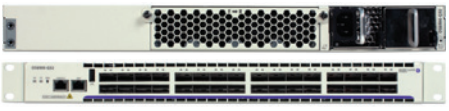
ALCATEL-LUCENT OMNISWITCH 6900
STACKABLE LAN SWITCHES

The Alcatel-Lucent OmniSwitch® 6900 Stackable LAN and data center switches are compact, high-density 10 Gb Ethernet (GigE) and 40 GigE platforms. In addition to high performance and extremely low latency, they offer Virtual Extensible LAN (VXLAN), OpenFlow, Shortest Path Bridging (SPB), and data center bridging (DCB) capabilities, QoS, Layer-2 and Layer-3 switching, as well as system and network level resiliency. They are designed for the most demanding software-defined operations in virtualized or physical networks and converged data centers.

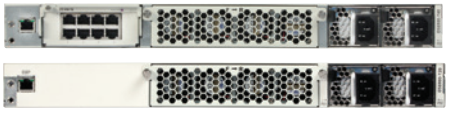
With their modular approach, the OmniSwitch 6900s support lossless configurations and native Fibre Channel (FC) ports for high-speed storage I/O consolidation. They can be positioned as converged top-of-rack or spine switches in data center environments, or as core and aggregation devices in campus networks.

OmniSwitch 6900-X72



OmniSwitch 6900-Q32 Back
OmniSwitch 6900-Q32 Front

OmniSwitch 6900-X20 w/OS-XNI-U12
OmniSwitch 6900-X40 w/OS-XNI-U4



OmniSwitch 6900-T40 Back w/OS-XNI-T8
OmniSwitch 6900-T20 Back

The OmniSwitch 6900 product family offers a broad range of 1/10 GigE and 40 GigE port density in a 1-RU form factor. The switches offer the highest 10 GigE port density in their class, with up to 104 x 10 GigE ports, up to 32 x 40 GigE and up to 24 x 2/4/8 Gigabit Fibre Channel (GFC) ports in a 1 RU form factor. Its modularity also allows for many combinations to address any to any switching between Ethernet, Converged Ethernet and FC ports. The OmniSwitch 6900 product family leverages an energy-efficient model with leading low power consumption, making them the most efficient and versatile switches in their class.

FEATURES	BENEFITS
Wire-rate non-blocking switching and routing performance for Ethernet at 40 GigE, 10 GigE 1 GigE and 100Base-T speeds and for FC at 2/4/8 GFC. High port density in 1RU. • Up to 72 SFP+ or 48 SFP+ and 6 40GigE/FCoE ports for the OmniSwitch 6900-X72 • Up to 104 Small Form-factor Pluggable (SFP+)/32 40 GigE/FCoE ports for OmniSwitch 6900-Q32 • Up to 28 10GBase-T/FCoE ports for OmniSwitch 6900-T20 • Up to 32 SFP+/FCoE ports for OmniSwitch 6900-X20 • Up to 56 10GBase-T/FCoE ports for OmniSwitch 6900-T40 • Up to 64 SFP+/FCoE ports for OmniSwitch 6900-X40 • Up to 6x 40 GigE or 24x 8GFC ports for OmniSwitch 6900-X40/T40 • Up to 3x 40 GigE or 12x 8GFC ports for OmniSwitch 6900-X20/T20	• Up to 2.56 Tb/s of wire-rate capacity, sub-microsecond latency for high-performance server clusters and core connectivity over QSFP, SFP+, DAC or CAT 5/6. • Outstanding performance when supporting real-time voice, data, storage and video applications for converged scalable networks • Supports next-generation service with a very high port density in a 1U form factor. • Modular slots offer versatility in terms of 40 GigE, 1/10 GigE, 10G base-T and FC ports. • FC ports are available for OS6900-X20, OS6900-X40, OS6900-T20 and OS6900-T40 using the OS-XNI-U12E module.
• Resilient hardware system architecture. • Internal, hot-swappable power supplies and fans. • Front-to-back and back-to-front cooling options provide lowest power consumption per 10 GigE port in its class.	• Resiliency maximizes uptime for converged mission-critical networks. • Ensures efficient power management, thereby reducing operating expenses and lowering total cost of ownership.

