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Cisco CloudCenter Use Case Summary

Overview

IT organizations often use multiple clouds to match the best application and infrastructure services with their business needs. It makes sense to have the freedom to choose and then only pay for what is used.

But extending IT service delivery beyond just a data center introduces new complexity.

Busy IT staff and developers may need many different IT management tools that are specific to one cloud or another. And, without effective controls, user's decisions may put a company at risk, and the cloud bill may be more costly than it should be.

Cisco CloudCenter™ is a multicloud management platform that works across multiple cloud and data center environments. From a single point of access, users can securely deploy, optimize, and manage workloads in any environment. IT organizations can also easily apply governance and cost controls consistently across all the major cloud providers as well as in private or hosted data centers.

With Cisco CloudCenter you can **automate multicloud workload deployment** and **increase feature velocity**, consistently **enforce multicloud governance**, and **optimize cloud service consumption** to reduce risk and cloud costs.

Benefits

- **Easier work:** Automate deployment to eliminate service-request wait time and avoid the need to learn multiple cloud-specific management tools.

- **Increased feature velocity:** Integrate with DevOps and CI/CD tool chains to automate deployment in any development, testing, or production environment.

- **Better control:** Apply IT policies and controls in a way that consistently guides user decisions and achieves repeatable and predictable results in order to reduce risks and improve security.

- **Lower costs:** Optimize cloud consumption to cut costs, and improve both developer and IT ops process efficiency.

Global Re-Insurance Merger resulted in different manual processes used to deploy workloads. Slow service-request time and lack of standardization across cloud and data center environments was diminishing the business's perception of IT. Multiple groups were independently using credit card to buy cloud services, reducing governance and cost visibility.

The Cisco CloudCenter solution provides a single standardized process for consuming IT services that creates consistency across all environments. Various development groups go through a single portal to deploy workloads and consume standardized services sourced from multiple data centers as well as public clouds such as AWS, Azure, and Google. Results include improved service quality and user satisfaction as well as better governance and cost visibility into total private and public cloud usage.

Multicloud workload deployment

Cisco CloudCenter enables you to securely deploy and manage workloads to any data center or cloud environment, as seen in Figure 1.

IT staff can quickly handle service requests and automate deployment of a simple virtual machine or more complex application stacks, including containerized micro-service architectures, without passing help tickets between IT teams. Or developers, through self-service, can deploy development and test environments or the latest build, with placement and configuration decisions guided by simple policies, so that they can focus on their code and not the stack. This lets your IT team focus their efforts on adding new services and environments rather than spending time responding to repetitive service requests.

