Product Highlights

Performance

- 7050DX4-32S: 32 QSFP-DD 400G & 2SFP+
- 7050PX4-32S: 32 OSFP 400G & 2SFP+
- 7050DX4M-32S: 32 QSFP-DD 400G (MACsec) & 2SFP+
- 7050SDX4-48D8: 48 SFP-DD 100G & 8 QSFP-DD 400G
- 7050SPX4-48D8: 48 DSFP 100G & 8 QSFP-DD 400G
- 7050CX4-24D8: 24 QSFP56 200G, 8 QSFP-DD 400G & 2SFP+
- 7050CX4M-48D8: 48 QSFP28, 8 QSFP-DD 400G & 2SFP+
- 7050X4-48Y-4DF: 48 SFP25 & 4 QSFP-DD 400G
- Up to 12.8 terabits per second
- Up to 5.3 billion packets per second
- Wire speed L2 and L3 forwarding
- Latency from 900 ns

Data Center Optimized Design

- Up to 32 x 400G with under 10W/port
- 1+1 redundant & hot-swappable power
- N+1 redundant & hot-swappable fans
- Tool less rails for simple installation

Cloud Networking Ready

- VXLAN and EVPN
- 128K MAC entries
- 800K/500K IPv4/v6 Routes
- 128-way ECMP for scale-out networks
- Up to 320K/80K IPv4/v6 Host Routes
- Up to 132MB integrated intelligent buffer with dynamic buffer allocation

Resilient Control Plane

- High Performance x86 CPU
- Up to 16GB DRAM and SSD

Advanced Provisioning & Monitoring

- CloudVision
- Zero Touch Provisioning (ZTP)
- LANZ for microburst detection
- DMF
- sFlow
- INT and GREEN-T for In-Band Telemetry*

Arista Extensible Operating System

- Single binary image for all products
- Stateful Fault Containment (SFC)
- Stateful Fault Repair (SFR)
- 64-bit EOS
- Full access to Linux shell and tools
- Extensible platform - bash, python, C++, GO, OpenConfig

Overview

The Arista 7050X4 series is the fourth generation of the Arista 7050X family and a key component of the Arista 400G portfolio of data center switches.

As enterprises continue to optimize data center facilities for modern cloud-native applications, collaboration tools, containerized services and emerging AI/ML technologies, the requirement for high capacity, low latency networking is driving a flattening of data center architectures and high bandwidth interconnectivity between facilities and the public cloud.

400G Ethernet is a key enabler in realizing modern high performance infrastructure, offering the ability to not only carry large volumes of data, but also to significantly increase the radix of 100Gbps networks and to support emerging 50/100/200Gbps server and storage connectivity driven by the adoption of PCIe® Gen4.

The Arista 7050X4 Series high performance flexible data center switches provide support for a wide range of interface speeds, a broad set of wire speed, low latency L2 and L3 Enterprise features including EVPN/VXLAN and extensive automation and programmability with Arista's EOS for industry leading software driven cloud networking.

All models of the 7050X4 Series offer flexible forwarding tables, latency from as low as 900 ns and a shared packet buffer of up to 132 MB for superior burst absorption. Comprehensive support for a wide range of interface speeds including 10G, 25G, 40G, 50G, 100G, 200G and 400G combined with Arista EOS ensures the 7050X4 delivers the flexibility for enterprises deploying emerging applications, scaling up existing facilities or consolidating multi-tiered networks into efficient leaf-spine topologies.
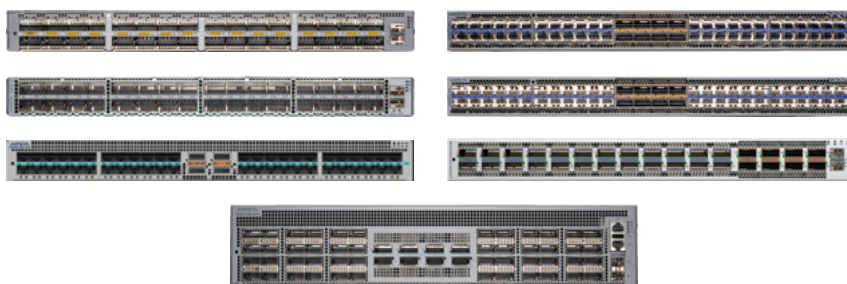
Arista 7050X4 Series

Arista EOS

The Arista 7050X4 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.

Arista's 64-bit EOS is purpose built for high performance, large scale workloads and embeds advanced monitoring, telemetry and automation capabilities. With a powerful x86 CPU subsystem and full access to Linux, a wealth of standard tools can also be run natively on the switch for simple integration into automation workflows.

Model Overview

The Arista 7050X4 series come in multiple configurations. Each delivers high performance combined with feature rich layer 2 and layer 3 forwarding, suited for both top of rack leaf, or fixed configuration spines.

The **7050DX4-32S** is a 1RU system with 32 400G QSFP-DD ports offering wire speed throughput of up to 12.8 Tbps. Each QSFP-DD port supports a choice of 7 speeds with flexible configuration between 400GbE, 200GbE, 100GbE, 50GbE, 40GbE, 25GbE and 10GbE modes for up to 128 ports of 10GbE and 25GbE or 144 ports of 50GbE or 64 ports of 200GbE using breakouts. All ports can operate in any supported mode without limitation, allowing easy migration from lower speeds and the flexibility for leaf or spine deployment.

The **7050DX4M-32S** variant also delivers MACsec functionality on 16 of the ports.

The **7050PX4-32S** is a 1RU system with 32 400G OSFP ports offering wire speed throughput of up to 12.8 Tbps. Each OSFP 400G port supports a choice of 7 speeds with flexible configuration between 400GbE, 200GbE, 100GbE, 50GbE, 40GbE, and 25GbE modes for up to 128 ports of 10GbE and 25GbE or 144 ports of 50GbE or 64 ports of 200GbE using breakouts. All ports can operate in any supported mode without limitation, allowing easy migration from lower speeds and the flexibility for leaf or spine.

