

# 3COM MSR 50 SERIES MULTI-SERVICE ROUTERS

Modular, feature-rich multi-service platforms, designed to support highly secure, flexible, and reliable Open Services Networking solutions



from left: 3Com MSR 50-60, MSR 50-40

## OVERVIEW

The network is a critical component of a successful business, helping organizations expand into new markets, collaborate with customers, partners and employees and efficiently manage communications. It is imperative that the network enable these processes and communications reliably and cost effectively, while providing protection from potentially disruptive, expensive and reputation damaging security breaches.

With a modular design and support for innovative 3Com® Open Services Networking (OSN), 3Com MSR Series Multi-Service Routers deliver unmatched flexibility in satisfying customer business requirements, while reducing complexity, simplifying management and increasing control, providing lasting investment protection, and reducing capital and operating expenses.

3Com Multi-Service Routers enable an agile and flexible network infrastructure, with the ability to quickly adapt to changing business requirements, while delivering integrated, concurrent services on a single, easy-to-manage platform.

The MSR 50 Series is the flagship series in the portfolio, comprising two modular chassis designed for large branch and regional offices.

The MSR 50-40 and the MSR 50-60 deliver:

- > OSN-enabled solutions, providing business productivity, enhanced security and performance accelerating applications and services;
- > unparalleled secure, converged networking through the use of embedded and integrated hardware-based encryption and voice processing capabilities;
- > reliable, scalable, high-performance WAN and LAN connectivity in a single platform; and,
- > a comprehensive portfolio of interface and module options for LAN, WAN and voice communications.

## KEY BENEFITS

### UNMATCHED FLEXIBILITY AND INVESTMENT PROTECTION WITH OPEN SERVICE NETWORKING

The MSR 50 enhances network functionality through 3Com Open Services Networking (OSN), delivering unmatched application and service flexibility based on business requirements. The result is increased investment protection, reduced complexity and costs, simplified deployment and management, and increased visibility and control.

The modular design and high-performance engine of the MSR 50 Series, coupled with the flexibility of OSN, enables users to integrate individual or multiple business productivity, enhanced security and/or performance accelerating applications into the



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## KEY BENEFITS (continued)

network. Additionally, users can deploy applications to meet their objectives today and easily update or change applications and services as the business evolves.

OSN applications are integrated into the MSR platform through Open Services Modules (OSM) that feature standalone processing capabilities, a secure Linux operating system, and embedded memory to maximize performance and flexibility without compromising the MSR's processor unit.

For service providers and systems integrators, the MSR platform and OSN enable innovative, differentiated services that provide higher value to customers and increase retention. For example, service providers can create and rapidly deploy fully-managed bundled voice, video and data services as well as customize their offering to fulfill a customer's unique business needs. Additionally, through 3Com's corporate developer program, service providers can leverage OSN to deploy their in-house-produced applications on the MSR, protecting their development investments.

Examples of best-of-breed commercial, open source and 3Com applications enabled through OSN include:

- › Voice over IP and live and on-demand video that empower employees and increase productivity;
- › enhanced security functionality, including Information Leak Protection (ILP) and Security Information Event Management (SIEM) to fortify an organization's multi-layered security strategy;
- › network performance-enhancing WAN optimization and application acceleration that give branch office and remote employees faster and more reliable access to the tools and information needed to be successful; and,
- › monitoring and management applications to simplify network deployment and management as well as provide deep visibility in order to make informed business decisions.

**Read more at [www.3com.com/OSN](http://www.3com.com/OSN).**

## CONVERGED COMMUNICATIONS SUPPORT

In addition to a comprehensive portfolio of voice gateway interfaces, the MSR 50 Series delivers services up to wirespeed T3/E3 rates. The MSR 50 also offers optional embedded Voice Processing Modules (VPM) and Voice Co-Processing Modules (VCPM), which enable advanced voice processing for high-performance analog and digital voice services without compromising performance of the other modules or of the router.