Figure 1. IT or developers deploy to multiple cloud or data center environments
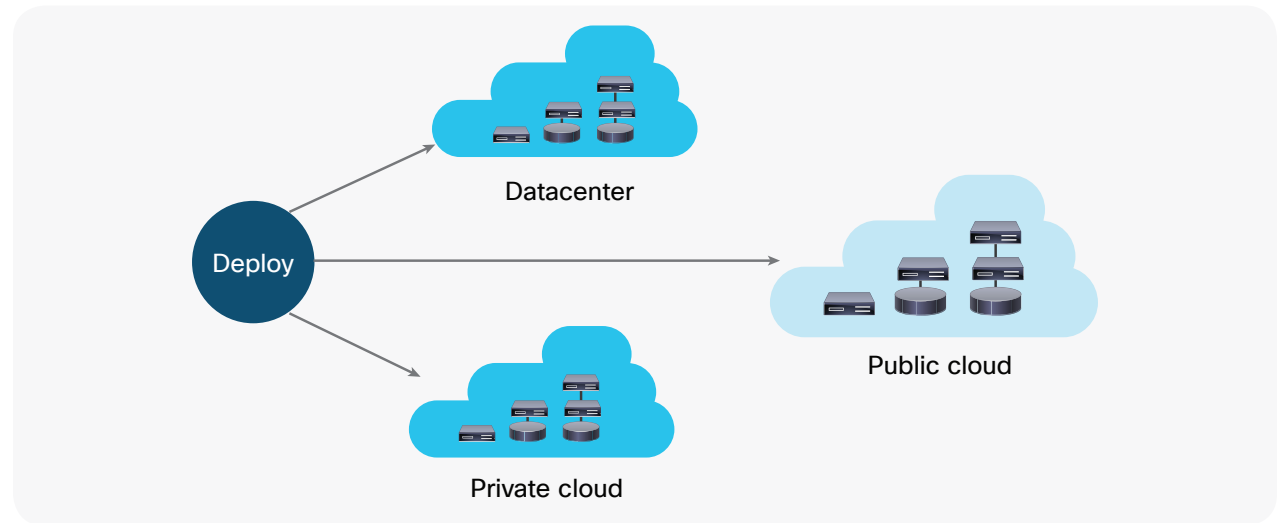
An application or cloud expert can model a deployable blueprint (as seen in Figure 2) that can then be deployed to any target environment. Many customers start simply, by offering on-demand virtual machines in a single environment, and then grow into multiple clouds, on-demand services like database as a service, or full stack applications comprising a mix of technologies, including virtual machines, containers, Platform-as-a-Service (PaaS) services, or cloud-specific services.

Experts can then share their blueprint and knowhow with other users that have lower level skills, in order to get consistent and predictable deployments. Cisco CloudCenter abstracts the cloud so that a single blueprint can be used to consistently and repeatably deploy traditional enterprise applications or cloud native micro-service architectures to any target cloud and data center environment, including Kubernetes clusters.

Users can then choose where to deploy without having deep knowledge about each target cloud. From drop-down fields users choose cloud-specific parameters, such as instance size and subnetwork domains, that best fit the needs of the application. Alternatively, these parameters can be chosen automatically based on a simple tag-based governance model.

Integration with IT service management tools make it easy for users to find and get the services they need when they need them, all through a single service portal. Request for multicloud workload deployment can follow existing enterprise approval and change management processes.

Cisco CloudCenter can also call out to any third-party tool that has an API or CLI. So it is easy to integrate with tools like Infoblox for IP asset management, Turbonomic for capacity management tools, Cisco ACI™ for network security, Puppet, Chef, or Ansible for configuration management, and AppDynamics® for application performance monitoring. This makes for consistent, zero-touch automation across your enterprise.

