

## High Performance

- 115Tbps system capacity
- Up to 51 billion packets per second
- Wire speed unicast & multicast
- Under 3.5us latency (64 byte)
- High density 10G/40G/100G
- Ultra large 600MB buffer per 100G port
- Under 25W per 100G port

## Feature Rich

- High Availability
- DC optimized airflow
- Rich L2 and L3 features
- 128-Way MLAG and ECMP
- VXLAN gateway and routing
- Zero touch provisioning
- Hitless MLAG ISSU
- Integrated wirespeed 802.1AE MACsec

## High Scalability

- Up to 432 x 100G
- Up to 432 x 40G
- Up to 1728 x 25G
- Up to 1728 x 10G
- FlexRoute Engine
- 768K MAC/IPv4/IPv6 Hosts
- Over 1M IPv4 Unicast LPM Routes
- Up to 768K IPv6 Unicast LPM Routes

## Scalable Architecture

- 100% efficient cell based fabric
- Deep packet buffer (24GB per line card)
- Up to 13,824 Virtual Output Queues per port to eliminate head of line blocking
- 9.6Tbps per slot fabric capacity

## High System Availability

- Grid and PS redundant power system
- 1+1 Supervisor redundancy
- N+1 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
- sFlow for network visibility
- VM Tracer integration

## Arista 7500R Series Introduction

Combining high density 10/40 and 100GbE with low latency and wire speed performance the Arista 7500R 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 in a compact design delivers a highly scalable and power efficient system that scales up to 1,728 ports of 10GbE or 432 ports of 100GbE. The flexible 100G port options provide support for 5 speeds including 25G and 50G on all ports with a choice of single mode or multi mode capabilities.

The Arista 7500R Series FlexRoute engine provides the flexible scalability to support deployment as a routing platform with Internet scale routing. Arista FlexRoute along with EOS NetDB enables innovation not natively available in merchant chipsets.

With a choice of a 12 slot, 8 slot and 4 slot system the 7500R series deliver scalable performance, large L2 & L3 resources, with advanced features for network monitoring, precision timing and network virtualization to deliver flexible and deterministic network performance for the most demanding data center networks.

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.

## 7500R Advantages

- Support for over 1,700 10Gb and 25Gb Ethernet ports - 1,728 x 10G / 25G, 432 x 40G / 100G Ethernet interfaces
- Seamless investment protection with 7500E line cards, fabric and supervisor
- Streaming network state for advanced analytics with CloudVision
- Unique monitoring and provisioning features – LANZ, DANZ, AEM, PTP, ZTP, VM Tracer, VXLAN, and eAPI
- Comprehensive L2 and L3 feature set for open multi-vendor networks with no proprietary lock-in
- Scalable L2 and L3 table resources allow deployment flexibility in both large L2 and L3 environments and internet peering with any workload suitability
- Network-wide virtualization platform for next generation cloud bursting with wire-speed VXLAN routing
- Directly connected 25GbE, 40GbE and 50GbE attached storage systems, requiring high performance and predictable latency



*Arista 7500R Series Modular Data Center 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.

## 7500R Series Systems

The Arista 7500 Series uses a deep buffer virtual output queue (VOQ) architecture that eliminates head-of-line (HOL) blocking and virtually eliminates packet drops even in the most congested network scenarios. An advanced traffic scheduler fairly allocates bandwidth between all virtual output queues while accurately following queue disciplines including weighted fair queueing, fixed priority, or hybrid schemes. As a result, the Arista 7500 can handle the most demanding data center requirements with ease, including mixed traffic loads of real-time, multicast, and storage traffic while still delivering low latency.

Arista 7500R Series deliver powerful EOS innovations for advanced traffic control, performance monitoring and virtualization features in addition to L2 and L3 multi-pathing scalability that improves the agility of modern high performance environments, with solutions for automation, data monitoring, precise timing and next-generation virtualization.

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 432 100G Tap/Tool ports
Wirespeed VXLAN Routing	Seamless integration between VXLAN and L2/L3 environments, physical and virtualized networks
Dynamic Deep Buffers	Up to 24GB of packet memory per line card virtually eliminating packet drops in congestion scenarios
IEEE 1588 PTP	Build and scale accurate timing solutions with sub-microsecond accuracy
128-way ECMP & 128-way MLAG	Improve network scalability and balance traffic across large-scale leaf-spine designs or server load balancers
Latency Analyzer	Microsecond utilization granularity using buffer watermarks for immediate feedback and precise monitoring
Network Wide Virtualization	Multi-vendor API Support with eAPI, VXLAN and NSX, and other encapsulation techniques
Secure Encryption with MACsec	Support for 802.1AE MACsec encryption on 100GbE ports for DCI and securing leaf and spine tiers

## 7500R Deployment Scenarios

- **Universal Spine:** Delivering high bandwidth with density with resiliency, rapid convergence and large routing tables
- **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
- **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 interface speeds including 10G, 25G, 40G, 50G and 100G
- **Big Data and Hadoop:** High performance spine for east-west traffic patterns with advanced monitoring and traffic control features for deterministic performance
- **IP Storage:** Storage requiring performance, deep buffers and predictable low latency in non-blocking system
- **Internet Peering:** With support for large tables and rapid convergence the 7500R can be leveraged for both peering and DCI

The 7500R offers a choice of line cards, with consistent support for the full set of 7500R features:

**7500R-36CQ** — 36 QSFP 100G ports capable of broadest range of speeds using 40G QSFP+ and 100G QSFP100 modules

**7500R-36Q** — 36 port QSFP+ 10/40G capable line card with 36x 40G or 96x10G and 12x 40G using breakout cables, and up to 6 ports of 100G

**7500R-48S2CQ** — 48 SFP+ and 2 QSFP100 ports allowing 48x 10G using standards based SFP+ and 2 x 100G, 40G or 8 x 10G / 25G

**7500RM-36CQ** — 36 QSFP 100G ports with integrated MACsec

