Reinvigorate Your Virtual Server Deployments and Optimize Operations



Simplify

- Use preintegrated clusters that are fast to deploy, simple to manage, and easy to scale



Choose

- Use Microsoft Hyper-V or VMware vSphere and match virtual servers to workloads



Optimize

- Take advantage of always-on inline compression, deduplication, and monitoring



Perform

- Eliminate bottlenecks with a system that securely distributes and optimizes data across scalable servers and storage tiers

With Cisco HyperFlex™ systems running your choice of hypervisor, you can deploy virtual server infrastructure for any application, on any cloud, at any scale.

Traditional approaches to virtual server implementation have left the data center burdened by a sprawling and complex set of virtual machines and storage systems that are difficult to scale, optimize, and manage. Cisco HyperFlex systems offer the rapid deployment, flexible scaling, hypervisor flexibility, and unified management you need to simplify your environments and improve IT agility.

The power to simplify more

Cisco HyperFlex systems, powered by Intel® Xeon® Scalable processors, bring the pay-as-you-grow economics of public clouds to IT infrastructure. An innovative server cluster design that can be stretched across geographies combines with an integrated network fabric, powerful data optimization, storage management, and your choice of hypervisor to bring the full potential of hyperconvergence to virtual server deployments.

Designed to help your business be more agile, efficient, and adaptable, these solutions are fast to deploy, simple to manage, and easy to scale. They arrive ready to provide you with a pool of infrastructure resources to power your virtual machines and applications as your business needs dictate.

Cisco HyperFlex™ Systems with Intel® Xeon® Scalable processors

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Choice of hypervisor

To promote configuration flexibility, Cisco HyperFlex systems support multiple hypervisors, including Microsoft Hyper-V and VMware vSphere. You can accommodate the needs of business units, capitalize on the hypervisor skill sets of your IT staff, and avoid vendor lock-in.

Hypervisor management integration

In typical virtual server deployments, you manage virtual servers and storage systems independently. That can make it difficult to control your resources. Cisco HyperFlex systems remove these management silos, allowing you to view, manage, and optimize your virtual environments as well as your related storage systems all from a single interface (Figure 1).

Cisco HyperFlex systems management integrates with both Microsoft Windows 2016 Hyper-V and VMware vCenter. This level of management integration enables you to manage the lifecycle of virtual machines—including storage management through the Cisco HyperFlex HX Data Platform—without leaving the interface that your administrators probably already use.

These management tools include Microsoft System Center Virtual Machine Manager (SCVMM), Microsoft Hyper-V Manager, PowerShell, and a VMware vCenter plug-in. Your IT staff can extend its virtualization skills to storage management and get better visibility into and control over computing, network, and storage resources from a single console, improving IT operations.

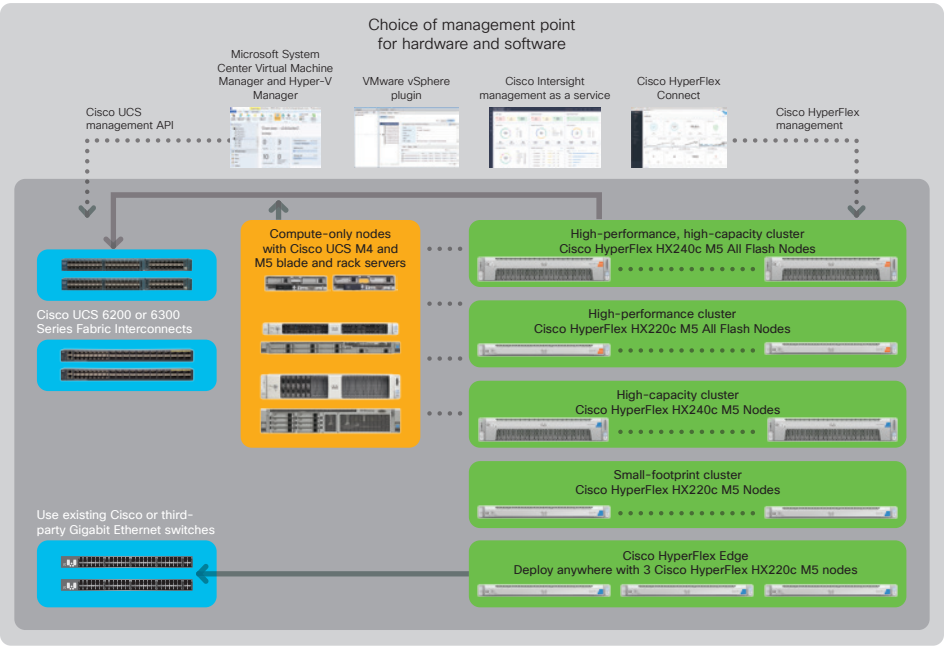


Figure 1 Cisco HyperFlex systems product family

Organizations looking for other management options can use:

- **Cisco HyperFlex Connect** is unified, intuitive, robust, secure, and simple management. It lets you manage and monitor your clusters from anywhere and at any time. It delivers a smart, insightful dashboard with metrics and trends to support your entire management lifecycle.
- **Cisco Intersight™** is cloud-based management as a service. It allows you to manage all your Cisco HyperFlex and Cisco Unified Computing System™ (Cisco UCS®) infrastructure—traditional, hyperconverged, edge, and remote and branch offices—through a single cloud-based GUI.