Figure 2. Model of a deployable blueprint
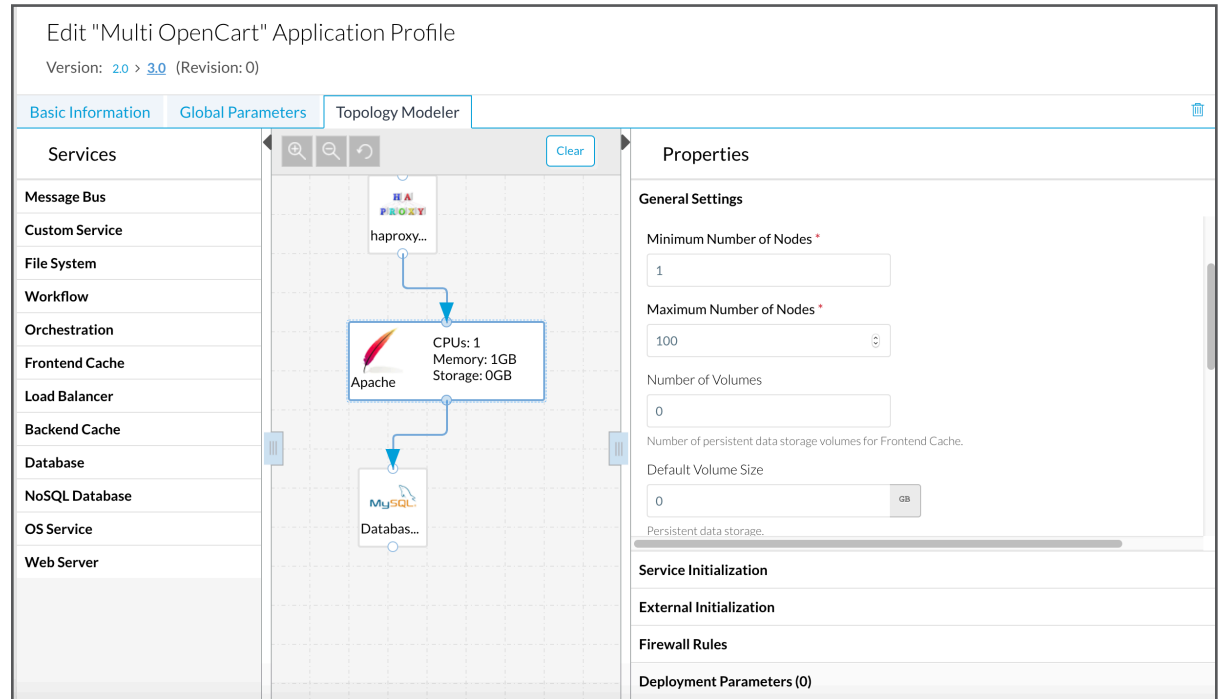
Once deployed, users can execute common day-2 actions without having to log into or manage credentials for various environment-specific management tools. Users can add resources, pause or kill workloads to cut costs, or make configuration changes to workloads in any environment— and all from a single-platform user interface.

Benefit:

Automated workload deployment eliminates service-request wait time and avoids the need for developers or IT staff to learn multiple cloud-specific management tools.

North America Technology Firm with 500 developers have sophisticated application development pipeline including various DevOps tools such as Jenkins, Puppet, Chef, Ansible, and Terraform. Teams need to deploy and test the latest application feature changes on premises and in two AWS regions and two Azure regions.

The Cisco CloudCenter solution provides a platform for developer self-service with full automation and integration with its DevOps tools. Workloads are typically deployed for a few hours up to a few days while feature, integration, and environmental tests are conducted in various development, testing, and staging environments. Tags are assigned to each project and guide placement decisions and project cost-tracking. Developers can manage day-2 actions in VMware, AWS, and Azure environments from the Cisco CloudCenter interface without needing access and login rights to environment-specific management tools.
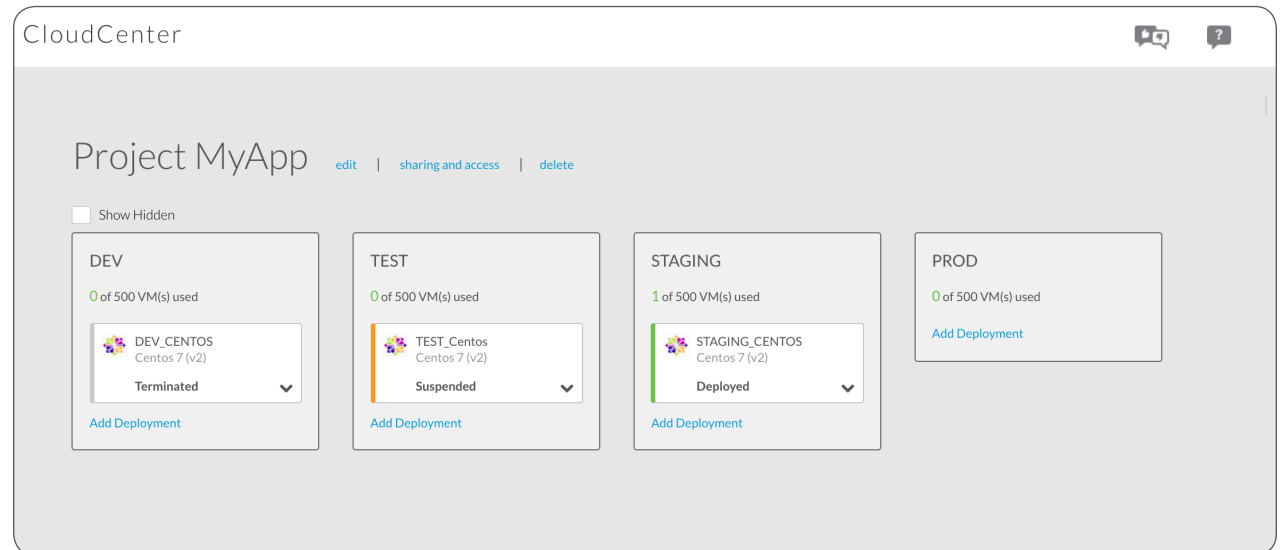
Increase feature velocity

