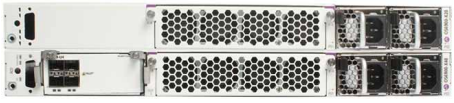
# ALCATEL-LUCENT OMNISWITCH 6900
## STACKABLE LAN SWITCHES

The Alcatel-Lucent OmniSwitch™ 6900 Stackable LAN Switches are compact, high-density 10 Gigabit Ethernet (GbE) and 40 GbE platforms designed for the most demanding networks. These platforms offer unmatched versatility to actually deliver on the promise of the next-generation virtualized data center. With their modular approach, these platforms accommodate the exact rack configuration and lowest oversubscription ratio required by the application flows. In addition to high performance and extremely low latency, the OmniSwitch 6900 platforms offer extensive QoS and Layer 2 and Layer 3 switching, as well as system- and network-level resiliency. They can be positioned as top of rack switches in a data center, as well as core/aggregation switches in a converged campus network.

**OS6900-X20 with OS-HNI-U6 and OS6900-X40 with OS-QNI-U3 front view**



**OS6900-X20 and OS6900-X40 with OS-XNI-U12 back view**

Through the use of optional modules, the OmniSwitch 6900 can offer the highest 10 GE port density in its class, with up to 64 10 GE ports in a 1U form factor. This modularity also allows for up to six 40 GE uplink ports. With a leading power consumption model, the OS6900 product family is the most efficient and versatile switch in its class.

| FEATURES | BENEFITS |
|---|---|
| High wire-rate performance for switching and routing at 40 G, 10 G and gigabit speeds. Advanced services are incorporated in the operating system: QoS, access control lists (ACLs), L2/L3, VLAN stacking and IPv6. | Up to 1.28 terabits per second (Tb/s) of wire-rate capacity, sub-microsecond latency for high-performance server and core connectivity. Outstanding performance when supporting real-time voice, data, and video applications for converged scalable networks |
| Redundant hardware system architecture. Internal, hot-swappable power supplies, fans. Front-to-back and back-to-front cooling models | Resiliency maximizes uptime for converged mission-critical networks |
| High 10 GbE port density in 1RU.<br>• Up to 32 fixed SFP+ ports for the OS6900-X20<br>• Up to 64 fixed SFP+ ports for the OS6900-X40 | Increases density in a single rack and supports next-generation service densities with a very high port density in a 1U form factor. Modular slots offer versatility in terms of 40 GbE uplinks and resulting oversubscription |
| Lowest power consumption per 10 GbE port in its class | Ensures efficient power management, reduces operating expenses and lowers total cost of ownership (TCO) through the low power consumption. |
| Alcatel-Lucent OmniVista™ 2500 Virtual Machine Manager (VMM) and Virtual Network Profiles (vNP) integration | Unifies physical and virtual infrastructures providing network operators with a comprehensive end-to-end network view for VM inventory, location tracking, event and log auditing and provisioning operations. This enables error-free network administration operations and simplifies the deployment of new value added services. |
| Scalable network virtualization architecture for guaranteed SLA delivery over standard Ethernet fabric: Edge Virtual Bridging (EVB), Shortest Path Bridging (SPB) and dynamic Virtual Network Profiles (vNP) | Comprehensive and flexible fabric architecture designed to automate and simplify the end to end deployment of campus, data center, cloud-based services while preventing host address explosion and flooding with built-in SLA service support at low capital and operating costs and based on interoperable proven standards |

| FEATURES (CONT'D) | BENEFITS (CONT'D) |
|---|---|
| • Unified virtual chassis<br>• Simplified management<br>• Multi-Chassis Link Aggregation (MC-LAG)<br>• Hardware-based virtual routing and forwarding (VRF) support | The OmniSwitch virtual chassis increases system redundancy and resiliency providing maximum uptime and high availability in the network. Optimizes/simplifies Layer 2 and Layer 3 network designs and reduces administration overhead while increasing network capacity with resilient multipath active-active dual homing multi-chassis support. Works with any Ethernet device that supports standard IEEE 802.3ad (LACP) or static LAG. Provides interoperability, investment protection, and flexibility |
| DCB support: Lossless Ethernet for all traffic | Extends the lossless capability beyond FCoE to any traffic type in any CoS queue and for many queues simultaneously in the same port. Allows the administrator to have a hands-off operation using application-based dynamic Lossless configuration via Enhanced Transmission Selection (ETS) or manually engineered and tuned to the application needs. |

