The Alcatel-Lucent OmniSwitch® 6465T is a family of extended temperature, value, Layer 3 Gigabit Ethernet switches. These switches are versatile in nature and can be deployed in a variety of environments such as residential and business metro Ethernet access offered by service providers, in smart cities/buildings or for transportation deployments.

OmniSwitch 6465T switches are a family of extended temperature, compact, gigabit Ethernet switches that are ideal for residential/metro Ethernet triple play applications. The PoE switches offer a value, power-efficient access for powering smart building subsystems such as lighting, CCTV and HVAC. The switches run on the widely deployed and field-proven Alcatel-Lucent Operating System (AOS) that offers high security, reliability, performance and easy management. These switches are designed to operate in an extended temperature range offering reliable operation in -10°C to 60°C ambient temperature range.

The OmniSwitch 6465T 12-port models are designed with an optimized size, low-power consumption and a rich software feature set. This extended temperature PoE model can provide power to a range of new age devices from IP cameras on toll booths to LED lights and building management gateways in smart buildings. These switches are easy to deploy and offer out-of-the-box plug-and-play, zero-touch provisioning, network automation and disaster recovery options. These switches support IEEE 1588v2 PTP for the nanosecond-level precision timing requirements of devices and applications. With support for MACsec on all ports, OmniSwitch 6465T enables end-to-end encrypted networks. The OmniSwitch 6465T family offers advanced system and network level resiliency features and convergence through standardized protocols in a space efficient form factor. OmniSwitch 6465T models can operate with out fan up to 45°C ambient temperature.
Features | Benefits
--- | ---
Extended temperature range | Operates at an extended temperature range from -10°C to +60°C offering a reliable operation over a wider temperature range
Virtual chassis to connect multiple switches for creating a single chassis-like entity | Increases system redundancy, resiliency and system scalability while simplifying deployment, operations and management of the network
Delivers redundant ring topologies using industry standard protocols | Field upgradable, highly redundant network solution maximizes network uptime
Switch backup and restore | Simplifying switch replacement in field and minimizing network downtime using USB drive. Encryption of USB ensures optimal security.
IEEE 1588v2 PTP support | Support for peer-to-peer and end-to-end transparent clock provides precise nanosecond time synchronization for devices on industrial networks
Simplified installation and service provisioning | Out-of-the-box Zero-touch provisioning and network automation with automatic protocol and topology discovery
Layer 2 security with MACsec | MACsec encryption support provides a secure network access ensuring data confidentiality and integrity

**Alcatel-Lucent OmniSwitch 6465T models**
The Alcatel-Lucent OmniSwitch 6465T-12 and 6465T-P12 models are power and acoustically optimized, with a half-rack width, and have a fixed configuration chassis in a 1 RU form factor. All models can operate without fan up to 45°C ambient temperature and with fan can operate up to 60°C. Both models have an internal power supply. PoE model is 802.3af/802.3at compliant and offers 115 W of power for PoE attached devices.

All ports of OmniSwitch 6465T-12 and OmniSwitch 6465T-P12 are capable of IEEE 1588v2 and MACsec. OmniSwitch 6465T switches can form a virtual chassis between any models creating a single chassis-like entity using 1G SFP ports. Up to four switches can be connected in a virtual chassis configuration with option to scale up to eight in future. For forming virtual chassis connections, any SFP transceiver or SFP+ Direct attach cables can be used on 1G SFP ports.

<table>
<thead>
<tr>
<th>Models</th>
<th>Gigabit ports (RJ45)</th>
<th>Gig combo ports</th>
<th>100/1000 SFP ports</th>
<th>Primary power</th>
<th>Backup power</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS6465T-12</td>
<td>8</td>
<td>2</td>
<td>2</td>
<td>Internal AC</td>
<td>N/A</td>
<td>Fixed-configuration half-rack width chassis with eight 10/100/1000 Base-T ports, two Gigabit combo ports and two 100/1000 Base-X SFP ports.</td>
</tr>
<tr>
<td>OS6465T-P12</td>
<td>8</td>
<td>2</td>
<td>2</td>
<td>Internal AC</td>
<td>N/A</td>
<td>Fixed-configuration half-rack width chassis with eight 10/100/1000 Base-T PoE+ ports two Gigabit combo ports and two 100/1000 Base-X SFP ports.</td>
</tr>
</tbody>
</table>

