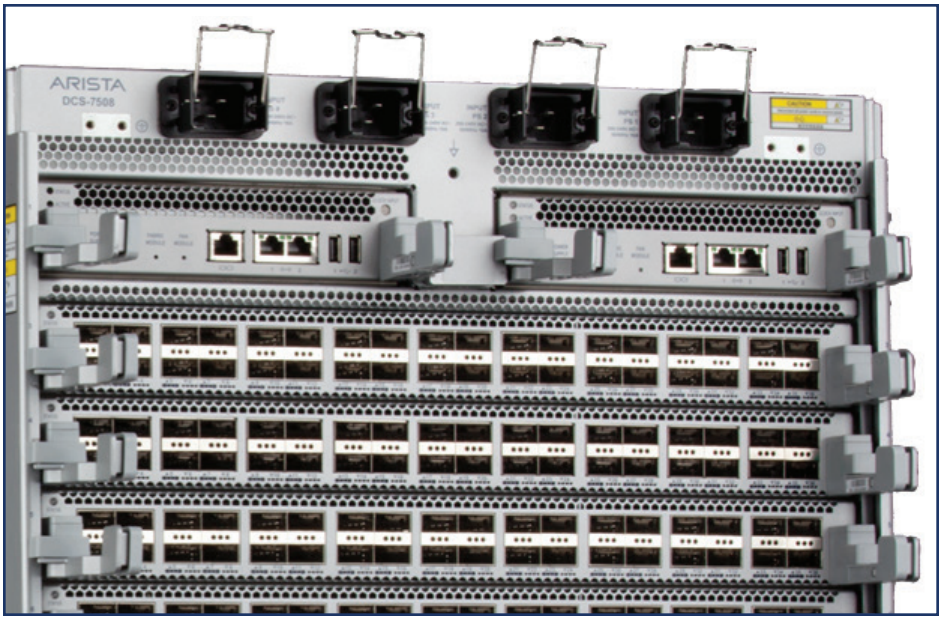

ARISTA AND LEVITON
Technology in the Data Center

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Network Technology ALLIANCE
ARISTA

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BUILDING MORE SCALABLE DATA CENTER NETWORKS

Successful network scalability requires constructing and expanding a network with simple, repeatable designs that can accommodate increased traffic or new devices without impacting applications, workflows or the cost per port. Scaling needs to be linear for both performance and for cost – i.e., as a system supports more nodes, the price per host and the performance per host stays close to the same. Achieving this challenging goal in the data center network has several components:

- Scaling up the performance of single systems, as this allows more price/performance linearity
- Extending or stretching the addressing of a network using open standards to embrace workload mobility across increased geographic distances and larger data center facilities
- Scaling the manageability and operational capabilities of the network infrastructure in the data center network so that administrators can effectively provision and manage a larger number of systems. Additionally, provide increased visibility to the network, and all of the devices that are required to deliver IT services. This includes integration with automation systems via open and extensible APIs
- Topologies must continue to self-organize and self-heal while failing over quickly in the event of link or nodal failure. Technologies that make all bandwidth available, reduce the dependency on the artificial insertion of loops into the network, and enable integration of topology change with planned operational procedures are part of Arista's Extensible Operating System - EOS

Together, Arista and Leviton can help customers achieve a more scalable, flexible, high-density solution.

ARISTA SWITCH OVERVIEW

7500E Series Switch

In compact 7RU (4-slot) and 11RU (8-slot) chassis options, Arista 7500E switches offer up to 30 terabits of fabric capacity and 14.4Bpps of L2/3 throughput with 1,152 wire-speed 1/10 GbE ports and support for 40 GbE and 100 GbE interfaces. With front-to-rear airflow, redundant and hot swappable supervisor, power, fabric, and cooling modules, the 7500E is energy efficient with typical power consumption of 3.5 watts per 10G port for a fully loaded chassis.