## Alcatel-Lucent OmniSwitch 6900 models

The OmniSwitch 6900 family offers customers high-performance, very low latency Layer 2/Layer 3 10 Gigabit Ethernet switches. All models are in 1RU form factor with redundant power supplies and fan trays, and front-to-back and back-to-front airflow. A wide range of 40 GE and 10 GE optional modules are supported, allowing for maximum flexibility and investment protection as customers migrate to 10 GE connectivity with 40 GE uplinks.

The OmniSwitch 6900-X40 has 40 fixed SFP+ ports and one expansion slot on the front panel. It also supports one expansion slot on the back of the device.

The OmniSwitch 6900-X20 has 20 fixed SFP+ ports and one expansion slot on the front panel.

**Table 1. Product matrix**

| PRODUCT MATRIX | OS6900-X20 | OS6900-X40 |
|---|---|---|
| Port count (SFP+ ) | 20 | 40 |
| Expansion slots | 1 | 2 |
| Out of band Ethernet port | 1 | 1 |
| USB port | 1 | 1 |
| Console port | 1 | 1 |
| Primary slide-in PSU slot | 1 | 1 |
| Backup slide-in PSU slot | 1 | 1 |
| Redundant fans | 3+1 | 3+1 |
| Flash | 2 GB | 2 GB |
| RAM | 2 GB | 2 GB |
| Max switching capacity | 640 Gb/s | 1280 Gb/s |
| Throughput | 480 Mp/s | 960 Mp/s |
| Latency | Sub microsecond | Sub microsecond |
| Power consumption** | 181 Watts | 242 Watts |
| Heat dissipation | 618 BTU/h | 825 BTU/h |
| MTBF with AC power supply | 146520 hours | 141490 hours |
| MTBF with DC power supply | 153407 hours | 147901 hours |
| Width | 48.2 cm (19.00 in) | 48.2 cm (19.00 in) |
| Depth | 55.9 cm (22.00 in) | 55.9 cm (22.00 in) |
| Height | 4.4 cm (1.73 in) | 4.4 cm (1.73 in) |
| Weight (chassis & fan) | 7.61 kg (16.8 lbs) | 7.78 kg (17.15 lbs) |
| Weight (fully populated***) | 10.21 kg (22.5 lbs) | 10.86 kg (23.95 lbs) |
| Operating temperature | 0°C-45°C (32°F-113°F) for front-to-back-cooling configuration<br>0°C to 40°C (32°F to 104°F) for back-to-front-cooling configuration | 0°C-45°C (32°F-113°F) for front-to-back-cooling configuration<br>0°C to 40°C (32°F to 104°F) for back-to-front-cooling configuration |
| Storage temperature | 10°C-70°C (14°F-158°F) | 10°C-70°C (14°F-158°F) |
| Humidity (operating) | 5% to 90% non-condensing | 5% to 90% non-condensing |
| Humidity (storage) | 5% to 95% non-condensing | 5% to 95% non-condensing |

** Maximum power consumption under full L2 traffic load; no plug-in modules
*** Fully populated chassis includes fan tray, 2 power supplies, all plug-in modules and no transceivers

**Table 2. Expansion Module Matrix**

| EXPANSION MODULES | OS-XNI-U12 | OS-XNI-U4 | OS-HNI-U6 | OS-QNI-U3 |
|---|---|---|---|---|
| 40 Gb port count (QSFP+) | 0 | 0 | 2 | 3 |
| 10 Gb port count ( SFP+) | 12 | 4 | 4 | 0 |
| Switching capacity | 240 Gb/s | 80 Gb/s | 240 Gb/s | 240 Gb/s |
| Hot swappable/interchangeable | Yes | Yes | Yes | Yes |
| Power consumption | 44 watts | 19 watts | 37 watts | 34 watts |
| Heat dissipation | 150.13 BTU/hour | 64.83 BTU/hour | 126.25 BTU/hour | 116 BTU/hour |

## Power supplies

All OmniSwitch 6900 models support 1+1 redundant, hot-swappable AC and DC power supplies. The primary and backup power supply units are internal, but removable allowing for easier maintenance and replacement.

