Product Highlights

Performance

- 7050S-64: 48x1/10GbE and 4x40GbE ports
- 7050S-52: 52x1/10GbE ports
- 1.28 terabits per second
- 960 million packets per second
- Wire speed L2 and L3 forwarding
- 800ns to 1.2us latency

Data Center Optimized Design

- Typical power draw less than 2W per port
- 1+1 redundant & hot-swappable power
- N+1 redundant & hot-swappable fans
- Front-to-rear or rear-to-front cooling

Cloud Networking Ready

- 128K MAC entries
- 16K IPv4 Routes
- 32K IPv4 Host Routes
- 8K IPv6 Routes
- 8K Mroutes
- 9MB Dynamic Buffer Allocation

Resilient Control Plane

- Dual-core x86 CPU
- 4GB DRAM
- 2GB Flash
- User applications can run in a VM

Built-in Storage

- Solid State Drive option
- Store logs and data captures
- Network boot nodes from the switch
- Linux tools with no limitations

Advanced Provisioning & Monitoring

- Zero Touch Provisioning (ZTP)
- VM Tracer - host view
- VM Tracer - auto VLANs
- sFlow
- Self-configure and recover from USB

Arista Extensible Operating System

- Single binary image for all products
- Fine-grained modularity
- Stateful Fault Containment (SFC)
- Stateful Fault Repair (SFR)
- Access to Linux tools
- Extensible platform

Overview

The Arista 7050 series 10/40G switches offer wire speed layer 2/3/4 performance with 52 or 64 ports of 10GbE in a compact 1RU chassis. The 7050S-64 switch offers 48 SFP+ and 4 QSFP+ interfaces while the 7050S-52 switch offers 52 SFP+ interfaces. Each QSFP+ 40GbE port can also operate as four independent 10GbE ports to provide a total of 64 10GbE ports in the 7050S-64 model. The Arista 7050S offers a latency of 800 to 1200 ns in cut-through mode, and a shared 9 MB packet buffer pool that is allocated dynamically to ports that are congested. With a typical power consumption of less than 2 watts/port with twinax copper cables, and less than 3 watts/port with SFP/QSFP lasers, the 7050S 10Gb switches provide industry leading power efficiency for the data center. An optional built-in SSD supports advanced logging, data captures and other services directly on the switch.

Arista 7050S-64: 48 x 1/10GbE SFP+ and 4 x 40GbE QSFP+ ports

Arista 7050S-52: 52 x 1/10GbE SFP+ ports

Arista EOS

The Arista 7050S switches run the same Arista EOS software as all Arista products, simplifying network administration. With Arista EOS, advanced monitoring and automation capabilities such as Zero Touch Provisioning, VM Tracer and Linux based tools can be run natively on the switch.

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 an in-memory database. This multi-process state sharing architecture provides the foundation for in-service-software updates and self-healing resiliency. Several Linux based tools can be run directly on the switch, running on a powerful dual-core x86 CPU subsystem.

High Availability

The Arista 7050 series switches were designed for high availability from both a software and hardware perspective. Key high availability features include:

- 1+1 hot-swappable power supplies and four N+1 hot-swap fans
- Color coded PSU's and fans - common to Arista 1RU devices
- Live software patching
- Self healing software with Stateful Fault Repair (SFR)
- Up to 16 10GbE ports per link aggregation group (LAG)
- Multi-chassis LAG for active/active L2 multipathing
- 32-way ECMP routing for load balancing and redundancy

Arista 7050S-64 Rear View: Front-to-rear airflow model

Arista 7050S-64 Rear View: Rear-to-front airflow model

Dynamic Buffer Allocation

In cut-through mode, the Arista 7050 10Gb switches forward packets with a latency of 800 to 1350 nanoseconds. Upon congestion, the packets are buffered in shared packet memory that has a total size of 9 MBytes. Unlike other architectures that have fixed per-port packet memory, the 7050 switches use Dynamic Buffer Allocation (DBA) to allocate up to 5MB of packet memory to a single port for lossless forwarding.

