

# 3COM SWITCH 4210G GIGABIT FAMILY



From top: 3Com Switch 4210G PWR 24-Port,  
Switch 4210G 24-Port, Switch 4210G 48-Port

## OVERVIEW

The 3Com® Switch 4210G Gigabit Family delivers quad-speed performance—10/100/1000 and 10-Gigabit—with plug-and-play "Gigabit-to-the-Desktop" switching and rich, easy-to-use features perfect for cost-conscious medium-sized businesses wanting a fast, efficient network upgrade.

Layer 2 switching along with Layer 3 static routes make these ideal for wiring closet, workgroup connectivity. For great flexibility, four of the ports are dual-personality, operating either as 10/100/1000 or SFP-based fiber. Specific models support up to four optional 10-Gigabit high-speed links, enabling connectivity to a core network or to high performance servers.

Enterprise-class security features include IEEE 802.1X network login, SSL encrypted device log-in and Access Control Lists.

Family switch models—clusterable in any combination up to 255 units—are:

- > 3Com Switch 4210G 24-Port:  
24 auto-negotiating 10BASE-T/100BASE-TX/1000BASE-T ports, four of which are dual-personality 10/100/1000 or 100/1000 SFP; two expansion slots for up to four 10-Gigabit ports.
- > 3Com Switch 4210G 48-Port:  
48 auto-negotiating 10BASE-T/100BASE-TX/1000BASE-T ports, four of which are dual-personality 10/100/1000 or 100/1000 SFP; two expansion slots for up to four 10-Gigabit ports.

- > 3Com Switch 4210G PWR 24-Port:  
24 auto-negotiating 10BASE-T/100BASE-TX/1000BASE-T ports, four of which are dual-personality 10/100/1000 or 100/1000 SFP; Power over Ethernet on all 10/100/1000 ports; two expansion slots for up to four 10-Gigabit ports.

## KEY BENEFITS

### AFFORDABLE MANAGED GIGABIT CONNECTIVITY

The Switch 4210G family is 3Com's most economical Gigabit fully managed stackable switch line. Achieve up to a 10-times performance improvement with Gigabit, at prices many still associate with 10/100 switches.

### FUTURE PROOF NETWORKING

3Com Switch 4210G switches provide outstanding investment protection by providing quad-speed 10/100/1000 Mbps and 10-Gigabit switching. Gradually move users to Gigabit speeds, with full backward compatibility with slower 100 Mbps and 10 Mbps networking.

Select Switch 4210G models support 10-Gigabit uplinks using "4500G-style" uplink modules.

### EMPOWERS APPLICATION CONVERGENCE

The Switch 4210G family combines high performance Gigabit switching, QoS and traffic management features to help ensure essential applications get the appropriate priority for efficient utilization of network resources.



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## KEY BENEFITS (continued)

The PWR model with available Power over Ethernet readies your network for running converged applications such as voice, wireless and video surveillance over the network.

### ENHANCES MANAGEMENT AND CONTROL

The Switch 4210G family is easy to use and manage, designed to increase business productivity by reliably supporting business applications. Cluster together up to 255 devices for easy administration, with single IP management across 3Com switching lines.

### GIVES FLEXIBLE, BASIC LAYER 3 ROUTING

Layer 3 static routing, with 32 definable static routes, gives this switch added flexibility to handle more complex networking needs.

### REDUNDANT POWER SYSTEM SUPPORT

The 3Com Switch 4210G models support a redundant power system (RPS) connection.

For this model, the RPS unit delivers 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 4210G Gigabit Family. Also provided is Advanced Hardware Replacement, with next business day shipment available in most regions, and telephone support and limited lifetime software updates.

