Arista 7060X, 7060X2, 7260X and 7260X3 series: Q&A

Product Overview

What are the 7060X, 7060X2, 7260X & 7260X3 series?

The Arista 7060X Series, comprising of the 7060X, 7060X2, 7260X and 7260X3, are purpose-built 10/25/40GbE and 100GbE data center switches in compact and energy efficient form factors with wirespeed layer 2 and layer 3 features, combined with advanced features for software defined cloud networking.

Featuring 32 100G QSFP and 2 10G SFP+ ports in a 1RU form factor the **7060CX-32S** switch delivers feature rich layer 2 and layer 3 wirespeed performance with an overall throughput of 6.4Tbps. For configuration flexibility the 7060CX-32S supports up to 32x100GbE ports, where each port can be broken out into wide range of speed choices; 4x10GbE, 4x25GbE, 1x40GbE or 2x50GbE in addition to 1x100GbE. The **7060CX2-32S** provides the same form factor and interface flexibility as the 7060CX-32S with the addition of full support for the 802.3by IEEE 25GbE standard, and a 40% expanded packet memory buffer.

Providing 48 SFP and 6 QSFP ports in a 1RU form factor, the **7060SX2-48YC6** switch delivers feature rich layer 2 and layer 3 wirespeed performance with an overall throughput of 3.6Tbps. Each 25G SFP port supports a choice of 1G, 10G and 25G speeds and each QSFP port can be broken out into wide range of speed choices; 4 x 10GbE, 4 x 25GbE, 1x 40GbE or 2 x 50GbE in addition to 1x 100GbE.

The **7260QX-64** is a 2RU 64x40GbE power efficient, high performance and low latency system. The 7260QX-64 represents a generational leap forward in silicon density with the same 64-port density as the 7250QX-64, but with a single central system on chip design. This allows the 7260QX-64 to operate in cut-through forwarding mode, offering low latency forwarding from 550ns at high 40G density. Each QSFP+ interface supports dedicated 40GbE mode. In addition, there are two SFP+ 1/10G ports for low speed connections to management systems or other networks.

The **7260CX-64** delivers a new standard for 100GbE port density within a fixed form factor chassis offering 64 line rate 100GbE interfaces via QSFP optics. Each interface can be used in any of 5 speed modes; 1x 100GbE, 2x50GbE, 1x40GbE, 4x25GbE or 4x10GbE without restriction. A broad range of 100GbE and 40GbE optics and cables provide the direct or break-out combinations for copper, multi-mode or single-mode fiber. The 7260CX-64 enables all this in 2RU, and also includes 2 SFP+ ports for direct 1/10G connections.

The **7260CX3-64** delivers leading 100GbE port density within a fixed form factor chassis offering 64 line rate

100GbE interfaces via QSFP100 optics. The 7260CX3 is a single chip system that enables low latency, low power and high performance. Each port is wire speed 100GbE, can be used for either 100G or 40G and 2 x 25/50G with support for a wide choice of optics and cables. Two additional SFP+ ports provide for low speed connection.

The 7060CX-32S and 7260QX-64 offer latency from just 450ns, with a 16MB shared buffer pool supporting a small segment size and dynamic buffer fairness technology, which ensures consistent high performance that scales with the number of congested interfaces, the 7060X2 systems maintain the same low latency profile while expanding the shared buffer pool to 22MBm optimized for lossless traffic classes. The 7260CX-64 latency ranges from 500ns to 1500ns and supports a buffer of 16MB per port group. The 7260CX3-64 offers a low latency from just 450ns with an expanded 42MB packet buffer with smart buffer allocation technology.

What switch models are available in the 7060X Family?

- The 7060CX-32S offers 32 100G QSFP and 2 SFP+ ports in a 1RU fixed configuration system. Two SFP+ port are in addition to the 32 x 100GbE.
- The 7060CX2-32S offers 32 100G QSFP and 2SFP+ ports in a 1RU fixed configuration systems. Two SFP+ port are in addition to the 32 100GbE.
- The 7260SX2-48YC6 offers 48 SFP for 1/10/25GbE and 6 100G QSFP ports in a 1RU fixed system.
- The 7260QX-64 offers 64xQSFP+ ports in a 2RU fixed configuration system. Two SFP+ ports are in addition to the 64x40GbE ports.
- The 7260CX-64 offers 64 100G QSFP ports in a 2RU fixed configuration system. Two SFP+ ports are provided in addition to the 64x100GbE ports, and support 1/10GbE operation.
- The 7260CX3-64 offers 64 100G QSFP ports in a 2RU fixed configuration system. Two SFP+ ports are provided in addition to the 64x100GbE ports, and support 1/10GbE operation.

