Cisco CloudCenter Solution with Amazon Web Services

Go hybrid and extend your data center to AWS

The Cisco CloudCenter™ hybrid cloud management solution securely deploys and manages application components and data to more than 20 data center, private cloud, and public cloud types, including Amazon Web Services (AWS) GovCloud and more than a dozen AWS regions.

With the Cisco CloudCenter solution, enterprise IT organizations can:

- **Model:** Quickly and easily create an application profile that combines infrastructure automation and application orchestration instructions into a single deployable blueprint.

- **Deploy:** Use one click to deploy the application profile and guide users' choices of regions, availability zones, Virtual Private Clouds (VPC), and other options according to tag-based governance rules.

- **Manage:** Apply a wide range of application lifecycle actions and set policies for horizontal scaling, cross-region scaling and bursting, and high availability and disaster recovery or to stop a deployment.

Cisco CloudCenter governance and security spans applications, data centers, and clouds as well as multiple groups and users. Administrators can centrally manage AWS cloud accounts, control and limit use, and report on costs. They can also manage user placement, deployment, and run-time actions with tag-based governance and Role-Based Access Control (RBAC).

Benefits

- **Application-centric focus** Deploy your first OS image or application stack in minutes or days. Reduce Total Cost of Ownership (TCO) by not building and maintaining separate infrastructure and application automation artifacts that are hard wired to a single region.

- **No vendor lock-in** The same application profile can be deployed in Amazon WebServices (AWS), data center, or other clouds, which gives IT flexibility to reduce costs and meet changing business needs.

- **Enterprise-class controls** Cost-control plans and bundles offer both aggregated and individualized cost and use reporting, with multitenant options for various enterprise business units and user groups.

- **Cloud abstraction** Eliminate the need for users to understand AWS API calls, instance size names, key management, region and availability zones, Virtual Private Clouds (VPCs), Access Control Lists (ACLs), security groups, and Amazon Machine Image (AMI) management.

- **Many application types** The solution works with many types of applications, including batch and N-tier applications; clusters such as Hadoop clusters; and technologies such as Ruby on Rails, Java, thick clients, and .NET.

With the Cisco CloudCenter solution, enterprise IT organizations can offer self-service on-demand application services, including AWS deployments starting with a simple virtual machine, or more complex enterprise or cloud-native applications (Figure 1). You can automate DevOps processes and continuous deployment or augment data center capacity. You can also use the solution as an IT-as-a Service (ITaaS) platform and broker both data center and cloud service delivery options.

Figure 1. Deploy and manage applications starting with a simple OS image in a single environment or more complex applications in multiple regions or availability zones

Unique hybrid cloud technology

The power of the Cisco CloudCenter solution comes from its unique technology, which abstracts the application from the Infrastructure-as-a-Service (IaaS) APIs using a cloud-independent application profile and a cloud-aware orchestrator.

You can deploy a single profile in any environment without lock-in and without environment-specific scripting. An application profile can automate microsegmentation in AWS with security groups and Access Control Lists (ACLs). And the same application profile deployed in a Cisco® Application Centric Infrastructure (Cisco ACI™) environment can automate microsegmentation with Endpoint Groups (EPGs) and contracts. One platform provides a hybrid management fabric that delivers powerful governance with visibility with cost and use controls across data center and AWS environments (Figure 2).

The application profile includes information about tier-level components, their relationships including port and firewall settings, hardware requirements, pointers to build repositories, and run-time policies.
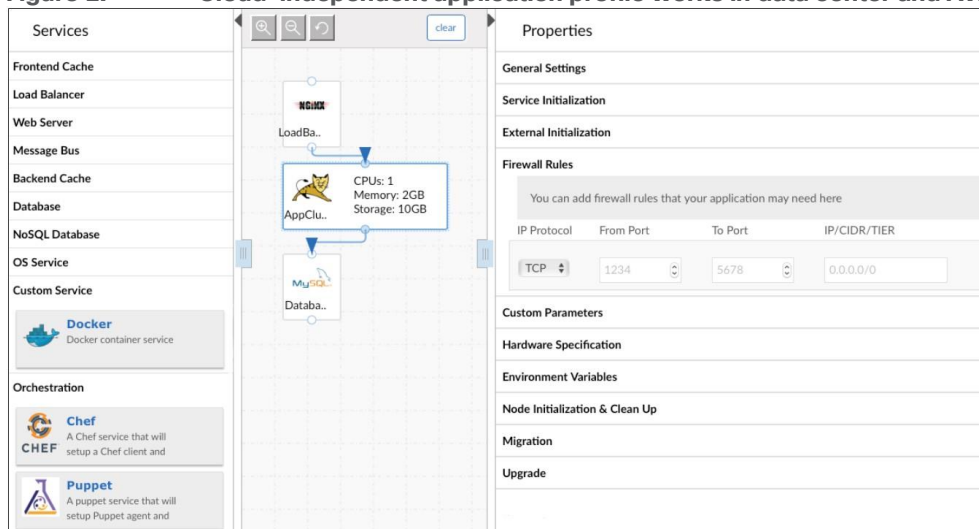
The Cisco CloudCenter solution transparently converts this information into API calls specific to AWS.