The VCPM provides local Time Division Multiplexing (TDM) functions while the VPM serves as a Digital Signal Processor (DSP) to support IP voice communication over the network. Scalable voice configurations and higher line density are supported through the use of multiple VPMs, based on the number of voice lines required. VPMs and VCPMs reside on a centralized, embedded multi-service processor module, conserving router I/O slots for maximum port density and configuration flexibility. Fully-populated, the MSR 50 Series can accommodate as many as 480 digital voice channels.

Building on 3Com's commitment to open standards, the MSR 50 Series supports common industry voice protocols including Session Initiation Protocol (SIP) and H.323.

## ADVANCED SECURITY AND CONTROL

To help protect sensitive information against unauthorized access, the MSR 50 Series integrates a number of comprehensive security services and access management capabilities, including:

- › Hardware-based Standard Network Data Encryption (SNDE) and Advanced Network Data Encryption (ANDE) embedded via Enhanced Services Modules (ESM) slots;
- › Encryption acceleration capabilities that ensure security without compromising network throughput as performance needs increase;
- › Progressive encryption methods such as DES and 3DES;
- › A comprehensive portfolio of security functionality delivered on the OSN module, including Information Leak Protection (ILP) and Security Information and Event Management (SIEM); and,
- › Additional security features such as advanced fire-wall, L2TP, MPLS and IPSec VPNs. SSHv2 and SNMPv3 protect router management sessions.

## KEY BENEFITS (continued)

As with the voice modules, ESM modules reside on a centralized multi-service processing module, conserving router I/O slots for maximum configuration flexibility, port density and routing performance.

### INTEGRATED AND FLEXIBLE SERVICES ARCHITECTURE

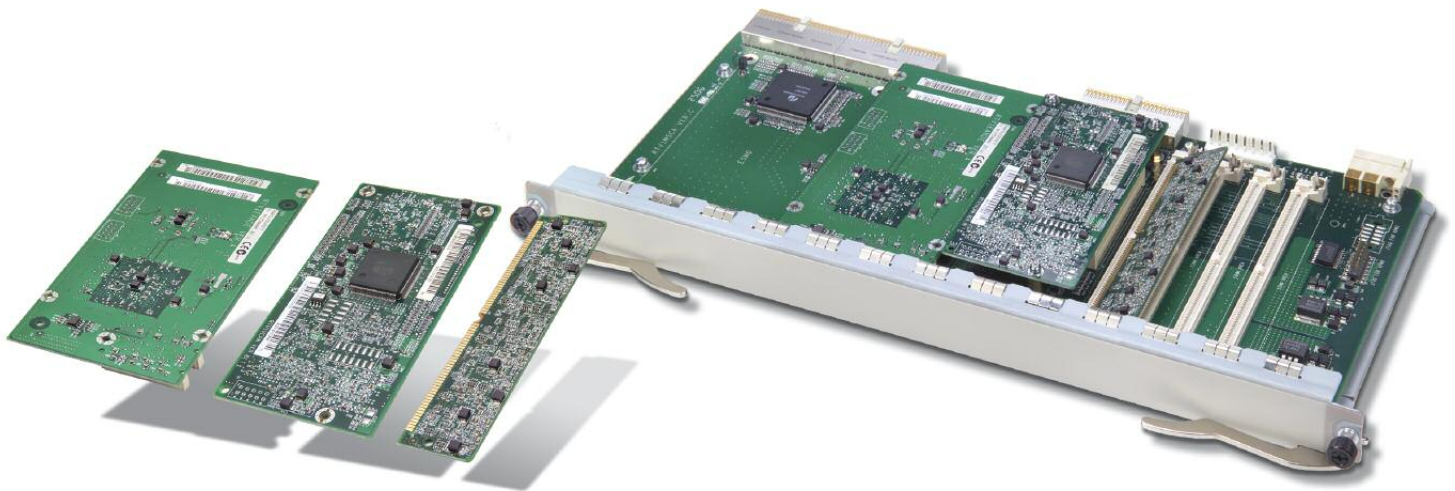
The MSR 50-60 and 50-40 are modular in design and deliver integrated, concurrent services on a single platform, creating operational efficiencies, reducing costs and maximizing precious rack space and power. With a comprehensive set of integrated modules that deliver voice and data interfaces, routing and switching capabilities as well as additional advanced OSN-enabled applications, the MSR 50 Series has the capacity to deliver the functionality of multiple devices and appliances in a single platform.