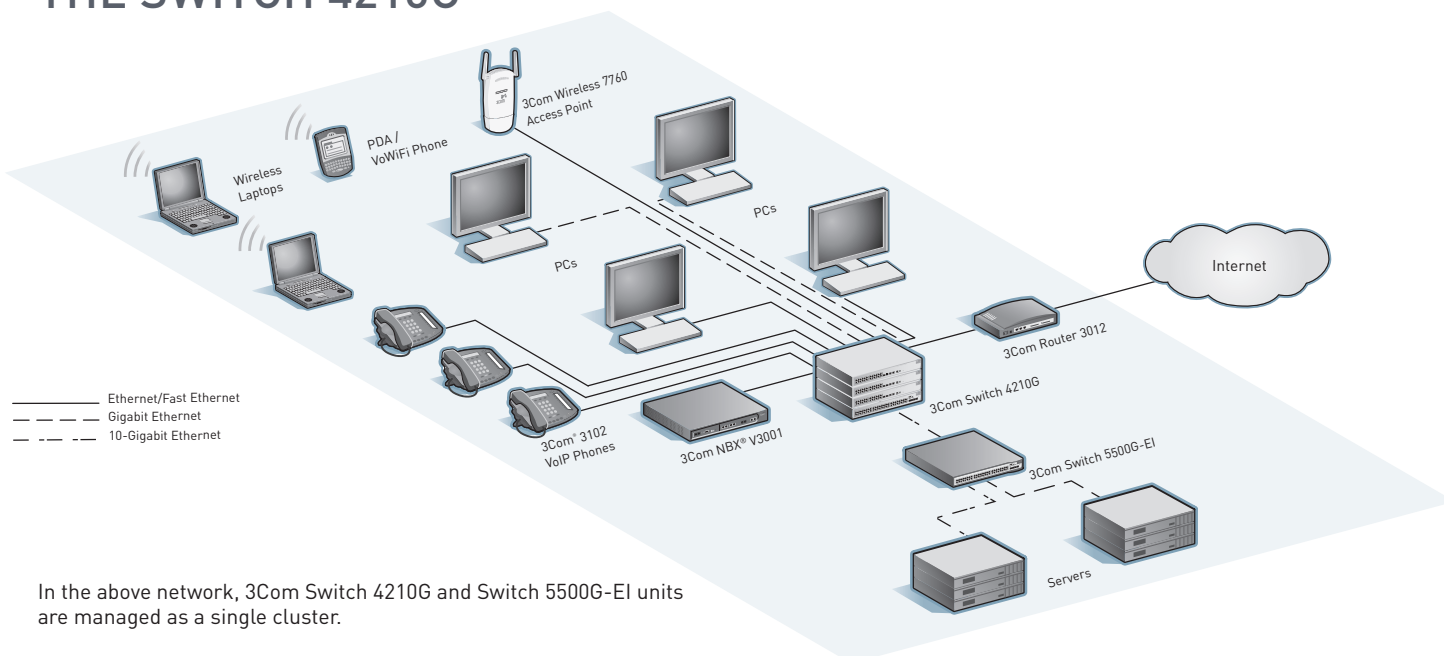
## FEATURE HIGHLIGHTS

### 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 an additional (RADA) 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 four queues	Enforce controls on each port for efficient use of network resources and priority prioritization of delay-sensitive traffic.
"Dual-personality" Gigabit Ethernet interfaces	Choice of copper or fiber media for flexible uplinks.
Multicast filtering with IGMP snooping versions 1, 2 and 3	Eliminate unneeded traffic on the network, improve network efficiency.
Spanning Tree, Rapid Spanning Tree, and Multiple Spanning Tree support	Improve network resiliency and availability.
Power over Ethernet models	Prepare the network for Voice over IP or wireless access points.
100 MB and 1000 MB fiber connections	Use SFPs to add fiber connections to the network. Dual-speed support makes network migration easier.
Secure management	Authentication and encryption of management traffic via Secure Shell (SSH) version 2, HTTPS and SNMP version 3.
3Com Operating System	Proven software featured in 3Com premium enterprise switches such as the Switch 4500, 5500 and 7750 families and enterprise MSR routers.
Service and Support	Backed by 3Com Global Services and authorized partners with demonstrated expertise in network assessment, implementation and maintenance

## SMALL-TO-MEDIUM LAN CONFIGURATION SUPPORTED BY THE SWITCH 4210G



## 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 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 4210G, 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 Guardian<sup>SM</sup> Maintenance Service

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

#### 3Com Express<sup>SM</sup> 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

For additional information, please visit [www.3com.com/services](http://www.3com.com/services)

# SPECIFICATIONS

All information in this section is relevant to all members of the 3Com Switch 4210G Gigabit family, unless otherwise stated.

