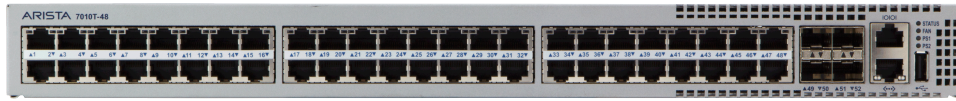


Arista 7010 Series: Q&A



Product Overview

What is the 7010 Series?

The Arista 7010 Series are a family of purpose built high performance and power efficient fixed configuration 1RU form factor switches designed for high density data center deployments. With 48 ports of 100/1000 RJ45 ports 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 7010 Series 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.

With a choice of two models the 7010T Series provide a choice of AC or DC power. Both models have 48 100/1000 RJ45 ports and 4 SFP+ ports for both 1G or 10G uplink connections with a full range of optics and cables.

What switch models are available in the 7010 Series?

The 7010T comes in 2 different models:

1. 7010T-48

This model has 48 ports of RJ45 for 100/1000Mb Ethernet and 4 ports of SFP/SFP+ for 1/10GbE with redundant AC power supplies. The SFP+ ports support the full range of optics available across all the Arista platforms for 100M/1G/10G connectivity.

2. 7010T-48-DC

This model has 48 ports of RJ45 for 100/1000Mb Ethernet and 4 ports of SFP/SFP+ for 1/10GbE with redundant DC power supplies. The SFP+ ports support the full range of optics available across all the Arista platforms for 100M/1G/10G connectivity.

Both models feature a single fan tray with dual fans, that is reversible to offer both F-R or R-F (forward or reverse) airflow in a single system.

What are the focus features of the 7010T?

One of the key aspects of the 7010T is that it matches closely the feature set and forwarding table capability of the 7050TX series with some minor differences. As a result it can be used in similar environments that call for 1GbE, rather than 10GbE connections.

The Arista 7010T supports a comprehensive range of L2, L3, Management, Monitoring, Provisioning, Security and flexible forwarding features that allow it to be deployed in SDN, HPC, Big Data and traditional Enterprise data center applications. Due to the line rate performance, low power consumption and small form factor combined with a common EOS image it is also ideal for parallel networks used for out of band management of servers.

- Broad IPv4 and IPv6 features - OSPF, BGP, ISIS
- RAIL for Big Data environments
- eAPI for programmatic access to EOS
- VM Tracer support
- L2 and IPv4 / IPv6 Scalability - 84K MAC & IPv4 host routes, 16K IPv4 / 8K IPv6 routes
- ECMP - Up to 64 way multi-pathing useful in highly virtualized server environments
- VRF - up to 4 vrf's at initial release
- 4MB shared packet buffer to handle micro-bursts and speed changes from 10G to 1G.

Also, the hardware design provides a number of advantages:

- Low power under 52W typical
- Quiet operation suitable for sensitive environments
- Universal reversible fan tray for customer selectable airflow
- A choice of AC and DC power supplies
- Small form factor just 10" deep

What are the focus markets of the 7010T?

The 7010T is a high performance 100/1000Mb (1GbE) Top of Rack switch. This means that it is suited to many existing mission-critical datacenter applications or out of band networks.

The following are a selection of use cases:

- Grid / HPC - designs requiring cost effective and power efficient systems to enable non-blocking or minimal over-subscription networks.
- Leaf-Spine - open standards L2 and L3 support for IPv4 and IPv6 routing protocols with wire speed L2 and L3 performance using dedicated hardware and local switching.
- Software Defined Networking - with support for eAPI, OpenStack and DirectFlow* the 7010T are ideal for SDN use cases.
- Enterprise access layers as top of rack supporting both 100Mb and 1G server connectivity options with 4 1/10GbE SFP+ uplinks for multi-path designs.
- ECMP up to 64-way in hardware allows cost-effective 2 to 4 way solutions using 10GbE uplinks, or in facing virtualized server environments with multiple next-hops.

What EOS licenses are available and what features require them?

There are two software licenses available for the 7010T series. The 7010T Series uses a consistent license structure to reduce complexity and simplify customer deployments.

- **The Enhanced Routing License (E)** enables dynamic unicast (IPv4 and IPv6) and multicast routing protocols – OSPF, BGP, IS-IS and PIM. RIPv2 is supported without the Enhanced License.

- **The Virtualization License (V)** is required for the VM Tracer features.

