

Arista 7300X3 Series: Q&A

Product Overview

What are the 7300X3 Family?

The **Arista 7300X3** Series are the third generation modular switches in the Arista 7300X portfolio of data center and campus switches. With high density 25G/10G and 100G/40G in compact and energy efficient form factors and increased scalability and performance, the 7300X3 series support leaf/spine and Spline™ applications for collapsed data center tiers and campus roles.

The 7300X3 Series systems share a common architecture with the Arista 7050X3 Series and offer a choice of two modular systems, a 4-slot and 8-slot. The 7300X3-32C line card offers 32 ports of 100GbE with each port supporting a flexible combination of 10G, 25G, 40G, 50G and 100G switching to design large networks for scale-out of east- west traffic patterns with low latency and power efficiency.

The 7300X3 series is modular and highly available. The chassis support redundant Supervisors, Fabrics, Fan modules and Power Supplies. Fans can be swapped individually without removing fabric modules.

What are the focus features of the 7300X3?

The 7300X3 Series provide a number of advanced features for software defined cloud networking, high performance compute, big data and traditional data center applications.

Feature	Benefits
CloudVision	Network-wide workflow automation and workload orchestration as a turnkey solution for Cloud Networking
Wirespeed VXLAN Routing	Seamless integration between VXLAN and L2/L3 environments, physical and virtualized networks
IEEE 1588 PTP *	Build and scale accurate timing solutions with sub-microsecond accuracy
Fully shared packet buffer	Advanced traffic manager with 32MB of packet buffer that is fully shared across all ports in the port group
128-way ECMP & 64-way MLAG	Improve network scalability and balance traffic across large-scale leaf-spine designs or server load balancers

Latency Analyzer *	Real time visibility of port latency and per port high watermarks to provide immediate feedback and precision monitoring
Network Address Translation *	Network Address translation with no performance impact to resolve overlapping addressing challenges without penalty
Flexible Architecture	Add support for new capabilities to the data plane for quicker deployment of new networking solutions
Dynamic Load Balancing *	Enhanced load distribution for optimal traffic distribution and link utilization for intensive data center workloads
Time Stamping *	Monitor end to end network performance with accuracy
IEEE 25GbE 802.3by	IEEE standard ensuring interoperability, long reach optics and long term investment protection

What are the focus markets of the 7300X3?

1. Single-tier Spline™ network designs:

Spline designs collapse what have historically been the *spine* and *leaf* tiers into a single *spline*. Single tier *spline* designs will always offer the lowest capex and opex (as there are no ports used for interconnecting tiers of switches), the lowest latency, are inherently non-oversubscribed with at most two management touch points.

2. Spine layer in spine-leaf designs:

For designs that don't fit a single tier *spline* design then a two-tier *spine leaf* design is the next logical step. A two-tier design has spine switches at the top tier and leaf switches at the bottom tier with Servers/compute/storage always attached to leaf switches at the top of every rack (or for higher density leaf switches, top of every N racks) and leaf switches uplink to 2 or more spine switches.

The Arista 7300X3 series is optimized for all application types ranging from large cloud to enterprise deployments. The following are a selection of use cases:

- Grid / HPC — designs requiring cost effective and power efficient systems to enable non-blocking or minimal over-subscription
- Spine for hadoop and big data applications with east-west connectivity
- Directly connected 25GbE, 40GbE and 50GbE attached storage – dense NFS systems, requiring high performance and predictable latency
- ECMP designs up to 128-way — cost-effective 100GbE multi-pathing using open protocols
- Cloud Scale modular switch with high availability features and choice of 40G and 100G density up to 256 x 40G or 100G and full L2 and L3 features

- Consolidated campus core and aggregation layers with collapsed Spline™ approach to build simple single tier with high availability
- Open standards based L2 and L3 with monitoring and visibility features - LANZ, DANZ, Tracers
- Software Driven Networking - with support for DirectFlow, eAPIs and VXLAN routing

What EOS licenses are available and what features require them?

The 7300X3 Series use the same license structure as other Arista 7000 Series switches. Customers using licensed features must purchase the appropriate EOS licenses.

Feature	Product SKU	Platform
FlexRoute-Lite L3 License for Arista Modular switches, OSPF, ISIS, BGP, PIM Up to 256K Routes, EVPN, VXLAN	LIC-MOD-1-FLX-L LIC-MOD-2-FLX-L	7304 7308
Virtualization feature license for Arista Modular switches (VM Tracer and VXLAN)	LIC-MOD-1-V LIC-MOD-2-V	7304 7308
Enhanced L3 License for Arista Modular switches, (BGP, OSPF, ISIS, PIM)	LIC-MOD-1-E LIC-MOD-2-E	7304 7308
Network monitoring and provisioning feature license for Arista Modular switches (ZTP, LANZ, TapAgg, API, Time-stamping)	LIC-MOD-1-Z LIC-MOD-2-Z	7304 7308

For more information on Arista licensing please refer to the official [licensing page](#).

How many ports does each of the 7300X3 series chassis support?