There is no interruption of service when a new power supply is installed or an old one replaced.

**Table 3. Power supplies**

| PS MODELS | DESCRIPTION | DIMENSIONS (W X D X H) | WEIGHT |
|---|---|---|---|
| OS6900-BP-F | Modular AC backup power supply. Front-to-back cooling. Provides 450 W AC system power to one OS6900 device. | 50.5 x 30 x 40.2 cm (19.9 x 11.8 x 15.8 in) | 2.6 lb (1.2 kg) |
| OS6900-BP-R | Modular AC backup power supply. Rear-to-front cooling. Provides 450 W AC system power to one OS6900 device. | 50.5 x 30 x 40.2 cm (19.9 x 11.8 x 15.8 in) | 2.6 lb (1.2 kg) |
| OS6900-BPD-F | Modular DC backup power supply. Front-to-back cooling. Provides 450 W DC system power to one OS6900 device. | 50.5 x 30 x 40.2 cm (19.9 x 11.8 x 15.8 in) | 2.6 lb (1.2 kg) |
| OS6900-BPD-R | Modular DC backup power supply. Rear-to-front cooling. Provides 450 W D-C system power to one OS6900 device. | 50.5 x 30 x 40.2 cm (19.9 x 11.8 x 15.8 in) | 2.6 lb (1.2 kg) |

# TECHNICAL SPECIFICATIONS

## Indicators

- Per-port LEDs
  - ¬ SFP+: link/activity
  - ¬ EMP: link/activity
- System LEDs
  - ¬ OK: green/yellow
  - ¬ PS1: green/yellow
  - ¬ PS2: green/yellow
  - ¬ PWR Save: green

# DETAILED PRODUCT FEATURES

## Simplified manageability

- Intuitive Alcatel-Lucent Command Line Interface (CLI) in a scriptable BASH environment via console, telnet or SSHv2
- Powerful Alcatel-Lucent WebView Graphical Web Interface via HTTP and HTTPS
- Full configuration and reporting using SNMPv1/2/3 across all OmniSwitch families to facilitate third-party network management
- File upload using USB, TFTP, FTP, SFTP or SCP
- Multiple microcode image support with fallback recovery
- Local (on the flash) and remote server logging (Syslog): event and command logging
- Loopback IP address support for management per service
- Management VRF support
- Policy and port-based mirroring
- Remote port mirroring
- sFlow v5 and RMON
- UDLD and DDM
- DHCP relay
- IEEE 802.1AB LLDP with MED extensions
- NTP

## Resiliency and high availability

- Smart continuous switching technology
- In-Service Software Upgrade (ISSU)
- Unified management, control and fabric virtual chassis technology
- Multi-chassis Link Aggregation (MC-LAG)
- ITU-T G.8032 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 Alcatel-Lucent 1x1 STP mode
- IEEE 802.3ad Link Aggregation Control Protocol (LACP) and static LAG groups across modules
- Virtual Router Redundancy Protocol (VRRP)
- Bidirectional Forwarding Detection (BFD)
- Redundant and hot-swappable power supplies
- Redundant fans
- Hot swappable fan tray
- Hot swappable supervisor and modules
- Built-in CPU protection against malicious attacks

## Data center networking

- Dynamic Virtual Network Profiles (vNP)
- Edge Virtual Bridging (EVB) – IEEE802.1Qbg
- Priority Flow Control (PFC) – IEEE802.1Qbb
- Enhanced Transmission Selection (ETS) – IEEE802.1Qaz
- Data Center Bridging Capabilities Exchange Protocol (DCBX) – IEEE802.1Qaz
- Shortest Path Bridging (SPB-M) – IEEE802.1aq

