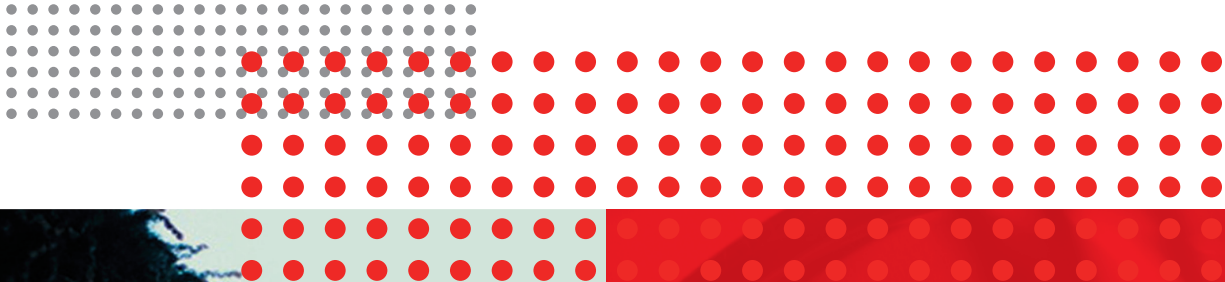
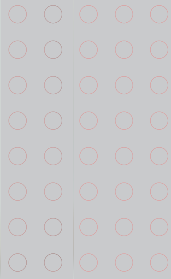


Alcatel-Lucent OmniStack 6200

Stackable LAN Switches





**THE ALCATEL-LUCENT OMNISTACK 6200 SWITCHES
DELIVER NETWORK INTELLIGENCE, IMPROVED SECURITY
FOR YOUR USERS WHILE SIMULTANEOUSLY REDUCING
OPERATING EXPENSES, CAPITAL EXPENDITURES, TRAINING,
AND DAY-TO-DAY MANAGEMENT COSTS**

To stay competitive, 21st century businesses must take advantage of new networking technologies that deliver quick and secure access to vital information from any location. Customers expect and demand that customizable user-centric services be securely provided over an always available environment, and they want to be able to access it from anywhere such as over the Internet.

Most enterprise networks have Ethernet-based infrastructures where workgroup switches supply the bulk of switch ports needed, making them an ideal target for performance improvements at attractive prices. With the latest workgroup switch technologies from Alcatel-Lucent®, it's possible to provide power-over-Ethernet across your campus for true plug-and-play connectivity for wireless LAN access points, IP phones, and other network devices.

Alcatel-Lucent switches exploit network intelligence improving user security while reducing operating expenses, capital expenditures, training and day-to-day management costs.

Alcatel-Lucent has designed the OmniStack™ 6200 Stackable LAN Switch (OmniStack 6200) family of Ethernet switches to address enterprise and residential networking needs. They are fixed configuration, 10/100 copper or 100Base-X fiber layer-2 switches that deliver the advanced features and services demanded by users. These 12-, 24- or 48-port Fast Ethernet switches provide the same advanced capabilities previously available only in Gigabit-class switches, making them an excellent, inexpensive edge device.

The OmniStack 6200s provide wire rate layer-2 forwarding and advanced layer 2-4 services. They also securely support advanced quality of service (QoS) with advanced user and traffic classification capabilities for exceptional video, voice, and data performance.

Every OmniStack 6200 switch comes with two 10/100/1000 copper ports that can be used with standard Ethernet cabling for fault-tolerant dedicated stacking links or as Gigabit ports in a standalone configuration. They also come with two additional Gigabit combo ports that provide ports for upstream connectivity to the network or to high-speed servers. Combo ports provide the user the ability to attach via standard copper Ethernet cabling or fiber using Alcatel-Lucent approved optical transceivers.

A compact, one unit (1U) high form factor, all-in-one stackable design and a comprehensive set of features makes the OmniStack 6200 perfect for:

- Enterprise workgroups / LAN wiring closets
- Edge deployments, small-/medium-sized businesses and branch offices
- Power-over-Ethernet
- Residential and business Ethernet access distribution devices (per floor or per building MDU) for triple play services delivery.