The 7300X3 series supports a wide variety of 10GbE and 40GbE interface options, presented through the QSFP100 pluggable optic

Speed	7304X3	7308X3
100GbE	128	256
50GbE	256	512
40GbE	128	256
25GbE	512	1024
10GbE	512	1024

Is it possible to mix line cards/fabrics from 7300X or 7320X with 7300X3 parts?

No, there is no mixed-mode operation. You cannot run 7300X3 line cards in a 7300X or 7320X Series system

(fabric is incompatible with the 7300X3 line cards). The fabric modules and all line cards must be replaced, with no mixing of generations or architectures. Please also ensure the system is updated to a version of EOS that supports the new hardware.

What speeds do the 7300X3 series line card ports support?

The table below shows the combinations of speeds supported on the line card.

Platform	10G Mode	25G Mode	40G Mode	100G Mode
7300X3-32C	Ports 1 – 32	1 – 32	1 – 32	1 – 32

How are the multi-purpose QSFP100 ports on the 7300X3 Series moved between 10GbE, 25GbE, 50GbE and 100GbE modes and what is the default?

The default QSFP100 interface speed is 100GbE. The 7300X3 series feature multi-speed QSFP100 ports that can be used as four 25GbE ports or 10GbE, two 50GbE ports or a single 40GbE 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.

```
7300X3(config)#interface ethernet 1/1
7300X3(config-if-Et1/1)#speed forced ?
 10000full  Disable autoneg and force 10 Gbps/full duplex operation
 1000full   Disable autoneg and force 1 Gbps/full duplex operation
 1000half   Disable autoneg and force 1 Gbps/half duplex operation
 100full    Disable autoneg and force 100 Mbps/full duplex operation
 100gfull   Disable autoneg and force 100 Gbps/full duplex operation
 100half    Disable autoneg and force 100 Mbps/half duplex operation
 10full     Disable autoneg and force 10 Mbps/full duplex operation
 10half     Disable autoneg and force 10 Mbps/half duplex operation
 25gfull    Disable autoneg and force 25 Gbps/full duplex operation
 40gfull    Disable autoneg and force 40 Gbps/full duplex operation
 50gfull    Disable autoneg and force 50 Gbps/full duplex operation
```

Is IEEE 25GbE standard support available on the 7300X3 Series?

The 7300X3 Series offers full support for the IEEE 802.3by 25Gigabit Ethernet standard ensuring long term investment protection, and support for the 25G and 50G Consortium specification for backward compatibility to existing 25G devices.

The introduction of 25GbE provides a 2.5X performance improvement over 10GbE while using the same familiar cabling and designs. Support for 10G/25GbE modes allows for future investment protection with the ability to migrate as needed without expensive network upgrades.

What are the advantages in the buffering of the 7300X3 series?

The 7300X3 Series line cards incorporate an advanced traffic manager with 32MB of packet buffer that is fully shared across all ports in the port group and is an excellent choice for scalable data centers and modern intensive workloads. Unlike other architectures that have fixed per-port packet memory, the 7300X3 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.

What sort of latency can I expect on the 7300X3 series?

The 7300X3 support both cut-through and store-and-forward modes depending on the nature of the source and destination interfaces and configuration. In cut-through mode the 100G to 100G latency is consistently between 2.4 and 2.6 microseconds depending on the packet size.

What are the maximums for forwarding tables on the 7300X3 series?

The 7300X3 series support comprehensive L2 and L3 resources optimized for data center deployments:

Resources	Base Mode	UFT Mode
MAC Addresses	32K	288K
IPv4 Hosts	16K	168K
IPv4 Routes - Unicast	32K	384K
IPv4 Routes - Multicast	16K	104K

IPv6 Hosts	8K	104K
IPv6 Routes – Unicast	12K	256K

* Maximum values are dependent on shared resources in some cases

* Supported in a future software release

What is the power draw on the 7300X3 Series

The 7300X3 Series draws under 1.7W per 10Gb of performance and under 17W of typical power per 100GbE port.

What efficiency rating do the new power supplies have?

AC Power supplies for 7300X3 have an efficiency of over 93% - which equates to a Titanium rating.

What are the high availability options?

The Arista 7300X3 Series offers all the same high availability options with some additional features:

- Dual hot-swap and redundant supervisor modules
- N+N hot-swappable power supplies
- Color-coded PSUs and fans common to Arista 2RU and 7300 Series
- Hot swap and redundant fabric modules
- Multiple redundant and individually hot swappable fan modules
- EOS Zero Touch Provisioning (ZTP)
- Self-healing software with Stateful Fault Repair (SFR)
- Multi-chassis LAG for active/active L2 multi-pathing
- 64-way MLAG and 128-way ECMP routing for all-active L2 and L3

What is the minimum EOS software version for the Arista 7300X3 Series?

The minimum version of EOS that supports the Arista 7300X3 Series is 4.21.1F.

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

All full range of SFP+, SFP28, QSFP+ and QSFP100 transceivers are supported on the Arista 7050X3 series. The 25G SFP ports accommodate a wide range of 25G, 10GbE 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+/SFP28 options include multi-mode and single-mode fiber transceivers, and both 100Mb and 1Gb over copper cabling. QSFP+ and QSFP100 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 7300X3 Series?

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