

High Performance

- Up to 460 Tbps system capacity
- Up to 96 billion packets per second
- Wire speed unicast & multicast
- Under 4us latency (64 byte)
- High density 100G and 400G
- Ultra large buffers per port
- 16W per 100G and 25W per 400G ports
- 800G Ready

Feature Rich

- High Availability
- DC optimized airflow
- Rich L2 and L3 features
- 256-Way MLAG and 512-Way ECMP
- VXLAN gateway and routing
- Zero touch provisioning
- Hitless MLAG ISSU
- Integrated wirespeed encryption
- 802.1AE MACsec / IPsec UDP-ESP

High Scalability

- Up to 576 x 400G
- Up to 768 x 100G QSFP
- Flexible 50G and 200G modes
- FlexRoute™ Engine
- Over 5M IPv4 Routes with K series

Scalable Architecture

- 100% efficient cell based fabric
- Deep packet buffer
 - up to 24 GB per line card
- Virtual Output Queues per port to eliminate head of line blocking
- 14.4 Tbps per slot fabric capacity

High System Availability

- Grid and PS redundant power system
- 1+1 Supervisor redundancy
- Fabric module redundancy
- N+1 Fan module redundancy
- Designed for NEBS

Advanced Monitoring

- CloudVision
- LANZ microburst detection
- DANZ advance monitoring
- AEM proactive management
- IEEE 1588 precision timing
- Accelerated sFlow for network visibility
- VM Tracer integration
- Inband Network Telemetry

Arista 7800R3 Series Introduction

Combining high density 100G and 400G with low latency and wire speed performance the Arista 7800R3 Series are designed for large virtualized data centers, internet peering, cloud networks and mission critical environments. A deep buffer VoQ architecture with large routing tables delivers a highly scalable and power efficient system optimized for modern datacenter and telco clouds.

The Arista 7800R3 Series FlexRoute engine provides the flexible scalability to support deployment as a routing platform with Internet scale routing. All Arista 7800R3 Series support FlexRoute™ engines providing the scalability to support deployment as a routing platform with Internet scale. The 7800R3 Series Accelerated sFlow feature samples and processes flow samples at line-rate. The 7800R3K Series support a series of flexible profiles that leverage common resources for different network roles including over 5M IP routes. Algorithmic ACLs enable more flexible and scalable solutions for access control, policy based forwarding and network telemetry, available on the Arista 7800R3, 7800R3A, 7800R3K and 7800R3AK series.

With front-to-rear airflow, redundant and hot swappable supervisor, power, fabric and cooling modules the system is purpose built for high availability and continuous operations.

7800R3 Advantages

- Support for up to 576 400G OSFP or QSFP-DD or up to 768 100G QSFP
- Support for interfaces with choice of speed from 10G to 400G
- Highly scalable chassis with choice of performance and size
- Consistent features with the 7500R3 and 7280R3 Series
- Comprehensive, wire-speed, cloud data center virtualisation and carrier routing with EVPN-VXLAN, MPLS and Segment Routing
- Line rate TunnelSec encryption for strong layer 2 and layer 3 security
- Streaming network state for advanced analytics with CloudVision
- Unique monitoring and provisioning features – LANZ, DANZ, AEM, PTP, ZTP, VM Tracer, and eAPI. Accelerated sFlow and IPFIX for network forensics
- Comprehensive L2 and L3 feature set for open multi-vendor networks with no proprietary lock-in.
- Scalable forwarding table resources allow deployment flexibility in both large L2 and L3 environments and internet peering with any workload suitability
- Flexible and scalable solutions for access control and network telemetry
- Programmable packet processor for advanced features and flexible profiles enabling different use cases including peering and DCI

