

Highlights

Accelerate Cloud Deployment

- Cisco Unified Computing System™ (Cisco UCS®) Solution Accelerator Paks provide a fast and easy approach to buying and deploying infrastructure.

Deploy the Cloud You Need

- Cisco UCS Solution Accelerator Paks can be used to build public, private, and hybrid cloud infrastructure that supports application, service, and storage hosting.

Install OpenStack Quickly

- The Cisco UCS OpenStack Installer provides a validated installation for an active-active, highly scalable architecture for OpenStack services.

Scale on Demand

- The Cisco UCS architecture makes it easy to add computing and storage resources as demand rises.

Provision Cloud Infrastructure Faster

- Built-in automation enables configurations to be deployed quickly, easily, and accurately.

Eliminate Network Sprawl and Complexity

- Cisco UCS provides greater network density with less cabling and complexity.

Simplify Management

- End-to-end management provides visibility and enables the monitoring and automated remediation of physical servers, storage, and network devices.

With Cisco UCS® Solution Accelerator Paks, organizations can quickly deploy the cloud infrastructure and OpenStack software they need to deliver IT agility.

Cloud computing is at the forefront of people's minds as organizations look for ways to increase IT agility and support dynamic business priorities. With pressure on for IT departments to deliver more applications and services in shorter time frames, the architectural silos that result from an ad hoc approach to capacity scaling with traditional systems pose a barrier to successful cloud infrastructure deployment. Cisco's approach—innovative and unified data center infrastructure that provides the underlying foundation for OpenStack technology—enables the creation of massively scalable infrastructure that delivers on the promise of the cloud.

OpenStack is an open source cloud operating system developed by a community of open source developers and participating organizations. The project supports all types of clouds by providing an open environment for quickly delivering massively scalable cloud solutions with a comprehensive set of features. OpenStack software consists of a series of interrelated projects that control pools of computing, storage, and networking resources throughout a data center. All these resources are managed through a dashboard, which gives administrators control while empowering users to provision resources through a web interface (Figure 1).

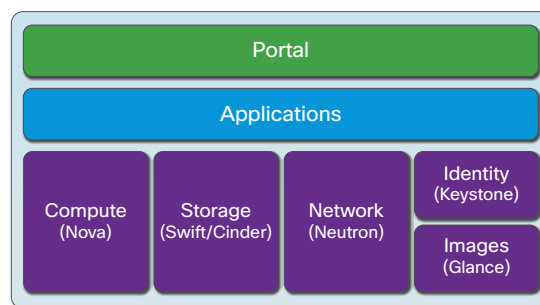


Figure 1. OpenStack Architectural Components

Build Your Cloud Vision with Cisco UCS

Whether your organization needs to expand an existing Cisco Unified Computing System™ (Cisco UCS) environment or create a private, public, or hybrid cloud, Cisco UCS Solution Accelerator Paks provide a fast and easy approach to buying Cisco technology. These preconfigured solutions are designed for cloud deployments and can be upgraded to match your memory, local storage, and I/O requirements.

Cisco UCS configurations for cloud infrastructure deployments can be applied in many enterprise areas, such as:

- Self-service development and test environments
- Massively scalable software-as-a-service (SaaS) solutions
- High-performance, scale-out storage
- Web server, multimedia, big data, and cluster-aware applications
- Applications with extensive computing power requirements and mixed I/O workloads

High-Density Configuration

Designed for public cloud providers, the high-density configuration simplifies the task of public cloud deployment. The solution consists of six Cisco UCS C220 M3 Rack Servers (Figure 2). Two control nodes authenticate requests and manage messages and queues to four compute nodes that perform tasks. Scalable object storage is provided by storage on two compute nodes that replicate data for excellent reliability (Table 1). With a balanced approach to computing, networking, and storage performance, and with massive horizontal scalability, the solution makes it easy to maintain a high quality of service.



Figure 2. Cisco UCS Configurations for Cloud Infrastructure Deployments

Mixed-Workload Configuration

Designed for enterprise environments, the mixed-workload configuration can help address some of the biggest business and technology challenges companies face. With this solution—six rack servers (three control and compute nodes, and three storage nodes)—companies can deliver IT as a service (ITaaS). With next-generation infrastructure that can flexibly allocate shared resources within and across data centers, organizations can offer self-service capabilities that accelerate deployment, increase user satisfaction, and improve operation efficiency.

Storage-Intensive Configuration

Whether you are offering public cloud storage or satisfying internal capacity demands, storage-intensive configurations can help. With two control nodes and four storage nodes and automated provisioning for improved compliance, the solution simplifies the task of storing, managing, and protecting globally distributed content. With big data on the rise, the horizontal scalability of the Cisco solution allows IT departments to easily add more capacity while lowering storage infrastructure costs. In addition, built-in management capabilities simplify storage policy enforcement.

Solution Components

The solutions help organizations quickly move away from silos of data center resources toward an on-demand cloud environment.

