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The IT Solution Experts

## **Arista 7124SX 10G SFP Switch**

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## Product Highlights

### Performance

- 24 1/10GbE ports in 1RU
- 480 gigabits per second
- 360 million packets per second
- Wire speed L2 and L3 forwarding

### Ultra-Low Latency

- Sub-500 nanosecond latency
- Same latency for L2 and L3
- Low latency at 1GE and 10GE
- Low jitter for unicast and multicast
- Dynamic buffer allocation

### Data Center Optimized Design

- 1+1 redundant & hot-swappable power
- N+1 redundant & hot-swappable fans
- Front-to-rear or rear-to-front cooling
- Typical power consumption 5W/port

### 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)
- Latency Analyzer (LANZ)
- VM Tracer
- sFlow

### Arista Extensible Operating System

- Single binary image for all products
- Truly modular network OS
- Stateful Fault Containment (SFC)
- Stateful Fault Repair (SFR)
- Access to Linux tools
- Extensible platform

## Overview

The Arista 7124SX switch is a high performance, ultra-low latency layer 2/3/4 10 Gigabit Ethernet switch. Offered with 24 1/10GbE ports in a compact and power efficient 1RU chassis, the Arista 7124SX forwards packets in less than 500 nanoseconds. All ports accommodate the full range of 10GbE SFP+ and GbE SFP options, allowing for maximum flexibility and investment protection as customers of all sizes migrate their server connections from Gigabit to 10 Gigabit Ethernet. With Arista EOS, advanced monitoring and provisioning capabilities such as Latency Analyzer, Zero Touch Provisioning, VM Tracer and Linux based tools can be run natively on the switch. A built in SSD is available for advanced logging, data captures and various services that can now be run from the switch.



*Arista 7124SX: 24-port 10GbE 480Gbps switch*

## Ultra-low, Consistent Latency

The 7124SX offers industry-leading sub-500 nanoseconds forwarding latency for both unicast and multicast traffic. The latency characteristics do not change with varying packet size, enabling L3, ACL or mirroring functionality.

## Arista EOS

All Arista products including the 7124SX switch 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.

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.

## Latency Analyzer (LANZ) with Built-in Storage

The 7124SX offers advanced capabilities for latency analysis in a network. Congestion points can be identified and tracked over time. 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, logging latency trends per queue, capturing and saving data packets via tcpdump and Linux based services such as DHCP and Precision Time Protocol (PTP).

## High Availability

The Arista 7124SX 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 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
- 16-way ECMP routing for load balancing and redundancy



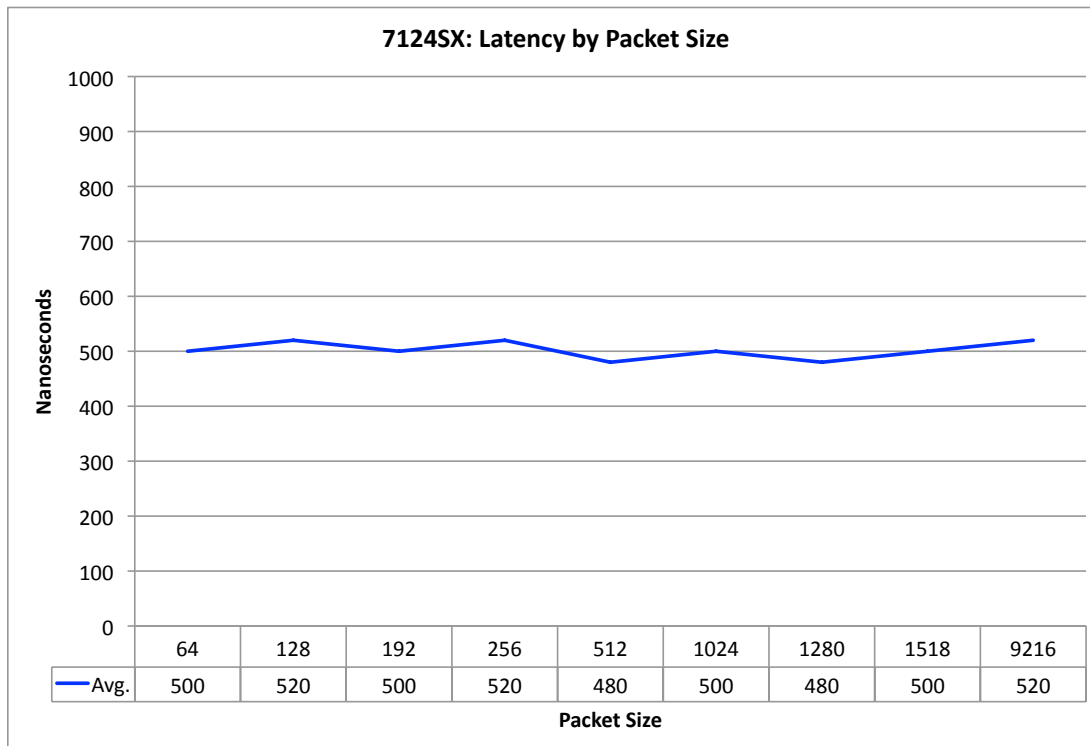
*Arista 7124SX Rear View: Front-to-rear airflow model*



*Arista 7124SX Rear View: Rear-to-front airflow model*

## Deterministic, Ultra-Low Latency

The Arista 7124SX is optimized for ultra-low latency, cut-through forwarding. It offers the same low latency characteristics at all packet sizes. The latency does not change even when additional features such as L3, ACL, QoS, Multicast or Port Mirroring are enabled. The 7124SX also forwards packets in cut-through mode at 1GbE speeds at low latency for legacy connections.