### Advanced security

**Access control**

- SSH with public key infrastructure (PKI) support
- TACACS+ client
- Centralized 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)

### Quality of Service (QoS)

- Priority queues: Eight hardware-based queues per port
- Traffic prioritization: Flow-based QoS
- Flow-based traffic policing and bandwidth management
- Egress traffic shaping
- Lossless Virtual Output Queuing (VOQ) with configurable scheduling algorithms
- Deep packet buffers for simultaneous high-burst absorption in all ports
- 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)

### IPv4 routing

- Multiple Virtual Routing and Forwarding (VRF)
- Static routing, Routing Information Protocol (RIP) v1 and v2
- Open Shortest Path First (OSPF) v2 with graceful restart
- Border Gateway Protocol (BGP) v4 with graceful restart
- Generic Routing Encapsulation (GRE) and IP/IP tunneling
- Virtual Router Redundancy Protocol (VRRP v2)
- DHCP relay (including generic UDP relay)
- Address Resolution Protocol (ARP)
- Policy-based routing

### IPv6 routing

- Multiple Virtual Routing and Forwarding (VRF)
- Internet Control Message Protocol version 6 (ICMPv6)
- Static routing
- Routing Information Protocol Next Generation (RIPng)
- OSPF v3
- BGP v4 multiprotocol extensions for IPv6 routing (MP-BGP)
- Graceful restart extensions for OSPF and BGP
- Virtual Router Redundancy Protocol (VRRPv3)
- Network Discovery Protocol (NDP)
- Policy-based routing

### IPv4/IPv6 multicast

- Internet Group Management Protocol (IGMP) v1/v2/v3 snooping
- Protocol Independent Multicast – Sparse-Mode (PIM-SM), Source Specific Multicast (PIM-SSM),
- Protocol Independent Multicast – Dense-Mode (PIM-DM), Bidirectional Protocol Independent Multicast (PIM-BiDir)
- Distance Vector Multicast Routing Protocol (DVMRP)
- 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) or IEEE802.1aq Shortest Path Bridging (SPB-M):
  - ¬ Ethernet Virtual Connection (EVC) support for transparent LAN services such as E-LAN, E-Line and E-Tree
  - ¬ Multipoint Ethernet VPN (EVPN) over I-SID service virtualization or Q-in-Q tunnels
  - ¬ 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
  - ¬ C-tag to S-tag priority mapping
- Port mapping
- DHCP Option 82: Configurable relay agent information
- Multicast VLAN Registration Protocol (MVRP)
- HA-VLAN for L2 clusters such as MS-MS-NLB and active-active Firewall clusters
- Jumbo frame support
- Bridge Protocol Data Unit (BPDU) blocking
- STP Root Guard
- Active-active Multi-Chassis Link Aggregation (MCLAG)

## COMPLIANCE AND CERTIFICATIONS

### Commercial

**EMI/EMC**

- FCC 47 CFR Part 15 Class A
- ICES-003 Class A
- 89/336/EEC EMC Directive
- EN55022:1998 Class A
- EN55024 :1998
- EN61000-42
- EN61000-4-3
- EN61000-4-4
- EN61000-4-5
- EN61000-4-6
- EN61000-4-8
- EN61000-4-11
- EN61000-3-2,
- EN61000-3-3
- CISPR22:1997 Class A
- VCCI (Class A)
- AS/NZS 3548 (Class A)
- IEEE 802.3 Hipot requirement and 1.5 kV surge on data port for copper interfaces

### Safety agency certifications

- US UL 60950
- IEC 60950-1:2001; all national deviations
- EN 60950-1: 2001; all deviations
- CAN/CSA-C22.2 No. 60950-1-03
- AS/NZ TS-001 and 60950:2000, Australia
- UL-AR, Argentina
- UL-GS Mark, Germany
- GOST, Russian Federation
- EN 60825-1 Laser
- EN 60825-2 Laser
- CDRH Laser