What are the main differences in the 7060X, 7060X2 & 7260X family over the Arista 7050SX/QX/TX and 7250QX series?

The 7060CX2-32S, 7060SX2-48YC6, 7060CX-32S, 7260QX-64, 7260CX-64 and 7260CX3-64 represent an expansion of the Arista 7000 series portfolio, offering higher performance over the current 7050QX-32S and 7250QX-64 platforms with 100GbE capability. The 100G capabilities also bring support for 25GbE and support for 50GbE.

The vast majority of EOS capabilities are common with the 7050X and 7250X series, as they share the same "X" series architecture. This provides a broad level of consistency for customers who will add the 7060X Series to existing network architectures. The system on chip inside the 7060X and 7060X2 has a raw capacity

of up to 32 x100GbE, compared with 32x40GbE on the 7050X series. This performance improvement provides 2.5X increase and allows 1RU and 2RU form factors to deliver higher performance, scalable forwarding and still retain the low power draw. The system on chip inside the 7260X3 has a raw capacity of up to 64 x100GbE, providing a 2x performance increase over the 7060X/7260X while providing additional scale combined with lower power and latency.

The 7260QX-64 delivers the same density as the 7250QX-64, with 64 ports of 40GbE. The 7250QX-64 offers the capability for 4x10GbE mode on all ports, and has more aggregate packet buffer due to a multi-chip design. The 7260QX-64 models use a single system on chip delivering lower latency, reduced power consumption and wirespeed performance for all packet sizes. The 7260QX-64 additional 2 SFP+ ports provide support for 10G or lower speed interfaces without detracting from 40GbE system density.

What are the focus solutions for the 7060X, 7060X2, 7260X and 7260X3 series?

The 7060X, 7060X2 and 7260X series provide a number of advanced features for software defined cloud networking, high performance compute, big data and traditional Enterprise data center applications.

Feature	Benefits
High Density 25GbE	High density top of rack for server racks with support for both 10GbE and 25GbE. Seamless migration for next generation data center designs.
High Density 50GbE	Increased bandwidth and density at a lower cost point than existing 40GbE technologies for high performance storage.
High Density 100GbE	Scale out of spine designs with compact and power efficient systems.
Hitless speed change	Enables a modular approach to service migration, without impacting other network services.
Smart System Upgrade (SSU)	Optimized SW upgrades to reduce the impact of software upgrades and avoid network convergence.
Latency Analyzer	A solution to improve monitoring and visibility at both 10G and 40G for congestion from persistent and short-lived microbursts.
Cloud Control	Support for Openflow and OpenStack automation and self-service provisioning with cloud scale economics.
Scalable Tables - ALPM and UFT	Flexible allocation of L2 and L3 forwarding table resources for greater design choice.
Parity Error Resilience	Automatic detection and correction of system parity errors with no discernable impact to the system.
High Density, Low Latency 40GbE	The 7260QX-64 provides high density QSFP+ interfaces in a low-latency single chip form factor.
Power Efficient	DC environments combined with reversible airflow and power supply choices.

VXLAN & Virtualization	Seamless integration between VXLAN and L2/L3 environments, physical and virtualized networks.
IEEE 25GbE	With support for the 25GbE standard the 7060CX2-32S and 7060SX2-48YC6 enable seamless migration from 10G to 25G avoiding the need for costly upgrades

What are the key markets for the 7060CX, 7060CX2, 7060SX2, 7260CX and 7260CX3?

The key features of the 7060X Series are the support for high density and cost effective 25GbE, 50GbE and 100GbE with support for cut-through forwarding. The 7060X2 and 7060X3 support IEEE standards based 25G with smart buffers and consistent low latency. These characteristics are attractive to a number of markets:

- Cloud Scale Data Centers

With the introduction of support for 25GbE on servers and switches a rapid movement to server attachment at 25G is expected, replacing the use of servers at 40G. As a result, the primary market for the 7060X series is cloud-based top of rack solutions, when lowest cost per gigabit of bandwidth is critical.

- 25G and 100G HPC Clusters

In addition to 25GbE the emergence of 50GbE and 100GbE host connectivity for the largest scale of high performance compute (HPC) is driving a requirement for dense 100G in fixed form factors. In these areas both the 7060CX, 7060CX2, 7260CX and 7260CX3 deliver high density and wire speed performance in fixed format systems that enables scalable and cost effective solutions.

- IP Based Storage Clusters

The introduction of 25GbE and 50GbE host connection solutions at low price points, and lower power 40GbE systems allow for expansion of IP-Based Storage.
In addition, Big Data analysis, Content Delivery, High Tech Enterprise and Manufacturing, SW Development would all benefit from 25GbE servers, 100GbE-based leaf and spine and investment protection support for 10GbE to 100GbE connectivity.