Arista 7050S: Latency through SFP+ ports

Provisioning Tools and Built-in Storage

The 7050 series switches offer advanced capabilities for network provisioning. With ZTP, the switch can be automatically provisioned through a centralized management system with a dynamically generated configuration and preferred boot image. A built-in 50GB SSD is available as an option from the factory. The integrated storage allows for a whole new family of applications that can be run from the network itself. This includes having the switch be a PXE boot server, store syslogs for audit and compliance right on the switch, capturing and saving data packets via tcpdump and Linux based services such as DHCP and Precision Time Protocol (PTP).
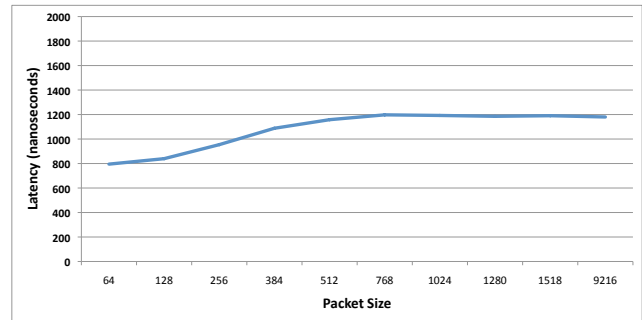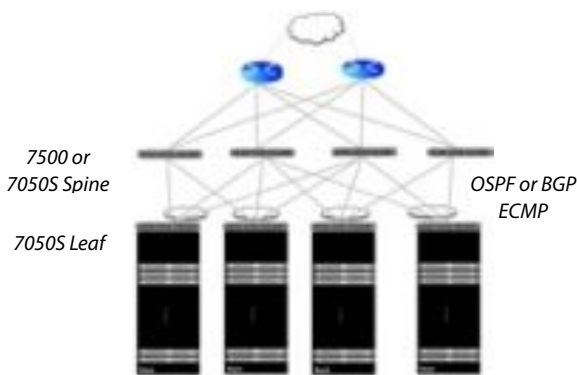
Cloud Network Scale: Up to 18,000 10GbE nodes using standardized protocols

Arista Leaf-Spine Design with L3 ECMP
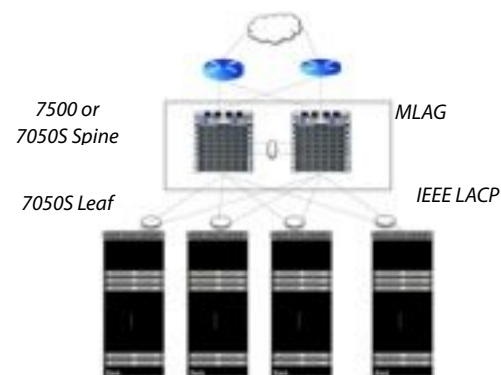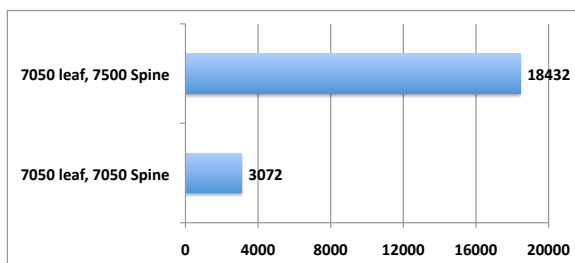
Arista Leaf-Spine Design with L2 MLAG
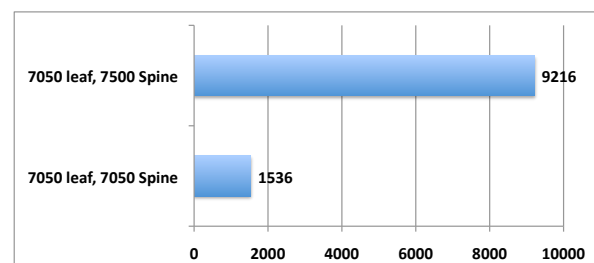
Number of 10GbE Nodes Interconnected Using Arista Leaf-Spine Designs

