

HARNESSING HYPERCONVERGENCE WITH CISCO HYPERFLEX

INTEL AND CISCO HELP PRESIDIO DELIVER THE BENEFITS OF CLOUD AND MULTISITE, DISTRIBUTED COMPUTING

The Challenge

Companies are seeing their data volumes jump as they add branch offices, remote sites, the Internet of Things (IoT), and intelligent services at the edge. The future for most organizations will include core on-prem workloads as well as public clouds and software as a service (SaaS) offerings. IDC predicts that by 2021, more than 90 percent of enterprises will use multiple cloud services and platforms.¹

Meanwhile, Gartner expects that by 2025, 75 percent of enterprise-generated data will be created and processed outside of the core data center or cloud.² These off-prem edge workloads will be used to enhance branch or remote office capabilities as well as for AI analytics and inferencing to support IoT and mobile workloads.

To meet the new requirements that accompany these ongoing developments, many acknowledge that they must turn to distributed computing to address the needs of the business.

Expanding application deployment models

The rapidly changing landscape is forcing companies to expand the number of application deployment models they support. Important to consider are all the locations in which you have data stored. This includes everything from distributed applications, which must be dispersed based on where the data lives, to traditional enterprise applications that demand data center support for new and existing

components. And do not forget the needs of analytics and cloud programs.

Along with the invaluable insight and opportunity such efforts deliver, they can increase complexity. Minimizing that complexity is the first order of business if you hope to:

- Support existing and new applications
- Ensure service delivery
- Maintain control over data
- Place computing at remote sites
- Attain necessary performance

TAKING HYPERCONVERGENCE END TO END

Cisco HyperFlex systems address a host of important needs as the first hyperconverged platform designed as an end-to-end software-defined infrastructure.

Cisco HyperFlex includes:

1. Software-defined computing
2. Software-defined storage
3. Software-defined networking
4. Cloud-based management

The power of hyperconvergence

In responding to these emerging challenges, many are finding an answer in hyperconverged platforms. Your chosen platform must be equipped to accommodate virtually any application, from virtualized and containerized software to multiple hypervisors and enterprise applications. It should also help you deploy all your applications across multicloud environments with analytics to optimize your investments. Finally, you want your hyperconverged platform to support and simplify deployment no matter where it is needed.

The Solution

In response to these demands, Cisco introduced Cisco HyperFlex, an adaptive system that uses the simplicity of hyperconvergence to power any application anywhere. Cisco HyperFlex systems deliver the flexibility to support multiple hypervisors, containerized environments, multicloud services, and edge deployment. The systems equip you to efficiently and economically deploy, monitor, and manage today's applications.

The new hyperconverged infrastructure (HCI) stack is built on Cisco Unified Computing and integrates a distributed hyperconverged data platform called Cisco HX Data Platform, along with the VMware hypervisor and Cisco Nexus networking. What is more, it does it all in a single HCI stack. The cluster is created with rack mount systems that contribute both compute and storage for linear growth. As your environment grows, both compute and storage can be scaled nondisruptively.

Deployed by Presidio

As a key partner, Presidio boasts a deep technical expertise about Cisco's products and services, and has helped lead the charge for next-generation data-center technologies for many years. Presidio's virtualization expertise can integrate hyperconverged platforms with any virtual workloads and Cisco infrastructure, including Cisco HyperFlex Systems.

Presidio also works with Intel to develop solutions using their latest technologies and architectures from Cisco and numerous other partners. We collaborate on multicloud, hyperconverged/software-defined data center, data, IoT, and security.

Key Benefits

Cisco HyperFlex systems are unique among Cisco products. They were created to move beyond the capabilities of traditional data center models that build independent stacks of server, storage, and networking resources. As a result, HyperFlex users enjoy operational ease and flexibility that are difficult to find outside of HCI platforms.

The first hyperconverged platform designed as an end-to-end software-defined infrastructure, Cisco HyperFlex systems avoid the compromises limiting first-generation products. They were engineered to support a range of applications and workloads in the data center, private and hybrid clouds, remote locations, and edge-computing environments.

POWERED BY INTEL® TECHNOLOGY



Cisco and Intel have teamed up to take hyperconverged infrastructure (HCI) into a new era of performance and usability.

Cisco HyperFlex systems rely on Intel, with each node powered by two Intel® Xeon® Scalable processors.

The processors deliver significantly improved performance and can serve a much wider arrange of application needs than prior servers. The family also delivers highly robust capabilities with outstanding performance, security, and agility. The CPUs provide top-of-the-line memory channel performance and include three Intel® UltraPath Interconnect (UPI) links across the sockets for improved scalability and intercore data flow.

