

Product Highlights

Performance

- 48x1/10GbE SFP and 4x40GbE QSFP ports
- 1.28 terabits per second
- 960 million packets per second
- Wire speed L2 and L3 forwarding

Data Center Optimized Design

- 125W typical power draw
- 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
- TRILL support
- 16K IPv4 Routes
- 16K IPv4 Host Routes
- 8K IPv6 Routes
- 8K Multicast Groups
- 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)
- VMTracer - host view
- VMTracer - 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 7050S-64 switch is a wire speed layer 2/3/4 switch with 48 10GbE SFP+ and 4 40GbE QSFP+ ports in a compact 1RU chassis. Each 40GbE port can also operate as four independent 10GbE ports to provide a total of 64 10GbE ports. The Arista 7050-64 offers a latency of 800 to 1200 ns in cut-through mode, and a shared 9 MB packet buffer pool is allocated dynamically to ports that are congested. With a typical power consumption of less than 2 Watt/port with twinax copper cables, and less than 3 Watt/port with SFP/QSFP lasers, the 7050S-64 provides 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: 48x10GbE SFP+ and 4x40GbE QSFP+ ports

Arista EOS

The Arista 7050S-64 switch runs 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, VMTracer 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

Provisioning Tools and Built-in Storage

The 7050S-64 offers 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 syslog logs 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).

High Availability

The Arista 7050S-64 switch was designed for high availability from both a software and hardware perspective. Key high availability features include:

- 1+1 hot-swappable power supplies
- Four N+1 hot-swappable fans
- 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



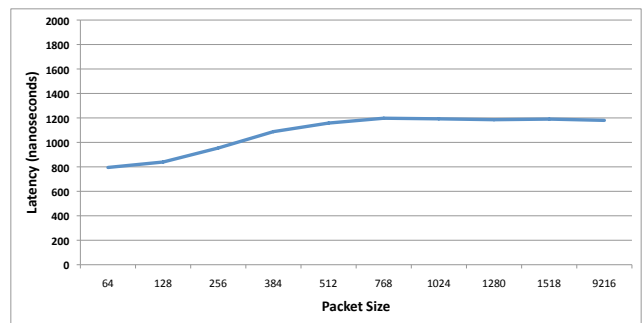
Arista 7050S-64 Rear View: Front-to-rear airflow model



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

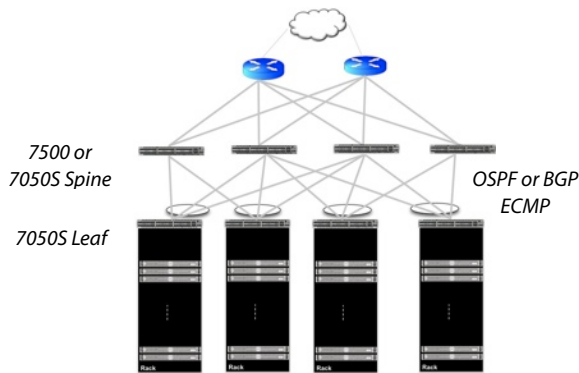
Dynamic Buffer Allocation

In cut-through mode, the Arista 7050S-64 forwards packets with a latency of 800 to 1200 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 7050S-64 uses Dynamic Buffer Allocation (DBA) to allocate up to 5MB of packet memory to a single port for lossless forwarding.

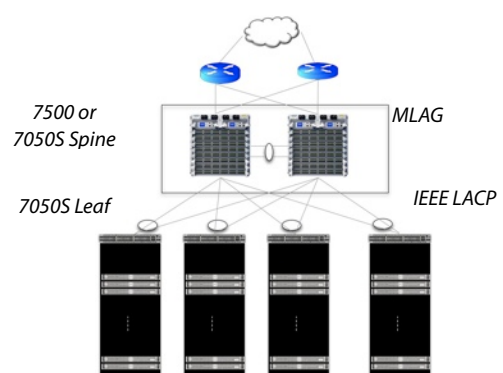
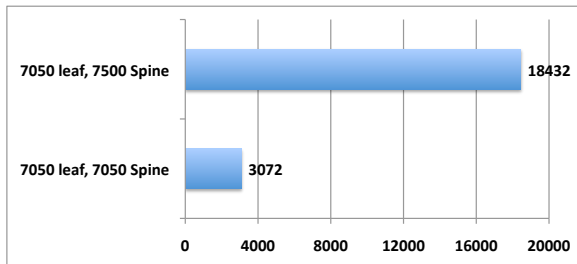


Arista 7050S-64: Latency using RFC 2544 tests

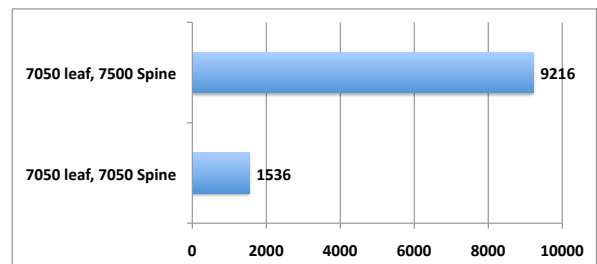
Cloud Network Scale: Up to 18K 10GbE nodes using standardized protocols



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+)
- 4094 VLANs
- Q-in-Q
- 802.3ad Link Aggregation/LACP
 - 16 ports/channel
 - 256 groups per system
- Multi-Chassis Link Aggregation (MLAG)
 - Uses IEEE 802.3ad LACP
 - 32 ports per MLAG
- IETF TRILL*
- 802.1AB Link Layer Discovery Protocol
- Port Mirroring
- 802.3x Flow Control
- Jumbo Frames (9216 Bytes)
- IGMP v1/v2/v3 snooping
- Storm Control

Layer 3 Features

- 16K IPv4 Routes
- 16K IPv4 Host Routes
- 8K IPv6 Routes*
- OSPF
- BGP
- 32-way Equal Cost Multipath Routing (ECMP)
- Route Maps
- PIM-SM
- Anycast RP (RFC 4610)
- VRRP
- Virtual ARP (VARP)

Monitoring and Provisioning

- Zero Touch Provisioning (ZTP)
- Optional SSD for logging and data capture
- Restore & configure from USB
- Blue Beacon LED for system identification

VM Tracer Feature Set

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

Security Features

- ACLs using L2, L3, L4 fields
- Control Plane Protection (CPP)
- MAC Security
- TACACS+
- Radius

* Supported in a future software release

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)
- 802.1Qau Quantized Congestion Notification (QCN)*
- DSCP based classification and remarking*
- Policers*
- Rate limiting*

Network Management

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

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

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
- LLDP-MIB
- LLDP-EXT-DOT1-MIB
- LLDP-EXT-DOT3-MIB
- ENTITY-MIB
- ENTITY-SENSOR-MIB