Hybrid IT options

The Cisco CloudCenter solution provides out-of-the-box support for more than 20 environments and regions (Figure 3), including:

- **Data center:** Any Cisco Unified Computing System™ (Cisco UCS®) infrastructure with VMware vSphere, Cisco HyperFlex™, Cisco UCS Director, Cisco ACI, or other software-defined infrastructure management solutions

- **Private cloud:** A wide range of OpenStack implementations including Cisco Metacloud™ as well as VMware vCloud Director and Microsoft Azure Pack

- **Public cloud:** AWS, AWS GovCloud, Alibaba Cloud, Microsoft Azure, Azure Government Cloud, Google Cloud Platform, Dimension Data, IBM Bluemix, Rackspace, and VMware vCloud Air, among others

Figure 2.   **Cloud-independent application profile works in data center and AWS environments**

# Eight ways that Cisco CloudCenter automates AWS

You can use the Cisco CloudCenter solution to deploy applications in AWS with several powerful capabilities:

- **Deploy a virtual machine on demand.** Easily integrate with service catalogs such as ServiceNow or Cisco Prime™ Service Catalog, a custom IT front end, or use the out-of-the-box enterprise marketplace. The IT organization controls who can deploy OS images and what, where, when, and for how long these images are deployed.

- **Deploy any application stack on demand.** Use one click to deploy the fully configured infrastructure and application stack, including databases, middleware, application and web servers, and load balancers. Model composite topologies including a mix of OS images, application services, containers, configuration tools, and AWS services.

- **Manage images.** Automate management of OS images across multiple clouds and multiple regions within AWS. Whether you build cloudspecific images, check out and harden Amazon-provided Amazon Machine Images (AMIs), or rent vendor-updated images, you can issue a Cisco CloudCenter API call to update the logical-to-physical OS image mapping to simplify maintenance and help ensure that users are always consuming the latest IT-approved OS image.

- **Autoscale across availability zones**. Use the stretched topology feature to model an application profile that deploys primary and secondary components in different availability zones. You can now easily deploy applications at scale in multiple availability zones in the way that is required to get the AWS 99.995 percent uptime guarantee.

- **Automate micro segmentation**. When you deploy a cloud-independent application profile in AWS, the Cisco CloudCenter solution automatically creates security groups and ACLs that deliver microsegmentation with allowed lists. You can easily scale the number of deployed applications without using shared segmentation that opens security risks from eastwest traffic

- **Include AWS-specific services.** Use cloud-independent services to model application profiles. But also have the option to model AWS specific services or to call AWS services as needed.

- **Migrate across regions**. Use powerful migration features to move an application from one AWS region to another. Once an application is deployed, users can select an application, pick target region, and "one click" migrate the application and optionally the data if needed.

- **Perform benchmarking.** Compare price-to-performance metrics to determine when AWS is the most cost-effective choice. View price differences between AWS regions. Find out when multiple small instances are more cost effective than one large instance.

Deployment does not require a long professional services engagement. Many customers achieve a successful proof-of-concept deployment or deploy their first application in just days, not weeks or months.

Figure 3.   **Cisco CloudCenter supports a wide range of private and public platforms**
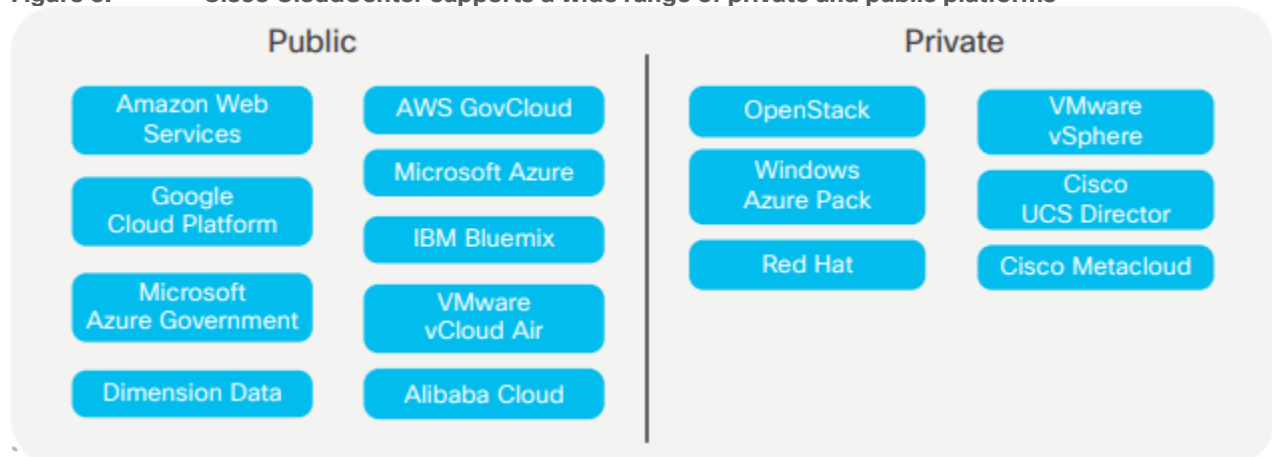
For more information

For more information visit at https://www.cisco.com/go/cloudcenter.