply provides a total PoE power budget of 300 Watts to PoE-enabled devices like IP phones; optional supplemental power available
"Dual-personality" Gigabit Ethernet interfaces	Choice of copper or fiber media for flexible uplinks
Multicast filtering and Rapid Spanning Tree Protocol support	Improve QoS, scalability and network availability
Dynamic routing	Routing Information Protocol (RIP) allows automatic updating of Layer 3 network topologies
Secure management	Authentication and encryption of management traffic via Secure Shell (SSH v2) and SNMP v3
3Com Operating System	Proven software featured in 3Com premium enterprise switches such as the Switch 5500, 7700 and 8800 families
Service and Support	Backed by 3Com Global Services and authorized partners with demonstrated expertise in network assessment, implementation and maintenance

CAMPUS LAN CONFIGURATION SUPPORTED BY THE SWITCH 4500
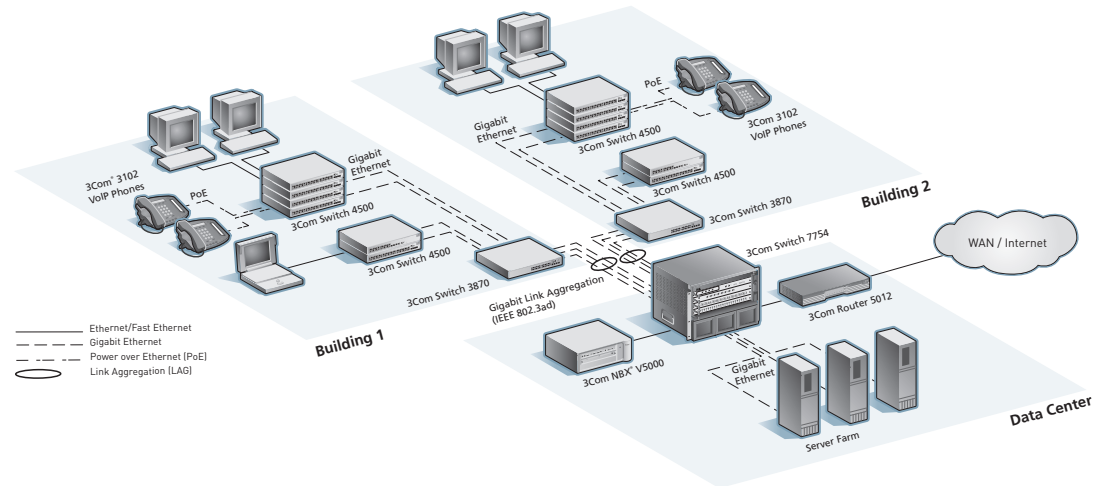
SMALL-TO-MEDIUM LAN CONFIGURATION SUPPORTED BY THE SWITCH 4500
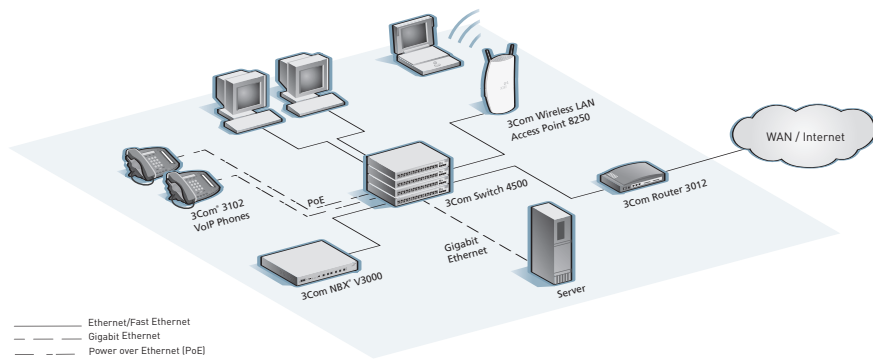
SERVICE AND SUPPORT

3Com Global Services offers the resources and talents of a major corporation plus more than two decades of experience in resolving network challenges and delivering business benefits to enterprises around the world.