Intel® Optane™ Solid State Drives (SSDs)—120 GB, 480 GB, and 1.6 TB—are also part of the nodes. Intel Optane SSDs connect to the PCIe bus to accelerate caching for even greater performance than NVMe drives alone. The solution does not require overprovisioning to provide consistent performance, so all the caching capacity can be used for demanding workloads.

Additionally, Intel Optane SSDs provide significantly reduced latency to applications, enabling IT administrators to easily mix demanding workloads within the HyperFlex HCI cluster without worrying about “noisy neighbors” affecting their mission-critical workloads. The result is improved workload placement flexibility and workload density.

Together, the Intel technologies help Cisco HyperFlex systems offer a next-generation platform able to adapt to new information technology challenges as they evolve.

The innovative systems from Cisco can efficiently scale compute independent of storage. Should you need to add a node with only compute, and no additional storage, the HyperFlex Data Platform will allow you to add Cisco B200 blades as compute-only nodes for the cluster. Cisco Hyperflex also provides flexibility to include HX and compute nodes.

Together, these elements of Cisco HyperFlex comprise an adaptive infrastructure that lets you integrate easily with your existing infrastructure. The result is a cluster that comes up and configures itself in an hour or less and that scales resources independently to closely match your application resource needs.

This new generation of hyperconverged solution builds on the ease of hyperconverged system deployment,

management, and support beyond the central data center. Now you can address needs in multicloud environments and out at the network edge as well.

Results from using Cisco HyperFlex systems can include significantly greater performance than competing solutions. This allows you to run up to three times more virtual machines, dramatically lowering your overall total cost of ownership (TCO) and providing more flexibility for your environment.

You can also achieve latency that is more consistent and radically lower, up to three times lower than other solutions.

Why Presidio

At Presidio, we bring an understanding of Cisco's products and services. This knowledge, combined with our keen attention to digital trends, uniquely equips us to provide the most reliable Cisco solutions for our clients.

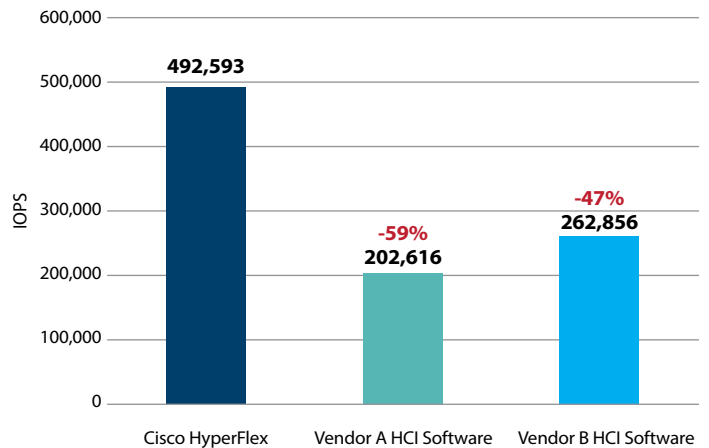
Bringing an unmatched commitment, Presidio can point to about two hundred presales engineers who have been trained and certified to sell Cisco HyperFlex, more than 50 postsales engineers certified on Cisco HyperFlex, and a range of supporting multisite services.

We are proud to have earned an array of awards and certifications for our deep commitment to our partnership with Cisco:

- Two 2017 Cisco Partner Summit Global Awards: Cisco Capital Partner of the Year and Architectural Excellence Partner of the Year (Collaboration)
- Seven Cisco Partner Summit Awards in the Americas
- First to receive the Cisco Internet of Things Partner of the Year Award
- First Cisco Master ATP partner globally in all ATP specializations: Managed Services, Unified Communications, Security, and TelePresence Video
- More than 30 Cisco-specific specializations and authorizations
- More than 2,200 Cisco technical certifications including 150+ CCIEs
- Cisco Gold Star recognition for Customer Satisfaction Excellence



SQL OLTP Workload – Aggregate Testing IOPS – HyperFlex ALL FLASH



Total IOPS on Cisco HyperFlex significantly outperform competition on similar hardware.

PRESIDIO®

<http://www.presidio.com/contact-us>
212.652.5700



1. "IDC Predictions Provide a Blueprint and Key Building Blocks for Becoming a Digital Native Enterprise," IDC, October 31, 2017.

2. "What Edge Computing Means for Infrastructure and Operations Leaders," Gartner, October 3, 2018.

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