*Arista 7124SX: Latency using RFC 2544 tests*

## Dynamic Buffer Allocation

The Arista 7124SX forwards packets at an ultra low latency of 500 nanoseconds from any port to any other port. However when there is a microburst of traffic from different sources, all destined to the same port, the packets are buffered in packet memory. Unlike other architectures that have fixed per-port packet memory, the 7124SX uses Dynamic Buffer Allocation (DBA) to allocate packet memory to ports that need it. Under congestion, a port can buffer up to 1.7MB of data in its transmit queue. The 7124SX is well suited for low latency applications such as financial trading, MPI jobs, storage interconnect, virtualized environment and other 10GbE data center deployments.

## Layer 2 Features

- 16K L2 Forwarding Entries
- 802.1w Rapid Spanning Tree
- 802.1s Multiple Spanning Tree Protocol
- Rapid Per VLAN Spanning Tree (RPVST+)
- 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
- 802.1Q VLANs/Trunking
  - 4094 VLANs
- Q-in-Q
- 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
- Static Routes
- Routing Protocols: OSPF, BGP, ISIS
- 16-way Equal Cost Multipath Routing (ECMP)
- Route Maps
- PIM-SM
- Anycast RP (RFC 4610)
- VRRP
- Virtual ARP (VARP)

## Security Features

- ACLs using L2, L3, L4 fields
- Control Plane Protection (CPP)
- 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)
- Rate limiting

## VM Tracer Feature Set

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

## Monitoring and Provisioning

- Latency Analyzer (LANZ)
- Zero Touch Provisioning (ZTP)
- SSD for logging and data capture

- Restore from USB
- Blue Beacon LED for system identification
- eAPI

## 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

## SNMP MIBs

- ARISTA-SMI-MIB
- ARISTA-PRODUCTS-MIB
- 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
- RFC 4273 BGP4-MIB
- RFC 4750 OSPF-MIB
- User configurable custom OIDs

See EOS release notes for latest supported MIBs

\* Supported in a future software release

## Environmental Characteristics

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

## 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

## 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)

Port count	24
Interface Type	SFP/SFP+
Throughput	480 Gigabits per second
Packets/Second	360 Million packets per second
Latency	500 nanoseconds
CPU	Dual-Core x86
System Memory	4 Gigabytes
Flash Storage Memory	2 Gigabytes
SSD Storage (optional item)	50 Gigabytes
100/1000 Management Ports	1
RS-232 Serial Console Ports	1 (RJ-45)
USB Ports	1
Hot-swappable Power Supplies	2 (1+1 redundant)
Hot-swappable Fans	4 (N+1 redundant)
Reversible Airflow Option	Yes
Typical Power Draw	120W*
Maximum Power Draw	210W

## Supported SFP Optics and Cables

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-LRL	9 micron SMF	1km
10GBASE-LR	9 micron SMF	10km
10GBASE-ER	9 micron SMF	40km
10G-DWDM	9 micron SMF	40km
1000BASE-SX	50 micron MMF	550m
1000BASE-LX	9 micron SMF	10km
100/1000BASE-T	Category 5 Copper	100m

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

Product Number	Product Description
DCS-7124SX-F	Arista 7124SX, 24-port L2/L3 switch, front-to-rear airflow with 4 fans and 2 AC 460W power supplies
DCS-7124SX-R	Arista 7124SX, 24-port L2/L3 switch, rear-to-front airflow with 4 fans and 2 AC 460W power supplies
FAN-7000-F	Fan for Arista 7124SX, front-to-rear airflow
FAN-7000-R	Fan for Arista 7124SX, rear-to-front airflow
PWR-460AC-F	AC Power supply for Arista 7124SX, 460W, front-to-rear airflow
PWR-460AC-R	AC Power supply for Arista 7124SX, 460W, rear-to-front airflow
LIC-FIX-1-E	Enhanced L3 License for Arista Fixed switches, 24-36 port 10G (BGP, OSPF, ISIS, PIM, NAT)
LIC-FIX-1-V	Virtualization license for Arista Fixed switches 24-36 port 10G (VMTracer)
LIC-FIX-1-Z	Monitoring & provisioning license for Arista Fixed switches 24-36 port 10G (ZTP, LANZ, API)
KIT-7000	Spare accessory kit for Arista 7124SX

## Warranty

The Arista 7124SX switch 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.

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