The **7050SDX4-48D8** is a 1RU system with 48 100G SFP-DD and 8 400G QSFP-DD ports offering wire speed throughput of up to 8.0 Tbps. Each 100G SFP-DD port supports a choice of speeds with flexible configuration between 100GbE, 50GbE, 25GbE and 10GbE modes and each QSFP-DD port supporting 400GbE, 200GbE, 100GbE and 40GbE modes with up to 72 logical ports. This system is optimized for Top of Rack connectivity with the next generation 50/100G PAM4 based server NICs.

The **7050SPX4-48D8** is a 1RU system with 48 100G DSFP and 8 400G QSFP-DD ports offering wire speed throughput of up to 8.0 Tbps. Each 100G DSFP port supports a choice of speeds with flexible configuration between 100GbE, 50GbE, 25GbE and 10GbE modes and each QSFP-DD port supporting 400GbE, 200GbE, 100GbE and 40GbE modes with up to 72 logical ports using breakouts. This system is optimized for Top of Rack connectivity with the next generation 50/100G PAM4 based server NICs.

The **7050CX4-24D8** is a 1RU system with 24 200G QSFP-56 and 8 400G QSFP-DD ports offering wire speed throughput of up to 8.0 Tbps. Each QSFP-56 200G port supports a choice of speeds with flexible configuration between 24 ports of 200GbE or 48 ports of 100GbE using breakouts and each QSFP-DD 400G port supporting 400GbE, 200GbE, 100GbE and 40GbE modes for up to a total of 72 logical ports using breakouts. This system is optimized for Top of Rack connectivity for next generation 50/100/200G PAM4 based server NICs and Spine use cases.

The **7050CX4M-48D8** is a 2RU system with 48 100G QSFP-28 and 8 400G QSFP-DD ports, offering wire speed throughput of up to 8.0 Tbps with MACsec encryption support. Each 100G QSFP-100 port supports a choice of speeds with flexible configuration between 100GbE, 50GbE, 25GbE and 10GbE modes and each QSFP-DD port supports 400GbE, 200GbE, 100GbE and 40GbE modes for up to a total of 72 logical ports using breakouts. This system is optimized for Top of Rack connectivity with 25G NRZ based server, 50G and 100G server NICs and Spine use cases.

The **7050X4-48Y-4DF** is a 1RU system with 48 25G SFP25 and 4 400G QSFP-DD ports, offering wire speed throughput of up to 2.8 Tbps. Each 25G SFP25 port supports a choice of speeds with flexible configuration between 25GbE, 10GbE and 1GbE modes, and each QSFP-DD port supports 400GbE, 200GbE, 100GbE and 40GbE modes for up to a total of 72 logical ports using breakouts. This system is optimized for next gen Top of Rack connectivity, for 25G NRZ based downlinks to servers, and dedicated 400G uplinks to the Spines.

Arista 7050DX4-32S and 7050DX4M-32S: 32x 400G QSFP-DD ports, 2 SFP+ ports

Arista 7050PX4-32S: 32x 400G OSFP ports, 2 SFP+ ports

Arista 7050SDX4-48D8: 48x 100G SFP-DD ports, 8x 400G QSFP-DD

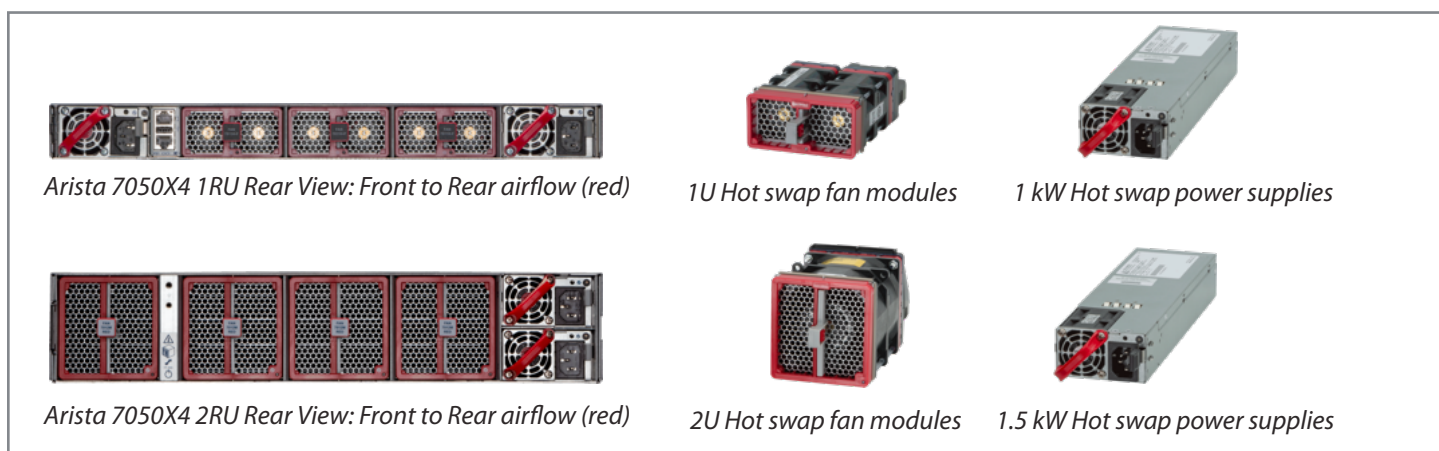*Arista 7050SPX4-48D8: 48x 100G DSFP ports, 8x 400G QSFP-DD*

Arista 7050CX4-24D8: 24x 200G QSFP56 ports, 8x 400G QSFP-DD

Arista 7050CX4M-48D8: 48x 100G QSFP-100 ports, 8x 400G QSFP-DD

Arista 7050X4-48Y-4DF: 48x 25G SFP25 ports, 4x 400G QSFP-DD

Arista 7050X4 1RU Rear View: Front to Rear airflow (red)

