

3COM SWITCH 4500 10/100 FAMILY

Intelligent and secure edge connectivity,
ideal for small and medium enterprise and
branch office networks



from top: 3Com Switch 4500 26-Port, Switch 4500 50-Port, Switch 4500 PWR 26-Port, Switch 4500 PWR 50-Port

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 port pairs
- > 3Com Switch 4500 50-Port:
48 10/100 ports plus 2 dual-personality Gigabit port pairs
- > 3Com Switch 4500 PWR 26-Port:
24 10/100 Power over Ethernet (PoE) ports plus 2 dual-personality Gigabit port pairs
- > 3Com Switch 4500 PWR 50-Port:
48 10/100 PoE ports plus 2 dual-personality Gigabit port pairs

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.

INCREASES FLEXIBILITY AND SCALABILITY

Dual-personality ports allow for both copper and fiber Gigabit uplink connections. The switch supports true stacking with the ability to stack up to eight switch units—384 10/100 ports per stack—with single IP management and distributed aggregated links for high uplink resiliency. Alternatively, cluster manage up to 32 geographically distributed devices together, with any mix of Switch 5500G, 5500, 4500G, 4500, 4200G and 4210s.



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KEY BENEFITS (continued)

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.

The Switch 4500 also supports jumbo frames at sizes up to 9,216 bytes for greater efficiency in large data transfers.

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.

REDUNDANT POWER SYSTEM SUPPORT

The two 3Com Switch 4500 PWR models support a redundant power system (RPS) connection.

RPS units provide these benefits:

- › For PWR switches, an RPS can deliver more power budget for IEEE 802.3af Power over Ethernet than what the switches alone can provide. For example,

the Switch 4500G PWR 50-port switch has a PoE power budget of 300 Watts, which means that approximately half of the ports can provide the full 802.3af PoE power of 15.4 Watts. With an RPS providing power, all 48-ports can provide a full 15.4 Watts of PoE power.

- › They deliver redundant power to switches so there is continued operation should the switch unit power supply fail. This allows for continuous operation of advanced Enterprise networks, particularly important for converged networks running IP phones on the network.

3Com H3C RPS Systems

3Com switches are compatible with 3Com H3C® RPS solutions. These are enterprise-class power redundancy systems that work with many 3Com fixed-configuration switches. 3Com Corporation manufactures networking equipment under the H3C brand for sale into many markets.

The H3C RPS 1000 is 1U high and provides multiple power output connections to support multiple switch units at the same time. Two power rectifiers can be installed for 1+1 load sharing and power redundancy. It supports switches with -54V RPS connections, and delivers sufficient power to fully provision all PoE ports of a switch with full power redundancy.

