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Empower a Secure Remote Workforce with Cisco HyperFlex

Experience the benefits of virtual desktops and applications running on Cisco HyperFlex systems with Cisco Intersight software

Today's workforce is changing rapidly. Let Cisco HyperFlex™ systems help you keep up.

We live in a world of constant change. People are working from home, both out of necessity and because of changing business workplace models. In 2017, Forbes predicted that by 2025, 75 percent of the global workforce will be millennials, with the vast majority of this generation preferring to work remotely. With that prediction already realized, there is no turning back. Remote workers need secure remote desktop and application services where they are located and mobile access to apps through smart phones, tablets, and laptops.

With a shrinking IT budget you need to maximize resources. You also need the ability to deploy with cloud-like scalability and a cost model that can adjust as your business demands and the number of users fluctuate. The best solution helps your business improve compliance, protect intellectual property, and deliver an excellent user experience with the ability to quickly respond to app performance and graphics demands.

Highlights

- Delivers consistent, high performance

- Enables users to work from anywhere, anytime, on any device

- Increases collaboration and productivity

- Simplifies operations with a cloud-like model

- Scales quickly and easily

- Secures intellectual property

- Reduces CapEx and OpEx

Cisco HyperFlex: A platform for today and into the future

Based on feedback from our customers, the benefit of efficiency and higher performance of Cisco HyperFlex systems speaks for itself.

"We chose Cisco HyperFlex for our VDI workloads because its performance is much better than the other HCI solutions we considered. We did some tests to compare Cisco and another HCI vendor, and Cisco is faster and more stable."

Staff time and economic benefits

- **382%** five-year ROI
- **47%** lower five-year cost of operations
- **63%** more efficient IT infrastructure teams
- **52%** faster to deploy new virtualized applications and desktops
- **99%** less unplanned downtime

IDC White Paper, sponsored by Cisco, Business Value of Cisco Compute Infrastructure for Virtualized Applications, Desktops, and Workstations, September 2020.

It's time to consider Cisco® virtual desktop solutions that can support the computing and graphical needs of your users while securing and simplifying your desktop IT organization's tasks, regardless of where users are. The choice of Cisco HyperFlex systems with NVIDIA graphics processors running either VMware Horizon or Citrix Virtual Apps and Desktops delivers the superior graphics experience your users expect. Cisco Intersight™ software-as-a-service management makes deploying, managing, and maintaining your entire infrastructure secure, consistent, and simple.

Agility and simplified operations better support remote workers

The underlying infrastructure must be agile and powerful for the entire environment to deliver the flexibility, agility, and user experience you need. It must have excellent and configurable graphics processing to meet all your users' needs. And it must be fast and easy to deploy and scale, while remaining consistent and simple to manage and maintain from a central location to make your data center staff effective.

Cisco HyperFlex nodes deploy into a cluster that is up and running quickly through automated deployment. With the clustered approach, you can start small and scale to support tens or hundreds of users, and easily and cost-effectively scale to provision thousands. The solution deftly supports persistent and nonpersistent desktops and delivers full desktop infrastructure and application streaming based on the needs of your workforce.

Distributed data platform

Networking is built into the cluster, unlike many other solutions that make you integrate your own infrastructure. With a high-bandwidth, low-latency backbone, Cisco HyperFlex HX Data Platform software distributes your data across the cluster. Cisco HyperFlex systems combine either hybrid nodes with solid-state disk (SSD) drives and hard disk drives (HDDs) or all-flash nodes into a single distributed, multitier, object-based data store.

- **Optional self-encrypting drives** encrypt your data in all storage tiers for additional security.
- **Deduplication and compression** help ensure that your storage resources are used optimally without adversely affecting virtual desktop and application performance.
- **Native replication** allows you to replicate data on a per-virtual-machine basis to local or remote sites for disaster recovery.
- **Integration with leading enterprise backup solutions** enables the use of a single backup approach across your entire data center to easily secure your intellectual property.
- **Third-party enterprise storage** can connect directly to your cluster to migrate storage resources, run virtual desktops, and perform backup operations.