1U Hot swap fan modules

1 kW Hot swap power supplies

Arista 7050X4 2RU Rear View: Front to Rear airflow (red)

2U Hot swap fan modules

1.5 kW Hot swap power supplies

High Availability

The Arista 7050X4 series switches are 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
• Self healing software with Stateful Fault Repair (SFR)
• Smart System Upgrade (SSU)
• Multi-chassis LAG for active/active L2 multi-pathing
• 128-way ECMP routing for load balancing and redundancy

Deployment example

The diagram below shows an example of non-blocking network fabric leveraging a 32 x 400G device configured to offer 128 x 100G ports, a simple 2-tier fabric is able to support up to 6144 servers across 128 leaf switches with a fixed 3:1 oversubscription and optimally deterministic bisectional performance. The following diagram shows each leaf connecting with 4 x 100GbE across the four spine devices.
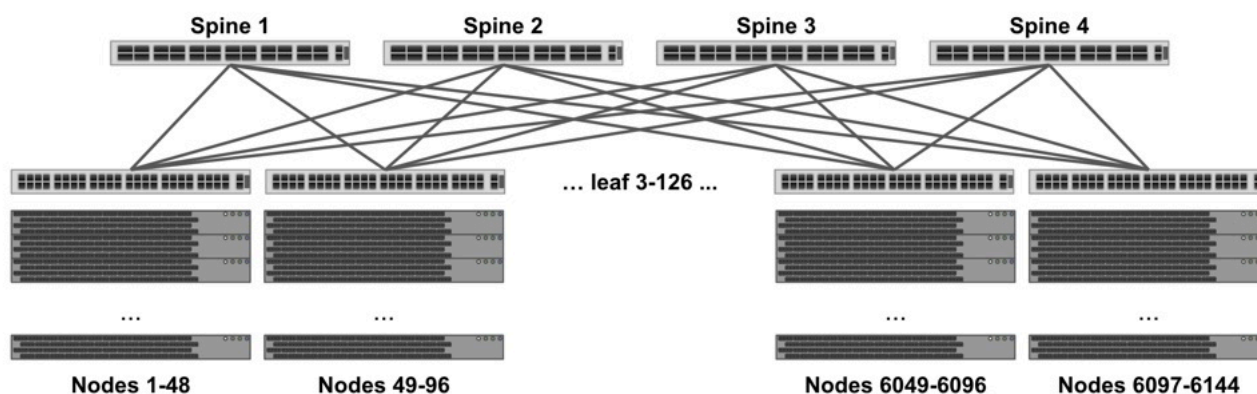
A typical 3:1 oversubscribed cluster 25G attached nodes and 4-way 32x400G spine switches

Supported Features in EOS

https://www.arista.com/en/support/product-documentation/supported-features

Layer 2 Features

- 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
  - 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 Pause Flow Control Tx
- Jumbo Frames (9216 Bytes)
- IGMP v2/v3
- IGMP v1/v2/v3 snooping
- Storm Control

Layer 3 Features

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

Advanced Monitoring and Provisioning

- Zero Touch Provisioning (ZTP)
- Smart System Upgrade*
- AI Analyzer*
- Traffic statistics polling at rates as low as 100 msec
- Optional traffic statistics fast polling as low as 1 msec rate
- 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 (8 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
- 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

- EVPN/VXLAN Routing and Bridging
- VM Tracer VMware Integration

Security Features

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

Quality of Service (QoS) Features

- Up to 8 unicast + 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
- 802.1Qbb Per-Priority Flow Control (PFC)
- 802.1Qaz Data Center Bridging Exchange (DCBX)
- ACL based DSCP Marking
- Rate limiting with ACL based Policing
- Per port MMU Configuration
- Traffic Shaping

* 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
- 802.3ab 1000BASE-T
- 802.3z Gigabit Ethernet
- 802.3ae 10 Gigabit Ethernet
- 802.3by 25 Gigabit Ethernet
- 802.3ba 40 and 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	64 (MST)/254 (RPVST+)
IGMP Groups*	128K max, with 4K unique groups
ACLs	11K
Egress ACLs	2K
ECMP	128-way, 4K groups
Max. IPv4 Host Routes	320K
Max IPv6 Host Routes	80K
Max IPv4 Multicast (S,G)	160K

	LPM Table Mode	ALPM	1	2	3	4
Shared	Max. IPv4 LPM Routes	800K	16K	16K	16K	16K
	Max. IPv6 LPM Routes - Unicast (prefix length <= 64)	500K	6K	4K	2K	—
	Max. IPv6 LPM Routes - Unicast (any prefix length)	500K	1K	2K	3K	4K

Dynamic Buffer Allocation

In cut-through mode, the Arista 7050X4 switches forward packets with a consistent low latency of 900 nanoseconds. Upon congestion, the packets are buffered in an intelligent fully shared packet memory that has a total size of up to 132MB for superior burst absorption. Unlike other architectures that have fixed per-port packet memory, the 7050X4 Series use dynamic thresholds to allocate packet memory based on traffic class, queue depth and quality of service policy ensuring a fair allocation to all ports of both lossy and lossless classes. Buffer utilization, occupancy and thresholds are all visible with Arista LANZ and can be exported to monitoring tools to identify hotspots and measure latency at the device and end to end.

Software Driven Cloud Networking

Arista Software Driven Cloud Networking (SDCN), combines the principles that have made cloud computing the unstoppable force that it is: automation, self service provisioning, and linear scaling of both performance and economics coupled with the trend in Software Defined Networking that delivers: network virtualization, custom programmability, simplified architectures, and lower capital expenditure. This combination creates a best-in-class software foundation for maximizing the value of the network to both the enterprise and service provider data center. A new architecture for the most mission-critical location within the IT infrastructure that simplifies management and provisioning, speeds up service delivery, lowers costs and creates opportunities for competitive differentiation, while putting control and visibility back in the hands of the network and systems administrators.

