Product Highlights

Performance

- 7010T-48: 48 x 10/100/1000 and 4 SFP+
- Up to 176Gbps throughput
- Up to 132Mpps forwarding
- Wire speed L2 and L3 forwarding

Data Center Optimized Design

- Low power consumption under 1W/port
- Redundant power
- Redundant & hot-swappable fans
- Field reversible fan module for rear-to-front or front-to-rear cooling
- 2 post and zero RU mounting
- AC or DC Power Options

Cloud Networking Ready

- Up to 84K MAC entries
- Up to 16K IPv4 Routes
- Up to 84K IPv4 Host Routes
- Up to 8K IPv6 Routes
- Up to 42K IPv6 Host Routes
- 64-way ECMP
- 32-port MLAG
- 4MB Buffer

Resilient Control Plane

- Multi-core x86 CPU
- 4GB DRAM
- 4GB Flash

Advanced Provisioning & Monitoring

- CloudVision
- VM Tracer VMware Integration
- DirectFlow * and eAPI
- OpenStack
- Chef, Puppet, Ansible
- Zero Touch Provisioning (ZTP)
- Self-configure and recover from USB

Arista Extensible Operating System

- Single binary image for all products
- Fine-grained truly modular network OS
- Stateful Fault Containment (SFC)
- Stateful Fault Repair (SFR)
- Full Access to Linux shell and tools
- Extensible platform - bash, python, C++

Overview

The Arista 7010T offers a purpose built high performance and power efficient solution for high density data center deployments. With 48 ports of 10/100/1000 and 4 integrated 1/10GbE SFP+ ports the switch delivers non-blocking forwarding of 176Gbps combined with feature rich L2 and L3 switching. A natural extension to the 7050X Series the 7010T are members of the Arista portfolio of data center switches.

The 7010T delivers the flexibility to be deployed as the server edge of 1Gb Ethernet leaf and spine designs or as a dedicated management network switch. With broad support for QoS, security, automation and monitoring features the 7010T provides an ideal solution to the challenges of implementing network policy consistently in both 1G and 10G environments when combined with the Arista fixed configuration 10G switches. Arista EOS advanced automation, monitoring and provisioning features that are consistent to all Arista 7000 Series switches, eliminate the complexity associated with managing mixed environments with inconsistent feature sets. Addressing the need for server Intelligent Platform Management Interface (IPMI) and out of band (OOB) network monitoring, demands solutions that are simple to deploy and manage, with full support for 100Mb and 1Gb with redundant power and cooling for availability.

Featuring a choice of two models the 7010T Series provide a choice of AC or DC power. Both models have 48 10/100/1000Mb RJ45 ports and 4 SFP+ ports for both 1G or 10G uplink connections with a full range of optics and cables. The Arista 7010T switches offer low latency and a shared packet buffer pool that is allocated dynamically to ports that are congested.

Consuming under 52W the 7010T are extremely power efficient at less than 1W per port. Built in power redundancy and customer reversible redundant fans allows cooling airflow in either forward or reverse direction in a single system.

Arista 7010T-48: 48 port 10/100/1000 and 4 port 10GbE Switch

Arista EOS

The Arista 7010T runs the same Arista EOS software as all Arista products, simplifying network administration. 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.

With Arista EOS, advanced monitoring and automation capabilities such as Zero Touch Provisioning, VMTracer and Linux based tools can be run natively on the switch with the powerful x86 CPU subsystem.

High Availability

The Arista 7010T series switches were designed for high availability from both a software and hardware perspective. Key high availability features include:
• 1+1 Redundant internal power supplies
• Redundant and reversible dual inline fan module
• Color coded fan module to indicate airflow direction
• Live software patching
• Self healing software with Stateful Fault Repair (SFR)
• Up to 32 ports per link aggregation group (LAG)
• Multi-chassis LAG for active/active L2 multi-pathing
• 64-way ECMP routing for load balancing and redundancy

Arista 7010T Rear View - reversible airflow, AC & DC

*Arista 7010T hot swap and reversible fan module*

Out of Band Networks

The 7010T provides for the consistent application of access controls, network security features and remote monitoring to protect access to both dedicated management interfaces and restrict access to authorized users of out-of-band networks. Intelligent Platform Management Interfaces (IPMI) on servers provide a standard interface for complete system management including startup, management, maintenance and shutdown over standard Ethernet networks. Access to the IPMI ports allows for privileged access and full control of the server. The Arista 7010T with EOS provides rich features that are applied to both the management networks and the production data center networks consistently across the range of Arista 7000 Series switches.