The OSN applications are directly integrated into the router fabric to deliver deep monitoring capabilities and application functionality, with management via a single interface.

### HIGH-DENSITY ROUTING AND SWITCHING PERFORMANCE

When evaluating multi-service routers, performance, port density and configuration flexibility are all key considerations. The MSR 50 Series outperforms competing multi-service routers, delivering packet forwarding performance up to 1,280 Kpps and encryption performance of up to 600 Mbps.

With a comprehensive portfolio of WAN and LAN interface modules, the MSR 50 delivers concurrent services up to T3/E3 rates, in addition to Fast Ethernet and Gigabit Ethernet LAN connectivity, and offers in-line PoE to provision IP phones, WLAN access points and IP security cameras as part of a unified branch office solution. In addition, Flexible Interface Card (FIC) options include high-density Layer 2 10/100 Mbps Ethernet switching cards for integrated switching and routing in a single platform, simplifying infrastructure deployments for branch and regional offices.



Optional ESM, VCPM, and VPM components

MSR 50 Multi-Service Module  
(with optional ESM, VCPM, and VPM installed)

## KEY BENEFITS (continued)

### RESILIENCE AND REDUNDANCY FOR MAXIMUM UPTIME

The MSR 50 Series is designed for the highest levels of availability and resiliency to ensure continuous operation and to meet the requirements of real-time applications such as VoIP and live and on-demand video. Hot swappable modules and power supplies allow for quick replacements without network interruption. Additional reliability capabilities include configuration rollback, Multilink PPP and Multilink Frame Relay and VRRP.

### NEXT-GENERATION ROUTING CAPABILITIES

The evolution to next generation networks based on IPv6 is imminent; however, organizations worldwide will follow different paths as they transition from today's IPv4 networks. The MSR 50 Series offers comprehensive IPv4 and IPv6 routing capabilities to accommodate a variety of migration approaches such as IPv4 "islands" on IPv6 networks, IPv6 "islands" on IPv4 networks and interconnection (with protocol translation) of IPv6 and IPv4 networks, enabling a wide array of network design possibilities.

Through a powerful suite of MPLS features, including MPLS TE (Traffic Engineering) and Fast Re-Route (FRR), the MSR 50 Series maximizes the benefit of a MPLS backbone to provide bandwidth optimization, strict QoS guarantees for the transport of critical traffic and the ability to quickly re-route traffic following network failures.

### FULLY FEATURED ROUTING PLATFORM

Unlike competitive offerings, the MSR 50 Series comes equipped with a complete routing and security suite, a robust application set and all required operating memory, eliminating the need for costly and inconvenient upgrades. Specifically, the MSR 50 Series includes:

- › Open, industry standards-based routing capabilities such as: IP and IPX routing; Open Shortest Path First (OSPF), RIP versions 1, 2 and 3; integrated intermediate system to intermediate system (IS-IS); multicast routing; QoS; IEEE 802.1Q VLANs; and IGMP versions 1, 2 and 3;
- › Built-in CompactFlash and USB slots that hold multiple configuration files and operating systems for recovery purposes; and,
- › A full complement of memory, including up to 2 Gb of SDRAM and 256 Mb of CompactFlash memory to support dual software images.

### SOPHISTICATED MANAGEMENT

Network infrastructure deployments and upgrades can be costly and time-consuming for organizations with several branch offices or remote locations. The MSR 50 Series offers an intuitive, easy-to-use CLI function that can be securely accessed locally or remotely for comprehensive configuration and management, with additional features that provide an extensive set of management capabilities.

For example, the MSR 50 Series is compatible with industry-standard NetFlow, an efficient and powerful technique for collecting IP traffic information, including information about network users and applications, peak usage times and traffic volumes. The MSR 50 Series is also fully manageable via the 3Com Enterprise Management Suite (EMS), a powerful graphical application with advanced remote diagnostics and network management capabilities. With capabilities such as QoS, systems infrastructure and voice applications, EMS ensures rapid deployments of IP telephony systems and robust support of both the data and voice components of a converged network.

