OmniSwitch 6600 Series

Carrier Class for the Enterprise
OmniSwitch 6600 series, consisting of the OmniSwitch 6624 and 6648, are stackable, multi-layer workgroup switches that provide high availability and intelligence with features designed especially for IP Communications and mission-critical environments. These switches are part of the Alcatel next generation OmniSwitch family, optimized for voice and data integration in the wiring closet and at the edge of the network.

The OmniSwitch 6600, featuring an innovative virtual chassis technology, allows administrators to configure and manage a stack of up to eight switches as if it were an eightslot chassis switch. The OmniSwitch 6600 provides non-blocking multi-Gigabit Ethernet capacity, multi-layer security, carrier-class availability, intelligent switching and routing services – all at wire speed.

The OmniSwitch 6600 series offers an extensive set of features making them ideal for a variety of network environments such as:

- Enterprise workgroups/ LAN wiring closets
- Edge deployments and branch offices
- Converged voice and data environments
- IP telephony/ LAN aggregation

**OmniSwitch 6624 and 6648**

The OmniSwitch 6600 series is a product family consisting of two switching platforms, the OmniSwitch 6624 and the OmniSwitch 6648. The OmniSwitch 6624 is a 24-port switch with a switching capacity of 12.8 Gbps, and the OmniSwitch 6648 is a 48-port with a switching capacity of 17.6 Gbps. They both feature two expansion slots, and also provide one slot in the back of the chassis for an optional redundant power supply, a key availability feature not found in most stackable switching platforms. Availability is further enhanced with the ability to hot swap any switch in a stack, expansion modules, and redundant power supplies.

**Key functionality includes:**

- High capacity, multi-Gigabit Ethernet architecture
- Smart continuous switching
- Virtual chassis technology
- Wire-speed intelligent switching/ routing
- Multi-layer security
- Dynamic mobility
- In-line power distribution*

* Contact for availability
Carrier-Class Availability

There is a strong focus today on business continuity and the need for carrier-class availability in enterprise networks. To ensure the highest levels of reliability, the OmniSwitch 6600s have been designed with a distributed architecture to enable carrier-class features, including full redundancy and resiliency. Carrier-class availability ensures that users have constant access to all resources and that services are available at all times.

A unique feature of the OmniSwitch 6600 series is smart continuous switching, which provides continuous operation in the event of a failure. With smart continuous switching, all source learning, spanning tree functions, and established routes are distributed. In the event of a management/fabric module failure, the switches automatically failover to the backup switch. Existing L2/L3 traffic, including voice conversations, can continue seamlessly without interruption. Plus, Alcatel’s OmniSwitch 6600s are capable of creating new connections during this failover – an industry first.

Network resiliency is a critical part of network availability and the OmniSwitch 6600s provide extensive support including advanced routing redundancy protocols and mechanisms for fast reconfiguration of links between switches, servers, and other network devices. The OmniSwitch 6600s provide fully redundant and resilient system components to ensure continuous operation. This includes:

- Redundant power supplies, stacking loop and management
- Hot-swappable units and gigabit expansion stacking modules
- "Hitless loading" of optional software allowing live upgrades without rebooting
- Downloadable bootstrap
- Image rollback to automatically re-load previous configurations and software versions

Virtual Chassis

A unique feature of the OmniSwitch 6600s is the concept of a virtual chassis, which provides the availability, functionality, and manageability features of an eight-slot chassis to a stack of OmniSwitch 6600s. The virtual chassis concept enables administrators to configure a complete stack of OmniSwitch 6600s through a single IP address and to treat each unit as a slot in a chassis. This simplifies and reduces configuration time through the command line interface (CLI) and the embedded web-based management application, which the OmniSwitch 7000 and 8000 next generation chassis-based switches also offer. Additionally, software images and configuration files are automatically synchronized across an entire stack of OmniSwitch 6600s.