7150 Series Switches

The Arista 7150S series represents the industry's leading ultra low-latency 1RU 1/10/40 GbE layer 2/3/4 wire-speed switch family, offering a unique combination of performance, advanced functionality and extensive onboard resources. Designed to suit the requirements of demanding environments such as ultra low-latency financial ECNs, HPC clusters, and cloud data centers, the class-leading deterministic latency from 350ns is coupled with a set of advanced tools for monitoring and controlling mission critical environments.

7048T-A Switch

Positioned for server access, the Arista 7048T-A is a wire-speed layer 2/3 switch with 48 1000 Mbps ports and four 1/10G Ethernet uplinks delivering up to 40 gigabits of interconnect capacity from the leaf to the spine layer of the network. Running the Arista Extensible Operating System (EOS), the 7048 provides automated switch and network provisioning through its Zero Touch Provisioning (ZTP) and vmTracer features. Unlike typical top-of-rack switches on the market, the Arista 7048T-A switch offers buffering capability on every port in combination with a purpose-built architecture for congestion management.

LEVITON CONNECTIVITY

Leviton data center systems are designed for turnkey implementation of the physical layer. With the documented pieces and parts from array cords, trunk cables, patch panels, patch cords and cassettes, Leviton helps your physical layer infrastructure meet the needs of 10/40/100 GbE requirements.

Opt-X® Unity 40/100G MTP® Fiber System

Update your data center to meet new high-speed applications with the Leviton Opt-X Unity 40/100G Fiber System - a simple connectivity solution that makes it easy to migrate to 40 GbE and 100 GbE speeds. System components include MTP trunk cables, harnesses, array cords, and cassettes. They are available in Leviton HDX, SDX, and e2XHD cassettes, and feature industry-leading 24-fiber MTP connectors. Combine with OM4+ cabling for greater bandwidth and longer reach.

