



Alcatel-Lucent OmniSwitch 6850

Stackable LAN Switch





The Alcatel-Lucent OmniSwitch™ 6850 Stackable LAN Switch (SLS) family addresses the needs at the edge of converged networks for enterprises and service providers. This family of switches enables both lower total cost of ownership and enhanced productivity. With flexible configurations, Power-over-Ethernet (PoE), high availability, wire-speed Gigabit and 10 Gigabit Ethernet performance, the OmniSwitch 6850 dramatically improves network response time and resiliency.



Today's enterprise networks require Gigabit Ethernet switches that are **feature-rich, reliable** and **capable** of supporting converged applications at low cost of ownership.





The Alcatel-Lucent OmniVista™ 2500 Network Management System (NMS) for enterprises and the Alcatel-Lucent 5620 SAM NMS for service providers offer extensive security and management for networks using OmniSwitch 6850s.

The OmniSwitch 6850 SLS family has similar features and management like the rest of the OmniSwitch family, which ensures an easy and economical way to upgrade or deploy a new feature-rich LAN supporting voice, video and data applications.

The flexible configuration options offered by the OmniSwitch 6850 SLS family makes it suitable for the edge or small core of enterprise networks as well as Ethernet access and aggregation in service provider networks, protecting investment and enabling future business growth.

OmniSwitch 6850s provide:

- Fast Ethernet, Gigabit Ethernet and 10 GigE interfaces
- Choice of PoE and non-PoE models
- Fast Ethernet interfaces upgradeable to Gigabit Ethernet via a software license key without any network reconfiguration
- SFP slots supporting 100Base-X, dual-speed and 1000Base-X optical transceivers
- Stacking capability for virtual chassis redundancy
- External power supply choice (AC, DC, PoE) for flexible deployment and easier maintenance or power upgrade
- Extensive operations, administration and maintenance (OA&M) features to optimize service-level reporting and troubleshooting
- Triple play support by virtual local area network (VLAN) stacking, video multicasting and DHCP services
- Advanced quality of service (QoS) to support mission-critical and triple-play applications

Target applications for these versatile LAN switches are:

- Enterprise workgroups for edge deployments or LAN wiring closets
- Layer-3 aggregation or distribution layer switches in three-tier networks
- Small enterprise core switching
- Ethernet access and aggregation for residential and business Ethernet services





Alcatel-Lucent OmniSwitch 6850 family

The OmniSwitch 6850 SLS family offers a variety of PoE and non-PoE Gigabit and Fast Ethernet models as well as 10G-capable models. The Alcatel-Lucent OmniSwitch 6850L, referred to as the “light” model, is the only switch on the market that offers the best layer-2/layer-3 features for 10/100 applications that can be upgraded to Gigabit Ethernet. It is a stackable 10/100 Ethernet switch that stacks up with any other OmniSwitch 6850 model. By purchasing and

installing an inexpensive software license key, this switch turns into the 10/100/1000 model.

All models in the Alcatel-Lucent OmniSwitch 6850 family are stackable, fixed configuration chassis in a 1U form factor. They can be optionally equipped with pluggable SFP and XFP transceivers (depending on the model) that support short, long and very long distances.

The OmniSwitch 6850 SLS family

CHASSIS	10/100/1000 OR GIG	COMBO PORT*	10 GIG STACKING PORTS	10 GIG UPLINKS	POWER SUPPLIES SUPPORTED
NON-POE MODELS					
OS6850-24	20 10/100/1000	4	2	–	126W AC or 120W DC
OS6850-24X	20 10/100/1000	4	2	2	126W AC or 120W DC
OS6850-48	44 10/100/1000	4	2	–	126W AC or 120W DC
OS6850-48X	44 10/100/1000	–	2	2	126W AC or 120W DC
OS6850-U24X	22 Gig SFP **	2	22	2	126W AC or 120W DC
OS6850-24L	20 10/100 ***	4	2	–	126W AC or 120W DC
OS6850-48L	44 10/100 ***	4	2	–	126W AC or 120W DC
POE MODELS					
OS6850-P24	20 10/100/1000	4	2	–	360W AC or 510W AC
OS6850-P24X	20 10/100/1000	4	2	2	360W AC or 510W AC
OS6850-P48	44 10/100/1000	4	2	–	360W AC or 510W AC
OS6850-P48X	48 10/100/1000	–	2	2	360W AC or 510W AC
OS6850-P24L	20 10/100 ***	4	2	–	360W AC or 510W AC
OS6850-P48L	44 10/100 ***	4	2	–	360W AC or 510W AC

* Combo ports are ports individually configurable to be 10/100/1000Base-T or 1000Base-X, which can support SFP transceivers for short, long and very long distances.

