FlexPod®

FlexPod Delivers Exceptional Virtual Desktops at Scale

Powered by the Cisco UCS X-Series with Cisco Intersight

Delivering the right technology and devices to workers is key to fostering staff productivity. Never has this been more in focus than in the aftermath of the Covid-19 pandemic and resulting changes in business operation. A mix of in-office and remote users creates a complex balancing act between productivity and service performance, data security, and operational profitability.

Your company needs to be prepared for whatever lies ahead: a return to the office, a hybrid work arrangement, or a work-from-home directive. Keeping your staff productive means staying ahead of changes and finding efficient ways to deploy, use, and manage IT infrastructure and endpoints. Being ready requires moving away from siloed architectures to a shared pool of resources that can adapt at the speed of change, deliver productive environments, and reduce the strain on IT budgets. Our future-ready, high-performance virtual desktop infrastructure (VDI) and operating model simplifies deployment and reconfiguration to help you keep pace.

FlexPod: Delivering Scalability for VDI

- Innovative platform that simplifies virtual desktop infrastructure deployment and management
- Delivers an adaptable system designed for modern applications
- Trusted worldwide for reliability, scale, security, and performance

FlexPod makes it easy to deploy the virtual desktop infrastructure you need today, and stands ready for the demands of tomorrow.

FlexPod Datacenter Solution for VDI

FlexPod® Datacenter for VDI provides converged infrastructure that is optimized to deliver virtual desktops to users in any location. Building on the popular FlexPod Datacenter platform, the solution includes the Cisco UCS® X-Series Modular System with Cisco UCS X-Series Compute Nodes, Cisco Nexus® 9000 Series switches, Cisco UCS 6400 Series Fabric Interconnects, and NetApp® AFF A-Series flash storage arrays with NetApp ONTAP® data management software.

- **Cisco UCS X-Series Modular System.** The Cisco UCS X-Series Modular System offers an operating model with unlimited scale that can shape itself to match the needs of your virtual desktops and applications. You can populate the chassis with the servers and storage you need today, and move to larger systems without a forklift upgrade. Because the system is exclusively managed through Cisco Intersight™ software, you can manage the hardware and software lifecycle from a single interface.

- **Cisco UCS X210c M6 Compute Nodes.** 3rd Gen Intel® Xeon® Processors deliver the computing power to handle virtual desktops and workloads, and the low latency needed for an outstanding user experience. Through a pair of Cisco UCS X9108-100G Intelligent Fabric Modules, the chassis links compute nodes with Cisco UCS 6454 Fabric Interconnects through Cisco Nexus 9300 Series switches to two all-flash NetApp AFF A400 storage systems with NetApp ONTAP software.
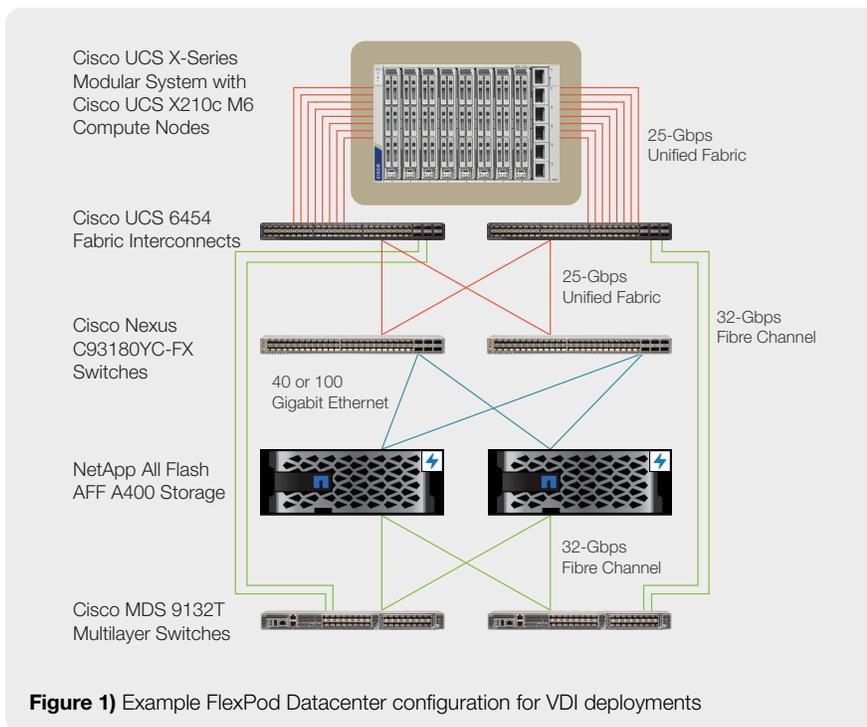
Cisco UCS X-Series Modular System