**Technical specifications**

<table>
<thead>
<tr>
<th>Product matrix</th>
<th>OS6465T-12</th>
<th>OS6465T-P12</th>
</tr>
</thead>
<tbody>
<tr>
<td>File system flash</td>
<td>1 GB</td>
<td>1 GB</td>
</tr>
<tr>
<td>RAM</td>
<td>1 GB</td>
<td>1 GB</td>
</tr>
<tr>
<td>Fans*</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>USB Port</td>
<td>1 (type A, USB 2.0)</td>
<td>1 (type A, USB 2.0)</td>
</tr>
<tr>
<td>Console</td>
<td>1 (RS232 RJ45)</td>
<td>1 (RS232 RJ45)</td>
</tr>
<tr>
<td>IEEE 1588v2 capable ports</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>MACsec capable ports</td>
<td>12</td>
<td>12</td>
</tr>
</tbody>
</table>

**Operating conditions**

| Operating temperature | -10°C to 60°C (14°F to 140°F) | -10°C to 60°C (14°F to 140°F) |
| Storage temperature | -40°C to 85°C (-40°F to 185°F) | -40°C to 85°C (-40°F to 185°F) |

* Fans run only if switch is operated at an ambient temperature of +45°C to +60°C. Fans remain off when switch is operating at -10°C to 45°C
Datasheet
Alcatel-Lucent OmniSwitch 6465T

<table>
<thead>
<tr>
<th>Product specifications and measurements</th>
<th>OS6465T-12</th>
<th>OS6465T-P12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Humidity (operating &amp; storage)</strong></td>
<td>5% to 95% non-condensing</td>
<td>5% to 95% non-condensing</td>
</tr>
<tr>
<td><strong>Altitude</strong></td>
<td>13,000 ft</td>
<td>13,000 ft</td>
</tr>
<tr>
<td><strong>MTBF (Hours)</strong></td>
<td>1,953,053</td>
<td>1,298,328</td>
</tr>
<tr>
<td><strong>Power Supply efficiency</strong></td>
<td>85%</td>
<td>85%</td>
</tr>
<tr>
<td><strong>Acoustic (-10°C to 45°C) (dB)</strong></td>
<td>Silent</td>
<td>Silent</td>
</tr>
<tr>
<td><strong>Acoustic (45°C to 60°C) (dB)</strong></td>
<td>56 dBA</td>
<td>56 dBA</td>
</tr>
<tr>
<td><strong>System power consumption (idle)</strong></td>
<td>8.5 W</td>
<td>8.5 W</td>
</tr>
<tr>
<td><strong>System power consumption (full load)</strong></td>
<td>16 W</td>
<td>19 W</td>
</tr>
<tr>
<td><strong>Heat dissipation (BTU)</strong></td>
<td>54.6</td>
<td>64.8</td>
</tr>
<tr>
<td><strong>PoE power budget</strong></td>
<td>NA</td>
<td>115 W</td>
</tr>
</tbody>
</table>

**Performance**

| **Switching capacity (aggregated)**    | 24 Gb/s    | 24 Gb/s    |
| **Forwarding capacity**                | 17.9 Mb/s  | 17.9 Mb/s  |

**Physical characteristics**

| **Switch width**                       | 21.7 cm (8.55 in.) | 21.7 cm (8.55 in.) |
| **Switch height**                      | 4.4 cm (1.73 in.)  | 4.4 cm (1.73 in.)  |
| **Switch depth**                       | 28 cm (11.05 in.)  | 28 cm (11.05 in.)  |
| **Weight**                             | 1.7 Kg (3.8 lb)    | 2.0 Kg (4.46 lb)   |

* MTBF calculations are done at ambient temperature of 25°C
** Power consumption measured at the 120 V AC outlet. Full load measurement does not include PoE power consumption. Heat dissipation: 1 watt = 3.41214 BTU/h

**Product LED specification**

- **Per-port LEDs**
  - Non-PoE ports: green - Link/activity
  - PoE ports: amber - Link/activity

- **System LEDs**
  - OK: Green/amber operational status of the switch
  - VC: Green/amber master or slave role in VC configuration. Number of blinks identify stacking unit number
  - PWR: Green/amber - status for the primary power supply

