

Arista 7500E Series: Q&A

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Product Overview

Q. What are the key advantages of the Arista 7500E Series?

The Arista 7500 Series with E-Series modules delivers performance without compromise. The 7500E Series is the first switch to address the challenges of density, performance, resource scalability and rich features to meet the demands of large virtualized cloud and high performance networks. It has a number of new capabilities that expand on the groundbreaking performance, reliability and density of the first generation 7500 Series.

- First modular switch to support over 1,000 10Gb Ethernet ports - 1,152 x 10G, 288 x 40G and 96 x 100G Ethernet interfaces making it the highest density wire-speed switch in the industry
- Seamless investment protection with the first generation 7500 Series – the chassis is completely unchanged providing simple in-place upgrade capability. All linecards, supervisor modules and common equipment from the 7500 Series can be used with the second generation systems
- Unique monitoring and provisioning features – LANZ, DANZ, AEM, IEEE 1588 PTP, ZTP, VM Tracer, VXLAN, and eAPI
- A 3X increase in fabric capacity, interface density and overall network scalability combined with a 3X improvement in power efficiency that dramatically lowers the TCO of migrating to 40G and 100G solutions

- Embedded 100G optical modules enable a high density multi-speed capability with flexible support for 10G, 40G and 100G on a single interface to support mixed modes and investment protection during migration from 10G to 100G
- Dense 10/40/100G modules with removable transceivers for flexible short and long reach connectivity options supporting a full range of IEEE interfaces and cost effective options including copper and optical cables.
- Comprehensive L2 and L3 feature set for open multi-vendor networks with no proprietary lock-in
- Unprecedented balanced L2 and L3 table resources allow deployment flexibility in both large L2 and L3 environments with any workload suitability
- Modular switch architected for large virtualized data centers and cloud networks with deterministic performance for mission critical environments
- First network-wide virtualization modular platform for next generation cloud bursting support with wire-speed VXLAN hardware-based Tunnel Endpoint (VTEP) termination

Q. What are the different models in the Arista 7500E Series?

The Arista 7500 Series offers two different chassis options, an 8-slot system at just 11RU, and a 4-slot system at just 7RU. Both systems share the same common equipment of a Supervisor module and 4 2900W power supplies, allowing for simple sparing. The 7508 systems support 8 linecards, dual supervisor modules and 6 fabric modules to provide a full 30Tbps of capacity. The smaller 7504 systems share a common architecture with the 7508 with the primary difference being support for 4 linecards and 15Tbps of forwarding capacity. Both models support a full 3.84Tbps of slot capacity enabling true wire-speed forwarding for dense 40G and 100G linecards.

The two models support up to 1,152 and 576 ports of 10GbE respectively, through the use of high-density 40G and 100G linecards that allow breaking 40G into 4x10G and 100G into either 3x40G or 12x10G. 7500E Series SFP+ linecards enable both 1/10G on the SFP+ interfaces and additional density is achieved with 10G/40G/100G flexible interfaces.

Resources	7508E	7504E
Description	Arista 7500 Series 7508E	Arista 7500 Series 7504E
10G Interfaces	1,152	576
40G Interfaces	288	144
100G Interfaces	96	48
Switching Capacity	30Tbps	15Tbps
Forwarding Rate	14.4Bpps	7.2Bpps
Total Buffer	144GB	72GB

Latency	3.5usec	3.5usec
Max Power	5,730W	3,016W

Q. What are the 7500E improvements over existing 7500 Series systems?

The 7500E Series maintains feature consistency with the 7500 Series and provides a number of enhancements:

- 3X increased port density for 10Gb Ethernet added through support for high density interfaces
- 3X the fabric capacity to enable a non-blocking 96x 100GbE system in just 11RU
- 3X larger dynamic buffers to ensure optimal congestion management and highest system-level throughput
- 3X the power efficiency to lower total cost of ownership
- Substantially larger L2/L3 table sizes for greater scalability and applicability in large data center networks
- Hardware support for many new features (PTP, VXLAN, Advanced Mirroring, and LANZ, PBR, 64 Way ECMP and VRF's)
- Flexible interface modes with support for both 10G and 40G on QSFP+ ports, and MXP triple speed interfaces supporting 10/40/100GbE modes
- Dense 40GbE and 100GbE allowing scale-out forwarding capacity of 7.2Billion packets per second