## CONNECTORS

### 24-port

24 auto-negotiating 10BASE-T/100BASE-TX/1000BASE-T ports,  
4 of which are dual-personality 10/100/1000 or 100/1000 SFP ports

### 48-port

48 auto-negotiating 10BASE-T/100BASE-TX/1000BASE-T ports,  
4 of which are dual-personality 10/100/1000 or 100/1000 SFP ports

### PWR model

IEEE 802.3af in-line power on all 10/100/1000 ports  
Support for redundant supplemental power supply (-48 VDC) connector  
PWR units with AC power have 370W available for PoE, at maximum  
15.4W per port

### All models

2 rear module expansion slots, use with available modules: 2-Port 10-Gigabit (XFP or SFP+), 1-Port 10-Gigabit (XFP), 2-Port Gigabit (SFP), 2-Port 10-Gigabit CX4 Local Connection Module  
RJ-45 console port

## PERFORMANCE

### 24-port

128.0 Gbps switching capacity  
95.2 Mpps forwarding rate

### 48-port

176.0 Gbps switching capacity  
131.0 Mpps forwarding rate

### All models

Wirespeed performance across ports  
Store-and-forward switching; latency <10 µs

## LAYER 2 SWITCHING

16K MAC addresses in address table  
1,024 static MAC addresses (in addition to default address)  
Jumbo Frame support  
4,094 Port-based VLANs (IEEE 802.1Q)  
IEEE 802.3ad Link Aggregation Control Protocol (LACP); automated and manual aggregation  
GARP VLAN Registration Protocol (GVRP)  
Local switch log-in password  
Switch login via RADIUS  
Trusted IP Management Addresses  
Isolated port in VLAN  
Blackhole MAC address  
Auto-VLAN assignment based on log-in  
6 trunk groups per switch  
8 10/100/1000 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  
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 (v1, 2 and 3) on Layer 2 interfaces  
Filtering for 128 multicast groups

### IEEE 802.1s Multiple Spanning Tree Protocol

Spanning Tree enable / disable per port  
Spanning Tree fast-start mode

## LAYER 3 SWITCHING

DHCP snooping  
Hardware based routing  
32 static routes  
8 IP interfaces

## CONVERGENCE

Eight hardware queues per port  
Weighted Round Robin queuing  
Strict Priority queuing  
IEEE 802.1p Class of Service/Quality of Service (CoS/QoS) on egress  
Traffic shaping with port-based egress rate limiting  
Application and protocol blocking  
Auto VLAN assignment for voice traffic determined by vendor OUI

## SECURITY

IEEE 802.1X Network login user authentication:  
• EAP over LAN (EAPoL) transport with EAP-MD5, PAP, CHAP, PEAP and EAP-TLS authentication  
• Multiple users per port  
• 1,024 online users, max.  
Local and RADIUS server authentication  
RADIUS session accounting  
TACACS+ network login  
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)  
ARP attack detection and suppression  
Web authentication  
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  
Denial of Service protection

## SINGLE IP ADDRESS MANAGEMENT

Switch 4210G supports two alternative approaches for Single IP Management.  
Clustering provides single IP address and management interfaces for centralized control. Up to 255 devices per cluster across 3Com Switch 4210, 4210G, 4500, 4500G, 4800G, 5500 and 5500G devices.