Cisco CloudCenter can also accelerate time to market for new application features when multicloud workload deployment is part of a developer's integrated and automated DevOps tool chain. Any blueprint that a user can deploy from the user interface, can be deployed through an automated API call. As a result, Cisco CloudCenter can automate deployment as part of a Continuous Integration/Continuous Deployment (CI/CD) workflow.

When a developer pushes code, their build-tool of choice triggers Cisco CloudCenter to deploy the latest version of the application to development, testing, staging, or production environments. Moreover, since a single blueprint can be deployed to any cloud, each phase of the software development lifecycle can be in a different cloud. For example, development and testing might be in a public cloud or at a data center colocated with the development team while production is in any cloud region or specific data center.

A CI/CD project board can track versions, allocate project costs, and control permissions through the development lifecycle, as seen in Figure 2. Also, a deployed workload can be promoted from development, to testing, staging and production, based on how the project is configured.

Figure 3. Cisco CloudCenter automates a development project

Configuration tools such as Chef, Puppet, or Ansible can be modeled as part of any or all application tiers or micro–services, as seen in Figure 3.

> **Benefit:** An automated and integrated application development process increases feature velocity and improves both application quality and time to market.

Figure 4. Modeling an application tier using existing configuration tools

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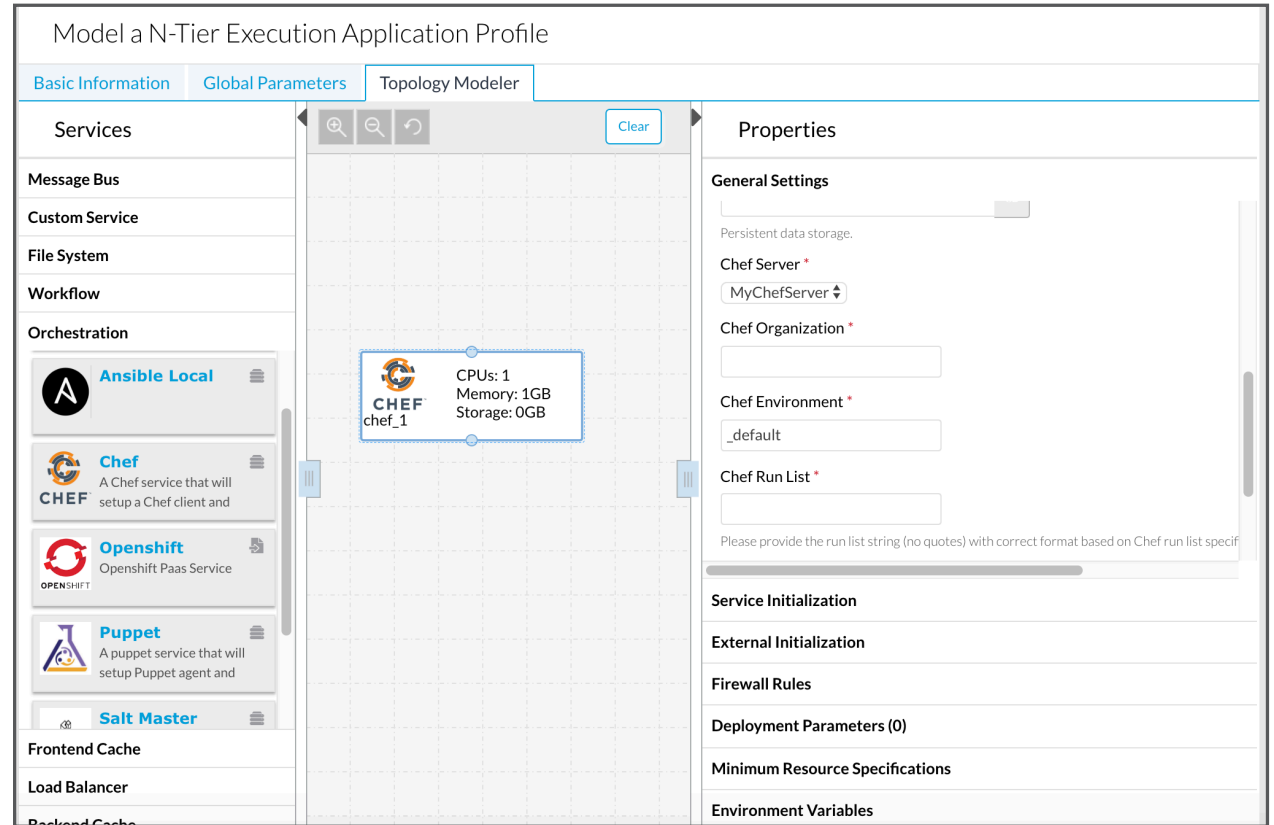
Large Health Care Provider has a wide range of IT consumers requesting services in a regulated industry. For example, a researcher may request a fresh instance of a statistics package with access to a particular set of data in a secure environment. There exist many different billing groups and many regulations that need to be followed. As a result, complex service requests and multilevel policy requirements require highly skilled IT staff to respond.