**Scalability numbers and speeds**

- Wire rate at layer 2 and layer 3 on all ports
- Jumbo frame size: 9216 bytes (for 1 Gb/s)
- Total number of MAC addresses: 16 K
- Total number of IPv4 routes: 128
- Number of VLANs: 4000

**Virtual Chassis**

- Maximum number of units in a VC: 4
- Remote VC connection: Using SFP-GIG-SX, SFP-GIG-LX

**Compliance and certifications**

**Commercial safety**

- UL 60950-1, 2nd Ed.
- UL 62368-1
- UL 2043 (plenum rated)
- IEC 60950-1; all national deviations
- IEC 62368-1; all national deviations
- EN 60950-1; all deviations
- CAN/CSA-C22.2 No. 60950-1-03
- CAN/CSA-C22.2 No. 62368-1
- NOM-019 SCFI, Mexico
- AS/NZ T5-001 and 60950:2000, Australia
- UL-AR, Argentina
- AS/NZ 62368-1
- UL-GS Mark, Germany
- C. E. A.C. Russia (EMC)
- ANATEL, Brazil
- CCC, China
- KCC Korea
- BSMI, Taiwan
- EN 60825-1 Laser
- CE Mark, Morocco
- EN 60825-2 Laser
- CDRH Laser

- RoHS and WEEE directives compliant
- REACH directive

**Commercial EMI/EMC**

- 47 CRF FCC Part 15: 2015 Subpart B (Class A)/VCCI (Class A, with UTP Cables)
- IES-003:2012 Issue 5, Class A
- AS/NZS 3548 (Class A) – C-Tick
- CE marking for European countries (Class A)
- CE Emission
  - EN50581 (RoHS Recast)
  - EN 55032 (EMI & EMC requirement)
  - EN 55024/EN 55035 (Immunity Characteristics)
  - EN 61000-3-2 (Harmonic Current emissions)
  - EN 61000-3-3
  - EN 61000-4-2
  - EN 61000-4-3
  - EN 61000-4-4
  - EN 61000-4-5 (Surge Immunity, Class 4)
  - EN 61000-4-6
  - EN 61000-4-8
  - EN 61000-4-11
- IEEE802.3: Hi-pot Test (2.25 KV DC on all Ethernet Ports)
**Detailed product features**

**Simplified manageability and configuration**
- Intuitive CLI in a scriptable BASH environment via console, Telnet or Secure Shell (SSH) v2 over IPv4/IPv6
- Powerful WebView Graphical Web Interface via HTTP and HTTPS over IPv4/IPv6
- Fully programmable RESTful web services interface with XML and JSON support. API enables access to CLI and individual mib objects
- Integrated with Alcatel-Lucent OmniVista® products for network management
- Integrated with Nokia 5620 SAM™ for network management
- Full configuration and reporting using SNMPv1/2/3 to facilitate third-party network management over IPv4/IPv6
- File upload using USB, TFTP, FTP, SFTP or SCP using IPv4/IPv6
- Human-readable ASCII-based configuration files for off-line editing, bulk configuration and out-of-the-box auto-provisioning
- Non-volatile memory for start-up configuration
- Multiple microcode image support with fallback recovery
- Dynamic Host Configuration Protocol (DHCP) relay for IPv4/IPv6
- IEEE 802.1AB Link Layer Discover Protocol (LLDP) with Media Endpoint Discover (MED) extensions
- Network Time Protocol (NTP)
- DHCPv4 and DHCPv6 server-managed by Nokia VitalQIP® DNS/ DHCP IP Address Management
- Access to the AOS console via USB Adapter with Bluetooth technology provides wireless management access, eliminating the need of console cables

**Cloud ready with OmniVista Cirrus**
- OmniVista Cirrus offers a secure, resilient and scalable cloud-based network management. It offers hassle free network deployment and easy service roll-out with advanced analytics for smarter decision making. It provides IT friendly Unified Access with secure authentication and policy enforcement for users and devices.