## MANAGEMENT

CLI via console or Telnet  
Embedded web management interface  
sFLOW performance monitoring  
System configuration with SNMP v1, 2c and 3  
Comprehensive statistics, including ACL/QoS and IP interface  
IPv6 management including pingv6, tracertv6, Telnetv6, TFTPv6, DNSv6 and ARPv6  
Remote Monitoring (RMON) groups statistics, history, alarm and events  
Many-to-1 port mirroring  
Detailed alarm and debug information  
Supports ping, remote ping and traceroute  
Configuration file for backup and restore; multiple configuration files available  
DHCP Relay and UDP Helper  
System file transfer mechanisms: Xmodem, FTP, Trivial FTP (TFTP), Secure FTP (SFTP)  
Link Layer Discovery Protocol (LLDP and LLDP-MED)

## SPECIFICATIONS (continued)

### DIMENSIONS

Height: 43.6 mm (1.7 in or 1 RU)

Width: 440.0 mm (17.4 in)

Depth: non-PWR: 300.0 mm (11.8 in)

PWR: 420.0 mm (16.5 in)

Weight:

- 24-port: 4.0 kg (8.8 lbs)
- 48-port: 4.5 kg (9.9 lbs)
- 24-port PWR: 6.0 kg (13.2 lbs)

### POWER SUPPLY

AC line frequency: 50/60 Hz

AC input voltage: 100 to 240 Volts

DC input voltage: -52 to -55 Volts (PWR model only)

Current Rating:

- 24-port: 1.5A
- 48-port: 2.0A
- 24-port PWR: AC 8.0A; DC 15.0A

### Power consumption (max)

- 24-port: 58 W
- 48-port: 108 W
- 24-port PWR: 87 W, plus up to 370W PoE budget

### 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)

### IEEE STANDARDS SUPPORTED

IEEE 802.1D Spanning Tree Protocol (STP)

IEEE 802.1p QoS

IEEE 802.1Q VLANs / VLAN tagging

IEEE 802.1s Multiple Spanning Tree

IEEE 802.1w Rapid Spanning Tree

IEEE 802.1X Network Login Security

IEEE 802.3 Ethernet

IEEE 802.3ab Gigabit Ethernet 1000BASE-T

IEEE 802.3ad Link Aggregation (unit wide)

IEEE 802.3af Power over Ethernet (PWR model only)

IEEE 802.3ae 10-Gigabit Ethernet

IEEE 802.3i 10BASE-T

IEEE 802.3u Fast Ethernet

IEEE 802.3x Flow control

IEEE 802.3z Gigabit Ethernet 1000BASE-X

### ITF STANDARDS

RFC 768 UDP Helpe/ Relay

RFC 783 Remote software upgrade TFTP

RFC 791 IP

RFC 792 ICMP Query, support as defined in RFC 1812

RFC 793 TCP

RFC 826 Address Resolution Protocol (ARP)

RFC 854 Telnet

RFC 951 BootP Bootstrap Protocol

RFC 1157 SNMP v1/v2

RFC 1305 Network Time Protocol (NTP) v3

RFC 1350 Remote software upgrade TFTP

RFC 1519 Classless Inter-Domain Routing (CIDR)

RFC 1812 Compliant "Requirements for IP Version 4 Routers"

RFC 1886 DNS Extensions to support IPv6

RFC 2131 DHCP client

RFC 2236 Internet Group Management Protocol (IGMP) Snooping v2

RFC 2284 Network Login 802.1X; EAP over LAN RFC 2284 Transport

RFC 2461 Neighbor Discovery for IPv6/ND

RFC 2463 ICMPv6 for IPv6/ICMP6

RFC 2474 DSCP Diffserv L3/L4 by IP source/dest, tcp/udp port, protocol

RFC 2597 DSCP Diffserv Expedited Forwarding (EF)

RFC 2598 DSCP Diffserv Assured Forwarding (AF)

RFC 2616 HTTP compatibility

RFC 2819 RMON 4 Groups - Stats, History, Alarm, Events (1,2,3,9)

