

## 3Com® Switch 7700 Family

### DATA SHEET



- Chassis-based design for enterprise building core and edge
- On-board switching for superior performance
- Resilient configuration for highest availability

### Key Benefits

#### Scalability

Scales to 288 Fast Ethernet, or 120 Gigabit Ethernet ports. Add 10 Gbps (10Gigabit Ethernet) connections for switch-to-switch links. Choose from 8-slot redundant, 7-slot, and 4-slot chassis configurations.

#### Performance

Provides up to 240 Gbps switching performance with local switching on each blade. Helps reduce congestion in the core of the network, improving application response times when accessing data across the network.

#### Prioritize Converged and other Business-Critical Traffic

Advanced policy-based Class of Service/Quality of Service (CoS/QoS), eight priority queues, committed access rates, and bandwidth limiting and filtering enables identification and prioritization of business-critical traffic, such as voice, for optimal network performance. Routing of multicast traffic in hardware on the Switch 7700 helps enable maximum performance for streamed voice and video data.

#### Network Level Availability

Helps minimize network down-time, providing a robust platform capable of supporting VoIP traffic. Enable rapid disaster recovery with resilient links, link aggregation, Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Open Shortest Path First (OSPF), and Virtual Router Redundancy Protocol (VRRP). Redundant chassis architecture supports power supplies, fans and hot-swappable switching modules for virtually non-stop operation, while sub-one-second fabric failover on the 3Com Switch 7700R helps enable the highest level of network availability.

#### Security

IEEE 802.1X RADIUS Network Login and Access Control Lists provide secure network access control. Management traffic can be authenticated using SNMP v3 and SSH encryption\*, preventing unauthorized configuration of the network. Layer 3 protocols can also be authenticated.

#### Network Control

All 3Com Switch 7700 modules support hardware-based packet filters, Virtual LANs (VLANs; protocol-and port-based) and RMON support for greater network control.

#### Advanced Layer 3 Support

Provides multiprotocol routing support of IP and multicast traffic control through IGMP and PIM SM/DM routing, for logical network segmentation and secure communication. IPX routing supports banking and education environments. Capabilities for MAN deployments and larger networks are provided through the support for BGP\* and IS-IS\*.

#### Flexibility

Modular design of the Switch 7700 enables additional modules to be inserted as, and when, the network grows. Provides a range of port densities and media types for connections of 10 Mbps to 10 Gbps, with fiber or copper cabling requirements.

#### Powerful Management

Comprehensive support within the 3Com management application software suite, including the standalone package 3Com Enterprise Management Suite, 3Com Network Director, or 3Com Network Administrator for HP OpenView-based management. 3Com Network Supervisor may also be used in smaller networks.

\* Available in the 3Com Advanced Feature Software, at additional cost

The 3Com® Switch 7700 modular LAN switch family delivers high-performance, multilayer, 10 Gigabit, Gigabit, and Fast Ethernet switching and routing in a scalable, flexible, modular chassis. Three chassis configurations are offered:

- High-availability 8-slot redundant chassis, with six payload slots, primary switch fabric, and optional backup switch fabric.
- 7-slot, with six payload slots plus switch fabric.
- 4-slot, with three payload slots, switch fabric, and optional plug-in submodule supporting four additional Gigabit ports.

The resilient systems architecture helps provide business network continuity for data and voice convergence applications—required in demanding core and campus environments.

The 3Com Switch 7700 is ideal for campus and building-level switching in the core, with support for up to six 10 Gigabit or 120 Gigabit ports. The availability of high-density 10/100 ports for a Switch 7700 configuration makes it appropriate for wiring closet distribution or edge installations.

The Switch 7700R 8-Slot chassis is designed for networking environments demanding the highest level of resiliency. When configured with an optional spare switch fabric, the Switch 7700R boasts sub-one-second switch fabric failover should there be a primary fabric failure, helping ensure continuous network operation.