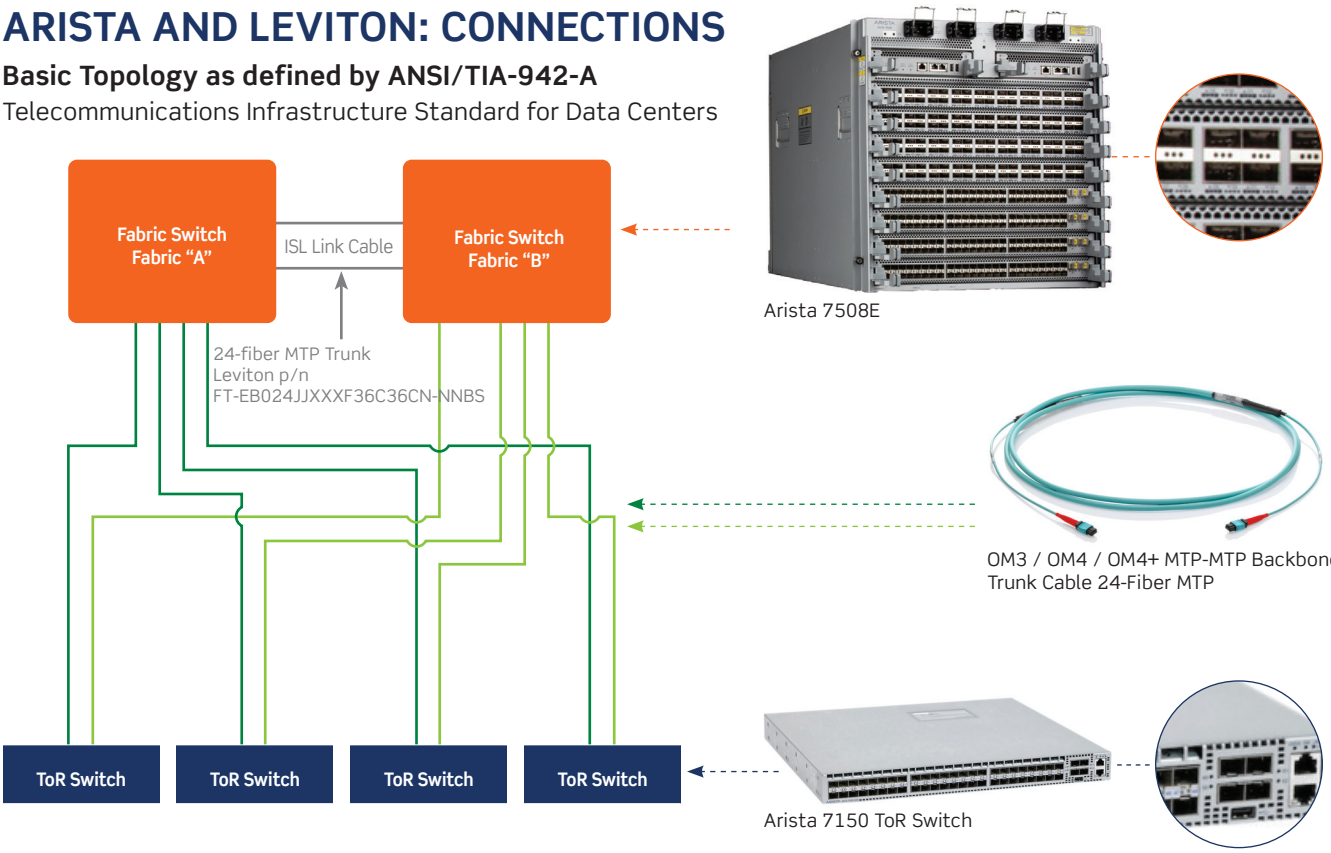
Density Patching Options

Ideal for demanding applications, the HDX patching system provides a high-density solution for data center environments where fast deployment and simple maintenance are priorities. The SDX system is available in multiple sizes and styles for versatility in small data center or enterprise applications, and e2XHD high-density snap-in cassettes allow a mix of fiber and copper patching for large enterprise environments.

ARISTA AND LEVITON: CONNECTIONS

Basic Topology as defined by ANSI/TIA-942-A

Telecommunications Infrastructure Standard for Data Centers



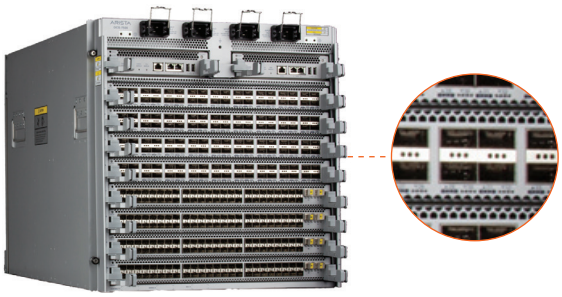
Migration from 10 GbE to 40 GbE and 100 GbE

The following pages show 10, 40, and 100 GbE network topologies, using Arista switches and Leviton connectivity. Each application includes the same 24-fiber MTP backbone trunk cables and patch panels.

10 GBE APPLICATION

Basic 10 GbE Solution Building Blocks:

- Opt-X® Unity 40/100G Pre-Terminated MTP Trunks
- UHDX Ultra High Density Angled Patch Panels
- HDX MTP®-LC and MTP-MTP Cassettes
- LC Duplex and MTP Patch Cords (OM3 & OM4)



Arista 7508E

Fabric Switch Fabric "A"

ISL Link Cable

Fabric Switch Fabric "B"

24-fiber MTP Trunk
Leviton p/n
FT-EB024JJXXXF36C36CN-NNBS

Opt-X Unity 8-fiber
MTP Array Cord (OM3 & OM4)

Patch Panel Cassette

Patch Panel Cassette

UHDX Angled Patch Panel
HDX MTP-MTP Cassette (3x8-fiber to 1x24-fiber)

Opt-X Unity MTP-MTP
24-Fiber Trunk Cable (OM3, OM4, & OM4+)