Instantly deploy and clone virtual machines

Cisco HyperFlex systems offload operations to the hypervisor's API and integrate with the native hypervisor management menu. As a result, your administrators can use familiar tools and instantly provision, clone, and take snapshots of virtual machines for deployment, backup, and disaster-recovery tasks.

Easy and rapid deployment

Simplifying the deployment and operation of your virtual server infrastructure helps improve IT agility. Cisco HyperFlex systems are delivered as a preintegrated cluster that is up and running in an hour or

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"Cisco HyperFlex took 80 percent less time to deploy than our previous solution, and speed equals efficiency."

Derek DePasture
Senior network engineer
BluePearl Veterinary Partners.
Read the story

less. Components that are plugged into the system are detected automatically. This self-aware and self-integrating approach allows the system to adapt quickly to changes in hardware configuration. You can move a node from the loading dock and add it to your cluster simply by plugging in network and power cables—no manual node configuration is required.

Cisco UCS service profiles prepare the node's identity, configuration, and connectivity characteristics, increasing efficiency and security and reducing deployment time. You no longer need to configure and manage logical unit numbers (LUNs) and volumes, and the system delivers consistent performance that reduces management challenges.

Any scale

Cisco HyperFlex systems let you independently scale computing and storage resources. You can easily scale computing capacity by adding blade servers or increase storage capacity by adding drives to existing converged nodes depending on the needs of your virtual servers and applications. Data is automatically rebalanced across the cluster. There is no need for long-term storage acquisition planning or complex processes between your hypervisor and storage administrators.In our most recent release, we have continued to increase scalability with built-in resiliency:

- **More nodes.** We have doubled the maximum scale to 64 nodes, with a maximum of 32 Cisco HyperFlex nodes and 32 Cisco UCS compute-only nodes.
- **More resiliency.** We have implemented logical availability zones that help you to scale wihtout compromising availability.
- **More capacity.** You can choose nodes with large-form-factor disk drives for even greater capacity. This allows your cluster to scale to higher capacity for storage-intensive applications.

With the addition of Cisco HyperFlex Edge to our portfolio you can scale from data center core to edge to public cloud.

Always-on storage optimization and monitoring

When you use multiple management tools, it's difficult to balance server and storage resources and keep track of configuration options. In Cisco HyperFlex systems, native inline deduplication and compression are always on to help ensure that your storage resources are used optimally without adversely affecting virtual machine performance. Monitoring and analysis tools are visible from the same dashboard, simplifying your management tool chain and giving you confidence that your IT staff are aware of how your physical and virtual infrastructure is performing.

Native security and data protection

Cisco HyperFlex systems protect and secure your data in multiple ways:

- **Distributed data placement** optimizes performance and

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Be flexible

- Adjust your storage-to-computing ratio to precisely match the needs of your virtual machines and applications.
- Choose your hypervisor, with support for VMware vSphere and Microsoft Hyper-V.
- Manage your virtual infrastructure with familiar tools.
- Deploy hybrid or all-flash nodes to add CPU and storage resources.
- Use self-encrypting drives to secure your data at rest.

For more information

- Cisco HyperFlex
- Microsoft solutions
- VMware solutions

resilience by allowing all cluster resources to participate in I/O responsiveness. Hybrid nodes use a combination of solid-state disk (SSD) drives for caching and hard-disk drives (HDDs) for capacity; All-flash nodes use SSD drives or Nonvolatile Memory Express (NVMe) storage for the caching layer and SSD drives for the capacity layer.

- **Clusterwide parallel data distribution** gives you high availability and performance, accelerated by the low latency and high bandwidth of the Cisco UCS network fabric.
- **Logical availability zones** increase scalability and availability because they can automatically protect your data against multiple component and node failures.
- **Stretch clusters** allow a Cisco HyperFlex cluster to reside in a single location or stretch across short geographic distances. An active-active stretch cluster synchronously replicates data between the two sites and has a very short recovery time objective (RTO) and zero data loss.
- **Native replication** can synchronize data geographically from a primary to a secondary site to support more traditional disaster recovery strategies.
- **Data-at-rest encryption** uses self-encrypting SSDs and HDDs and is available for both hybrid and all-flash nodes. Cisco HyperFlex Connect interfaces with third-party key management systems to keep disk encryption keys safe.
- **Secure, role-based management** integrates easily into existing environments and operational processes.

Proven performance

Some virtual server infrastructure implementations are limited in their capacity and performance. In Cisco HyperFlex systems, data is securely distributed and optimized across scalable servers and storage tiers in the cluster, reducing performance bottlenecks to achieve high I/O performance.

Get started

Cisco HyperFlex systems deliver power and simplicity for any application, on any cloud, at any scale. Using the Cisco HyperFlex Sizer web-based application, you can define scenarios and determine which configuration is the right starting point for your workload.

You can also take the risk and guesswork out of deployment with our Cisco® Validated Design guides. Using these guidebooks for implementation, your architects can quickly deploy virtual server infrastructure that supports your enterprise workloads.

To talk with someone about your choices for deploying virtual server infrastructure and the power of Cisco HyperFlex systems, call your Cisco representative or visit the Cisco Partner Locator to find your closest Cisco partner.

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