Scaling Data Center Performance

The Arista 7010T series delivers line rate switching at layer 2 and layer 3 to enable dramatically faster and simpler network designs for data centers that lowers the network capital and operational expenses. When used in conjunction with the Arista 7000 series of fixed and modular switches it allows networks to scale to over 55,000 1G servers in a high performance and low-latency two-tier network that provides predictable and consistent application performance. The flexibility of the L2 and L3 multi-path design options combined with support for open standards provides maximum flexibility, scalability and network wide virtualization. Arista EOS advanced features provide control and visibility with single point of management.

Number of 1GbE Nodes Interconnected Using Arista Leaf-Spine Designs
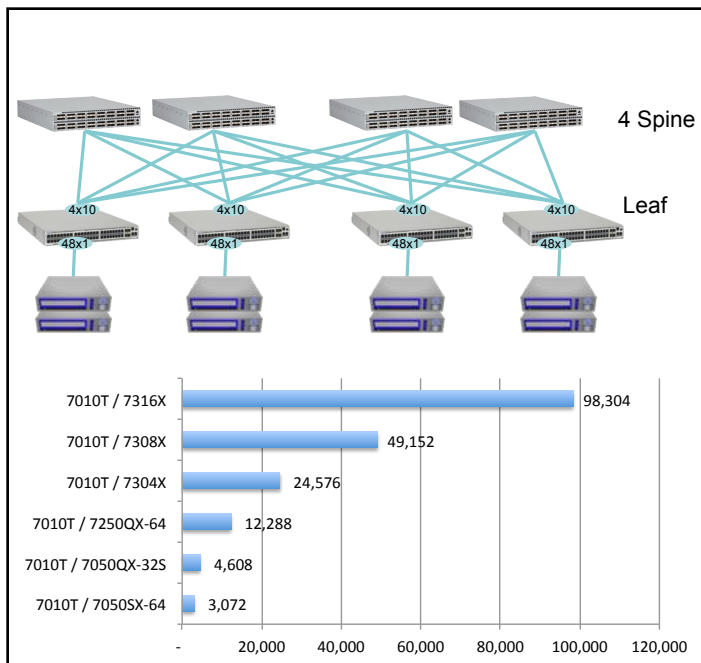
Arista Leaf-Spine Design with L3 ECMP all at 1.2:1
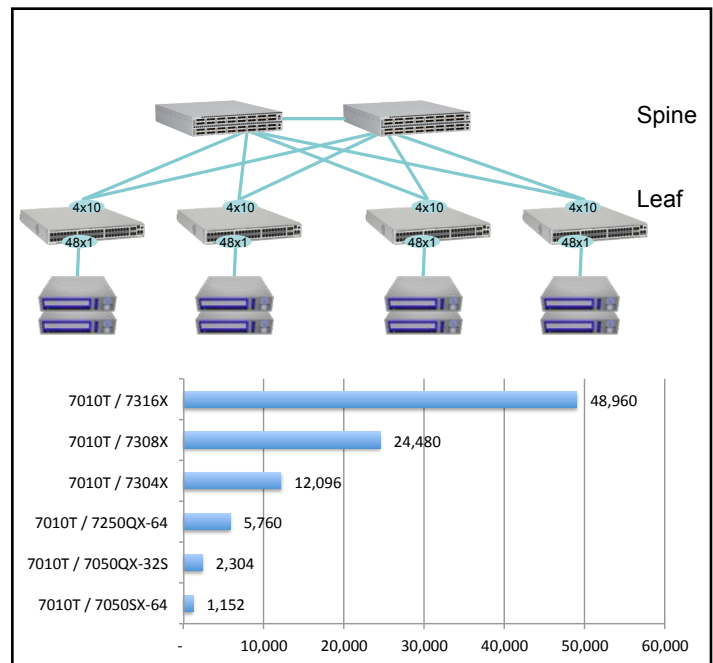
Arista Leaf-Spine Design with L2 MLAG all at 1.2:1

Maximum Flexibility for Scale Out Network Designs

Scale out network designs enable solutions to start small and evolve over time. A simple two-way design can grow as far as 64-way without significant changes to the architecture. The Arista 7010T include enhancements that allow for flexible scale-out designs:
- 4 1/10G uplinks to provide scalable designs and balance traffic evenly across large scale 2 tier leaf-spine designs
- Flexible hash algorithms for efficient hashing, persistent hashing and custom lookups for tunneled protocols *
- Comprehensive L2 and L3 forwarding table resources for more design choice
- Wide choice of both 1G and 10G transceivers and cables for single port multi-speed flexibility
- sFlow and multi-port mirroring to detect micro-burst congestion and provide network wide visibility and monitoring *
- Openstack, Directflow* and eAPI for programmatic provisioning, configuration and management simplifying network administration

