Product Highlights

Performance

- 7060DX5-64S: 64x QSFP-DD 400G, 2x SFP+
- Highest density 400G in compact 2RU
- Flexible 100GbE, 200G and 400G support
- Up to 25.6 terabits per second
- Up to 10.6 billion packets per second
- Wire speed L2 and L3 forwarding
- Latency from 825ns for 400G

Data Center Optimized Design

- 64 ports of 400G QSFP-DD in 2RU
- Typical power of under 16W per port
- Over 93% efficient power supplies
- 1+1 redundant & hot-swappable power
- N+1 redundant & hot-swappable fans
- Front-to-rear only cooling
- Tool less rails for simple installation

Cloud Networking Ready

- 128-way ECMP for hyperscale networks
- Dynamic Load Balancing for advanced multi-pathing
- Advanced Congestion Management for NVMe and AI workloads
- Flow aware traffic scheduling
- Shared 114MB Buffer with burst absorption
- Up to 128K MAC addresses
- Over 800K IPv4 Routes
- Over 500K IPv6 Routes
- DirectFlow and eAPI

Resilient Control Plane

- High Performance x86 CPU
- 32GB DRAM
- User applications can run in a VM

Advanced Provisioning & Monitoring

- CloudVision
- Zero Touch Provisioning (ZTP)
- LANZ for microburst detection
- DANZ Advanced Mirroring for visibility
- sFlow
- Self-configure and recover from USB

Arista Extensible Operating System

- Single binary image for all products
- 64-bit EOS image only
- Fine-grained truly modular network OS
- Stateful Fault Containment (SFC)
- Stateful Fault Repair (SFR)
- Full Access to Linux shell and tools
- Extensible platform - bash, python, C++

Overview

A key enabler in the ecosystem of ultra-high performance applications including hyper-scale cloud computing and AI/ML clusters is 400 Gigabit Ethernet. Faster, higher capacity CPUs, specialist processors, Smart NICs and flash storage enable the construction of larger clusters which require high bandwidth, low latency, large radix networks to achieve optimal performance.

Arista's 7060X5 series of 25.6Tbps systems deliver the highest density of 400G switching in a single chip platform. Deterministic, low latency, line rate performance, proven layer 2 and layer 3 features, and advanced traffic awareness, congestion handling and instrumentation provides the ideal foundation for ultra-high performance applications with scale to match the largest clusters' requirements.

The Arista 7060X5 series, with the Arista 7060X, 7260X, 7368X and 7388X portfolio of data center switches, deliver a rich choice of port speed and density including support for 25GbE, 50GbE, 100GbE, 200GbE and 400GbE enabling consistent network architectures that seamlessly scale from small dedicated clusters to the needs of the largest multi-tier networks.

The 7060DX5-64S fixed switch is available in a 2RU form factor with a choice of industry standard 400G interfaces that provide investment protection and seamless migration from 100G to 400G with significant power and cost improvements.

Combined with Arista EOS the 7060X5 series deliver advanced features for hyperscale networks, serverless compute, big data farms and machine learning clusters.

Arista 7060DX5-64S:
64 x 400GbE QSFP-DD ports, 2 SFP+ ports

Arista EOS

The Arista 7060X5 series run the same Arista EOS software as all Arista products, simplifying network administration. 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.

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 with the powerful x86 CPU subsystem.

Model Overview

The Arista 7060X5 series offers high density 400G in a compact 2RU form factor. The system delivers the highest performance of 25.6Tbps combined with feature rich layer 2 and layer 3 forwarding, suited for both leaf, or fixed configuration spine deployment in modern large scale networks addressing the challenges of increasing network capacity and efficiency through lower power, enhanced automation and advances in scalability.

The **7060DX5-64S** delivers 64 400G ports in a 2RU system with an overall throughput of 25.6Tbps. The 7060DX5-64S supports QSFP-DD interfaces supporting industry standard optics and cables allowing for ease of migration to 400G. All ports allow a choice of speeds including 400GbE, 200GbE or 100GbE, up to 256 interfaces.

The Arista 7060X5 series switches support latency as low as 825ns in cut-through mode, and a 114 MB packet buffer with a large shared pool allowing for superior burst absorption compared to systems with fixed port buffering.