** Gig fiber interfaces support 1000Base-X SFP, dual-speed SFP or 100Base-X SFP optical transceivers.

*** The 10/100 RJ-45 ports can be upgraded to 10/100/1000 speed by purchasing the OS6850-24L-UPGD or OS6850-48L-UPGD software license for 24-port and 48-port models respectively.



POWER SUPPLY OPTIONS

The OmniSwitch 6850 family offers customers a vast selection of models and power options so that they can prevent over- or under-provisioning power to their switches and save money by not having to purchase more than they need. All of the OmniSwitch 6850 chassis models support redundant, dual hot-swappable AC, DC or PoE power supplies.

The primary and backup power supplies for the OmniSwitch 6850 models are external and can be either directly attached to the unit for standard 1U mounting in a 19-inch rack, or indirectly connected using a cable, allowing the OmniSwitch 6850 to be used in areas with reduced depth in wall-mounted cabinets, for instance.



Non-PoE models

- OS6850-24
- OS6850-24X
- OS6850-48
- OS6850-48X

PoE models

- OS6850-P24
- OS6850-P24X
- OS6850-P48
- OS6850-P48X

Fiber model

- OS6850-U24X





PRODUCT FEATURES AND BENEFITS

The OmniSwitch 6850 are part of the Alcatel-Lucent switch family, which includes core, stackable/modular edge and wireless LAN (WLAN) switches. All OmniSwitch use the Alcatel-Lucent Operating System (AOS) and are managed by the Alcatel-Lucent OmniVista 2500 NMS. This system is capable of OneTouch enterprise network management for fault, configuration, performance and security management. Centralized network management will reduce the total cost of ownership for the entire network.

For service providers, Alcatel-Lucent offers the 5620 SAM. This system is capable of provisioning Ethernet services across a Multi-Protocol Label Switching (MPLS) network from a graphical interface. Centralized service provisioning reduces the total cost of operations of the entire Ethernet service network.

OmniSwitch administrators can use any of the management interfaces to fully configure the device: command line interface (CLI), Simple Network Management Protocol (SNMP), or Alcatel-Lucent WebView for web-based management. Each is easy to use and offers a common look and feel for every device.

Performance

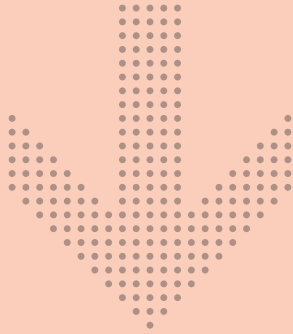
The OmniSwitch 6850 family supports real-time voice, data and video applications. The switches provide first packet wire-speed classification and processing for all packets giving a noticeable performance boost to converged networks. They support advanced services such as 10GigE, PoE and IPv6, enabling today's investment to support the demands of tomorrow.

Security

Enforcing policy-based network access control rules and isolating security threats at the edge of the network not only drastically reduce OPEX, but also protect intellectual property and sensitive company and customer information. Therefore, the OmniSwitch has integrated and automated, standards-based security tools and applications to actively mitigate internal and external threats.

The OmniSwitch 6850 provides a comprehensive security framework at the edge of the network by using Alcatel-Lucent capabilities such as Access Guardian, Traffic Anomaly Detection (TAD) and Alcatel-Lucent OmniVista 2500 NMS Quarantine Manager™. This multi-layered set of deterrent tools for proactive and reactive capabilities defines a unique and highly effective edge network security standard for access control and threat containment.





Access Guardian

Alcatel-Lucent OmniSwitch products provide auto-sensing, identity-based network access control through the Access Guardian framework. The Access Guardian enables enforcement of device and network security policies, resulting in increased privacy and availability of communications. The Access Guardian framework has the following features:

- Authenticates network access by automatically detecting the 802.1X-capable supplicants to a single port or uses MAC, web-based authentication or rules for non-supplicants
- Facilitates endpoint device control for company security policies' compliance by enforcing the Host Integrity Check (HIC)
- Provides authorization based on an authentication-associated policy containing VLAN assignment, access control lists (ACLs), bandwidth restriction and QoS.