Software Defined Networking

Arista Software Defined Cloud Networking (SDCN), combines the principles that have made cloud computing the unstoppable force that it is: automation, self service provisioning, and linear scaling of both performance and economics coupled with the trend in Software Defined Networking that delivers: network virtualization, custom programmability, simplified architectures, and lower capital expenditure. This combination creates a best-in-class software foundation for maximizing the value of the network to both the enterprise and service provider data center. A new architecture for the most mission-critical location within the IT infrastructure that simplifies management and provisioning, speeds up service delivery, lowers costs and creates opportunities for competitive differentiation, while putting control and visibility back in the hands of the network and systems administrators.

Advanced Event Management (AEM)

Simplifying the overall operations, AEM provides the tools to customize alerts and actions. AEM is a powerful and flexible set of tools to automate tasks and customize the behavior of EOS and the operation of the overall data center switching infrastructure. AEM allows operators to fully utilize the intelligence within EOS to respond to real-time events, automate routine tasks, and automate actions based on changing network conditions.

Enhanced Features for High Performance Networks

The Arista 7010T deliver a suite of advanced traffic control and monitoring features to improve the agility of modern high performance environments, with solutions for data monitoring, and next-generation virtualization.

Next Generation Provisioning and Monitoring

Zero Touch Provisioning (ZTP) combined with other Arista features, like VMTracer's adaptive VLAN configuration allows data center managers to fully automate the bring-up of network elements and virtual servers and leverage Arista's unique 'hands-off' provisioning. Designed to integrate with VMware, OpenStack and Microsoft OMI, Arista's open architecture allows for integration with any virtualization and orchestration system providing visibility to the VM-level enabling portable policies, persistent monitoring and rapid troubleshooting of cloud networks.

Unified Forwarding Table

Cloud network scalability is directly impacted by the size of a switches forwarding tables. In many systems discrete fixed sized tables are used for each of the common types of forwarding entries with additional memory required to expand any one table. In cloud environments correctly sizing these tables is critical to allow for flexible network scaling. The Arista 7010T leverages a common unified forwarding table for the L2 MAC, L3 Host and IP Multicast forwarding table entries that allows each table to be sized correctly for the solution. Each of these table size varies depending on the network deployment scenario. A large choice of pre-defined configuration profiles are available on the 7010T to enable optimal resource utilization for all network topologies and network virtualization technologies - L2, L3, or L2overL3 overlay.

EOS Software Licensed Features

Arista EOS delivers a comprehensive feature set along with single image consistency with all other Arista switches. The default EOS system software has a broad Layer 2 feature set with extensive monitoring and provisioning, security, QoS and management features. Layer 3 IPv4 and IPv6 unicast and IPv4 multicast routing functions require the Enhanced license, and VMTracer requires the Virtualization license.

Layer 2 Features

- 802.1w Rapid Spanning Tree
- 802.1s Multiple Spanning Tree Protocol
- Rapid Per VLAN Spanning Tree (RPVST+)
- 4096 VLANs
- Q-in-Q
- 802.3ad Link Aggregation/LACP
  - 32 ports/channel
  - 52 groups per system
- Multi-Chassis Link Aggregation (MLAG)
  - 32 ports per MLAG
- 802.1AB Link Layer Discovery Protocol
- 802.3x Flow Control
- Jumbo Frames (9216 Bytes)
- IGMP v1/v2/v3 snooping
- Storm Control
- RAIL

Layer 3 Features

- Routing Protocols: OSPF, OSPFv3, BGP, MP-BGP, IS-IS, and RIPv2
- 64-way Equal Cost Multipath Routing (ECMP)
- Resilient ECMP Routes
- 4 VRFs
- Route Maps
- IGMP v2/v3
- PIM-SM / PIM-SSM
- Anycast RP (RFC 4610)
- VRRP
- Virtual ARP (VARP)
- uRPF

Advanced Monitoring and Provisioning

- Zero Touch Provisioning (ZTP)
- Port Mirroring (4 active sessions)
- Advanced Event Management suite (AEM)
  - CLI Scheduler
  - Event Manager
  - Event Monitor
  - Linux tools
- Integrated packet capture/analysis with TCPDump
- RFC 3176 sFlow
- Restore & configure from USB
- Blue Beacon LED for system identification
- Software Defined Networking (SDN)
  - Arista DirectFlow *
  - eAPI
  - OpenStack Neutron Support

