

Product Highlights

Performance

- 10 Terabits per second fabric capacity
- 1.25 Terabits per second per line card
- 384 wirespeed 10GbE ports
- 5.76 BPPS wirespeed L2 & L3
- 4.5 microsecond latency (64 bytes)

High Hardware Availability

- 2+2 Grid redundant power system
- 1+1 Supervisor redundancy
- N+1 Fabric module redundancy
- N+1 Fan module redundancy

High Software Reliability

- Fine-grained software modularity
- Health monitoring and self healing
- Live patching through ISSU

Scalable Architecture

- 40GbE and 100GbE ready
- Deep packet buffers (18 GB total)
- 384 Virtual Output Queues per port

Resilient Control Plane

- Dual-core x86 CPU
- 4GB DRAM
- 2GB Flash
- Dual Supervisor modules

Data Center Class Design

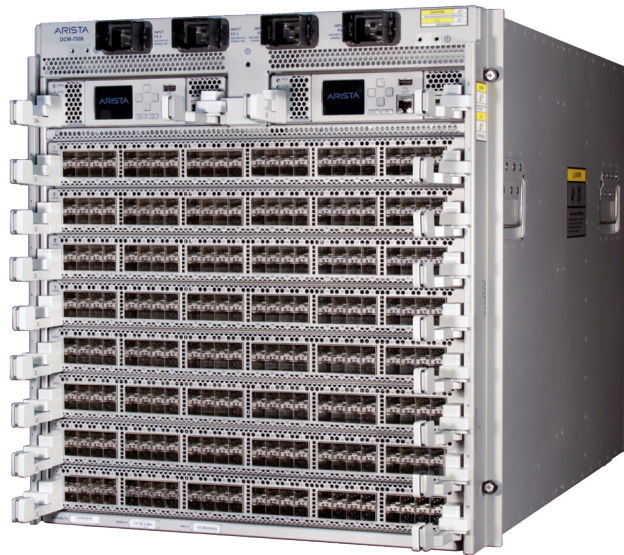
- 11RU chassis
- Front-to-rear airflow
- 10W per port (typical, fully loaded)
- 1536 ports per 44U rack

Arista Extensible Operating System

- Single binary image for all products
- Truly modular network OS
- Access to Linux tools
- Extensible platform

Overview

The Arista 7500 Series modular switch sets a new standard for performance, density, reliability, and power efficiency for data center switches. In a compact 11RU chassis, the Arista 7508 offers 10 Terabits of fabric capacity, 384 wirespeed 10 GbE ports and 5.76 BPPS of L2/3 throughput. The Arista 7500 offers a comprehensive feature set, as well as future support for the 40GbE and 100GbE standards. With front-to-rear airflow, redundant and hot swappable supervisor, power, fabric and cooling modules, the 7500 is energy efficient with typical power consumption of 10 watts per port for a fully loaded chassis. All of these attributes make the Arista 7500 an ideal platform for building low latency, scalable, data center networks.