Q. What are the focus markets for the 7500E Series?

The 7500E Series supports both large scale and high performance network requirements making it an “any-purpose” data center switch. Key markets that will realize value from its enhanced capabilities are:

- **Virtualized and Cloud data centers:** Largest scale, flexible interface choices, balanced resources, deep buffers and non-blocking performance coupled with a rich L2/L3 feature set and innovative provisioning and monitoring features that include open API and SDN features such as VXLAN
- **High Performance Compute (HPC) and Research:** Low and predictable latency, non-blocking with high density 40G and 100G, precision timing, precision monitoring, and support for flexible 10G, 40G and 100G
- **Big Data and Hadoop:** High performance, high density, flexible 1G/10G/40G/100G, advanced monitoring and traffic control features for deterministic performance
- **IP Storage:** Dense 10G with deep buffers and predictable low latency in a non-blocking system.
- **Enterprise Data Centers:** Rich L2 and L3 features for provisioning and monitoring with power efficient and scalable support for 10G to 100G.
- **Virtual Desktop Infrastructure:** High performance, high density scale-out 10G with deep buffers for modern VDI scale-out with distributed file systems, advanced monitoring and traffic control features for deterministic performance.

Q. Which software licenses are available and which features require licenses?

There are three licenses available for the 7500E series. The 7500E Series uses the same license structure as the 7500 Series.

- **The Enhanced Routing License (E)** enables dynamic unicast (IPv4 and IPv6) and multicast routing protocols – OSPF, BGP, IS-IS and PIM. RIPv2 is supported without the Enhanced License.
- **The Virtualization License (V)** is required for both the VM Tracer feature and VXLAN features.
- **The Network Monitoring and Provisioning License (Z)** is required for ZTP, LANZ, eAPI, and the Advanced Mirroring feature sets. *

* Not all features are available at FCS – check with your Arista Account team.

Advanced Features:**Network Scalability****Q. How scalable is the 7500 Series?**

The Arista 7500E Series addresses scalability in both system performance and network scalability. The Arista 7500 Series supports up to 288 40G and 96 100G ports, which enables up to 1,152 10G ports when using break out cables. The linecard offerings provide incredible flexibility through transceiver based 100G and 40G QSFP ports that enable mix and match of long and short reach connections and 100G MXP ports that can operate as 1 x 100G, 3 x 40G, 12 x 10G or combinations of 40G and 10G. The 7500E Series linecard modules support a wide variety of 10G and 40G modes as well as line rate 100G Ethernet.

The combinations offered on a per linecard are:

- **DCS-7500E-48S** (48 x SFP+/SFP ports): for cost-effective and flexible 1G and 10G designs
- **DCS-7500E-72S** (48 x SFP+/SFP and 2 x MXP ports): for combining 1G/10G with high density 10G/40/100G
 - **9 port combinations in one**
(48x10+2x100, 48x10+3x40+1x100, 52x10+2x40+1x100, 56x10+1x40+1x100, 60x10+1x100, ...)
- **DCS-7500E-36Q** (36 x QSFP+): allowing dense 10G and 40G designs
 - **37 port combinations in one**
(36x40G, 35x40G+4x10G, 34x40G+8x10G, 33x40G+12x10G, 32x40G+16x10G, 31x40G+20x10G, ...)
- **DCS-7500E-12CM** (12 x MXP ports): seamless 10G/40G/100G capability and easy migrations

- **247 port combinations in one**
(12x100G, 11x100G+3x40G, 11x100G+2x40G+4x10G, 11x100G+1x40G+8x10G, 11x100G+12x10G, ...)

- **DCS-7500E-6C2** (6 x CFP2 ports): high performance 100G with support for mixed mode 10/40/100G capability and easy migrations

- **18 port combinations in one**
(ranging from 60x 10G, 12 x 40G or 6x100G, with each port supporting 1x100G, 2x 40G or 10x10G modes allowing up to 18 unique combinations)

- **DCS-7500E-12CQ** (12 x QSFP ports): high density and performance 100G with support for mixed mode 10/40/100G capability and easy migrations

- **36 port combinations in one**
(from 48x 10G, 12 x 40G or 12x100G, with each port supporting 1x100G, 2x 40G or 10x10G modes allowing up to 36 unique combinations)

The high port counts and system performance enables network designs that historically required two or three tiers of switches to be collapsed into a single switch.

