

# Top Five Reasons for FlexPod VDI: Digitally Transform Your Desktops

- **Scale quickly and easily without disruption**
- **Increase scalability, agility and reliability with security**
- **Harness a software-defined experience for both IT and End users**
- **Deploy a high-performance VDI solution with confidence**
- **Begin your VDI journey with real business benefits**

Today digital transformation involves both modern applications and modern workflows. End customers and IT users alike need capacity and change, and these needs are nearly insatiable. Just as users have come to expect a superior user experience with quick service and on-demand application, so too does IT expect on-demand scalability and always-on uptime. Modern application requirements don't extend only to newer DevOps workloads but to all workloads including virtual desktop infrastructure (VDI), which enables access to computing resources from anywhere, at any time, and from any device. With VDI the mobile, diverse workforce can collaborate easily regardless of physical location - securely.

These requirements of agility, scalability, low cost, and efficiency are a reality, and they are now part of the expected VDI experience for end-users and IT alike. To satisfy these

requirements, IT users are moving toward pre-validated, shared infrastructure. They're turning away from application silos and toward solutions such as FlexPod® VDI, which can be quickly provisioned, scaled, changed, and repurposed while increasing agility, reliability, and efficiency and decreasing TCO.

To meet these fast-changing needs, Cisco and NetApp—through their FlexPod partners—deliver [standardized converged infrastructure for VDI](#). FlexPod can handle mission critical VDI applications from hundreds to up to tens of thousands of users. In addition, VDI and other enterprise and cloud workloads use the same FlexPod architectural model with its industry-leading standardized components: [NetApp® AFF](#) and FAS storage arrays, [Cisco® Unified Computing System™](#) (Cisco UCS®) servers, and [Cisco Nexus®](#) switches.

## 1. Scale quickly and easily without disruption

Growth of a VDI solution is all but inevitable, so a solution must scale, and scale predictably. FlexPod delivers software-driven scalability that provisions in software quick changes to the infrastructure. You can granularly and non-disruptively repurpose, add, or subtract compute, storage, and network resources. FlexPod VDI truly delivers infrastructure as code.

FlexPod abstraction comes from UCS compute and NetApp ONTAP® storage software that offer plug-ins, management packs, and commandlets that allow orchestration from UCS Director or other third-party software. You can then scale, repurpose, change, add, and subtract VDI workloads for FlexPod quickly, efficiently, and in a standardized manner through software policy—not unplanned, error-prone processes. You can efficiently and accurately address any spikes in VDI demand or lulls, whenever they occur. You can alter VDI resources all in software. You can easily reallocate resources from other workloads like databases back to VDI, or vice versa. Our solutions support high virtual-desktop density (desktops per server), and additional servers and storage scale with near-linear performance. Cisco UCS Manager and Cisco Intersight™ service profiles allow on-demand server provisioning.

FlexPod for VDI is [fully tested and validated](#) to provide operational simplicity. These highly-available architectures have no single point of failure and do not require storage tuning or tiers. They provide low TCO, with dramatic savings in power, cooling, and space requirements. Highly available architectures deliver enterprise-grade resiliency, supporting nondisruptive operations with no downtime – whether your scaling to hundreds of users up to tens of thousands of users.

With FlexPod ONTAP FlexGroup and NetApp FlexVol® technology, FlexPod scales up to 20 PB, 20 FlexVol volumes, and billions of files non-disruptively. This non-disruptively scalability enables you to scale one FlexPod pod to over 20,000 VDI users. Customers can also choose multiple pods to scale beyond this number. You don't have to worry about running out of space or scale as both are inherently part of the FlexPod architecture and model.

FlexPod ONTAP SVMs (Storage Virtual Machines) allow IT to divide, consolidate and provide isolated virtual storage arrays to their customers including overlapping client addresses. SVMs provide high availability and security with clustered ONTAP systems which can scale up to 24 nodes. In addition, FlexPod ONTAP storage arrays deliver Adaptive Quality of Service (AQoS) policy group to

automatically scale a throughput ceiling or floor, guaranteeing performance to volumes and to your VDI users. AQoS protects from users be bullied by other workloads or users. If you are not sure about the value to set for SLA, ActiveIQ Unified Manager will suggest a value based on the performance data collected from your VDI users. In total, with SVMs and AQoS you get the most from your FlexPod storage, enabling easy scaling to over ten thousand users and tens of petabytes where no single user lacks for performance.