FEATURES	BENEFITS
• Integral operating system advances functions: quality of service (QoS), access control lists (ACLs), Layer-2/Layer-3 switching, Virtual LAN (VLAN) stacking and IPv6. • High-availability hardware Virtual Extensible LAN (VXLAN) Virtual Tunnel End Point (VTEP) gateway for network virtualization supported in OS6900-Q32 and OS6900-X72. • VXLAN snooping for dynamic real-time multi-tenant visibility and SLA policy enforcement • Integrated overlay (VXLAN) and underlay internetworking automated with OpenStack neutron plug-in • Intelligent policy control through OpenFlow 1.3.1/1.0. • Hardware virtual routing and forwarding (VRF) support for VRF-lite and IP Virtual Private Network (IP VPN)	• The switch architecture simplifies the deployment of converged storage for FC, Fibre Channel over Ethernet (FCoE), Internet Small Computer System Interface (iSCSI) and Network-Attached Storage (NAS) systems. • Embedded Software-defined networking (SDN) integration to control virtual network profiles and policy management. • VXLAN VTEP allows overlay to underlay bridging and data center interconnecting. • Built-in dynamic and automated policy enforcement • Policy enforcement engine fully open for external control through RESTful northbound APIs for automation and integration of innovative applications • Native and overlay Cloud Multi-tenancy support
• Scalable network virtualization architecture with guaranteed SLA delivery over standard Ethernet fabric: auto-Fabric IP routing for routed backbone and access provisioning, SPB for bridging and routed services, Edge Virtual Bridging (EVB), Multiple VLAN Registration Protocol (MVRP) and dynamic Virtual Network Profiles (VNP). • Zero-touch provisioning and network automation with out-of-the-box plug-and-play Auto-Fabric for automatic protocol and topology discovery. Protocol auto-discovery and self-provisioning works with any Ethernet device that supports standard IEEE protocols, such as 802.1aq (Shortest Path Bridging-MAC, SPBM), 802.1ak (MVRP), or 802.3ad/802.1AX (Link Aggregation Control Protocol, LACP). Auto-fabric operation extends to IP routing protocol provisioning and IP on-boarding	• Out-of-the-box flexible fabric architecture designed to automate and simplify the end-to-end deployment of campus, data center, and cloud-based services. • Prevent human mistakes by automating standardized and replicable configurations. • Prevents host address explosion and flooding with built-in SLA service support at low capital and operating costs and based on interoperable proven standards. • 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. • Out-of-the-box auto-fabric to simplify installation and service provisioning. • Automated Cloud Multi-Tenancy support through vNP.
• Virtualized management, control and programmability • Unified virtual chassis with support for up to 6 switches. • Flexible and programmable Layer 2, Layer 3, ACL, QoS network virtualization function abstracted into a single virtual routing and bridging instance • Network management virtualization • Distributed Address Resolution Protocol (ARP) hardware learning for scalability	• The OmniSwitch 6900 virtual chassis increases system redundancy and resiliency, providing maximum uptime and high availability in the network. • Provides interoperability, investment protection, and flexibility • Supports pod/mesh and Spine Leaf architectures for flexible deployment. • Virtual chassis topology is flexible to accommodate any architecture that is needed to meet the desired latency and oversubscription requirements.
• Comprehensive northbound RESTful API to the entire Alcatel-Lucent operating system (AOS) feature set. • API offers access to all AOS CLI commands and all MIB structures • AOS-embedded scripting capabilities supporting Python and Bash programming.	• The RESTful interface exposes the entire AOS feature set as a programmable data structure. The API allows external controllers and applications to control and manage the switch's data plane and monitor its counters, statistics and events for the automation of the network.
• N_Port ID virtualization (NPIV) FCoE to FC forwarder gateway supported using the OS-XNI-U12E module. • FC to FCoE gateway • FC tunneling over FCoE • FC inter-switch link (ISL) tunneling, F-port virtualization • FCoE Initialization Protocol (FIP) snooping • Compliant with multi-hop Fibre Channel over Ethernet (FCoE) transit switching based on T11-BB-5 and T11-BB-6. • Flexible multi-queue IEEE DCB support for FCoE, iSCI and configurable storage protocol TLV definitions for lossless Ethernet control. • Multiple FCoE VLANs and other storage VLANs supported in the same port with different lossless properties	• Enables the administrator to have a hands-off operation using application-based dynamic Lossless configuration through Enhanced Transmission Selection (ETS) or manually engineered lossless tuned to the application needs. Reduces data center operating costs by simplifying the convergence of high-performance storage I/O and mission-critical data into a single multipath infrastructure. • Simplifies the expansion of FC to FCoE while protecting the existing investment in FC infrastructure. Allows unified storage attachments for FC, FCoE, iSCSI and NAS. • Multi-queue IEEE DCB extends the lossless capability beyond FCoE to any traffic class in any Class of Service (CoS) queue and for many queues simultaneously in the same port. Lossless operation is supported in multiple queues per port for multiples storage technologies simultaneously.

FEATURES	BENEFITS
• VMware-certified Alcatel-Lucent OmniVista® 2500 Virtual Machine Manager (VMM), Virtual Network Profiles (VNP) integration, VM SLA monitoring and application fingerprinting for unmanned network operation and self-adjusting SLA for application delivery • Interfaces with VMware vCenter® and Citrix™ XenServer® for discovery and inventory • VMware vCenter integration • Single pane-of-glass for end-to-end physical and virtual networks infrastructure operations • Real time tracking between VM and its network location • Dynamic VM performance for application performance analytics and visibility	• Unifies physical and virtual infrastructures by providing network operators with a comprehensive end-to-end network view for VM inventory, VM performance, location tracking, event and log auditing and provisioning operations. Monitors applications and malware activity, adjusting the network to meet the application SLAs according to the business operational requirements. This enables error-free network administration operations and simplifies the deployment of new value-added services. • Dynamic application profiling with in-line application recognition based on signatures and auto-adjustment of the network security and QoS treatment. Maintains the VM performance measurement of latency, throughput and jitter in the data center. • VM to underlay network correlation and single pane visibility

Alcatel-Lucent OmniSwitch 6900 models

The Alcatel-Lucent OmniSwitch 6900 family offers high-performance and very low-latency Layer 2/Layer 3 10/40 GigE switches. All models are 1RU form factor with redundant power supplies and fan trays for front-to-back and back-to-front airflow. A wide range of Ethernet and Fibre Channel interfaces are supported. Available interfaces include 40 GigE, 1/10 GigE, 1/10GBase-T, 100Base-T, and 2/4/8GigFC in the base switch or using optional modules. OmniSwitch 6900 allows for maximum flexibility and investment protection as customers migrate to 10 GigE and 40 GigE.

- The OmniSwitch 6900-X72 has 48 fixed 1/10 GigE SFP+ ports auto-negotiable 1/10 GigE and six 40 GigE QSFP ports that operate at 40 GigE or 4x10 GigE. Maximum 10G port density is 72 10G ports.
- OmniSwitch 6900-Q32 has 32 fixed Quad Small Form-factor Pluggable (QSFP) ports in the front panel. The ports can be fiber or copper operating at 40 GigE or 4x10 GigE using splitters cables. Maximum 10G port density is 104 ports.
- OmniSwitch 6900-T40 has 40 fixed 10 GBASE-T ports auto-negotiable 100Base-T, 1/10 GigE and two expansion slots, one on the front panel and one on the back of the device
- OmniSwitch 6900-T20 has 20 fixed 10 GBASE-T ports auto-negotiable 100Base-T, 1/10 GigE and one expansion slot on the front panel.
- OmniSwitch 6900-X40 has 40 fixed SFP+ ports 1/10 GigE depending on transceiver and two expansion slots, one on the front panel and one on the back of the device.
- OmniSwitch 6900-X20 has 20 fixed SFP+ ports 1/10 GigE depending on transceiver and one expansion slot on the front panel.