The 7500E Series enables highly scalable network designs with L2, L3 and VXLAN technologies. Using L2 MLAG a pair of 7508E systems allows scalability to over 6,000 10G ports at 3:1 oversubscription, using either 10G or 40G as uplinks. Using a 4-way L3 ECMP design a 7500E Series spine supports over 13,000 10G ports at 3:1 oversubscription, again using either 40G or 10G as uplinks.

Expanding the number of ECMP paths to 16-way and 32-way allows up to 55,000 and 110,000 10G ports respectively, in a simple two-tier network design that satisfies the requirements for many cloud architectures and workloads: Hadoop / Big Data, IP Storage, Public/Private Cloud, VM Farms, and Web 2.0 as well as traditional enterprise Data Center designs.

The 7500E supports a well-balanced set of network resources that makes it ideal for L2 or L3 topologies.

Characteristic	7500E Linecards
MAC Table Size	256K
Max ARP Entries	256K
Max Host Route Prefixes	128K
Max IPv4 Route Prefixes	64K
Max IPv6 Route Prefixes	16K *
Max Multicast Groups	64K
Max Egress Forwarding Entries / Forwarding Engine	30K

Max LAG Groups	up to 1K
Max LAG Members	32 member ports
Max ECMP Fanout	64-way
Max ACL Entries	12,000 per port group (6 groups)
Buffer per 10GbE Port	125MB
Buffer per 100GbE Port	Up to 1500MB per port

* 12K IPv6 prefixes initially

Q. What improvements are provided by the Supervisor-E

The Supervisor-E retains many of the key features of the 7500-Supervisor module while increasing the overall control plane performance and adding a number of new features:

- CPU performance increased by up to 4X
- Increased DRAM by 4X to 16GB
- Introduction of an SSD option for local logging, packet captures and installation of Linux tools and packages
- A Pulse Per Second input port for direct connection of an external clock source to sync the internal clock of the 7500 System
- Dual USB ports for external storage and copying logs and software images
- Latest generation multi-core Intel Xeon processor with hyper-threading for increased scalability of Arista EOS multi-process software architecture

Q. Is the Supervisor-E required for 7500E Series systems?

The Supervisor-E is not required for 7500E Systems. The increased control plane performance is recommended for systems that will be leveraging the increased scale in physical and logical interfaces. The Supervisor-E improves protocol scalability and reduces convergence times. The Supervisor-E will support both generations of the 7500 Series.

Q. What software features does the Arista 7500E support?

All Arista products including the 7500E Series runs the same Arista EOS software, binary image simplifying network administration with a single standard across all switches. EOS delivers a rich suite of features for IPv4 and IPv6. For a complete list of supported features please view the supported features matrices at:

<http://www.aristanetworks.com/en/support/supportedfeatures>

Q. What are the Advanced Monitoring and Provisioning Features?

The 7500E Series supports a comprehensive set of advanced monitoring and provisioning features.

- Latency Analyzer and Microburst Detection (LANZ) *
 - Configurable Congestion Notification (CLI, Syslog)
 - Streaming Events (GPB Encoded)
 - Capture/Mirror of congested traffic
- Zero Touch Provisioning (ZTP)
- Advanced Mirroring
 - Port Mirroring (16 sessions)
 - Enhanced Remote Port Mirroring
 - SPAN/TAP M:N Aggregation
 - L2/3/4 Filtering
- Advanced Event Management suite (AEM)
 - CLI Scheduler
 - Event Manager
 - Event Monitor
 - Linux tools
- Integrated packet capture/analysis with TCPDump
- Restore and Configure from USB
- RFC 3176 sFlow
- Optional SSD for logging and data capture
- IEEE 1588v2 Precision Time Protocol (PTP)
- 802.1 Audio Video Bridging (AVB)*

Latency Analyzer (LANZ)

Q. What is Latency Analyzer (LANZ)?

LANZ provides a unique real-time high precision monitoring of buffer utilization, micro-bursts, and network hotspots before congestion leads to drops. LANZ allows for proactive planning of capacity upgrades or topology changes.

LANZ (Latency Analyzer) is an advanced monitoring feature available on Arista 7100 / 7150 Series and Arista 7500 E-Series linecards.