Layer 2 Features

- 128K L2 Forwarding Entries
- 802.1w Rapid Spanning Tree
- 802.1s Multiple Spanning Tree Protocol
- Rapid Per VLAN Spanning Tree (RPVST+)
- 4096 VLANs
- Q-in-Q
- 802.3ad Link Aggregation/LACP
    - 16 ports/channel
    - 64 groups per system
- Multi-Chassis Link Aggregation (MLAG)
    - Uses IEEE 802.3ad LACP
    - 32 ports per MLAG
- 802.1AB Link Layer Discovery Protocol
- Port Mirroring (4 active mirroring sessions)
- 802.3x Flow Control
- Jumbo Frames (9216 Bytes)
- IGMP v1/v2/v3 snooping
- Storm Control

Layer 3 Features

- 16K IPv4 Routes
- 32K IPv4 Host Routes
- 8K IPv4 Multicast Routes
- 8K IPv6 Routes
- 4K IPv6 Multicast Routes
- Routing Protocols: OSPF, OSPFv3, BGP, MP-BGP, IS-IS, and RIPv2
- 32-way Equal Cost Multipath Routing (ECMP)
- BFD
- Route Maps
- IGMP v2/v3
- PIM-SM / PIM-SSM
- Anycast RP (RFC 4610)
- VRRP
- Virtual ARP (VARP)
- vrf
- Policy Based Routing
- uRPF

Monitoring and Provisioning

- Zero Touch Provisioning (ZTP)
- Advanced Event Management suite (AEM)
    - CLI Scheduler
    - Event Manager
    - Event Monitor
    - Linux tools
- Optional SSD for logging and data capture
- Integrated packet capture/analysis with TCPDump
- RFC 3176 sFlow
- Restore & configure from USB
- Blue Beacon LED for system identification
- Software Defined Networking (SDN)
    - Openflow 1.0

- Arista DirectFlow
- eAPI

VM Tracer Feature Set

- VMware vSphere support
- VM Auto Discovery
- VM Adaptive Segmentation
- VM Host View

Security Features

- Ingress Egress ACLs using L2, L3, L4 fields
- ACL Logging and Counters
- Control Plane Protection (CPP)
- DHCP Relay / Snooping
- MAC Security
- TACACS+
- RADIUS

Quality of Service (QoS) Features

- Up to 8 queues per port
- Strict priority queueing
- 802.1p based classification
- Per-Priority Flow Control (PFC)
- Data Center Bridging Extensions (DCBX)
- 802.1Qaz Enhanced Transmissions Selection (ETS)*
- DSCP based classification and remarking
- Policing/Shaping
- Rate limiting
- Explicit Congestion Notification (ECN)

Network Management

- CloudVision Task-Oriented Multi-Device CLI
- 100/1000 Management Port
- RS-232 Serial Console Port
- USB Port
- SNMP v1, v2, v3
- Management over IPv6
- Telnet and SSHv2
- Syslog
- AAA
- Industry Standard CLI

Extensibility

- Linux Tools
    - Bash shell access and scripting
    - RPM support
    - Custom kernel modules
- Programmatic access to system state
    - Python
    - C++
- Native KVM/QEMU support

* Not yet supported in EOS

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
• 802.3ab 1000BASE-T
• 802.3z Gigabit Ethernet
• 802.3ae 10 Gigabit Ethernet
• 802.3ba 40 Gigabit Ethernet
• RFC 2460 Internet Protocol, Version 6 (IPv6) Specification
• RFC 4861 Neighbor Discovery for IP Version 6 (IPv6)
• RFC 4862 IPv6 Stateless Address Autoconfiguration
• RFC 4443 Internet Control Message Protocol (ICMPv6) for the
  Internet Protocol Version 6 (IPv6) Specification