Patch Panel Cassette

Patch Panel Cassette

Patch Panel Cassette

Patch Panel Cassette

UHDX Angled Patch Panel
HDX2 MTP-LC 24-Fiber Cassette

ToR Switch

Server

Server

Server

Server

Server

Server

Server

Server Cabinet

ToR Switch

Server

Server

Server

Server

Server

Server

Server

Server Cabinet

ToR Switch

Server

Server

Server

Server

Server

Server

Server

Server Cabinet

ToR Switch

Server

Server

Server

Server

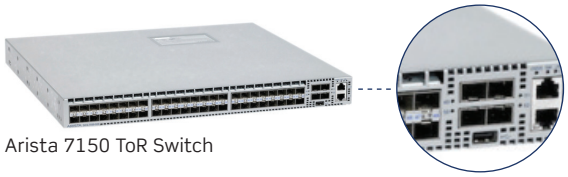
Server

Server

Server

Server Cabinet

Duplex LC-LC
Patch Cord (OM3, OM4, & OM4+)



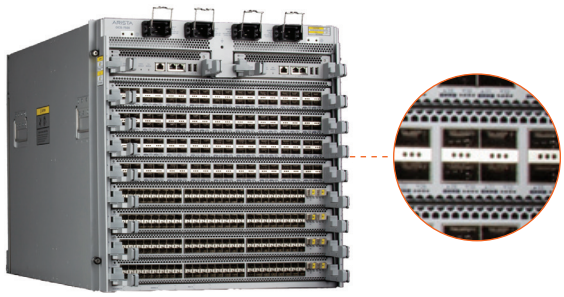
Arista 7150 ToR Switch

40 GBE (SR4) APPLICATION

Migration from 10 GbE to 40 GbE

Required component change to enable 40 GbE Solution:

- HDX MTP®-MTP Cassettes
- Opt-X® Unity MTP 8-Fiber Array Cords



Arista 7508E

Opt-X Unity 8-fiber
MTP Array Cord (OM3, OM4, & OM4+)

UHDX Angled Patch Panel
HDX MTP-MTP Cassette (3x8-fiber to 1x24-fiber)

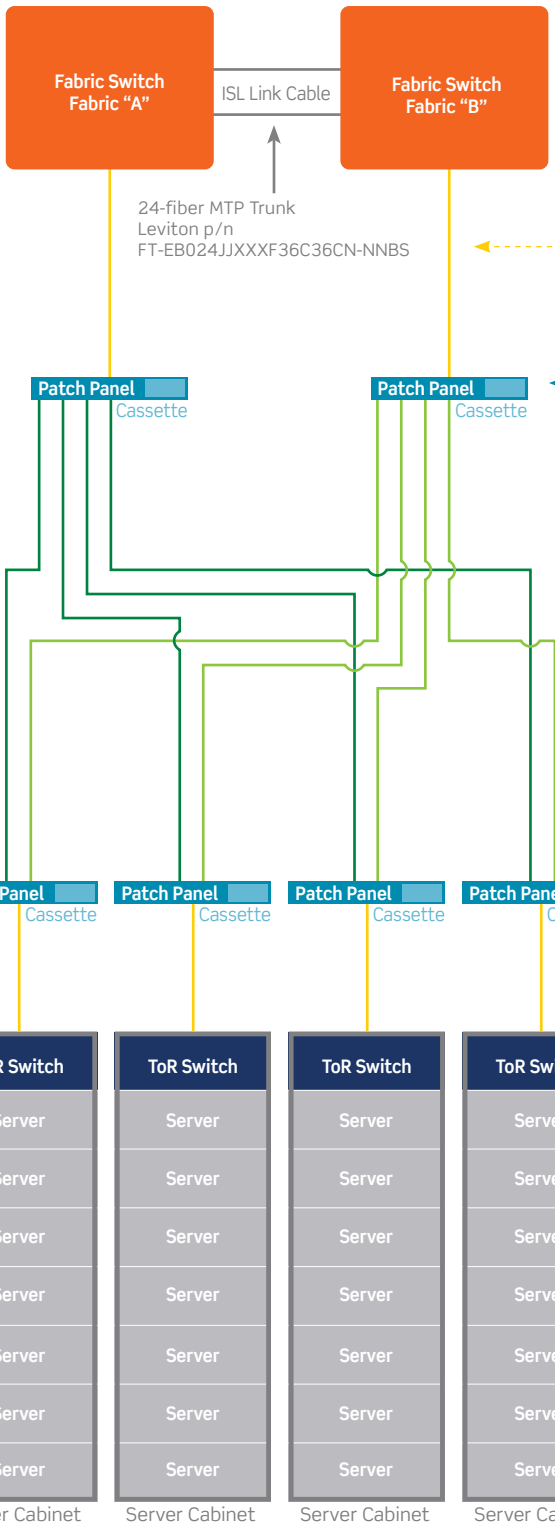
Opt-X Unity MTP-MTP
24-Fiber Trunk Cable (OM3, OM4, & OM4+)
40 GbE uses same trunks from 10 GbE