Arista 7500 Series LANZ provides the ability to track utilization of deep VOQ buffers, providing the user with an understanding of which destination interfaces are most congested and how much data is being en-queued and its sources.

Q. What features are part of Latency Analyzer (LANZ)?

LANZ refers to the set of latency analyzer features available with the Arista 7500E series of devices.

- **Per Queue per Port Reporting** - LANZ allows reporting and configuration for every egress port and all VoQs
- **Congestion Lifecycle Monitoring** – LANZ tracks congestion events end-to-end, providing Start-Time, Duration and Maximum Queue Length
- **Drop Monitoring** - LANZ is able to report on lost traffic occurring through severe congestion events
- **Per VoQ Buffer Monitoring** - LANZ reports on VoQ buffer usage in addition to interface queues
- **Data Capture** - LANZ allows the user to capture and mirror packets that were involved in congestion events
- **Local Analysis** – LANZ provides a local database of congestion records
- **Export data** - LANZ Streaming allows for real-time streaming of data in an open Google Protocol Buffer (GPB) encoded TCP stream.

Port Mirroring

Q. How many SPAN sessions are supported on the 7500E Series?

The 7500E Series supports 16 discrete mirroring sessions, each able to support TX, RX or both with multiple source interfaces.

Q. Is it possible to mirror a set of sources to multiple monitor destinations (i.e. to multiple ports)?

The 7500E Series linecards support this capability and the feature is planned for a future release of EOS software.

Q. Is it possible to have a single monitor source mirrored to multiple destination sessions?

Yes, the 7500E Series linecards support this capability and will be offered in a future software release.

Q. What is the Advanced Mirroring suite?

Advanced Mirroring is a group of expanded mirroring features that include the following:

- Enhanced remote port mirroring
- Filtered/ACL based mirroring
- Arbitrary N:M mirroring
- Mirror Aggregation
- Tap Aggregation

Precision Timing Protocol - PTP (IEEE 1588)

Q. Why is supporting PTP (IEEE 1588) in the switch important?

Precision Time Protocol (IEEE1588) is an alternative to the popular Network Time Protocol (NTP), a means of using the existing IP network infrastructure to distribute highly accurate time-of-day enabling multiple devices to synchronize their clocks to a central source (the Grand Master (GM)).

PTP is a useful solution wherever accurate synchronization of measured events is important to enable correlation.

Traditionally, high precision environments have deployed dedicated time distribution networks, which consist of an overlay network of co-axial cabling and dedicated hardware, required in each client machine. These networks are expensive to scale and require significant additional cable infrastructure.

The ability of PTP to offer scalable, hierarchical in-band time distribution is very attractive to simplify deployments, lower costs and limit GPS antenna sprawl.

Q. What is different about Arista's Hardware PTP implementation?

While software implementations of PTP can provide improvements over NTP, it is with hardware support that substantial accuracy gains are made. Deployment of PTP in hardware may improve upon NTP's accuracy by several orders of magnitude - from 10-100 μ s down to 100s of nanoseconds.

The 7500E Series linecards uses ASIC based timing capabilities to support both Transparent Clock and Boundary Clock modes.

Q. What is different from existing Switches with PTP offerings?

There are no high-density 10G/40G/100G devices supporting hardware based Transparent Clock and Boundary Clock operation. Current solutions use limited software solutions that are unable to achieve the very high levels of accuracy demanded by Financial, Service Provider, Scientific and Federal markets. The Arista 7500E Supervisor is the first to offer native hardware PTP with the ability to synchronize using Sync-E, external PPS input and in-band PTP.

Wire-speed VXLAN Gateway

Q. What is VXLAN?

VXLAN is a multi-vendor industry-supported network virtualization technology that enables much larger networks to be built at layer 2 without the inherent scale issues that underpin large layer 2 networks. It uses a VLAN-like encapsulation technique to encapsulate layer 2 Ethernet frames within IP packets at layer 3 and as such is categorized as an 'overlay' network.

VXLAN provides solutions to a number of underlying issues with layer 2 network scale, namely:

- Enables large layer 2 networks without increasing the fault domain

- Scale beyond 4K VLANs
- Enables layer 2 connectivity across multiple physical locations or pods
- Potential ability to localize flooding (unknown destination) and broadcast traffic to a single site
- Enables large layer 2 networks to be built without every device having to see every other MAC address

From a virtual machine perspective, VXLAN enables VMs to be deployed on any server in any location, regardless of the IP subnet or VLAN that the physical server resides in.

