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Cisco® Application Centric Infrastructure (ACI) and CliQr CloudCenter™ Integration and Solution Overview

Cisco Application Centric Infrastructure (ACI) simplifies and accelerates the entire application deployment lifecycle for next-generation datacenter and cloud deployments.

In the Cisco ACI framework, applications guide networking behavior, not the other way around. Predefined application requirements and descriptions (application profiles) automate the provisioning of the network, application services, security policies, tenant subnets, and workload placement. By automating the provisioning of the complete application network, Cisco ACI helps organizations lower costs, reduce errors, accelerate deployment, and make the business more agile.

Cisco ACI, when combined with CloudCenter application-centric cloud management platform, paves the way for a transformative solution that delivers the promise of true end-to-end management of workloads in a secure and optimized ACI-powered cloud environment.

The joint solution enables numerous advantages:

- A highly automated, one-click, end-to-end provisioning of infrastructure (compute, storage, and network) as per the application's requirement, following the best-practices guidelines of the infrastructure. The solution creates a multi-tenant cloud platform that enables deployment of any application—from simple workloads to complex application stacks—on an ACI-powered datacenter environment.
- An application-centric policy model that decouples policy (security, auditing, service-level agreements [SLAs], user experience, etc.) from network topology and supports application mobility.
- Application deployments that are secured with the CliQr CloudCenter governance policies and enforced with ACI's policy-based forwarding capabilities, including strong isolation and automated insertion of firewalls and security appliances into the application traffic flow.
- End-to-end visibility and control that is delivered on a single graphical dashboard, all in one logical environment.

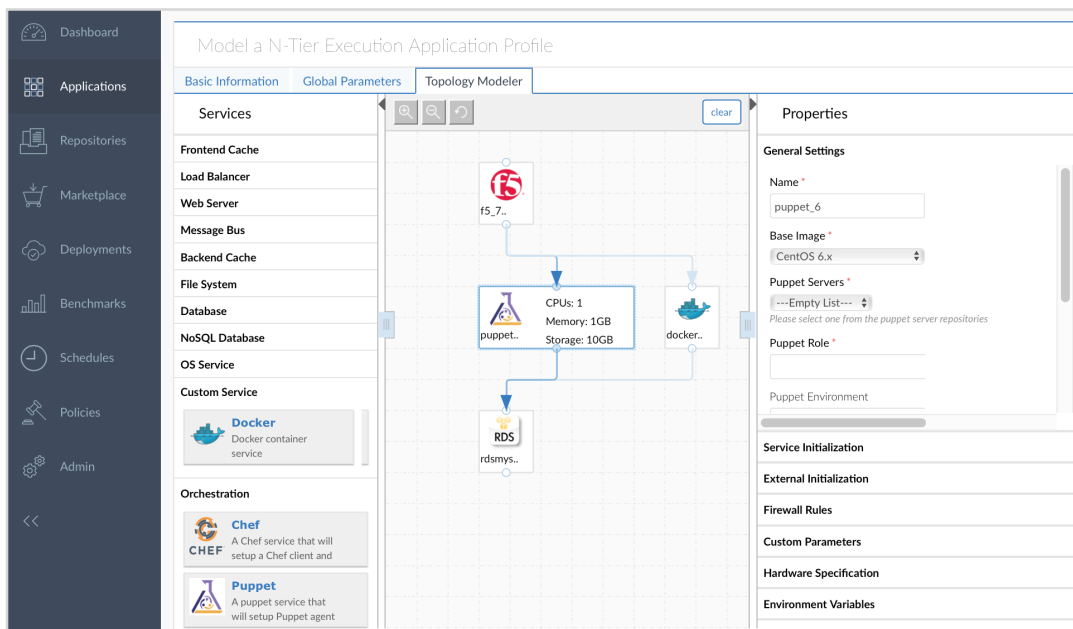
With today's collection of diverse and constantly changing pools of infrastructure resources, technologies required to manage these environments must move beyond Software Defined Networking (SDN) so they are able to be dynamically conformed by the application itself—they are "application defined."