Using the Access Guardian, the network can provide secure access to all authorized users, including IP phones and other network devices, regardless of the vendor — all while protecting the privacy and availability of your communications.

Traffic Anomaly Detection

Identifying anomalies rapidly and accurately at the edge is critical to the efficient operation of any network. TAD, a Bell Labs innovation, is the network security component, part of the operating system running on the OmniSwitch 6850.

TAD detects anomalies and distinguishes malware by monitoring the traffic patterns in real time. It either reports the problem to the management system or automatically quarantines the offending ports. It reduces the impact of worms and other malicious code by detecting and eliminating them right at the edge of the network.

Alcatel-Lucent OmniVista 2500 NMS Quarantine Manager

The OmniVista 2500 NMS Quarantine Manager is an automated containment and quarantine engine integrated with the Alcatel-Lucent OmniVista 2500 NMS. After detecting anomalies or incidents from the deployed OmniSwitch or third-party devices, the OmniVista 2500 NMS Quarantine Manager will act immediately on the misbehaving device by stopping or containing traffic right at the source using port or MAC lockdown or more granular QoS and ACLs.



High availability

The OmniSwitch 6850 virtual chassis minimizes network down time, reduces operational complexity and cost, and increases availability for mission-critical applications by removing single points of failure. Resiliency is provided through an architecture offering physical and functional redundancy everywhere:

- Virtual chassis that provides management functionality and automatic election of primary and secondary managers
- Redundant backup power supplies
- Fault tolerant loop stacking
- Hot-swappable chassis, power supplies, SFPs and XFPs
- Image rollback to automatically reload previous configurations and software versions
- Hitless loading of optional advanced routing software without rebooting
- Improved network availability:
 - Ethernet Ring Protection (ERP) with sub 50-ms convergence time in ring topologies
 - Reduced re-convergence or traffic disruption times in a routed environment by faster failure detection using Bidirectional Forwarding Detection (BFD)

IPv6 support



Leading industry analysts such as Gartner and Burton have indicated that IPv6 will be a requirement for enterprise networks in the near future. By including it now, a network manager extends the life of existing equipment and prevents future operating expenses.

The OmniSwitch 6850 family provides full IPv6 support with hardware-based forwarding for wire-rate speeds, classification and tunneling to address various corporate and U.S. Department of Defense (DoD) requirements for IPv6.

Flexibility is provided through a choice of deploying IPv4, IPv6, or IPv4/IPv6 without compromising switch performance. The OmniSwitch 6850 offers both native IPv6 routing and extensive support of IPv6 tunneling mechanisms, including configured, 6-in-4 and ISATAP tunneling.

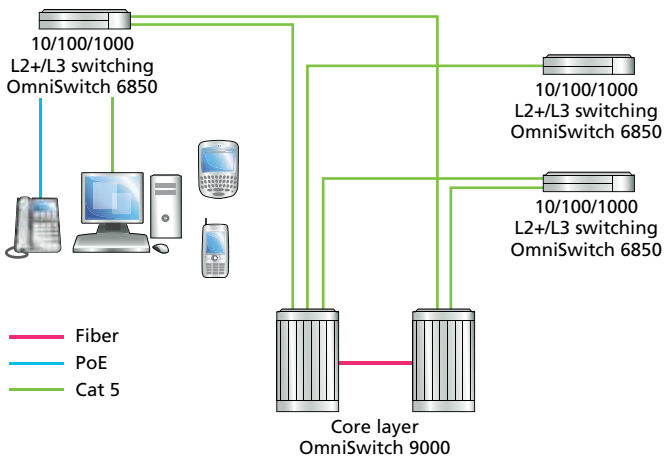


DEPLOYMENT OPTIONS

Gigabit at the edge

The OmniSwitch 6850 SLS family provides a migration path to Gigabit Ethernet on the LAN edge where high speed and extensive features are needed. The OmniSwitch 6850 products have the features necessary to provide intelligent, secure and available networking for the most demanding applications and user requirements.