Shaped with Cisco Intersight to match virtual desktop infrastructure needs, Cisco UCS X210c M6 Compute Nodes include:

- High performance 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
- Fifth-generation Cisco UCS virtual interface cards, delivering up to 200 Gbps of connectivity per server

- **Next-generation 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 supported is a 5th generation Cisco fabric, and testing is pending on these new options.

Figure 1) Example FlexPod Datacenter configuration for VDI deployments

Cisco UCS X-Series Modular System with Cisco UCS X210c M6 Compute Nodes

Cisco UCS 6454 Fabric Interconnects

Cisco Nexus C93180YC-FX Switches

NetApp All Flash AFF A400 Storage

Cisco MDS 9132T Multilayer Switches

25-Gbps Unified Fabric

25-Gbps Unified Fabric

32-Gbps Fibre Channel

40 or 100 Gigabit Ethernet

32-Gbps Fibre Channel

NetApp AFF-A400 All-Flash Storage Array

- End-to-end NVMe all-flash enterprise storage array
- Supports 100-Gbps iSCSI or 32-Gbps Fibre Channel, including NVMe over TCP (NVMe/TCP) and NVMe over Fibre Channel (NVMe/FC)
- Delivers up to 702 PB of effective capacity in a 4 rack-unit (4RU) footprint
- Reduces the amount of SSD storage needed by 5 to 10 times with inline data reduction technologies
- Provides scalable performance and capacity, and non-disruptive scale-out
- Unifies data services across SAN and NAS environments, on premises and in the cloud
- Helps protect investments with support for different controllers, SSD sizes, and new technologies
- Supports SAS SSDs, maximizing the flexibility and cost effectiveness
- Helps safeguard data with best-in-class integrated data protection and seamless cloud backup and recovery

NetApp ONTAP. The ONTAP software built into NetApp storage systems makes it easy to create a seamless data lake that spans your distributed data sources and helps your data scientists share data. Your data lake can stream data from the all-flash arrays into your training environment at high speed and with low latency, supporting many I/O streams in parallel. After training completes, the resulting inference models can quickly be moved to a repository used in the data center, close to customers at the edge, or in the cloud.

Achieve IT and business advantage

The FlexPod Datacenter for VDI solution is fully equipped to power your virtual desktops and workloads. By deploying this highly scalable architecture, your organization can take advantage of built-in technology advancements and a unified approach to management to achieve many IT and business benefits.

Accelerate virtual desktops and applications

Whether your virtual desktops are used by task workers accessing a few applications, knowledge workers accessing many applications, or power users accessing graphics-intensive applications, your systems must perform as expected. The compute nodes within the FlexPod solution support multiple processors and up to two NVIDIA GPUs. Alternatively, you can extend the server's PCIe connectivity and add up to four NVIDIA T4 or up to two NVIDIA A-Series GPU accelerators, and tap into end-to-end 100 gigabit bandwidth, for an even more compelling virtual desktop experience.

Scale computing, storage, and GPU resources

You can expand your VDI deployments as the number of users and workloads change. You can purchase exactly the infrastructure you need for your applications today and scale up as needed. You can:

- **Scale up.** Add compute nodes to your Cisco UCS X-Series chassis, Cisco UCS rack servers, or more storage to your NetApp systems.