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 128-way without significant changes to the architecture. The Arista 7050X4 include enhancements for flexible scale-out designs:
- 128-way ECMP and 64-way MLAG to provide scalable designs and balance traffic evenly across large scale 2 tier leaf-spine designs
- Equal and Unequal Cost Multi-Pathing (UCMP) for flexible traffic balancing in large scale multi-tier topologies
- Custom hash algorithms for efficient hashing, persistent hashing and custom lookups for tunneled protocols
- Flexible allocation of L2 and L3 forwarding table resources for more design choice
- Wide choice of dense 10G/25G/40G/50G/100G/200G/400G interfaces for multi-speed flexibility
- Support for standards based IEEE 50GbE PAM4 for simple and cost effective migration from 25G and 100G to 50G and 400G
- VXLAN routing, bridging and gateway capability for physical to virtualization communication in next generation data center designs
- DMF, sFlow and multi-port mirroring to detect micro-burst congestion and provide network wide visibility and monitoring
- Hitless speed changes from 10G to 400G to eliminate down-time when implementing speed changes

Flexible Forwarding Table

Network scalability is directly impacted by the size of a switches forwarding tables. In many systems a 'one size fits all' approach is adopted using discrete fixed size tables for each of the common types of forwarding entry. The Arista 7050X4 leverage flexible forwarding tables for the L2 MAC, L3 Routing, L3 Host and IP Multicast forwarding entries, which can be flexibly allocated per entry type. The ideal size of each partition varies depending on the network deployment scenario. The flexibility of the forwarding table coupled with the range of pre-defined profiles available on the 7050X4 ensures optimal resource allocation for all network topologies and network virtualization technologies.

AI Analyzer *

Traditional software-based traffic counters do not lend themselves to examine AI/ML traffic patterns, which exhibit unique ramp up behavior in very short intervals of time. The AI Analyzer is a hardware capability that enables the collection of ECMP member utilization data, aggregated over extremely short periods of time. This allows the Arista 7050X4 series to effectively analyze the traffic patterns, with a time interval as granular as 100 microseconds. The results of such an analysis can then be applied to fine tune dynamic load balancing workloads uniformly across the ECMP member links, which is a key requirement for AI/ML applications.

Smart System Upgrade *

Smart System Upgrade is a network application designed to address one of the most complicated and challenging tasks facing data center administrators - network infrastructure maintenance. Changes to the underlying network infrastructure can affect large numbers of devices and cause significant outages. SSU provides a fully customizable suite of features that tightly couples data center infrastructure to technology partners allowing for intelligent insertion and removal, programmable updates to software releases and open integration with application and infrastructure elements.

* Not currently supported in EOS

Virtualization

Supporting next-generation virtualized data centers requires tight integration with orchestration tools and encapsulation technologies such as VXLAN. The 7050X4 build 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.

Dynamic Load Balancing

Traditional hash-based load balancing algorithms can result in link and path allocations with short term imbalances and under utilization of aggregate capacity. This is aggravated further in modern data centers with high traffic loads, varied flow duration, mixed packet sizes and micro-bursts. DLB enhancements to load balancing consider the real time load on links and dynamically assign new and existing flows to the best link. When imbalances are detected active flows and new flows are allocated to the least loaded paths to reduce the possibility of drops. Supported with any combination of ECMP and LAG/MLAG, DLB delivers higher throughout with enhanced load distribution while offering the user an open implementation.

Programmable Pipeline

The Arista 7050X4 series support an enhanced forwarding architecture with smarter and flexible packet pipeline which allows the addition of new capabilities to the data plane of the packet processor through software upgrades without changes or replacement of the underlying hardware. This allows for rapid testing and deployment avoiding costly replacements or major upgrades. Together with flexible resource allocation, the programmable pipeline increases the flexibility of the platform allowing for broad use cases and ensures continued investment protection.

CloudVision® for Accelerated Computing

CloudVision is a network-wide approach for workload orchestration and workflow automation as a turnkey solution for Accelerated Computing. CloudVision extends the EOS publish-subscribe architectural approach across the network for state, topology, monitoring and visibility.

CloudVision combined with Arista Validated Designs (AVD) enables a template driven automated common configuration model to be deployed deterministically across all network elements, implementing best-practice configuration parameters with minimal user input. When combined with the Arista AI Agent for compute hosts, configuration consistency and visibility is extended into the compute platform improving cluster deployment time, operational stability and end to end telemetry.

Precise Data Analysis

Arista's Streaming Telemetry, Latency Analyzer (LANZ), and AI Analyzer are integrated features of EOS. These EOS monitoring features include both event triggered monitoring for real-time micro-burst and congestion tracking as well as high rate counter polling down to 1ms granularity.

EOS Licensing

Arista 7050X4 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.

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.

* Not currently supported in EOS

Model Comparison	7050DX4-32S	7050PX4-32S	7050DX4M-32S
Ports	32x QSFP-DD 400G 2x SFP+	32x OSFP 400G 2x SFP+	32x QSFP-DD 400G 2x SFP+
Max 400GbE Ports [1]	32	32	32
Max 200GbE Ports [1]	64	64	64
Max 100GbE Ports [1]	128	128	128
Max 50GbE Ports [1]	144	144	144
Max 40GbE Ports [1]	64	64	64
Max 25GbE Ports [1]	128	128	128
Max 10GbE Ports [1]	128 + 2	128 + 2	128 + 2
MACsec enabled ports	-	-	16 [5]
Max Total Interfaces [2]	144	144	144
Throughput (FDX)[3]	12.8 (25.6) Tbps	12.8 (25.6) Tbps	12.8 (25.6) Tbps
Packets/Second	5.3Bpps	5.3Bpps	5.3Bpps
Latency	900ns	900ns	900ns
CPU	Quad-Core x86	Quad-Core x86	Quad-Core x86
System Memory		16 Gigabytes	
Flash Storage Memory		16 Gigabytes	
Packet Buffer Memory		132 MB (Dynamic Buffer Allocation)	
100/1000 Mgmt Ports		1	
RS-232 Serial Ports		1 (RJ-45)	
USB Ports		1	
Hot-swap Power		2 (1+1 redundant)	
Hot-swappable Fans		3 (N+1 redundant)	
Reversible Airflow	Yes	Yes	No
Typical/Max Power [4]	353W / 880W	353W / 880W	423W / 1208W
Rack Units	1RU	1RU	1RU
Size (WxHxD)	17.3 x 1.75 x 19.9 in (43.9 x 4.45 x 50.56 cm)	17.3 x 1.75 x 20.72 in (43.9 x 4.45 x 52.65 cm)	17.3 x 1.75 x 19.9 in (43.9 x 4.45 x 50.56 cm)
Weight	24.4 lbs (11.1kgs)	26.6lbs (12.1kgs)	24.4 lbs (11.1kgs)
Fan Tray	FAN-7011H -F/R		FAN-7011H -F
Power Supplies	PWR-1512-AC-RED/BLUE PWR-1511-DC-RED/BLUE		PWR-2421-HV
EOS Feature Licenses	LIC-FIX-3	LIC-FIX-3	LIC-FIX-3-MACSEC
Minimum EOS	4.28.1	4.28.1	4.30.1