Arista 7060DX5-64S:
64 x 400GbE QSFP-DD ports, 2 SFP+ ports

High Availability

The Arista 7060X5 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
- Live software patching for zero downtime maintenance
- Self healing software with Stateful Fault Repair (SFR)
- Smart System Upgrade (SSU) and Accelerated Software Update (ASU)
- Up to 256 100GbE or 128 200GbE or 64 400GbE ports per LAG
- Multi-chassis LAG for active/active L2 multi-pathing
- 128-way ECMP routing for load balancing and redundancy
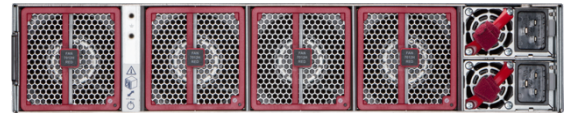
Arista 7060X5 Series Rear View: Front to Rear airflow

Arista 7060X5 Series Fan Trays and Power Supplies

Maximum Flexibility for Scale Out Network Designs

Scale out network designs enable solutions to start small and evolve over time. A simple two-way design can grow as far as 256-way without significant changes to the architecture. The Arista 7060X5 provide a consistent architecture with the 7060X/7260X Series offering QSFP-DD interfaces, providing investment protection and future proof migration to high density 400G optimized for large scale cloud networks. They include several enhancements for hyper-scale cloud data center designs:

- Wide choice of optics and cables for multi-speed flexibility from 100G to 400G
- 128-way ECMP and 64-way MLAG for scalable designs and to balance traffic evenly across large scale multi-tier designs
- Enhanced ECMP Hashing and Load Balancing consider real-time loads and dynamically assign new and existing flows to the best link to improve performance
- Advanced Multipathing improves congestion management by rebalancing flows in large scale cloud environments under load
- Hitless speed changes from 400G to 100G to eliminate down-time when implementing changes
- DANZ, sFlow and multi-port mirroring to detect micro-burst congestion and provide network wide visibility and monitoring
- Flow aware detector to identify large flows and selectively allow marking and queue assignment to optimize traffic forwarding

Precise Data Analysis*

Arista Latency Analyzer (LANZ) is an integrated feature of EOS. LANZ provides precise real-time monitoring of micro-burst and congestion events before they impact applications, with the ability to identify the sources and capture affected traffic for analysis. Advanced analytics are provided with features like buffer monitoring with configurable thresholds, in-band path and latency monitoring, event driven trace packets and granular time stamping.

Virtualization

Supporting next-generation virtualized data centers requires tight integration with orchestration tools and encapsulation technologies such as VXLAN. The 7060X5 builds on the valuable tools already provided by the Arista VM Tracer suite to integrate directly into encapsulated environments. Offering a wire-speed gateway between VXLAN and traditional L2/3 environments, they make integration of non-VXLAN aware devices including servers, firewalls and load-balancers seamless and provide the ability to leverage VXLAN as a standards based L2 extension technology for non-MPLS environments.

CloudVision

CloudVision is a network-wide approach for workload orchestration and workflow automation as a turnkey solution for Cloud Networking. CloudVision extends the EOS publish subscribe architectural approach across the network for state, topology, monitoring and visibility. This enables enterprises to move to cloud-class automation without needing any significant internal development.

EOS Licensing

Arista 7060X5 Series with EOS and CloudVision, is designed to provide flexibility both in the choice of the appropriate feature functionality and in the software consumption model. The base feature set of Arista EOS comes bundled with the Arista products and systems. A set of feature licenses are available to enable additional functionality in advanced feature sets. The traditional licensing procurement model employs a perpetual term for the right to use the feature, set at a fixed price. For Arista CloudVision the functionality is available as a monthly subscription, for an agreed upon term.

Routing: General Routing functionality (BGP, OSPF, Multicast, etc) is available in the EOS Enhanced (E) license. The EOS Flex-route (FLX) Lite license expands that to include key features like BGP-EVPN for VXLAN.

Automation/Visibility: CloudVision is the most complete offering for advanced automation and visibility. Arista also offers subsets of CloudVision Lite, for entry-level GUI functionality. CloudVision is offered as an on-premises appliance (virtual or physical appliance) or as a SaaS-based software application that is fully managed by Arista. The EOS V2 license includes capability to run custom extensions natively or via containers in EOS. In addition, the V2 license gives customers an option of integrating with Arista's best of breed ecosystem for security, analytics, visibility, and other use-cases.

