# Alcatel OmniCore 5000

## Enterprise
## Core Routing Switches

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## OmniCore OC-5000

Choosing a core switch for the Enterprise has always been difficult. Will it scale as my enterprise grows? Will it provide the performance I need tomorrow? What will it cost me today? What applications will it need to support next year?

Alcatel understands the dilemma that network managers face when confronted with these questions, and we can help. Alcatel's OmniCore switches are designed to meet the current and future demands of high-performance, high-availability enterprise networks. They feature extensive routing capabilities, flexible connectivity options, and a powerful parallel access shared memory architecture. OmniCore's policy-based management simplifies network design and administration, and reduces the cost of ownership. Superior forwarding rates, scalability, and mission critical resiliency features make Alcatel's OmniCore 5000 switches the ideal solution for scaling the performance of your network.

## OmniCore 5052

The OmniCore 5052 provides 52 Gbps of non-blocking bandwidth. A fully loaded 14-slot chassis supports high performance switching at layers 2, 3, and 4, allowing port density up to 240 auto-sensing 10BaseT/100BaseTX, 240 100BaseFX, or 73 Gigabit Ethernet ports with GBIC Interfaces (Gigabit Interface Converters), 72 Gigabit Ethernet Ports for supporting 1000 BaseT, as well as packet-over-SONET/ SDH (OC-3 and OC-12).

## OmniCore 5022

The OmniCore 5022 provides 22 Gbps of non-blocking bandwidth. A fully loaded seven-slot chassis supports high performance switching at layers 2, 3, and 4, allowing port density to 100 auto-sensing 10BaseT/100BaseTX, 100 100BaseFX, or 30 Gigabit Ethernet ports with GBIC Interfaces (Gigabit Interface Converters), 30 Gigabit Ethernet ports for support of 1000BaseT, as well as packet-over-SONET/ SDH (OC-3 and OC-12).

## OmniCore Differentiators

OmniCore 5000 routing switches are built to address a network manager's primary concerns — improved performance and lower overall cost of ownership. The OmniCore 5000 products address these important issues in several ways. Each OmniCore 5000 routing switch provides:

- High Performance Routing
- Mission Critical Reliability
- Parallel Access Shared Memory
- Application Enabled Networking
- Continuous Investment Protection

## High Performance Routing

Maintaining scalable and reliable network connectivity is a constant challenge for network architects who must support the exponential growth of Internet traffic. Historically, the router was the design constraint in providing greater throughput and increased network availability.

The OmniCore 5052 addresses this challenge by providing wire-speed, packet-by-packet routing throughput of more than 37 Mpps (15 Mpps for OmniCore 5022) for IP and IPX traffic via standards-based routing protocols. OmniCore 5000 cacheless routing engines support more than 256K MAC or IP routes per port. All routes are handled as longest prefix match routes.

For the OmniCore 5052, this equates to 6.1 million subnet routes per chassis (2.5 million for the OmniCore 5022) – more than enough to accommodate the largest networks. Routing is managed by traditional routing protocols including RIPv1/v2, OSPFv2, IPX/RIP, IPX/SAP, and BGP4. Software assisted routing is provided for AppleTalk Phase 2.

The OmniCore 5000 routing switches can route based on a matrix of layer 3 and 4, providing advanced filtering and forwarding for comprehensive traffic accounting, security, and QoS. For state-of-the-art delivery of multimedia traffic, an OmniCore 5000 switch can route wire-speed IP multicast traffic using IGMP, DVMRP, and PIM-SM, with control on all ports. Additionally, the OmniCore family's parallel access shared memory architecture provides routing scalability to hundreds of millions of packets per second.

## Mission-Critical Reliability

Today, networks are carrying more business critical information than ever. It is essential that networks remain available to end-users at all times.

The OmniCore 5000 family is designed for these mission-critical environments. The modular design offers future-proofing, simple field-serviceability, and product flexibility. All key components exist independently, are optionally redundant, and are hot swappable. These components include:

- Management modules
- Interface ports
- Interface modules
- Power supplies
- Cooling system
- Switching fabric (5052)

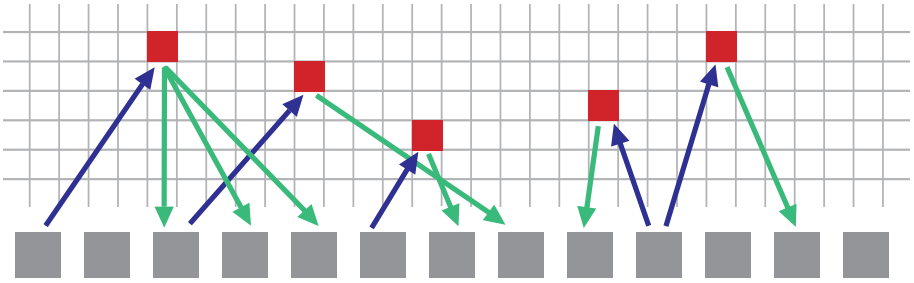
Hardware resiliency alone is not enough. Software and network resiliency are also critical. Alcatel's OmniCore 5000 routing switch solutions meet these requirements with software features such as environmental monitoring and the ability to store and maintain multiple images of the operating system. Network resiliency is achieved with redundant physical links and load-sharing trunk groups with elegant fail-over.

