High Performance

- 150Tbps system capacity
- Up to 69 billion packets per second
- Wire speed unicast & multicast
- Under 4us latency (64 byte)
- High density 10G/25G/40G/100G
- Ultra large 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 576 x 100G
- Up to 576 x 40G
- Up to 2304 x 25G
- Up to 2304 x 10G
- FlexRoute™ Engine
- ACL scalability to 192K entries
- 768K MAC/IPv4/IPv6 Hosts
- Over 2M IPv4/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
- Accelerated 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.

The Arista 7500R Series FlexRoute engine provides the flexible scalability to support deployment as a routing platform with Internet scale routing enabling innovation not natively available in merchant chipsets. 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 2,300 10Gb and 25Gb Ethernet ports - 2304 x 10G / 25G, 576 x 40G / 100G Ethernet interfaces
- Broad choice of compact to highly scalable chassis ranging from 16 slot to 4 slot systems
- 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
- AlgoMatch™ for flexible and scalable solutions for access control and network telemetry
- 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
- Performance optimized DCI solution with line rate encryption with MACSec

Arista 7500R Series Modular Data Center

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.

Arista 7500R: Deep buffer, high availability, advanced visibility and open extensibility
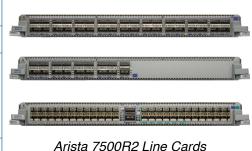
Feature	Description
CloudVision	Network-wide workflow automation and workload orchestration as a turnkey solution for Cloud Networking
DANZ Tap Aggregation	10/40/100G Tap Aggregation with best-in-class performance and high density up to 576 100G Tap/Tool ports
Wirespeed VXLAN Routing	Seamless integration 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
FlexRoute	Flexible scalability to support deployment as a routing platform with Internet scale routing
sFlow Acceleration	High sampling rate for advanced network telemetry, capacity planning and monitoring
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
- **Internet Peering:** With support for large tables and rapid convergence the 7500R can be leveraged for both peering and DC
- **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

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

Line Card	10G	25G	40G	50G	100G
7500R2AK-48YCQ[1]	48 + 8	12 + 8	2	4	2
7500R2-18CQ[1]	72	72	18	36	18
7500R2AK-36CQ[1] **7500R2A-36CQ[1]** **7500R2-36CQ[1]**	144	144	36	72	36
7500R2M-36CQ	-	-	-	-	36[2]

Arista 7500R2 Line Cards

1 *IEEE 25G Support*   **2** *MACsec Support*

Arista 7500R: Deep buffer, high availability, advanced visibility and open extensibility