## FEATURE SUMMARY

OSN-ready platform delivers unmatched flexibility, providing reduced complexity, simplified management and increased control, lasting investment protection, and reduction in capital and operating expenses

Integrated routing and switching, and remote management capabilities simplify managed services for remote locations and branch offices

Advanced Multi-Service Architecture delivers enhanced, integrated data, voice and security services

Embedded voice processing functionality delivers advanced, high-performance analog and digital voice capabilities for connections to centralized IP PBX and local public switched telephone network (PSTN)

Versatile modular chassis supports a full portfolio of WAN, LAN and voice interfaces. Backward compatibility with existing SIC and FIC interfaces enhances investment protection and provides maximum configuration flexibility

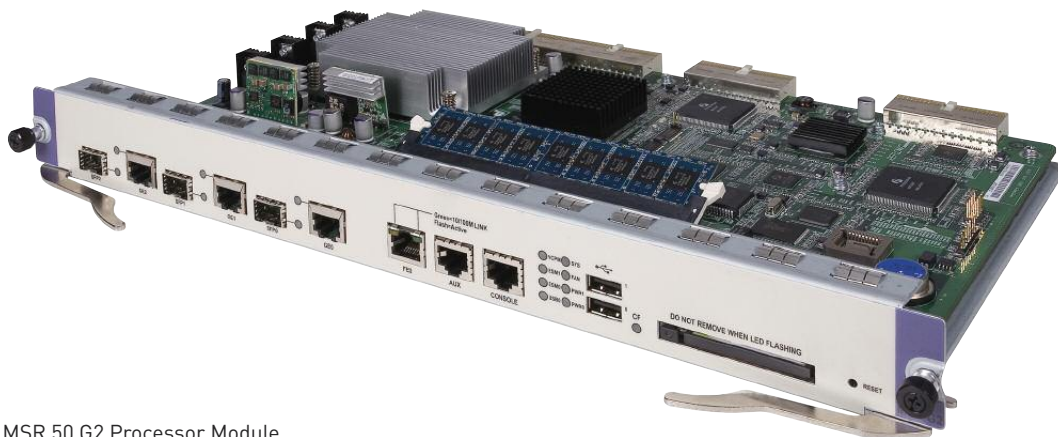
Advanced, embedded security functions with multiple hardware encryption options ensure the highest levels of security without sacrificing throughput performance

Standards-based design ensures complete interoperability in multi-vendor environments, including Cisco

Enhanced performance, security and reliability make the MSR 50 Series the perfect platform for delivering converged networks, including data, voice, video, and additional advanced applications through OSN

Comprehensive IPv6 and IPv4 routing functionality ensures seamless migration

Engineered by H3C, a 3Com company



MSR 50 G2 Processor Module  
(as shipped)

# SPECIFICATIONS

All information in this section is relevant to the MSR 50-40 and 50-60 unless stated otherwise.

FIC = Flexible Interface Controller    DFIC = Double-width Flexible Interface Controller

SIC = Smart Interface Controller    DSIC = Double-width Smart Interface Controller

## SLOT CAPACITY

### MSR 50-40 FIC Slots

Can be populated with choice of:

- 4 single-width or
- 2 single-width and 1 double-width or
- 2 double-width

### MSR 50-60 FIC Slots

Can be populated with choice of:

- 6 single-width or
- 4 single-width and 1 double-width or
- 2 single-width and 2 double-width or
- 3 double-width

### MSR 50-40 and 50-60 SIC Slots

Can be populated with choice of:

- 4 single-width or
- 2 single-width and 1 double-width or
- 2 double-width

SIC slots not available with G2 Processor Module

## PROCESSORS

### MSR 50 G2 Processor Module

RISC 1.7 GHz, delivering up to 1,280 Kpps forwarding performance

- 1 Gb (default) to 2 Gb DDR SDRAM
- 256 Mb (default) to 1 Gb CompactFlash
- 64 Mb integrated flashable memory
- 3 10/100/1000 Ethernet Combo ports
- 1 10/100 Ethernet management port
- 1 console port
- 2 USB 1.1 ports
- 1 auxiliary port