**Monitoring and troubleshooting**
- Local (on the flash) and remote server logging (Syslog): Event and command logging
- IP tools: Ping and trace route
- Dying Gasp support via SNMP and syslog messages
- Loopback IP address support for management per service
- Policy- and port-based mirroring
- Remote port mirroring
- sFlow v5 and Remote Monitoring (RMON)
- Unidirectional Link Detection (UDLD), Digital Diagnostic Monitoring (DDM)

**Resiliency and high availability**
- Unified management, control and virtual chassis technology
- Virtual chassis 1:N redundant supervisor manager
- Smart continuous switching technology
- ITU-T G.8032/Y1344 2010: Ethernet Ring Protection
- IEEE 802.1s Multiple Spanning Tree Protocol (MSTP) encompasses IEEE 802.1D Spanning Tree Protocol (STP) and IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
- Per-VLAN spanning tree (PVST+), and 1x1 STP mode
- IEEE 802.3ad/802.1AX Link Aggregation Control Protocol (LACP) and static LAG groups across modules
- Dual-home link support for sub-second link protection without STP
- Virtual Router Redundancy Protocol (VRRP) with tracking capabilities
- IEEE protocol auto-discovery
- Built-in CPU protection against malicious attacks
- Split Virtual Chassis protection: Auto-detection and recovery of Virtual Chassis splitting due to one or more VFL or stack element failures

**Advanced security**

**Switch software security**
- AOS secured diversified code solution is available on OmniSwitch 6465T, hardening it at both the software source code and binary executable levels to enhance overall network security.
- AOS secured diversified code protects networks from intrinsic vulnerabilities, code exploits, embedded malware, and potential back doors that could compromise mission critical operations.
- AOS secured diversified code is a proactive, defense approach toward network security that continuously defines and implements value-add capabilities to address both current and future threats.

**Access control**
- Alcatel-Lucent Access Guardian framework for comprehensive user-policy-based NAC
- Autosensing IEEE 802.1X multi-client, multi-VLAN support
- MAC-based authentication for non-IEEE 802.1X hosts
- Web based authentication (captive portal): a customizable web portal residing on the switch
- User Network Profile (uNP) simplifies NAC by dynamically providing pre-defined policy configuration to authenticated clients – VLAN, ACL, BW
- Secure Shell (SSH) with public key infrastructure (PKI) support
- Terminal Access Controller Access-Control System Plus (TACACS+) client
- Centralized Remote Access Dial-In User Service (RADIUS) and Lightweight Directory Access Protocol (LDAP) administrator authentication
- Centralized RADIUS for device authentication and network access control authorization
- Learned Port Security (LPS) or MAC address lockdown
- Access Control Lists (ACLs); flow-based filtering in hardware (Layer 1 to Layer 4)
- DHCP Snooping, DHCP IP and Address Resolution Protocol (ARP) spoof protection

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*Future support

**Datasheet**

[Alcatel-Lucent OmniSwitch 6465T](#)
• ARP poisoning detection
• IP Source Filtering as a protective and effective mechanism against ARP attacks
• LLDP Security mechanism for rogue device detection and restriction

QoS
• Priority queues: Eight hardware-based queues per port for flexible QoS management
• Traffic prioritization: Flow-based QoS Flow-based traffic policing and bandwidth management
• 32-bit IPv4/128-bit IPv6 non-contiguous mask classification
• Egress traffic shaping
• DiffServ architecture
• Congestion avoidance: Support for end-to-end head-of-line (E2E-HOL) blocking prevention, IEEE 802.1Qbb Priority-based Flow Control (PFC) and IEEE 802.3x Flow Control (FC)
• Auto-QoS support for Generic Object Oriented Substation Events (GOOSE) messages

Layer-3 routing and multicast
IPv4 routing
• Static routing
• Virtual Router Redundancy Protocol (VRRPv2)
• DHCP relay (including generic UDP relay)
• Address Resolution Protocol (ARP)
• Policy-based routing and server load balancing
• DHCPv4 server

IPv6 routing
• Internet Control Message Protocol version 6 (ICMPv6)
• Static routing
• Virtual Router Redundancy Protocol version 3 (VRRPv3)
• Neighbor Discovery Protocol (NDP)*
• Policy-based routing and server load balancing
• DHCPv6 server

IPv4/IPv6 multicast
• Internet Group Management Protocol (IGMP) v1/v2/v3 snooping
• Multicast Listener Discovery (MLD) v1/v2 snooping