The virtual chassis feature enables high availability because each element added to a stack provides a fully redundant management capability should the primary management module fail. An OmniSwitch 6600 stack automatically elects, on a recurrent basis, a primary and backup chassis manager. Network resiliency and availability is further enhanced with the ability to hot swap any switch in a stack, expansion modules, and redundant power supplies. Along with all the features of a virtual chassis, the OmniSwitch 6600 provides the same high availability features as the OmniSwitch 7000 and 8000 – all at an enterprise price.
Multi-layer Security

As organizations open up their networks for e-business and external users, a secure infrastructure architecture needs to be designed and managed. **Multi-layer security** enables sophisticated hardware and software-based solutions that can be integrated with policy-based management and other technologies such as smart cards, PKI, and biometrics for enhanced security implementations. As part of the Alcatel CrystalSec security framework, OmniSwitch 6600 provides an arsenal of security features that can be implemented at the edge and throughout the network. This includes extensive features such as security-by-default design, user authentication, VLANs, access control lists (ACLs), authenticated switch access, encryption, and denial of service protection.

For secure management, there are many features integrated into the architecture including authenticated user access, SNMPv3 and SSL for encrypted sessions, and partitioned management for multi-tiered access and granular network administration.

Distributed Intelligence

**Distributed intelligence**, enabled by local processing for traffic on each switch, ensures users and applications get the priority and performance they need with ease-of-use management that extends across the enterprise. The OmniSwitch 6600 features state-of-the-art ASIC-based technology for intelligent, wire-speed processing, which includes switching, routing, ACLs, and QoS. It also provides intelligent switching for layers 2 and 3, and the most advanced classification, prioritization, and queuing schemes based on L2, L3, and L4. The OmniSwitch 6600 classifications support industry standards including 802.1Q/p, TOS, DiffServ, and are enhanced with complementary features such as QoS mappings and QoS marking.

OneTouch Manageability

OmniVista, the Alcatel voice and data network management platform, features **OneTouch manageability**, which allows network managers to quickly configure and manage the switches in their network. For example, OneTouch QoS is a feature of PolicyView, the Alcatel policy management software that allows network managers to quickly assign QoS priorities to network traffic based on the characteristics of different applications, and with "one-click" automatically configure every Alcatel switch in the network.

The OmniSwitch 6600 also offers service-level and policy-based configurations with support for LDAP Directories, enabling flexible integration with existing platforms and extended offerings. It includes RMON support with a choice of interfaces for administrators - a command line interface (CLI), SNMP, fully edit-able text-based configuration file, and a standard Web-browser interface.

Dynamic Mobility

Users are becoming increasingly mobile, creating challenges for administrators. The OmniSwitch 6600 features **dynamic mobility**, which simplifies the task of managing remote and mobile users. This allows users to move anywhere in the network without having to reconfigure each time. Users can change locations, connect to a new network port, and have access to all their resources without administrator intervention. Dynamic mobility can be fully integrated with authentication to provide secure mobility across an entire network. The OmniSwitch 6600 provides the highest flexibility and the most extensive VLAN capabilities in the industry to support mobile user environments.
**System Features**

- Virtual chassis-stack of up to eight elements managed like an eight-slot chassis
- Distributed L2/L3/L4 services and processing
- Provides non-blocking store-and-forward switching fabric
- Wire-speed layer 2 frame forwarding
- Wire-speed layer 3 IP packet forwarding
- Wire-speed access control lists (ACL)
- Wire-speed multicast switching
- Port mirroring
- 802.3ad and Alcatel's OmniChannel port aggregation with port failure recovery and load balancing based on MAC addresses
- Per-port flood limiting
- Redundant stacking link
- Automatic over-temperature shutdown
- DHCP/BootP relay support
- Port mapping*
- SSH*
- WRED support*

**Hardware Features**

- 10/100 Ethernet auto-sensing and auto-negotiation, non-blocking, full duplex
- 1000BaseX (fiber) and 1000BaseT (copper) expansion modules
- Stacking expansion module

**Chassis**

- Fixed 24 or 48 port units with two expansion slots
- One slot in back of chassis for optional redundant AC power supply

**Interface Expansion Modules**

- The OmniSwitch 6600 supports 1,000 Mbps Ethernet fiber and 1000BaseT (copper) interface expansion modules.