SNMP MIBs

• RFC 3635 EtherLike-MIB
• RFC 3418 SNMPv2-MIB
• RFC 2863 IF-MIB
• RFC 2864 IF-INVERTED-STACK-MIB
• RFC 2096 IP-FORWARD-MIB
• RFC 4363 Q-BRIDGE-MIB
• RFC 4188 BRIDGE-MIB
• RFC 2013 UDP-MIB
• RFC 2012 TCP-MIB
• RFC 2011 IP-MIB
• RFC 2790 HOST-RESOURCES-MIB
• RFC 3636 MAU-MIB
• RMON-MIB
• RMON2-MIB
• HC-RMON-MIB
• LLDP-MIB
• LLDP-EXT-DOT1-MIB
• LLDP-EXT-DOT3-MIB
• ENTITY-MIB
• ENTITY-SENSOR-MIB
• ENTITY-STATE-MIB
• ARISTA-ACL-MIB
• ARISTA-QUEUE-MIB
• RFC 4273 BGP4-MIB
• RFC 4750 OSPF-MIB
• ARISTA-CONFIG-MAN-MIB
• RFC 2787 VRRPv2MIB
• MSDP-MIB
• PIM-MIB
• IGMP-MIB
• IPMROUTE-STD-MIB
• SNMP Authentication Failure trap
• ENTITY-SENSOR-MIB support for DOM (Digital Optical
  Monitoring)
• User configurable custom OIDs

See EOS release notes for latest supported MIBs

* Not yet supported in EOS

Table Sizes

MAC Addresses	128,000
STP Instances	64 (MST)/511 (RPVST+)
IGMP Groups	50,000
ACLs	3,000
IPv4 Hosts	32,000
IPv4 Routes - Unicast	16,000
IPv4 Routes - Multicast	8,000
IPv6 Routes - Unicast	8,000
IPv6 Routes - Multicast	4,000
ECMP	32-way

Environmental Characteristics

Operating Temperature	0 to 40C
Storage Temperature	-40C to 70C
Relative Humidity	5 to 95%
Operating Altitude	0 to 10,000 ft

Physical Characteristics

Size (WxHxD)	19" x 1.75" x 16" (44.5 x 4.4 x 40.64 cm)
Weight	17 lbs (7.71 kg)

Power Supply Specifications

	AC	DC
Input Voltage	100-240AC	40-72V DC
Input Current	2.2-5.3A	12.8-7.1A 11.3A at -48V
Input Frequency	50/60Hz	DC
Input Connector	IEC 320-C13	AWG #16-12

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
Other	ROHS-6 Compliant

* Typical power consumption measured at 25C ambient with 50% load

Model Comparison

	7050S-64	7050S-52
Ports	48 x SFP+, 4 x QSFP+	52xSFP+
Total 10GbE Ports	64	52
Total 1GbE Ports	48 (SFP/SFP+)	52 (SFP/SFP+)
Throughput	1.28 Terabits/second	1.04 Terabits/second
Packets/Second	960 Mpps	780 Mpps
Latency	800 - 1150ns (SFP+) 950 - 1350ns (QSFP+)	800 to 1150ns
CPU	Dual-Core x86	Dual-Core x86
System Memory	4 Gigabytes	4 Gigabytes
Flash Storage Memory	2 Gigabytes	2 Gigabytes
Packet Buffer Memory	9MB (Dynamic Buffer Allocation)	9MB (Dynamic Buffer Allocation)
SSD Storage (optional)	50 Gigabytes	50 Gigabytes
100/1000 Mgmt Ports	1	1
RS-232 Serial Ports	1 (RJ-45)	1 (RJ-45)
USB Ports	1	1
Hot-swap Power Supplies	2 (1+1 redundant)	2 (1+1 redundant)
Hot-swappable Fans	4 (N+1 redundant)	4 (N+1 redundant)
Reversible Airflow Option	Yes	Yes
Typical/Max Power Draw*	125 / 220W	103 / 185W