Advanced Layer-2 services
• Ethernet services support using IEEE 802.1ad Provider Bridges (also known as Q-in-Q or VLAN stacking
• Ethernet OAM (802.1ag , ITU-T Y.1731): Connectivity Fault Management (L2 ping & Link trace)
• Ethernet in first mile: Link OAM (802.3ah)
• Ethernet network-to-network interface (NNI) and user network interface (UNI)
• Service Access Point (SAP) profile identification
• Service VLAN (SVLAN) and customer VLAN (CVLAN) support
• VLAN translation and mapping including CVLAN to SVLAN
• Port mapping
• DHCP Option 82: Configurable relay agent information
• Multiple VLAN Registration Protocol (MVRP)
• HA-VLAN for Layer 2 clusters such as MS-NLB and active-active firewall clusters*
• Customer Provider Edge (CPE) test head traffic generator and analyzer tool
• TR-101 Point-to-Point Protocol over Ethernet (PPPoE) Intermediate Agent allowing for the PPPoE network access method
• Service Assurance Agent (SAA) for proactively measuring network health, reliability and performance.
• Jumbo frame support
• Bridge Protocol Data Unit (BPDU) blocking
• STP Root Guard

Supported standards

IEEEn standards
• IEEE 802.1D STP
• IEEE 802.1p CoS
• IEEE 802.1Q VLANs
• IEEE 802.1ab (LLDP)
• IEEE 802.1ag (OAM)
• IEEE 802.3ah (OAM)
• IEEE 802.1ad Provider Bridges Q-in-Q VLAN stacking
• IEEE 802.1ak (Multiple VLAN Registration Protocol (MVRP)
• IEEE 802.1s MSTP
• IEEE 802.3i 10Base-T
• IEEE 802.1w RSTP
• IEEE 802.3x Flow Control
• IEEE 802.3z Gigabit Ethernet
• IEEE 802.3ab 100Base-T
• IEEE 802.3ac VLAN Tagging
• IEEE 802.3ad/802.1AX Link Aggregation
• IEEE 802.3af Power over Ethernet
• IEEE 802.3at PoE Plus
• IEEE 802.1ae MAC Security
• IEEE 1588-2008 (PTP)

ITU-T recommendations
• ITU-T G.8032/Y.1344 2010: Ethernet Ring Protection (ERPv2)

IETF RFCs

IPv4
• RFC 2131 Dynamic Host Configuration Protocol (DHCPv4)
• RFC 4022/2452 MIB for IPv4 TCP
• RFC 4113/2454 MIB for IPv4 UDP
• RFC 4292/4293 IPv4 MBs

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

IP Multicast
• RFC 2365 Multicast
• RFC 2710/3019/3810/MLD v2 for IPv6
• RFC 2933 IGMP MIB
• RFC 3376 IGMPv3 (includes IGMP v2/v1)
• RFC 4541 Considerations for IGMP and MLD Snooping Switches
• RFC 5132 Multicast Routing MIB

IPv6
• RFC 1981 Path MTU Discovery
• RFC 2460 IPv6 Specification
• RFC 2464 IPv6 over Ethernet
• RFC 2465 MIB for IPv6: Textual Conventions (TC) and General Group
• RFC 2466 MIB for IPv6: ICMPv6 Group
• RFC 3484 Default Address Selection
• RFC 3493/2553 Basic Socket API
• RFC 3542/2292 Advanced Sockets API
• RFC 3587/2374 Global Unicast Address Format
• RFC 3595 TC for IPv6 Flow Label
• RFC 3596/1886 DNS for IPv6
• RFC 4007 Scoped Address
• RFC 4022/2452 MIB for IPv6 TCP

*Future support
- RFC 4113/2454 MIB for IPv6 UDP
- RFC 4193 Unique Local Addresses
- RFC 4213/2893 Transition Mechanisms
- RFC 4291/3513/2373 Addressing Architecture (uni/any/multicast)
- RFC 4292/4293 IPv6 MIBs
- RFC 4443/2463 ICMPv6
- RFC 4861/2461 Neighbor Discovery
- RFC 4862/2462 Stateless Address Autoconfiguration
- RFC 5095 Deprecation of Type 0 Routing Headers in IPv6