*Arista 7800R3 Series
Modular Data Center
Switches*



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
CloudVision	Network-wide workflow automation and workload orchestration as a turnkey solution for Cloud Networking
DANZ Tap Aggregation	10/40/100G Tap Aggregation with best-in-class performance and high density up to 576 400G Tap/Tool ports
Wirespeed VXLAN Routing	Seamless integration between VXLAN and L2/L3 environments, physical and virtualized networks
Cloud Grade Routing	Scalable IP/MPLS and EVPN services for Internet Peering, Carrier Core and Edge
IEEE 1588 PTP	Build and scale accurate timing solutions with sub-microsecond accuracy
FlexRoute	Flexible scalability to support Internet scale routing up to 5M prefixes
sFlow Acceleration	High sampling rate for advanced network telemetry, capacity planning and monitoring
Inband Network Telemetry *	Measure latency per device and across the network, trace packets and reconstruct topology
Dynamic Deep Buffers	Up to 24GB of packet memory per line card virtually eliminating packet drops in congestion scenarios
512-way ECMP & 256-way MLAG	Improve network scalability and balance traffic across large-scale leaf-spine designs or server load balancers
Network Wide Virtualization	Multi-vendor API Support with eAPI, VXLAN and NSX, and other encapsulation techniques
TunnelSec for 10G - 400G	MACsec, IPsec and VXLANsec line rate encryption at scale for Cloud Data Centers and DCI

7800R3 Deployment Scenarios

- **Universal Spine:** Unparalleled performance with high density and network virtualization in a proven architecture
- **Internet Peering:** Scaling to over 5M routes with FlexRoute the 7800R3 can be leveraged for peering and MPLS
- **Telco and Cloud data centers:** Non-blocking performance and deep buffers coupled with a rich L2/L3 feature set with advanced routing, flexible and open provisioning and telemetry including accelerated sFlow and IPFIX
- **High Performance Compute (HPC) and Research:** Low and predictable latency, non-blocking with high density 400G and 100G, precision timing, monitoring, and support for interface speeds including 10G, 25G, 40G, 50G, 100G and 400G
- **Cloud and AI:** High performance leaf and spine for AI and ML solutions, east-west traffic patterns using advanced monitoring and traffic control features for deterministic performance
- **Content Delivery Networks:** Ultra deep buffers create a lossless network for streaming 4K video over content delivery networks that ensures reliable performance under peak load
- **IP Storage:** Storage requiring performance, deep buffers and predictable low latency in non-blocking system
- **Data Center Interconnect (DCI):** High performance, cost effective and secure

* Not currently supported in EOS

7800R3 Line Card Models

The 7800R3 Series offers a choice of line cards, with consistent support for the full set of 7800R3 features:

Line Card	Type	10G	25G	40G QSFP+	50G	100G	400G	Encryption	Large Scale
7800R3-48CQ	QSFP	96	96	48	96	48	—	—	—
7800R3-48CQ2									
7800R3-36P	OSFP	288	288	36	288	144	36		
7800R3-36D	QSFP-DD								
7800R3A-36P	OSFP	232	232	36	232	144	36		
7800R3A-36D	QSFP-DD								
7800R3A-36D2									
7800R3-48CQM	QSFP	—	—	48 (no MACsec)	—	48	—	MACsec	
7800R3-48CQMS		96	96	48	96	48	—		
7800R3-48CQM2									
7800R3A-36PM	OSFP	232	232	36	232	144	36	TunnelSec	
7800R3A-36DM	QSFP-DD								
7800R3A-36DM2									
7800R3K-72Y	SFP	72	72	—	32	—	—	—	Y
7800R3K-48CQ	QSFP	96	96	48	96	48	—	—	Y
7800R3K-36DM	QSFP-DD	288	288	36	288	144	36	MACsec	Y
7800R3AK-36PM	OSFP	232	232	36	232	144	36	TunnelSec	Y
7800R3AK-36DM	QSFP-DD								
7800R3AK-36DM2									



Arista 7800R3 25/50G Line Cards



Arista 7800R3 100G Line Cards



Arista 7800R3 400G Line Cards

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