Supported Optics and Cables

Interface Type	SFP+ ports	QSFP+ ports
40GBASE-SR4	-	100m (OM3) /150m (OM4)
40GBASE-XSR4	-	300m (OM3) /450m (OM4)
40GBASE-AOC	-	3m to 100m
40GBASE-CR4	-	0.5m to 7m QSFP+ to QSFP
40GBASE-PLRL4	-	1km (1km 4x10G LR/LRL)
40GBASE-UNIV		150m (OM3) / 150m (OM4) 500m (SM)
40GBASE-SRBD		100m (OM3) /150m (OM4)
40GBASE-LRL4	-	1km
40GBASE-PLR4		10km (10km 4x10G LR/LRL)
40GBASE-LR4	-	10km
40GBASE-ER4	-	40km
10GBASE-CR	SFP+ to SFP: 0.5m-5m	0.5m - 5m QSFP+ to 4x SFP
10GBASE-AOC	3m to 30m	
10GBASE-SRL	100m	-
10GBASE-SR	300m	-
10GBASE-LRL	1km	-
10GBASE-LR	10km	-
10GBASE-ER	40km	-
10GBASE-ZR	80km	-
10G-DWDM	80km	-
100TX 1G SX/LX/TX	Yes	-

Product Number	Product Description
DCS-7050S-64-F	Arista 7050, 48xSFP+ & 4xQSFP+ switch, front-to-rear airflow and dual 460W AC power supplies
DCS-7050S-64-R	Arista 7050, 48xSFP+ & 4xQSFP+ switch, rear-to-front airflow and dual 460W AC power supplies
DCS-7050S-64#	Arista 7050, 48xSFP+ & 4xQSFP+ switch, no fans, no psu (requires fans and psu)
DCS-7050S-64-D#	Arista 7050, 48xSFP+ & 4xQSFP+ switch, 50GB SSD, no fans, no psu (requires fans and psu)
DCS-7050S-52-F	Arista 7050, 52xSFP+ switch, front-to-rear airflow and dual 460W AC power supplies
DCS-7050S-52-R	Arista 7050, 52xSFP+ switch, rear-to-front airflow and dual 460W AC power supplies
DCS-7050S-52#	Arista 7050, 52xSFP+ switch, no fans, no psu, (requires fans and psu)
DCS-7050S-52-D#	Arista 7050, 52xSFP+ switch, 50GB SSD, no fans, no psu (requires fans and psu)
FAN-7000-F	Spare fan module for Arista 7124SX, 7050 & 7048-A switches (front-to-rear airflow)
FAN-7000-R	Spare fan module for Arista 7124SX, 7050 & 7048-A switches (rear-to-front airflow)
PWR-460AC-F	Spare 460 Watt AC power supply for Arista 7124SX, 7050 & 7048-A Switches (front-to-rear airflow)
PWR-460AC-R	Spare 460 Watt AC power supply for Arista 7124SX, 7050 & 7048-A Switches (rear-to-front airflow)
PWR-460DC-F	Spare 460 Watt DC power supply for Arista 7124SX, 7050 & 7048-A Switches (front-to-rear airflow)
PWR-460DC-R	Spare 460 Watt DC power supply for Arista 7124SX, 7050 & 7048-A Switches (rear-to-front airflow)
LIC-FIX-2-E	Enhanced L3 License for Arista Fixed switches, 40-64 port 10G (BGP, OSPF, ISIS, PIM, NAT)
LIC-FIX-2-V	Virtualization license for Arista Fixed switches 40-64 port 10G (VMTracer)
LIC-FIX-2-Z	Monitoring & provisioning license for Arista Fixed switches 40-64 port 10G (ZTP, API, OpenFlow)
KIT-7000	Spare accessory kit for Arista 7000 / 7100 switches

Warranty

The Arista 7050 switches comes with a one-year limited hardware warranty, which covers parts, repair, or replacement with a 10 business day turn-around after the unit is received.

Service and Support

Support services including next business day and 4-hour advance hardware replacement are available. For service depot locations, please see: http://www.arista.com/en/service

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