## SUPPORTED STANDARDS

### IEEE standards

- IEEE 802.1D (STP)
- IEEE 802.1p (CoS)
- IEEE 802.1Q (VLANs)
- IEEE 802.1ad (Provider Bridges) (Q-in-Q/ VLAN stacking)
- IEEE 802.1ak (Multiple VLAN Registration Protocol MVRP)
- IEEE 802.1aq (Shortest Path Bridging SPB)
- IEEE 802.1Qaz (ETS/DCBX)
- IEEE 802.1Qbb (PFC)
- IEEE 802.1s (MSTP)
- IEEE 802.1w (RSTP)
- 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 802.3ae (10 G Ethernet)
- IEEE 802.3ba (40 G Ethernet)

### ITU-T standards

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

## IETF standards

### IPv4

- RFC 2003 IP/IP Tunneling
- RFC 2784 GRE Tunneling

### OSPF

- RFC 1765 OSPF Database Overflow
- RFC 1850/2328 OSPF v2 and MIB
- RFC 2154 OSPF MD5 Signature
- RFC 2370/3630 OSPF Opaque LSA
- RFC 3101 OSPF NSSA Option
- RFC 3623 OSPF Graceful Restart
- RFC 2470 OSPFv3 for IPv6

### 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

### BGP

- RFC 1269/1657/4273 BGP v3 and v4 MIB
- RFC 1403/1745 BGP/OSPF Interaction
- RFC 1771-1774/2842/2918/3392/4271 BGP v4
- RFC 1965 BGP AS Confederations
- RFC 1966 BGP Route Reflection
- RFC 1997/1998 BGP Communities Attribute
- RFC 2042 BGP New Attribute
- RFC 2385 BGP MD5 Signature
- RFC 2439 BGP Route Flap Damping
- RFC 2545 BGP-4 Multiprotocol Extensions for IPv6 Routing
- RFC 2858/4760 Multiprotocol Extensions for BGP-4
- RFC 3065 BGP AS Confederations
- RFC 4456 BGP Route Reflection
- RFC 4486 Subcodes for BGP Cease Notification
- RFC 4724 - Graceful Restart for BGP

### IS-IS

- RFC 1142/1195/3719/3787 IS-IS v4
- RFC 2763/2966/3567 Adjacencies and route management
- RFC 3373/draft-ietf-isis-igp-p2p-over-lan Point to point over LAN
- RFC 5306 Graceful restart
- RFC 6329 IS-IS Extensions Supporting IEEE 802.1aq SPB

### IP multicast

- RFC 1075/draft-ietf-idmr-dvmrp-v3-11.txt DVMRP
- RFC 2365 Multicast
- RFC 2710/3019/3810/MLD v2 for IPv6
- RFC 2715 PIM and DVMRP interoperability*
- RFC 2933 IGMP MIB
- RFC 3376 IGMPv3 (includes IGMP v2/v1)
- RFC 3569 Source-Specific Multicast (SSM)
- RFC 3973 Protocol Independent Multicast-Dense Mode (PIMDM)
- RFC 4087 IP tunnel MIB
- RFC 4541 Considerations for IGMP and MLD snooping switches
- RFC 4601/5059 PIM-SM
- RFC 5015 BiDIR PIM
- RFC 5060 Protocol Independent Multicast MIB
- RFC 5240 PIM Bootstrap Router MIB
- RFC 5132 Multicast Routing MIB

### IPv6

- RFC 1886/3596 DNS for IPv6
- RFC 1981 Path MTU Discovery for IPv6
- RFC 2292/2553/3493/3542 IPv6 Sockets
- RFC 2373/2374/3513/3587/ 4291 IPv6 Addressing
- RFC 4007 IPv6 Scoped Address Architecture
- RFC 4193 Unique Local IPv6 Unicast Addresses
- RFC 2460//2462/2464 Core IPv6
- RFC 2461 NDP
- RFC 2463/2466/4293/4443 ICMP v6 and MIB
- RFC 2452/2454 IPv6 TCP/UDP MIB
- RFC 2711 IPv6 Router Alert Option
- RFC 2893/4213 IPv6 Transition Mechanisms
- RFC 3056 IPv6 Tunneling
- RFC 3484 Default Address Selection IPv6
- RFC 3542/3587 IPv6
- RFC 3595 TC for Flow Label