1. Maximum port numbers are uni-dimensional, may require the use of break-outs and are subject to transceiver/cable capabilities
2. Where supported by EOS, each system supports a maximum number of interfaces. Certain configurations may impose restrictions on which physical ports can be used
3. Performance figures based on average packet size of 289 B
4. Typical power consumption measured at 25C ambient with 50% load on all ports, excludes transceivers
5. MACsec encryption is supported on ports 1-8 and 25-32

Model	7050SDX4-48D8	7050SPX4-48D8	7050CX4-24D8	7050CX4M-48D8	7050X4-48Y-4DF
Ports	48x SFP-DD 100G 8x QSFP-DD 400G	48x DSFP 100G 8x QSFP-DD 400G	24x QSFP-56 200G 8x QSFP-DD 400G 2x SFP+	48x QSFP-100 100G 8x QSFP-DD 400G 2x SFP+	48x SFP25 25G 4x QSFP-DD 400G
Max 400GbE Ports [1]	8	8	8	8	4
Max 200GbE Ports [1]	16	16	40	16	8
Max 100GbE Ports [1]	72	72	72	72	16
Max 50GbE Ports [1]	72	72	72	72	32
Max 40GbE Ports [1]	16	16	40	64	8
Max 25GbE Ports [1]	72	72	72	72	72
Max 10GbE Ports [1]	72	-	72 + 2	72 + 2	72
MACsec ports	-	-	-	56	-
Max Interfaces [2]	72	72	72 + 2	72 + 2	72
Throughput (FDX)[3]	8.0 (16) Tbps	8.0 (16) Tbps	8.0 (16) Tbps	8.0 (16) Tbps	2.8 (5.6) Tbps
Packets/Second	2.7Bpps	2.7Bpps	2.7Bpps	2.7Bpps	2.7Bpps
Latency	900ns	900ns	900ns	900ns	900ns
CPU	Quad-Core x86	Quad-Core x86	Quad-Core x86	Quad-Core x86	Quad-Core x86
System Memory	16 GB				
Flash Storage	16 GB				32 GB
Packet Buffer	82 MB (Fully Shared)				
Mgmt Ports	1				
RS-232 Serial Ports	1 (RJ-45)				
USB Ports	1				
Hot-swap Power	2 (1+1 redundant)				
Hot-swappable Fans	4 (N+1 redundant)				3 (N+1 redundant)
Reversible Airflow	Yes				
Typical/Max Power [4]	165W / 520W	156W / 520W	226W / 465W	390W / 740W	120W / 223W
Rack Units	1RU	1RU	1RU	2RU	1RU
Size (WxHxD)	17.3 x 1.72 x 18.68 in (43.99 x 4.37 x 47.46 cm)			17.3 x 3.46 x 26.30 in (43.99 x 8.79 x 66.8 cm)	17.3 x 1.72 x 18.43 in (43.99 x 4.37 x 46.83 cm)
Weight	23lbs (10.4 kgs)			35.1lbs (16.0 kgs)	21 lbs (9.52 kgs)
Fan Tray	FAN-7011M-F FAN-7011H-R		FAN-7011H -F FAN-7011H-R [5]	FAN-7012H-RED FAN-7012H-BLUE	FAN-7011M-F FAN-7011M-R
Power Supplies	PWR-1011-AC-RED/BLUE PWR-1011-DC-RED/BLUE			PWR-1512-AC-RED/BLUE PWR-1511-DC-RED/BLUE	PWR-511-AC-RED/BLUE PWR-511-DC-RED/BLUE
EOS Licenses	LIC-FIX-3			LIC-FIX-3-MACSEC	LIC-FIX-2
Minimum EOS	4.30.2	4.30.0	4.30.2	4.31.1	TBD

1. Maximum port numbers are uni-dimensional, may require the use of break-outs and are subject to transceiver/cable capabilities
2. Where supported by EOS, each system supports a maximum number of interfaces. Certain configurations may impose restrictions on which physical ports can be used
3. Performance figures based on average packet size of 289B
4. Typical power consumption measured at 25C ambient with 50% load on all ports, excludes transceivers
5. Reverse airflow configuration requires derating to 35C ambient

Power Supply Specifications

Power Supply	PWR-511-AC-RED/BLUE	PWR-511-DC-RED/BLUE	PWR-1011-AC-RED/BLUE	PWR-1011-DC-RED/BLUE	PWR-1511-DC-RED/BLUE	PWR-1512-AC-RED/BLUE	PWR-2421-HV
Input Voltage	100-240V AC	-48 to -60V DC	200-240V AC 100-120V AC	-48 to -60 VDC	-48 to -60 VDC	200-240V AC	200-277VAC 240-380VDC
Typical Input Current	6.3 - 2.3A	11.8A Max (-48V)	12.0 - 6.0A	23A Max (-48V)	35.2A Max (-48V)	9.6A	13.5A (200V AC)
Input Frequency	50/60Hz	DC	50/60Hz	DC	DC	50/60Hz	50/60Hz AC or DC
Output Power	500W	500W	1000W	1000W	1500W	1500W	2400W
Input Connector	IEC 60320 C14	AWG #14 Max	IEC 60320 C14	AWG #6 Max	AWG #6 Max	IEC 60320 C14	SAF-D
Efficiency (Typical)	93% Platinum	92%	93% Platinum	94%	92%	93% Platinum	96%

