

Product Highlights

Performance

- 7170B-64C: 64x QSFP100
- Flexible 10G to 100G support
- Wirespeed MACSec Encryption
- Up to 130 x 10G, or 128 x 25/50G using breakout cables
- Up to 6.4 terabits per second
- Up to 3.2 billion packets per second
- Wire speed L2 and L3 forwarding
- Latency from 1us
- 64MB integrated packet buffer

Data Center Optimized Design

- 64 QSFP100 ports in 2RU
- Over 93% efficient power supplies
- 1+1 redundant & hot-swappable power
- N+1 redundant & hot-swappable fans
- Front-to-rear cooling
- Tool-less rails for simple installation

Resilient Control Plane

- High Performance x86 CPU
- 64GB DRAM , 120GB SSD
- User applications can run in a VM

Advanced Provisioning & Monitoring

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

Flexible & Programmable Architecture

- Integrated and flexible packet forwarding
- Flexible resource allocation
- P4 Programmable pipeline profiles
- Advanced telemetry with packet traces and user defined triggers

Arista Extensible Operating System

- Single binary image for all products
- 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++ , GO, OpenConfig

Overview

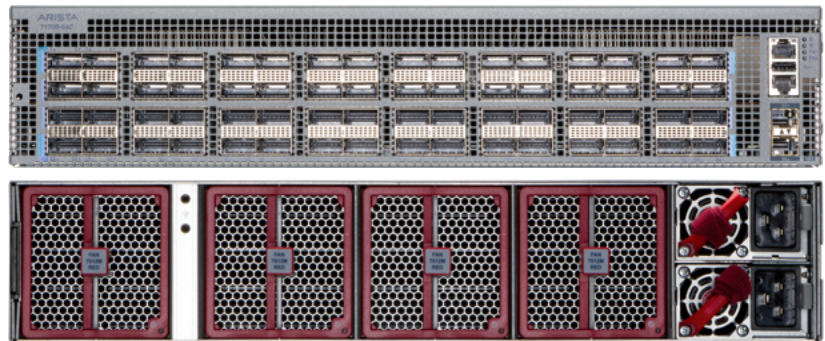
Significant growth in the scale, performance and complexity of data centre networks has created new challenges for designers. Network functions that traditionally required dedicated appliances are no longer able to keep pace with the required data rates in an economical fashion.

The Arista 7170B Series are second-generation purpose built, high density, fixed configuration 100GbE systems with up to 6.4 Tbps performance in a compact, low power form factor.

Built around a fully P4 programmable data plane, the packet processor architecture allows for complete definition of packet parsing, lookups, traffic scheduling, packet modification and traffic monitoring. The 7170 harnesses this flexibility to deploy complex functions, usually only available in CPU based appliances, at wire speed directly in the network layer providing orders of magnitude performance improvements and power/space reduction.

Arista provides multiple user selectable pipeline profiles that focus on use cases including high scale tunneling, address translation and server load balancing combined with scalable L2 and L3 resources and rich EOS features. The unique flexibility means new pipeline features and applications can be developed and deployed without replacing the underlying hardware.

The Arista 7170B-64C offers 64 QSFP ports for dense 40/100 GbE deployments and can support flexible combinations of 10, 25, 40, 50 and 100 GbE.



Arista 7170B-64C: 64 x 40/100GbE QSFP100 ports, 2 x SFP+ ports

Arista EOS

The Arista 7170B series runs 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 its powerful x86 CPU subsystem.

Model Overview

The **7170B-64C** is a 2RU system with 64 100G QSFP ports offering wire speed performance with an overall throughput up to 6.4 Tbps. Each QSFP port is capable of a choice of 40/100GbE, with support for up to 128 10/25G ports when using breakouts. Two integrated SFP+ ports provide support for additional lower speed 1/10G interfaces.

High Availability and Flexibility

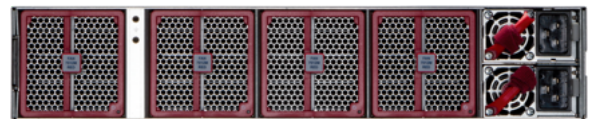
The Arista 7170 Series were designed for flexible deployment and continuous operations with system wide monitoring of both hardware and software components, simple serviceability and provisioning to prevent single points of failure.