Manageability
- RFC 854/855 Telnet and Telnet options
- RFC 959/2640 FTP
- RFC 1350 TFTP Protocol
- RFC 1155/2578-2580 SMI v1 and SMI v2
- RFC 1157/2271 SNMP
- RFC 1212/2737 MIB and MIB-II
- RFC 1215 Convention for SNMP Traps
- RFC 1573/2233/2863 Private Interface MIB
- RFC 1643/2665 Ethernet MIB
- RFC 1867 Form-based File Upload in HTML
- RFC 1901-1908/3416-3418 SNMP v2c
- RFC 2096 IP MIB
- RFC 2131 DHCP Server/Client
- RFC 2388 Returning Values from Forms: multipart/form-data
- RFC 2396 Uniform Resource Identifiers (URI): Generic Syntax
- RFC 2570-2576/3410-3415/3584 SNMP v3
- RFC 2816/2854 HTTP and HTML
- RFC 2668/3636 IEEE 802.3 MAU MIB
- RFC 2674 VLAN MIB
- RFC 3023 XML Media Types
- RFC 3414 User-based Security Model
- RFC 3826 (AES) Cipher Algorithm in the SNMP User-based Security Model
- RFC 4122 A Universally Unique iDentifier (UUID) URN Namespace
- RFC 4234 Augmented BNF for Syntax Specifications: ABNF
- RFC 4251 Secure Shell Protocol Architecture
- RFC 4252 The Secure Shell (SSH) Authentication Protocol
- RFC 4627 JavaScript Object Notation (JSON)
- RFC 6585 Additional HTTP Status Codes

Security
- RFC 1321 MD5
- RFC 1826/1827/4303/4305 Encapsulating Payload (ESP) and crypto algorithms
- 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 FTP Security Extensions
- RFC 2284 PPP EAP
- RFC 2869/2869bis RADIUS Extension
- RFC 4301 Security Architecture for IP

QoS
- RFC 896 Congestion Control
- RFC 1122 Internet Hosts
- RFC 2474/2475/2597/3168/3246 DiffServ
- RFC 2697 srTCM
- RFC 2698 trTCM
- RFC 3635 Pause Control

Others
- RFC 791/894/1024/1349 IP and IP/ Ethernet
- RFC 792 ICMP
- RFC 768 UDP
- RFC 793/1156 TCP/IP and MIB
- RFC 826 ARP
- RFC 919/922 Broadcasting Internet Datagram
- RFC 925/1027 Multi-LAN ARP/Proxy ARP
- RFC 2681
- RFC 950 Subnetting
- RFC 951 BOOTP
- RFC 1151 RDP
- RFC 1191 Path MTU Discovery
- RFC 1256 ICMP Router Discovery
- RFC 1305/2030 NTP v3 and Simple NTP
- RFC 1493 Bridge MIB
- RFC 1518/1519 CIDR
- RFC 1541/1542/2131/3396/3442 DHCP
- RFC 1757/2819 RMON and MIB
- RFC 2131/3046 DHCP/BootP Relay
- RFC 2132 DHCP Options
- RFC 2251 LDAP v3
- RFC 2338/3768/2787 VRRP and MIB
- RFC 3021 Using 31-bit Prefixes
- RFC 3060 Policy Core
- RFC 3176 sFlow
- RFC 4562 MAC-Forced Forwarding