### MSR 50 Processor Module

PowerPC 833 MHz, delivering up to 600 Kpps forwarding performance

- 512 Mb (default) to 1 Gb DDR SDRAM
- 256 Mb (default) to 1 Gb CompactFlash
- 2 10/100/1000 Ethernet Combo ports
- 1 console port
- 2 USB 1.1 ports
- 1 auxiliary port

### MSR 50 Multi-Service Module

- 4 Voice Processor Module slots, for optional 8-, 16-, 24- or 32-channel processors
- 2 Enhanced Service Module slots, for advanced or standard encryption accelerators
- 1 Voice Co-Processor Module slot

### Open Services Module (OSM)

- Pentium M 1.4 GHz CPU
- 80 Gb hard drive
- 1 Gb DRAM
- 1 Gigabit Ethernet port
- 1 USB port
- 256 Mb CompactFlash
- 3Com|OS Operating System

## POWER SUPPLY

### AC Power

- 100 to 240 VAC, 50/60 Hz
- 350W maximum

## POWER OVER ETHERNET

(PoE power supply required)

IEEE 802.3af PoE

32 switched ports supported

## PHYSICAL SPECIFICATIONS (CHASSIS ONLY)

### MSR 50-40

- Height: 131mm (5.1 in)
- Width: 436 mm (17.2 in)
- Depth: 424 mm (16.7 in)
- Weight: 18 kg (39.7 lb)

### MSR 50-60

- Height: 175 mm (6.9 in)
- Width: 436 mm (17.2 in)
- Depth: 424 mm (16.7 in)
- Weight: 20 kg (44.1 lb)

## ENVIRONMENTAL

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

Storage temperature: -40° to 70° C (-40° to 158° F)

Humidity (operating and storage): 5% to 90% non-condensing

## REGULATORY COMPLIANCE

CE (European Union)

UL (North America)

FCC (North America)

## EMC STANDARDS

FCC Part 15 (CFR 47) Class A

ICES-003 Class A

VCCI Class A

CISPR 22 Class A

EN 55022 Class A

AS/NZS CISPR22 Class A

EN 55024

CISPR 24

IEC 61000-3-2, 61000-3-3

EN 61000-6-1

ETSI EN 300 386 V1.3.3

## SAFETY AGENCY CERTIFICATIONS

UL 60950-1: 2003

CAN/CSA C22.2 No 60950-1-03

IEC 60950-1 2001

EN 60950-1/A11: 2004

AS/NZS 60950

EN 60825-1 and 60825-2

FDA 21 CFR Subchapter J

## TELECOM STANDARDS

FCC Part 68 (CFR 47)

IC CS-03

## MTBF

MSR 50-40 chassis: 33 years (289,000 hours)

MSR 50-60 chassis: 32 years (287,000 hours)

## NETWORK MANAGEMENT

### Tools

- 3Com Intelligent Management Center
- 3Com Enterprise Management Suite
- 3Com Network Director
- 3Com Router Manager
- CLI
- Web-based management
- TR069

## SPECIFICATIONS (continued)

### Embedded Management Features

SNMP v1, v2c, v3  
 Standard and enterprise MIBs  
 Telnet  
 SSH  
 Syslog  
 BIMS  
 RMON  
 Zero-touch deployment  
 Configuration rollback  
 NetStream packet statistics

### LAN INTERFACE MODULES

#### LAN Modules (SIC, DSIC)

1-port 10/100 Ethernet  
 1-port 10/100/1000 Ethernet  
 4- and 9-port 10/100 Ethernet switching  
 4- and 9-port 10/100 PoE Ethernet switching

#### LAN Modules (FIC, DFIC)

2-port 10/100 Ethernet  
 1-port 10/100/1000 Ethernet  
 1-port Gigabit Ethernet fiber  
 16-port 10/100 and 1-port Gigabit Ethernet switching  
 16-port 10/100 PoE and 1-port Gigabit Ethernet switching  
 24-port 10/100 and 2-port Gigabit Ethernet switching  
 24-port 10/100 PoE and 2-port Gigabit Ethernet switching