UHDX Angled Patch Panel
HDX MTP-MTP Cassette (3x8-fiber to 1x24-fiber)

Opt-X Unity 8-fiber
MTP Array Cord (OM3, OM4, & OM4+)

Arista 7150 ToR Switch

Duplex LC-LC
Patch Cord (OM3 & OM4)

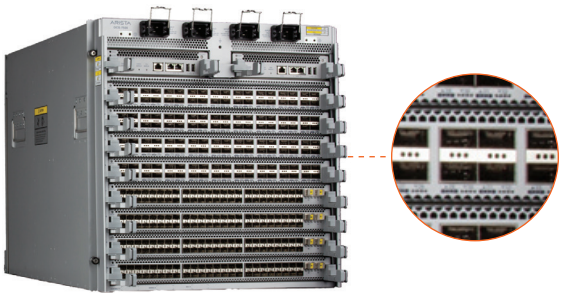


100 GBE (SR10) APPLICATION

Migration from 40 GbE to 100 GbE

Required Leviton component changes to enable 100 GbE Solution:

- HDX MTP® Adapter Plates
- Opt-X® Unity 24-fiber MTP Array Cords



Arista 7508E

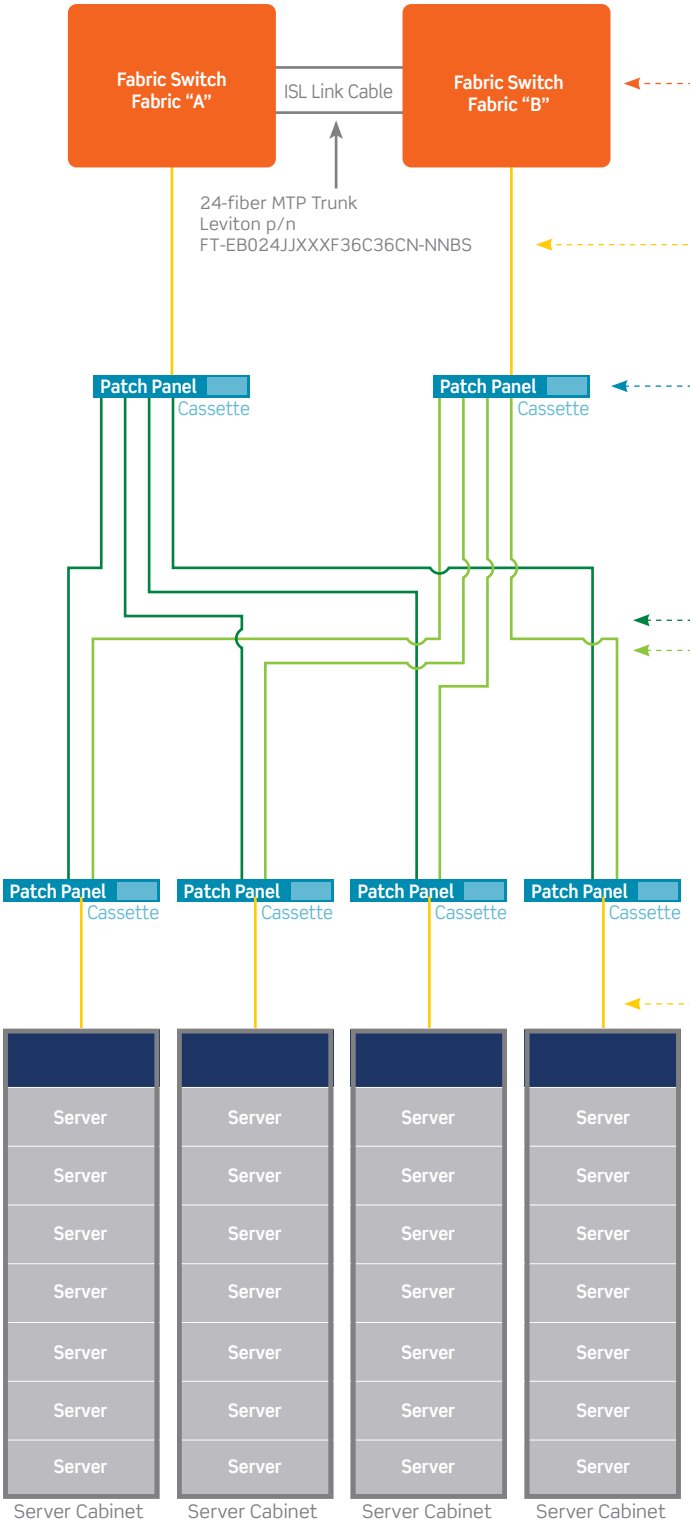
Opt-X Unity 24-fiber
MTP Array Cord (OM3, OM4, & OM4+)

UHDX Angled Patch Panel
with HDX MTP Adapter Plate

Opt-X Unity MTP-MTP
24-Fiber Trunk Cable (OM3, OM4, & OM4+)
100 GbE uses same trunks from 10/40 GbE

UHDX Angled Patch Panel
with HDX MTP Adapter Plate

Opt-X Unity 24-fiber
MTP Array Cord (OM3, OM4, & OM4+)



TOPOLOGY INFRASTRUCTURE CONSIDERATIONS:

- Topologies adhere to the following standards: ANSI/TIA-942-A, ASHRAE, IEEE 802.3bac, BICSI, OSHA, other International standards
- Migration strategy for 10/40/100 GbE infrastructure as OEM equipment and internal needs require migration to higher bandwidth speeds
- Cable jacket material should be LSZH, Plenum
- Color-coding for fabrics: available in multiple colors to allow for visual identification
- Patch cord / array length is based on 42U cabinet: top third = 3 ft, middle third = 5 ft, bottom third = 8 ft
- High density UHDX panels allow up to 72 channels in 1RU and up to 280 channels in 4RU
- Panels are available that can be mounted above racks: either inside cabinets or overhead
- Angled UHDX panels conserved rack space by eliminating the need for additional horizontal cable management

MORE OPTIONS AVAILABLE

Leviton.com/datacenter

See Leviton's complete offering of data center solutions, including trunks, patch cords, enclosures, panels, cassettes, and cable management.

Leviton.com/configurator

Custom configure pre-terminated solutions and build detailed part numbers.

Contact your local Leviton or Arista representative for assistance building your data center network infrastructure.

LEVITON®
Network Solutions

THE SMART CHOICE FOR A BETTER NETWORK

High-performance connectivity backed by the industry's best service and support

We invent the industry's best technologies. We build them to last. And we stand behind every product and every installation – delivering industry-leading performance and unbeatable service and support – throughout the life of your structured cabling system. Add in the peace of mind that comes from working with a stable, century-old supplier, and you get far and away the highest return on infrastructure investment.

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