*“The product is very stable. I don’t think it’s failed once since I have worked with it within the organization.”*

[Cloud Infrastructure Engineer at Payments Canada](#)

*“FlexPod has improved our application performance by 40%.”*

[Senior Systems Engineer at a manufacturing company with 10,001+ employees](#)

[Source: www.itcs.com](http://www.itcs.com)

## 2. Increase scalability, agility and reliability with security

FlexPod UCS servers provide the core of the data center infrastructure for desktop virtualization. UCS drastically reduces the number of servers, switches, network interface cards (NICs), and host bus adapters (HBAs) needed, and the number of cables used per server. Because IT can rapidly deploy or re-allocate servers by using FlexPod UCS service profiles, operations are significantly simplified. Thousands of desktops can be provisioned quickly and efficiently through our ecosystem broker partners, including Citrix and VMware Horizon. This ease of provisioning makes end users productive more quickly, improves business agility, and frees up IT resources for other tasks.

FlexPod VDI reliability also comes from its dual-redundant design in all areas of the architecture. Dual paths, NetApp Snapshot™ and SnapMirror™ copies, and software abstraction enable FlexPod to keep running even if any single component, path, server, data, switch, storage component, or storage controller is lost. Because all components are abstracted in software, any part of the infrastructure can easily be brought back into the design non-disruptively. Not only can VDI customers have bullet-proof scalability: They can have scalability with reliability.

FlexPod delivers security leveraging its ONTAP storage arrays with flexible encryption and key management help guard your sensitive data on the premises, in the cloud, and in transit. With simple and efficient security FlexPod ONTAP storage arrays you can:

- Achieve FIPS 140-2 compliance (Level 1 and Level 2) with self-encrypting drives and use any type of drives with software-based encryption.
- Meet governance, risk, and compliance requirements with security features such as secure purge; logging and auditing monitors; and write once, read many (WORM) file locking.
- Protect against threats with multifactor authentication, role-based access control, secure multitenancy, and storage-level file security.

Providing a FlexPod VDI solution for applications and virtual desktops also solves the complex, massive problem of securing your intellectual property. Your data remains in the data center, under your control, allowing VDI users access to create, modify, and retire content. Using policy-based file access, you can limit the capability for users to download data to physical devices. Keeping the data in the data center not only improves security, it also gives you the ability to back up and recover your critical files and information reliably and efficiently.

## 3. Harness a software-defined experience for both IT and End users

FlexPod abstraction comes from UCS compute and NetApp ONTAP® storage software offers plug-ins, management packs, and commandlets that allow orchestration from UCS Director or other third-party software. The fifth-generation Cisco UCS Server platforms support the new Intel Xeon Scalable processors, delivering faster CPUs and memory with increased core counts. The Cisco UCS M5 Server portfolio, which includes half-width blade servers, supports NVMe and industry-leading GPU density. These innovations allow you to address general compute infrastructure along with VDI, real-time analytics, deep learning, and machine learning with a common system-based approach.

Graphics acceleration and high-performance storage options can be added to the solution, depending on the number of power users and overall scalability plans. NVIDIA virtual GPU (vGPU) allocates graphics processing resources to users' machines differently, based on need. Additionally, based on user requirements, NVIDIA vGPU software options can also be considered.

## Learn Why FlexPod VDI Delivers TCO and Business Benefits.

A recent IDC survey of FlexPod customers found numerous TCO and business benefits that accrued to IT clients of all sizes, including VDI:

- 65% more time spent on innovation and new projects
- 61% improvement in application performance
- 60% decrease in the number of unplanned downtime incidents
- 34% decrease in data center floor space
- 29% reduction in power and cooling
- 24% saved in software capital expenditures (capex)

## 4. Deploy a high-performance VDI solution with confidence

The FlexPod architectural standard also offers numerous benefits, including the following:

- You get one-call support for the entire FlexPod stack from Cisco, NetApp, or the partner.

## Here are some example case studies:

- [CannonDesign](#): VMware Horizon; high-end graphics with NVIDIA GPUs
- [LCMC Health](#): 3,000 VMware virtual desktops

- FlexPod is tested and battle-proven, with more than 170 validated designs across nearly all data center and hybrid cloud workloads.
- You can save up to 5 to 10 times the storage space by using inline data reduction with AFF SSD storage arrays.
- The partner network is large and diverse with a wellspring of VDI knowledge.
- You can connect to the cloud through your data fabric powered by NetApp technology and Cisco CloudCenter management software.
- FlexPod uses block and file storage protocols that can be combined on the ONTAP storage arrays, offering a complete solution for VDI workloads without buying two sets of storage.

VDI designs are available for both [VMware Horizon](#) and [Citrix Virtual Apps and Desktops](#). Designs are continually updated to highlight the latest FlexPod innovations;

we've been making these updates ever since the first FlexPod VDI design in 2012.

## 5. Begin Your VDI Journey with real business benefits

Yesterday's brittle infrastructure can affect your satisfaction and bottom line. Today's FlexPod infrastructure is software-defined, standard, and proven to change as your VDI demands change. In lab tests, in real-world IT use cases, and throughout the world with thousands of customers, FlexPod delivers. [Get started today](#) on a converged infrastructure [FlexPod VDI solution](#) that changes with the needs of your business and customers.



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