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**Technical Summary**

**Switch Architecture**

**Switching capacity**

**OmniSwitch 6624:** 12.8 Gbps

**OmniSwitch 6648:** 17.6 Gbps

**Redundant, hot-swappable/hot insertable**

- Expansion modules
- Redundant power supplies
- Individual switches within the stack

**In-line power for IP phones**

**Number of power supplies supported**

- OmniSwitch 6600 supports one for primary power and one optional power supply for redundancy

**Input voltage and current ratings**

- 85 - 270 VAC
- 1.21 Amps (max.) at 110 VAC
- 0.60 Amps (max.) at 220 VAC
- 47-63 Hz
- 48 VDC input power*

**VLAN Support**

- Up to 4,096 802.1Q VLANs
- Configuration per port, MAC address, layer 3-based, port binding and protocol type, DHCP and custom
- Authenticated and policy-based VLANs
- Hardware support for 802.1p-tagged frames
- Network mobility

**Advanced QoS Features**

- L2, L3, L4 classification
- Strict priority queuing with four queues per port Setting of 802.1p, IP TOS, and/or DiffServ control points
- Priority classification based upon MAC SA/DA, MAC group, IP SA/DA, IP Subnet, IP Protocol, IP Multicast Address, IP Multicast Address Group, TCP/UDP, VLAN, port, interface type

**QoS mapping and prioritization re-tagging for:**

- 802.1p to 802.1p, TO S and DiffServ
- TO S to TO S, 802.1p and DiffServ
- DiffServ to DiffServ, 802.1p and TO S

**Routing Protocol Support**

- RIP v1/ v2
- OSPF
- OSPF ECMP
- VRRP

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### Standards and Certifications

**Standards (abridged)**

- IEEE 802.1D Spanning Tree Protocol
- IEEE 802.1D-1998 Priority and Dynamic Multicast Filtering
- IEEE 802.1p
- IEEE 802.1Q VLAN Tagging
- IEEE 802.1s Multiple Spanning Tree*
- IEEE 802.1w Rapid Reconfiguration (Fast Spanning Tree)
- IEEE 802.1x Port-based network access control*
- IEEE 802.3 10BaseT Ethernet
- IEEE 802.3ab 1000Base-T Gigabit Ethernet
- IEEE 802.3ad Dynamic link aggregates
- IEEE 802.3af
- IEEE 802.3u 100BaseTX, 100BaseFX Fast Ethernet
- IEEE 802.3x Full Duplex with Flow Control
- IEEE 802.3z 1000BaseX fiber optic Gigabit Ethernet
- RFC 768 UDP
- RFC 791 IP
- RFC 792 ICMP
- RFC 793 TCP
- RFC 826 ARP
- RFC 854 Telnet
- RFC 903 Reverse ARP
- RFC 919 IP Multicast Routing with support for RFC 919**
- RFC 925 MultilAN ARP/ Proxy ARP
- RFC 2332 Multicast Routing MIB
- RFC 1058 RIPv1*
- RFC 1191 Path MTU Discovery

### Physical Dimensions

**OmniSwitch 6624 and 6648**

- 19 in. rack mount (kit included)
- 23 in. rack mount (kit available)
- **Width:** 17.20 in. (43.69 cm)
- **Height:** 2.65 in. (6.73 cm)
- **Depth:** 14.00 in. (35.56 cm)
- **Weight**
  - OmniSwitch 6624: 13 lbs. (6 kg)
  - OmniSwitch 6648: 14 lbs. (7 kg)
- **RPS:** 2 lbs. (1 kg)

### Operating Environment

**Total heat dissipation**

- **OmniSwitch 6624:** 205 BTU ave/hr, 340 BTU max/hr
- **OmniSwitch 6648:** 296 BTU ave/hr, 340 BTU max/hr

**Storage temperature:** 14 to 158 °F (-10 to 70 °C)

**Operating temperature:** 32 to 113 °F (0 to 45 °C)

**Humidity:** 5% to 95% (Non-condensing)

**Operating altitude:** Sea level to 10,000 feet (3 km)

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### Certifications/Safety

**EMC Compliance:** EN 55024 1998; EN 55022 Class A/ B; FCC Part 15, Subpart B, Class A/ B; VCCI-V3/ 97.04 Class A/ B; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-8; EN 61000-4-11; AS/ NZS 3548, Class A/ B; CE Marking per EMC Directive