What are the maxima in terms of forwarding tables on the 7010T Series?

Each 7010T is capable of 176Gbps or 132Mpps of forwarding, at L2 and L3. The table below shows the L2 and L3 resource capabilities.

Feature	
Forwarding Capacity	176Gbps 132M PPS
UFT Default Mode	Mode 2:
L2 MAC Entry	44K
IPv4 Host Routes	44K
IPv6 Host Routes	22K
IPv4 Multicast S,G	22K
IPv4 LPM	16K
IPv6 LPM	8K (/64), 4K (/128)
ACL	4K + 1K
Packet Buffer	4MB Dynamic Buffer

* Not yet supported in EOS

Is this switch really line rate on all ports?

With a forwarding system capable of 132Mpps the 7010T is a wire speed 1G system that supports full L2 and L3 protocols. Unlike similar top of rack 1G products such as fabric extenders the 7010T is a fully featured hardware switch, with local switching, and a robust

architecture with comprehensive L2 and L3 resources for demanding environments.

Does performance or latency vary based on source and destination ports?

No. All packets within the system get consistent latency and performance does not vary based on ingress or egress ports.

Does performance or latency change if ACLs or QoS features are enabled?

The performance and latency of the system is consistent for L2 and L3 forwarding, and when features such as ACL's or QoS are enabled.

What is the Unified Forwarding Table (UFT)?

Dedicated tables provide a clear indication of how much state a system can store. However, if a table is dedicated to an unused feature, that system resource is wasted. The UFT mitigates this by using a flexible set of tables that can be allocated to particular functions based on user configuration.

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 choice of pre-defined configurations profiles are available on the 7010T to enable optimal resource utilization for all network topologies and network virtualization technologies - L2, L3, or L2overL3 overlay.

UFT Mode	0	1	2	3	4
MAC Addresses	84K	64K	44K	24K	4K
IPv4 Host Routes	4K	24K	44K	64K	84K
IPv4 Multicast (S,G)	2K	12K	22K	32K	42K
IPv6 Host Routes	2K	<u>12K</u>	<u>22K</u>	<u>32K</u>	<u>42K</u>

Maximum values dependent on shared resources in some cases

Is the UFT Dynamic or statically partitioned?

The UFT is statically partitioned on startup, changing the UFT allocation will reload the forwarding agent. The use of partition profiles ensures a predictable level of resource availability for a given function.

What optics can be used with the 10G SFP+ ports?

A wide range of 1G and 10G SFP/SFP+ optics and cables can be used. Due to the low power of the 7010T the higher powered 10G optics of ER, ZR and DWDM are not supported.

Can the 7010T be mounted vertically?

Assuming an acceptable environmental environment for temperature and airflow the 7010T can be mounted in any orientation. Customers should monitor temperature if the switch is installed in any location where airflow or inlet temperature are a concern.

What is the power draw on the 7010T Models?

The 7010T power draw is approximately 52W or under 1W per port. This is the typical power and will vary slightly depending on the optics or cables used, and the fan speeds. Maximum power is approximately 69W. The power supply is rated for a maximum output of less than 75W. At this level the power supply does not require Power Factor Correction.

What power supply combinations are available?

Both AC and DC power supplies will be available as separate orderable units. The AC will be available at FCS, with DC available in shortly after.

What is the airflow on the 7010T

The airflow is both front to rear and rear to front, with a reversible tray that changes the airflow directions.

Is the fan tray redundant?

The fan tray contains two integrated fans, providing for redundancy. One fan is required to cool the system such that the failure of just one fan does not cause a system to fail. The fan tray can be replaced with the system operating.

Are the fan trays common and can they be reversed?

The 7010T uses a single reversible fan tray. This is common between the AC and DC 7010T models. The 7010T are orderable as forward and reverse to meet the needs of hot or cold aisle deployment and eliminate the need for customers to reverse the direction before

installation.

What is the minimum EOS software version for the Arista 7050X Series?

The minimum version of EOS that supports the Arista 7010T-48 is 4.14. Please refer to EOS release notes for detailed release information.

What are the options for support?

Arista A-Care Service Options are designed to provide you with world-class support. A-Care service offerings are available 24x7x365 with advance replacement options to minimize any network downtime. All A-Care Service options include full access to bug fixes and software downloads. For more information about A-Care Service options go to <http://www.arista.com/en/service>.

Where do I get more information on the Arista 7010 Series?

For more information please go to www.arista.com or contact us at sales@arista.com