Virtualization Support

- VM Tracer VMware Integration
  - VMware vSphere support
  - VM Auto Discovery
  - VM Adaptive Segmentation
  - VM Host View

Security Features

- IPv4 / IPv6 Ingress & Egress ACLs using L2, L3, L4 fields
- MAC ACLs
- ACL Deny Logging
- ACL Counters
- Control Plane Protection (CPP)
- DHCP Relay / Snooping
- MAC Security
- TACACS+
- RADIUS

Quality of Service (QoS) Features

- Up to 8 queues per port
- 802.1p based classification
- DSCP based classification and remarking
- Explicit Congestion Notification (ECN)
- QoS interface trust (COS / DSCP)
- Strict priority queueing
- Per-Priority Flow Control (PFC)
- Data Center Bridging Extensions (DCBX)
- ACL based DSCP Marking *
- Policing/Shaping
- Rate limiting

Network Management

- CloudVision
- 10/100/1000 Management Port
- RS-232 Serial Console Port
- USB Port
- SNMP v1, v2, v3
- Management over IPv6
- Telnet and SSHv2
- Syslog
- AAA
- Industry Standard CLI

Extensibility

- Linux Tools
  - Bash shell access and scripting
  - RPM support
  - Custom kernel modules
- Programmatic access to system state
  - Python
  - C++

* Not currently supported in EOS

Standards Compliance

- 802.1D Bridging and Spanning Tree
- 802.1p QOS/COS
- 802.1Q VLAN Tagging
- 802.1w Rapid Spanning Tree
- 802.1s Multiple Spanning Tree Protocol
- 802.1AB Link Layer Discovery Protocol
- 802.3ad Link Aggregation with LACP
- 802.3i 10BASE-T Ethernet
- 802.3x full duplex on 10BASE-T, 100BASE-TX and 1000BASE-T
- 802.3u 100BASE-TX
- 802.3ab 1000BASE-T
- 802.3z 1000BASE-X
- 802.3ae 10 Gigabit Ethernet
- RFC 2460 Internet Protocol, Version 6 (IPv6) Specification
- RFC 4861 Neighbor Discovery for IP Version 6 (IPv6)
- RFC 4862 IPv6 Stateless Address Autoconfiguration
- RFC 4443 Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification

SNMP MIBs

- RFC 3635 EtherLike-MIB
- RFC 3418 SNMPv2-MIB
- RFC 2863 IF-MIB
- RFC 2864 IF-INVERTED-STACK-MIB
- RFC 2096 IP-FORWARD-MIB
- RFC 4363 Q-BRIDGE-MIB
- RFC 4188 BRIDGE-MIB
- RFC 2013 UDP-MIB
- RFC 2012 TCP-MIB
- RFC 2011 IP-MIB
- RFC 2790 HOST-RESOURCES-MIB
- RFC 3636 MAU-MIB
- RMON-MIB
- RMON2-MIB
- HC-RMON-MIB
- LLDP-MIB
- LLDP-EXT-DOT1-MIB
- LLDP-EXT-DOT3-MIB
- ENTITY-MIB
- ENTITY-SENSOR-MIB
- ENTITY-STATE-MIB
- ARISTA-ACL-MIB
- ARISTA-QUEUE-MIB
- RFC 4273 BGP4-MIB
- RFC 4750 OSPF-MIB
- ARISTA-CONFIG-MAN-MIB
- RFC 2787 VRRPv2MIB
- MSDP-MIB
- PIM-MIB
- IGMP-MIB
- IPMROUTE-STD-MIB
- SNMP Authentication Failure trap

- ENTITY-SENSOR-MIB support for DOM (Digital Optical Monitoring)
- User configurable custom OIDs

See EOS release notes for latest supported MIBs

Table Sizes

STP Instances	64 (MST)/510 (RPVST+)
IGMP Groups	up to 8K, with 1K unique groups
Ingress ACLs	4K
Egress ACLs	1K
ECMP	64-way, 1K groups
VLAN Translation	4K
Egress VLAN Translation	4K

UFT Mode - 2 is default	0	1	2	3	4	
MAC Addresses	84K	64K	**44K**	24K	4K	Shared Resources
IPv4 Host Routes	4K	24K	**44K**	64K	84K	
IPv4 Multicast (S,G)	2K	12K	**22K**	32K	42K	
IPv6 Host Routes	2K	12K	**22K**	32K	42K	
IPv4 Routes - Unicast	16K					
IPv6 Routes - Unicast	8K (/64) / 4K (/128)					