Global support with a personalized focus in the local language helps drive productivity and minimize expenses. Because 3Com understands both the technology and the business, we're the partner you need to maintain your competitive edge and remain strong.

Suggested Service, Support and Training Offerings

Network Health Check	An activity-auditing service focused on improving network performance and productivity
	Includes traffic monitoring, utilization analysis, problem identification, and asset deployment recommendations
	Extensive report provides blueprint for action
Network Installation and Implementation Services	Experts set-up and configure equipment and integrate technologies to maximize functionality and minimize business disruption
	For large and complex sites, implementation services include personalized configuration, project management, extended testing and coaching on network administration
Project Management	Provides extra focus and resources that special projects demand
	3Com engineers manage entire process from initial specifications to post-project review
	Using structured methodology, requirements are identified, projects planned and progress of implementation activities tracked
3Com Guardian℠ Maintenance Service	This service provides comprehensive on-site support and includes advance hardware replacement, telephone technical support and software upgrades
3Com Express℠ Maintenance Service	This service provides speedy access to 3Com shipment of advance hardware replacements, software upgrades and telephone support
3Com University	Self-paced and instructor-led technology and product courses, plus certification programs

SPECIFICATIONS

All information in this section is relevant to all members of the 3Com Switch 4500 10/100 family, unless otherwise stated.

CONNECTORS

26-port non-PWR
24 auto-negotiating 10BASE-T/100BASE-TX ports configured as auto MDI/MDIX

2 dual-personality Gigabit port pairs, configurable as 1000BASE-T or SFP

26-port PWR
24 auto-negotiating 10BASE-T/100BASE-TX ports configured as auto MDI/MDIX; IEEE 802.3af in-line power

2 dual-personality Gigabit SFP pairs; unit ships with two 1000BASE-T SFPs

50-port models
48 auto-negotiating 10BASE-T/100BASE-TX ports configured as auto MDI/MDIX; IEEE 802.3af in-line power for PWR models

2 dual-personality Gigabit SFP pairs; units ship with two 1000BASE-T SFPs

PERFORMANCE

26-port
8.8 Gbps switching capacity, maximum

6.5 Mpps forwarding rate, maximum

50-port
13.6 Gbps switching capacity, maximum

10.1 Mpps forwarding rate, maximum

All models
Wirespeed performance across all ports within stack or fabric

Store-and-forward switching; latency <10 µs

2 Gbps full-duplex stacking bandwidth

LAYER 2 SWITCHING
8,000 MAC addresses in address table

12 static MAC addresses, in addition to default address

256 Port-based VLANs (IEEE 802.1Q)

IEEE 802.3ad Link Aggregation Control Protocol (LACP); automated and manual aggregation

Per-switch trunk groups: 13 groups (26-port); 25 groups (50-port)

8 10/100 ports or 2 Gigabit ports per group

Auto-negotiation of port speed and duplex

IEEE 802.3x full-duplex flow control

Back pressure flow control for half-duplex

Supports broadcast storm suppression per VLAN

IEEE 802.1D Spanning Tree Protocol (STP)

IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)

Bridge Protocol Data Unit (BPDU) protection

Internet Group Management Protocol (IGMP) snooping on Layer 2 interfaces

Filtering for 128 multicast groups

LAYER 3 SWITCHING
Hardware based routing

12 static routes, in addition to default address

1,990 dynamic Address Resolution Protocol (ARP) entries; 10 static

4 IP interfaces

Routing Information Protocol (RIP), v1 and v2; supports 2,000 entries

Dynamic Host Configuration Protocol Relay (DHCP Relay)

CONVERGENCE
Eight hardware queues per port

Weighted Round Robin (WRR)

IEEE 802.1p Class of Service/Quality of Service (CoS/QoS) on egress

Auto prioritization of voice traffic determined by vendor OUI

DiffServ Code Point Expedited Forwarding (DSCP EF) remarking for prioritization of VoIP traffic

Traffic shaping with port-based egress rate limiting; application and protocol blocking

IEEE 802.3af Power over Ethernet standards-compliant (PWR models)

POE (PWR MODELS ONLY)
IEEE 802.3af PoE injection into Category 5 or 5e LAN wiring (300 W total maximum)