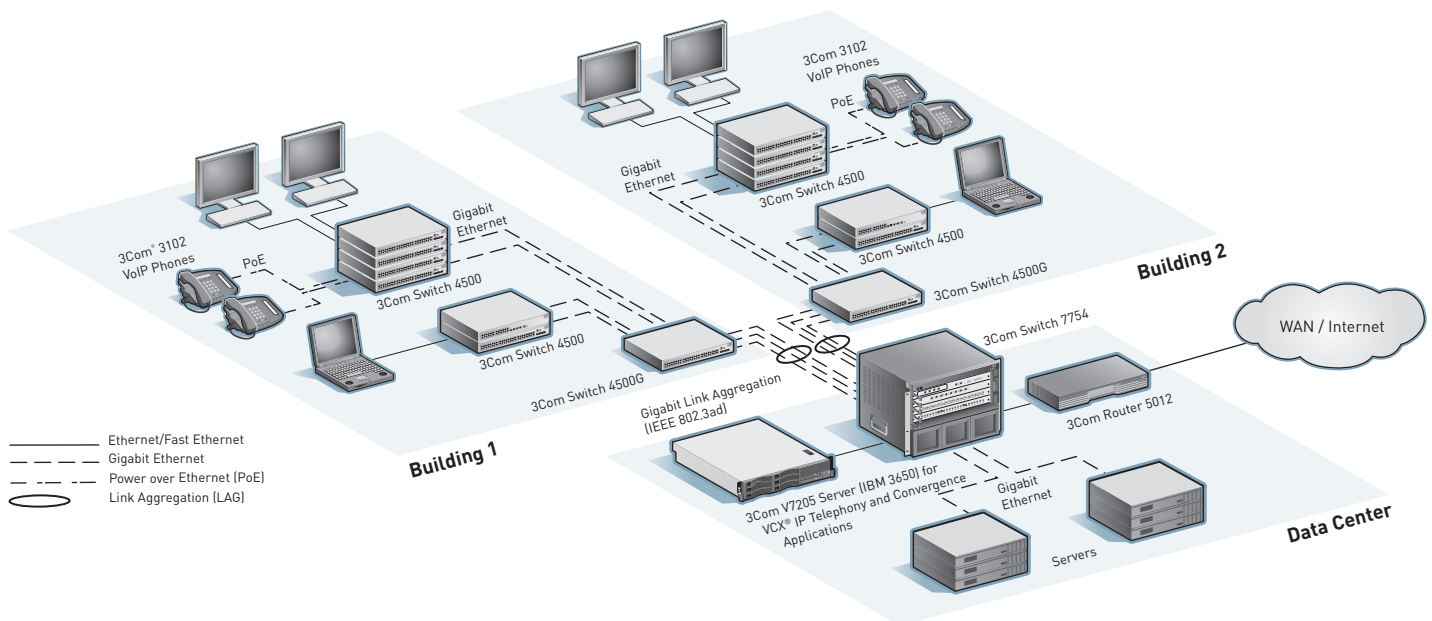
SUPPORTED BY LIMITED LIFETIME HARDWARE WARRANTY

3Com gives a Limited Lifetime Hardware Warranty on the Switch 4500 10/100 Family. Also provided is Advanced Hardware Replacement, with next business day shipment available in most regions, and telephone support and limited lifetime software updates.

FEATURE HIGHLIGHTS

FEATURE	DESCRIPTION
IEEE 802.1X network access control	Standards-based security combined with RADIUS authentication
RADIUS Authenticated Device Access	Authentication of attached devices via MAC address for additional level of (RADA) 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 prioritization of delay-sensitive VoIP traffic	Enforce controls on each port for efficient use of network resources and filtering
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 network topologies	Routing Information Protocol (RIP) allows automatic updating of Layer 3
Secure management (SSH v2) and SNMP v3	Authentication and encryption of management traffic via Secure Shell
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



PRODUCT WARRANTY AND OTHER SERVICES

Warranty	3Com Limited Lifetime Warranty. For as long as the original end user owns the product, or for five years after 3Com discontinues the of sale of the product, whichever occurs first.
Hardware coverage	Covers the complete unit including power supply and fan.
In-warranty hardware replacement*	Advanced Hardware Replacement of hardware for the duration of the warranty. In the US 48 contiguous states this is same-day ship with next business day delivery when call received before noon Pacific time. For Canada, Alaska and Hawaii, this is same-day ship when call received before noon Pacific time. For the rest of the world, it is next-business-day ship. Actual delivery times may vary depending on customer location. Reasonable commercial efforts apply.
Software coverage	90 days for media replacement.
Software updates*	Access to releases with incremental software features and bug fixes. For the Switch 4500, updates are all releases within the licensed 3Com OS software level.
Telephone support*	Technical support via phone for 90 days.
Online Knowledgebase support*	Access to online troubleshooting tool for the duration of the warranty.

* These services are not included as part of the Warranty and 3Com reserves the right to modify or cancel this offering at any time, without advance notice. This offering is not available where prohibited by law. Services are effective at warranty start date, and are enabled with product registration. Customers receive a user ID with eSupport registration.

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.

Additional Service, Support and Training Offerings

3Com GuardianSM Maintenance Service

This service provides comprehensive on-site support and includes advance hardware replacement, expedited telephone technical support and software upgrades

3Com ExpressSM Maintenance Service

This service provides speedy access to 3Com shipment of advance hardware replacements (including a four-hour option), expedited telephone technical support and software upgrades