DETAILED PRODUCT FEATURES

Simplified manageability

- Fully programmable RESTful web services interface with XML and JSON support. The API enables access to Command Line Interface (CLI) and individual management information base (MIB)objects.
- Intuitive Alcatel-Lucent Enterprise CLI in a scriptable Python and Bash environment through console, Telnet or Secure Shell (SSH) v2 over IPv4/IPv6
- Powerful Alcatel-Lucent Enterprise WebView Graphical Web Interface through HTTP and HTTPS over IPv4/IPv6
- Full configuration and reporting using Simple Network Management Protocol (SNMP) v1/2/3 to facilitate third-party network management over IPv4/IPv6
- File upload using USB, Trivial File Transfer Protocol (TFTP), FTP, SFTP or secure copy (SCP) over IPv4/IPv6
- Multiple microcode image support with fallback recovery
- Local (on the flash) and remote server logging (Syslog) for events and commands
- Loopback IP address support for management-per-service
- Management VRF support
- Policy- and port-based mirroring
- Remote port mirroring
- sFlow v5 and Remote Network Monitoring (RMON)
- Unidirectional Link Detection (UDLD) and Digital Diagnostic Monitoring (DDM)
- Dynamic Host Configuration Protocol (DHCP) relay
- IEEE 802.1AB LLDP with MED extensions
- Network Time Protocol (NTP)
- DHCPv4 and DHCPv6 server managed by Alcatel-Lucent VitalQIP® DNS/DHCP IP Management Software

Resiliency and high availability

- Unified management, control and fabric-mesh virtual chassis technology
- Virtual chassis 1+N redundant supervisor manager
- Virtual chassis In-Service Software Upgrade (ISSU)
- Smart continuous switching technology
- ITU-T G.8032/Y1344 2010: Ethernet Ring Protection
- IEEE 802.1s Multiple Spanning Tree Protocol (MSTP), 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/802.1AX Link Aggregation Control Protocol (LACP) and static LAG groups across modules
- Virtual Router Redundancy Protocol (VRRP) with tracking capabilities
- IEEE protocol auto-discovery
- Bidirectional Forwarding Detection (BFD)
- Redundant and hot-swappable power supplies
- Redundant fans
- Hot-swappable fan tray
- Hot-swappable expansion modules
- Built-in CPU protection against malicious attacks

Data center networking

- Dynamic Virtual Network Profiles (vNP)
- IEEE 802.1Qbg Edge Virtual Bridging (EVB)
- IEEE 802.1Qbb Priority Flow Control (PFC)

- IEEE 802.1Qaz Enhanced Transmission Selection (ETS)
- IEEE 802.1Qaz Data Center Bridging Capabilities Exchange Protocol (DCBX)
- IEEE 802.1 Converged Enhanced Ethernet (CEE) 1.01
- IEEE 802.1aq Shortest Path Bridging (SPB-M)
- RFC 7843 Virtual eXtensible Local Area Network (VXLAN)

Software Defined Networking (SDN)

- Programmable AOS RESTful API
- Fully programmable OpenFlow 1.3.1 and 1.0 agent for control of native OpenFlow and hybrid ports.
- OpenStack networking plug-in compatible with Grizzly or higher
- Software-controlled VXLAN hardware VTEP gateway

Converged storage I/O

- Multi-hop FCoE transit switching with FIP snooping
- NPIV FCoE to FC forwarder gateway with dynamic multipath load balancing complaint with T11/BB-5
- End-to-end FCoE converged network adapter (can) switching with T11-BB-6
- Native FC ANSI INCITS FC-PI-4 and FC-PI-5
- Dynamic session load balancing for the N_port and F_port functionality
- Multi-hop FCoE for FC Inter-switch Link (ISL) tunneling
- Multi-hop FCoE for standalone FC host bus adapter (HBA) tunneling into storage area network (SAN)
- Virtual SAN (VSAN) to VLAN mapping and FIP snooping bridge (FSB)
- Fabric-provided MAC Address (FPMA) support
- Server-provided MAC Address (SPMA) support in FIP snooping

Advanced security

Access control

- Autosensing IEEE 802.1X multi-client, multi-VLAN support for bridging and SPBM/VXLAN services
- MAC-based authentication for non-IEEE 802.1X hosts
- Secure Shell (SSH) with public key infrastructure (PKI) support for bridging and SPBM/VXLAN services
- 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
- ARP poisoning detection
- IP source filtering as a protective and effective mechanism against ARP attacks

Quality of Service (QoS)

- Priority queues: Eight hardware-based queues per port
- 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
- Lossless Virtual Output Queuing (VOQ) with configurable scheduling algorithms
- 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 VRF
- Static routing with route labeling
- Routing Information Protocol (RIP) v1 and v2
- Open Shortest Path First (OSPF) v2 with graceful restart
- Intermediate System to Intermediate System (IS-IS) with graceful restart
- Border Gateway Protocol (BGP) v4 with graceful restart
- Generic Routing Encapsulation (GRE) and IP/IP tunneling
- Virtual Router Redundancy Protocol (VRRPv2)
- DHCP relay (including generic UDP relay)
- ARP
- Policy-based routing and server load balancing
- DHCPv4 server
- Distributed ARP learning