## Parallel Access Shared Memory

Alcatel's OmniCore 5000 routing switches use a unique parallel access shared memory architecture to provide every port with a dedicated full-duplex connection into the system memory. As a result, all ports have simultaneous access into and out of the switching fabric. This provides the ideal foundation for delivering high-performance reliable networking in highly congested infrastructures.

Unlike traditional crossbar architectures, the parallel access shared memory enables OmniCore 5000 switches to deliver equally high performance under maximum traffic loads, even when all intelligence features, such as application-level filtering and forwarding, are enabled. Integral to this performance-enabling architecture, an OmniCore 5000 switch can selectively and independently pull traffic from the central memory based upon the priority of the traffic. Prioritized traffic can be placed in any of eight outbound hardware priority queues per port without suffering head-of-line blocking.

The OmniCore 5052 offers a unique switching architecture of 52 Gbps (22 Gbps for the OmniCore 5022) of non-blocking capacity and supports wire-speed IP multicasting on all ports.



**Parallel Access Shared Memory Architecture**

## Application-enabled networking

Using its ability to perform wire-speed analysis of layers 2, 3, and 4, an OmniCore 5000 switch can route traffic according to a broad set of management policies. Predefined templates make this easy. This capability protects applications with a combination of application-based filtering and forwarding, IP type of service (TOS), priority tagging (IEEE 802.1p, IEEE 802.1Q, and DiffServ), and mapping between layer 2 and layer 3 QoS signaling. The OmniCore 5000 product line incorporates unique "best-of-breed" characteristics that provide quality of service functionality for the enterprise.

The OmniCore routing switch hardware is standards compliant with eight priority queues per port, and manages them using weighted fair queuing. With application-based traffic classification, routing/rerouting, and interworking of QoS information among layers 2, 3, and 4, an OmniCore 5000 switch delivers critical business application data throughout the enterprise.

OmniCore 5000 switches support traditional VLANs including port-based, protocol-based, and tag-based VLANs. Of course, the switches provide wire-speed routing for inter-VLAN communication as well.

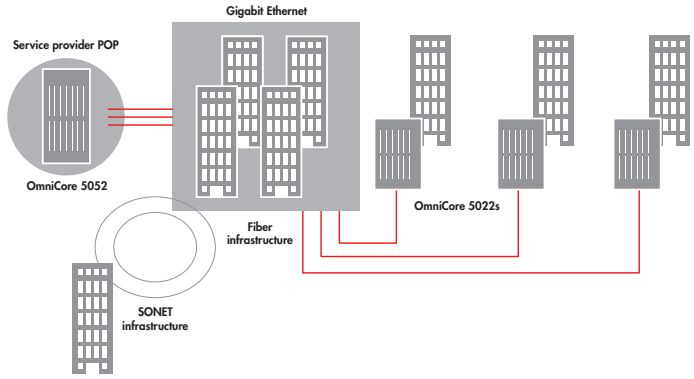
## Continuous Investment Protection

The OmniCore 5000 switches leverage your current hardware investment and provide smooth expansion and migration well into the future. The size, modularity, and variety of interfaces available for the OmniCore 5000 routing switches assure that they will scale as your network grows. Furthermore, the interface modules for the OmniCore 5052 also fit into the smaller OmniCore 5022, enabling flexible network design as networking requirements change.

## High performance, high availability network solutions

The OmniCore 5000 routing switch family provides industry-leading performance, superior reliability, flexibility, and network intelligence that is demanded by large-scale enterprise and metropolitan area networks. In enterprise and campus networks, the OmniCore 5052 provides a high performance network core for OmniCore 5022s located in building backbones and wiring closets.

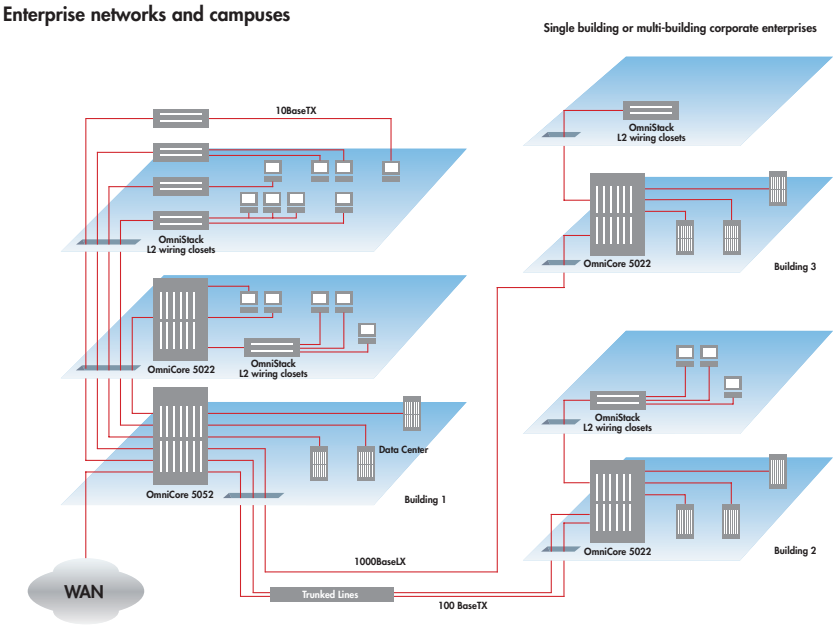
**OmniCore 5000 in a metropolitan area network (MAN)**




OmniCore 5000 routing switches can also be used to build metropolitan area networks using traditional wide area technologies such as packet-over-SONET, or native Gigabit Ethernet over distances of up to 70 kilometers.