Fault-tolerant aggregation features in the Switch 7700 family include Virtual Router Redundancy Protocol (VRRP), Rapid Spanning Tree Protocol (RSTP), Spanning Tree Protocol (STP), Multiple Spanning Tree Protocol (MSTP), and link aggregation for virtually non-stop network availability. The architecture of the Switch 7700 supports a passive backplane and N+1 redundant power supplies for seamless network operation.

The Switch 7700 family supports IP (RIP, OSPF), IPX, and IGMP PIM (DM and SM) multicast routing for logical network segmentation and traffic control. Advanced QoS features provide differentiated network services for traffic classification and prioritization based on Diffserv Code point, Type of Service (ToS), and IEEE 802.1p Class of Service (CoS).

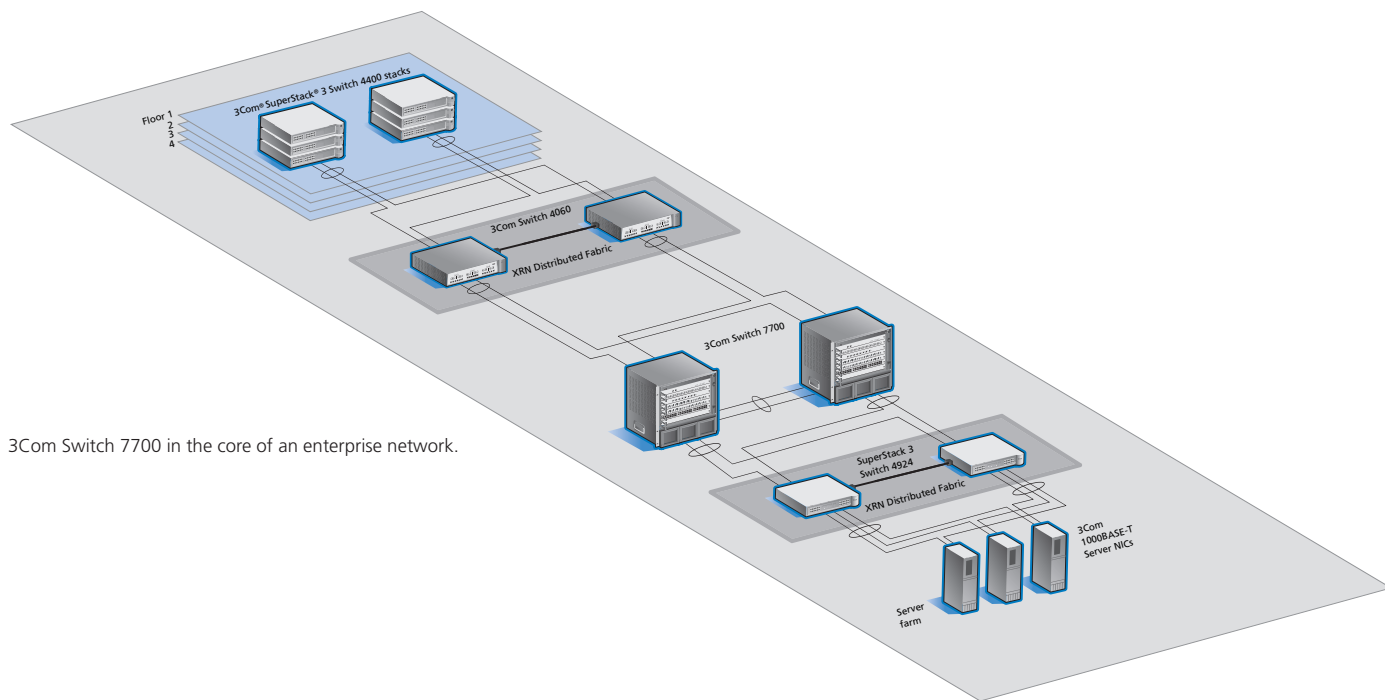
Advanced Bandwidth management allows different traffic flows to be shaped using packet priority, minimum and maximum bandwidth thresholds, and individual flow weightings.

These features enable optimal priority queuing of network data, helping to ensure minimal congestion for important traffic. Routing in hardware of multicast traffic for voice and video streaming enables minimal latencies through the switch.