Maximum values dependent on shared resources in some cases

* Not yet supported in EOS

Environmental Characteristics

Operating Temperature	0° to 40°C (32° to 104°F)
Storage Temperature	-25° to 70°C (-13° to 158°F)
Relative Humidity	5 to 95%
Operating Altitude	0 to 10,000 ft, (0-3,000m)

Standards Compliance

EMC	Emissions: FCC, EN55022, EN61000-3-2, EN61000-3-3 or EN61000-3-11, EN61000-3-12 (as applicable) Immunity: EN55024 Emissions and Immunity: EN300 386
Safety	UL/CSA 60950-1, EN 60950-1, IEC 60950-1 CB Scheme with all country differences
Certifications	North America (NRTL) European Union (EU) BSMI (Taiwan) C-Tick (Australia) CCC (PRC) ** MSIP (Korea) EAC (Customs Union) VCCI (Japan)
European Union Directives	2006/95/EC Low Voltage Directive 2004/108/EC EMC Directive 2011/65/EU RoHS Directive 2012/19/EU WEEE Directive

Power Supply Specifications

Power Supply Model	7010T-AC 65W	7010T-DC 75W
Input Voltage	100-240AC	40-72V DC
Typical Input Current	0.96-0.48A	0.8-1.5A 1.3A at -48V
Input Frequency	50/60Hz	DC
Input Connector	IEC 320-C13	AWG #22-12
Efficiency (Typical)	Over 90%	-

Specifications

	7010T-48
Ports	48 x10/100/1000 RJ-45 4 x SFP+
1/10GbE SFP/SFP+ Ports	4
10/100/1000BASE-T (RJ45) Ports	48
Throughput	176 Gigabits per second
Packets/Second	132 Million packets per second
Latency (RJ45 to uplinks)	3 microseconds
CPU	Multi-Core x86
System Memory	4 Gigabytes
Flash Storage Memory	4 Gigabytes
Packet Buffer Memory	4MB (Dynamic Buffer Allocation)
10/100/1000 Mgmt Ports	1
RS-232 Serial Ports	1 (RJ-45)
USB Ports	1
Power Supplies	2 (1+1 redundant)
Hot-swappable Fans	2 (1+1 redundant)
Reversible Airflow Option	Yes - same fan
Typical Power Draw*	52W
Max Power Draw	65W
Size (WxHxD)	19 x 1.75 x 10" (44.5 x 4.4 x 25.4cm)
Weight	9.5 lbs (4.3kg)

Supported SFP Optics and Cables

Interface Type	SFP+ ports
10GBASE-CR	SFP+ to SFP+: 0.5m-5m
10GBASE-AOC	SFP+ to SFP+: 3m-30m
10GBASE-SRL	100m (OM3) / 150m (OM4)
10GBASE-SR	300m (OM3) / 400m (OM4)
10GBASE-LRL	1km SMF
10GBASE-LR	10km SMF
100/1000BASE-T, 1GbE SX/LX	Yes

* Typical power consumption measured at 25C ambient with 50% load
** In Progress

Ordering Information

Product Number	Product Description
DCS-7010T-48-F	Arista 7010T, 48x RJ45 (10/100/1000), 4 x SFP+ (1/10GbE) switch, front to rear air, 2x AC, 2xC13-C14 cords
DCS-7010T-48-R	Arista 7010T, 48x RJ45 (10/100/1000), 4 x SFP+ (1/10GbE) switch, rear to front air, 2x AC, 2xC13-C14 cords
DCS-7010T-48-DC-F	Arista 7010T, 48x RJ45 (10/100/1000), 4 x SFP+ (1/10GbE) switch, front to rear air, 2x DC
DCS-7010T-48-DC-R	Arista 7010T, 48x RJ45 (10/100/1000), 4 x SFP+ (1/10GbE) switch, rear to front air, 2x DC
LIC-7048-E	Enhanced License for Arista Fixed 48-port Gigabit Ethernet Switch (OSPF, BGP, ISIS, PIM)
LIC-7048-V	Virtualization license for Arista Fixed 48-port 1G (VMTracer)
Spare Options	
FAN-7010	Spare fan module for Arista 7010 switches (reversible airflow)
KIT-7010	Spare accessory kit for Arista 7010T switches

Warranty

The Arista 7010 switches comes with a one-year limited hardware warranty, which covers parts, repair, or replacement with a 10 business day turn-around after the unit is received.

Service and Support

Support services including next business day and 4-hour advance hardware replacement are available. For service depot locations, please see: http://www.arista.com/en/service

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