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Scalability to match your workload

Because we build Cisco HyperFlex nodes based on Cisco UCS® technology, we can give you more flexibility to optimize performance to match your VDI workload characteristics than other vendors can. The closer you can match computing and graphics capacity to your workloads, the more your deployments will be cost effective and higher performing (Figure 1). You do this by adding computing, storage capacity, and GPU acceleration where and when it is needed:

· **Add more nodes** to a cluster when more storage is needed; the cluster automatically replicates and redistributes data to fully utilize the new node.

· **Add more computing power** to the cluster by adding Cisco UCS servers. These servers run the Cisco HyperFlex HX Data Platform software and thus have access to storage in the rest of the cluster.

· **Add GPU capacity** to nodes to better support today's graphics-rich environments. This is accomplished by adding GPU-equipped Cisco UCS servers to the cluster. Each server can support up to two NVIDIA T4 GPUs. The NVIDIA GRID virtual GPU allows multiple virtual
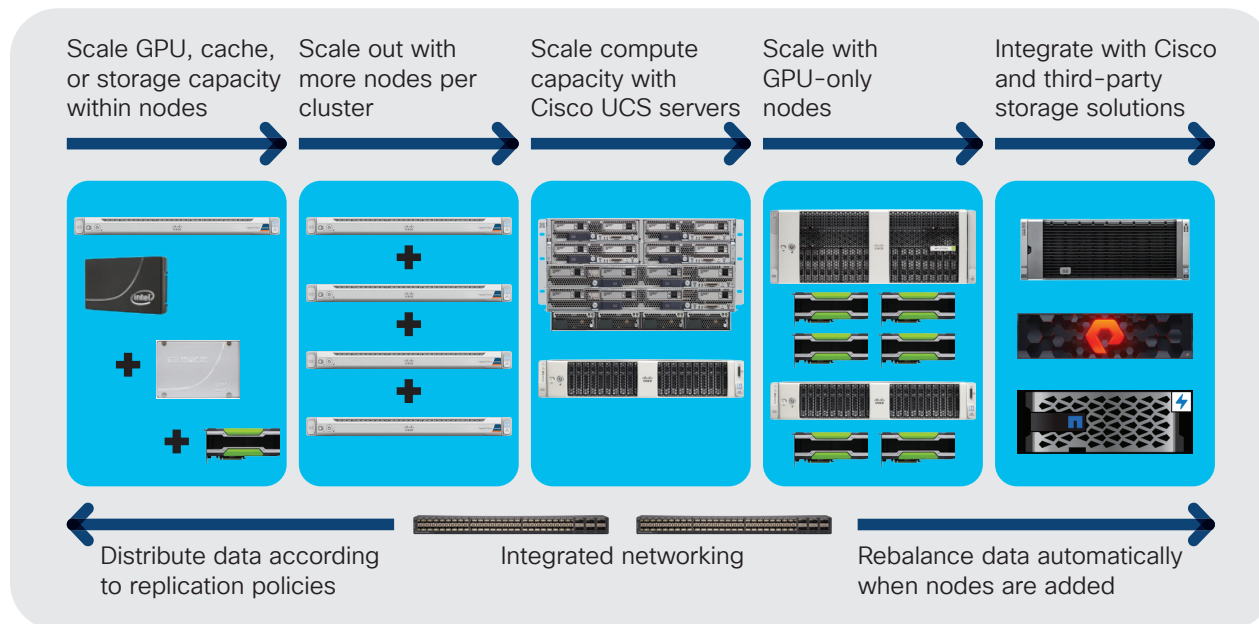
HyperFlex increases VDI performance

"By upgrading to Cisco HyperFlex for our VDI workloads, we've increased performance by 30-50%....With increased compute resources with Cisco HyperFlex, we changed our model so that every virtual desktop user gets their own dedicated VM machine. That helps with performance..."

DC White Paper, sponsored by Cisco, Business Value of Cisco Compute Infrastructure for Virtualized Applications, Desktops, and Workstations, September 2020.

| Scale GPU, cache, or storage capacity within nodes | Scale out with more nodes per cluster | Scale compute capacity with Cisco UCS servers | Scale with GPU-only nodes | Integrate with Cisco and third-party storage solutions |

Distribute data according to replication policies   Integrated networking   Rebalance data automatically when nodes are added

Figure 1 Cisco HyperFlex systems give you more options for scaling performance to match workload needs

Simplify scalability

"Having Cisco HyperFlex helps with our VDI agility because we plug a server in and everything gets configured."