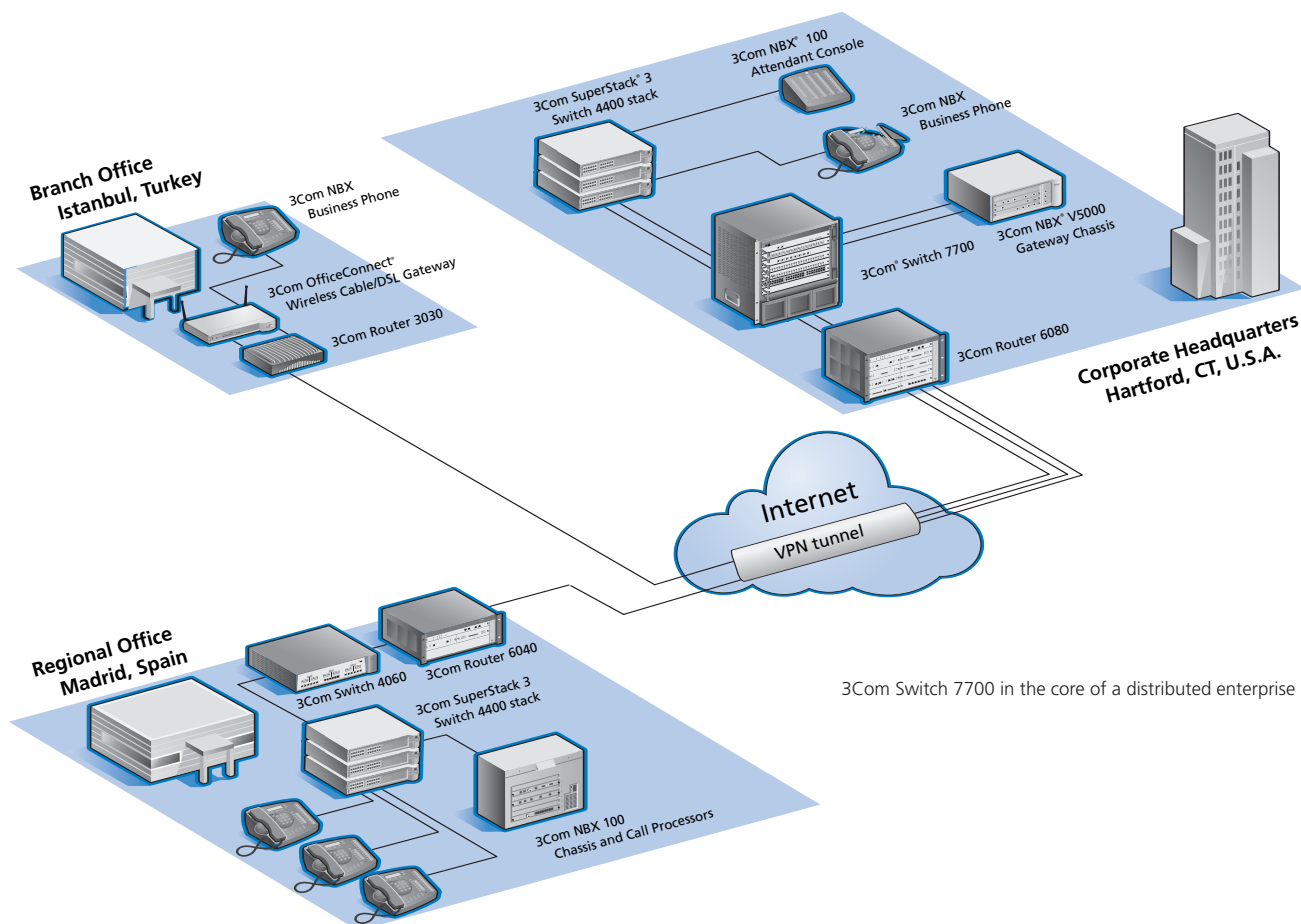
The network can be secured from unauthorized access through IEEE 802.1X RADIUS Network Login, Access Control Lists and management authentication. The chassis supports most cabling requirements and offers comprehensive management for simple configuration and advanced network monitoring and troubleshooting.

