

Cisco CloudCenter Solution with Cisco HyperFlex Systems

Hyperconverged infrastructure with hybrid cloud management

Cisco® CloudCenter is available bundled with the Cisco HyperFlex™ platform. This integrated hardware and software solution, called HyperFlex with CloudCenter, makes infrastructure and application services easy to consume and supports a hybrid IT strategy.

Cisco HyperFlex systems deliver the full benefits of a next-generation data center platform, with independent scaling and a scale-out architecture. But flexible and scalable infrastructure services are often trapped behind a help-desk “ticket and wait” system that limits users who want to quickly deploy a temporary test or development workload. And hyperconverged infrastructure may remain isolated from hybrid cloud service delivery strategies in which users choose where to deploy workloads based on business need.

So in an era in which digitization is transforming business, IT needs a way to make hyperconverged infrastructure fast and easy to consume. IT also needs to be able to integrate that easy consumption model with a seamless hybrid cloud service delivery strategy.

Benefits

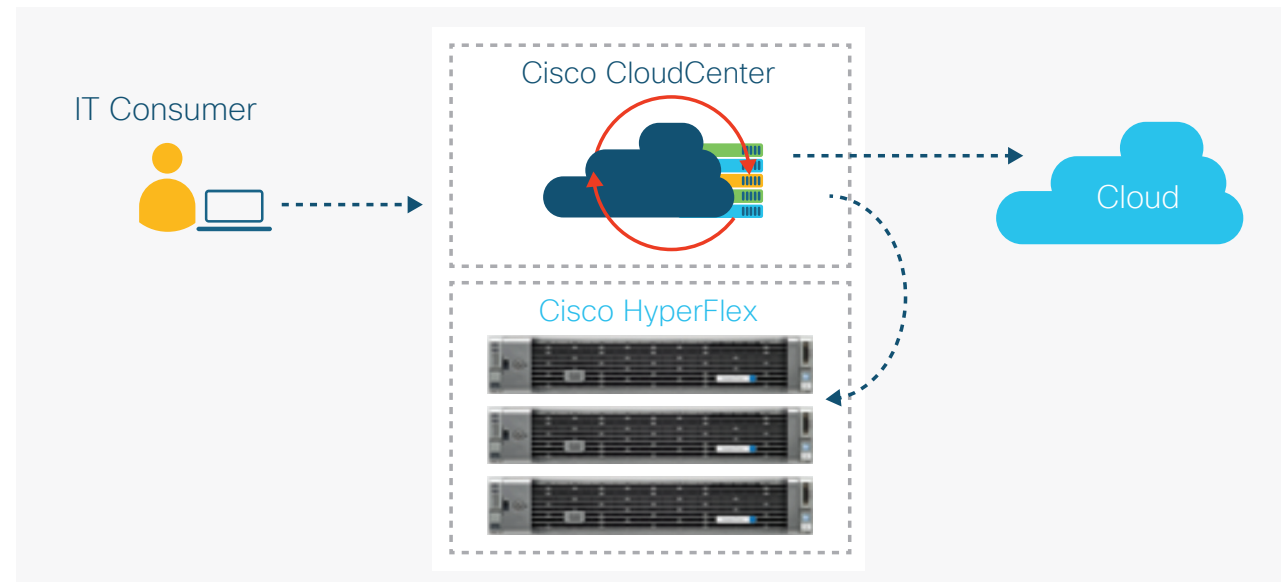
- **Enable User Self-Service**
Users can avoid help-desk tickets and deploy virtual machines or full application workloads on demand in Cisco HyperFlex™ systems or in the public cloud. Day-2 actions extend self-service operations to common management tasks.
- **Improve Resource Utilization**
Avoid “just-in-case” overprovisioned infrastructure by using automation to optimize capacity on your premises and supplement this capacity with capacity in the cloud.

- **Transform Service Delivery** Use a hybrid strategy with application-centric orchestration in both Cisco HyperFlex and public cloud environments.
- **Improve IT Operation Efficiency** Reduce the time and effort needed for manual provisioning and management processes, which often include multiple members of the IT staff.

CloudCenter protects investments in next-generation Cisco HyperFlex infrastructure. It allows IT to build their hybrid IT strategy on HyperFlex, and leverage application-centric automation to offer users self-service on-demand virtual machines and fully configured application stacks on premises or in or any supported public cloud. Users can also use self-service for day-2 actions without having to learn environment-specific tools or rely on a help-desk request for common management tasks.

Together, CloudCenter and the Cisco HyperFlex platform deliver a more consumable hyperconverged infrastructure solution (Figure 1). Users get on-demand deployment and management, which reduces operating costs. And infrastructure managers can use application-centric automation to optimize a mix of on-premises and cloud capacity, which reduces capital costs.

Figure 1. Self-service on-demand consumption of hyperconverged infrastructure and cloud resources



Hybrid ecosystem

HyperFlex with CloudCenter can be extended to work with a wide range of other Cisco data center solutions. Applications deployed on a Cisco HyperFlex system that is part of a Cisco Application Centric Infrastructure (Cisco ACI™) network have whitelist zero-trust security with application-centric network management. CloudCenter works with Cisco UCS® Director, Cisco Tetration Analytics™, and Cisco's AppDynamics solutions as part of the Cisco ASAP Data Center architecture. It also works with the Turbonomic partner solution for policy-based workload placement.

