

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)
- 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 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, 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 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

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.

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).

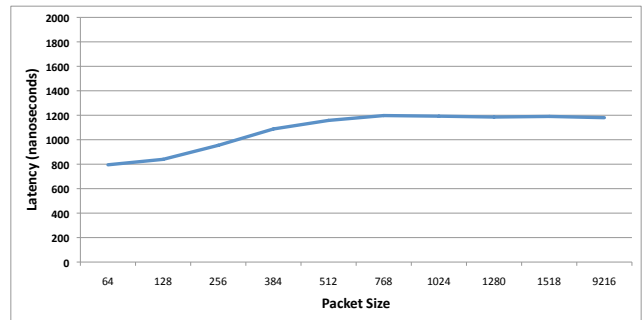
Cloud Network Scale: Up to 18,000 10GbE nodes using standardized protocols



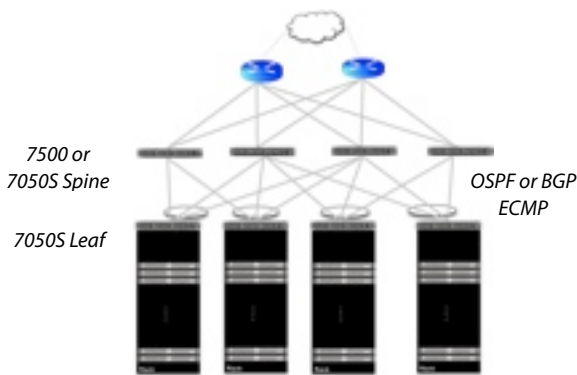
Arista 7050S-64 Rear View: Front-to-rear airflow model



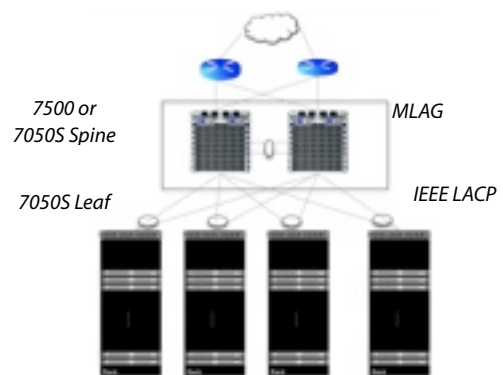
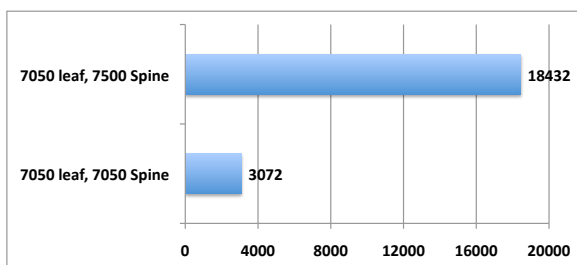
Arista 7050S-64 Rear View: Rear-to-front airflow model



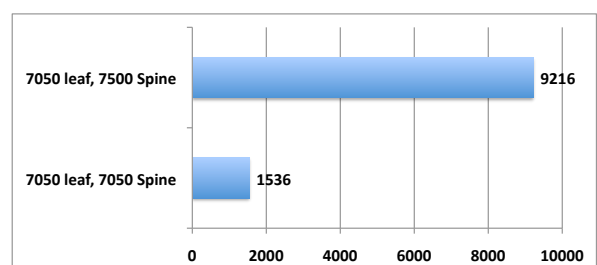
Arista 7050S: Latency through SFP+ ports



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
- OSPF
- BGP
- OSPFv3
- MP-BGP
- ISIS*
- 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)

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

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
- 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

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

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
- LLDP-MIB
- LLDP-EXT-DOT1-MIB
- LLDP-EXT-DOT3-MIB
- ENTITY-MIB
- ENTITY-SENSOR-MIB
- ENTITY-STATE-MIB
- User configurable custom OIDs

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 Specifications

| | |
|---------------------|-------------|
| Input Voltage | 100-240AC |
| Input Current (Max) | 2.2-5.3A |
| Input Frequency | 50-60Hz |
| Input Connector | IEC 320-C13 |

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 |

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 Power Draw* | 125W | 103W |
| Maximum Power Draw | 220W | 185W |

Supported Optics and Cables

| Interface Type | SFP+ ports | QSFP+ ports |
|-----------------------------|-----------------------|----------------------------|
| 40GBASE-SR4 | - | 100m (OM3) /150m (OM4) |
| 40GBASE-CR4 | - | 0.5m to 7m QSFP+ to QSFP+ |
| 40GBASE-LR4 | - | 10Km |
| 10GBASE-CR | SFP+ to SFP+: 0.5m-5m | 0.5m - 3m QSFP+ to 4x SFP+ |
| 10GBASE-SRL | 100m | - |
| 10GBASE-SR | 300m | - |
| 10GBASE-LR | 10Km | - |
| 10GBASE-ER | 40Km | - |
| 10G-DWDM | 80Km | - |
| 100Mb TX 1GbE SX, LX, TX | Yes | - |

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

| 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-7050-E | Enhanced License for Arista 7050 Switches (OSPF, BGP, PIM) |
| LIC-VM-TRACER-2 | VM Tracer License for 7140, 7148 and 7050 Switches |
| LIC-7050-Z | Network monitoring and provisioning feature set license for Arista 7050 (ZTP) |
| KIT-7000 | Spare accessory kit for Arista 7000 / 7100 switches |



www.arista.com/en/6454