### WAN INTERFACE MODULES

#### WAN Modules (SIC, DSIC)

1-port enhanced serial sync/async  
 1-port ISDN-S/T  
 1-port ISDN-U  
 1-port Fractional E1  
 1-port Fractional T1  
 1-port ADSL 2+  
 1-port analog modem

#### WAN Modules (FIC, DFIC)

4- and 8-port enhanced serial sync/async  
 4- and 8-port E1/CE1/PRI  
 4-port Fractional E1  
 4-port T1/CT1/PRI  
 4-port fractional T1  
 4-port E1 IMA  
 4-port T1 IMA  
 4-port enhanced ISDN-S/T  
 1-port FE3/CE3  
 1-port FT3/CT3  
 1-port OC-3 POS  
 1-port OC-3 ATM MM optical  
 1-port OC-3 ATM SM optical  
 1-port OC-3 ATM SM LH optical  
 1-port ATM, E3  
 1-port ATM, T3

### VOICE MODULES

#### Voice Modules (SIC)

1- and 2-port voice FXS  
 1- and 2-port voice FXO  
 1-port E1 voice  
 1-port T1 voice

#### Voice Modules (FIC)

4-port voice FXS  
 4-port voice FXO  
 1- and 2-port E1 voice  
 1- and 2-port T1 voice  
 4-port E&M

### VOICE SUPPORT

#### Interface

FXS  
 FXO  
 E&M  
 E1V1/T1V1

#### Signaling

SIP  
 R2  
 DSS1  
 Q.sig  
 Digital E&M

#### H.323

H.225  
 H.245

#### CODECs

G.711A law  
 G.711U law  
 G.723R53  
 G.723R63  
 G.729a  
 G.729R8

#### Media Process

RTP/cRTP  
 IPHC  
 Voice backup

#### FAX

Fax

#### Other

Voice RADIUS  
 Voice over Frame Relay (VoFR)  
 SIP server local survival  
 IVR  
 DTMF

### LINK PROTOCOLS

#### LAN Protocols

Ethernet II  
 Ethernet SNAP  
 IEEE 802.3x VLAN  
 IEEE 802.1P  
 IEEE 802.1Q  
 IEEE 802.3ad LACP  
 IEEE 802.1w RSTP  
 IEEE 802.1s MSTP  
 IGMP snooping  
 GVRP  
 Port loopback  
 Port multicast suppression

#### WAN Protocols

PPP and Multilink PPP (MP)  
 PPPoE client and server  
 PPP/MP over FR  
 FR and Multilink FR (MFR)  
 Frame relay fragmentation, compression, and FR over IP  
 Frame Relay Traffic Shaping (FRTS)  
 ATM (IPoA, IPoEoA, PPPoA and PPPoEoA)  
 DCC and dialer watch  
 HDLC  
 LAPB  
 X25, X25 over TCP, X25 to TCP  
 X25 PAD, X25 hunt groups and X25 CUG  
 DLSW (V1.0/2.0)  
 ISDN and ISDN network  
 ISDN QSIG  
 MODEM

## SPECIFICATIONS (continued)

### NETWORK PROTOCOLS

#### IP Service and Applications

TCP  
 UDP  
 ARP  
 IP option  
 IP unnumbered  
 Policy-based routing (unicast/multicast)  
 PING, traceroute  
 DHCP snooping, server, relay, and client  
 DNS client  
 DNS static  
 DDNS  
 NQA  
 IP accounting  
 UDP helper  
 NTP  
 Telnet  
 TFTP client  
 FTP server, client

#### IP Routing

Static  
 RIP v1 and v2  
 OSPF  
 OSPF v3  
 BGP IV  
 IS-IS  
 IGMP  
 PIM-DM  
 PIM-SM  
 MBGP  
 MSDP