What are the key markets for the 7260QX?

The key features of the 7260QX are support for high port density and cost effective 40GbE with consistent latency between all ports.

- Low Latency Trading at 40G

One key feature of the 7260QX-64 is the low latency with applicability to high frequency trading financial markets, where a 40GbE solution optimizes the lowest serialization delay, and enables cut-through low

latency performance when all systems are operating at 40G.

- Dense 40G Top of Rack

The lower power and wire speed performance ensures that the 7260QX-64 is ideal for large-scale networks needing dense 40GbE switching at either the server rack or storage layer.

What EOS licenses are available and what features require them?

The 7060X, 7060X2 and 7260X use the same license structure as the existing 7000 series fixed platforms.

NOTE: RIPv2 is supported without the Enhanced License.

Description	Product SKU	Platform
Virtualization feature license for Arista Fixed switches 40-132 port 10G (VM Tracer and VXLAN)	LIC-FIX-2-V	7060CX(2)-32S 7060SX2-48YC6
Network monitoring and provisioning feature license for Arista Fixed switches 40-132 port 10G (ZTP, LANZ, API, Time-stamping)	LIC-FIX-2-Z	7060CX(2)-32S 7060SX2-48YC6
Enhanced L3 License for Arista Fixed switches, 40-132 port 10G (BGP, OSPF, ISIS, PIM, NAT)	LIC-FIX-2-E	7060CX(2)-32S 7060SX2-48YC6
Virtualization feature license for Arista Fixed switches 144-256 port 10G (VM Tracer and VXLAN)	LIC-FIX-3-V	7260QX-64
Network monitoring and provisioning feature license for Arista Fixed switches 144-256 port 10G (ZTP, LANZ, API, Time-stamping)	LIC-FIX-3-Z	7260QX-64
Enhanced L3 License for Arista Fixed switches, 144-256 port 10G (BGP, OSPF, ISIS, PIM, NAT)	LIC-FIX-3-E	7260QX-64
Virtualization feature license for Arista Fixed switches 288-640 port 10G (VM Tracer and VXLAN)	LIC-FIX-4-V	7260CX-64 7260CX3-64
Network monitoring and provisioning feature license for Arista Fixed switches 288-640 port 10G (ZTP, LANZ, API, Time-stamping)	LIC-FIX-4-Z	7260CX-64 7260CX3-64
Enhanced L3 License for Arista Fixed switches, 288-640 port 10G (BGP, OSPF, ISIS, PIM, NAT)	LIC-FIX-4-E	7260CX-64 7260CX3-64

For more information on Arista licensing please refer to the official licensing page.

How many ports does each of the switches have?

Within the 7060X, 7060X2 & 7260X series the various platforms provide a wide range of interface combinations. The table below summarizes the interface combinations.

Platform	SFP+	SFP25	QSFP+	QSFP100	RU
7060CX2-32S	2	--	--	32	1
7060SX2-48YC6	--	48	--	6	1
7060CX-32S	2	--	--	32	1
7260QX-64	2	--	64	--	2
7260CX-64	2	--	0	64	2
7260CX3-64	2	--	0	64	2

What port speeds do the 7060X, 7060X2 and 7260X series support?

The table below shows the combinations of speeds supported on each switch.

Platform	1/10G Mode	10/25G Mode	40G Mode	10G, 25G, 40G, 50G, 100G Mode
7060CX2-32S	Ports 33 - 34		--	Ports 1 - 32
7060SX2-48YC6		Ports 1 – 48		Ports 49-54
7060CX-32S	Ports 33 - 34		--	Ports 1 - 32
7260QX-64	Ports 65 - 66		Ports 1 - 64	--
7260CX-64	Ports 65 - 66		--	Ports 1 – 64
7260CX3-64[1]	Ports 65 - 66		--	Ports 1 – 64

Note 1: 7260CX3-64 QSFP ports can be broken out to a system maximum of 128 ports

How are the multi-purpose QSFP ports on the 7060X Series moved between 25GbE, 50GbE and 100GbE modes and what is the default?

The default QSFP interface speed is 100GbE. The 7060CX-32S, 7060CX2-32S, 7060SX2-48YC6, 7260CX-64 and 7260CX3-64 feature multi-speed QSFP ports that can be used as four 25GbE ports or 10GbE, two 50GbE ports or a single 40GbE port or 100GbE port. To migrate the links to a different speed, use the 'speed forced' command on the master interface. For 100GbE the master lane is x/1, for 50GbE x/1 and x/3, and for 25GbE and 10GbE x/1, x/2, x/3 and x/4.

```
7060CX32(config)#interface ethernet 3/1
7060CX32(config-if-Et3/1)#speed forced 40gfull
```

How are the SFP+ ports on 7060X, 7060X2, 7260X & 7260X3 series enabled?