IPv6 routing

- Multiple VRF
- Internet Control Message Protocol version 6 (ICMPv6)
- Static routing
- Routing Information Protocol Next Generation (RIPng)
- OSPF v3 with graceful restart
- Intermediate System to Intermediate System (IS-IS) with graceful restart
- Multi-Topology IS-IS
- BGP v4 multiprotocol extensions for IPv6 routing (MP-BGP)
- Graceful restart extensions for OSPF and BGP
- Virtual Router Redundancy Protocol (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
- 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
- PIM to DVMRP gateway support
- (S,G) and (*,G) forwarding

Advanced Layer 2 services

- Ethernet services support using IEEE 802.1ad Provider Bridges (also known as Q-in-Q or VLAN stacking)
- Fabric virtualization services IEEE802.1aq Shortest Path Bridging (SPB-M) and VXLAN
  - 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 or VNI service virtualization or Q-in-Q tunnels
- Ethernet network-to-network interface (NNI) and user network interface (UNI)
- Service Access Point (SAP)
- 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
- MVRP
- High availability VLAN (HA-VLAN) for L2 clusters such as MS-NLB and active-active Firewall clusters
- Jumbo frame support
- Bridge Protocol Data Unit (BPDU) blocking
- STP Root Guard

TECHNICAL SPECIFICATIONS

Product specifications and measurements

- Per-port LEDs
- Ethernet/FC: link/activity
- EMP: link/activity
- Per port multi-color beacon support in OS6900-Q32 and OS6900-X72
- System LEDs
- OK: green/yellow
- PS1: green/yellow
- PS2: green/yellow
- PWR Save: green

COMPLIANCE AND CERTIFICATIONS

EMI/EMC - Commercial

- FCC 47 CFR Part 15 Class A
- ICES-003 Class A
- CE marking for European countries (Class A)
- EMC Directive 89/336/EEC
- EN55022:1998:2006 Class A
- EN55024 :1998:A1: 2001+A2:2003
- EN61000-3-2
- EN61000-3-3
- EN61000-4-2
- EN61000-4-3
- EN61000-4-4
- EN61000-4-5
- EN61000-4-6
- EN61000-4-8
- EN61000-4-11
- 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 (MVRP)
- IEEE 802.1aq Shortest Path Bridging (SPB)
- IEEE 802.1Qaz ETS/DCBX
- IEEE 802.1 CEE 1.01
- IEEE 802.1Qbb PFC
- IEEE 802.1s MSTP
- IEEE 802.1w RSTP
- IEEE 802.1X Port-based Network Access Control (PNAC).
- IEEE 802.3x Flow Control
- IEEE 802.3u Fast Ethernet
- IEEE 802.3z 1 GigE
- IEEE 802.3ab 1 GBASE-T
- IEEE 802.3ac VLAN Tagging
- IEEE 802.3ad/802.1AX Link Aggregation
- IEEE 802.3ae 10 GigE
- IEEE 802.3an 10 GBASE-T
- IEEE 802.3az Energy Efficient Ethernet (EEE)
- IEEE 802.3ba 40 GigE

ITU-T recommendations

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

ANSI recommendations

- INCITS/Project 1647-D/Rev7.10 FC-PI-4
- INCITS/T11/Project 2159-D/Rev 1.23 T11-BB-6 compliance
- INCITS/T11/Project 1871-D/Rev 2.00 T11-BB-5 support

IETF RFCs

IPv4

- RFC 2003 IP/IP Tunneling
- RFC 2784 GRE Tunneling
- RFC 2131 DHCPv4

OSPF

- RFC 1765 OSPF Database Overflow
- RFC 1850/2328 OSPF v2 and MIB
- RFC 2154 OSPF MD5 Signature
- RFC 2370/5250 OSPF Opaque LSA
- RFC 3101 OSPF NSSA Option
- RFC 3623 OSPF Graceful Restart
- RFC 2740 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 1771-1774/2842/2918/4271 BGP
- RFC 1965 BGP AS Confederations
- RFC 1966 BGP Route Reflection
- RFC 1997/1998/4360 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
- RFC 3392/5492 Capabilities Advertisement with BGP-4
- RFC 5396/5668/6793 BGP 4-Octet ASN and Textual Representation of ASN

IS-IS

- RFC 1142/1195/3719/3787/5308 IS-IS v4
- RFC 2763/2966/3567/3373 Adjacencies and route management
- RFC 5120 M-ISIS: Multi-topology IS-IS
- RFC 5306 Graceful Restart
- RFC 5309/draft-ietf-isis-igp-p2p-over-lan Point to point over LAN
- 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 PIM-DM
- 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 PIM MIB
- RFC 5240 PIM Bootstrap Router MIB
- 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 2711 Router Alert Option
- RFC 3056 6to4 Tunnels
- RFC 3315 Dynamic Host Configuration Protocol for IPv6 (DHCPv6)
- 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
- 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 4301/2401 Security Architecture
- RFC 4302/2402 IP Authentication Header
- RFC 4303/2406 IP Encapsulating Security Payload (ESP)
- RFC 4308 Cryptographic Suites for IP Security Architecture (IPsec)
- 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 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 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 2570-2576/3411-3415 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 3023 XML Media Types
- RFC 3414 User-based Security Model
- RFC 4122 A Universally Unique Identifier (UUID) URN namespace
- RFC 4234 Augmented BNF for Syntax Specifications: ABNF
- RFC 4251/4418 Secure Shell Protocol Architecture with UMAC Message Authentication
- RFC 4252/4253 The Secure Shell (SSH) Authentication Protocol and Transport Layer Protocol
- RFC 4627 JavaScript Object Notation (JSON)
- RFC 6585 Additional HTTP Status Codes

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 crypto algorithms

QoS

- RFC 896 Congestion Control
- RFC 1122 Internet Hosts
- RFC 2474/2475/2597/3168/3246 DiffServ
- RFC 3635 Pause Control

