The Alcatel-Lucent OmniSwitch® 6450 Stackable Gigabit Ethernet LAN value switch family includes a series of 10-port models (non-PoE, Power over Ethernet [PoE], Fast and Gigabit Ethernet) for classroom, workgroup and small enterprise segments. Designed with an optimized size, low-power consumption, fan-less and fan models and a rich software feature set, the OmniSwitch 6450-10 models provide a highly available, self-protective, easily managed and eco-friendly collocation solution.

Service providers offering managed services have the option to install the Metro services license enabling a set of Metro Ethernet features. This allows the OmniSwitch 6450-10 port models to be quickly integrated into the provider’s network as advanced customer premise equipment (CPE) devices. The OS6450-P10S is especially designed for small cell access point deployments requiring higher PoE power and precision network timing.

The Alcatel-Lucent OmniSwitch 6450-10 models use the latest technologies and Alcatel-Lucent Operating System (AOS) innovations.

Solutions benefiting from the OmniSwitch 6450-10 switches are:

- Classroom and workgroup networks
- Small enterprise or branch office networks
- Commercial and residential managed services
- Service Provider networks deployments
Alcatel-Lucent OmniSwitch 6450-10

The Alcatel-Lucent OmniSwitch 6450-10 offers eight user ports for smaller network environments. These models are power and acoustically optimized, with a half-rack width (8.5 in./21.59 cm), and have a fixed configuration chassis in a 1 RU form factor. All models are fan-less (except -P10S) and have an internal power supply. The –P10L/-P10 PoE models are both IEEE 802.3af/802.3at compliant with a 115 W power budget for PoE attached devices. The P10S PoE model supports IEEE 802.3af/802.3at, and is compliant the PoE section of the PoH (Power over HDBase-T over four pair) standard with a 280W power budget for PoE attached devices.

The OmniSwitch 6450-10L/P10L models have the user port speeds fixed for 10/100M operation. These models are upgradeable to gigabit speeds in the future using the OS6450-10L-UPGD license upgrade.

Table 1. OmniSwitch 6450-10 model configurations

<table>
<thead>
<tr>
<th>Chassis</th>
<th>10/100 ports</th>
<th>10/100/1000 ports</th>
<th>Gig combo ports</th>
<th>SFP uplink (Gigabit)</th>
<th>Power supply supported</th>
<th>Backup power supply supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-PoE models</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OS6450-10L</td>
<td>8</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>Internal AC</td>
<td>N/A</td>
</tr>
<tr>
<td>OS6450-10/10M</td>
<td>0</td>
<td>8</td>
<td>2</td>
<td>2</td>
<td>Internal AC</td>
<td>N/A</td>
</tr>
<tr>
<td>PoE models</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OS6450-P10L</td>
<td>8</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>Internal AC</td>
<td>N/A</td>
</tr>
<tr>
<td>OS6450-P10</td>
<td>0</td>
<td>8</td>
<td>2</td>
<td>2</td>
<td>Internal AC</td>
<td>N/A</td>
</tr>
<tr>
<td>OS6450-P10S</td>
<td>0</td>
<td>8</td>
<td>0</td>
<td>2</td>
<td>Internal AC</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Port information:
- RJ-45 combo port configurable to be RJ10/100/1000Base-T
- SFP combo port supporting 100/1000Base-X transceivers for short, long and very long distances
- SFP fixed fiber interfaces support only gigabit SFP transceivers or SFP stacking cable.
- All P10S ports support 1588v2 Transparent Clock and is a non-stackable switch