Key features include:

- AC and DC power supply options
- Front to Rear cooling with dynamic temperature control.
- Redundant, color coded, field serviceable power and cooling subsystems:
 - 1+1 hot-swappable platinum rated power supplies
 - N+1 hot-swappable fans
- Live software patching
- Self healing software with Stateful Fault Repair (SFR)



*Arista 7170B-64C:
64x 100GbE QSFP100 ports, 2 SFP+ ports*

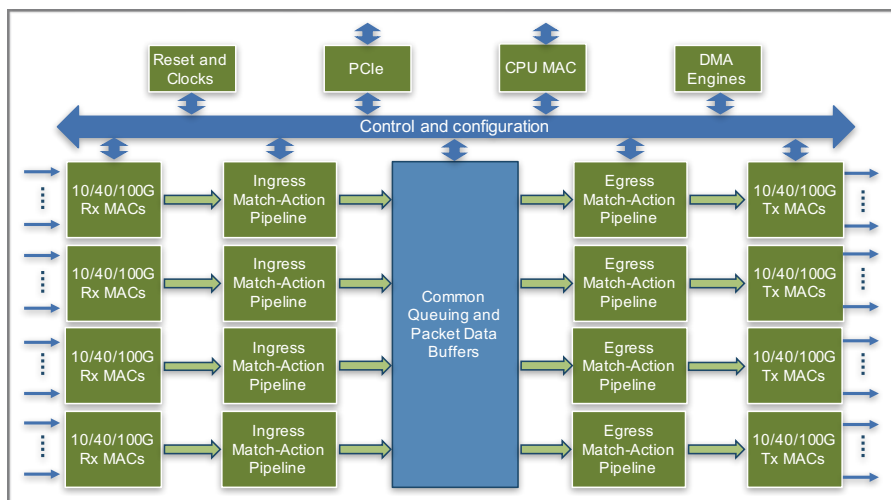


7170 2RU Rear View

Programmable Architecture

The 7170B series offers a protocol independent switch architecture with a highly programmable packet pipeline that allows the addition of new protocols, encapsulation and tunneling features to the packet processor through simple software upgrades without changes to the underlying hardware. With up to 80 programmable stages, the 7170B series provides more than twice as much pipeline capacity as the previous generation 7170, enabling new profiles with more complex functionality and greater scalability.

Arista leverages P4 to define advanced forwarding profiles for the 7170 packet pipeline to deliver custom behavior, change lookups performed on the packets or rapidly develop and test new functionality. This flexibility provided by multiple forwarding profiles written in P4 and compiled into Arista EOS, addresses multiple real world requirements for scale, advanced telemetry, security and encapsulation and can be further customized to specific customer use-cases. The Enhanced feature license enables use of specialist profiles.



Arista 7170 Series Packet Pipeline Architecture

Match-Action Units

The 7170 series packet processor pipeline consists of identical blocks of pipeline stages or Match-Action Units. The pipeline program, known as a profile, defines the functions implemented by each Match-Action Unit, matching specific information extracted from packet headers and performing lookups in the resource tables which then define modifications and forwarding decisions. This architecture results in a configurable data plane with very high throughput, broad range of packet processing functionality and application visibility.

Flexible and Scalable Resources

Network scalability is directly impacted by a switch's forwarding tables. Programmable profiles enable the 7170 Series to provide flexibility on how memory resources are allocated among the different tables and features. The architecture allows for flexible and programmable allocation of available resources to achieve maximum efficiency for a given customer application. The unique level of pipeline programmability enables deployment of the 7170 Series in traditional roles with standard scale requirements as well as a wide range of use cases with unique resource requirements.

Intelligent Packet Buffers

The Arista 7170B Series switches offer up to 64 MB of unified packet buffer that is shared dynamically across all ports. The packet buffer can be allocated programmatically across multiple classes of applications to optimize performance for custom applications along with standard data center applications designed to avoid congestion from micro-bursts or fan-in packets. Unlike architectures with small per-port packet memory, or small shared memory pools the 7170 Series use a scheme to allocate memory intelligently based on a combination of traffic class, queue depth and quality of service policy ensuring fair allocation to all ports.