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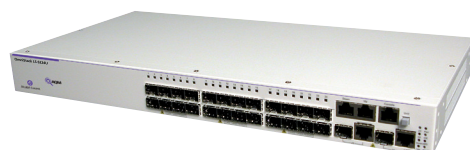
OmniStack 6212P



OmniStack 6224P



OmniStack 6248



OmniStack 6224U

Alcatel-Lucent OmniStack 6200 family

Alcatel-Lucent OmniStack 6212, OmniStack 6224, OmniStack 6248 Stackable LAN Switches are Fast Ethernet L2+ stackable fixed configuration chassis in a 1U form factor consisting respectively of 12, 24 or 48 10/100 RJ-45 ports, two 10/100/1000 RJ-45 ports and two combo ports.

Combo ports consist of two additional 10/100/1000 RJ-45 and two mini-GBIC ports. Mini-GBIC ports support Giga-bit or 100FX Ethernet mini-GBIC (SFP) optical transceivers. Stacking capability uses the two 10/100/1000 RJ-45 ports and standard Ethernet cabling.

Alcatel-Lucent OmniStack 6212P, OmniStack 6224P, OmniStack 6248P Stackable LAN Switches are Fast Ethernet L2+ stackable fixed configuration chassis in a 1U form factor consisting respectively of 12, 24 or 48 10/100 RJ-45 ports with power over Ethernet, two 10/100/1000 RJ-45 ports and two combo ports.

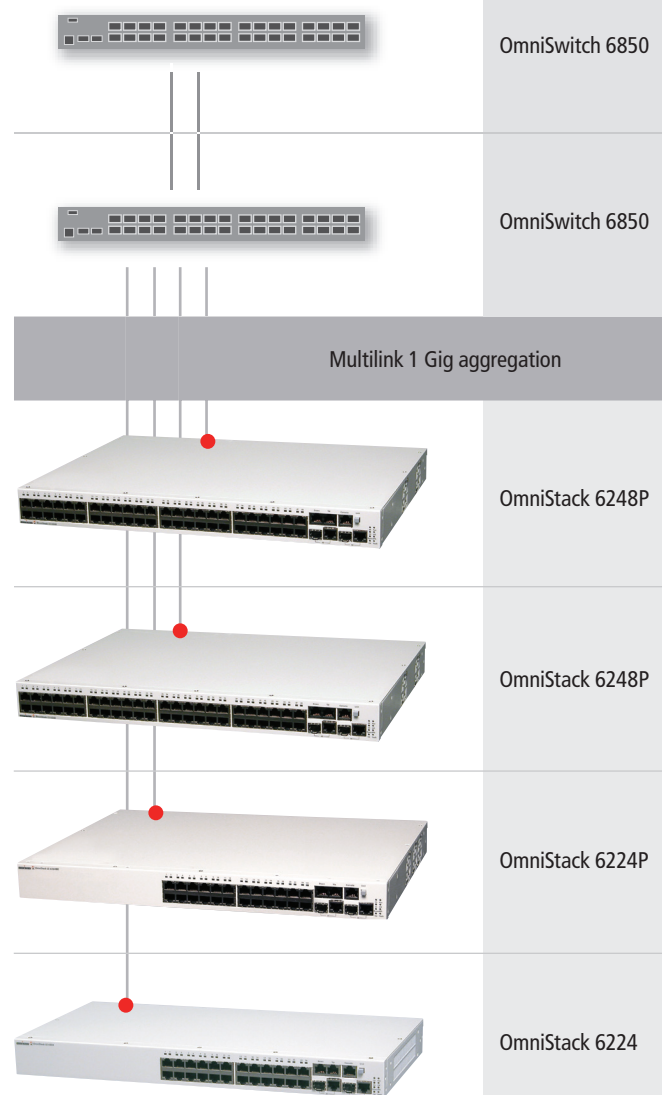
Alcatel-Lucent OmniStack 6224U Stackable LAN Switch is a Fast Ethernet L2+ stackable fixed configuration chassis in a 1U form factor consisting of 24 100Base-X SFP ports, two 10/100/1000 RJ-45 ports and two combo ports. The 24 SFP ports accept Alcatel-Lucent approved 100Base-X optical transceivers.