Technical specifications

<table>
<thead>
<tr>
<th>Port</th>
<th>OS6450-10L</th>
<th>OS6450-10/10M</th>
<th>OS6450-P10L</th>
<th>OS6450-P10</th>
<th>OS6450-P10S*</th>
</tr>
</thead>
<tbody>
<tr>
<td>RJ-45 10/100 ports</td>
<td>8</td>
<td>0</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RJ-45 10/100/1000 ports</td>
<td>0</td>
<td>8</td>
<td>0</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>RJ-45/SFP 10/100/1000 combo ports</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>SFP uplink/stacking ports</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>PoE ports</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Maximum units stackable*</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Dimensions

| | | | | | |
|------------------|------------------|------------------|------------------|------------------|
| Switch width | 8.50 in. (21.5 cm) | 8.50 in. (21.5 cm) | 8.50 in. (21.5 cm) | 8.50 in. (21.5 cm) |
| Switch height | 1.73 in. (4.4 cm) | 1.73 in. (4.4 cm) | 1.73 in. (4.4 cm) | 1.73 in. (4.4 cm) |
| Switch depth | 11 in. (28 cm) | 11 in. (28 cm) | 11 in. (28 cm) | 11 in. (28 cm) |
### Performance (Aggregated)

<table>
<thead>
<tr>
<th>Port</th>
<th>OS6450-10L</th>
<th>OS6450-10/10M</th>
<th>OS6450-P10L</th>
<th>OS6450-P10</th>
<th>OS6450-P10S*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch capacity (with 2GigE uplinks)</td>
<td>5.6 Gb/s</td>
<td>20 Gb/s</td>
<td>5.6 Gb/s</td>
<td>20 Gb/s</td>
<td>20 Gb/s</td>
</tr>
<tr>
<td>Switch capacity (with 4GigE uplinks)</td>
<td>9.6 Gb/s</td>
<td>24 Gb/s</td>
<td>9.6 Gb/s</td>
<td>24 Gb/s</td>
<td>N/A</td>
</tr>
<tr>
<td>Max frame rate (4GigE or 2GigE uplinks)</td>
<td>14.28 Mp/s</td>
<td>35.70 Mp/s</td>
<td>14.28 Mp/s</td>
<td>35.70 Mp/s</td>
<td>29.76 Mp/s (2 uplinks)</td>
</tr>
<tr>
<td>Stacking capacity (2x5Gbs stacking)</td>
<td>10/20 Gb/s</td>
<td>10/20 Gb/s</td>
<td>10/20 Gb/s</td>
<td>10/20 Gb/s</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Operating conditions

<table>
<thead>
<tr>
<th>Port</th>
<th>OS6450-10L</th>
<th>OS6450-10/10M</th>
<th>OS6450-P10L</th>
<th>OS6450-P10</th>
<th>OS6450-P10S*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch capacity (with 4GigE uplinks)</td>
<td>9.6 Gb/s</td>
<td>24 Gb/s</td>
<td>9.6 Gb/s</td>
<td>24 Gb/s</td>
<td>N/A</td>
</tr>
<tr>
<td>Max frame rate (4GigE or 2GigE uplinks)</td>
<td>14.28 Mp/s</td>
<td>35.70 Mp/s</td>
<td>14.28 Mp/s</td>
<td>35.70 Mp/s</td>
<td>29.76 Mp/s (2 uplinks)</td>
</tr>
<tr>
<td>Stacking capacity (2x5Gbs stacking)</td>
<td>10/20 Gb/s</td>
<td>10/20 Gb/s</td>
<td>10/20 Gb/s</td>
<td>10/20 Gb/s</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Indicators

**System LEDs**
- System (OK) (chassis HW/SW status)
- PWR (primary power supply status)
- PRI (virtual chassis primary)
- BPS (backup power status)
- STK (stacking indicator for 10 port models)

**Per-port LEDs**
- 10/100/1000: PoE, link/activity
- SFP: Link/activity
- Stacking: Link/activity

**Compliance and certifications**

**Commercial**

**EMI/EMC**
- FCC CRF Title 47 Subpart B (Class A limits. Note: Class A with UTP cables)
- VCCI (Class A limits. Note: Class A with UTP cables)
- AS/NZS 3548 (Class A limits. Note: Class A with UTP cables)
- CE-Mark: Marking for European countries (Class A limits. Note: Class A with UTP cables)

**Datasheet**

Alcatel-Lucent OmniSwitch 6450-10

*All PoE ports support IEEE 802.3af/802.3at. PoE (four pair) ports 1-4 are compliant with the PoE portion of the Power over HD Base-T (PoH) standard with a 280W PoE power budget.