- **Scale out.** Add more FlexPod instances to expand your virtual desktop infrastructure.

FlexPod®

CISCO NetApp

With the massive scalability created with Cisco Nexus 9000 Series Switches and ONTAP software, you can deploy VDI that scales tens of petabytes and beyond in a single namespace to support many virtual desktop users and applications.

The FlexGroup capability in ONTAP creates scale-out NAS volumes consisting of multiple storage components that automatically and transparently share the traffic. Combined with automatic load distribution, FlexGroups make it easy to use infrastructure resources to serve virtual desktops that require high throughput, and low latency, without complicating storage management.

Keep your users working

Fast access to virtual desktops, applications, and upgrades fuels user productivity. Your IT staff can tap into simplified application and desktop patching, migration, and management support, and instantly provision virtual desktops for new staff. Because environments must be available anytime, anywhere, the solution is designed to sustain single failures and keep running.

Plus, Cisco Intersight offers an always-on connection to the Cisco® Technical Assistance Center (TAC), monitoring your environment to help identify configuration or operational issues before they become problems. As you add more

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virtual desktops and users, you can easily scale and add new capabilities, without downtime.

Simplify management

The FlexPod for VDI solution can be managed alongside your existing Cisco UCS infrastructure and data sources through the Cisco Intersight platform, helping reduce costs and administrative overhead. With Cisco Intersight, your IT staff can deliver consistent, error-free, policy-based alignment of server personalities and storage characteristics with workloads.

Call to action

Your VDI must be ready to adapt to changing conditions. FlexPod simplifies the delivery of centrally managed workloads that foster workforce productivity, service availability, and operational profitability.
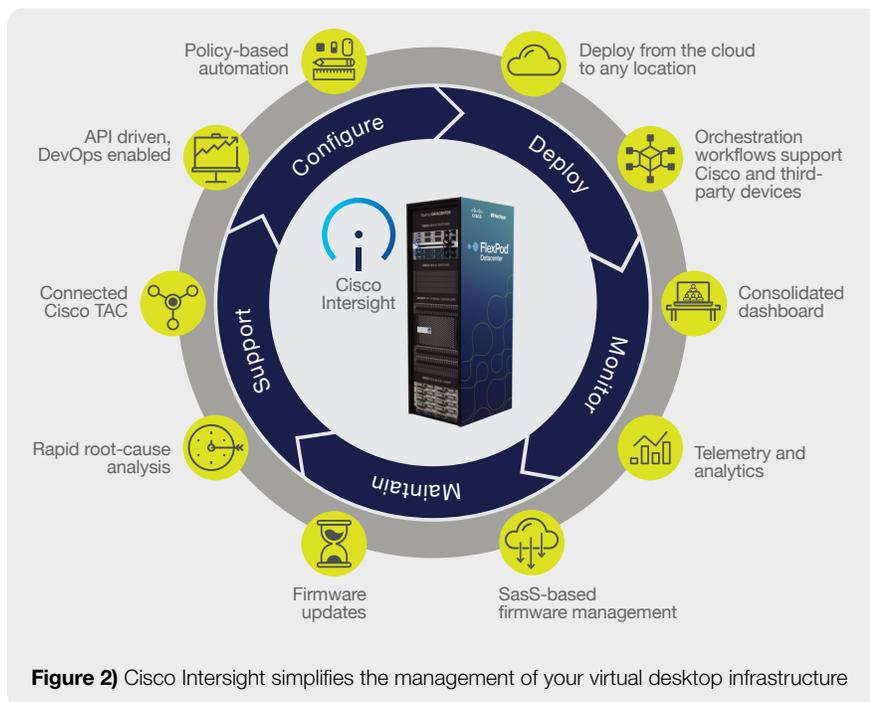

Figure 2) Cisco Intersight simplifies the management of your virtual desktop infrastructure