The OmniStack 6200 family uses a modular external backup power solution that provides redundant chassis and PoE power on a 1:1 basis. The OmniStack 6200 family complements the existing portfolio of Alcatel-Lucent enterprise fixed-configuration workgroup switches which includes:

- *OmniSwitch™ 6602 family switches*: stackable layer-3 10/100 with Gig uplinks
- *OmniSwitch 6800 and 6850 family switches*: stackable layer-3 10/100/1000 capable of 10Gig uplinks.

OmniStack 6200s are supported by the Alcatel-Lucent OmniVista™ 2500 Network Management System and facilitates management of a converged, multi-vendor equipped network by supporting 802.1ab (LLDP link layer discovery protocol) and the media-endpoint discover (LLDP-MED) extensions.

Figure 1. Typical configuration



PRODUCT FEATURES AND BENEFITS



Alcatel-Lucent's fixed configuration switches are part of the Alcatel-Lucent enterprise portfolio that includes the OmniSwitch 6250, 6400, 6850 and 9000 series of modular aggregation and core switches. This portfolio offers a complete edge-to-core solution with high availability, intelligent performance, and enhanced security in an easy-to-manage, flexible and scalable package. Alcatel-Lucent understands the need to offer investment protection.

Cost effective, enterprise workgroup switch

The OmniStack 6200 family offers small, medium or large enterprise networks a cost-effective and secure means of deploying PoE on every port, providing users mobility across the campus. By providing wire-speed QoS and security to the edge, Alcatel-Lucent is able to ensure a highly available network for important applications such as IP voice communications.

The OmniStack 6200s support industry-standard CLI, and provide simplified stack management using standard Ethernet cabling. This reduces the

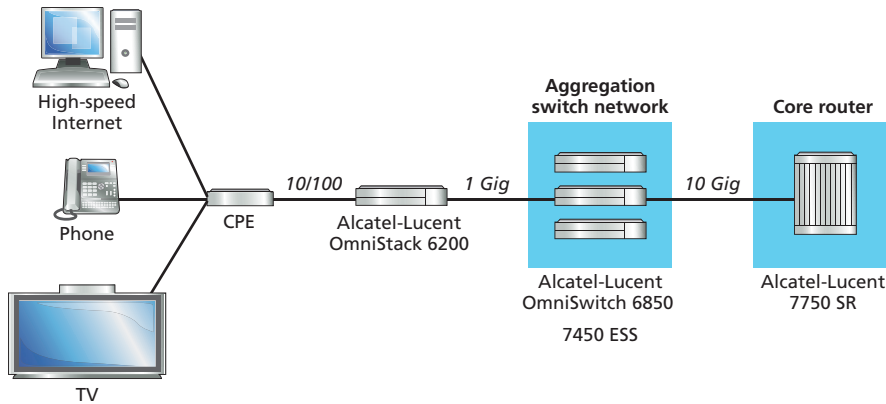
complexity and costs associated with training, installation, configuration, and maintenance.

Superior architecture

This switch family also provides a superior architecture with four useable Gigabit Ethernet ports that support stacking and multi-Gigabit uplink connectivity without sacrificing user ports. Since the OmniStack 6212 and OmniStack 6224 are fan-less designs, they are a perfect fit for environments with severe noise restrictions.

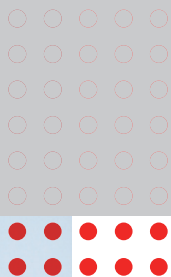
In addition, the advanced VLAN classification offered by the OmniStack 6200 family improves partitioning of users and applications, greatly improving security and enabling better performance for network applications including voice and video.

Figure 2. Ethernet access residential triple-play services



Alcatel-Lucent offers a comprehensive networking portfolio that provides a secure, feature-rich, and cost-effective end-to-end triple play Ethernet solution. It supports subscriber-centric content increasing user satisfaction and opportunities for additional operator services and revenue.