Standards Compliance

EMC	FCC A ICES-003 Issue 7 EN 55032:2015 EN IEC 61000-3-2:2019 EN 61000-3-3 KS C 9832 VCCI-CISPR 32:2016 AS/NZS CISPR 32:2015 +A1 2020 EN 300 386, TEC/SD/DD/EMC-221 CNS 15936 BS EN 55032:2015+A11:2020 BS EN IEC 61000-3-2 BS EN 61000-3-3
Immunity	EN 55035:2017+A11:2020 EN 300 386 KS C9835 BS EN 55035:2017+A11:2020
Safety	EN 62368-1:2020+A11:2020 EN 62368-1:2014+A11:2017 IEC 62368-1: 2018 Korea KC Safety KC 62368-1 (2021-08) CSA/UL 62368-1:2019 NOM 019-SCFI-1998 CNS 15598-1 AS/NZS 62368.1:2022
Certifications	BSMI (Taiwan) FCC Class A (United States) ICES-003 (Canada) CE (European Union) KCC (South Korea) NRTL (North America) RCM (Australia / New Zealand) UKCA (United Kingdom) VCCI (Japan) TEC (India) ANATEL (Brazil) ICASA (South Africa) NOM Equivalency (Mexico)
European Union Directives	2014/35/EU Low Voltage Directive 2014/30/EU EMC Directive 2012/19/EU WEEE Directive 2011/65/EU RoHS Directive 2015/863/EU Commission Delegated Directive
Further Information	Product Certification Portal

Environmental Characteristics

Operating Temperature [1]	0 to 40˚C (32 to 104˚F)
Storage Temperature	-40 to 70˚C (-40 to 158˚F)
Relative Humidity	5 to 90%
Operating Altitude	0 to 10,000 ft, (0-3,000m)

1. Certain airflow configurations or the use of higher power or reduced temperature range optics may reduce maximum operating temperature.

Arista Optics and Cables

The Arista 7050X4 Series supports a wide range of 10G to 400G pluggable optics and cables. 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.

Supported Optics and Cables [1]

Interface Type	400G OSFP ports
400GBASE-CR8	OSFP to OSFP: 1m-3m lengths
400GBASE-AOC	OSFP to OSFP: 1m-30m lengths
400GBASE-SR8	100m OM3/4 Parallel MMF
400GBASE-DR4	500m Parallel SM
400GBASE-XDR4	2km Parallel SM
400GBASE-FR4	2km Duplex SM
400GBASE-2FR4	2km 2 x Duplex SM
400GBASE-LR4	10km Duplex SM
400GBASE-PLR4	10km Parallel SM
400GBASE-ZR	120km (with optical amplification)
200GBASE-CR4	OSFP to 2xQSFP: 1m to 3m lengths
200GBASE-SR4	100m (using OSFP-400G-SR8)
200GBASE-FR4	2km (using OSFP-400G-2FR4)
100GBASE-CR2	OSFP to 4xQSFP: 1m to 3m lengths
100GBASE-CR4 [2]	OSFP to 2xQSFP: 1m to 3m lengths
50GBASE-CR	OSFP to 8xSFP: 1 to 3m lengths
50GBASE-CR2 [2]	OSFP to 4xQSFP: 1m to 3m lengths
25GBASE-CR [2]	OSFP to 8xSFP: 1m to 3m lengths

Supported Optics and Cables [1]

Interface Type	400G QSFP-DD ports
400GBASE-CR8	QSFP-DD to QSFP-DD: 1m-2.5m lengths
400GBASE-AOC	QSFP-DD to QSFP-DD: 1m-30m lengths
400GBASE-SR8	100m OM3/4 Parallel MMF
400GBASE-DR4	500m Parallel SM
400GBASE-XDR4	2km Parallel SM
400GBASE-FR4	2km Duplex SM
400GBASE-LR4	10km Duplex SM
400GBASE-PLR4	10km Parallel SM
400GBASE-ZR	120km (with optical amplification)
200GBASE-CR4	QSFP-DD to 2xQSFP: 1m to 2.5m lengths
200GBASE-SR4	100m (QDD-400G-SR8 / QSFP-200G-SR4)
200GBASE-FR4	2km (using QSFP-200G-FR4)
100GBASE-CR2	QSFP-DD to 4xQSFP: 1m to 3m lengths
100GBASE-CR4 [2]	QSFP-DD to 2xQSFP: 1m to 3m lengths
50GBASE-CR	QSFP-DD to 8xQSFP: 1m to 3m lengths
50GBASE-CR2 [2]	QSFP-DD to 4xQSFP: 1m to 3m lengths
25GBASE-CR [2]	QSFP-DD to 8xSFP: 1m to 3m lengths

1. For a complete list of transceivers, please refer to the Transceiver Datasheet and check EOS release notes for support
2. Requires OSFP / QSFP-DD port to be configured for 200G, 8 x 25G NRZ lanes. Allows interop with 100G QSFP and 25G SFP ports

Supported Optics and Cables [1]