Arista 7508 Switch: 10 Terabit capacity, 384 wirespeed 10GbE Ports

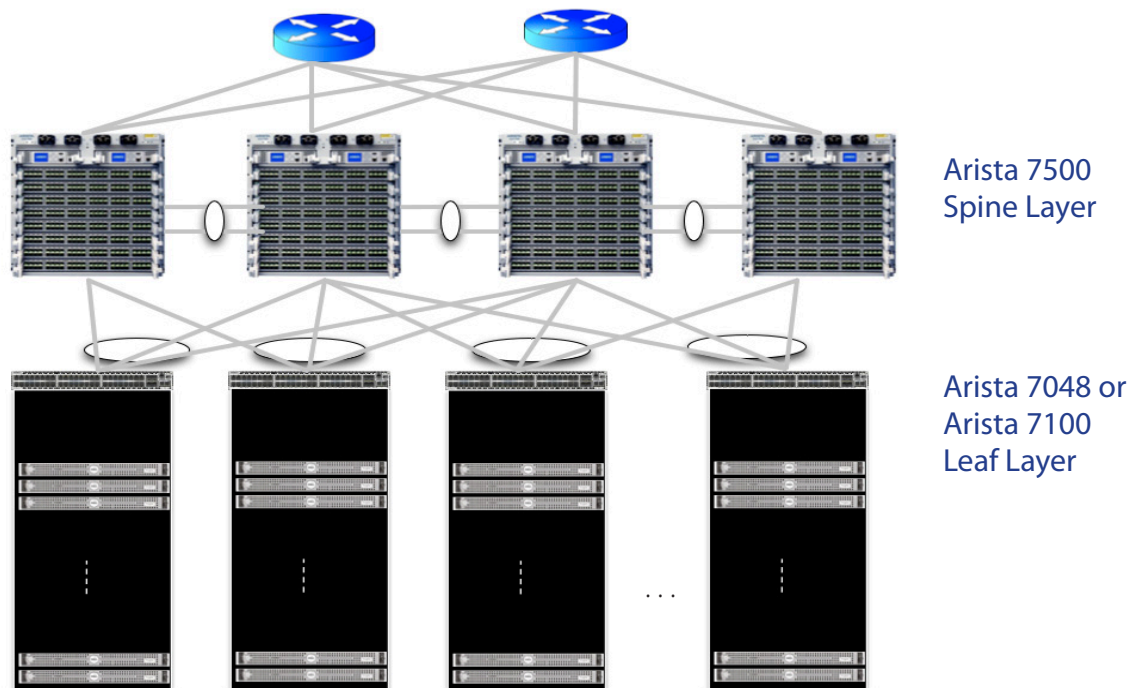
Arista EOS

All Arista products including the 7500 series switches run Arista EOS software. The same binary image supports all Arista products, making it easy for network administrators to standardize the operating system across all switches in the data center. With the addition of Arista 7500, EOS has been extended to support redundant supervisor modules with stateful switchover without the loss of data plane forwarding.

Arista EOS is a modular switch operating system with a unique state sharing architecture that cleanly separates switch state from protocol processing and application logic. Built on top of a standard Linux kernel, all EOS processes run in their own protected memory space and exchange state through a memory based database. This multi-process state sharing architecture provides the foundation for in-service-software updates and self-healing resiliency.

Scaling Data Center Performance

The Arista 7500 enables dramatically faster and simpler network designs for large-scale data centers. When used in conjunction with Arista 7048 or 7100 leaf switches and Arista's Multi-Chassis Link Aggregation (MLAG) technology, a pair of 7508 Switches can support 9200 Servers with a leaf/spine active/active L2 network topology. With four Arista 7508 switches at Layer 3, more than 18,000 Servers can be connected with a non-blocking, low-latency, two-stage network that provides predictable end-to-end application performance.



Cloud Networking: Arista 7000 Family Leaf/Spine network design

Predictable Network Performance

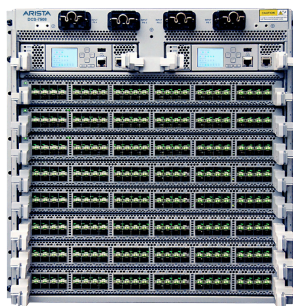
The Arista 7500 uses a deep buffer virtual output queue (VOQ) architecture that eliminates head-of-line (HOL) blocking and virtually eliminates packet drops even in the most congested network scenarios. An advanced traffic scheduler fairly allocates bandwidth between all virtual output queues while accurately following queue disciplines including weighted fair queueing, fixed priority, or hybrid schemes including 802.1Qaz ETS. As a result, the Arista 7500 can handle the most demanding data center requirements with ease, including mixed traffic loads of real-time, multicast, and storage traffic.

Designed for High Availability

The Arista 7500 is designed specifically for high-availability requirements. The hardware supports hot-swappable redundant power, cooling, fabric, supervisors, and linecards. The fabric is N+1 redundant with graceful degradation. The Arista EOS software supports stateful failover between the redundant supervisors as well as self healing and live patching through in-service-software updates.



2900W
AC Power Supply



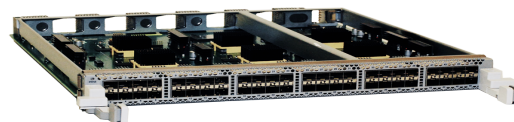
7508 Chassis



Fabric Module



Supervisor
Module



7548S Linecard
Module

7500 Series

7508 Chassis

The 7508 chassis provides room for two supervisor modules, eight linecard modules, four power supply modules, and six fabric modules. The chassis fits into 11 U of a standard data center rack. Supervisor and linecard modules plug in from the front, while the fan, fabric and power supply modules are inserted from the rear. The midplane is completely passive and provides control plane connectivity to each of the fabric and linecard modules. The system design is optimized for data center deployments with front-to-rear airflow.

7500 Supervisor Module

The supervisor modules for the 7500 series run Arista Extensible Operating System (EOS) and handle all control plane and management functions of the system. One supervisor module is needed to run the system and a second can be added for 1+1 control plane redundancy. Each supervisor module takes up only a half slot resulting in very efficient use of space and a higher density design. The dual-core x86 CPU provides the necessary control plane performance needed to run an advanced data center switch. Each supervisor module also includes an LCD panel in the front to monitor system status making it easy for network operators to quickly identify issues.