- RFC 2697 Single Rate Three Color Marker (srTCM)
- RFC 2698 Two Rate Three Color Marker (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 Bootstrap Protocol (BOOTP)
- RFC 1151 Remote Desktop Protocol (RDP)
- RFC 1191 Path MTU Discovery
- RFC 1256 ICMP Router Discovery
- RFC 1305/2030 Network Time Protocol (NTP) v3 and Simple NTP
- RFC 1493 Bridge MIB
- RFC 1518/1519 Classless Inter-Domain Routing (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
- IETF draft "IP/IPVPN services with IEEE 802.1aq SPB networks"

Software Defined Networking (SDN)

- OpenFlow Switch Specification v1.3.1
- OpenFlow Switch Specification v1.0.0
- RFC 7348 Virtual eXtensible Local Area Network (VXLAN)

Fibre Channel

- FC-PI-4 Fibre Channel T11/08-138v1
- FC-PI-5 Fibre Channel T11 2118-D/ Rev 6.10
- FC-BB-5 Backbone 5 T11/1871-D
- FC-BB-6 Backbone 6 T11/2159-D CNA switching

Product matrix

FEATURE	MODEL					
	OS6900-X20	OS6900-T20	OS6900-X40	OS6900-T40	OS6900-X72	OS6900-Q32
Port count	20 (SFP+)	20 (10GBase-T)	40 (SFP+)	40 (10GBase-T)	72 (48 SFP+ and 6 QSFP)	32 (QSFP)
Expansion slots	1	1	2	2	N/A	N/A
Out-of-band Ethernet port	1	1	1	1	1	1
USB port	1	1	1	1	1	1
Console port	1	1	1	1	1	1
Primary slide-in PSU slot	1	1	1	1	1	1
Backup slide-in PSU slot	1	1	1	1	1	1
Redundant fans	3+1	3+1	3+1	3+1	3+1	3+1
Flash	2 GB	2 GB	2 GB	2 GB	4 GB	4 GB
RAM	2 GB	4 GB	2 GB	4 GB	8 GB	8 GB
Data buffer	9MB	9MB	9MB	9MB	12MB	12MB
Max switching capacity	640 Gb/s Non-blocking	640 Gb/s Non-blocking	1.28Tb/s Non-blocking	1.28Tb/s Non-blocking	1.44 Tb/s Non-blocking	2.56 Tb/s Non-blocking
Throughput	480 Mp/s	480 Mp/s	960 Mp/s	960 Mp/s	1.4 Gp/s	1.92 Gp/s
Latency	Sub µs	<3.3 µs	Sub µs	<3.3 µs	<650ns	<780 ns
Power consumption**	181 W	206 W	242 W	329 W	242 W	312 W
Heat dissipation	618 Btu/h	703 Btu/h	825 Btu/h	1123 Btu/h	825 Btu/h	1065 Btu/h
Mean time between failures (MTBF) with AC power supply	146 520 h	145 569 h	141 490 h	139 840 h	192 778 h	195 601 h
MTBF with DC power supply	153 407 h	152 364 h	147 901 h	146 099 h	206 968 h	210 225 h
Width	43.3 cm (17.06 in)	43.3 cm (17.06 in)	43.3 cm (17.06 in)	43.3 cm (17.06 in)	43.3 cm (17.06 in)	43.3 cm (17.06 in)
Depth	55.9 cm (22.00 in.)	55.9 cm (22.00 in.)	55.9 cm (22.00 in.)	55.9 cm (22.00 in.)	55.9 cm (22.00 in.)	55.9 cm (22.00 in.)

FEATURE	MODEL					
	OS6900-X20	OS6900-T20	OS6900-X40	OS6900-T40	OS6900-X72	OS6900-Q32
Height	4.4 cm (1.73 in.)	4.4 cm (1.73 in.)	4.4 cm (1.73 in.)	4.4 cm (1.73 in.)	4.4 cm (1.73 in.)	4.4 cm (1.73 in.)
Weight (chassis & fan)	7.61 kg (16.8 lb)	7.61 kg (16.8 lb)	7.78 kg (17.15 lb)	7.78 kg (17.15 lb)	7.78 kg (17.15 lb)	7.78 kg (17.15 lb)
Weight (fully populated***)	10.21 kg (22.5 lb)	10.21 kg (22.5 lb)	10.86 kg (23.95 lb)	10.86 kg (23.95 lb)	10.86 kg (23.95 lb)	10.86 kg (23.95 lb)
Operating temperature Front-to-rear airflow	0°C to 45°C (32°F to 113°F) 55°C shutdown	0°C to 45°C (32°F to 113°F) 55°C shutdown	0°C to 45°C (32°F to 113°F) 55°C shutdown	0°C to 40°C (32°F to 104°F) 50°C shutdown	0°C to 45°C (32°F to 113°F) 55°C shutdown	0°C to 45°C (32°F to 113°F) 55°C shutdown
Operating temperature Rear-to-front airflow	0°C to 45°C (32°F to 113°F) 55°C shutdown	0°C to 45°C (32°F to 113°F) 55°C shutdown	0°C to 40°C (32°F to 104°F) 50°C shutdown	0°C to 45°C (32°F to 113°F) 55°C shutdown	0°C to 45°C (32°F to 113°F) 55°C shutdown	0°C to 45°C (32°F to 113°F) 55°C shutdown
Storage temperature	-10°C to 70°C (14°F to 158°F)	-10°C to 70°C (14°F to 158°F)	-10°C to 70°C (14°F to 158°F)	-10°C to 70°C (14°F to 158°F)	-10°C to 70°C (14°F to 158°F)	-10°C to 70°C (14°F to 158°F)
Humidity (operating)	5% to 95% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing
Humidity (storage)	5% to 95% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing

** Maximum power consumption under full L2 traffic load includes a fan tray, two power supplies, and transceivers; expansion plug-in modules not included.
*** Fully populated chassis includes a fan tray, two power supplies, and all expansion plug-in modules; transceivers not included.