Superior forwarding rates, scalability, and mission-critical resiliency features make the OmniCore 5000 switch family the ideal solution for improving the performance of any network.

**Enterprise networks and campuses**



# Alcatel OmniCore 5000 Series

## Technical Information

### System Resiliency

**OmniCore 5052/5022**

Redundant, hot-swappable power supplies

Redundant, hot-swappable management cards

Redundant, hot-swappable memory cards (OmniCore 5052 only)

Redundant Gigabit Ethernet links

Hot-swappable inter-face modules

Multiple operating system images

Redundant, hot-swappable fans;

Load sharing resilient inter-switch links (trunk groups)

### Capacity

***OmniCore 5052***

**Backplane capacity:** 52 Gbps

**Switching throughput:** 37.2 Mpps

**Packet-by-packet routing throughput:** 37.2 Mpps

***OmniCore 5022***

**Backplane capacity:** 22 Gbps

**Switching throughput:** 14.88 Mpps

**Packet-by-packet routing throughput:** 14.88 Mpps

### Physical Dimensions

***OmniCore 5052***

**Width:** 17.5 in (445 mm)

**Height:** 31.4 in (798 mm)

**Depth:** 24.2 in (615 mm)

**Weight:** 225 pounds (102 kg), fully loaded

**Total slots:** 14 front

***OmniCore 5022***

**Width:** 17.5 in (445 mm)

**Height:** 22.7 in (577 mm)

**Depth:** 20.75 in (527 mm)

**Weight:** 90 pounds (41 kg), fully loaded

**Total slots:** 7 front

### Power

**Input voltage:** 90-264 VAC; 50-60 Hz 48 VDC

### System Configuration

OmniCore 5000 routing switches can be managed with an intuitive Java-based management application, a command line inter-face (CLI), and Telnet.

Additional support is offered for enterprise network management systems such as the HP OpenView platform.

### RMON

**Four groups:** statistics, history, alarms and events

### Link aggregation

Up to six trunk groups of ten load-sharing, resilient inter-switch links. Supports proprietary and standard 802.3ad link aggregation.

### Environmental

**Operating temperature:** 0 to 45º C

**Humidity:** 85% maximum relative humidity, non-condensing

**Operating altitude:** 0 to 3,000 m (0 to 10,000 feet)

**Certifications/Safety:** FCC Part 15, Class A, CE Mark, VCCI Class A, EN50082-1, EN55052, UL, cUL, TUV

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FCC Part 15, Class A, CE Mark, VCCI Class A, EN50082-1, EN55052, UL, cUL, TUV

### Standards (Abridged)

IEEE 802.3u 100BaseT, IEEE 802.3z 1000BaseX, IEEE 802.3x Full-Duplex with flow control, IEEE 802.1D Spanning Tree Protocol, IEEE 802.1p Priority, IEEE 802.1Q VLAN Tagging, RFC 1058, 1723, 2082 RIP and RIPv2, RFC 1583, 2178 OSPF, BGP4 RFC 1112 IGMP and IGMPv2, RFC 1256 Router Discovery Protocol, RFC 1812 Router requirements, RFC 1122 Host requirements, RFC 1163 Border Gateway Protocol (BGP), RFC 1771 BGP-4, RFC 783 TFTP, RFC 951 and 1542 BootP, RFC 2068 HTTP, RFC 1619/1662 PPP-over-SONET, RFC 1075 - Distance Vector Multicast Routing Protocol (DVMRP), RFC 2117 - Protocol Independent Multicast-Sparse Mode Protocol (PIM-SM), IPX/RIP , IPX/SAP & AppleTalk Phase 2

### Management (abridged)

RFC 1157 SNMP, RFC 1213 MIB-II, RFC 1493 Bridge MIB, RFC 1643 Ethernet MIB RFC 1757 RMON (4 groups), RFC 1724 RIPv2 MIB, RFC 1850 OSPF MIB, RFC 1657 BGP-4 MIB, RSVP MIB, RFC 2037 Entity MIB, RFC 2096 IP Forwarding MIBs, IGMPv2, DVMRP, PIM, IP Multicast Routing MIBs, Alcatel Enterprise MIB

# www.alcatel.com/enterprise

**Alcatel**

26801 West Agoura Road
Calabasas, CA 91301 USA

**Contact Center**
(800) 995-2612 US/Canada
(818) 880-3500 Outside US

**www.alcatel.com/enterprise**



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