#### Non-IP

SNA/DLSw  
 IPX  
 SOT  
 NetStream  
 sFlow

### QUALITY OF SERVICE (QoS)

#### Layer 2 QoS

SP  
 WRED (Port)  
 CAR  
 LR  
 Flow-based QoS policy  
 Port-based mirroring  
 Flow-based mirroring  
 CoS-based Head of Line Blocking (HOLB) prevention  
 Packet remarking  
 Flow redirect  
 Flow accounting  
 Priority mapping  
 Port trust mode  
 Port priority  
 Flow filter  
 Flow control and backpressure  
 ACL

#### Traffic Policing

Committed Access Rate (CAR)  
 Line Rate (LR)

### Congestion Management

FIFO  
 PQ  
 CQ  
 WFQ  
 CBQ  
 RTPQ

### Congestion Avoidance

WRED/RED

### Traffic Shaping

Generic

### Other

FR QoS  
 MPLS QoS  
 MP QoS/LFI  
 cRTP/IPHC  
 ATM QoS  
 Sub-interface QoS  
 Load balance based bandwidth  
 VLAN QoS  
 Speed limitation based on IP

### NETWORK SECURITY AND RELIABILITY

#### Port-Based

PPPoE client and server  
 Portal  
 IEEE 802.1X

#### AAA

Local authentication  
 RADIUS  
 TACACS

#### Firewall

ASPF  
 Access Control Lists (ACL)  
 Filtering

#### Data Security

IKE  
 IPSec  
 Encryption accelerator  
 Portal

#### Other

L2TP  
 NAT/NAPT  
 PKI  
 RSA  
 SSH v1.5 and v2  
 SSL VPN  
 URPF  
 GRE

#### Reliability

VRRP  
 Backup Center

### WARRANTY AND OTHER SERVICES

One-year Limited Hardware Warranty  
 Limited Software Warranty for 90 days  
 90 days of telephone technical support  
 Refer to [www.3com.com/warranty](http://www.3com.com/warranty) for details.

## ORDERING INFORMATION

### PRODUCT DESCRIPTION

### 3COM SKU

#### 3COM MULTI-SERVICE ROUTER

3Com MSR 50-40 Multi-Service Router Chassis	0235A297
3Com MSR 50-60 Multi-Service Router Chassis	0235A298

Router Processing Unit must also be ordered separately for each chassis:

3Com Multi-Service Router 50-Series G2 Processor Module	0231A84Q
*Must order software license for G2 engine	
3Com Multi-Service Router 50-Series Processor Module	0231A791
3Com Multi-Service Router 50-Series G2 Multi-Service Module	0231A85D
3Com Multi-Service Router 50-Series Multi-Service Module	0231A64P
3Com Multi-Service Router 50-Series Power Supply	0231A64N
3Com Multi-Service Router 50-Series POE Power Supply	0231A781
3Com MSR 50 G2 Engine Standard Software License	3130A15D

#### VOICE PROCESSORS

3Com Multi-Service Router 32-Channel Voice Processor Module	0231A63L
3Com Multi-Service Router 24-Channel Voice Processor Module	0231A63M
3Com Multi-Service Router 16-Channel Voice Processor Module	0231A63N
3Com Multi-Service Router 8-Channel Voice Processor Module	0231A63P
3Com Multi-Service Router Voice Co-Processor Module	0231A64S

#### LAN SMART INTERFACE CARD (SIC) MODULES

3Com Router 1-Port 10/100 SIC	0231A53T
3Com Router 1-Port 10/100/1000 SIC	0231A61M
3Com Router 4-Port 10/100 SIC	0231A61N
3Com Router 9-Port 10/100 DSIC	0231A61P
3Com Router 4-Port 10/100 POE SIC	0231A769
3Com Router 9-Port 10/100 POE DSIC	0231A770

#### LAN FLEXIBLE INTERFACE CARD (FIC) MODULES

3Com Router 2-Port 10/100 FIC	0231A61S
3Com Router 1-Port GbE Fiber FIC	0231A62G
3Com Router 1-Port 10/100/1000 FIC	0231A62H
3Com Router 24-Port 10/100 DFIC	0231A63V
3Com Router 16-Port 10/100 FIC	0231A63W
3Com Router 16-Port 10/100 POE FIC	0231A75P
3Com Router 24-Port 10/100 POE DFIC	0231A75Q