### Manageability

- RFC 959/2640 FTP
- RFC 1350 TFTP Protocol
- RFC 2131 DHCP Server/Client
- RFC 854/855 Telnet and Telnet options
- RFC 1155/2578-2580 SMI v1 and SMI 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 2616 /2854 HTTP and HTML
- RFC 2667 IP Tunneling MIB
- RFC 2668/3636 IEEE 802.3 MAU MIB
- RFC 2674 VLAN MIB
- RFC 3414 User-based Security Model
- RFC 4251 Secure Shell Protocol Architecture
- RFC 4252 The Secure Shell (SSH) Authentication Protocol

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

### QoS

- 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 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 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

**Table 4. OmniSwitch 6900 ordering information**

| | |
|---|---|
| **MODULES** | |
| OS6900-X20-F-xx | OS6900-X20: 10 Gigabit Ethernet L2/L3 fixed-configuration chassis in a 1U form factor with 20 SFP+ ports, one optional module slot. The chassis includes a 450 W front-to-back cooling AC power supply. –xx to be replaced with the country-specific power cord code (e.g. –EU for Europe). |
| OS6900-X20D-F | OS6900-X20: 10 Gigabit Ethernet L2/L3 fixed-configuration chassis in a 1U form factor with 20 SFP+ ports, one optional module slot. The chassis includes a 450 W front-to-back cooling DC power supply. |
| OS6900-X40-F-xx | OS6900-X40: 10 Gigabit Ethernet L2/L3 fixed-configuration chassis in a 1U form factor with 40 SFP+ ports, two optional module slots. The chassis includes a 450 W front-to-back cooling AC power supply.–xx to be replaced with the country-specific power cord code (e.g. –EU for Europe). |
| OS6900-X40D-F | OS6900-X40: 10 Gigabit Ethernet L2/L3 fixed-configuration chassis in a 1U form factor with 40 SFP+ ports, two optional module slots. The chassis includes a 450 W front-to-back cooling DC power supply. |
| OS6900-X20-R-xx | OS6900-X20: 10 Gigabit Ethernet L2/L3 fixed-configuration chassis in a 1U form factor with 20 SFP+ ports, one optional module slot. The chassis includes a 450 W back-to-front cooling AC power supply. –xx to be replaced with the country-specific power cord code (e.g. –EU for Europe). |
| OS6900-X20D-R | OS6900-X20: 10 Gigabit Ethernet L2/L3 fixed-configuration chassis in a 1U form factor with 20 SFP+ ports, one optional module slot. The chassis includes a 450 W back-to-front cooling DC power supply. |
| OS6900-X40-R-xx | OS6900-X40: 10 Gigabit Ethernet L2/L3 fixed-configuration chassis in a 1U form factor with 40 SFP+ ports, two optional module slots. The chassis includes a 450 W back-to-front cooling AC power supply. –xx to be replaced with the country-specific power cord code (e.g. –EU for Europe). |
| OS6900-X40D-R | OS6900-X40: 10 Gigabit Ethernet L2/L3 fixed-configuration chassis in a 1U form factor with 40 SFP+ ports, two optional module slots. The chassis includes a 450 W back-to-front cooling DC power supply. |
| **PLUG-IN MODULES** | |
| OS-XNI-U12 | 10 Gigabit Ethernet Optional Module for the OS6900 series of switches. Supports 12 SFP+ ports. |
| OS-XNI-U4 | 10 Gigabit Ethernet Optional Module for the OS6900 series of switches. Supports 4 SFP+ ports. |
| OS-HNI-U6 | Optional Module for the OS6900 series of switches. Supports 2 QSFP+ ports and 4 SFP+ ports. |
| OS-QNI-U3 | 40 Gigabit Ethernet Optional Module for the OS6900 series of switches. Supports 3 QSFP+ ports. |
| **BACKUP POWER SUPPLIES** | |
| OS6900-BP-F-xx | Modular 450W AC backup power supply. Front-to-back cooling. Provides backup system power to one 6900 switch; –xx to be replaced with the country-specific power cord code (e.g. –EU for Europe). |
| OS6900-BPD-F | Modular 450W DC backup power supply. Front-to-back cooling. Provides backup system power to one 6900 switch |
| OS6900-FT-F | OS6900 replacement fan tray; front-to-back cooling. |
| OS6900-BP-R-xx | Modular 450W AC backup power supply. Back-to-front cooling. Provides backup system power to one 6900 switch; –xx to be replaced with the country-specific power cord code (e.g. –EU for Europe). |
| OS6900-BPD-R | Modular 450W DC backup power supply. Back-to-front cooling. Provides backup system power to one 6900 switch |
| OS6900-FT-R | OS6900 replacement fan tray; back-to-front cooling. |
| **SOFTWARE** | |
| OS6900-SW-AR | Advanced routing software license. Includes VRF, BGP, OSPFv2, VRRPv2, PIMSM/DM, DVMRP, IPv6 Routing, OSPFv3, RIPng, VRRPv3. |
| OS6900-SW-DC | Data Center Software for support of DCBX, FCoE and EVB on OS6900. One license required per chassis |
| **GE TRANSCEIVERS** | |
| SFP-GIG-T | 1000Base-T Gigabit Ethernet Transceiver (SFP MSA). SFP works at 1000 Mb/s speed and full-duplex mode. |
| SFP-GIG-SX | 1000Base-SX Gigabit Ethernet optical transceiver (SFP MSA). |
| SFP-GIG-LX | 1000Base-LX Gigabit Ethernet optical transceiver (SFP MSA). |
| SFP-GIG-LH40 | 1000Base-LH Gigabit Ethernet optical transceiver (SFP MSA). Typical reach of 40 km on 9/125 µm SMF. |
| SFP-GIG-LH70 | 1000Base-LH Gigabit Ethernet optical transceiver (SFP MSA). Typical reach of 70 km on 9/125 µm SMF. |

