Hyperconvergence at the Edge

Designed for today's computing landscape

Complete hyperconverged solution

Deployment with massive scale

Consistent management across all sites

Hyperconvergence close to your customers and data

You need infrastructure that can follow your customers and data and help scale your business regardless of where computing takes place. Internet of Things (IoT) applications use edge locations to acquire and clean data before forwarding the useful parts to the core data center. Remote, branch office, retail, and industrial locations need always-on computing even if the core data center is unavailable. Point-of-sale, video surveillance analysis, virtual desktop, and inventory management are edge applications where IT organizations need to deploy to sometimes hundreds of sites.

Hyperconvergence anywhere

Cisco HyperFlex™ Edge brings the robust feature set and simplicity of Cisco HyperFlex systems to your edge environments with a flexible, scalable, low-cost, centrally managed solution that can be deployed and maintained with massive scale.

Cisco HyperFlex Edge

- Reduce cost and minimize complexity
- Support always-on applications close to customers and data
- Deploy quickly with massive scale
- Provide resilient computing and storage
- Deploy anywhere, manage centrally

We meet evolving challenges

Simplify the core

"Over the last two years, IT organizations spent 70% on 'run the business' IT spending, up from 67% in 2013 to 2014, and 65% in 2012"

04/18 Gartner, 2018 Strategic roadmap for compute infrastructure, Chirag Dekate, Daniel Bowers, et. al., April 10, 2018.

Deploy cloud-native apps

"By 2020, more than 50% of enterprises will run mission-critical, containerized cloud-native applications in production, up from less than 5% today."

04/18 Gartner, 2018 Strategic roadmap for compute infrastructure, Chirag Dekate, Daniel Bowers, et. al., April 10, 2018.

Reach to the edge

"By 2022, more than 50% of enterprise-generated data will be created and processed outside [of] the core data center or cloud"

12/18 Gartner, Gartner IT Infrastructure, Operations & Cloud Strategies Conference Event Presentation, The Future of IT Infrastructures: Always On, Always Available, Everywhere, David J. Cappuccio, Bob Gill, et. al., December 3-6, 2018.

The power of Cisco HyperFlex systems

We designed Cisco HyperFlex systems as a next-generation platform capable of adapting to meet new challenges as IT organizations face them. The first challenge was to help reduce cost and complexity in the data center core. Next we simplified support for cloud-native applications. Cisco HyperFlex Edge was designed to address the next frontier: placing computing anywhere customers and data reside (Figure 1).
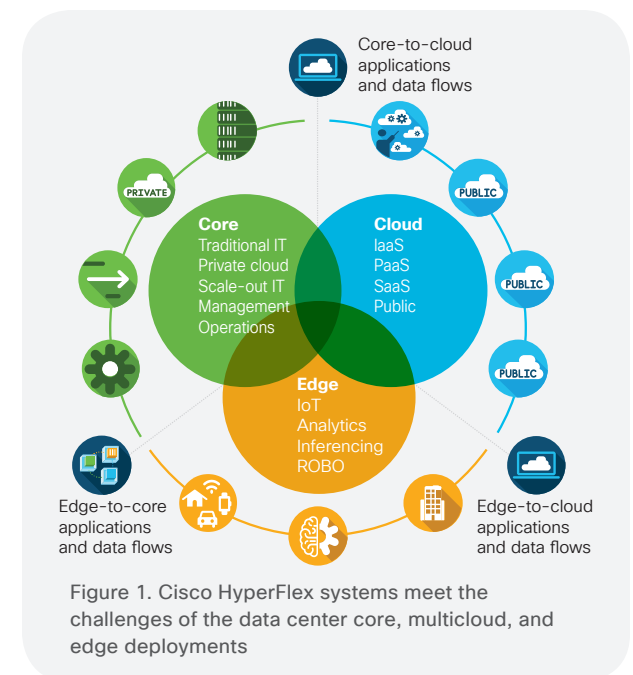
Designed for anywhere computing

While enterprise applications have been migrating to centralized data centers and to the cloud, the Internet edge has been moving to branch and remote locations closer to users, IoT devices, and organizational touchpoints.

The move to the edge poses new challenges. Budgets for remote sites are tight. Edge locations have different requirements and must flexibly scale up or down. They must be highly resilient and be able to operate independently, and without support of the core data center. They must install and operate with minimal or no onsite IT staff. They must be centrally deployed, managed, and maintained. And they must be able to support new inferencing applications with GPU acceleration as needed.

Cisco HyperFlex Edge helps you meet the unique challenges of deploying simplified, hyperconverged environments for multisite, distributed computing with global scale. It incorporates key features optimized to lower cost and reduce space consumption. You can choose clusters with two, three, or four nodes for ease of meeting a wide range of edge-location computing, GPU acceleration, and storage requirements (see Figure 2 on the next page).

Cisco HyperFlex Edge locations can use existing Cisco® or third-party 1- and 10-Gbps networks for cluster communication. Two-node clusters can use built-in 10-Gpbs LAN-on-motherboard

Figure 1. Cisco HyperFlex systems meet the challenges of the data center core, multicloud, and edge deployments

(LOM) ports for high-speed cluster connectivity even with Gigabit Ethernet switches upstream. These enhancements make Cisco HyperFlex Edge easy and affordable to deploy as a hyperconverged solution in a multitude of edge locations, or even as the sole cluster supporting a small or medium-sized business.

Deploy and manage with massive scale

The biggest challenge for organizations extending computing to the network edge is handling deployment and management with massive scale. Imagine composing your hyperconverged infrastructure through a single interface that accesses hundreds of clusters at once, with support for installation, inventory management, and day-to-day centralized control. Cisco Intersight™ management as a service automates cluster deployment and management regardless of cluster size or location.