#### WAN SMART INTERFACE CARD (SIC) MODULES

3Com Router 1-Port Analog Modem SIC	0231A49M
3Com Router 1-Port ADSL2+ SIC	0231A50Y
3Com Router 1-Port Fractional T1 SIC	0231A52S
3Com Router 1-Port Fractional E1 SIC	0231A90R
3Com Router 1-Port Enhanced Serial SIC	0231A56N
3Com Router 2-Port FXO SIC	0231A56P
3Com Router 1-Port FXO SIC	0231A56Q
3Com Router 2-Port FXS SIC	0231A56R
3Com Router 1-Port FXS SIC	0231A56S
3Com Router 1-Port ISDN-U SIC	0231A61A
3Com Router 1-Port ISDN-S/T SIC	0231A61H
3Com Router 1-Port E1 Voice SIC	0231A61Q
3Com Router 1-Port T1 Voice SIC	0231A61R

### PRODUCT DESCRIPTION

### 3COM SKU

#### WAN FLEXIBLE INTERFACE CARD (FIC) MODULES

3Com Router 1-Port FE3/CE3 FIC	0231A792
3Com Router 1-Port FT3/CT3 FIC	0231A86Q
3Com Router 8-Port Enhanced Serial FIC	0231A62A
3Com Router 1-Port OC-3 POS FIC	0231A62C
3Com Router 4-Port Enhanced Serial FIC	0231A62J
3Com Router 8-Port CE1/PRI FIC	0231A62K
3Com Router 2-Port E1-Voice FIC	0231A62P
3Com Router 4-Port CE1/PRI FIC	0231A62S
3Com Router 4-Port ISDN-S/T FIC	0231A62T
3Com Router 4-Port FT1/CT1PRI FIC	0231A62U
3Com Router 4-Port Fractional E1 FIC	0231A62V
3Com Router 4-Port Fractional T1 FIC	0231A62W
3Com Router 4-Port FXO FIC	0231A62X
3Com Router 4-Port FXS FIC	0231A62Y
3Com Router 1-Port T3 ATM FIC	0231A63B
3Com Router 1-Port E3 ATM FIC	0231A63D
3Com Router 1-Port OC 3 ATM	0231A896
3Com Router 4-Port E&M FIC	0231A63Q
3Com Router 1-Port T1 Voice FIC	0231A63X
3Com Router 2-Port T1 Voice FIC	0231A63Y
3Com Router 1-Port E1 Voice FIC	0231A64A
3Com Router 4-Port E1 IMA FIC	0231A77N
3Com Router 4-Port T1 IMA FIC	0231A77Q

#### OPEN SERVICES NETWORKING FLEXIBLE INTERFACE CARD (FIC) MODULES

3Com Router Open Services Networking FIC (1 Gb)	0231A86W
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#### ENCRYPTION OPTIONS

3Com Multi-Service Router Advanced Encryption Accelerator	0231A64Q
3Com Multi-Service Router Standard Encryption Accelerator	0231A64R

#### CABLES

3Com Router Auxiliary Cable	04021299
3Com Router E1 RJ45 Cable - 3m	04026104
3Com Router E1 BNC Cable - 20m	04040148
3Com Router E1 RJ45 Cable - 20m	04040150
3Com Router T1 Cable	04041054
3Com Router V.24 DTE Cable-Enhanced	04043589
3Com Router V.24 DCE Cable-Enhanced	04043590
3Com Router V.35 DTE Cable-Enhanced	04043591
3Com Router V.35 DCE Cable-Enhanced	04043592
3Com Router X.21 DTE Cable-Enhanced	04043593
3Com Router X.21 DCE Cable-Enhanced	04043594
3Com Router 8-Port E1 Cable	0404A00R
3Com Router 4-Port E1 IMA Cable	0404A042
3Com Router 4-Port T1 IMA Cable	0404A045
3Com Router T3/E3 Cable	04060353
3Com Router T1 Voice Cable	14080099
3Com Router E1 75-120 Ohm Conversion Cable	04026813

Visit [www.3com.com](http://www.3com.com) for more information about 3Com network solutions.

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