The switch fabric of the 7700 4-Slot chassis supports sub-modules for additional gigabit (1000BASE-T or 1000BASE-X GBIC ports) connections. This is particularly helpful when Gigabit ports are required for an uplink, and the payload slots contain Fast Ethernet modules.

## Sample configurations supported by the Switch 7700 Family



3Com Switch 7700 in the core of an enterprise network.



3Com Switch 7700 in the core of a distributed enterprise network.

## Features

PERFORMANCE	
Backplane capacity	8- and 7-slot chassis: 96 Gbps; 4-slot: 48 Gbps
Maximum bandwidth	8- and 7-slot chassis: 240 Gbps; 4-slot: 120 Gbps
Maximum throughput	8- and 7-slot chassis: 177 Mpps; 4-slot: 95 Mpps
LAYER 2 SWITCHING	
MAC Address	32K MAC addresses 10K Static MAC addresses Modules forwarding (delay <10µs) 9K Jumbo Frame support
VLAN	4096 VLANs (IEEE 802.1Q) Port-based (IEEE 802.1Q) and protocol-based (IEEE 802.1v) VLANs GVRP (GARP VLAN Registration Protocol) IPv6 tunneling using protocol-based VLANs
Link Aggregation	IEEE 802.3ad Link Aggregation Control Protocol (LACP) Supports maximum of 64 link aggregation groups
Auto-negotiation	Auto-negotiation of port speed and duplex
Traffic control	IEEE 802.3x full-duplex flow control Back pressure flow control for half-duplex Supports broadcast storm suppression per VLAN
STP/RSTP	IEEE 802.1D Spanning Tree Protocol (STP) IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) IEEE 802.1S Multiple Spanning Tree Protocol instances (MSTP) Single STP instance BPDU (Bridge Protocol Data Unit) protection
LAYER 3 SWITCHING	
Routes	Hardware based routing 64K routes 64K static routes 64K dynamic / static ARP (Address Resolution Protocol) entries
IP Routing	64 IP interfaces RIP (Routing Information Protocol), v1 and v2; supports Split Horizons OSPF (Open Shortest Path First), v1 and v2; 50 areas BGP4 (Border Gateway Protocol)* IS-IS (Intra-Domain Intermediate System to Intermediate System)*
Multicast	Hardware-based multicast routing for wirespeed performance 1K multicast routes IGMP (Internet Group Management Protocol) snooping on Layer 2 interfaces IGMP v1 and v2 GMRP (GARP Multicast Registration Protocol) PIM-DM (Protocol Independent Multicast-Dense Mode) PIM-SM (Protocol Independent Multicast-Sparse Mode)
Network protocol	DHCP Relay (Dynamic Host Configuration Protocol Relay) TCP/IP protocol stack ARP
Resilience	VRRP (Virtual Router Redundancy Protocol): 14 virtual routers per switch; each virtual router supports 16 IP addresses