**Power consumption measured with 64 byte packets at varied % traffic conditions on all port, including the stacking ports**
Safety agency certifications

- CB Scheme: Certification per IEC 60950/EN 60950 with all different country deviations, IEC 60950-1:2005. 2nd Edition
  - UL 60950 United States
  - IEC 60950-1:2006; all national deviations
    - IEC 60950-1:2006; all national deviations
    - CAN/CSA-C22.2 No. 60950-1:03
    - NOM-019 SCFI, Mexico
    - AS/NZ TS-001 and 60950:2000,
    - UL-AR, Argentina
    - UL-56 Mark, Germany
  - IEC 60825-1 Laser, IEC 60825-2 Laser
  - CDRH Laser

Resiliency and high availability

- Rapid Ring Spanning Tree Protocol (RRSTP) optimized for ring topology to provide less than 100 ms convergence time
- IEEE 802.1s Multiple Spanning Tree Protocol: Encompasses IEEE 802.1D STP and IEEE 802.1w Rapid Spanning Tree Protocol
- Per-VLAN spanning tree (PVST) and Alcatel-Lucent 1x1 STP mode
- IEEE 802.3ad Link Aggregation Control Protocol (LACP) and static LAG groups across modules is supported
- Dual-home link (DHL) support for sub second link protection without STP
- Virtual Router Redundancy Protocol (VRRP) to provide highly available routed environments
- Broadcast and multicast storm control to avoid degradation in overall system performance
- Unidirectional Link Detection (UDLD): Detects and disables unidirectional links on fiber optic interfaces
- Layer 2 port loopback detection for preventing customer loops on Ethernet access ports
- Redundant and hot-swapable power supplies, transceivers modules offering uninterruptable service
- Dual image and dual configuration files storage provides backup

Detailed product features

Simplified management

Configuration management interfaces

- Intuitive Alcatel-Lucent command-line interface (CLI) with familiar interface reducing training costs
- Easy-to-use, point-and-click web-based element manager (WebView) with built-in help for easy configuration
- Integration with Alcatel-Lucent OmniVista for network management
- Full configuration and reporting using SNMPv1/2/3 across all OmniSwitch families to facilitate third-party Network Management System (NMS) integration

Network configuration

- Auto remote configuration download feature
- 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 through and crossover cabling
- BootP/Dynamic Host Configuration Protocol (DHCP) client allows auto-config of switch IP information for simplified deployment
- DHCP relay to forward client requests to a DHCP server
- Alcatel-Lucent Mapping Adjacency Protocol (AMAP) for building topology maps
- IEEE 802.1AB Link Layer Discovery Protocol (LLDP) with MED extensions for automated device discovery
- Multiple VLAN Registration Protocol (MVRP) for IEEE 802.1Q-compliant. VLAN pruning and dynamic VLAN creation
- Auto QoS for switch management traffic as well as traffic from Alcatel-Lucent IP phones
- IEEE 1588v2 Precision Timing Protocol (PTP) via end-to-end Transparent Clock (TC) for network-wide time synchronized applications:
  - “S” models only
- Network Time Protocol (NTP) for networkwide time synchronization
- Stackable to 4 units
Advanced security