**Safety Compliance:** 21 CFR 1040; AS/ NZS 3260; CB with all national deviations (IEC 950); CE Marking per Low Voltage Directive; CSA-C22.2 no.60950; TS 001; UL 60950; EN 60825-1; EN 60825-2; TUV GS Mark (EN 60950); ULAR: Argentina Certification

### Ordering Information

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS6600-24</td>
<td>OmniSwitch 6600 chassis w/ DES, 3DES, RC2 &amp; RC4. [ECCN 5A002] 24 port 10/100 chassis with 2 open slots for optional uplinks or stacking module and one slot in back for an optional redundant and hot swappable backup AC power supply. Advanced Routing and/or Authentication software is sold separately. Country specific power cord required.</td>
</tr>
<tr>
<td>OS6600-48</td>
<td>OmniSwitch 6600 chassis w/ DES, 3DES, RC2 &amp; RC4. [ECCN 5A002] 48 port 10/100 chassis with 2 open slots for optional uplinks or stacking module and one slot in back for an optional redundant and hot swappable backup AC power supply. Advanced Routing and/or Authentication software is sold separately. Country specific power cord required.</td>
</tr>
<tr>
<td>OS6600-BPS</td>
<td>Hot Swappable AC Backup Power Supply for the OmniSwitch 6600 series switch. Backup power supply is optional. Country specific power cord required.</td>
</tr>
<tr>
<td>OS6600-STK-KIT</td>
<td>Stacking Kit for the OmniSwitch 6600 switches, includes one 2 port stacking module and one 30cm in length stacking cable. Same stacking module as the OS6600-RSTK-KIT, but with a short cable.</td>
</tr>
<tr>
<td>OS6600-RSTK-KIT</td>
<td>Redundant stacking Kit for the OmniSwitch 6600 switches, includes one 2 port stacking module and one 1 meter in length stacking cable. Same stacking module as the OS6600-STK-KIT, but with a longer cable.</td>
</tr>
<tr>
<td>OS6600-GN1C2</td>
<td>2 port Copper Gigabit Ethernet expansion module with 2 RJ-45 connectors.</td>
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<tr>
<td>OS6600-GN1U2</td>
<td>2 port mini-Gbic universal Gigabit Ethernet expansion module. Requires mini-Gbic transceiver.</td>
</tr>
<tr>
<td>OS6600-SW-AS</td>
<td>OmniSwitch 6600 Authenticated Software w/ MD5. [ECCN 5D002] OmniSwitch 7000 Authentication Services software is for Authenticated VLANs and administrative access (user or user partitioned commands) utilizing a remote AAA server. Support is provided for standards-based RADIUS and standards-based LDAP v3 for authorization, authorization and accounting, and RSA ACE/ Server direct for authentication based on one-time password tokens (SecurID).</td>
</tr>
<tr>
<td>OS6600-SW-SBR-N</td>
<td>Authenticated SBR-MS sw w/ MD5, RC4, MD4, DES. [ECCN 5D002] OmniSwitch 6600 Authentication Services software bundled with Funk Software’s Steel-Belted Radius Enterprise Edition for Microsoft W indows.</td>
</tr>
<tr>
<td>OS6600-SW-SBR-S</td>
<td>Authenticated SBR-Sun sw w/ MD5, RC4, MD4, DES. [ECCN 5D002] OmniSwitch 6600 Authentication Services software bundled with Funk Software’s Steel-Belted Radius Enterprise Edition for Sun Solaris.</td>
</tr>
<tr>
<td>MiniG Bic-SX</td>
<td>MiniG Bic Transceiver (SFP M SA) - 1000Base-SX for Multimode fiber.</td>
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<tr>
<td>MiniG Bic-LX</td>
<td>MiniG Bic Transceiver (SFP M SA) - 1000Base-LX for Singlemode fiber.</td>
</tr>
<tr>
<td>MiniG Bic-LH-70</td>
<td>MiniG Bic Transceiver (SFP M SA) - 1000Base-LH for Singlemode fiber.</td>
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