\* Available in the 3Com Advanced Feature Software

*Features, continued*

CONVERGENCE	
Priority Queues	Eight hardware queues per port
Traffic Prioritization	Flow-based QoS profiles Ingress and egress Remarking of packets based on priority: <ul style="list-style-type: none"> <li>• Auto classification of NBX telephones</li> <li>• Selectable prioritization</li> <li>• DSCP (Diffserv Code Point)</li> <li>• Type of Service (ToS)</li> <li>• IEEE 802.1p Class of Service (CoS)</li> <li>• IP precedence</li> <li>• Local precedence: physical port, source/destination MAC address, VLAN information, Ethernet type, Layer 3 protocol, source/destination IP address, DSCP, datagram type, IP Layer 4 protocol, IP Layer 4 ports</li> </ul>
Bandwidth Management	Flow based bandwidth management Flows identified through Access Control Lists (ACLs) Minimum and maximum thresholds: <ul style="list-style-type: none"> <li>• 64kbit/s increments</li> <li>• 128 traffic classes per port</li> <li>• 512 flows per class</li> </ul>
Queue Handling	Random Early Detect/Discard (RED) Queuing algorithms Strict Priority Queuing WRR (Weighted Round Robin) provided through bandwidth management
SECURITY	
Network Login	IEEE 802.1X user authentication Local authentication and RADIUS authentication.
Packet Filtering	Wirespeed packet filtering in hardware Supports a maximum of 1,536 ACL rules ACLs filter at Layers 2, 3, and 4: physical port, source/destination MAC address, VLAN information, Ethernet type, Layer 3 protocol, source/destination IP address, DSCP, datagram type, IP Layer 4 protocol, IP Layer 4 ports
Switch Protocol Security	MD5 cipher-text authentication and clear-text authentication for OSPF v2 and RIP v2 packets and SNMP v3 traffic
Switch Management	IEEE 802.1X user authentication on switch Telnet sessions Hierarchical management and password protection for management interface
MANAGEMENT	
System Configuration and Management	CLI (Command Line Interface) configuration mode Configuration via the console (control console) port Local/remote configuration via Telnet Remote configuration via modem dial-up System configuration with SNMP v1, 2, and 3* Comprehensive statistics RMON (Remote Monitoring) groups statistics, history, alarm, and events ACL/QoS statistics IP interface statistics System log Syslog
System maintenance	Detailed alarm/debug information Hierarchical alarms Alarm generation Alarm filtering Statistics Supports Ping and Traceroute Configuration file for backup and restore

\* Encryption of SNMP v3 traffic available in the 3Com Advanced Feature Software

**MANAGEMENT, *continued***

Bandwidth Management	<p>Flow based bandwidth management</p> <p>Flows identified through Access Control Lists (ACLs)</p> <p>Minimum and maximum thresholds:</p> <ul style="list-style-type: none"> <li>• 64kbit/s increments</li> <li>• 128 traffic classes per port</li> <li>• 512 flows per class</li> </ul>
Queue Handling	<p>Random Early Detect/Discard (RED)</p> <p>Queuing algorithms</p> <p>Strict Priority Queuing</p> <p>WRR (Weighted Round Robin) provided through bandwidth management</p>
System file transfer mechanisms	<p>Xmodem</p> <p>FTP (File Transfer Protocol)</p> <p>TFTP (Trivial File Transfer Protocol)</p>
Graphical management	<p>3Com Management Applications:</p> <ul style="list-style-type: none"> <li>• 3Com Network Director for comprehensive, turn-key network management for the enterprise</li> <li>• 3Com Network Administrator for comprehensive management under HP OpenView for Windows</li> <li>• 3Com Network Supervisor for basic, turn-key network management for small and medium businesses</li> <li>• 3Com Enterprise Management Suite for flexible, extensible management in advanced enterprise IT environments</li> </ul>

**OPTIONAL SERVICE AND SUPPORT**

Network Health Check	<p>An activity-auditing service focused on improving network performance and productivity</p> <p>Includes traffic monitoring, utilization analysis, problem identification, and asset deployment recommendations</p> <p>Extensive report provides blueprint for action</p>
Network Design	<p>Includes review of business plan, extensive inventory of requirements, and complete design document specifying implementation details</p>
Network Installation	<p>Experts set up and configure equipment and integrate technologies to maximize functionality and minimize business disruption</p> <p>Service may include physical site survey and network design and engineering based on evaluation of business objectives</p>
Project Management	<p>Provides extra focus and resources that special projects demand</p> <p>3Com engineer(s) manage entire process from initial specifications to post-project review</p> <p>Using structured methodology, requirements are identified, projects planned, and progress of implementation activities tracked</p>
3Com Guardian <sup>SM</sup> Maintenance Service	<p>Provides comprehensive onsite support, including advance hardware replacement, telephone technical support, and software upgrades:</p> <ul style="list-style-type: none"> <li>• Telephone support backed by powerful call-tracking database and replication laboratory</li> <li>• Software upgrades ensure access to pertinent patches</li> </ul>
3Com Express <sup>SM</sup> Maintenance Service	<p>Benefits customers who prefer to maintain own hardware</p> <p>Bolsters in-house resources with convenient and speedy access to 3Com hardware replacements, software upgrades, and telephone support</p>

## Specifications

All information in this section is relevant to all members of the 3Com Switch 7700 family, unless stated otherwise.