Available standards-based DC supplemental power system supplies up to 15.4 W each of power to all PoE ports in a switch or stack (5,914 W total maximum)

SECURITY
IEEE 802.1X Network login user authentication:

- EAP over LAN (EAPoL) transport with EAP-MD5, PAP and CHAP authentication
- Multiple users per port
- 1024 users per fabric

Local and RADIUS server authentication

RADIUS session accounting

Automatic VLAN assignment via RADIUS server

Wirespeed packet filtering in hardware

ACLs filter at Layers 2, 3 and 4:
- Source/destination MAC address
- Ethernet type
- Source/destination IP address
- Source/destination TCP port
- Source/destination UDP port

RADIUS Authenticated Device Access (RADA): authenticate devices based on MAC address against RADIUS server, and assign VLAN ID and ACL

Port-based MAC address Disconnect Unknown Device (DUD)

IEEE 802.1X user authentication of switch management on switch Telnet and console sessions; four access privilege levels

Hierarchical management and password protection for management interface

SNMP v3 encryption

SSH v2

SPECIFICATIONS
(CONTINUED)

STACKING

Up to 384 10/100 front panel ports

Single IP address and management interfaces for stack-wide control

MANAGEMENT

CLI via console or Telnet

Remote configuration via modem dial-up

Embedded web management interface

System configuration with SNMP v1, 2 and 3

Comprehensive statistics, including ACL/QoS and IP interface

Remote Monitoring (RMON) groups statistics, history, alarm and events

1-to-1 port mirroring

Detailed alarm and debug information

Supports ping and traceroute

Configuration file for backup and restore; multiple configuration files available

Queuing algorithms

DHCP Relay and UDP Helper

System file transfer mechanisms: Xmodem, File Transfer Protocol (FTP), Trivial File Transfer Protocol (TFTP)

3Com Management Applications:

- 3Com Enterprise Management Suite for flexible, extensible management in advanced enterprise IT environments
- 3Com Network Director for comprehensive, turn-key network management for the enterprise
- 3Com Network Supervisor for basic, turn-key network management for mid-market businesses

DIMENSIONS

Height: 43.6 mm (1.7 in or 1 RU)

Width: 440.0 mm (17.3 in)

Depth:
Non-PWR models: 270.0 mm (10.6 in)
PWR models: 427.0 mm (16.8 in)

Weight:
Non-PWR models: 3.3 kg (7.3 lb)
PWR models: 6.3 kg (13.9 lb)

POWER SUPPLY

AC Line Frequency: 50/60 Hz

Input Voltage: 90-240 VAC

Current Rating: 1.0A maximum

ENVIRONMENTAL REQUIREMENTS

Operating temperature: 0° to 40°C (32° to 104°F)

Storage temperature: -10° to 70°C (14° to 158°F)

Humidity (operating and storage): 10% to 95% non-condensing

Standard: EN 60068 (IEC 68)

RELIABILITY

(MTBF @ 25°C)

26-port: 47 years (411,000 hours)
26-port PWR: 25 years (221,000 hours)
50-port: 38 years (334,000 hours)
50-port PWR: 22 years (189,000 hours)

INDUSTRY STANDARDS SUPPORTED

Ethernet Protocols

IEEE 802.1D (STP)
IEEE 802.1p (CoS)
IEEE 802.1Q (VLANs)
IEEE 802.1w (RSTP)
IEEE 802.1X (Security)
IEEE 802.3 (Ethernet)
IEEE 802.3ad (Link Aggregation)
IEEE 802.3ab (1000BASE-T)
IEEE 802.3af (Power over Ethernet)
IEEE 802.3i (10BASE-T)
IEEE 802.3u (Fast Ethernet)
IEEE 802.3x (Flow Control)
IEEE 802.3z (1000BASE-X)

