## Key Features

### High Performance

- Up to 960 gigabits per second (Gbps)
- Up to 720 million packets per second
- Hardware based Layer 2/3 switching
- As low as 600 nanosecond latency

### Arista Extensible Operating System

- Supports virtualized environments
- Customizable to customer needs
- Access to Linux tools

### High Software Reliability

- Fine-grained software modularity
- Health monitoring and self-healing
- In-service-software upgrades (ISSU)

### High Hardware Availability

- Redundant hot-swappable power
- Redundant hot-swappable fans
- Redundant management ports

### Flexible Airflow/Mounting Options

- Front-to-rear or rear-to-front fan options
- Hot or cold aisle port facing options

### High 10-Gigabit Port Density

- 48 10GbE ports in 1U
- 2016 10GbE ports per 42U rack

### Full Range of SFP+ PHY Options

- 10GBASE-X optical PHYs
- 10GBASE-CR copper cables
- 1000BASE-X optical PHYs
- 1000BASE-T copper PHY

## Overview

The Arista 7100 Series is a family of high performance, very low latency layer 2/3/4 10 Gigabit Ethernet data center switches. Offered with 24 and 48 ports in a compact 1RU chassis with redundant power and cooling, the Arista 7100 Series features front-to-rear airflow when mounted in either direction for flexible rack-top server aggregation deployments. All ports accommodate the full range of 10GbE SFP+ or GbE SFP optical or copper physical layer options, allowing for maximum flexibility and investment protection as customers of all sizes migrate their server connections from Gigabit to 10 Gigabit Ethernet.



Arista 7148SX: 48-port 10GbE 960 Gbps, 720 Mpps, L2/3/4, 1U Switch (SFP)



Arista 7148S: 48-port 10 GbE 800 Gbps, 600 Mpps, L2/3/4, 1U Switch (SFP)



Arista 7124S: 24-port 10 GbE 480 Gbps, 360 Mpps, L2/3/4, 1U Switch (SFP)

## Arista EOS™

The Arista 7100 Series runs Arista EOS™, a data center-class operating system with a fine-grained modular protected memory architecture that ensures the highest levels of reliability and availability. Each process is monitored and restarted automatically in response to failure, while in-service software upgrades (ISSU) allow individual software components to be updated without disrupting system operation. Arista EOS can be extended to support virtualized environments and is customizable to meet specific customer functionality requirements.

## Arista EOS™ Key Attributes

Arista EOS™ is a highly modular operating system based on a unique multi-process state sharing architecture that completely separates networking state from processing. This enables fault recovery and incremental software updates on a fine-grain process basis without affecting the state of the system. Key EOS attributes include:

- Fine Grained Modularity
- Software Fault Containment (SFC)
- Stateful Fault Repair (SFR)
- In-Service Software Upgrades (ISSU)
- Access to Linux Tools
- Extensible Network Services
- Integration with 3rd Party Applications
- Ample memory for 3rd party applications

## Arista 7100S Rear View



Arista 7100 Series rear view with two 1+1 redundant, hot-swappable power supplies and five N+1 redundant, hot-swappable independent fans.

## Cloud Leaf and Spine Network Design
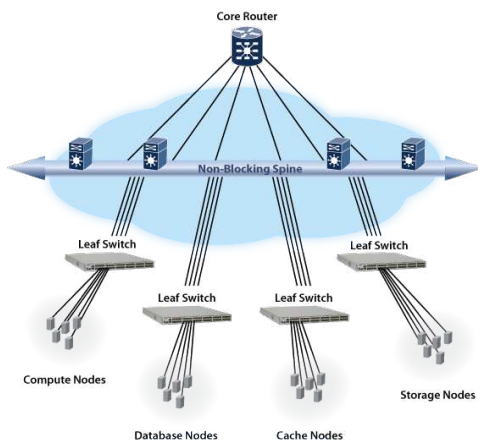


In the data center, there is an architectural migration to two-tiered cloud networking designs. The main building blocks are Cloud Leaves (CL) and Cloud Spines (CS). Cloud Spines forward traffic along optimal paths between nodes at layer 2 or layer 3 while Cloud Leaves control the flow of traffic between servers.

## Predictable Latency and Multicast

The ultra-low latency characteristics of the Arista 7100 Series are consistent regardless of packet size and port speed, which means customers can reap the benefits of industry leading latency at 1 Gigabit speeds in addition to 10 Gigabit speeds. The 7100 Series latency is also predictable with little variance in environments with random packet sizes which is key to improving and maintaining application performance and server utilization.