| MODULES (CONT'D) | |
|---|---|
| **10 GE TRANSCEIVERS** | |
| SFP-10G-SR | 10 Gigabit optical transceiver (SFP+). Supports multimode fiber over 850 nm wavelength (nominal) with an LC connector. Typical reach of 300 m |
| SFP-10G-LR | 10 Gigabit optical transceiver (SFP+). Supports monomode fiber over 1310 nm wavelength (nominal) with an LC connector. Typical reach of 10 km |
| SFP-10G-ER | 10 Gigabit optical transceiver (SFP+). Supports monomode fiber over 1550 nm wavelength (nominal) with an LC connector. Typical reach of 40 km |
| SFP-10G-LRM | 10 Gigabit optical transceiver (SFP+). Supports multimode fiber over 1310 nm wavelength (nominal) with an LC connector. Typical reach of 220 m on FDDI-grade (62.5µm) |
| **SFP+ DIRECT ATTACHED CABLES** | |
| SFP-10G-C1M | 10 Gigabit direct attached copper cable (1 m, SFP+). |
| SFP-10G-C3M | 10 Gigabit direct attached copper cable (3 m, SFP+). |
| SFP-10G-C7M | 10 Gigabit direct attached copper cable (7 m, SFP+). |
| **40 GE TRANSCEIVERS** | |
| QSFP-40G-SR | Four channel 40 Gigabit optical transceiver (QSFP+).<br>Supports link lengths of 100 m and 150 m, respectively, on OM3 and OM4 multimode fiber cables. |
| **QFP+ DIRECT ATTACHED CABLES** | |
| QSFP-40G-C1M | 40 Gigabit direct attached copper cable (1 m, QSFP+). |
| QSFP-40G-C3M | 40 Gigabit direct attached copper cable (3 m, QSFP+). |
| QSFP-40G-C7M | 40 Gigabit direct attached copper cable (7 m, QSFP+). |

## SERVICE AND SUPPORT

### Warranty

Limited lifetime hardware warranty: Limited to the original owner and will be provided for up to 5 years after the product's End-of-Sales announcement.

* Roadmap item



Alcatel·Lucent Enterprise