Arista Optics and Cables

The Arista 7060X5 Series supports a wide range of 10G, 25G, 50G, 100G, 200G and 400G pluggable optics and cables in the QSFP-DD ports. For details about the different optical modules and the minimum EOS Software release required for each of the supported optical modules, visit **https://www.arista.com/en/products/transceivers-cables.**

Layer 2 Features

- 802.1w Rapid Spanning Tree
- 802.1s Multiple Spanning Tree Protocol
- Rapid Per VLAN Spanning Tree (RPVST+)
- 4096 VLANs
- 802.3ad Link Aggregation/LACP
    - 64 ports/channel
    - 128 groups per system
- Multi-Chassis Link Aggregation (MLAG)
    - 64 ports per MLAG
- Custom LAG Hashing
- Resilient LAG Hashing
- 802.1AB Link Layer Discovery Protocol
- 802.3x Flow Control
- Jumbo Frames (9216 Bytes)
- IGMP v1/v2/v3 snooping
- Storm Control
- Audio Video Bridging (AVB)

Layer 3 Features

- Routing Protocols: OSPF, OSPFv3, BGP, MP-BGP, IS-IS, and RIPv2
- 128-way Equal Cost Multipath Routing (ECMP)
- Resilient ECMP Routes
- VRF
- BFD
- Route Maps
- IGMP v2/v3
- PIM-SM / PIM-SSM
- Anycast RP (RFC 4610)
- VRRP
- Virtual ARP (VARP)
- Policy Based Routing (PBR)
- RAIL

Advanced Monitoring and Provisioning

- Zero Touch Provisioning (ZTP)
- Latency Analyzer and Microburst Detection (LANZ)
    - Configurable Congestion Notification (CLI, Syslog)
    - Streaming Events (GPB Encoded)
    - Capture/Mirror of congested traffic
- Advanced Monitoring and Aggregation
    - Port Mirroring (4 active sessions)
    - L2/3/4 Filtering on Mirror Sessions
    - Port Channel source and destination
    - Mirror to CPU *
- Advanced Event Management suite (AEM)
    - CLI Scheduler
    - Event Manager
    - Event Monitor
    - Linux tools
- Integrated packet capture/analysis with TCPDump

- RFC 3176 sFlow
- Restore & configure from USB
- Blue Beacon LED for system identification
- Software Defined Networking (SDN)
    - Arista DirectFlow
    - eAPI
    - OpenStack Neutron Support
- IEEE 1588 PTP (Transparent Clock and Boundary Clock)*

Virtualization Support

- VXLAN Routing* and Bridging*
- VM Tracer VMware Integration
    - VMware vSphere support
    - VM Auto Discovery
    - VM Adaptive Segmentation
    - VM Host View

Security Features

- IPv4 / IPv6 Ingress & Egress ACLs using L2, L3, L4 fields
- ACL Drop Logging and ACL Counters
- Control Plane Protection (CPP)
- PDP
- Service ACLs
- DHCP Relay / Snooping
- TACACS+
- RADIUS

Quality of Service (QoS) Features

- Up to 8 Unicast and 2 Multicast queues per port
- 802.1p based classification
- DSCP based classification and remarking
- Explicit Congestion Notification (ECN)
- QoS interface trust (COS / DSCP)
- Strict priority queueing
- Weighted Round Robin (WRR) Scheduling
- Per-Priority Flow Control (PFC) *
- Data Center Bridging Extensions (DCBX)
- 802.1Qaz Enhanced Transmissions Selection (ETS)
- ACL based DSCP Marking
- ACL based Policing
- Per port MMU Configuration
- Policing/Shaping
- Rate limiting

* Not currently supported in EOS

Network Management

- CloudVision
- 10/100/1000 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
- 802.3ae 10 Gigabit Ethernet
- 802.3ba 100 Gigabit Ethernet
- 802.3bs 400 and 200 Gigabit Ethernet
- 802.3cm 400 Gigabit over multimode fiber
- 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 4292 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
- ARISTA-REDUNDANCY-MIB
- RFC 2787 VRRPv2-MIB
- 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

Table Sizes

STP Instances	62 (MST)/62 (RPVST+)
IGMP Groups	128K, with 512 unique groups
ACLs	2304
Egress ACLs	512
ECMP	128-way, 4K groups, 16K members
MAC Addresses	128K
IPv4 Host Routes	500K
IPv4 Multicast (S,G)	256K
IPv4 LPM Routes	800K
IPv6 LPM Routes - Unicast (prefix length <= 64)	500K
IPv6 LPM Routes - Unicast (any prefix length)	500K