Application Profiles

The 7170 series with Arista EOS support a rich set of both data plane and control plane features and capabilities with a programmable SDK that address the deployment in either a leaf or spine role in two-tier networks. In addition, configurable application specific profiles provide a targeted set of data plane and control plane features with the feature scale tailored to address specific deployment scenarios.

Some examples of solutions the 7170 Series can enable:

- **Bare-metal Integration with Network Overlays and Virtualization:** Enables large scale integration of bare metal compute into virtualized overlays, offloading network functions such as traffic segmentation or tunnel encapsulation from bare metal servers freeing up compute resources and accelerating applications.
- **Large Scale Network Address Translation:** Provides highly scalable static and dynamic network address and port translation (NAT) at line rate with synchronization for gateway redundancy.
- **IPv4 to v6 transition with MAP-T:** Implements line-rate, high scale, stateless translation between IPv4 and IPv6 enabling service providers to remove IPv4 from core networks without the need for complex CGNAT deployments.
- **Stateless Load Balancing:** Delivers high bandwidth, low latency load balancing for distributed applications including cloud, web and containerized workloads.
- **Broadcast Media Workflows:** Provides in-network support for broadcast specific requirements including clean switching, stream reconstruction and advanced address translation.

For further information about available pipeline profiles or new profile development, please contact your Arista representative.

Layer 2 Features ¹

- 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
 - 128 ports/channel
- Multi-Chassis Link Aggregation (MLAG)
 - 64 ports per MLAG
- 802.1AB Link Layer Discovery Protocol
- 802.3x Flow Control
- Jumbo Frames (9216 Bytes)
- IGMP v1/v2/v3 snooping
- Storm Control

Layer 3 Features ¹

- Routing Protocols: OSPF, OSPFv3, BGP, MP-BGP, IS-IS, and RIPv2
- Static Routes
- Equal Cost Multipath Routing (ECMP)
- Resilient ECMP Routes
- VRF
- Bi-Directional Forwarding Detection (BFD)
- Route Maps
- IGMP v2/v3
- PIM-SM / PIM-SSM
- Anycast RP (RFC 4610)
- VRRP
- Virtual ARP (VARP)
- Policy Based Routing (PBR)
- uRPF
- Network Address Translation
 - Source/Destination NAT
 - Source/Group Multicast NAT

Advanced Monitoring and Provisioning ¹

- 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
 - 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
- eAPI
- OpenStack Neutron Support
- IEEE 1588 PTP (Transparent Clock and Boundary Clock)

Virtualization Support ¹

- VXLAN Routing and Bridging
- VM Tracer VMware Integration

Security Features ¹

- Control Plane Protection (CPP)
- Ingress ACLs using L2, L3, L4 fields
- ACL Deny Logging
- ACL Counters
- DHCP Relay / Snooping
- MACsec (802.1AE)
- TACACS+
- RADIUS

Quality of Service (QoS) Features ¹

- Up to 8 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)
- Per port MMU Configuration
- Policing/Shaping
- Rate limiting

1. Due to the highly programmable nature of the packet processor, available functionality and scale varies by the current active profile

Network Management

- CloudVision
- Configuration rollback and commit
- 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
- Beacon LED for system identification
- System Logging
- Environment monitoring

Extensibility

- Linux Tools
 - Bash shell access and scripting
 - RPM support
 - Custom kernel modules
- Software Defined Networking (SDN)
 - eAPI
 - OpenStack Neutron Support
- Programmatic access to system state
 - Python
 - Chef
 - Puppet
 - C++
 - eAPI
 - GO
 - OpenConfig
 - OpenStack Neutron Plug-in support
- Native KVM/QEMU support

Standards Compliance ¹

- 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
- 802.3by 25 Gigabit Ethernet
- 802.3ba 40 Gigabit Ethernet
- 802.3ba 100 Gigabit Ethernet
- 802.3bs 200 Gigabit Ethernet
- RFC 2460 Internet Protocol, Version 6 (IPv6)
- RFC 2461 Neighbor Discovery for IP Version 6 (IPv6)
- RFC 2462 IPv6 Stateless Address Autoconfiguration
- RFC 2463 Internet Control Message Protocol (ICMPv6)
- IEEE 1588-2008 Precision Time Protocol