Interface Type	40G QSFP ports
10GBASE-CR	QSFP+ to 4xSFP+: 0.5m-5m lengths
40GBASE-CR4	QSFP+ to QSFP+: 0.5m-5m lengths
40GBASE-AOC	3m to 100m lengths
40GBASE-UNIV	150m OM3 / 150m OM4, 500m SM
40GBASE-SRBD	100m OM3 /150m OM4 Duplex MMF
40GBASE-SR4	100m OM3 /150m OM4 Parallel MMF
40GBASE-XSR4	300m OM3 /400m OM4 Parallel MMF
40GBASE-PLRL4	1km (1km 4x10G LR/LRL)
40GBASE-PLR4	10km (10km 4x10G LR/LRL)
40GBASE-LRL4	1km Duplex SM
40GBASE-LR4	10km Duplex SM
40GBASE-ER4	40km Duplex SM

100GbE	100G QSFP ports
100GBASE-SR4	70m OM3 / 100m OM4 Parallel MMF
100GBASE-XSR4	150m OM3 / 300m OM4 Parallel MMF
100GBASE-SWDM4	70m OM3 / 100m OM4 Duplex MMF
100GBASE-SRBD	70m OM3 / 100m OM4 Duplex MMF
100GBASE-LR	10km Duplex SM
100GBASE-LR4	10km Duplex SM
100GBASE-LRL4	2km Duplex SM
100GBASE-XCWDM4	10km Duplex SM
100GBASE-CWDM4	2km Duplex SM
100GBASE-FR	2km Duplex SM
100GBASE-DR	500m Duplex SM
100GBASE-PSM4	500m Parallel SM
100GBASE-AOC	1m to 30m lengths
100GBASE-ERL4	40km Duplex SM
100GBASE-CR4	QSFP to QSFP: 1m to 5m lengths
50GBASE-CR2	QSFP to 2xQSFP: 1m to 5m lengths
25GBASE-CR	QSFP to SFP25: 1m to 5m lengths

Supported Optics and Cables [1]

10GbE	SFP+ ports
10GBASE-CR	SFP+ to SFP+: 0.5m-5m lengths
10GBASE-AOC	SFP+ to SFP+: 3m-30m lengths
10GBASE-SRL	100m OM3 /150m OM4 Duplex MMF
10GBASE-SR	300m OM3 / 400m OM4 Duplex MMF
10GBASE-LRL	1km Duplex SM
10GBASE-LR	10km Duplex SM
10GBASE-ER	40km Duplex SM
10GBASE-ZR	80km Duplex SM
10GBASE-T	Up to 30m over Cat6a
10GBASE-DWDM	80km Duplex SM

25GbE	25G SFP Ports
25GBASE-CR	SFP25 to SFP25: 1m-5m lengths
25GBASE-AOC	SFP+ to SFP+: 3m-30m lengths
25GBASE-MR-XSR	25G: 200m OM3 / 300m OM4 Duplex MMF 10G: 300m OM3 / 400m OM4 Duplex MMF
25GBASE-MR-SR	25G: 70m OM3 / 100m OM4 Duplex MMF 10G: 300m OM3 / 400m OM4 Duplex MMF
25GBASE-SR	70m OM3 / 100m OM4 Duplex MMF
25GBASE-LR	10km Duplex SM
25GBASE-MR-LR	10km Duplex SM

1. For a complete list of transceivers, please refer to the Transceiver Datasheet and check EOS release notes for support

Product Number	Product Description
DCS-7050DX4-32S-F	Arista 7050X4, 32x400GbE QSFP-DD & 2xSFP+ switch, front-to-rear air, 2xAC
DCS-7050DX4-32S-R	Arista 7050X4, 32x400GbE QSFP-DD & 2xSFP+ switch, rear-to-front air, 2xAC
DCS-7050DX4-32S#	Arista 7050X4, 32x400GbE QSFP-DD & 2xSFP+ switch, configurable fans and psu
DCS-7050DX4M-32S-F	Arista 7050X4, 32x400GbE QSFP-DD & 2xSFP+ switch, MACsec, front-to-rear air, 2xAC
DCS-7050DX4M-32S#	Arista 7050X4, 32x400GbE QSFP-DD & 2xSFP+ switch, MACsec, configurable fans and psu
DCS-7050PX4-32S-F	Arista 7050X4, 32x400GbE OSFP & 2xSFP+ switch, front-to-rear air, 2xAC
DCS-7050PX4-32S-R	Arista 7050X4, 32x400GbE OSFP & 2xSFP+ switch, rear-to-front air, 2xAC
DCS-7050PX4-32S#	Arista 7050X4, 32x400GbE OSFP & 2xSFP+ switch, configurable fans and psu
DCS-7050SDX4-48D8-F	Arista 7050X4, 48x100GbE SFP-DD & 8x400GbE QSFP-DD switch, front-to-rear air, 2xAC
DCS-7050SDX4-48D8-R	Arista 7050X4, 48x100GbE SFP-DD & 8x400GbE QSFP-DD switch, rear-to-front air, 2xAC
DCS-7050SDX4-48D8#	Arista 7050X4, 48x100GbE SFP-DD & 8x400GbE QSFP-DD switch, configurable fans and psu
DCS-7050SPX4-48D8-F	Arista 7050X4, 48x100GbE DSFP & 8x400GbE QSFP-DD switch, front-to-rear air, 2xAC
DCS-7050SPX4-48D8-R	Arista 7050X4, 48x100GbE DSFP & 8x400GbE QSFP-DD switch, rear-to-front air, 2xAC
DCS-7050SPX4-48D8#	Arista 7050X4, 48x100GbE DSFP & 8x400GbE QSFP-DD switch, configurable fans and psu
DCS-7050CX4-24D8-F	Arista 7050X4, 24x200GbE QSFP56 & 8x400GbE QSFP-DD switch, front-to-rear air, 2xAC
DCS-7050CX4-24D8-R	Arista 7050X4, 24x200GbE QSFP56 & 8x400GbE QSFP-DD switch, rear-to-front air, 2xAC
DCS-7050CX4-24D8#	Arista 7050X4, 24x200GbE QSFP56 & 8x400GbE QSFP-DD switch, configurable fans and psu
DCS-7050CX4M-48D8-F	Arista 7050X4, 48x100GbE QSFP28 & 8x400GbE QSFP-DD switch, MACsec, front-to-rear air, 2xAC
DCS-7050CX4M-48D8-R	Arista 7050X4, 48x100GbE QSFP28 & 8x400GbE QSFP-DD switch, MACsec, rear-to-front air, 2xAC
DCS-7050CX4M-48D8#	Arista 7050X4, 48x100GbE QSFP28 & 8x400GbE QSFP-DD switch, MACsec, configurable fans and psu
DCS-7050X4-48Y-4DF-F	Arista 7050X4, 48x25GbE SFP & 4x400GbE QSFP-DD switch, front-to-rear air, 2xAC
DCS-7050X4-48Y-4DF-R	Arista 7050X4, 48x25GbE SFP & 4x400GbE QSFP-DD switch, rear-to-front air, 2xAC
DCS-7050X4-48Y-4DF#	Arista 7050X4, 48x25GbE SFP & 4x400GbE QSFP-DD switch, no fans, no psu