Expansion module matrix

FEATURE	MODEL					
	OS-XNI-U12E	OS-XNI-U12	OS-XNI-U4	OS-HNI-U6	OS-QNI-U3	OS-XNI-T8
40 Gb port count (QSFP+)	0	0	0	2	3	0
10 Gb port count	12 (SFP+)***	12 (SFP+)	4 (SFP+)	4 (SFP+)	0	8 (10GBase-T)
8 GFC (2/4/8G FC)	12 (FC SFP+)***	0	0	0	0	0
Switching capacity	240 Gb/s	240 Gb/s	80 Gb/s	240 Gb/s	240 Gb/s	160 Gb/s
Hot-swappable /interchangeable	Yes	Yes	Yes	Yes	Yes	Yes
Power consumption	31 W	44 W	19 W	37 W	21 W	52 W
Heat dissipation	145.01 BTU/h	150.13 BTU/h	64.83 BTU/h	126.25 BTU/h	116 BTU/h	191 BTU/h
MTBF (hours)	5,866,720 h	5,794,716 h	10,211,792 h	6,514,828 h	6,896,504 h	6,228,124 h

*** Ports are dual personality. Operate as FC or Ethernet/VFL.

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 to allow for easier maintenance and replacement. There is no service interruption when a new power supply is installed or an old one replaced.

Power supplies

PS MODELS	DESCRIPTION	DIMENSIONS (W X L 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 mm x 300 mm x 40.2 mm (1.99 in x 11.8 in x 1.58 in.)	1.2 kg (2.6 lb)
OS6900-BP-R	Modular AC backup power supply. Back-to-front cooling. Provides 450 W AC system power to one OS6900 device.	50.5 mm x 300 mm x 40.2 mm (1.99 in x 11.8 in x 1.58 in.)	1.2 kg (2.6 lb)
OS6900-BPD-F	Modular DC backup power supply. Front-to-back cooling. Provides 450 W DC system power to one OS6900 device.	50.5 mm x 300 mm x 40.2 mm (1.99 in x 11.8 in x 1.58 in.)	1.2 kg (2.6 lb)
OS6900-BPD-R	Modular DC backup power supply. Back-to-front cooling. Provides 450 W DC system power to one OS6900 device.	50.5 mm x 300 mm x 40.2 mm (1.99 in x 11.8 in x 1.58 in.)	1.2 kg (2.6 lb)

ORDERING INFORMATION

OS6900 SWITCH FAMILY	
OS6900-X72-F-xx	OS6900-X72: 10Gigabit/40Gigabit Ethernet L3 fixed configuration chassis in a 1U form factor with 48 1/10G SFP+ ports and 6 40G QSFP+ ports. QSFP+ ports operate as single 40GE port or Quad-10GE. Console and Ethernet management ports are RJ45. Front to Rear cooling. The chassis includes a 450W AC power supply. A second power supply slot is supported for redundancy. Redundant power supply shall be ordered separately. The bundle ships with user manuals access card and rack mounts. –xx to be replaced with the country-specific power cord code (e.g. –EU for Europe).
OS6900-X72-R-xx	OS6900-X72: 10Gigabit/40Gigabit Ethernet L3 fixed configuration chassis in a 1U form factor with 48 1/10G SFP+ ports and 6 40G QSFP+ ports. QSFP+ ports operate as single 40GE port or Quad-10GE. Console and Ethernet management ports are RJ45. Rear to Front cooling. The chassis includes a 450W AC power supply. A second power supply slot is supported for redundancy. Redundant power supply shall be ordered separately. The bundle ships with user manuals access card and rack mounts. –xx to be replaced with the country-specific power cord code (e.g. –EU for Europe).
OS6900-X72D-F	OS6900-X72: 10Gigabit/40Gigabit Ethernet L3 fixed configuration chassis in a 1U form factor with 48 1/10G SFP+ ports and 6 40G QSFP+ ports. QSFP+ ports operate as single 40GE port or Quad-10GE. Console and Ethernet management ports are RJ45. Front to Rear cooling. The chassis includes a modular DC power supply. A second power supply slot is supported for redundancy. Redundant power supply shall be ordered separately. The bundle ships with user manuals access card and rack mounts.
OS6900-X72D-R	OS6900-X72: 10Gigabit/40Gigabit Ethernet L3 fixed configuration chassis in a 1U form factor with 48 1/10G SFP+ ports and 6 40G QSFP+ ports. QSFP+ ports operate as single 40GE port or Quad-10GE. Console and Ethernet management ports are RJ45. Rear to Front cooling. The chassis includes a modular DC power supply. A second power supply slot is supported for redundancy. Redundant power supply shall be ordered separately. The bundle ships with user manuals access card and rack mounts.
OS6900-Q32-F-xx	OS6900-Q32: 40 Gb Ethernet L3 fixed configuration chassis in a 1U form factor with 32 QSFP+ ports. Ports operate as single 40GigE port or Quad-10GigE. Front-to-back cooling. The chassis includes a 450W AC power supply. A second power supply slot is supported for redundancy. Redundant power supply must be ordered separately. The bundle ships with a country-specific power cord, user manuals access card, rack mounts, and USB to RJ-45 adaptor. (xx to be replaced with the country-specific power cord code (for example, –EU for Europe).)
OS6900-Q32-R-xx	OS6900-Q32: 40 Gb Ethernet L3 fixed configuration chassis in a 1U form factor with 32 QSFP+ ports. Ports operate as single 40GigE port or Quad-10GigE. Back-to-front cooling. The chassis includes a 450W AC power supply. A second power supply slot is supported for redundancy. Redundant power supply shall be ordered separately. The bundle ships with a country-specific power cord, user manuals access card, rack mounts, and USB to RJ-45 adaptor. (xx to be replaced with the country-specific power cord code (for example,–EU for Europe).)
OS6900-Q32D-F	OS6900-Q32: 40 Gb Ethernet L3 fixed configuration chassis in a 1U form factor with 32 QSFP+ ports. Ports operate as single 40GigE port or Quad-10GigE. Front-to-back cooling. The chassis includes a modular DC power supply. A second power supply slot is supported for redundancy. Redundant power supply must be ordered separately. The bundle ships with a user manuals access card, rack mounts, and USB to RJ-45 adaptor.
OS6900-Q32D-R	OS6900-Q32: 40 Gb Ethernet L3 fixed configuration chassis in a 1U form factor with 32 QSFP+ ports. Ports operate as single 40GigE port or Quad-10GigE. Back-to-front cooling. The chassis includes a modular DC power supply. A second power supply slot is supported for redundancy. Redundant power supply must be ordered separately. The bundle ships with a user manuals access card, rack mounts, and USB to RJ-45 adaptor.
OS6900-T20-F-xx	OS6900-T20: 10 Gb Ethernet L2/L3 fixed configuration chassis in a 1U form factor with 20 10GBase-T ports, auto-negotiable 100-BaseT, 1/10 GigE one optional module slot. Front-to-back cooling. The chassis includes a 450W AC power supply. A second power supply slot is supported for redundancy. Redundant power supply must be ordered separately. The OS6900-20 ships with a country-specific power cord, user manuals access card, rack mounts, and USB to RJ-45 adapter. (xx to be replaced with the country-specific power cord code (for example,–EU for Europe).)
OS6900-T20D-F	OS6900-T20: 10 Gb Ethernet L2/L3 fixed configuration chassis in a 1U form factor with 20 10GBase-T ports, auto-negotiable 100-BaseT, 1/10 GigE one optional module slot. Front-to-back cooling. The chassis includes a modular DC power supply. A second power supply slot is supported for redundancy. Redundant power supply must be ordered separately. The bundle ships with user manuals access card, rack mounts, and USB to RJ-45 adapter.