The 2 SFP+ interfaces are enabled by default and operate in addition to other front panel interfaces, without requiring the disabling of other ports.

What latency figures can be expected on the 7060X, 7060X2, 7260X & 7260X3 series?

The 7060X, 7060X2, 7260X and 7260X3 series support both cut-through and store-and-forward capability. The 7060CX-32S, 7060CX2-32S, 7260QX-64 and 7260CX3-64 are built upon a single system-on-chip, and offer low latency from 450ns. The 7260CX-64 is a multi-chip system, offering latency between 550ns and

1500ns. The latency also depends on the forwarding mode of the switch – cut-through or store-and-forward.

What are the advantages of buffer allocation on the 7060X series?

The 7060X/7260X series provides a best of both worlds approach to buffering. Combining a shared/dynamic buffer architecture with a small segment size, which together are designed to ensure maximum efficiency by minimizing 'unusable' buffer space. In addition, the 7060CX and 7260CX switches have 133% of total buffer compared with the 7050X platforms. The 7060X2 series expand this resource by a further 40% to 22MB to enhance the buffer capabilities in lossless networks, for example IP storage. The 7260X3 series expands the packet buffer by 2X to 42MB while maintaining the consistent buffer architecture delivering high performance, high density and low latency switching.

What are the maximums for forwarding tables on the 7060X and 7060X2 series?

The 7060X, 7060X2 & 7260X support comprehensive L2 and L3 resources optimized for data center deployments:

Resources	Base Mode	UFT Mode
MAC Addresses	8K	136K
IPv4 Hosts	8K	104K
IPv4 Routes - Unicast	16K	128K
IPv4 Routes - Multicast	4K	52K*
IPv6 Hosts	4K	52K
IPv6 Routes - Unicast	8K	85K*
IPv6 Routes - Multicast	4K	No Change

Maximum values are dependent on shared resources in some cases
* Supported in a future software release

What are the maximums for forwarding tables on the 7260X3 series?

The 7260X3 support comprehensive L2 and L3 resources optimized for data center deployments:

Resources	Base Mode	UFT Mode
MAC Addresses	8K	264K
IPv4 Hosts	8K	200K
IPv4 Routes - Unicast	16K	180K
IPv4 Routes - Multicast	4K	100K*
IPv6 Hosts	4K	100K
IPv6 Routes - Unicast	8K	90K*
IPv6 Routes - Multicast	4K	No Change

Maximum values are dependent on shared resources in some cases
* Supported in a future software release

What is the power draw on the 7060X, 7060X2, 7260X and 7260X3 series?

The 7060X, 7060X2 & 7260X series feature low power draw, with typical per port power of just 7W per 100GbE port on the 7060CX-32S.

The 7260X3 series with a single chip architecture features a lower power draw with typical per port power of just 5W per 100GbE port.

What efficiency rating do the power supplies have?

The AC power supplies are all rated at over 93% efficient for typical use, or Platinum rated.

Do the 7060X, 7060X2, 7260X and 7260X3 series support both AC and DC PSUs?

Yes, all members of the 7060X series support AC and DC power supply options.

How many fans are needed for the 2RU 7260X and 7260X3 models?

The 7260X 2RU systems have 4 fan modules. These fan modules are fully hot-swappable. The 7260X fans operate in an N+1 redundancy mode, however all fans should be installed for normal operation.

What are the key high availability options?

The Arista 7060X, 7060X2, 7260X and 7260X3 switches were all 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-swappable fans
- Live software patching
- Color-coded PSUs and fans
- Self-healing software with Stateful Fault Repair (SFR)
- Smart System Upgrade (SSU) Leaf and Spine
- Multi-chassis LAG for active/active L2 multi-pathing
- 128-way ECMP routing for load-balancing and redundancy

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

All full range of 10G SFP+, 25G SFP, QSFP+ and 100G QSFP transceivers are supported on the Arista 7060X series. The SFP+ ports accommodate a wide 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 SFP+ ports support SFP option for both 100Mb and 1Gb over copper cabling. QSFP+ and 100G QSFP ports support a wide range of 10GbE, 40GbE and

100GbE options for cables, single and multi-mode fiber.

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.arista.com/en/service.

Where do I get more information on the Arista 7060X, 7060X2, 7260X & 7260X3 series?

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

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