VXLAN is an industry-standard method of supporting a layer 2 overlay across layer 3 boundaries. As multiple vendors support VXLAN there are subsequently a variety of ways VXLAN can be deployed: as a software feature on hypervisor-resident virtual switches, on firewall and load-balancing appliances and on VXLAN hardware gateways built into L3 switches.

Q. How does VXLAN work?

VXLAN is a network encapsulation and segmentation protocol enabling applications to be deployed on any server, on any network, at any time. It accomplishes this by encapsulating the application's MAC and IP packets within a UDP header and utilizing IP multicast groups to emulate broadcast domains.

VXLAN encapsulation and de-encapsulation is done at the Virtual Tunnel Endpoint (VTEP) located at the virtual or physical edge of the network. Because VXLAN networks are not bound by IP subnets or L2 boundaries, VXLAN can utilize the existing L3 network topology.

Q. What advantages does VXLAN provide over building large L2 networks?

Large Layer 2 broadcast and failure domains can be eliminated and traded for more stable L3 networks supporting greater scale, better multipathing and millisecond convergence. In addition, previous scalability limitations due to MAC address table exhaustion and limited VLAN tags (4K VLANs) are replaced with the VXLAN header allowing for up to 16 million customer segments.

Q. How can I deploy VXLAN?

There are two fundamental ways that VXLAN can be deployed:

- Virtual switch (in software, distributed across physical hosts)
The virtual switch approach is supported by some virtual switches (VMware Distributed vSwitch / vSphere 5.1, Open vSwitch, others..) with between a 10-30% performance impact on the server
(ref: <http://www.vmware.com/files/pdf/techpaper/VMware-vSphere-VXLAN-Perf.pdf>)
- Physical switches (hardware VXLAN gateways)

The second example is provided on Arista 7500E series for hardware VXLAN gateway functionality with no performance impact on the server.

Q. What VXLAN functionality will be available on the Arista 7500E?

Arista 7500E switches will provide Hardware VXLAN Gateway functionality. Specifically this is the ability to gateway a VLAN to/from a VXLAN Tunnel Interface (VTI) at line rate, acting as a Virtual Tunnel Endpoint (VTEP) and participating as a VXLAN Segment with both hardware and software based VTEPs.

Q. What SDN features are delivered with the 7500E Series?

The 7500E Series enables a number of capabilities for software defined cloud networking:

- VXLAN
- eAPI
- DANZ, which includes Advanced Mirroring and TapAgg
- OpenStack
- LANZ

Q. Does the 7500E Series support OpenFlow?

OpenFlow 1.0 is currently supported in EOS on the 7050 Series. The 7500E Series is capable of supporting OpenFlow in the future without requiring hardware upgrades.

General Information

Q. Is this a store and forward or cut-through switch?

The Arista 7500 Series is a store-and-forward switch that utilizes a virtual output queue architecture, which provides deterministic low latency with no head of line blocking. Latency is predictable as packet sizes increase from a low of 3.5usec (port to port) for 64 bytes to under 9usec for jumbo frames.

The 7500 Series store and forward architecture optimizes latency by reducing serialization delay between forwarding engines and fabrics by utilizing a cell-based switch fabric where packets/frames are sliced into cells and are transmitted in parallel across multiple fabric modules simultaneously. Local switching is used to reduce latency where output ports are on the same forwarding engine.

When additional features such as L3 forwarding, L4 inspection, ACL, QoS, Multicast or Port Mirroring functionality are enabled, latency is consistently low. As mixed 10G, 40G and 100G is deployed the latency characteristics do not change as the 7500 Series VoQ architecture uses variable sized segments internally optimized for high performance with predictable latency.

Q. What new linecards and system components are available?

A set of new high-density E-Series linecards, fabric and supervisor modules is available for the 7500 Series, along with new fabric and supervisor modules. The existing 7500 Series chassis and power supply are unmodified to support the E-Series components.