The Cisco CloudCenter solution provides an automated workload deployment solution that includes governance and controls guiding the automation. Skilled IT staff can create automation artifacts and use tags to apply various policy requirements. Then lower-skilled IT staff, or even researchers and other users requesting services, can use a simple central interface to request deployment. The use of repeatable automated deployment guided by governance rules ensures cost-effective service delivery that meets complex regulatory requirements.

Benefit: Multicloud governance reduces business risk that can be an issue with a multicloud strategy, and improves security by consistently applying IT policies and controls in a way that guides user decisions and achieves consistent and predictable results.

Multicloud governance

With Cisco CloudCenter, taking control doesn't mean adding barriers to innovation. Multicloud governance can guide who can do what, where, and when without laying onerous control process on those who just want to get their work done.

Tag-based policies help users make good choices without needing to understand a wide range of underlying IT policies. Tags can guide placement and network configuration decisions. Tags can activate suspension and deletion policies. Tags can set cost and usage limits. And all of this is made possible without users needing to know the details of the underlying IT policies.

Deployment environments are resources that consist of one or more associated cloud regions and cloud accounts set aside for specific deployment needs, as seen in Figure 4. Environments can be created to limit instance sizes, dictate network choices, and hide technical complexity from end users. Users can simply deploy blueprints to deployment environments, and deployment environments can be shared with multiple users.

