FlashStack

Simplify Hybrid Cloud Deployments

With FlashStack Using Cisco UCS X-Series with Intersight and Pure Storage.

As you deploy and grow your on-premises and hybrid cloud it is important to have an underlying infrastructure that is simple, flexible, and economical. You need to be able to quickly adapt to the changing business environment to realize the promise of cloud computing. This FlashStack® solution with the Cisco UCS® X-Series Modular System and Pure Storage FlashArray or FlashBlade storage managed with the Cisco Intersight® platform is uniquely qualified to deliver a simplified hybrid-cloud infrastructure that grows simply and easily with your business.

Based on Cisco Validated Designs

FlashStack is a software-defined, hybrid-cloud infrastructure solution developed jointly by Cisco and Pure Storage and has been documented in a Cisco Validated Design. It provides best-in-class components that have been integrated, pretested, and validated for the most popular and demanding business workloads. It is AI-managed with the Cisco Intersight platform and can scale without disruption as your business needs grow.

With FlashStack, you achieve a better balance of resources that can help you deliver more applications and services with the confidence that the entire infrastructure is tuned to maximize business productivity.

Highlights

- Maximize productivity with 1O:1 data reduction, balanced performance across CPUs, I/O bandwidth, and All-Flash storage

- Simplify on-premises and hybrid cloud with end-to-end provisioning, management, monitoring, and application optimization with the Cisco Intersight platform

- Promote sustainability with a smaller footprint, and shared power and cooling requirements

CISCO **PURE**STORAGE®

Cisco Validated Design for FlashStack

This [Cisco Validated Design for Virtual Server Infrastructure](#) solution is delivered as infrastructure as code (IaC) through Ansible scripts that drive the Intersight API. These scripts eliminate error-prone manual tasks, allowing quicker and more consistent solution deployments.
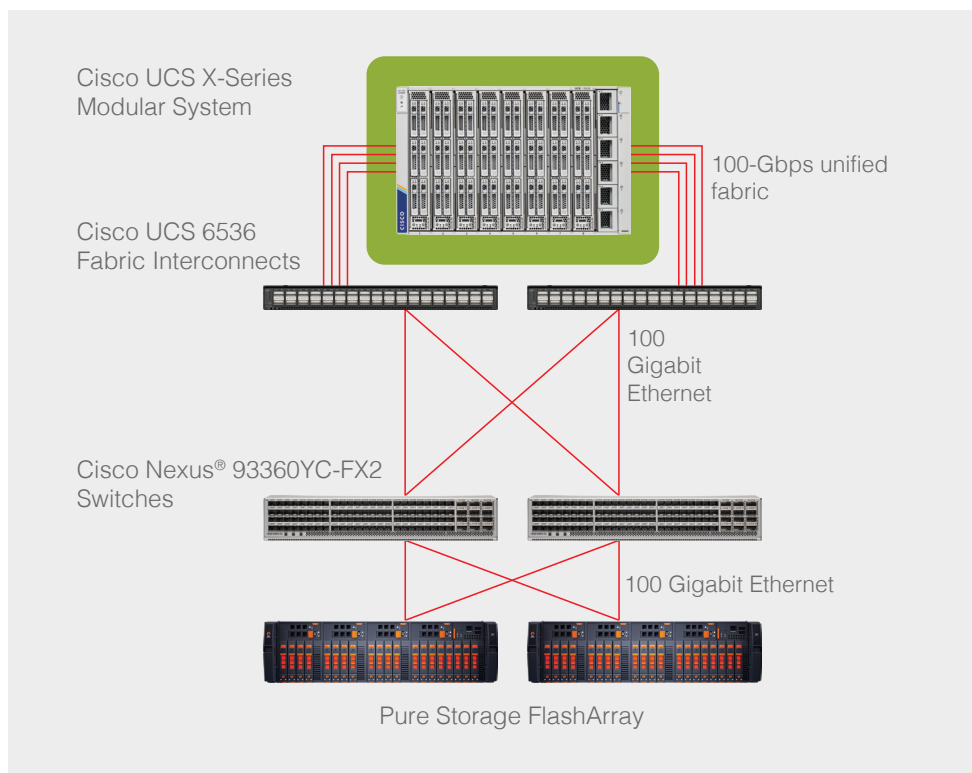
- Cisco Unified Computing System™ (Cisco UCS®) X210c M6 Compute Nodes

- 5th Generation Cisco unified fabric technology including the new Cisco UCS 6500 Series Fabric Interconnects, Cisco UCS X9108 100G Intelligent Fabric Modules (IFMs) and Cisco UCS Virtual Interface Cards

- Pure Storage FlashArray storage with Purity. Purity is the intelligence and management that comes with every FlashStack solution

Conquer Challenges

As CPU power and the number of cores increase, the demand for bandwidth must also increase to satisfy the demands that virtual machines place on network and storage access. This solution is designed and tested for 100 Gbps of bandwidth throughput, including compute, storage, and network. But that's not all. This solution is designed to deliver on a number of the challenges that IT organizations face in supporting hybrid-cloud infrastructure. The solution provides:

- **Reduced complexity** with software-defined infrastructure that can be automated with easily deployed resources

- **Robust components** capable of supporting high performance and high bandwidth virtualized applications

- **Efficiency** through optimization of network bandwidth and inline storage compression with deduplication