Multi-service operator

The OmniStack 6200 family supports service operators at the network's edge with:

- Per service VLAN stacking (Q-in-Q) capability providing scalability for user service differentiation
- A reduced number of VLANs in aggregation
- Interoperability with MPLS/VPLS core network architecture

Through the use of multicast TV VLANs the OmniStack 6200s provide extremely efficient bandwidth usage by preventing duplication of TV streams sent between the core and the edge of the network. In addition, it enables multiple TV providers per subscriber.

Port mapping (private VLAN edge) segments and privatizes user traffic, preventing direct layer-2 communication between users, thereby giving better operator control and security.

Another advantage of the OmniStack 6200's advanced VLAN and multicast classification is that it separates services into dedicated domains while granular traffic controls provide excellent control of bandwidth usage and consumption.



SUMMARY

The Alcatel-Lucent OmniStack 6200 family provides the performance and advanced services required to support 21st century applications at a tremendous value. The OmniStack 6200 is a great alternative when L3 routing or Gigabit speed is not needed on every port.

Simplified manageability

- Dual image and multiple configuration file storage provides backup
- Industry standard CLI with a familiar interface reduces training costs
- Easy-to-use point-and-click web based element manager with built-in help for easy configuration of new technology features
- Remote telnet management or secure shell
- Port based, port mirroring for troubleshooting
- Human readable ASCII-based config files for offline editing and bulk configuration
- IGMPv1/v2/v3 snooping to optimize multicast traffic
- IGMP querier for non-routed multicast network configuration
- BootP/DHCP client allows auto-config of switch IP information to simplify deployment
- Auto-negotiating 10/100/1000 ports automatically configure port speed and duplex setting
- Auto MDI/MDIX automatically configures transmit and receive signals to support straight thru and crossover cabling
- SNMPv1/v2/v3

- Supports RFC 2819 RMON group (1-Statistics, 2-History, 3-Alarm & 9-Events)
- Simple Network Time Protocol (SNTP) for network wide time synchronization
- Alcatel-Lucent Mapping Adjacency Protocol (AMAP) for building topology maps within OmniVista
- IEEE 802.1ab (LLDP) and LLDP-MED extensions for network discovery, topology and easier VoIP deployment
- Virtual cable tester provides switch-based integrity testing on copper Ethernet cabling
- Event logging and remote SYSLOG support

VLAN support

- 255 VLANs
- 4094 VLAN tag value support
- Per port, 802.1Q, MAC, IP subnet and protocol VLAN
- Per service VLAN stacking (Q-in-Q) with per port and inner VLAN classification
- Multicast TV VLAN registration per port for maximum bandwidth efficiency between edge and core
- Private VLAN edge support

High availability

- 802.1w rapid recovery spanning tree allows sub-second failover to redundant link
- 802.1d spanning tree for loop free topology and link redundancy
- 802.1s multiple spanning tree
- Fast forwarding mode on user ports to bypass 30-second delay for spanning tree

- Static and 802.3ad dynamic link aggregation that supports automatic configuration of link aggregates with other switches
- Broadcast storm control
- Redundant 1:1 power
- Fault tolerant loop stack topology
- Per port loop back detection

Quality of service

- 802.1p, TOS, DSCP marking
- QoS mapping: 802.1p to TOS/DSCP, TOS to 802.1p/DSCP, DSCP to 802.1p/TOS
- Classification per port, 802.1p(COS) value, MAC SA/DA, Ethertype, TOS precedence, DSCP value, ICMP code and type, IP SA/DA, IP protocol, TCP/UDP port
- Classification per inner VLAN for VLAN stacking configuration
- Four egress queues per port that support strict and WRR queuing algorithms
- Ingress bandwidth rate limiting per port/flow
- Egress bandwidth rate limiting per port/queue

Advanced security

- 802.1x port based user authentication with multiple host mode
- 802.1x multi-client, multi-VLAN support for per-client authentication
- 802.1x Dynamic VLAN assignment using Radius attributes/server
- MAC-based authentication for non- 802.1x capable devices





Advanced security cont'd.