Access control
- AOS Access Guardian framework for comprehensive user policy-based Network Access Control (NAC)
- Autosensing 802.1X multi-client, multi-VLAN
- MAC-based authentication for non-802.1x hosts
- Web-based authentication (Captive Portal) – a customizable web portal residing on the switch that can be used for authenticating supplicants as well as non-supplicants
- Group mobility rules and "guest" VLAN support
- The host integrity check (HIC) agent on each switch makes it a HIC enforcer and facilitates endpoint device control for company policy compliance.
- Supports dynamic Change of Authentication (CoA) and enforces traffic remediation or restriction for noncompliant devices.
- User Network Profile (UNP) – simplify NAC management and control by dynamically providing pre-defined policy configuration to authenticated clients – VLAN, ACL, BW, HIC
- SSH for secure CLI session with public key infrastructure (PKI) support
- Centralized RADIUS and Lightweight Directory Access Protocol (LDAP) user authentication
- Private VLAN feature for user traffic segregation

Containment, monitoring and quarantine
- Alcatel-Lucent Quarantine Manager and quarantine VLAN (not supported)
- Learned Port Security (LPS) or MAC address lockdown – secures the network access on user or trunk ports based on MAC address
- DHCP Snooping, DHCP IP Spoof protection
- TACACS+ client allows for authentication authorization and accounting with a remote TACACS+ server
- Dynamic Address Resolution Protocol (ARP) protection and ARP poisoning detection
- Access control lists to filter out unwanted traffic including denial of service attacks; flow-based filtering in hardware (L1-L4)
- Bridge Protocol Data Unit (BPU) blocking – automatically shuts down user ports if a STP BPU packet is seen to prevent topology loops
- STP Root Guard – prevents edge devices from becoming Spanning Tree Protocol root node

Converged networks

PoE
- The PoE models support Alcatel-Lucent IP phones and WLAN access points, as well as any IEEE 802.3af or IEEE 802.3at compliant end device.
- The P10S PoE model supports IEEE 802.3af, IEEE 802.3at and is compliant the PoE section of the PoH (Power over HDBase-T) standard
- Configurable per port PoE priority and max power for power allocation
- Dynamic PoE allocation delivers only the power needed by the Powered Devices (PD) up to the total power budget for most efficient power consumption.

QoS
- Priority queues: Eight hardware-based queues per port for flexible QoS management
- Traffic prioritization: Flow-based QoS with internal and external (that is, remarking) prioritization
- Bandwidth management: Flow-based bandwidth management, ingress rate limiting; egress rate shaping per port
- Queue management: Configurable scheduling algorithm – Strict Priority (SOP), Weighted Round Robin (WRR) and Deficit Round Robin (DRR)
- Congestion avoidance: Support for End-to-End Head of Line (E2E-HOL) Blocking Protection
- Auto QoS for switch management traffic as well as traffic from Alcatel-Lucent IP phones
- Three color marker – single/dual rate – policing with commit BW, excess BW, burst size

Layer 2, Layer 3 routing and multicast

Layer 2 switching
- Up to 16,000 MACs
- Up to 4000 VLANs

Layer 2 switching
- Up to 2K Access Control Lists (ACLs)
- Latency: <4 μs

IPv4 and IPv6
- Static routing for IPv4 and IPv6
- RIP v1 and v2 for IPv4, RIPng for IPv6
- Up to 256 IPv4/128 IPv6 static and RIP routes
- Up to 128 IPv4 and 16 IPv6 interfaces
- Up to 1k Arp entries

Multicast
- IGMPv1/v2/v3 snooping to optimize multicast traffic
- Multicast Listener Discovery (MLD) v1/v2 snooping
- Up to 1000 multicast groups/stack
- IP Multicast VLAN (IPMVLAN) for optimized multicast replication at the edge saving network core resources

Network protocols
- DHCP relay (including generic UDP relay)
- ARP
- DHCP relay
- DHCP relay to forward client requests to a DHCP server
- Generic User Datagram Protocol (UDP) relay per VLAN
- DHCP Option 82 – configurable relay agent information