7500E	Description
DCS-7500E-SUP	Supervisor module for 7500E series chassis
DCS-7500E-SUP-D	Supervisor module for 7500E series chassis with 100GB SSD
DCS-7508E-FM	Fabric-E (integrated fan) Module for 7508-E Chassis, required for fabric slots 1-6
DCS-7504E-FM	Fabric-E (integrated fan) Module for 7504-E Chassis, required for fabric slots 1-6
DCS-7500E-36Q-LC	36 port 40GbE QSFP+ wire-speed linecard for 7500E Series
DCS-7500E-72S-LC	48 port 10GbE SFP+ & 2 x SR10 Embedded MXP wire-speed linecard for 7500E Series
DCS-7500E-48S-LC	48 port 10GbE SFP+ wire-speed linecard for 7500E Series
DCS-7500E-12CM-LC	12 x SR10 Embedded MXP wire-speed linecard for 7500E Series
DCS-7500E-6C2-LC	6 port 100GbE CFP2 wire-speed line card for 7500E Series
DCS-7500E-12CQ-LC	12 port 100GbE QSFP wire-speed line card for 7500E Series

Q. What is the power draw for 7500E series components?

The power draw both typical and maximum for the two 7500 Series models and each component or linecard

is shown below. Typical power is measured at 25°C ambient with 50% load on all ports. Maximum power is specified for all ports running at line rate and the maximum specified operating temperature.

7500E	Typical Power	Maximum Power	Notes
7508E	5050W	5790W	Fully loaded Arista 7508 with -36Q modules
7504E	2490W	3010W	Fully loaded Arista 7504 with -36Q modules
7500E-SUP	47W	87W	
7508E-FM	155	195W	
7504E-FM	80W	105W	
7500E-36Q	450W	556W	
7500E-48S	197W	285W	
7500E-72S	212W	305W	
7500E-12CM	408W	495W	
7500E-6C2	300W	320W	
7500E-12CQ	TBD	TBD	

Q. What are the high availability features of the 7500 Series?

The Arista 7500 Series was designed specifically for high availability from both a software and hardware perspective to prevent single points of failure. Key high availability features include:

- Hardware support for hot swap of all components with redundant supervisors, power supplies, fabric and cooling modules.
- Fabric N+1 redundancy provides zero loss of performance with deterministic degradation and integrated fans that provide dynamic temperature control combined with N+1 redundancy.
- Dual Supervisors for redundancy of hardware and software
- Stateful switchover (SSO) between the dual redundant supervisors
- Power supply and grid redundancy – only 2 power supplies are required on a 7500 system ensuring protection against power supply failure or grid failure in a dual feed environment
- EOS Zero Touch Provisioning (ZTP)
- Self-healing software with Stateful Fault Repair (SFR)
- Stateful Fault Containment (SFC) and live patching through in-service-software updates
- Multi-chassis LAG for active/active L2 multipathing
- 64-way MLAG and ECMP routing for all-active L2 and L3

- Chassis health tracker monitoring all data-plane elements inside the chassis:
 - ECC memory protection of control-plane memories (corrects single bit errors, identifies dual bit errors)
 - Parity protection of all data-plane forwarding tables with active monitoring and checking with shadow copies in control-plane ECC protected memories
 - CRC32 protection of packet buffer memories and packets/frames as they pass through the switch
 - FEC (Forward Error Correction) of all fabric link traces inside the chassis

Arista Transceiver Modules and MXP ports

Q. Which cables and optics can be used in the SFP+ and QSFP+ ports?

All Arista 10G SFP+ transceivers, with the exception of LRM, are supported on the Arista 7500E SFP+ ports. The SFP+ ports accommodate a full range of 10GbE SFP+ and 1GbE SFP transceivers and cables to provide support for a wide range of connectivity options from short reach copper and multi-mode fiber, to longer reaches over single mode up to 80km and DWDM solutions up to 80km. The SFP options include multi-mode and single-mode fiber transceivers, and both 100Mb and 1Gb over copper cabling.

All Arista 40G QSFP+ transceivers can be used including SR4, XSR4, LR4 PLRL4 (and many others) and a range of copper and active optical cables up to 100m. Additional 40G QSFP+ transceivers will be supported through software updates. The 40G QSFP+ transceivers and cables allow for 4x10G mode support with the use of fiber breakout cables, MTP to LC cassettes, or QSFP-SFP+ cables. See the [Arista Networks](#) web site for details on the latest supported transceivers.