Support employees

"Offering VDI on Cisco HyperFlex has supported our employee engagement efforts because we can offer flexible work schedules and work at home opportunities."

Streamline management

"Cisco Intersight makes it easier to manage our Cisco HyperFlex environment because it allows us to look into the datacenter really easily."

DC White Paper, sponsored by Cisco, Business Value of Cisco Compute Infrastructure for Virtualized Applications, Desktops, and Workstations, September 2020.

desktops to share a single physical GPU or the assignment of one or more physical GPUs can be dedicated to a single virtual workstation. This allows you to power graphics-hungry interfaces to deliver an exceptional user experience to knowledge and power users alike.

- **Integrate with Cisco and third-party storage** for migration, backup, and for access to enterprise shared storage.

Deliver consistent deployment and security

Policy-based infrastructure speeds the deployment of new desktops and applications. Users realize the same experience across devices and locations. Applications and desktops are securely accessed across hybrid-cloud environments to eliminate the need to make trade-offs between flexibility and security. Secure data at rest in the HyperFlex cluster through optional self-encrypting drives helps to protect business data.

Radically simplified cloud-like management model

It has to be easy for your data center desktop administrators and operators. You can configure, monitor, and manage your cluster from any device with the advanced Cisco Intersight software-as-a-service (SaaS) platform. Cisco Intersight software handles all of a cluster's hardware

management functions and provides a hypervisor-independent, single point of control for the physical infrastructure, the data platform, and the virtualization layer, anywhere they are located. With Cisco, you get to choose how and where you want to manage the infrastructure. This cloud-like model enables staff and reduces costs.

Cisco Intersight

Cisco Intersight is available as a cloud-based service or an on-premises appliance. It gives you instant access to all of your clusters regardless of where they are deployed.

- **Parallel, heterogeneous deployment** supports the scale you need to support distributed locations, and full-stack upgrade allows you to update the entire stack—firmware, hypervisor, and data platform software—to the revision levels your applications need. High-level resource inventory and status are provided by Intersight dashboards.
- **A recommendation engine** helps you proactively respond to impending issues such as the need to scale capacity.
- **Connected Cisco TAC** integration can proactively prepare a support case when errors are detected and can even upload log information needed for case analysis.
- **The Intersight invisible witness** supports lightweight 2-node clusters and helps maintain continuous operation in the event of a node or network failure with fully automatic configuration.
- **Drill down into data platform operations** and you have exactly the same control that Cisco

Solutions designed and built for change at any scale

Discover how Cisco HyperFlex systems and Intersight software can help you stay resilient and respond quickly to change.

- Learn more about Cisco VDI solutions

- Get started with Cisco Validated VDI Designs using our Design Navigator

- Read about Cisco HyperFlex systems

- Read about Cisco Intersight software

- NVIDIA Virtual GPU

LE-56105-01 09/2020

HyperFlex Connect provides—except that you do not have to host management software and you always have the most up-to-date versions.

- **Storage analytic capabilities** can track and monitor compute, network, and storage configurations and provide proactive optimization recommendations.

Cisco HyperFlex Connect

This intuitive management tool, hosted locally or accessed through Intersight software, gives you access to all cluster features through any device, from anywhere. All of the cluster data platform features (such as logical availability zones and native replication) can be managed through this interface. Cluster profiles enable you to quickly replicate configurations for fast and accurate deployment. Single-click, full-stack upgrades allow you to keep your firmware, data platform, and hypervisor versions up to date easily.

Reduce risk

We believe that deploying a Cisco solution shouldn't come with risk. That is why we test and validate solutions with our Cisco Validated Designs. These provide the foundation for solution designs to implement common use cases. They incorporate a broad set of technologies, features, and applications to address your needs. Each design has been comprehensively tested and documented by Cisco engineers to help ensure faster, more reliable, and fully predictable deployment. Cisco has tested Cisco HyperFlex systems with VDI for up to 5000 users.

Cisco HyperFlex bundles for VDI

Cisco HyperFlex systems are available as packaged bundles. With these bundles, you can easily purchase and deploy the VDI solutions you need to deliver anytime, anywhere access to desktops and applications and make the most of your IT resources.

Learn more about the bundles: https://www.cisco.com/c/en/us/solutions/data-center-virtualization/desktop-virtualization/index.html