RFC 2865 Remote Authentication Dial-In User RADIUS

RFC 2866 Radius RFC 2138/Accounting RFC 2866

RFC 3376 Internet Group Management Protocol (IGMP) Snooping v3 message types

### MANAGEMENT, INCLUDING MIBS SUPPORTED

RFC 1212 Concise MIB definitions

RFC 1215 MIB Monitoring Trap Registration

RFC 1213 MIB II

RFC 1398 Ethernet MIB

RFC 1493 Bridge MIB

RFC 1757 RMON I MIB

RFC 2096 IP Forwarding Table MIB

RFC 2233 Interfaces MIB

RFC 2571 SNMP-Framework-MIB

RFC 2572 SNMP-MPD-MIB

RFC 2573 SNMP Notification MIB/Target MIB

RFC 2574 SNMP v3 MIB

RFC 2575 SNMP Access Control

RFC 2618 MIB BulkConf-RADIUS Servers, BulkConf-Port Security

RFC 2620 MIB

RFC 2665 EtherLike MIB

RFC 2668 MAU MIB

RFC 2674 Bridge MIB Extensions: Q-Bridge, P-Bridge, Extensions

RFC 2737 Entity-MIB

RFC 2819 RMON I MIB

RFC 2863 MIB Disc-Sizing

RFC 2925 MIB Discovery, Topology

RFC 3414 SNMP-User-based-SM-MIB

RFC 3415 SNMP-View-based-ACM-MIB

RFC 3418 SNMP v2

RFC 3621 Power-ethernet MIB

IEEE 802.1X MIB

### EMISSIONS/AGENCY APPROVALS

EN 55022: 1998+A1:2000+A2:2003 Class A

FCC Part 15: 2004 Class A

ICES-003: 2004 Class A

VCCI: 2004 Class A

CISPR 22: 2003 Class A

IEC 61000-3-2:2001/EN 61000-3-2:2000

IEC 61000-3-3:2002/EN 61000-3-3: 1995+A1:2001

Korean EMI Class A

### IMMUNITY

EN 55024: 1998+A1:2001+A2:2003

### SAFETY AGENCY CERTIFICATIONS

UL 60950-1:2003

EN 60950-1:2001

CSA 2.22 # 60950-1:2003

IEC 60950-1:2001

EU RoHS Compliant

## SPECIFICATIONS (continued)

### 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](http://www.3com.com/warranty) for details.

## ORDERING INFORMATION

PRODUCT DESCRIPTION	SKU
Switch 4210G 24-Port	3CRS42G-24-91
Switch 4210G 48-Port	3CRS42G-48-91
Switch 4210G PWR 24-Port	3CRS42G-24P-91
<b>MODULES</b>	
1-Port 10-Gigabit Module (XFP)	3C17768
2-Port 10-Gigabit Module (XFP)	3C17766
2-Port Gigabit Module (SFP)	0231A833
2-Port 10-Gigabit Module (SFP+)	0231A98L
2-Port 10-Gigabit Local Connection Module	3C17767
<b>CABLES</b>	
CX4 Local Connection Cable – 50 cm	3C17775
CX4 Local Connection Cable – 100 cm	3C17776
CX4 Local Connection Cable – 300 cm	3C17777
<b>GIGABIT SFP TRANSCEIVERS</b>	
1000BASE-SX SFP	3CSFP91
1000BASE-LX SFP	3CSFP92
1000BASE-LH SFP	3CSFP97
<b>FAST ETHERNET SFP TRANSCEIVERS</b>	
3Com 100BASE-FX SFP (Dual-Mode)	3CSFP9-81
3Com 100BASE-LX SFP (Dual-Mode)	3CSFP9-82

PRODUCT DESCRIPTION	SKU
<b>10-GIGABIT XENPAK TRANSCEIVERS</b>	
10GBASE-LX4	3CXENPAK91
10GBASE-LR	0231A323
10GBASE-SR	0231A363 or 3CXENPAK94
10GBASE-CX4	3CXENPAK95
10GBASE-ER	0231A364 or 3CXENPAK96
<b>10-GIGABIT XFP TRANSCEIVERS</b>	
10GBASE-LR	0231A438 or 3CXFP92
10GBASE-SR	0231A494 or 3CXFP94
10GBASE-CX4	3CXFP95
10GBASE-ER	0231A72X or 3CXFP96
<b>3COM GLOBAL SERVICES</b>	
3Com Network Health Check, Installation Services and Express Maintenance	<a href="http://www.3com.com/services_quote">www.3com.com/services_quote</a>
3Com Global Education and Training Courses	<a href="http://www.education.3com.com">www.education.3com.com</a>

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