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

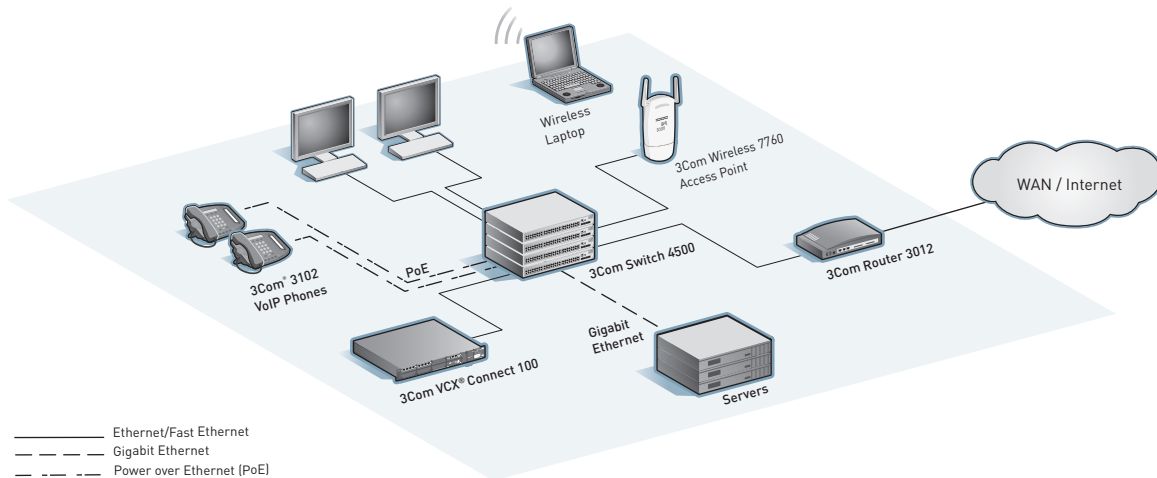
3Com engineers manage entire process from initial specifications to post-project review

Using structured methodology, requirements are identified, projects planned and progress of implementation activities tracked

3Com University

Self-paced and instructor-led technology and product courses, plus certification programs

SMALL-TO-MEDIUM LAN CONFIGURATION SUPPORTED BY THE SWITCH 4500



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

26 total available ports, comprised of:

- 24 auto-negotiating 10BASE-T/100BASE-TX ports configured as auto MDI/MDIX
- 2 dual-personality Gigabit port pairs, configurable as 10BASE-T/100BASE-TX/1000BASE-T or SFP

26-port PWR

26 total available ports, comprised of:

- 24 auto-negotiating 10BASE-T/100BASE-TX ports configured as auto MDI/MDIX; IEEE 802.3af in-line power
- 2 dual-personality Gigabit SFP port pairs

Unit ships with two 1000BASE-T SFPs

50-port models

50 total available ports, comprised of:

- 48 auto-negotiating 10BASE-T/100BASE-TX ports configured as auto MDI/MDIX; IEEE 802.3af in-line power for PWR model
- 2 dual-personality Gigabit SFP port pairs

Units ship with two 1000BASE-T SFPs

PERFORMANCE

26-port

8.8 Gbps switching capacity, max.

6.5 Mpps forwarding rate, max.

50-port

13.6 Gbps switching capacity, max.

10.1 Mpps forwarding rate, max.

All models

Switch fabric bandwidth: 32 Gbps

Wirespeed performance across all ports within stack or fabric

Store-and-forward switching; latency <10 μ s

2 Gbps full-duplex stacking bandwidth

LAYER 2 SWITCHING

8,192 MAC addresses in address table

64 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

Jumbo Frame Support

GARP VLAN Registration Protocol (GVRP)

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

8 10/100 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 802.1s Multiple Spanning Tree Protocol (MSTP)

IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)

Bridge Protocol Data Unit (BPDU) protection

Internet Group Management Protocol (IGMP) snooping (v1, 2 and 3) on Layer 2 interfaces

Filtering for 128 multicast groups

Spanning Tree enable / disable per port

Spanning Tree fast-start mode

Bridge Protocol Data Unit (BPDU) protection

DHCP snooping

SPECIFICATIONS (continued)

LAYER 3 SWITCHING

Hardware based routing

12 static routes, in addition to default address

1,990 dynamic Address Resolution Protocol (ARP) entries; 16 static

4 IP interfaces

Routing Information Protocol (RIP) v1 and 2; 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

IEEE 802.1p QoS marking/remarking

Weighted Fair Queuing (WFQ)

Strict Priority Queuing (SP)