* Not currently supported in EOS

Specifications

Switch Model	7060DX5-64S
Ports	64 x QSFP-DD 2x SFP+
Max 400GbE Ports	64
Max 200GbE Ports	128 (2x200G)
Max 100GbE Ports	256 (4x100G)
Max 10GbE Ports	2
Throughput	25.6 Tbps
Packets/Second [1]	10.6 Bpps
Latency	825 ns
CPU	Multi-Core x86
System Memory	32 Gigabytes
Flash Storage Memory	32 Gigabytes
Packet Buffer Memory	114MB (Dynamic Buffer Allocation)
10/100/1000 Mgmt Ports	1
RS-232 Serial Ports	1 (RJ-45)
USB Ports	1
Hot-swap Power Supplies	2 (1+1 redundant)
Hot-swappable Fans	4 (N+1 redundant)
Airflow Direction	Front to Rear
Typical/Max Power Draw [2]	985W/1130W
Size (WxHxD)	17.3 x 3.5 x 26.4" (48.3 x 8.9 x 67 cm)
Weight	45lbs (20.4kg)
Fan Tray	FAN-7012H-RED
Power Supplies	2400W AC
EOS Feature Licenses	LIC-FIX-4
Minimum EOS	TBD

Standards Compliance

EMC	Emissions: FCC, EN55022, EN61000-3-2, EN61000-3-3 or EN61000-3-11, EN61000-3-12 (as applicable) Immunity: EN55024 Emissions and Immunity: EN300 386
Safety	UL/CSA 60950-1, EN 60950-1, IEC 60950-1 CB Scheme with all country differences
Certifications	North America (NRTL) European Union (EU) BSMI (Taiwan) C-Tick (Australia) CCC (PRC) MSIP (Korea) EAC (Customs Union) VCCI (Japan)
European Union Directives	2006/95/EC Low Voltage Directive 2004/108/EC EMC Directive 2011/65/EU RoHS Directive 2012/19/EU WEEE Directive

Power Supply Specifications

Power Supply	PWR-2411-AC	PWR-2411-DC
Input Voltage	200-240AC	-48 to 060 VDC
Typical Input Current	14A	55A Max (-48V)
Input Frequency	50/60Hz	DC
Output Power	2400W	2400W
Input Connector	IEC 60320 C20	AWG #6 Max
Efficiency (Typical)	93% Platinum	94%

Environmental Characteristics

Operating Temperature	0 to 40°C (32 to 104°F)
Storage Temperature	-40 to 70°C (-40 to 158°F)
Relative Humidity	5 to 95%
Operating Altitude	0 to 10,000 ft, (0-3,000m)

1. Performance rated over operation with average packets larger than 295 bytes.
2. Typical power consumption measured at 25C ambient with 50% load.

Product Number	Product Description
DCS-7060DX5-64S-F	Arista 7060X5, 64x400GbE QSFP-DD switch, front-to-rear air, 2xAC
DCS-7060DX5-64S#	Arista 7060X5, 64x400GbE QSFP-DD switch, no fans, no psu
LIC-FIX-4-E	Enhanced L3 License for Arista Group 4 Fixed switches (BGP, OSPF, ISIS, PIM, NAT)
LIC-FIX-4-V	Virtualization license for Group 4 Arista Fixed switches (VMTracer and VXLAN)
LIC-FIX-4-V2	EOS Extensions, Security and Partner Integration license for Arista Group 4 Fixed switches
LIC-FIX-4-Z	Monitoring & Automation license for Arista Group 4 Fixed switches (ZTP, LANZ, TapAgg, API, Time-stamping, OpenFlow)
LIC-FIX-4-FLX-L	FLX-Lite License for Arista Fixed Group 4 - Full Routing Up to 256K Routes, EVPN, VXLAN, SR, base MPLS LSR (no TE or link/node protection)

Optional Components and Spares

FAN-7012H-RED	Spare fan module for Arista 7000 Series 2RU switches (front-to-rear airflow)
PWR-2411-AC-RED	Spare 2400W AC power supply for Arista 7000 Series 2U switches (front to rear airflow)
PWR-2411-DC-RED	Spare 2400W DC power supply for Arista 7000 Series 2U switches (front to rear airflow)
KIT-7202	Spare accessory kit for Arista 7000 2RU switches, C19/20
KIT-7004-2U	Spare Rack Mount Kit for 4 Post 2U-4U, standard depth

Warranty

The Arista 7060X5 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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