Main use cases

HyperFlex with CloudCenter can optimize hyperconverged infrastructure in two powerful ways. Each use case includes an easy starting point and additional levels of capability.

Self-service

Users get the on-demand experience they expect in the cloud era. They avoid the IT ticket-and-wait processes that are often used to consume infrastructure services. Instead, they can help themselves utilizing automated workload deployment as well as common day-2 management tasks.

- **HyperFlex environment:** Self-service deploy a simple virtual machine or a fully configured application in your Cisco HyperFlex environment. Users can also perform common day-2 management actions on their workloads without the need for a help-desk ticket. And IT can apply policy-based usage controls to limit use to fit available resources, and terminate workloads after a pre-set period of time.
- **Public cloud environment:** Users can deploy the same virtual machine or application in the public cloud. IT can apply policy-based placement and cloud cost controls. And, get roll-up and drill-down use and cloud cost reporting.
- **Cross-cloud application lifecycle deployment:** Users can start development and test efforts in the cloud, and then redeploy or migrate the workloads back to the Cisco HyperFlex environment.

Capacity optimization

Use application orchestration and management automation to optimize the Cisco HyperFlex platform for both long-running and temporary workloads. Cisco HyperFlex systems alone enable users to easily scale computing and storage resources separately by adding more nodes or scaling up cache or capacity within a node. CloudCenter application-centric automation and orchestration offers additional capacity optimization.

- **Load balance legacy workloads:** Deploy more instances of a workload or workload tier during periods of heavy use. Automatically load-balance between them and then deprovision as use wanes. IT maintains workload performance while avoiding overprovisioning resources.
- **Automate temporary workloads:** Automate both deployment and end-of-life actions based on policies. Stand up and tear down workloads quickly and easily based on user request, API call from another tool, or run-time policy.
- **Burst to cloud:** Temporarily deploy or migrate workloads to the public cloud during periods of heavy use. Supplement on-premises resources with pay-per-use cloud resources only when needed.
- **Automate hybrid topology:** Use multiple environments when deploying an application placing the web or application tier in a pay-per-use cloud, while deploying the database tier back in the Cisco HyperFlex environment.

Public cloud options

In addition to working with vSphere on your premises, CloudCenter supports more than 10 public cloud types that can be included in this solution, including AWS, AWS GovCloud, Microsoft Azure, Azure Government Cloud, Google Cloud Platform, Alibaba Cloud, Dimension Data, IBM SoftLayer, Rackspace, and VMware vCloud Air.

Simple to complex applications

HyperFlex with CloudCenter works with many application types, including batch, N-tier, and cluster (such as Hadoop clusters). It also works with most common technologies, such as Ruby on Rails, Java, and .NET.

- **Virtual machines and application stack:** Automate deployment of a simple virtual machine or a more complex and fully configured application stack, including the database, middleware, application, and or web server. The deployment can include configuration tools such as Chef and Puppet as well as containers.

- **DevOps and production applications:** Deploy temporary test and development workloads as well as long-running production workloads.
- **New and existing applications:** Automate the deployment of new applications and accelerate deployment and redeployment of legacy systems.
- **Commercial and custom applications:** Support both commercial off-the-shelf applications (COTS) and custom applications, or any combination such as a custom e-commerce portal deployed with a packaged order-management system.

Figure 2. Model an application profile with deployment and management requirements

IP Protocol	From Port	To Port	IP/CIDR/TIER
TCP	1234	5678	0.0.0.0/0

For more information

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- **Traditional and cloud-native applications:** Deploy both multitier enterprise applications and new microservices and containerized applications and tiers.
- **IT and business applications:** Deploy a wide range of business applications as well as IT tools such as Chef server, ELK stack, and Microsoft SharePoint.
- **Portable and cloud-specific applications:** Use general application services such as Microsoft SQL Server that can be deployed anywhere, as well as cloud-specific services such as Amazon Web Services (AWS) Relational Database Service (RDS), which works only in the Amazon cloud.

Easily model an application profile that includes deployment and run-time requirements (Figure 2). A single application profile can be deployed in VMware vSphere on the Cisco HyperFlex platform or in any supported cloud environment.

Buy and implement: Cisco HyperFlex for cloud

CloudCenter is offered with Cisco HyperFlex systems as a single bundled SKU called Cisco HyperFlex with CloudCenter. Cisco HyperFlex with CloudCenter includes both Cisco HyperFlex and Cisco ONE™ Enterprise Cloud Suite Cloud Management part numbers. It is offered with both Cisco HyperFlex HX220c and HX240c M4 All Flash Node and hybrid configurations.

This bundle includes two CloudCenter orchestrators: one configured for use with vSphere hosted on HyperFlex, and another that can be configured for your choice of public cloud. Select the number of Cisco HyperFlex nodes (a minimum of three and a maximum of eight), fabric interconnection options (Cisco UCS 6248UP 48-Port or 6296UP 96-Port Fabric Interconnects), and CloudCenter subscription duration option (one, three, or five years).

HX220c configurations include a CloudCenter subscription for 100 concurrent virtual machines, and HX240c configurations include a CloudCenter subscription for 200 concurrent virtual machines. Additional subscriptions for increments of 100 virtual machines can be added to both the HX220c and HX240c options. Additional CloudCenter components to expand the scope of the solution to include more CloudCenter orchestrators or virtual machines are priced and purchased separately.

Data center software professional service partners are available to install the CloudCenter virtual appliance and configure CloudCenter to work with vSphere and a public cloud.