### Capacities and Performance

#### Switch 7700 4-slot:

One switch fabric, three optional payload slots  
Backplane: 48 Gbps, max  
Bandwidth: 120 Gbps, max  
Throughput: 88 Mpps, max

#### Switch 7700 7-slot:

One switch fabric, six optional payload slots  
Backplane: 96 Gbps, max  
Bandwidth: 240 Gbps, max  
Throughput: 177 Mpps, max

#### Switch 7700R 8-slot:

One switch fabric, one optional redundant fabric, six optional payload slots  
Backplane: 96 Gbps, max  
Bandwidth: 240 Gbps, max  
Throughput: 177 Mpps, max

#### All models:

Layer 3: 64 interfaces, IP routing at 48 Mpps, 64k IP routing entries

### Connectivity:

Mix and match in available payload slots:  
48-port 10BASE-T/100BASE-TX  
8-port 10/100/1000BASE-T  
20-port 10/100/1000BASE-T  
8-port 1000BASE-X (GBIC)  
20-port 1000BASE-X (SFP)  
24-port 100BASE-FX (multi-mode fiber)  
1-port 10GBASE-X (Xenpak)  
4-port 1000BASE-T<sup>†</sup>  
4-port 1000BASE-X (SFP)<sup>†</sup>

### Dimensions

#### Switch 7700 4-slot:

Height: 35.2 cm (13.8 in)  
Width: 43.6 cm (17.2 in)  
Depth: 48.0 cm (18.9 in)  
Weight (fully loaded chassis): <46 kg (102 lbs)

#### Switch 7700 7-slot:

Height: 48.6 cm (19.1 in)  
Width: 43.6 cm (17.2 in)  
Depth: 48.0 cm (18.9 in)  
Weight (fully loaded chassis): <70 kg (154 lbs)

#### Switch 7700R 8-slot:

Height: 51.9 cm (20.4 in)  
Width: 43.6 cm (17.2 in)  
Depth: 48.0 cm (18.9 in)  
Weight (fully loaded chassis): <70 kg (154 lbs)

### Power Supply

550 W AC Power Supply  
Input voltage: 100-240 VAC autoranging  
Operating frequency: 47-63 Hz  
Maximum current: 15A at 110 VAC; 7A at 200 VAC  
Maximum output power: 460 W

### Environmental Requirements

Operating temperature:  
0° to 40°C (32° to 104°F)  
Operating humidity:  
5% to 85% non-condensing  
Storage temperature:  
-40° to 70°C (-40° to 158°F)  
Storage humidity:  
10% to 90% non-condensing

### MTBF

Switch 7700 Gigabit Ethernet Switch Fabric (3C16857):  
63 years (552,000 hours)  
Switch 7700 1000BASE-X Module (8-port 3C16858):  
66 years (583,000 hours)  
Switch 7700 10/100/1000BASE-T Module (8-port 3C16859):  
66 years (583,000 hours)

Switch 7700 10/100BASE-TX Module (3C16860):

38 years (336,000 hours)

Switch 7700 100BASE-FX Module (3C16861):  
63 years (552,000 hours)

Switch 7700 1000BASE-X Module (20-port, 3C16862):  
63 years (552,000 hours)

Switch 7700 10/100/1000BASE-T Module (20-port, 3C16863):  
38 years (336,000 hours)

Switch 7700 10GBASE-X Module (3C16875):  
261 years (2,286,000 hours)

### Security

IEEE 802.1X RADIUS  
Access Control Lists (ACL)  
Packet filtering  
SNMP v3 encryption\*  
SSH 1.5 web session encryption\*