Multicast and broadcast throughput is also very consistent at all packet sizes, maintaining line rate performance with no packet drops. This means that multimedia applications such as content delivery and video conferencing can be used in the network in a reliable and effective way.

## High Availability

The Arista 7100 Series was designed for high availability from both a software and hardware perspective. Key high availability features include:

- Two 1+1 hot-swappable independent power supplies
- Five N+1 hot-swappable independent fans
- Dual management ports
- In-Service Software Upgrades (ISSU)
- Self healing software with Stateful Fault Repair (SFR)
- Up to 16 10GbE ports per link aggregation group (LAG)
- ECMP routing for load balancing and redundant fail over

## Target Positioning

The Arista 7100S Switches are positioned for a variety of places in the network including:

- Top-of-Rack Server Aggregation
- Blade Server Aggregation
- Network Spine and Aggregation
- HPC Cluster Interconnects
- Storage Access
- Cloud Networking Interconnects

10 Gigabit Ethernet is becoming the interconnect of choice in data centers of all sizes providing key improvements in terms of bandwidth, latency, scalability, reliability and application performance. The Arista 7100 Series enables a seamless migration path from existing Gigabit Ethernet-based servers to 10 Gigabit Ethernet-based high-performance servers while further enabling the transition to virtualized environments.

## Layer 2 Feature Set

- 16K L2 Forwarding Entries
- 802.1w Rapid Spanning Tree
- 802.1s Multiple Spanning Tree Protocol
- RPVST+
- 802.3ad Link Aggregation/LACP
    - 16 ports/channel
    - 256 groups per system
- MLAG- Multi-Chassis Link Aggregation
- 802.1Q VLANs/Trunking
    - 4094 VLANs
    - 150K VLAN Ports
- 802.1AB Link Layer Discovery Protocol
- Traffic Mirroring (mirror port or LAG)
- Jumbo Frames (9216 Bytes)
- 802.3x PAUSE
- Static MAC Addresses
- Q-in-Q
- IGMP Snooping v 2

## Layer 3 Feature Set

- 16K IPv4 Routes
- 4K IPv6 Routes*
- Static Routes
- OSPF
- BGP
- VRRP
- ECMP - Equal Cost Multipath Routing
- PIM-SM
- Virtual ARP (VARP)

## Network Management

- Dual 10/100/1000 Mgmt Ports
- RS-232 Serial Console Port
- USB Port
- SNMP v2, v3
- Telnet
- Syslog
- TACACS+
- RADIUS
- AAA
- Network Time Protocol (NTP)
- File download via SCP, HTTP, HTTPs, FTP & TFTP Client
- Familiar Industry Standard CLI

## IEEE 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

\* Supported in a future software release

## Model Comparison

| | 7124S | 7148S | 7148SX |
|---|---|---|---|
| Port Count | 24 | 48 | 48 |
| Throughput | 480 Gbps | 800 Gbps | 960 Gbps |
| Packets/Second | 360 Mpps | 600 Mpps | 720 Mpps |
| Latency | 600 nsec | 900 nsec | 1200 nsec |
| CPU | X86 Dual-Core | X86 Dual-Core | X86 Dual-Core |
| Flash Memory | 2GB | 2GB | 2GB |
| Main Memory | 2GB | 2GB | 2GB |
| Ethernet Mgmt Ports | 2 | 2 | 2 |
| Serial Ports | 1 | 1 | 1 |
| USB Port | 1 | 1 | 1 |
| Interface Type | SFP/SFP+ | SFP/SFP+ | SFP/SFP+ |
| 1+1 PSU Redundancy | Yes | Yes | Yes |
| Hot Swappable PSUs | Yes | Yes | Yes |
| Hot Swappable Fans | Yes | Yes | Yes |
| Reversible Airflow Option | Yes | Yes | Yes |
| Typical Power Draw | 210 watts | 360 watts | 600 watts |