Figure 5. Editing a deployment environment
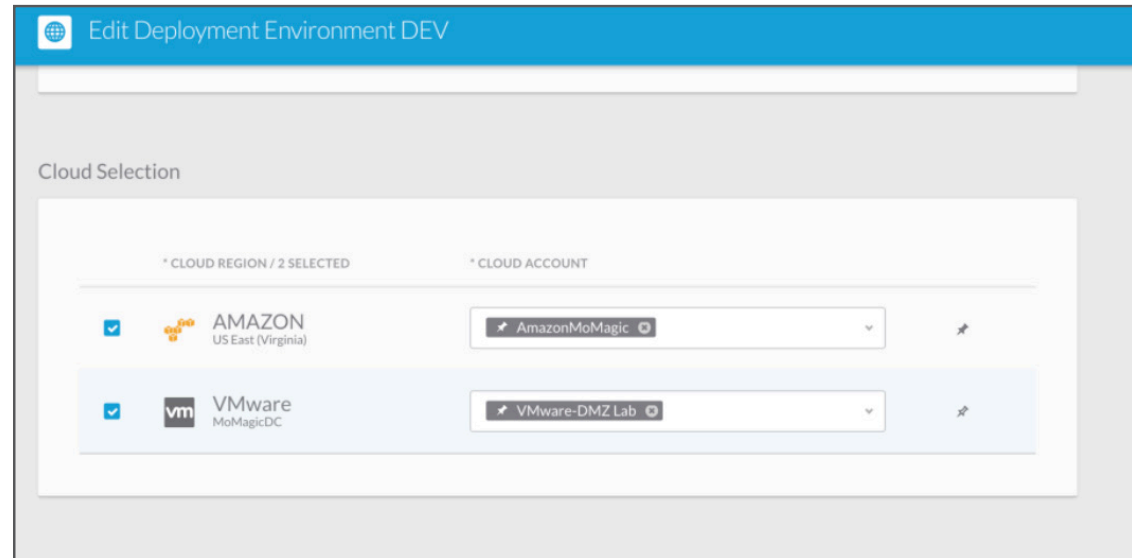
Security profiles define a policy that can contain ingress and egress rules and be dynamically attached to a workload deployment. You can create a security profile so that a workload deployed to a development environment has more open ports than the same workload deployed in a production environment.

UK Government Agency

CIO develop a strategy to streamline and standardize IT services delivered to 10 different agency departments, and move the majority of IT to the public cloud, including AWS and Microsoft Azure. They wanted to give consumers flexibility to use both standard infrastructure services and cloud-specific application services. But they also wanted to ensure cost controls in a constrained budget environment.

The Cisco CloudCenter solution delivers a faster and more standardized response to service requests. It also uses automation to optimize consumption and avoid unnecessary cloud fees. As a result, cloud costs were reduced, and visibility tied costs back to individual departments within an agency.

Optimize consumption of services

With pay-per-use cloud services, it doesn't make sense to pay for services that don't add business value. Cisco CloudCenter can leverage the power of automation to optimize consumption and cut your monthly cloud bill.

Usage and cost plans set hard limits on how much users, teams, or projects can consume services. Limits can be set on the number of virtual machines or the number of hours virtual machines are deployed, or on spending in the cloud.

Deployment policies, including aging, scaling, and suspension policies, provide a powerful way to use automation to stop consuming cloud services when they aren't being used.

Aging policies, as seen in Figure 5, terminate a running workload after a designated period or for a certain amount of cost.

Figure 6. Aging policy with a hard cost limit

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Summary

With a multicloud management platform like Cisco CloudCenter, you get flexibility to implement a multicloud strategy and get the benefit of speed and scale while reducing risk and cost, all backed by Cisco® Advanced Service and Support.

Visit the product page or speak with your Cisco or partner representative today. www.cisco.com/go/cloudcenter

Suspension policies place workloads in a suspended state on a set schedule to avoid accruing cloud service costs. For example, a developer environment may be suspended during nights and weekends and resumed at the start of each business day.

Scaling policies increase or decrease the number of deployed workload instance based on usage metrics. Users can deploy "just enough" cloud resources with confidence that additional service costs will be incurred only when usage requires more resources to be deployed.

Benefit:

Consumption optimization uses automation to avoid paying for cloud services that aren't delivering value to significantly cut monthly cloud bills.