### Industry Standards Supported

#### Ethernet Protocols

IEEE 802.1D (STP)  
IEEE 802.1p (CoS)  
IEEE 802.1Q (VLANs)  
IEEE 802.1S (MSTP)  
IEEE 802.1v (VLANs)  
IEEE 802.1w (RSTP)  
IEEE 802.1X (Security)  
IEEE 802.3ad (LACP)  
IEEE 802.3ae (10G Ethernet)  
IEEE 802.3i (10BASE-T)  
IEEE 802.3u (Fast Ethernet)  
IEEE 802.3x (Flow Control)  
IEEE 802.3z (Gigabit Ethernet)

#### Administration Protocols

RFC 768 (UDP)  
RFC 783 (TFTP)  
RFC 791 (IP)  
RFC 792 (ICMP)  
RFC 793 (TCP)  
RFC 826 (ARP)  
RFC 951, 1542 (BOOTP)  
RFC 959 (FTP)  
RFC 1058 (RIP v1)  
RFC 1112 (IGMP v1)  
RFC 1518, 1519 (CIDR)  
RFC 1587 (OSPF NSSA option)  
RFC 1723 (RIP v2)  
RFC 1765 (OSPF Database Overflow)  
RFC 1812 (IP v4)  
RFC 2131 (DHCP)  
RFC 2132 (DHCP and BOOTP Extension)  
RFC 2138 (Radius Authentication)  
RFC 2139 (Radius Accounting)  
RFC 2236 (IGMP v2)  
RFC 2267 (Network Ingress Filtering)  
RFC 2328 (OSPF v2)  
RFC 2338 (VRRP)  
RFC 2362 (PIM-SM)  
RFC 2370 (OSPF Opaque LSA Option)  
RFC 2474 (Diffserv)  
RFC 2622 (Routing policy)  
RFC 2819 (RMON)  
*Management, including MIBs Supported*  
RFC 1155 (Structure and Mgmt Information (SMI v1))  
RFC 1157 (SNMP v1/v2c)  
RFC 1213 (MIB II)  
RFC 1213, 1573 (MIB II)  
RFC 1493 (Bridge MIB)  
RFC 1573 (Private IF MIB)  
RFC 1724 (RIP Version 2 MIB Extension)  
RFC 1850 (OSPF Version 2 MIB Extension)  
RFC 1901-1907 (SNMP v2c, SMI v2 and Revised MIB-II)

RFC 2233 (Interfaces MIB)

RFC 2271 (FrameWork)

RFC 2571-2575 (SNMP v3)\*

RFC 2578-2580 (SMI v2)

RFC 2618 (RADIUS Authentication Client MIB)

RFC 2620 (RADIUS Accounting Client MIB)

RFC 2665 (Pause control)

RFC 2668 (IEEE 802.3 MAU MIB)

RFC 2674 (VLAN MIB Extension)

RFC 2787 (VRRP MIB)

### Emissions / Agency Approvals

CISPR 22 Class A  
FCC Part 15 Class A  
EN 55022 Class A  
ICES-003 Class A  
VCCI Class A  
Korean Class A  
CNS 13438 Class A  
AS/NZS 3548 Class A  
EN 61000-3-2  
EN 61000-3-3

### Immunity

Product conforms to:  
EN 55024: 1998  
EN 61000-4-2  
EN 61000-4-3  
EN 61000-4-4  
EN 61000-4-5  
EN 61000-4-6  
EN 61000-4-11

### Safety Agency Certifications

UL 60950 3rd ed.  
IEC 60950: 1999, corr. Feb. 2000; all national deviations  
EN 60950: 2000, ZB and ZC deviations  
CSA 22.2 No. 950 3rd ed., 1995  
NOM-019 SCFI, Mexico; AS/NZS 60950:2000, Australia; Russian GOST safety approval

### Management

SNMP and Telnet support  
Multiple agents with single management entry point  
RMON-1, SMON  
RMON Groups: Statistics, History, Alarms and Events  
Statistics gathering and reporting  
Command line interface  
Connectivity: 10BASE-T (RJ-45) Ethernet, RS-232 control port

Management through 3Com management applications

- 3Com Network Supervisor
- 3Com Network Director
- 3Com Network Administrator
- 3Com Enterprise Management Suite

### Features of Advanced Feature Software

SNMP v3 and SSH v1.5 Encryption (security)  
BGP4 (WAN routing protocol)  
IS-IS (Large-scale WAN routing protocol)

### Warranty

Limited Hardware Warranty for one year. Limited Software Warranty for ninety (90) days. See [www.3com.com/warranty](http://www.3com.com/warranty) for details.