Figure 1. Desktop to gigabit migration: Supports triple-play application's high bandwidth requirements



These switches are ideal for use at the edge because of their compact fixed form factor design, especially suitable for closets. Their modular expandability and flexible configuration provide an easy path to scale any workgroup up to 384 10/100/1000 ports and 16 10GigE ports in a single stack to support campus wiring closet requirements.

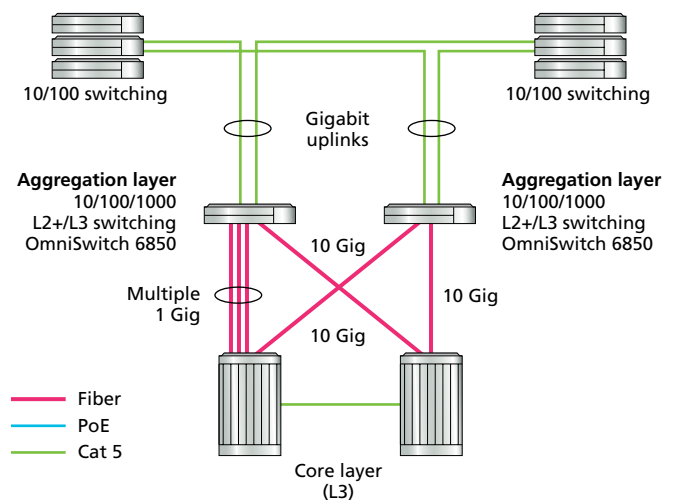
The OmniSwitch 6850 products support high power as well as standard-powered PoE ports, copper non-PoE ports and fiber ports in any combination in a stack. This exceptional flexibility allows custom closet or small core deployment to support applications ranging from just data to triple play converged applications.



L3 aggregation and distribution

The OmniSwitch 6850 placed in the distribution layer of three-tier networks provides high-capacity, wire-speed layer-2 and layer-3 switching and intelligent services near the edge of the network. In addition, some models of the OmniSwitch 6850 family have four combo ports that are individually configurable to provide users the choice of copper or fiber interfaces.

Figure 2. L3 aggregation/distribution: Provides fiber or copper configuration options

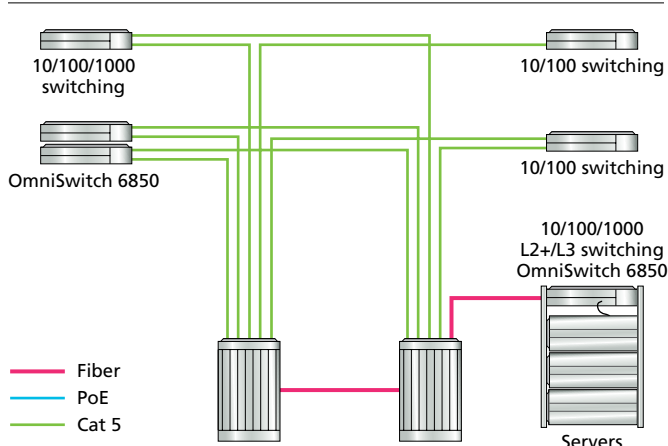




Server aggregation

The small form factor, high Gigabit and 10G performance, and rich features of the OmniSwitch 6850 family make it a great data center server access switch, especially for space-constrained data centers where the OmniSwitch 6850 can be installed as a top-of-rack switch.

