Arista 7500R3 Series: High Density 400G & 100G with Next Generation Routing Enhancements

**High Performance**
- 230Tbps system capacity
- Up to 48 billion packets per second
- Wire speed unicast & multicast
- Under 4us latency (64 byte)
- High density 25G, 100G and 400G
- Ultra large buffer per port
- Under 25W per 100G port

**Feature Rich**
- High Availability
- DC optimized airflow
- Carrier Grade Routing
- Rich L2 and L3 features
- 256-Way MLAG and 512-Way ECMP
- EVPN for next generation DC
- Zero touch provisioning
- Hitless MLAG ISSU

**High Scalability**
- Up to 288 x 400G
- Up to 432 x 100G
- Flexible 50G and 200G modes
- FlexRoute™ Engine
- Up to 2.7M Hosts
- Up to 2.7M IPv4/IPv6 Unicast LPM Routes

**Scalable Architecture**
- 100% efficient cell based fabric
- Deep packet buffer (16GB per line card)
- Virtual Output Queues per port to eliminate head of line blocking
- 9.6Tbps per slot 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 7500R3 Series Introduction**
Combining high density 100G and 400G with low latency and wire speed performance the Arista 7500R3 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 compact designs delivers a highly scalable and power efficient system.

The Arista 7500R3 Series FlexRoute engine provides the flexible scalability to support deployment as a routing platform with Internet scale routing. All Arista 7500R3 Series support FlexRoute™ engines providing the scalability to support deployment as a routing platform with Internet scale. The 7500R3 Series Accelerated sFlow feature samples and processes flow samples at linerate. The 7500R3K Series support a series of flexible profiles that leverage common resources for different network roles including up to 2.7M IP routes. Algorithmic ACLs enable more flexible and scalable solutions for access control, policy based forwarding and network telemetry, available on the Arista 7500R3 and 7500R3K 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.

**7500R3 Advantages**
- Support for up to 1152 Ethernet interfaces with choice of speed from 10G to 400G
- Highly scalable chassis ranging from 12 slot to 4 slot systems
- Investment protection with 7500R Series
- 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 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
- Network–wide virtualization platform for next generation cloud bursting with wire-speed VXLAN routing
- Accelerated sFlow and IPFIX for network forensics
- Directly connected 25G, 40G and 50G attached storage systems, requiring high performance spine with predictable latency
- Programmable packet processor for advanced features and flexible profiles enabling different use cases including peering and DCI
- Comprehensive interface combinations with 50G and 200G modes on both 400G and 100G ports using optics and cables.
- Segment Routing and EVPN with flexible options for underlay and overlay topologies

**Arista 7500R3 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.

### 7500R3 Deployment Scenarios

- **Universal Spine:** Unparalleled performance with high density and network virtualization in a proven architecture
- **Internet Peering:** Scaling to up to 2.7M routes with FlexRoute the 7500R3 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 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:** Deep buffers and predictable low latency in non-blocking systems with Inband Network Telemetry
- **Data Center Interconnect (DCI):** High performance, cost effective and secure

The 7500R3 Series offers a choice of line cards, with consistent support for the full set of 7500R3 features:

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<tr>
<th>Line Card</th>
<th>10G</th>
<th>25G</th>
<th>40G</th>
<th>50G</th>
<th>100G</th>
<th>400G</th>
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*Not currently supported in EOS*