OS6900 SWITCH FAMILY	
OS6900-T20-R-xx	OS6900-T20: 10 Gb Ethernet L2/L3 fixed configuration chassis in a 1U form factor with 20 10GBase-T ports, auto-negotiable 1/10 GigE one optional module slot. Back-to-front cooling. The chassis includes a 450W AC power supply. A second power supply slot is supported for redundancy. Redundant power supply must be ordered separately. The OS6900-20 ships with a country-specific power cord, user manuals access card, rack mounts, and USB to RJ-45 adapter. (xx to be replaced with the country-specific power cord code (for example,–EU for Europe).)
OS6900-T20D-R	OS6900-T20: 10 Gb Ethernet L2/L3 fixed configuration chassis in a 1U form factor with 20 10GBase-T ports, auto-negotiable 100-BaseT, 1/10 GigE one optional module slot. Back-to-front cooling. The chassis includes a modular DC power supply. A second power supply slot is supported for redundancy. Redundant power supply must be ordered separately. The bundle ships with a user manuals access card, rack mounts, and USB to RJ-45 adapter.
OS6900-T40-F-xx	OS6900-T40: 10 Gb Ethernet L2/L3 fixed configuration chassis in a 1U form factor with 40 10GBase-T ports, auto-negotiable 100-BaseT, 1/10 GigE two optional module slots. Front-to-back cooling. The chassis includes a 450W AC power supply. A second power supply slot is supported for redundancy. Redundant power supply must be ordered separately. The OS6900-40 ships with a country-specific power cord, user manuals access card, rack mounts, and USB to RJ-45 adapter. (xx to be replaced with the country-specific power cord code (for example,–EU for Europe).)
OS6900-T40D-F	OS6900-T40: 10 Gb Ethernet L2/L3 fixed configuration chassis in a 1U form factor with 40 10GBase-T ports, auto-negotiable 100-BaseT, 1/10 GigE two optional module slots. Front-to-back cooling. The chassis includes a modular DC power supply. A second power supply slot is supported for redundancy. Redundant power supply must be ordered separately. The bundle ships with a user manuals access card, rack mounts, and USB to RJ-45 adapter.
OS6900-T40-R-xx	OS6900-T40: 10 Gb Ethernet L2/L3 fixed configuration chassis in a 1U form factor with 40 10GBase-T ports, auto-negotiable 100-BaseT, 1/10 GigE two optional module slots. Back-to-front cooling. The chassis includes a 450W AC power supply. A second power supply slot is supported for redundancy. Redundant power supply must be ordered separately. The OS6900-40 ships with a country-specific power cord, user manuals access card, rack mounts, and USB to RJ-45 adapter. (xx to be replaced with the country-specific power cord code (for example,–EU for Europe).)
OS6900-T40D-R	OS6900-T40: 10 Gb Ethernet L2/L3 fixed configuration chassis in a 1U form factor with 40 10GBase-T ports, auto-negotiable 100-BaseT, 1/10 GigE two optional module slots. Back-to-front cooling. The chassis includes a modular DC power supply. A second power supply slot is supported for redundancy. Redundant power supply must be ordered separately. The bundle ships with a user manuals access card, rack mounts, and USB to RJ-45 adapter.
OS6900-X20-F-xx	OS6900-X20: 10 Gb 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 (for example,–EU for Europe).)
OS6900-X20D-F	OS6900-X20: 10 Gb 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 Gb 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 (for example,–EU for Europe).)
OS6900-X40D-F	OS6900-X40: 10 Gb 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 Gb 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 (for example,–EU for Europe).)
OS6900-X20D-R	OS6900-X20: 10 Gb 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 Gb 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 (for example,–EU for Europe).)
OS6900-X40D-R	OS6900-X40: 10 Gb 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-U12E	10 Gb Ethernet or 2/4/8 Gigabit Fibre Channel (FC) optional module for the OS6900 series of switches with 12 SFP+ ports that support 1Gig and 10 Gig Ethernet speeds or 2Gig/4Gig/8Gig FC speeds. Requires OS6900-SW-DC license to use the ports in FC mode.
OS-XNI-U12	10 Gb Ethernet Optional Module for the OS6900 series of switches. Supports 12 SFP+ ports.
OS-XNI-U4	10 Gb 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.
OS-XNI-T8	10 Gb Ethernet Optional Module for the OS6900 series of switches with 8 10GBase-T ports that support 100-BaseT, 1 G and 10 G speeds.
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 (for example,–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.
OS6900Q-FT-F	OS6900Q-FT-F : OS6900Q 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 (for example,–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 SWITCH FAMILY	
OS6900-FT-R	OS6900 replacement fan tray; back-to-front cooling.
OS6900Q-FT-R	OS6900Q-FT-R : OS6900Q replacement fan tray; back to front cooling
SOFTWARE	
OS6900-SW-AR	Advanced routing software license. Includes support for Policy Based Routing, VRF, BGP, OSPFv2, VRRPv2, PIM-SM/DM, DVMRP, IPv6 Routing, OSPFv3, RIPng, VRRPv3, SPB, Virtual Chassis (VC), and if supported VXLAN VTEP.
OS6900 SWITCH FAMILY	
OS6900-SW-DC	Data Center Software for support of DCBX, FCoE and EVB on OS6900. One license required per chassis.
GIGE TRANSCEIVERS	
SFP-GIG-T	1000Base-T Gb Ethernet Transceiver (SFP Multiple Source Agreement, MSA). SFP works at 1000 Mb/s speed and full-duplex mode.
SFP-GIG-SX	1000Base-SX Gb Ethernet optical transceiver (SFP MSA).
SFP-GIG-LX	1000Base-LX Gb Ethernet optical transceiver (SFP MSA).
SFP-GIG-LH40	1000Base-LH Gb Ethernet optical transceiver (SFP MSA). Typical reach of 40 km on 9/125 µm SMF.
SFP-GIG-LH70	1000Base-LH Gb Ethernet optical transceiver (SFP MSA). Typical reach of 70 km on 9/125 µm SMF.
10 GIGE TRANSCEIVERS	
SFP-10G-SR	10 Gb optical transceiver (SFP+). Supports multimode fiber over 850 nm wavelength (nominal) with an LC connector. Typical reach of 300 m.
SFP-10G-LR	10 Gb optical transceiver (SFP+). Supports monomode fiber over 1310 nm wavelength (nominal) with an LC connector. Typical reach of 10 km.
SFP-10G-ER	10 Gb optical transceiver (SFP+). Supports monomode fiber over 1550 nm wavelength (nominal) with an LC connector. Typical reach of 40 km.
SFP-10G-LRM	10 Gb optical transceiver (SFP+). Supports multimode fiber over 1310 nm wavelength (nominal) with an LC connector. Typical reach of 220 m on FDDI-grade (62.5 µm).
SFP-10G-GIG-SR	Dual-speed SFP+ optical transceiver. Supports multimode fiber over 850 nm wavelength (nominal) with an LC connector. Supports 1000Base-SX and 10GBase-SR.
SFP-10G-24DWD80	10 Gb Dense Wavelength Division Multiplexing (DWDM) optical transceiver (SFP+ MSA), 1558.17 nm/Channel 24 (100GHz ITU Grid), 80 km, LC Connector.