Metro Ethernet access

(available on “M” models or with metro license upgrade)
- Ethernet services support per IEEE 802.1ad Provider Bridge
  - Transparent LAN Services with Service VLAN (SVLAN) and Customer VLAN (CVLAN) concept
  - Ethernet network-to-network interface (NNI) and user network interface (UNI) services
  - Service Access Point (SAP) profile identification
  - CVLAN to SVLAN translation and mapping
- IEEE 802.1ag Ethernet OAM: Connectivity Fault Management (L2 ping and link trace)
- Ethernet OAM compliant with IEEE 802.3ah
- ITU-T G.8032 Ethernet Ring Protection designed for loop protection and fast convergence times (sub 50 ms) in ring topologies
- Private VLAN feature for user traffic segregation
• Service Assurance Agent (SAA) for proactively measuring network health, reliability and performance. Four SAA tests including L2-MAC, IP, ETH-LB and ETH-DMM depending on your network requirements
• Customer Provider Edge (CPE) test head traffic generator and analyzer tool used in the metro Ethernet network to validate customer Service Level Agreements (SLA)
• IPM VLAN for optimized multicast replication at the edge saving network core resources
• Layer 2 Multicast VLAN Replication (MVR) – allows users from different multicast VLANs to subscribe to a multicast group from an upstream trunk interface
• Three color marker – single/dual rate – policing with commit BW, excess BW, burst size
• TR-101 Point-to-Point Protocol over Ethernet (PPPoE) Intermediate Agent allowing for the PPPoE network access method
• MAC-forced forwarding support according to RFC 4562
• L2CP – Layer 2 Control Protocol for tunneling a customer’s L2CP frames, using a well known address, on a given UNI for the EPL and EVPL services
• Dying Gasp using SNMP and Ethernet OAM delivery
• Metro Ethernet Forum CE 2.0 Certified
• Managed by Alcatel-Lucent 5620 Service Assurance Manager

Supported standards

IEEE standards
• IEEE 802.1D (STP)
• IEEE 802.1P (CoS)
• IEEE 802.1Q (VLANs)
• IEEE 802.1ad (Provider Bridge)
• Q-in-Q (VLAN stacking)
• IEEE 802.1aq (Connectivity Fault Management)
• IEEE 802.1s (MSTP)
• IEEE 802.1w (RSTP)
• IEEE 802.1X (Port-based Network Access Protocol)
• IEEE 802.3i (10Base-T)
• IEEE 802.3u (Fast Ethernet)
• IEEE 802.3x (Flow Control)
• IEEE 802.3z (Gigabit Ethernet)
• IEEE 802.3ab (1000Base-T)
• IEEE 802.3ac (VLAN Tagging)
• IEEE 802.3ad (Link Aggregation)
• IEEE 802.3af (Power over Ethernet)
• IEEE 802.3at (Power over Ethernet)
• IEEE 802 ah (Ethernet first mile)
• IEEE 1588v2 Precision Timing Protocol (PTP) “S” models only
• End-to-end Transparent Clock (TC)
• IPv4 Unicast address or Ethernet Multicast Encapsulation

ITU-T standards
• ITU-T G.8032: Draft (June 2007) Ethernet Ring Protection
• ITU-T Y.1731 O&M fault and performance management

IETF standards

RIP
• RFC 1058 RIP v1
• RFC 1722/1723/1724/2453 RIP v2 and MIB
• RFC 1812/2644 IPv4 Router Requirements
• RFC 2080 RIPng for IPv6

IP Multicast
• RFC 1112 IGMP v1
• RFC 2236/2933 IGMP v2 and MIB
• RFC 2365 Multicast
• RFC 3376 IGMPv3 for IPv6

IPv6
• RFC 1886 DNS for IPv6
• RFC 2292/2373/2374/2460/2462
• RFC 2461 NDP
• RFC 2463/2466 ICMP v6 and MIB
• RFC 2452/2454 IPv6 TCP/UDP MIB
• RFC 2464/2553/2893/3493/3513
• RFC 3056 IPv6 Tunneling
• RFC 3542/3587 IPv6
• RFC 4007 IPv6 Scoped Address Architecture
• RFC 4193 Unique Local IPv6 Unicast Addresses