Datasheet
Alcatel-Lucent OmniSwitch 6465T
## Ordering information

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OmniSwitch 6465T models</strong></td>
<td></td>
</tr>
<tr>
<td>OS6465T-12</td>
<td>OS6465T-12: Gigabit Ethernet chassis. 8 RJ45 10/100/1000 BaseT, 2 SFP/RJ45 combo, 2 SFP ports. 1RU by 1/2 rack width, internal AC PSU. Operating temp -10° C to 60° C. Includes power cord, manuals/software access cards, RJ45 to DB9 adaptor</td>
</tr>
<tr>
<td>OS6465T-P12</td>
<td>OS6465T-P12: Gigabit Ethernet chassis. 8 RJ45 10/100/1000 BaseT PoE+, 2 SFP/RJ45 combo, 2 SFP ports. 1RU by 1/2 rack width, internal AC PSU. Operating temp -10° C to 60° C. Includes power cord, manuals/software access cards, RJ45 to DB9 adaptor.</td>
</tr>
<tr>
<td><strong>OmniSwitch 6465T licenses</strong></td>
<td></td>
</tr>
<tr>
<td>OS-SW-MACSEC</td>
<td>Site license to enable MACsec on applicable OS6465, OS6560, OS6860, OS6865, OS6900, OS9900 models. One license per customer at no cost</td>
</tr>
<tr>
<td><strong>OmniSwitch 6465T Accessories</strong></td>
<td></td>
</tr>
<tr>
<td>OS6465T-CBL-60</td>
<td>60 centimeters long SFP+ direct stacking cable for OS6465T models</td>
</tr>
<tr>
<td>OS6465T-CBL-1M</td>
<td>1-meter long SFP+ direct stacking cable for OS6465T models</td>
</tr>
<tr>
<td>OS6465T-CBL-3M</td>
<td>3-meter long SFP+ direct stacking cable for OS6465T models</td>
</tr>
<tr>
<td><strong>Gigabit transceivers</strong></td>
<td></td>
</tr>
<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-EXTND</td>
<td>1000Base-SX transceiver with an LC interface for single mode fiber over 850 nm wavelength. Typical reach of 2 km.</td>
</tr>
<tr>
<td>SFP-GIG-T</td>
<td>1000Base-T Gigabit ethernet transceiver Supports category 5, 5E, and 6 copper cabling up to 100m.</td>
</tr>
<tr>
<td>SFP-DUAL-MM-N</td>
<td>Dual Speed 100Base-FX or 1000Base-X Ethernet optical transceiver SFP MSA). Supports multimode fiber over 1310nm wavelength (nominal) with an LC connector. Typical reach of 550 m at Gigabit speed and 2 km at 100 Mb/s speed.</td>
</tr>
<tr>
<td>SFP-DUAL-BX-D</td>
<td>Dual Speed 100Base-BXD or 1000Base-BXD SFP transceiver with an LC type connector. This bidirectional transceiver is designed for use over single mode fiber optic on a single strand link up to 10 km. Transmits 1550 nm and receives 1310 nm optical signal.</td>
</tr>
<tr>
<td>SFP-DUAL-BX-U</td>
<td>Dual Speed 100Base-BXU or 1000Base-BXU SFP transceiver with an LC type connector. This bidirectional transceiver is designed for use over single mode fiber optic on a single strand link up to 10 km. Transmits 1310 nm and receives 1550 nm optical signal.</td>
</tr>
<tr>
<td><strong>100 Megabit transceivers</strong></td>
<td></td>
</tr>
<tr>
<td>SFP-100-LC-MM</td>
<td>100Base-FX SFP transceiver with an LC type interface. This transceiver is designed for use over multimode fiber optic cable.</td>
</tr>
<tr>
<td>SFP-100-LC-SM15</td>
<td>100Base-FX SFP transceiver with an LC type interface. This transceiver is designed for use over single mode fiber optic cable up to 15 km.</td>
</tr>
<tr>
<td>SFP-100-LC-SM40</td>
<td>100Base-FX SFP transceiver with an LC type interface. This transceiver is designed for use over single mode fiber optic cable up to 40 km.</td>
</tr>
<tr>
<td>SFP-100-BXLC-D</td>
<td>100Base-BX SFP transceiver with an LC type interface. Designed for use over single mode fiber optic on a single strand link up to 20KM point-to-point. This transceiver is normally used in the central office OLT) Tx-1550 nm and Rx-1310 nm optical signal</td>
</tr>
<tr>
<td>SFP-100-BXLC-U</td>
<td>100Base-BX SFP transceiver with an LC type interface. Designed for use over single mode fiber optic on a single strand link up to 20 km point-to-point. This transceiver is normally used in the client ONU) Tx-1310 nm and Rx-1550 nm optical signal</td>
</tr>
</tbody>
</table>

### Warranty

The OmniSwitch 6465T family comes with a Limited Lifetime Hardware Warranty.

### Services and support

For more information about our Professional Services, Support Services, and Managed Services, please go to [https://www.al-enterprise.com/en/services](https://www.al-enterprise.com/en/services).

Please visit our website to learn more: [https://www.al-enterprise.com/en/products/switches/](https://www.al-enterprise.com/en/products/switches/)