CloudCenter coupled with Cisco's ACI networking solution takes the next step forward in management technology, providing an innovative way to model, deploy, and manage applications across agile pools of IT resources. CliQr's CloudCenter acts as a tool that enables users to define the end state of their network with the given modeled application.

Working Together

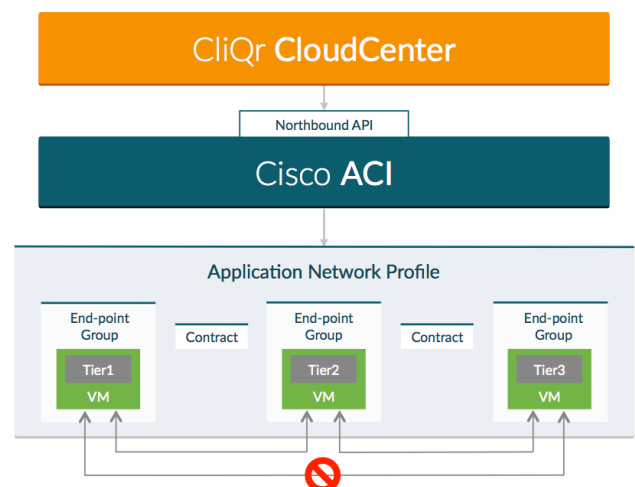
The integration of the two solutions produces a true application-centric management platform for users to model, migrate, and manage the entire lifecycle of new and existing applications along with its full complement of required resources—onto any cloud or datacenter environment.

The combined solution provides a single platform and intuitive graphical modeling environment that integrates the network configurations and policies from Cisco's ACI with application topologies, policies, and governance rules from CliQr's CloudCenter into a single application profile.



If a user chooses to deploy the application profile to an environment managed by Cisco ACI, the CloudCenter automatically and seamlessly creates policy objects based on the modeled application, and calls Cisco ACI northbound API to automate network policy objects that deliver the full power of a software defined network.

CloudCenter automates the end-to-end provisioning of compute, storage, ACI network configurations and settings, and security resources—along with full deployment of the application and all of its components (middleware and application data/packages)—based on the application's specific needs, characteristics, and dependencies. CloudCenter and ACI work together without installing plugins, without creating environment specific scripting, or modifying any application code.



Common Use Cases

Securely deploy N-tier application

CloudCenter users can self-service deploy an N-tier application in a single ACI network pod, with automated Cisco ACI policy object creation that guides network placement with white listed communication between tiers. Users don't need any knowledge about SDN technology, or underlying network configuration and policies, in order to get highly secure fully automated deployment.

Stretched Application Deployment

The "Profile once, deploy anywhere" capabilities of CloudCenter extend to stretched deployment topologies. When users deploy, they normally choose a single deployment target datacenter, private or public cloud location that is available to them based on role, governance rules, and other controls. But they also have the option to choose a stretched deployment, and that give them the ability to select specific target sites for each individual tier.

- CloudCenter can deploy N-Tiered applications to a datacenter with multiple Cisco ACI pods.
- CloudCenter can deploy N-Tiered applications to a Cisco ACI fabric that is stretched across geographically dispersed sites and over long distances.
- CloudCenter can deploy N-Tiered applications across a Cisco ACI pod and a public cloud.

CloudCenter and ACI together offer a truly unique and flexible solution for addressing the cost, security and agility requirements for increasingly complex enterprise workloads.

Benefits of the CloudCenter and Cisco ACI Solution

Efficiencies

- Simplify and accelerate the deployment and management of new and existing applications onto any cloud or datacenter environment.
- Mask the complexity of increasingly diverse infrastructure environments and related management challenges.
- Graphically model any new or existing application enabling the automatic provisioning of all required infrastructure resources, network configurations and policies, and the installation of the entire application stack and dependent artifacts.
- Streamline deployment and management of application workloads to support hybrid datacenter and cloud use cases, including Cross-Environment Release Management/DevOps, High Availability, Disaster Recovery, and Capacity Augmentation/Bursting.