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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
- 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 VRRPv2MIB
- 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

Specifications

| | |
|---|--|
| Switch Model | 7170B-64C ^E |
| Ports | 64x QSFP100 2x SFP |
| Max 100GbE Ports | 64 |
| Max 50GbE Ports ¹ | 128 |
| Max 40GbE Ports | 64 |
| Max 25GbE Ports | 128 |
| Max 10GbE Ports | 130 |
| Max 1GbE Ports | 2 |
| MACSec ¹ | All QSFP Ports |
| Throughput (Full Duplex) | 6.4 Tbps (12.8 Tbps) |
| Packets/Second ² | Up to 3.2 Bpps |
| Latency ² | From 1 us |
| Programmable Pipeline Stages ¹ | Up to 80 |
| CPU | Multi-core x86 |
| System Memory | 64 GB |
| Flash Storage Memory | 120 GB |
| Packet Buffer Memory | 64 MB |
| 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) |
| Reversible Airflow Option | Front to Rear only |
| Typical/Max Power Draw ³ | 772 W / 980 W Max. (excl. transceivers) |
| Rack Units | 2 U |
| Size (WxHxD) | 17.55 x 3.46 x 23.42 inches (44.58 x 8.8 x 59.5 cm) |
| Weight | 39.4 lbs (17.9 kg) |
| Power Supplies | PWR-2411-AC / PWR-2411-DC |
| EOS Feature Licenses | Group 3 |
| Minimum EOS | 4.29.1 |

1. Subject to support in EOS and pipeline profile installed

2. Performance rated over operation with average packets larger than 230 bytes with a medium complexity profile installed

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

E. Product is subject to an End of Sale notice

Power Supply Specifications

| Power Supply | PWR-2411-AC | PWR-2411-DC |
|-----------------------|---------------|----------------|
| Input Voltage | 200-240V AC | -48 to -60 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% |

Standards Compliance

| | |
|---------------------------|--|
| EMC | FCC Class A, ICES-003, EN 55032, EN IEC 61000-3-2:2019, EN 61000-3-3 |
| Immunity | EN 55035 EN 300 386 |
| Safety | EN 62368-1:2014 + A11:2017 IEC 62368-1:2014 |
| Certifications | BSMI (Taiwan) CE (European Union) KCC (South Korea) NRTL (North America) RCM (Australia/New Zealand) UKCA (United Kingdom) VCCI (Japan) |
| 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 | 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) |

Arista Optics and Cables

The Arista 7170B Series supports a wide range of 10G, 25G, 50G, and 100G pluggable optics and cables in the QSFP 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>.

Supported Optics and Cables

| 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

| 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 |
| 1GbE SX/LX/TX | 550m / 10km / 100m |

| Product Number | Product Description |
|------------------|---|
| DCS-7170B-64C-F | Arista 7170B, Programmable 64 x 100GbE QSFP switch, front to rear air, 2 x AC |
| DCS-7170B-64C# | Arista 7170B, Programmable 64 x 100GbE QSFP switch, configurable fans and psu |
| 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, 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-FLX | FLX License for Arista Fixed switches Group 3 - Full Routing Up to 2M Routes, >24K ACL, EVPN, VXLAN, SR, Adv MPLS LSR with TE or link/node protection |
| LIC-FIX-ENH1 | Enhanced License Group 1 for 7170 platforms - All non-default profiles. Includes E, V2, Z, FLX. |
| LIC-FIX-3-MACSEC | MACsec Encryption License for Arista Group 3 Fixed switches, MACsec capable ports |

Optional Components and Spares

| | |
|-----------------|--|
| PWR-2411-AC-RED | Arista PSU, 1RU, AC/DC, 2400W, FORWARD, 73.5MM |
| PWR-2411-DC-RED | Arista PSU, 1RU, DC/DC, 2400W, FORWARD, 73.5MM |
| FAN-7012H-RED | Spare fan module for Arista 7000 Series 2RU High Speed Fan (front-to-read airflow) |
| KIT-7202 | Spare tool-free accessory kit (v2) for Arista 2RU switches. 4-post mount. (2x C19-C20, 2m) |

Warranty

The Arista 7170 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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