## Supported SFP Optics and Copper Media

| Interface Type | Media | Max Distance |
|---|---|---|
| 10GBASE-CR | Twinax Copper | 7m |
| 10GBASE-SRL | 50 micron MMF | 100m |
| 10GBASE-SR | 50 micron MMF | 300m |
| 10GBASE-LRM | 62.5 micron MMF | 220m |
| 10GBASE-LR | 9 micron SMF | 10km |
| 10GBASE-ER | 9 micron SMF | 40km |
| 1000BASE-SX | 50 micron MMF | 550m |
| 1000BASE-LX | 9 micron SMF | 10km |
| 1000BASE-T | Category 5 Copper | 100m |

## Quality of Service

- 8 queues per port
- 802.1p Based Classification
- Strict Priority Queueing
- Per-Priority Flow Control (PFC)
- Data Center Bridging Exchange (DCBX)

## Security

- IP Access Lists (per-port)
- MAC Security
- Control Plane Protection (CPP)
- IP Control Plane Access Lists
- SSHv2

## Environmental Characteristics

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

## Physical Characteristics

- Size HxWxD: 1.74 x 17.4 x 20.25" (44 x 440 x 515mm)
- Weight : 7124S: 26 lbs (11.8kg) 7148S: 29 lbs (13.2kg)

## Power Specifications

- Max Output Power: 760W
- Input Voltage Range: 100-240VAC
- Input Current (max): 4-8A
- Input Frequency: 50-60 Hz
- 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-5 compliant

## Ordering Information

| Product Number | Product Description |
|---|---|
| DCS-7124S-F | Arista 7124S, 24-port L2/3/4 switch (5 front-to-rear* airflow fans) & 2 760W AC** (SFPs optional) |
| DCS-7124S-R | Arista 7124S, 24-port L2/3/4 switch (5 rear-to-front* airflow fans) & 2 760W AC** (SFPs optional) |
| DCS-7148S-F | Arista 7148S, 48-port L2/3/4 switch (5 front-to-rear* airflow fans) & 2 760W AC** (SFPs optional) |
| DCS-7148S-R | Arista 7148S, 48-port L2/3/4 switch (5 rear-to-front* airflow fans) & 2 760W AC** (SFPs optional) |
| DCS-7148SX-F | Arista 7148SX, 48-port L2/3/4 switch (5 front-to-rear* airflow fans) & 2 760W AC** (SFPs optional) |
| DCS-7148SX-R | Arista 7148SX, 48-port L2/3/4 switch (5 rear-to-front* airflow fans) & 2 760W AC** (SFPs optional) |
| LIC-7124-E | Enhanced Software License for Arista 7124S switches (OSPF, BGP, PIM) |
| LIC-7148-E | Enhanced Software License for Arista 7148S and 7148SX switches (OSPF, BGP, PIM) |
| CAB-SFP-SFP-0.5M | 10GBASE-CR twinax copper cable, 0.5 meter (SFP+ connectors pre-attached on both ends) |
| CAB-SFP-SFP-1M | 10GBASE-CR twinax copper cable, 1 meter (SFP+ connectors pre-attached on both ends) |
| CAB-SFP-SFP-2M | 10GBASE-CR twinax copper cable, 2 meters (SFP+ connectors pre-attached on both ends) |
| CAB-SFP-SFP-3M | 10GBASE-CR twinax copper cable, 3 meters (SFP+ connectors pre-attached on both ends) |
| CAB-SFP-SFP-5M | 10GBASE-CR twinax copper cable, 5 meters (SFP+ connectors pre-attached on both ends) |
| CAB-SFP-SFP-7M | 10GBASE-CR twinax copper cable, 7 meters (SFP+ connectors pre-attached on both ends) |
| SFP-10G-SR | 10GBASE-SR (Short Reach) SFP+ |
| SFP-10G-SRL | 10GBASE-SRL (Short Reach Lite) SFP+ |
| SFP-10G-LRM | 10GBASE-LRM (Long Reach Multimode) SFP+ |
| SFP-10G-LR | 10GBASE-LR (Long Reach) SFP+ |
| SFP-1G-SX | 1000BASE-SX (Short Haul) SFP |
| SFP-1G-LX | 1000BASE-LX (Long Haul) SFP |
| SFP-1G-T | 1000BASE-T (Copper) SFP |

\* Front-to-rear implies airflow from the port side to the fan side. Rear-to-front implies airflow from the fan side to the port side.
\*\* All Arista 7100 Series switches ship with two meter C13-C14 power cables. Other power cables must be ordered separately.

## Warranty

The Arista 7100 Series switches include a 1 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 advanced hardware replacement are available.

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