7500 Fabric Module

At the heart of the 7500 series is the fabric. It interconnects all linecards in a non-blocking architecture irrespective of the traffic pattern. Each linecard module connects to the fabric with multiple links and data packets are spread across these links to fully utilize the fabric capacity using a fabric control protocol. Unlike typical hash-based selection of fabric links, the 7500 architecture provides connectivity from any port to any other port with no drops. The fabric modules are N+1 redundant and can be hot-swapped with very little impact to data traffic.

7500 Power Supply Module

The 7500 series switches are provisioned with four 2900W AC power supplies. The power supplies are 2+2 grid redundant and hot-swappable. Each power supply must be connected to a 16A (20A UL) 200-240V AC circuit. The power supplies are gold climate saver rated and have an efficiency of over 90% with single stage conversion to the internal 12V DC voltage.

7548S Linecard Module

The 7548S Linecard offers 48 wirespeed 1/10GbE SFP+ ports with an aggregate throughput of 760 Mpps at both Layer 2 and Layer 3. The Arista 7508 chassis can be fully populated with eight linecards to achieve a wirespeed 384 10GbE ports. The virtual output queue architecture eliminates head-of-line blocking and with 2.3GB of packet memory on each linecard, approximately 40 msec of traffic can be buffered per ingress port, virtually eliminating packet drops in congestion scenarios. Each linecard module connects to all fabric modules in a non-blocking full mesh. The redundant fabric modules allow the system to continue forwarding at wirespeed even when one fabric module fails.

Layer 2 Features

- 802.1w Rapid Spanning Tree
- 802.1s Multiple Spanning Tree Protocol
- Rapid Per Vlan Spanning Tree (RPVST+)*
- 802.3ad Link Aggregation/LACP
- MLAG-Multi-Chassis Link Aggregation*
- 802.1Q VLANs/Trunking
- 802.1AB Link Layer Discovery Protocol
- Port Mirroring*
- 802.3x Flow Control
- IGMP v1/v2 snooping

Layer 3 Features

- Static Routes*
- OSPF*
- BGP*
- VRRP*
- Policy Based Routing (PBR)*
- L2/3/4 Access Lists*
- ECMP-Equal Cost Multipath Routing*

Standards Compliance

- 802.1D Bridging and Spanning Tree
- 802.1p QOS/COS
- 802.1Q VLAN Tagging
- 802.1w Rapid Spanning Tree
- 802.1s Multiple Spanning Tree Protocol
- 802.1AB Link Layer Discovery Protocol
- 802.3ad Link Aggregation with LACP
- 802.3x Flow Control
- 802.3ab 1000BASE-T
- 802.3z Gigabit Ethernet
- 802.3ae 10 Gigabit Ethernet

Fabric Features

- 10 Terabit/second Capacity
- 1.25 Terabit/second per Linecard
- 1.66 Terabit/sec per Fabric Module
- N+1 Redundant
- Non-blocking
- Virtual Output Queueing
- Self-healing
- Distributed Scheduler
- WFQ, CIR*, ETS*, Fixed Priority

Quality of Service (QoS) Features

- Up to 8 queues per port
- Strict priority queueing
- 802.1p based classification
- DSCP based classification*
- Policers*
- Rate limiting*
- Per-Priority Flow Control*
- Enhanced Transmission Selection (ETS)*
- Data Center Bridging Extensions (DCBX)*

Security Features

- Filtering based on L2, L3, L4 fields*
- Control Plane Protection (CPP)
- MAC Security
- TACACS+
- Radius
- ARP trapping and rate limiting*

Network Management

- 10/100/1000 Management Port
- RS-232 Serial Console Port
- USB Port
- SNMP v2, v3
- SSHv2
- Syslog
- AAA
- Port Mirroring
- Telnet
- Industry Standard CLI

7548S Linecard Features

- 48 1/10GbE SFP+ Ports
- 720 MPPS L2/L3 Forwarding Rate
- 1.25 Tbps Fabric Interface (full duplex)
- 9216 Byte Jumbo Frame Support
- 8 Priority Queues per Port
- 256 Link Aggregation Groups (LAG)
- 16 Ports per LAG
- 16,384 MAC Addresses
- 10,000 IPv4 Unicast Routes
- 4,000 IPv4 Multicast Routes
- 4,000 IPv6 Unicast Routes
- 512 IPv6 Multicast Routes
- 8,000 ARP Entries
- 8,000 Next Hop Entries
- 24,000 ACL Entries