Security

- The combined solution leads to new levels of network security previously not possible. The unique coupling of application topologies, app stack services, network configurations, and settings provides end-to-end network isolation per both application deployment and individual application tier.

Performance

- Generated by CliQr's application profile, detailed information about the application's topology and its full stack of services, combined with tag-based governance rules, work with ACI to optimize network traffic to improve application performance. For example, for an application deployment marked as "production" (as opposed to "development"), the network traffic would have a higher priority.

Visibility and Control

- The combined solution provides continuous monitoring and a user interface dashboard that provides visibility and control from the application down to the network, as well as the infrastructure deployment environment from the perspective of the application and its requirements. Aggregating infrastructure, network, and application-specific performance and cost metrics, the combined solution gives user visibility a true application health status and specific management capabilities, including alerts and financial control.

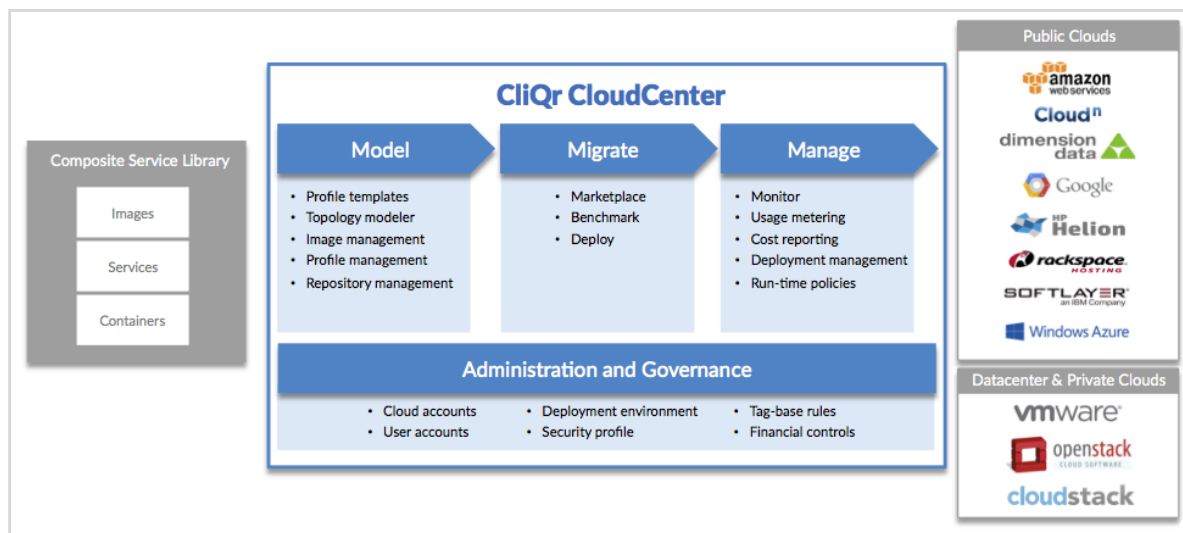
Cisco Application Centric Infrastructure

Cisco Application Centric Infrastructure (ACI) is an innovative architecture that radically simplifies, optimizes, and accelerates the entire application deployment lifecycle. Cisco ACI uses a holistic systems-based approach, with tight integration between physical and virtual elements; an open ecosystem model; and innovation-spanning application-specific integrated circuits (ASICs), hardware, and software. This unique approach uses a common policy-based operating model across ACI-ready network and security elements (computing, storage in future), overcoming IT silos and drastically reducing costs and complexity. Cisco ACI redefines the power of IT, enabling IT to be more responsive to changing business and application needs, enhance agility, and add business value.

CloudCenter Application Centric Hybrid Cloud Management

CliQr's CloudCenter is a single multi-user, multi-tenant application-centric management platform. It allows users to model, migrate, and manage new and existing applications, data, and related artifacts—from any datacenter or cloud environment—portably to and between any datacenter or private and public cloud.

With CloudCenter, graphical application profiles simply capture an application's topology, requirements, and dependencies, driving infrastructure environments to dynamically provision best-practices resources and services. These profiles automate the deployment and comprehensive management of the full application onto any datacenter or cloud environment.



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