Manageability
• RFC 1350 TFTP Protocol
• RFC 854/855 Telnet and Telnet options
• RFC 1155/2578-2580 SM1 v1 and SM2 v2
• RFC 1157/2271 SNMP
• RFC 1212/2737 MIB and MIB-II
• RFC 1213/2011-2013 SNMP v2 MIB
• RFC 1215 Convention for SNMP Traps
• RFC 1573/2233/2863 Private Interface MIB
• RFC 1643/2665 Ethernet MIB
• RFC 1901-1908/3416-3418 SNMP v2c
• RFC 2096 IP MIB
• RFC 2570-2576/3411-3415 SNMP v3
• RFC 3414 User-based security model
• RFC 2616/2854 HTTP and HTML
• RFC 2667 IP Tunneling MIB
• RFC 2668/3636 IEEE 802.3 MAU MIB
• RFC 2674 VLAN MIB
• RFC 4251 Secure Shell Protocol architecture
• RFC 4252 The Secure Shell (SSH) Authentication Protocol
• RFC 959/2640 FTP

Security
• RFC 1321 MD5
• RFC 2104 HMAC Message Authentication
• RFC 2138/2865/2868/3575/2618 RADIUS Authentication and Client MIB
• RFC 2139/2866/2867/2620 RADIUS Accounting and Client MIB
• RFC 2228 step
• RFC 2284 PPP EAP
• RFC 2869/3579 Radius Extension

Quality of service
• RFC 896 Congestion control
• RFC 1122 Internet Hosts
• RFC 2474/2475/2597/3168/3246 DiffServ
• RFC 3635 Pause Control
• RFC 2697 srtCM
• RFC 2698 trTCM

Others
• RFC 791/894/1024/1349 IP and IPv/ Ethernet
• RFC 792 ICMP
• RFC 768 UDP
• RFC 793/1156 TCP/IP and MIB
• RFC 826/903 ARP and Reverse ARP
• RFC 919/922 Broadcasting Internet datagram
• RFC 925/1027 Multi LAN ARP/Proxy ARP
• RFC 950 Sub-netting
• RFC 951 BootP
• RFC 1151 RDP
• RFC 1191 Path MTU Discovery
• RFC 1256 ICMP Router Discovery
• RFC 1305/2030 NTP v3 and Simple NTP
OmniSwitch 6450-10 models ordering

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS6450-10L</td>
<td>Fast Ethernet chassis in a 1 RU form factor with eight 10/100Base-T, two 10/100/1000 RJ-45/SFP combo and two fixed SFP uplink/stacking ports</td>
</tr>
<tr>
<td>OS6450-10</td>
<td>Gigabit Ethernet chassis in a 1 RU form factor with eight 10/100/1000Base-T, two 10/100/1000 RJ-45/SFP combo and two fixed SFP uplink/stacking ports</td>
</tr>
<tr>
<td>OS6450-10M</td>
<td>Gigabit Ethernet chassis in a 1 RU form factor with eight 10/100/1000Base-T, two 10/100/1000 RJ-45/SFP combo and two fixed SFP uplink/stacking ports. Metro ethernet services enabled by default</td>
</tr>
<tr>
<td>OS6450-P10L</td>
<td>Fast Ethernet chassis in a 1 RU form factor with eight Poe 10/100Base-T, two 10/100/1000 RJ-45/SFP combo and two fixed SFP uplink/stacking ports</td>
</tr>
<tr>
<td>OS6450-P10</td>
<td>Gigabit Ethernet chassis in a 1 RU form factor with eight Poe 10/100/1000Base-T, two 10/100/1000 RJ-45/SFP combo and two fixed SFP uplink/stacking ports</td>
</tr>
<tr>
<td>OS6450-P10S</td>
<td>Gigabit Ethernet chassis in a 1 RU form factor with eight Poe 10/100/1000Base-T and two fixed gigabit SFP uplink ports. Supports IEEE 802.3af, IEEE 802.3at and 4x75W Poe (four pair) ports compliant with the Power over HD Base-T (PoH) standard with a 280W Poe power budget. Supports 1588v2 precision timing protocol.</td>
</tr>
</tbody>
</table>

License options
- All models above support the below license options.