Figure 3. Server aggregation features high performance in limited space

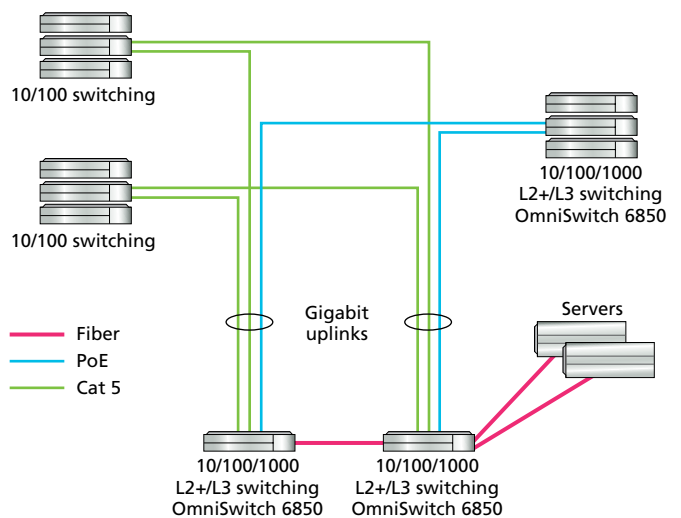


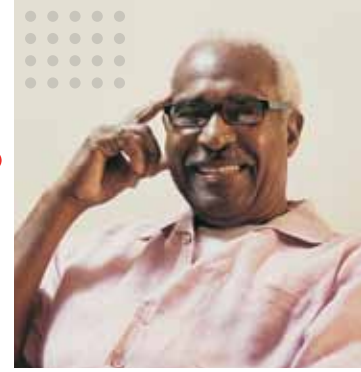
Small enterprise core

The high switching capacity of the OmniSwitch 6850 makes it a very capable and cost-effective core switch solution because of the following features:

- High port density
- Wire rate at first packet
- 10GigE performance providing high throughput for backbone connections
- Full support of IPv4/IPv6
- Wire-rate multicast for media and backup applications
- 16 10GigE ports per full stacked chassis
- Extensive QoS classification marking queuing and queue service capabilities

Figure 4. Small enterprise core provides first packet, wire-rate performance





Ethernet access – Residential and business Ethernet services

Ethernet access service installations are on the rise globally, and an increasing number of service providers are offering fully managed metro Ethernet services extended to the customer premises. The OmniSwitch 6850 is perfectly engineered for this type of deployment. OmniSwitch features offer service providers all the tools necessary to fulfill the demand for user-differentiated, high-speed Internet, voice and video services, as well as resiliency, performance, secure access and traffic control.

The key features for residential and business Ethernet access services are:

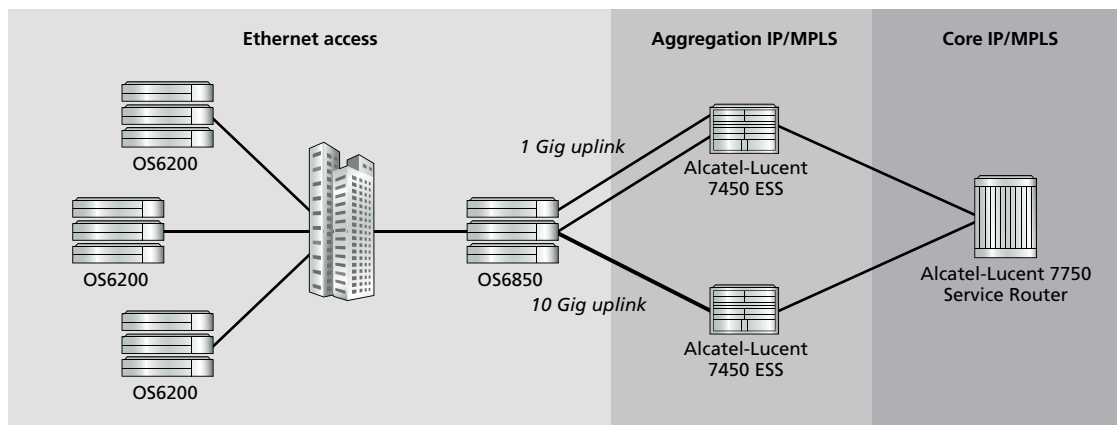
- Optimization for Ethernet access services
- VLAN stacking

- Ethernet Ring Protection
- IPTV multicast VLANs
- Ethernet OA&M support for service provisioning and SLA monitoring
- Compliance with MEF 9 and MEF 14

The OmniSwitch 6850 family is compliant with the following standards:

- Restriction on Hazardous Substances (RoHS)
- Waste Electrical and Electronic Equipment (WEEE)
- NEBS Level 3 for all of the models except those with PoE

Figure 5. Residential/metro triple play Ethernet access

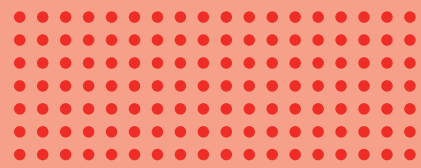


SERVICE AND SUPPORT

Warranty

The OmniSwitch 6850 models are offered with limited lifetime hardware warranty, limited to the original owner, and will be provided for up to five years after the product's End-of-Sales announcement.

Data Networks



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