

Solution Highlights

High Performance Infrastructure

- Up to 400G Ethernet
- 120 GB/s Storage Performance
- 100 us Storage IO Latency
- Flexible L2 and L3 Scale
- Dynamic Hitless Network Speed Change
- Flexible Server and Uplink Ports

Simplify Infrastructure

- Unified network for compute and storage
- Standard Management

Resiliency

- No single point of failure
- Highly Available solution

High Density Storage

- 14 TB to 1 PB Storage Capacity in 4U Appliance
- Dual-Parity RAID
- Thin Provisioning
- Snapshots & Clones

100% Standards Compliant

- U.2 NVMe SSDs
- Inbox NVMeOF Support
- NVMe-Over-TCP Support
- NVMe-Over-ROCE Support

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Pavilion and Arista 7060X Series Composable, Rack Scale Solutions



Accelerate IT Transformation with Rack-Scale Design (RSD)

Datacenter infrastructure is evolving rapidly to respond to new demands placed on IT organizations. Modern applications are designed differently, and drive new requirements in the areas of flexibility, scalability, and cost. Also, the implementation of private clouds requires that a general type of infrastructure can be leveraged for multiple uses and provisioned on demand for diverse use cases and applications. In this new environment, it is critical that resources can easily be provisioned on-demand, and be delivered in the exact size and scale required by an application at a given time.

Traditional hyperconverged infrastructure, where compute and storage are combined in individual servers, has several limitations. Namely, you cannot separate compute and storage resources to satisfy the requirements for delivering the exact amount of resources to meet a given application's needs. This requires a re-thinking of how IT infrastructure is built and managed. Compute and storage resources need to be delivered using a standard, rack-level configuration that can be leveraged by diverse applications on-demand.

Key RSD Requirements

In order to successfully gain the benefits of Rack-Scale Design, several requirements need to be satisfied.

On-Demand Provisioning: Resources need to be provisioned on the spot as the need arises, and repurposed just as flexibly. This will accelerate the rate at which new applications can be deployed and scaled on-demand.

Scalable in Multiple Dimensions: You need to be able to respond to demands for storage and compute independently, as the need arises. This requires that storage be disaggregated from servers within a rack, and administered as a separate pool of resources. In addition, the disaggregated storage resource needs to satisfy performance requirements, in terms of both throughput and latency, as if the resources were converged within local servers.

Simplified Management: In order to provision resources on demand, or scale in multiple dimensions, a management framework is required that can operate and manage heterogeneous resources from multiple vendors, in a common way.

Unified High-Speed Network: In order to simplify the environment as much as possible, it is required to combine the compute and storage network. As a result, a very high-speed, low-latency network that is easy to manage is required as the common interconnect between the various resources in a rack.

Simplify Procurement: When you are able to successfully disaggregate storage from servers and flexibly provision from a centralized pool using a high-speed, low latency network, it becomes easier to standardize the infrastructure using a smaller number of parts or SKUs. A standard server component can be leveraged without having to diversify to accommodate different storage requirements, since the storage is delivered separately.

Pavilion Rack-Scale Storage and Arista Network Switches are the Foundation of RSD Designs

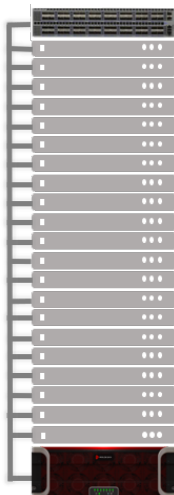
Arista Networks 7060X Series delivers high density ethernet switching with line rate performance, proven layer 2 and layer 3 features, and advances in traffic awareness congestion handling and instrumentation for the largest scale cloud networks. The key features include:

- Support for 25G, 40G, 50G, 100G and 400G high density, fixed configuration data center switches delivering enough bandwidth to combine storage and server traffic in a unified network for composable, rack-scale infrastructure
- Wire speed layer 2 and layer 3 features
- No Proprietary Protocols or vendor lock-ins
- Reduce complexity by reducing the number of tiers
- Multi-chassis Link Aggregation (MLAG) at layer 2 and Equal Cost Multi-Pathing (ECMP) at layer 3 enables infrastructure to be built as active/active with no port blocking
- Agile design that allows for flexibility in port speeds, which are enabled by Arista switches
- Consistent features and OS across all platforms

Pavilion offers a storage platform ideally suited for delivering shared, rack-level storage resources in an RSD architecture. The key features supported by the Pavilion Rack-Scale Flash Array are:

- Allows storage to be scaled on-demand within a single rack or multiple racks, as performance or capacity requirements dictate
- Up to 120 GB/s of storage performance bandwidth in a 4U Appliance, or 30 GB/s per rack-unit of space
- Up to 20 million 4K read IOPS in a 4U Appliance, or 4 million IOPS per rack-unit of space
- Modular architecture which allows custom configurations for different types or racks, depending on varying storage performance and capacity requirements to meet the needs of any rack-level definition/configuration
- Full standard API support for the Redfish/Swordfish standard, allowing seamless integration into Intel RSD-based Pod Manager (PODM) Design
- Full data management support, including thin provisioning to improve utilization, RAID6 protection for ensuring rack-level up time even when multiple component failures occur, and snapshots/clones for instant backup and re-deployment of rack-level resources for test/dev/analytics purposes

Arista and Pavilion combine to deliver the ultimate solution for composable, rack-scale design, as follows:



Arista and Pavilion Joint Rack-Scale Design