Deploy

All you need to get started in a remote location is to connect power and network cables to the edge nodes in the remote location. Technicians can do this without any specialized expertise.

Once the edge nodes are connected to the Intersight platform through a secure Transport Layer Security (TLS) connection, you claim them in the interface. Then you associate a cluster profile that specifies the complete configuration
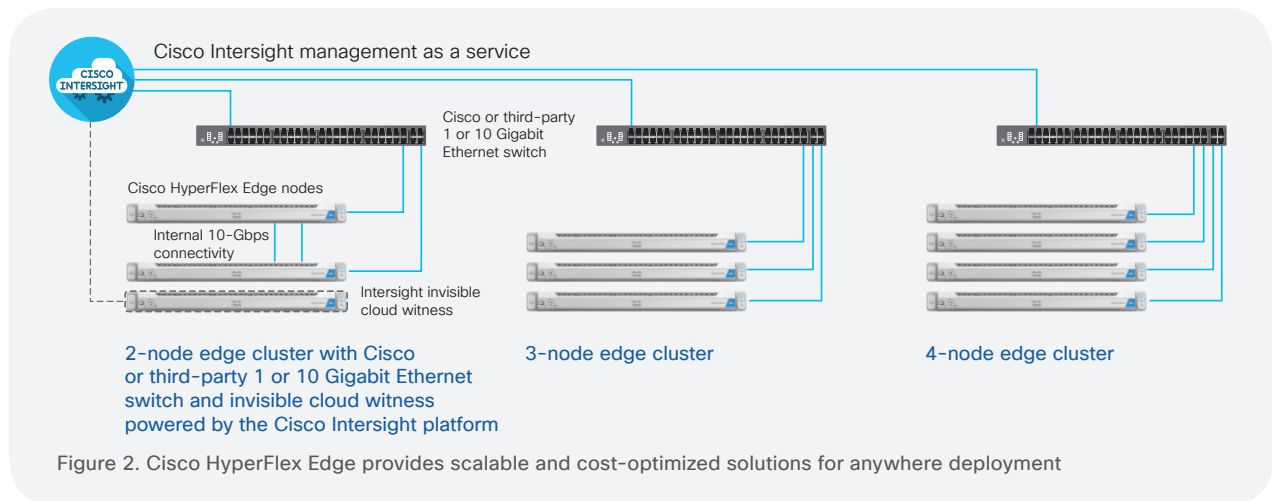

Figure 2. Cisco HyperFlex Edge provides scalable and cost-optimized solutions for anywhere deployment

for the remote site. Installation is fully automated without any manual intervention required.

Cluster settings can be embodied in profiles that can direct rapid, consistent deployment without any variance from the standards you set. Cloning tools can be used in the Intersight user interface. If you wish to automate using your own software, the Intersight API can be accessed from a wide variety of scripting tools.

Configure

To configure Cisco HyperFlex HX Data Platform parameters, all you need to do is click to launch the HyperFlex Connect interface. This enables you to control every aspect of the data platform operation, including creating and mounting data stores, taking snapshots, configuring remote replication, and cloning virtual machines.

Configuring two-node clusters is easy. Just install the cluster and Cisco Intersight automatically provides an invisible cloud witness that eliminates the need to set up a witness node in the core data center or hosted location.

Traditional systems require setting up a witness node for each two-node cluster to prevent split-brain situations. This problem occurs when both halves of a cluster think they can continue to operate independently. Traditional witness approaches impede deploying at scale because each witness needs to be installed, maintained, and connected to the edge cluster with high-speed networks. This adds cost and complexity to edge deployments. In contrast, the Intersight invisible cloud witness simply arbitrates which node gets to continue operating in a split-brain situation automatically, without any time-consuming or expensive setup.

For more information

Learn more at cisco.com/go/hyperflex

Monitor

The Intersight platform monitors your edge cluster health and provides an intuitive dashboard so that you can easily see the status of all of your nodes worldwide. Just click on any cluster or node to see more status details.

The platform is directly connected to the Cisco Technical Assistance Center (Cisco TAC). If Intersight software detects errors that indicate or a hard failure, the Cisco TAC can automatically diagnose the issue by reviewing logs through an artificial intelligence engine that looks for diagnostic signatures.

Maintain

Cisco Intersight software is adept at maintaining each cluster in the state you desire. The software can maintain an unlimited number of clusters with different hardware and software configurations.

Unique in the industry, single-click software updates can update an entire cluster's firmware, hypervisor, and data platform software to the revision levels that you specify. Other vendors can't do this because they don't integrate the entire hardware and software stack. Cisco's ownership of both these layers helps ensure the most seamless, efficient, and time-optimized upgrades possible on any hyperconverged infrastructure stack.

When a single-click update is initiated, by cross-launching into the HyperFlex Connect interface, you can upgrade multiple clusters in parallel, across multiple sites, without any workload disruption or human intervention needed.

Stay up to date

Cisco Intersight itself is a containerized, cloud-native application that is continually updated, helping assure that you always have access to the latest, most secure, and most stable version.

Management options

In addition to Cisco Intersight management, you can also manage your hyperconverged clusters through locally hosted Cisco HyperFlex Connect software or a range of third-party tools and plugins including the VMware vSphere plug-in.

Next steps

Cisco HyperFlex Edge brings the next generation of hyperconverged solutions beyond your data center and out to the network edge. With access to the same full-featured data platform and management model as you use in your data center systems, extending your reach has never been easier.