<sup>†</sup> For use only in Switch 7700 4-Slot Switch Fabric

\* Available in the 3Com Advanced Feature Software, at additional cost

## Ordering Information

PRODUCT DESCRIPTION	3COM SKU
<b>Starter Kits</b>	
3Com Switch 7700 4-Slot Starter Kit (consisting of chassis, one power supply, fan assembly, and switch fabric)	3C16870-xx
3Com Switch 7700 7-Slot Starter Kit (consisting of chassis, two power supplies, fan assembly, and switch fabric)	3C16850-xx
3Com Switch 7700R 8-Slot Starter Kit (consisting of chassis, two power supplies, fan assembly, and one switch fabric)	3C16852-xx
<b>Modules</b>	
3Com Switch 7700 8-port 1000BASE-X (GBICs required, sold separately)	3C16858
3Com Switch 7700 8-port 10/100/1000BASE-T (RJ-45 connectors)	3C16859
3Com Switch 7700 48-port 10/100BASE-TX (RJ-45 connectors)	3C16860
3Com Switch 7700 24-port 100BASE-FX (MT-RJ connectors)	3C16861
3Com Switch 7700 20-port 1000BASE-X (SFPs required, sold separately)	3C16862
3Com Switch 7700 20-port 10/100/1000BASE-T (RJ-45 connectors)	3C16863
3Com Switch 7700 1-port 10GBASE-X (Xenpak required, sold separately)	3C16875
3Com Switch 7700 4-port 10/100/1000BASE-T Fabric Sub-module (RJ-45 connectors) <sup>†</sup>	3C16873
3Com Switch 7700 4-port 1000BASE-X Fabric Sub-module (GBICs required, sold separately) <sup>†</sup>	3C16874
<b>Software</b>	
3Com Switch 7700 4-Slot Advanced Feature Software	3CR1686591-V3
3Com Switch 7700 7-Slot Advanced Feature Software	3CR1686591R-V3
3Com Switch 7700R 8-Slot Advanced Feature Software	3CR1686591S-V3
<b>Transceivers</b>	
3Com 1000BASE-SX GBIC	3CGBIC91
3Com 1000BASE-LX GBIC	3CGBIC92
3Com 1000BASE-T GBIC	3CGBIC93A
3Com 1000BASE-LH70 (70km) GBIC	3CGBIC97
3Com 1000BASE-SX SFP	3CSFP91
3Com 1000BASE-LX SFP	3CSFP92
3Com 1000BASE-T SFP	3CSFP93
3Com 1000BASE-LH70 (70km) SFP	3CSFP97
3Com 10GBASE-LR Xenpak	3CXENPAK92
3Com 10GBASE-ER Xenpak	3CXENPAK96
<b>Spare Components</b>	
3Com Switch 7700 Family AC Power Supply	3C16854
3Com Switch 7700 4-Slot Fan Assembly	3C16871
3Com Switch 7700 7-Slot Fan Assembly	3C16856
3Com Switch 7700R 8-Slot Fan Assembly	3C16855
3Com Switch 7700 4-Slot Switch Fabric	3C16872
3Com Switch 7700 7-Slot Switch Fabric	3C16857
3Com Switch 7700R 8-Slot Redundant Switch Fabric	3C16857R
3Com Switch 7700 Dual Power Cord Resiliency Kit, 120v	3C16892
3Com Switch 7700 Dual Power Cord Resiliency Kit, 220v	3C16893

<sup>†</sup> For use only in Switch 7700 4-Slot Switch Fabric



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To learn more about 3Com solutions, visit [www.3com.com](http://www.3com.com). 3Com is publicly traded on NASDAQ under the symbol COMS.

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