Cisco UCS

Cisco UCS is the first data center platform that integrates industry-standard, x86-architecture Intel® Xeon® servers with networking and storage access into a single unified system. Providing a platform built for the needs of virtualized environments, Cisco UCS is programmed through a single, model-based management interface to accelerate the deployment and performance of physical, virtualized, and cloud-computing environments.

Table 1. Cisco UCS Solution Accelerator Paks for Cloud Infrastructure Deployments

	High-Density Configuration	Mixed-Workload Configuration	Storage-Intensive Configuration
Computing	6 Cisco UCS C220 M3 Rack Servers, each with: <ul style="list-style-type: none"> • 2 Intel Xeon processors E5-2650 v2 • 256 GB of memory • LSI MegaRAID 9271-CV 8i card • Cisco UCS Virtual Interface Card (VIC) 1225 • Redundant power supplies • 2 x 900-GB SAS hard disk drives 	3 Cisco UCS C220 M3 Rack Servers, each with: <ul style="list-style-type: none"> • 2 Intel Xeon processors E5-2650 v2 • 256 GB of memory • LSI MegaRAID 9271-CV 8i card • Cisco UCS VIC1225 • Redundant power supplies • 2 x 600-GB SAS hard disk drives 3 Cisco UCS C240 M3 Rack Servers, each with: <ul style="list-style-type: none"> • 2 Intel Xeon processors E5-2650 v2 • 256 GB of memory • LSI MegaRAID 9271-CV 8i card • Cisco UCS VIC 1225 • Redundant power supplies • 22 x 900-GB SAS hard disk drives • 2 x 400-GB solid-state drives 	6 Cisco UCS C240 M3 Rack Servers, each with: <ul style="list-style-type: none"> • 2 Intel Xeon processors E5-2650 v2 • 256 GB of memory • LSI MegaRAID 9271-CV 8i card • Cisco UCS VICs 1225 • Redundant power supplies • 22 x 900-GB SAS hard disk drives • 2 x 400-GB solid-state drives

The system creates a physically distributed, centrally managed system that supports blade and rack-mount servers to deliver scalability and performance. A unified fabric supported by a single, distributed virtual switch interconnects all server resources. Servers and virtual machines are interconnected equally and consistently, eliminating multiple layers of switching. This radically simplified architecture packs more computing power into less space while allowing IT to choose from a portfolio of servers to deliver massive computing density and scalability. Workloads can be sized to meet application needs and moved to larger systems as demand grows. The Cisco UCS approach yields greater management and space efficiency for high-capacity cloud environments.

Cisco UCS 6296UP 96-Port Fabric Interconnects

Cisco® fabric interconnects provide uniform access to both networks and storage. Typically deployed in redundant pairs, the fabric interconnects support line-rate, low-latency, lossless 10 Gigabit Ethernet, Fiber Channel over Ethernet (FCoE), and Fibre Channel communication.

Cisco's unified fabric integrates Cisco UCS servers with a single high-bandwidth, low-latency network that supports all system I/O. This fabric carries IP, storage, and management traffic over redundant 10 Gigabit

Ethernet and FCoE networks. This approach simplifies the architecture and reduces the number of I/O interfaces, cables, and access-layer switch ports that are required for traditional platforms. This unification can reduce network complexity by up to a factor of three, and the system's wire-once network infrastructure increases agility and accelerates deployment with zero-touch configuration.

Choice of Software

Virtualization and cloud software is a critical element of a public, private, or hybrid cloud deployment. Cisco configurations for cloud infrastructure support solutions from Citrix, Microsoft, and VMware as well as OpenStack distributions, providing choice and flexibility in cloud software infrastructure deployment.

Organizations that choose OpenStack for their cloud software can take advantage of the Cisco UCS OpenStack Installer. This software performs the work needed to install a validated OpenStack deployment. Unlike other solutions, Cisco's approach provides an active-active, highly scalable architecture for OpenStack services. Baseline monitoring capabilities for system processes and physical components are also installed.

Easy Ordering

The solution's computing and networking components are available

through Cisco and its partners, making it easy to quickly deploy a powerful, secure cloud environment without the expense or risk entailed in designing and building your own custom solution.

Conclusion

Deployment of Cisco UCS Solution Accelerator Paks for cloud infrastructure enables organizations to gain the benefits of a simplified cloud infrastructure. With Cisco UCS, IT departments can build scalable, flexible, and agile public, private, and hybrid cloud infrastructure that costs less to acquire, operate, and maintain.

For More Information

- For more information about Cisco UCS Solution Accelerator Paks, please visit <http://www.cisco.com/go/smartplay>.
- For more information about Cisco UCS, please visit <http://www.cisco.com/go/ucs>.
- For more information about Cisco solutions for cloud computing, please visit <http://www.cisco.com/go/cloud>.
- For more information about getting started with the Cisco UCS OpenStack Installer, please visit http://docwiki.cisco.com/wiki/Openstack:Getting_Started_with_COE_development.



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