



Arista 7050X Series

Arista 7050X Series Introduction

The Arista 7050 Series are the benchmark for performance, scale and power efficiency in 1RU data center switches. Increased adoption of 10G servers is accelerating the need for flexible, dense 10GbE/40GbE solutions. The Arista 7050X Series extends the industry leading 7050 Series with increased performance, scalability, density and features designed for software defined networking.

7050X Deployment Flexibility

The Arista 7050X Series are a range of compact 1RU and 2RU 10GbE and 40GbE wire speed, low latency and scalable multilayer switches powered by Arista EOS, the worlds most advanced network operating system.

The 7050X Series is available in a choice of three ranges, based on the primary interface connectivity option offered by each platform:

- 7050SX Series - 1/10GbE connectivity via SFP+ interfaces
- 7050TX Series - 1/10GbE connectivity via 10GBASE-T interfaces
- 7050QX Series - 10/40GbE connectivity via QSFP+ interfaces

High Performance

- 2.56 Tbps system capacity
- 1.44 billion packets per second
- Wire speed unicast & mcast
- Class leading latency
- High density 10G/40G
- Dynamic buffer allocation
- Under 5W per 40G and 2W per 10G port

Feature Rich




- High Availability
- DC optimized airflow
- Rich L2 and L3 features
- 64-Way MLAG
- 64-Way ECMP
- VXLAN gateway
- Zero touch provisioning
- Smart System Upgrade

High Scalability

- System scalability
- 32 x 40G QSFP+
- 4 x 10G SFP+
- Up to 96 x 10G + 8 x 40G
- Scalable leaf spine designs
- MAC up to 288K
- Host Routes up to 208K
- v4 LPM Routes: 16K [144K ALPM Mode]
- v6 LPM Routes: 8K [77K ALPM Mode]
- Multicast Routes up to 104K

Advanced Monitoring

- LANZ microburst detection
- DANZ advance monitoring
- AEM proactive management
- IEEE 1588 precision timing
- sFlow for network visibility
- SSD for local monitoring
- VM Tracer integration
- RAIL for Big Data and Hadoop

7050SX	7050TX	7050QX
		
10G SFP+ & QSFP/MXP	10GBASE-T & QSFP/MXP	40G QSFP+ & SFP+
Consistent Software, Architecture, Throughput and Performance		

Each of the 7050X ranges offers a variety of density options that provide wide flexibility in building scalable leaf and spine designs. The operational flexibility offered by the entire 7050X series ensures suitability for a variety of deployment scenarios. 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.
- **Leaf-Spine** — open standards based L2 and L3 with monitoring and visibility features — VM Tracer, LANZ, sFlow and Tracers
- **Software Defined Networking** — with support for OpenFlow, DirectFlow, eAPI and VXLAN
- **Enterprise server access** as middle or end of row supporting range of 1G, 10G and 40G connection options without fork lift upgrades
- **Enterprise aggregation** with up to 96 x 10G ports or 32 x 40G - full L2 and L3 features
- **Dense top of rack** for server racks with both rack and blade systems
- **40GbE attached storage** – dense NFS systems, high performance
- **ECMP designs up to 64-way** — cost-effective multi-pathing using open protocols and the Arista 7300X and 7500E as spine switches

Arista EOS

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.

Feature	Description
Network Address Translation *	Network address translation with no performance impact to resolve overlapping addressing challenges without penalty
Wirespeed VXLAN Gateway	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
Accelerated SW Update	Optimized SW upgrades to reduce the impact of software upgrades and avoid network convergence
64-way ECMP and LAG	Improve network scalability and balance traffic across large-scale leaf-spine designs or server load balancers
Latency Analyzer	A solution to improve monitoring and visibility at both 10G and 40G for congestion from persistent or microbursts.
Cloud Control & SDN	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

7050X Series Systems

Arista 7050X Series support hot-swappable power supplies and N+1 fan redundancy, EOS high availability, a choice of L2 and L3 multi-pathing designs and powerful EOS innovations for visibility, application level performance monitoring and virtualization.

Characteristic	7050QX		7050TX					7050SX			
	32	32S	48	64	72	96	128	64	72	96	128
Switch Height (RU)	1RU	1RU	1RU	1RU	1RU	1RU	2RU	1RU	1RU	1RU	2RU
10G BASE-T Ports	--	--	32	48	48	48	48	--	--	--	--
10G SFP+ Ports	--	4	--	--	--	--	--	48	48	48	96
40G QSFP+ Ports	32	32	4	4	--	--	8	4	--	--	8
10/40G MXP Ports	--	--	--	--	2	4	--	--	2	4	--
Maximum Density 10GbE ports	96	96	48	64	72	96	96	64	72	96	96
Maximum Density 40GbE ports	32	32	4	4	6	12	8	4	6	12	8
Maximum System Throughput (pps)	2.56B	2.56B	960G	1.28B	1.44B	1.92B	2.56B	1.28B	1.44B	1.92B	2.56B
Maximum Forwarding Rate (PPS)	1.44B	1.44B	720M	960M	1.08B	1.44B	1.44B	960M	1.08B	1.44B	1.44B
Latency	550ns		3usec					550ns			