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, EAP-TLS, EAP-TTLS, PAP, PEAP and CHAP authentication
- Multiple users per port
- 1024 users per fabric

Local, RADIUS and HWTACACS 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

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

HTTPS web interface encryption

ARP attack detection and suppression

Port-based MAC address Disconnect Unknown Device (DUD)

Denial of Service protection

Local switch log-in password

Switch login via RADIUS

Trusted IP Management Addresses

Isolated port in VLAN

Blackhole MAC address

STACKING

Up to 384 10/100 front panel ports

Single IP address and management interfaces for stack-wide control

Distributed Link Aggregation

Clustering management with Switch 5500G, 5500, 4500G, 4500, 4210 and 4200G

MANAGEMENT

CLI via console or Telnet

Remote configuration via modem dial-up

3Com Operating System / Comware V3

Embedded web management interface

System configuration with SNMP v1, 2 and 3

IPv6 management including pingv6, tracertv6, Telnetv6, TFTPv6, DNSv6 and ARPv6

IPv6 management interface IP address configuration

Comprehensive statistics, including ACL/QoS and IP interface

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

1-to-1 and many-to-1 port mirroring

Detailed alarm and debug information

Supports ping and traceroute

Syslog remote logging

Network Time Protocol (NTP)

Configuration file for backup and restore; multiple configuration files available

DHCP Relay and UDP Helper

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

IP address allocation via DHCP, bootP

Network Time Protocol

Link Layer Discovery Protocol (LLDP / LLDP-MED)

3Com Management Applications:

- 3Com Enterprise Management Suite for flexible, extensible management in advanced enterprise IT environments
- 3Com Intelligent Management Center, Enterprise Edition for comprehensive management with the rich functionality required to meet the needs of advanced Enterprise networks
- 3Com Network Director for complete, 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 max.

Power consumption (max.)

26-port: 24 W

50-port: 40 W

26-port PWR: 48 W plus up to 300 W for PoE

50-port PWR: 59 W plus up to 300 W for PoE

SPECIFICATIONS (continued)

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)

HEAT DISSIPATION (MAX)

26-port: 82 BTU/hour

50-port: 137 BTU/hour

26-port PWR: 163 BTU/hour; excludes heat from PoE

50-port PWR: 203 BTU/hour; excludes heat from PoE

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)

IEEE STANDARDS SUPPORTED

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 802.3ab (1000BASE-T)

IEEE 802.3ad (Link Aggregation)

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)

RFC STANDARDS

RFC 783 (TFTP)

RFC 791 (IP)

RFC 793 (TCP)

RFC 826 (ARP)

RFC 951 (BootP)

RFC 1157 (SNMP)

RFC 1723 (RIP)

RFC 1305 (NTP)

RFC 2131 (DHCP client)

RFC 2236 (IGMP Snooping)

RFC 2284 (EAP over LAN)

RFC 2819 (RMON)

MANAGEMENT, INCLUDING MIBS SUPPORTED

RFC 1212 (Concise MIB definitions)

RFC 1213/2233 (MIB II)

RFC 1493 (Bridge MIB)

RFC 1724 (RIP v2 MIB Extension)

RFC 1907 (SNMP v2c, SMI v2 and Revised MIB-II)

RFC 2021 (RMON II Probe Config MIB)

RFC 2233 (Interfaces MIB)

RFC 2571 (SNMP Framework)

RFC 2572-2575 (SNMP)

RFC 2665 (EtherLike MIB)

RFC 2667 (IP Tunnel 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 AND OTHER SERVICES

Limited Lifetime Hardware Warranty, including fans and power supply

Limited Software Warranty for 90 days

Advance Hardware Replacement with Next Business Day shipment in most regions

Limited Lifetime software updates

90 days of telephone technical support

Refer to www.3com.com/warranty for details.



from top: 3Com Switch 4500 26-Port, Switch 4500 PWR 50-Port

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	
1000BASE-SX SFP	3CSFP91
1000BASE-LX SFP	3CSFP92
1000BASE-T SFP	3CSFP93
1000BASE-LH SFP	3CSFP97
3COM GLOBAL SERVICES	
3Com Network Health Check, Installation Services and Express Maintenance	www.3com.com/services_quote
3Com University Courses	www.3com.com/3comu

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