Q. How does the MXP port allow for triple speed operation?

Two of the linecards in the 7500E Series support 100G via embedded optical modules that avoid the requirement for separate high-powered 100G transceivers. The embedded optics support 100GBASE-SR10, that supports 100GbE up to 100m over OM3 (150m over OM4) natively via an MTP-24 port. Each multi-speed port (MXP) can selectively be configured as 3x40GbE, 12x10GbE or combinations, and use a break out cable to provide the 40GbE MTP and 10GbE LC connections. There is no requirement to swap the embedded optic module, or use special hardware to support these additional modes.

The two linecards that include multi-speed ports (MXP) are:

DCS-7500E-72S – 48 ports SFP+ and 2 port 100G MXP

DCS-7500E-12CM-LC - 12-port 100G MXP

The first linecard has 2 MTP/MPO interfaces (and 48 SFP+ ports), and the latter has 12 interfaces of MTP/MPO. The 12-port linecard allows 12x100G, 36x 40G or 144 x10G or mixed combinations. As each MXP port is configured individually for the desired speed it provides the ability to mix and match, and support an in-

place migration from 10G to 100G within one module without losing density or performance.

Q. Is the Arista MXP 100G port compatible with a transceivers 100G interface?

Yes. The Arista MXP supports the IEEE 100GBASE-SR10 standard ensuring compatibility with other 100G ports that are compliant to the IEEE specification. Distances up to 100m are fully supported on OM3 and 150m on OM4. Increased distances will also be supported between two Arista switches (up to 300m on OM3).

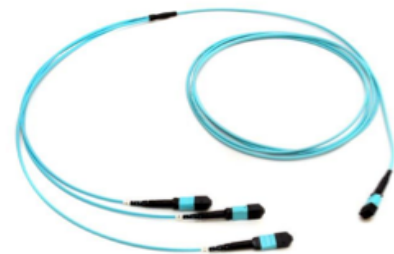
Q. Where do I get information on the cables needed to connect to the MPO ports?

Information on the cables needed for both direct connect (point to point) and cross-connect cables are provided in a separate document on the Arista Networks web site. This document identifies the correct Rx and Tx port mapping on the MTP-24 for all three speed combinations, for both direct connect and cross-connect applications. Additionally for easy availability and integration with existing structured cabling systems a number of major cabling vendors have produced cabling specification sheets for the Arista MXP ports. Arista Networks offers a selection of MTP24 fiber cables for direct 100G, 40G and 10G applications and for connecting into structured cabling systems. These fiber optic cables offer a simple way to rapidly test and deploy the 7500E Series 100G ports.

Q. Can I connect a 40G QSFP+ port to an MPO port?

Yes. When the Arista MXP is configured in 40G mode it supports industry standard IEEE 40GBASE-SR4, and extended reach XSR4 capability. The MPO interface on the Arista linecard is an MTP-24, which can be broken into 3 MTP-12 ports with a simple 1-to-3 cable available from many fiber optical cable vendors. An example is shown here:

The MTP-24 to 3xMTP-12 cable presents three ends each supporting 40GBASE-SR4 that allows up to 100m on OM3 and 150m on OM4 fiber.



Alternatively a cassette solution can be used to adapt MTP-24 to 3x MTP-12 as shown:



A similar solution exists for 10GbE. With the MXP ports supporting 12x 10GBASE-SR (100m) a cable is used to adapt the MPT-24 interface to 12 x LC pairs.



A cassette option is also available for adapting MTP-24 to 12 x LC pairs



Availability

Q. What is the minimum EOS software version for the Arista 7500E

The minimum version of EOS that supports the Arista 7500E is 4.12.0. This image adds support for the 7500E Series linecards. Future EOS releases will add support for additional new features. Refer to the latest release notes for details of new hardware and features support. Releases above 4.12.4 enable mixed mode operations of the gen1 7548S line card and 7500E Series line cards. The later releases for EOS are recommended for mixed mode deployments. Customers should request specific EOS code recommendations from their account teams of Arista TAC based on their deployments and feature requirement.

Q. What are the options for support?

Arista A-Care Service Options are designed to provide you with world-class support. A-Care service offerings are available 24x7x365 with advance replacement options to minimize any network downtime. All A-Care Service options include full access to bug fixes and software downloads. For more information about A-Care Service options go to <http://www.aristanetworks.com/en/service>.

Q. Where do I get more information on the Arista 7500E?

For more information please go to www.aristanetworks.com or contact us at sales@aristanetworks.com