Management, including MIBs Supported

RFC 1213/2233 (MIB II)
RFC 1724 (RIP Version 2 MIB Extension)
RFC 1907 (SNMP v2c, SMI v2 and Revised MIB-II)
RFC 2021 (RMON II Probe Config MIB)
RFC 2233 (Interfaces MIB)
RFC 1493 (Bridge MIB)
RFC 2284 (EAP over LAN)
RFC 2571 (FrameWork)
RFC 2572-2575 (SNMP)
RFC 2665 (Pause control)
RFC 2667 (IP Tunnel MIB)
RFC 2668 (IEEE 802.3 MAU MIB)
RFC 2674 (VLAN MIB Extension)
RFC 2737 (Entity MIB)
RFC 2819 (RMON MIB)

EMISSIONS / AGENCY APPROVALS

CISPR 22 Class A
FCC Part 15 Class A
EN 55022 1998 Class A
EN 61000-3-2 2000, 61000-3-3
ICES-003 Class A
VCCI Class A

IMMUNITY

EN 55024

SAFETY AGENCY CERTIFICATIONS

UL 60950
IEC 60950-1
EN 60950-1
CAN/CSA-C22.2 No. 60950-1-03

WARRANTY

Limited Lifetime Hardware Warranty including power supply and fans. Limited Software Warranty for 90 days. See www.3com.com/warranty for details.

OTHER BENEFITS

Advance Hardware Replacement with Next Business Day shipment in most regions.

90 days of telephone technical support

Register products at http://eSupport.3com.com

REDUNDANT POWER SYSTEM

3Com has tested and qualified a Redundant Power System (RPS) solution designed for the 3Com Switch 4500 by Eaton Powerware Corporation, a leading global provider of power quality and management solutions.

The Powerware DC RPS systems come in either 3RU or 6RU form-factors, delivering up to 9,000W of DC power to a stack of Switch 4500 PWR units. The 3RU RPS unit can house up to three hot-swappable rectifiers supplying up to 4,500W of power and supports up to eight separately-fused DC outputs, while the 6RU unit can house up to six hot-swappable rectifiers provisioning a total of 9,000W.

The RPS supports SNMP management, including MIB II, which is easily accessible through the built-in RJ-45 or serial port. It is fully compatible with the IEEE 802.3af Power over Ethernet standard, providing supplemental power for the 3Com Switch 4500 PWR models.

With this RPS, all 384 10/100 ports on a stack of eight Switch 4500 PWR 26-Port or 50-port units can receive the industry standard 15.4W of power per port, with N+1 power redundancy.

The RPS ships with the power input fully configured and can be connected to a UPS with battery backup. For more details, please refer to **www.3com.com/rps**.

ORDERING INFORMATION

PRODUCT DESCRIPTION	3COM SKU
3Com Switch 4500 26-Port	3CR17561-91
3Com Switch 4500 50-Port	3CR17562-91
3Com Switch 4500 PWR 26-Port	3CR17571-91
3Com Switch 4500 PWR 50-Port	3CR17572-91

Transceivers

3Com 1000BASE-SX SFP	3CSFP91
3Com 1000BASE-LX SFP	3CSFP92
3Com 1000BASE-T SFP	3CSFP93
3Com 1000BASE-LH SFP	3CSFP97

DC Power System Components†

Powerware RPS Rackmount 3 Rectifier System with Load Distribution	APS3-058
Powerware RPS Rackmount 3 Rectifier System with Load and Battery Distribution	APS3-059
Powerware RPS Desktop 3 Rectifier System with Load Distribution	APS3-060
Powerware RPS Desktop 3 Rectifier System with Load and Battery Distribution	APS3-061
Powerware RPS Rackmount 6 Rectifier System with Load Distribution	APS6-058
Powerware RPS Rackmount 6 Rectifier System with Load and Battery Distribution	APS6-059
Powerware RPS 1,500W Rectifier	APR48
Powerware RPS 720W Rectifier	APU48

3Com Global Services

3Com Network Health Check, Installation Services, and Express Maintenance	www.3com.com/services_quote
3Com University Courses	www.3com.com/3comu

† Provides supplemental or redundant DC power for Switch 4500 PWR models. Available from authorized 3Com resellers. See www.3com.com/rps for details.

Visit www.3com.com for more information about 3Com secure converged network solutions.

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