- Transparent 802.1x BPDU forwarding when 802.1x control is done by a different device or equipment in the network
- Private VLAN edge or port mapping
- Guest VLAN provides limited network access for unauthorized clients
- MAC address lockdown allows only known devices to have network access preventing unauthorized network device access includes lockdown after a user configured number of MAC addresses have been learned
- DHCP Option 82 and DHCP snooping for IP address allocation control and protection
- IP source guard and dynamic ARP inspection using DHCP snooping binding table
- RADIUS and TACACS+ admin authentication prevents unauthorized switch management
- Secure Shell (SSH), Secure Socket Layer (SSL) and SNMPv3 for encrypted remote management communication
- Access control lists to filter out unwanted traffic including denial of service attacks
- Access control lists (ACLs) are per port, MAC SA/DA, IP SA/DA, ICMP type and code, Ether type, TCP/UDP port
- STP root guard prevents an unauthorized device from becoming the root of a spanning tree.
- ARP inspection with extended statistics

Indicators

- LEDs per port
 - 10/100: link/activity, PoE power
 - Combo: Link/activity
 - 10/100/1000: Link/activity
- System LEDs
 - OK (diagnostics)
 - PWR (internal power supply status)
 - FAN (fan status)
 - TEMP (overtemp)
 - RPU (backup power status)
 - Stack (status)

Performance

- Switching capacity:
 - 12.8 Gbps OS-LS-6212/12P/24/24P/24U
 - 17.6 Gbps OS-LS-6248/48P
- Stacking capacity: 1 Gbps full-duplex per stack port, 4 Gbps aggregate capacity with optimized unicast and multicast forwarding
- Wire rate forwarding for 10/100/1000 port speeds, 7.74 Mpps OS-LS-6212/12P, 9.52 Mpps OS-LS-6224/24P, 13.1Mpps OS-LS-6248/48P
- 8 K MAC addresses



User ports

- OS-LS-6200: 12 or 24 or 48 10/100Base-T RJ-45 ports on the front panel. Each copper port is capable of auto-MDI/MDIX sensing.
- OS-LS-6224U: 24 100Base-X fiber ports on the front panel. Each fiber port support external SFP optical transceivers for 100MB fiber connectivity.

Stacking ports

- Alcatel-Lucent OmniStack 6200: Two 10/100/1000 copper RJ-45 ports. Alcatel-Lucent OmniStack 6200 supports a fault tolerant looped stacking configuration. In a standalone configuration, these ports can be used as normal network ports.

Combo ports

- OS-LS-6200: Two Gigabit Ethernet SFP (mini-GBIC) plus two 10/100/1000 RJ-45 combo ports are located on the front panel. Users determine whether the mini-GBIC or 10/100/1000 ports will operate. The mini-GBIC ports support full duplex mode only.
- SFP (mini-GBIC) ports support 100Base-X fiber optic transceivers for 100mb fiber connectivity



SPECIFICATIONS

Physical dimensions

- OS-LS-6212/6212P/6224/6224U: 17.32 x 9.05 x 1.73 in., 44 x 23 x 4.4 cm (W x D x H)
- OS-LS-6224P/48/48P: 17.32 x 12.99 x 1.73 in., 44 x 33 x 4.4 cm, (W x D x H)

Weight

- OS6212: 2.65 kg (5.84 lbs)
- OS6212P: 3.0 kg (6.61 lbs)
- OS6224U: 3.5 kg (7.7 lbs)
- OS6248: 4.1 kg (9.01 lbs)
- OS6248P: 5.5 kg (12.13 lbs)

Connectors/cabling

- Management: one RJ-45 console interface configured as DTE for operation, diagnostics, status, and configuration information. Ship kit includes RJ-45 to DB-9 connector adapter
- AC power connector and BPS connector on rear of chassis

Operating environment

- 0°C to 50°C (Standard operating)
- Humidity: 5% to 95% (Non-condensing)
- Shock: IEC 68-2-29
- -40°C to 70°C (Non-operation)
- Vibration: IEC 68-2-36, IEC 68-2-6
- Drop: IEC 68-2-32

Maximum power consumption

- OS-LS-6212: 26.2W
- OS-LS-6212P: 135W max
- OS-LS-6224: 33.1W
- OS-LS-6224P: 225W max
- OS-LS-6224U: 54W max
- OS-LS-6248: 51.5W
- OS-LS-6248P: 465W max