SFP+ DIRECT ATTACHED CABLES	
SFP-10G-ZR	10 Gigabit industrial optical transceiver (SFP+). Supports data transmission at 1550nm over up to 80km single mode fiber. LC connector type.
SFP-10G-C1M	10 Gb direct attached copper cable (1 m, SFP+)
SFP-10G-C3M	10 Gb direct attached copper cable (3 m, SFP+)
SFP-10G-C7M	10 Gb direct attached copper cable (7 m, SFP+)
40 GIGE TRANSCEIVERS	
QSFP-40G-SR	Four-channel 40 Gb optical transceiver (QSFP+). Supports link lengths of 100 m and 150 m, respectively, on OM3 and OM4 multimode fiber cables.
QSFP-40G-LR	Four-channel 40 Gb optical transceiver (QSFP+). Supports single mode fiber over 1310 nm wavelength. Typical reach 10 km.
QSFP-4X10G-SR	40 Gb to 4 x 10 Gb Multifiber Push-On (MPO) fiber splitter transceiver
QSFP+ DIRECT ATTACHED CABLES	
QSFP-40G-C1M	40 Gb direct attached copper cable (1 m, QSFP+)
QSFP-40G-C3M	40 Gb direct attached copper cable (3 m, QSFP+)
QSFP-40G-C7M	40 Gb direct attached copper cable (7 m, QSFP+)
QSFP-4X10G-C1M	40 Gb to 4 x 10 Gb direct attached copper splitter cable (1m, QSFP+)
QSFP-4X10G-C3M	40 Gb to 4 x 10 Gb direct attached copper splitter cable (3m, QSFP+)
QSFP-4X10G-C5M	40 Gb to 4 x 10 Gb direct attached copper splitter cable (5m, QSFP+)
FC SFP+ TRANSCEIVERS	
SFP-FC-SR	Triple-speed SFP+ Fibre Channel optical transceiver. Supports multimode fiber 850nm wavelength with an LC connector. Supports auto-sensing 8G Fibre Channel (FC), 4GFC and 2GFC.

enterprise.alcatel-lucent.com Alcatel-Lucent and the Alcatel-Lucent Enterprise logo are trademarks of Alcatel-Lucent. To view other trademarks used by affiliated companies of ALE Holding, visit: enterprise.alcatel-lucent.com/trademarks. All other trademarks are the property of their respective owners. The information presented is subject to change without notice. Neither ALE Holding nor any of its affiliates assumes any responsibility for inaccuracies contained herein. (July 2015)

Alcatel·Lucent Enterprise