Optional Components and Spares

FAN-7011M-F	Spare fan module for Arista 7000 Series 1RU Enhanced Fan Speed (front-to-rear airflow)
FAN-7011H-F	Spare fan module for Arista 7000 Series 1RU High Speed Fan (front-to-rear airflow)
FAN-7011H-R	Spare fan module for Arista 7000 Series 1RU High Speed Fan (rear-to-front airflow)
FAN-7012H-RED	Spare fan module for Arista 7000 Series 2RU High Speed Fan (front-to-rear airflow)
FAN-7012H-BLUE	Spare fan module for Arista 7000 Series 2RU High Speed Fan (rear-to-front airflow)
FAN-7011M-F	Spare fan module for Arista 7000 Series 1RU Enhanced Fan Speed (front-to-rear airflow)
FAN-7011M-R	Spare fan module for Arista 7000 Series 1RU Enhanced Fan Speed (rear-to-front airflow)
PWR-511-AC-RED	Arista PSU, 1RU. AC/DC, 500W, FORWARD, 73.5MM
PWR-511-AC-BLUE	Arista PSU, 1RU. AC/DC, 500W, REVERSE, 73.5MM
PWR-511-DC-RED	Arista PSU, 1RU. DC/DC, 500W, FORWARD, 73.5MM
PWR-511-DC-BLUE	Arista PSU, 1RU. DC/DC, 500W, REVERSE, 73.5MM
PWR-1512-AC-RED	Arista PSU, 1RU, AC/DC, 1500W, FORWARD, 73.5MM
PWR-1512-AC-BLUE	Arista PSU, 1RU, DC/DC, 1500W, REVERSE, 73.5MM
PWR-1511-DC-RED	Arista PSU, 1RU, DC/DC, 1500W, FORWARD, 73.5MM
PWR-1511-DC-BLUE	Arista PSU, 1RU, DC/DC, 1500W, REVERSE, 73.5MM
PWR-1011-AC-RED	Arista PSU, 1RU, AC/DC, 1000W, FORWARD, 73.5MM
PWR-1011-AC-BLUE	Arista PSU, 1RU, AC/DC, 1000W, REVERSE, 73.5MM
PWR-1011-DC-RED	Arista PSU, 1RU, DC/DC, 1000W, FORWARD, 73.5MM
PWR-1011-DC-BLUE	Arista PSU, 1RU, DC/DC, 1000W, REVERSE, 73.5MM
PWR-2421-HV-RED	Arista 2400W HV AC and DC Power Supply, FORWARD, 73.5MM
KIT-7101	Spare tool-free accessory kit (v3) for Arista switches. 4-post mount. (2 x C13-C14, 2m)
KIT-7103	Spare tool-free accessory kit (v3) for Arista switches. 4-post mount. (2 x SAF-D GRID - C20, 3m)
KIT-7201	Spare tool-free accessory kit (v2) for Arista 2RU switches. 4-post mount. (2x C13-C14, 2m)
KIT-2POST-1U-NT	Spare tool-free 2-post mount kit (v2) for 1RU Arista tool-free switches
KIT-7101-RK	Spare tool-free 4-post mount kit (v3). (Compatible with KIT-ADJ-RLR)
KIT-GND-EXT-1U	Arista 7000 Series 1RU Ground Extender Kit for NEBS compliance

Licenses

LIC-FIX-2-E	Enhanced L3 License for Arista Group 2 Fixed switches, (BGP, OSPF, ISIS, PIM, NAT)
LIC-FIX-2-V	Virtualization license for Group 2 Arista Fixed switches (VMTracer and VXLAN)
LIC-FIX-2-V2	EOS Extensions, Security and Partner Integration license for Arista Group 2 Fixed switches
LIC-FIX-2-Z	Monitoring & Automation license for Arista Group 2 Fixed switches (ZTP, LANZ, TapAgg, API, Time-stamping, OpenFlow)
LIC-FIX-2-FLX-L	FLX-Lite License for Arista Fixed switches Group 2 - Full Routing Up to 256K Routes, EVPN, VXLAN, SR, base MPLS LSR (no TE or link/node protection)
LIC-FIX-3-E	Enhanced L3 License for Arista Group 3 Fixed switches, (BGP, OSPF, ISIS, PIM, NAT)
LIC-FIX-3-V	Virtualization license for Group 3 Arista Fixed switches (VMTracer and VXLAN)
LIC-FIX-3-V2	EOS Extensions, Security and Partner Integration license for Arista Group 3 Fixed switches
LIC-FIX-3-Z	Monitoring & Automation license for Arista Group 3 Fixed switches (ZTP, LANZ, TapAgg, API, Time-stamping, OpenFlow)
LIC-FIX-3-FLX-L	FLX-Lite License for Arista Fixed switches Group 3 - Full Routing Up to 256K Routes, EVPN, VXLAN, SR, base MPLS LSR (no TE or link/node protection)
LIC-FIX-3-MACSEC	MACSEC Encryption License for Arista Group 3 Fixed switches, MACSEC capable ports

Warranty

The Arista 7050X4 series switches come 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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