Acoustic

- <0 db for OS-LS-6212 and OS-LS-6224
- <30 db for OS-LS-6212P and OS-LS-6224P
- <50 db for other models

MTBF

- 200K hours at 25°C

IEEE standards

IEEE 802.3, IEEE 802.3u, IEEE 802.3z, IEEE 802.3x, IEEE 802.3ab, IEEE 802.3af, IEEE 802.1D, IEEE 802.1Q, IEEE 802.3ad, IEEE 802.1x, IEEE 802.1w, IEEE 802.1s, IEEE 802.1p, IEEE 802.1ad, IEEE 802.1ab, LLDP-MED extensions

EMC

- EN50081-1, EN55022 Class A
- EN50082-1, IEC 1000-4-2/3/4/6
- FCC Class A, VCCI Class A
- EN60555-2 Class A
- EN60555-3

Safety

- CSA/NRTL (UL60950, CSA 22.2. No 60950-00)
- CB
- TUV/GS(EN60950)
- CE Mark

Environment compliance

- *RoHS* – Restriction on Hazardous Substances in Electrical and Electronic Equipment
- *WEEE* – Waste Electrical and Electronic Equipment

Number of power supplies

OmniStack 6200 family supports one internal AC power supply for chassis power and an external connector on rear of chassis for use with the backup power supply solution.

Input voltage & current ratings

- OS-LS-6212: Input, AC 100~240V 50Hz~60Hz. Output DC 12V/2.5A
- OS-LS-6224/6248/6224U: Input, AC 100~240V 50Hz~60Hz. Output DC 12V/4.5A
- OS-LS-6212P: Input, AC 100~240V 50Hz~60Hz. Output, DC 12V/2.5A, 50V/3.0A
- OS-LS-6224P: Input, AC 100~240V 50Hz~60Hz. Output, DC 12V/3.7A, 50V/3.6A
- OS-LS-6248P: Input, AC 100~240V 50Hz~60Hz. Output, DC 12V/7A 50V/7.6A

PoE power

- 802.3af standards supported with maximum 15.4w PoE power per port
- OS-LS-6212P: Maximum 75w of PoE power
- OS-LS-6224P: Maximum 180w of PoE power
- OS-LS-6248P: Maximum 345w of PoE power

Warranty

Chassis and power supplies are protected with a limited lifetime hardware warranty. Warranty is limited to the original owner, and will be provided for up to five years after the product's End-of-Sales announcement. Faulty parts will be replaced via a five-business day AVR (Advance Replacement) RMA.

