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Enterprise

Alcatel-Lucent OmniSwitch 7900-D64

AI Data Center Switches

The Alcatel-Lucent OmniSwitch 7900-D64 (OS7900-D64) is a spine switch for high-performance data centers. The switch provides line-rate L2 and L3 switching across the 64 x QSFP56-DD ports, each supporting 1 x 400G QSFP56-DD, 1 x 100G QSFP28, 1 x 40G QSFP+, or via breakout cables 2 x 200G (2 x 4 lanes 50G PAM4), 4 x 100G (4 x 2 lanes 50G PAM4), 2 x 50G (2 x 2 lanes 25G NRZ), 4 x 25G NRZ, or 4 x 10G NRZ. The OS7900-D64 can be deployed as a spine switch supporting 100/400 GbE spine to spine or spine to leaf interconnects. This open network switch is loaded with the Open Network Install Environment (ONIE), which supports the installation of compatible Network Operating System software, including open source options, Alcatel-Lucent SONiC (ASON) or Alcatel-Lucent Operating System (AOS-X) NOS offerings.

Key Features and Benefits

- QSFP56-DD switch ports, each supporting 1 x 400G QSFP56-DD, 1 x 100G QSFP28, 1 x 40G QSFP+, or via breakout cables 2 x 200G (2 x 4 lanes 50G PAM4), 4 x 100G (4 x 2 lanes 50G PAM4), 2 x 50G (2 x 2 lanes 25G NRZ), 4 x 25G NRZ, or 4 x 10G NRZ
- Incorporates Broadcom Tomahawk 4 switch series silicon
- 2 RU form factor
- Supports hot/cold aisles with front-to-back airflow SKU
- All ports on front; PSUs and fans accessible from rear
- Hot-swappable, load-sharing, redundant 2400 W AC/HVDC PSUs
- 3+1 redundant, hot-swappable fan modules
- Hardware switch pre-loaded with Open Network Install Environment (ONIE) for automated loading of compatible open source and commerical NOS offerings including Alcatel-Lucent SONiC (ASON) and Alcatel-Lucent Operating System (AOS-X)
- Compatible with Open Network Linux (ONL), the open-source, OCP reference NOS

Product Picture

OS7900-D64 front: preliminary picture of the OS7900-D64, final product may look slightly different.

Product specifications

Feature	Description

Ports	• Switch Ports: 64 x OSFP800 800GbE
	• Port Modes:
	  • 1 x 800G (8 lanes 100G PAM4)
	  • 2 x 400G (4 lanes 100G PAM4) breakout
	  • 4 x 200G (2 lanes 100G PAM4) breakout
	  • 8 x 100G (1 lane 100G PAM4) breakout
	  • 1 x 400G (8 lanes 50G PAM4)
	  • 2 x 200G (4 lanes 50G PAM4) breakout
	  • 4 x 100G (2 lanes 50G PAM4) breakout
	  • 8 x 50G (1 lane 50G PAM4) breakout
	  • 1 x 100G (4 lanes 25G NRZ)
	• Management Ports on Port Side:
	  • 1 x RJ-45 serial console
	  • 1 x RJ-45 1000BASE-T management
	  • 2 x SFP28 10G In-band management
	  • 1 x USB 2.0 storage port
	• Supported Transceivers and Cables:
	  • 100GBASE-SR4/CWDM4/LR4
	  • 100G-DAC/AOC Cable
	  • 400BASE-FR4
	  • 400G-DAC/AOC Cable

Key Components	• Switch Silicon: BCM78900 Tomahawk 4
	• CPU Module:
	  • Intel® Xeon® Processor D-1548 8-Core 2.0 GHz
	  • DDR4: 16 GB x 2 SO-DIMM
	  • m.2 SSD: 128GB x 1

Performance	• Switching Capability: 25.6 Tbps full duplex (51.2 Tbps half duplex) • Forwarding Rate: 10.42 Bpps • Jumbo frames support up to 9416 bytes • Packet Buffer Size: Integrated 113.66 MB packet buffer • Subject to NOS: • MAC Addresses: 8K for exact match • 128K without exact match •
Physical and Environmental	• Dimensions (WxDxH): 44 x 64.92 x 87 cm (17.32 x 25.56 x 34.25 in) • Weight: 21.5 kg (47.4 lb), with 2 PSUs and 4 fans installed • Fans: Hot-swappable 3 + 1 redundant fans • Storage Temperature: -40°C to 70°C (-40°F to 158°F) • Operating Temperature: • (FtoB): 0°C~40°C (32°F~104°F) • 0~40°C (32°F~104°F) at sea level, • 0~35°C (32°F~95°F) at 1828 m (6000 ft) • Operating Humidity: 5% ~ 95% non-condensing • Operating Altitude: 0-1828 m (0~6000 ft) •
Software	• Switch is loaded with Open Network Install Environment (ONIE) software installer • Compatible with the following NOS options: Open source options, Alcatel-Lucent Enterprise SONiC (ASON), Alcatel-Lucent Enterprise Operating System (AOS-X) •

Feature	Description

System and Port LEDs	• QSFP56-DD Port LEDs:
	  • 400G (1 x 8 lanes 50G PAM4): Blue
	  • 200G (2 x 4 lanes 50G PAM4): Cyan
	  • 100G (4 x 2 lanes 50G PAM4): Green
	  • 100G (1 x 4 lanes 25G NRZ): Green
	  • 40G (1 x 4 lanes 10G NRZ): Dark Green
	  • 50G (2 x 2 lanes 25G NRZ): Red
	  • 25G (4 x 1 lane 25G NRZ): Orange
	  • 10G (4 x 1 lane 10G NRZ): Yellow
	• Management Port LEDs:
	  • SFP+: Left: Green (10G link), Amber (1G link)
	  • Right: Green (10G activity), Amber (1G activity)
	  • RJ-45: Left: Green (1G link), Amber (10/100M link)
	• Right: Green (1G activity), Amber (10/100M activity)
	• System LEDs: PSU1, PSU2, FAN, STAT, and LOC
	• Reset button

Power	• PSUs: 2 redundant, load-sharing, hot-swappable 2400 W
	  • AC/HVDC power supplies
	• AC PSU
	  • Input Power Rating:
	    • 100–127 VAC, 50/60 Hz, 12 A maximum
	    • 200–240 VAC, 50/60 Hz, 15 A maximum
	    • HVDC: 240 VDC, 15 A maximum
	• Power Draw: 287.75 W (min.), 2100 W (max.)
	• Power Budget:
	  • Ports 1, 2, 3, 4, 29, 30, 31, 32, 33, 34, 35, 36, 61, 62, 63, 64: 24 W per transceiver
	  • All other ports: 13 W per transceiver

Regulatory	• Emissions:
	  • EN 55032 Class A
	  • EN 61000-3-2
	  • EN 61000-3-3
	  • VCCI-CISPR 32 Class A
	  • AS/NZS CISPR 32 Class A
	  • ICES-003 Issue 7 Class A
	  • FCC Class A
	• Immunity:
	  • EN 55035
	  • IEC 61000-4-2/3/4/5/6/8/11
	• Safety:
	  • UL (CSA 22.2 No 62368-1 & UL 62368-1)
	  • CB (EC/EN60950-1 & IEC/EN 62368-1)
	• Environmental:
	  • GR63-CORE (Pre-test)
	• RoHS-2.0 Compliant
	• Electrical and Electronic Equipment (WEEE Directive 2002/96/EC)

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