* Supported in a future software release

Chassis (DCS-7508)

Supervisor slots	2
Linecard Slots	8
Fabric Module Slots	6
Power Supply Slots	4
Fan Modules (front-to-back air flow)	6
Physical Dimensions (WxHxD)	17.5" x 19" x 30" (44.5 x 48.3 x 76.2cm)
Weight (Chassis only)	95 lbs (43.1 kg)
Weight (Fully configured system)	300lbs (136 kg)

Supervisor Module (DCS-7500-SUP)

Processor	2.4Ghz, Dual Core, x86, 64-bit
DRAM Memory	4 GB
On-board Flash	2 GB
Serial Console Port	RJ45 interface
Out-of-band Management Ethernet Port	RJ45, 100/1000BASE-T
USB 2.0 Interface	For recovery or file transfers
LCD Display	For system status & error logs
Physical Dimensions (WxHxD)	8.5" x 1.75" x 23" (21.6 x 4.4 x 58.4cm)
Weight	5.2 lbs (2.4 kg)

Linecard (DCS-7548S-LC)

Physical Dimensions (WxHxD)	17.5" x 1.75" x 23" (44.5 x 4.5 x 58.4cm)
Weight	12.5 lbs (5.7 kg)

Fabric Module (DCS-7508-FM)

Redundancy	5+1
Physical Dimensions (WxHxD)	2.5" x 14" x 7.25" (6.4 x 35.6 x 18.4cm)
Weight	6.2 lbs (2.8 kg)

Fan Module (DCS-7508-FAN)

Redundancy	5+1
Physical Dimensions (WxHxD)	2.5" x 15" x 3.75" (6.4 x 38.1 x 9.5cm)
Weight	3.1 lbs (1.4 kg)

Power Supply (PWR-2900AC)

Input Circuit	200 - 240V, 16A (20A UL)
Input Frequency	50-60 Hz, single phase AC
Output Power	2900W
Physical Dimensions (WxHxD)	4.25" x 3.25" x 10" (10.8 x 8.3 x 25.4cm)
Weight	5.3 lbs (2.4 kg)

Environmental Characteristics

Operating Temperature	0 to 40C
Storage Temperature	-40 to 70C
Relative Humidity	5 to 90%
Operating Altitude	0 to 10,000 ft

Standards Compliance

EMI	FCC Part 15 Class A, ICES-003 Class A, VCCI Class A
Safety	IEC/UL/CSA/EN 60950
	CE, UL, TUV Mark
ROHS	ROHS-5 compliant

Product Number	Product Description
DCS-7508-BND	Arista 7508 system bundle. Includes 7508 chassis, (4) 2900W AC power supply modules, (6) fabric modules, (6) fan modules, (1) supervisor module, (1) accessory kit and blank covers for all unused slots
DCS-7508-CH	Arista 7508 chassis. 2 supervisor slots, 8 linecard slots, 6 fabric slots
DCS-7500-SUP	Supervisor module for 7500 series. Two supervisor modules needed for redundancy
DCS-7548S-LC	48 port 1/10GbE SFP+ wire-speed linecard module for 7500 series
DCS-7508-FM	Fabric module for 7508 chassis, required for fabric slots 1-6
DCS-7508-FAN	Fan module for 7508 chassis. Provides front-to-rear airflow
DCS-7500-SCVR	Blank cover for 7500 supervisor slot
DCS-7500-LCVR	Blank cover for 7500 linecard slot
PWR-2900AC	2900W AC power supply for 7500 series
LIC-7508-E	Enhanced software license for Arista 7508 switches (OSPF, BGP, PIM)
KIT-7508	Spare accessory kit for Arista 7508. Includes 4xC19-C20 power cords, 2 & 4 post mounting brackets
CAB-C19-C20	Power cord, C19 to C20 (2m)
CAB-C19-L6-20	Power cord, C19 to L6-20 (2.5m)

Note:

- Arista 7500 switches ship with four C19-C20 power cables (2m). Other power cables must be ordered separately
- Front-to-rear means the air flows from the switch port side to the fan side

Warranty

The Arista 7500 system includes a one-year limited hardware warranty, which covers parts, repair, or replacement with a 10 business day turn-around after unit is received.

Service and Support

Additional support services including next business day and 4-hour advance hardware replacement are available.

Headquarters

275 Middlefield Road
Menlo Park, CA 94025
650 462-5000

Support

support@aristanetworks.com
650 462-5002
866 476-0000

Sales

sales@aristanetworks.com
650 462-5001
866 497-0000