Ordering information



PART NUMBER	PRODUCT DESCRIPTION
OS-LS-6212	Fast Ethernet L2+ stackable fixed configuration chassis in a 1U form factor consisting of 12, 24 or 48 10/100 RJ-45 ports, two 10/100/1000 RJ-45 ports and two combo ports. Combo ports consist of two additional 10/100/1000 RJ-45 and two mini-GBIC ports. MiniGBIC ports support Gigabit Ethernet MiniGBIC (SFP) optical transceivers, which can be ordered separately. Stacking capability utilizes the two 10/100/1000 RJ-45 ports and standard Ethernet cabling. Optional backup power supported. Optional items can be purchased/ordered separately. Comes with user manuals on CD-ROM, 19" rack mounts, RJ-45 to DB-9 adapter, and country specific power cord.
OS-LS-6224	
OS-LS-6248	
OS-LS-6212P	Fast Ethernet L2+ stackable fixed configuration chassis in a 1U form factor consisting of 12, 24 or 48 10/100 RJ-45 ports with Power over Ethernet, two 10/100/1000 RJ-45 ports and two combo ports. Combo ports consist of two additional 10/100/1000 RJ-45 and two mini-GBIC ports. Mini-GBIC ports support Gigabit Ethernet mini-GBIC (SFP) optical transceivers, which can be ordered separately. Stacking capability utilizes the two 10/100/1000 RJ-45 ports and standard Ethernet cabling. Optional backup power supported. Optional items can be purchased/ordered separately. Comes with user manuals on CD-ROM, 19" rack mounts, RJ-45 to DB-9 adapter, and country specific power cord.
OS-LS-6224P	
OS-LS-6248P	
OS-LS-6224U	Fast Ethernet L2+ stackable fixed configuration chassis in a 1U form factor consisting of 24 ports 100Base-X SFP, two 10/100/1000 RJ-45 ports and two combo ports. Combo ports consist of two additional 10/100/1000 RJ-45 and two mini-GBIC ports. The 24 SFP ports accepts industry standard 100Base-X optical transceivers which are sold separately. MiniGBIC ports support Gigabit Ethernet MiniGBIC (SFP) optical transceivers, which can be ordered separately. Stacking capability utilizes the two 10/100/1000 RJ-45 ports and standard Ethernet cabling. Optional backup power supported. Optional items can be purchased/ordered separately. Comes with 19" rack mounts, RJ-45 to DB-9 adaptor, and country specific power cord.
OS-LS-62BP	OS-LS-6200 modular AC backup power supply. Provides backup power to one non-PoE switch. Ships with chassis connection cable and country specific power cord.
OS-LS-62BP-P	OS-LS-6200 modular AC backup power supply. Provides backup power to one OS-LS-6200 PoE capable switch. Ships with chassis connection cable and country specific power cord.
OS-LS-62BP-DC	OS-LS-6200 modular DC backup power supply. Provides backup power to one non-PoE OmniStack 6200 switch.
100FX SFP TRANSCEIVERS	
SFP-100-LC-MM	100Base-FX SFP transceiver with an LC type interface. This transceiver is designed for use over multimode fiber optic cable.
SFP-100-LC-SM15	100Base-FX SFP transceiver with an LC type interface. This transceiver is designed for use over single mode fiber optic cable up to 15km.
SFP-100-LC-SM40	100Base-FX SFP transceiver with an LC type interface. This transceiver is designed for use over single mode fiber optic cable up to 40km.
SFP-100-BX20LT	100Base-BX SFP transceiver with an SC type interface. This bi-directional transceiver is designed for use over single mode fiber optic cable on a single strand link up to 20km point-to-point. This transceiver is normally used in the central office (OLT), transmits 1550nm and receives 1310nm optical signal
SFP-100-BX20NU	100Base-BX SFP transceiver with an SC type interface. This bi-directional transceiver is designed for use over single mode fiber optic cable on a single strand link up to 20km point-to-point. This transceiver is normally used in the client (ONU), transmits 1310nm and receives 1550nm optical signal.
MiniGBIC SFP (MSA)	
SFP-GIG-LH70	1000Base-LH Gigabit Ethernet Optical Transceiver (SFP MSA) Supports single mode fiber over 1550nm wavelength with an LC connector. Typical reach of 70km on 9/125 micron SMF.
SFP-GIG-LH40	1000Base-LH Gigabit Ethernet Optical Transceiver (SFP MSA). Supports single mode fiber over 1310nm wavelength with an LC connector. Typical reach of 40km on 9/125 micron SMF.
SFP-GIG-LX	1000Base-LX Gigabit Ethernet optical Transceiver (SFP MSA). Supports single mode fiber over 1310nm wavelength with an LC connector. Typical reach of 10km on 9/125 micron SMF.
SFP-GIG-SX	1000Base-SX Gigabit Ethernet optical Transceiver (SFP MSA). Supports multimode fiber over 850nm wavelength with an LC connector. Typical reach of 300m on 62.5/125 micron MMF or 550m on 50/125 micron MMF.

SERVICE AND SUPPORT

SupportBasic

One year 7x24 phone support, includes eService web access and free software releases

SupportPlus

One year 7x24 phone support, includes eService web access, free software releases and next business day arrival of replacement hardware

SupportTotal (Available only in N. America)

One year 7x24 phone support, software releases, eService Web access, same day 4-hour on site hardware replacement (labor and parts) 7 days a week, 24 hours a day. Excludes NMS and Authentication Services software.



Please contact your local Alcatel-Lucent sales representative for additional service and support information.



Data Networks



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