- **Risk reduction** at each level of the design with resiliency built into each touch point

- **Cloud-based monitoring, management, and support** of your physical and virtual infrastructure

FlashStack Solution for Hybrid Cloud with 100-Gbps End-to-End Bandwidth

Cisco UCS X-Series Modular System

100-Gbps unified fabric

Cisco UCS 6536 Fabric Interconnects

100 Gigabit Ethernet

Cisco Nexus® 93360YC-FX2 Switches

100 Gigabit Ethernet

Pure Storage FlashArray

FlashStack For Your Hybrid Cloud

This FlashStack solution provides software-defined infrastructure that is optimized for virtual workloads. It includes the Cisco UCS X-Series Modular System with Cisco UCS X-Series compute nodes, Cisco Nexus 9000 Series Switches, Cisco UCS 6500 Series Fabric Interconnects, Cisco UCS 15000 Series Virtual Interface Cards (VICs), Cisco UCS X9108 100G Intelligent Fabric Modules, and Pure Storage FlashArray storage systems. All components are managed with the Cisco Intersight platform.

Cisco UCS X-Series Modular System

The Cisco UCS X-Series Modular System is ready to serve your data center well into the future with an architecture designed to support many future generations of server, I/O, and networking technologies. With cloud-based lifecycle management through the Cisco Intersight platform, you can simplify your data center in multiple ways. Simplify with this cloud-operated infrastructure that can respond at the speed and scale of your business by shaping resources to workload requirements. This adaptable system is designed for modern applications and engineered for the future. Cisco is known for blade server chassis that stand the test of time, and the X-Series is designed to serve your data center well into the future by accommodating new technologies as they arise.

Cisco UCS X210c M6 Compute Nodes

With your choice of two 3rd Gen Intel Xeon Scalable Processors, you have the computing power to handle enterprise applications and databases, and the low latency needed for fast queries. Through a pair of Cisco UCS X9108 100G intelligent fabric modules, the chassis links compute nodes with Cisco UCS fabric interconnects through Cisco Nexus switches to two or more all-flash Pure Storage FlashArray storage devices with the Purity//FA software.

Next-Generation Compute Nodes

The solution supports Cisco UCS M7 compute nodes that feature 4th Gen Intel Xeon Processors with up to 60 cores per CPU, including the 2-socket Cisco UCS X210c and the new 4-socket Cisco UCS X410c compute nodes. Also supporting 5th Generation Cisco fabric, testing is pending on these new options.

Pure Storage FlashArray with Purity

FlashStack delivers unified block- and file-based storage designed to be as easy to use as it is powerful. The All-Flash Pure Storage FlashArray is software-driven storage that's optimized to meet your corporate or enterprise requirements today, with a nondisruptive path

Cisco UCS X-Series Modular System

Shaped through Cisco Intersight to match workload needs, the Cisco UCS X210c M6 Compute Node includes:

- High-performance computing with two 3rd Gen Intel® Xeon® Scalable processors

- Up to 8 TB of DDR5 memory

- Up to 6 SAS/SATA/NVMe drives

- Up to two SATA/NVMe M.2 boot drives

- Up to two Cisco UCS virtual interface cards for up to 200 Gpbs of unified fabric connectivity

- Built for sustainability through the use of 54v internally, and energy efficiency due to shared infrastructure such as fans and power supplies

Pure Storage FlashArray

Also can be shaped through Cisco Intersight to match workload needs. This storage includes:

- 100-Gbps NVMe connectivity with NVMe/RoCE and 32 Gbps with NVMe/FC

- Up to 5.5 PB (5.18 PiB, effective) capacity per 5RU

- The smart product design uses up to 85% less energy consumption and greenhouse gas emissions compared to other all-flash storage vendors. (Read the ESG Report.)

IDC Business Value Snapshot

446%
5-year return on investment.

72%
reduced total cost of operations.

8 months
payback on investment.

for the future. With exceptional performance density, you can consolidate more business services—bigger databases, more applications, and more users—on fewer arrays, which is just the point of a powerful virtualization environment such as this FlashStack solution.

The Pure Storage FlashArray delivers 100 percent NVMe performance. It comes with Purity to deliver rich enterprise-class data services including global flash management, deduplication efficiency, fabric support, and always-on data protection. Best of all, the Pure Storage systems are integrated into the same management domain through Cisco Intersight so you can accomplish deployment, monitoring, and management tasks through a single interface.

Cisco Intersight Platform

The Intersight platform is a modular, cloud-based management platform that provides correlated visibility and management across all your FlashStack hardware and application components, helping you to reach the scale and velocity your business demands. Intersight helps your teams efficiently collaborate within and across domains, by automating lifecycle workflows, determining resource allocations, and enabling consistency and governance with extensible, open capabilities that natively integrate with third-party platforms and tools. This solution can be deployed with Ansible scripts that drive the Intersight API to configure your infrastructure quickly and accurately.

Drive Productivity and Competitive Advantage

FlashStack helps you make proactive moves in an ever-changing business world. It delivers the simplicity, flexibility, economy, performance, productivity, security, and sustainability to support your business initiatives and realize the full value of on-premises and hybrid cloud. FlashStack can help you accelerate your business applications without disruption, improve data center economics, and help you build infrastructure that will serve you well into the future with confidence.