<table>
<thead>
<tr>
<th>License options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS6450-10LUPGD</td>
<td>Software license enabling gigabit speeds on the RJ-45 ports of OS6450-10L and OS6450-P10L chassis to operate at gigabit speed</td>
</tr>
<tr>
<td>OS6450-SW-ME</td>
<td>OS6450 software license enables the Metro software features outlined in the Metro Ethernet access section of this data sheet.</td>
</tr>
</tbody>
</table>

Mounting options
- Order optional 19" Rack mounting kit separately

<table>
<thead>
<tr>
<th>Mounting options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS6450-RM-19-L</td>
<td>Simple L-bracket for mounting a single OS6450-10 model switch in a 19-in. rack</td>
</tr>
<tr>
<td>OS6450-DUAL-MNT</td>
<td>Two universal mounting and sliding brackets accessory kit. Hardware to mount two 6450-10 units in a 19-in. rack</td>
</tr>
</tbody>
</table>

Gigabit transceivers

<table>
<thead>
<tr>
<th>Transceiver</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFP-GIG-LH70</td>
<td>1000Base-LH transceiver with an LC interface for single mode fiber over 1550 nm wavelength. Typical reach of 70 km</td>
</tr>
<tr>
<td>SFP-GIG-LH40</td>
<td>1000Base-LH transceiver with an LC interface for single mode fiber over 1310 nm wavelength. Typical reach of 40 km</td>
</tr>
<tr>
<td>SFP-GIG-LX</td>
<td>1000Base-LX transceiver with an LC interface for single mode fiber over 1310 nm wavelength. Typical reach of 10 km</td>
</tr>
<tr>
<td>SFP-GIG-SX</td>
<td>1000Base-SX transceiver with an LC interface for multimode fiber over 850 nm wavelength. Typical reach of 300 m</td>
</tr>
<tr>
<td>SFP-GIG-BX-D</td>
<td>1000Base-BX bidirectional transceiver with an LC type interface for use over single mode fiber optic on a single strand link up to 10 km point to point. Transmits 1490 nm and receives 1310 nm optical signal</td>
</tr>
<tr>
<td>SFP-GIG-BX-U</td>
<td>1000Base-BX bidirectional transceiver with an LC type interface for use over single mode fiber optic on a single strand link up to 10 km point to point. Transmits 1310 nm and receives 1490 nm optical signal</td>
</tr>
</tbody>
</table>

100 Megabit transceivers

<table>
<thead>
<tr>
<th>Transceiver</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFP-100-MM</td>
<td>100Base-FX transceiver with an LC interface for multimode fiber optic cable</td>
</tr>
<tr>
<td>SFP-100-SM15</td>
<td>100Base-FX transceiver with an LC type interface for single mode fiber optic cable up to 15 km</td>
</tr>
<tr>
<td>SFP-100-SM40</td>
<td>100Base-FX transceiver with an LC type interface for single mode fiber optic cable up to 40 km</td>
</tr>
<tr>
<td>SFP-100-BX-U</td>
<td>100Base-BX bidirectional transceiver with an SC type interface for use over single mode fiber optic on a single strand link up to 20 km point to point, where the client (ONU) transmits 1310 nm and receives 1550 nm optical signal</td>
</tr>
<tr>
<td>SFP-100-BX-D</td>
<td>100Base-BX bidirectional transceiver with an SC type interface for use over single mode fiber optic on a single strand link up to 20 km point to point, where the client (OLT) transmits 1550 nm and receives 1310 nm optical signal</td>
</tr>
</tbody>
</table>