

Cisco CloudCenter Solution with Cisco ACI

Application-Centric Infrastructure with Application-Centric Management

Software-defined networking (SDN) is revolutionizing data center management. Orchestrated control of network resources through an API enables highly programmatic and policy-based automation that delivers exceptional speed, efficiency, and security.

Cisco ACI is the world's leading SDN solution. It can create and configure network and communication policies to fit the unique needs of each application dynamically and on demand. However, to experience the full power and value of SDN, you need an automated management layer to call its northbound APIs.

Cisco CloudCenter is an application-centric management layer that integrates transparently with Cisco ACI:

Automated deployment: Users get self-service on-demand deployment and management of new and existing applications with fully integrated Cisco ACI network policy and configuration.

Click to use: Gain the security and efficiency of network microsegmentation without the need to program, modify application code, write cloud-specific scripts, or have special network expertise.

Full stack: Fully automated infrastructure provisioning, application-tier deployment, and comprehensive network policy configuration using the unique Cisco CloudCenter application profile technology.

Experience the full power of Software-Defined Networking

Cisco CloudCenter™ is a hybrid cloud management platform that securely provisions infrastructure resources and deploys application components and data across more than 19 data center, private cloud, and public cloud environments. With Cisco CloudCenter and Cisco® Application Centric Infrastructure (Cisco ACI™) together, users get fully automated self-service deployment of existing and new applications, with microsegmented network security that supports both single-site and stretched application configurations.

Benefits

- **Agility:** Accelerate application development and release for new or existing applications with integrated infrastructure and application and network automation—all based on the needs of the application.
- **Security:** Use a policy-based interconnect with white-list network isolation at either the application or individual tier level for both single-pod and stretched deployments. Automate the removal of application-specific policies when an application is deleted.
- **Efficiency:** Capture infrastructure and application deployment and management requirements in a single deployable blueprint called an application profile. You don't need any environment-specific scripting or separate infrastructure and or automation tools.
- **Performance:** Optimize network traffic to improve performance based on application priority. For example, you can prioritize the production workload over the development workload.
- **Transparent integration:** Cisco CloudCenter™ automates Cisco® Application Policy Infrastructure Controller (APIC) security and network policies without the need for programming. You don't need to install any plug-ins or make any application coding changes.

Automated and secure application deployment

Cisco CloudCenter and Cisco ACI support three primary use cases:

- **Securely deploy N-tier applications:** Users can deploy an N-tier application with fully automated network and security configurations using a self-service system. Users don't need any knowledge about SDN technology, programming languages, or underlying network configurations and policies.
- **Deploy stretched applications:** Users can choose to deploy different application tiers to different pods or sites to gain cost, security, and high-availability and disaster-recovery benefits. Placement decisions can be guided by a rules engine for a simplified user experience. For example, a Health Insurance Portability and Accountability Act (HIPAA)-compliant application can be tagged so that users can choose only a Cisco ACI managed data center for the database tier.
- **Migrate applications to a Cisco ACI environment:** Users can take applications from public clouds or environments that aren't enabled for Cisco ACI and deploy them to a more secure Cisco ACI managed data center. The joint solution fully automates network configuration optimized for the needs of the application.

Working together

Cisco CloudCenter and Cisco ACI work together in a transparently integrated workflow without the need to install plug-ins, create environment-specific scripts, or modify any application code (Figure 1).

- **Model an application profile:** A service manager can use the Cisco CloudCenter graphical modeling tools to create a cloud-independent application profile and then share it with specific users or publish it to a marketplace.
- **Use self-service deployment:** Role- and user-based access controls, paired with tag-based governance, help users choose an appropriate deployment environment that optionally includes Cisco ACI.
- **Create and deploy Cisco Application Policy Infrastructure Controller (APIC) policy objects:** If a user chooses an environment that is part of a Cisco ACI fabric, Cisco CloudCenter automates creation of the appropriate policy objects and calls the Cisco ACI northbound representational state transfer (REST) API to create networks specifically for the application.
- **Provision infrastructure:** Cisco CloudCenter calls infrastructure APIs to provision computing, memory, and storage resources in the appropriate network segment.

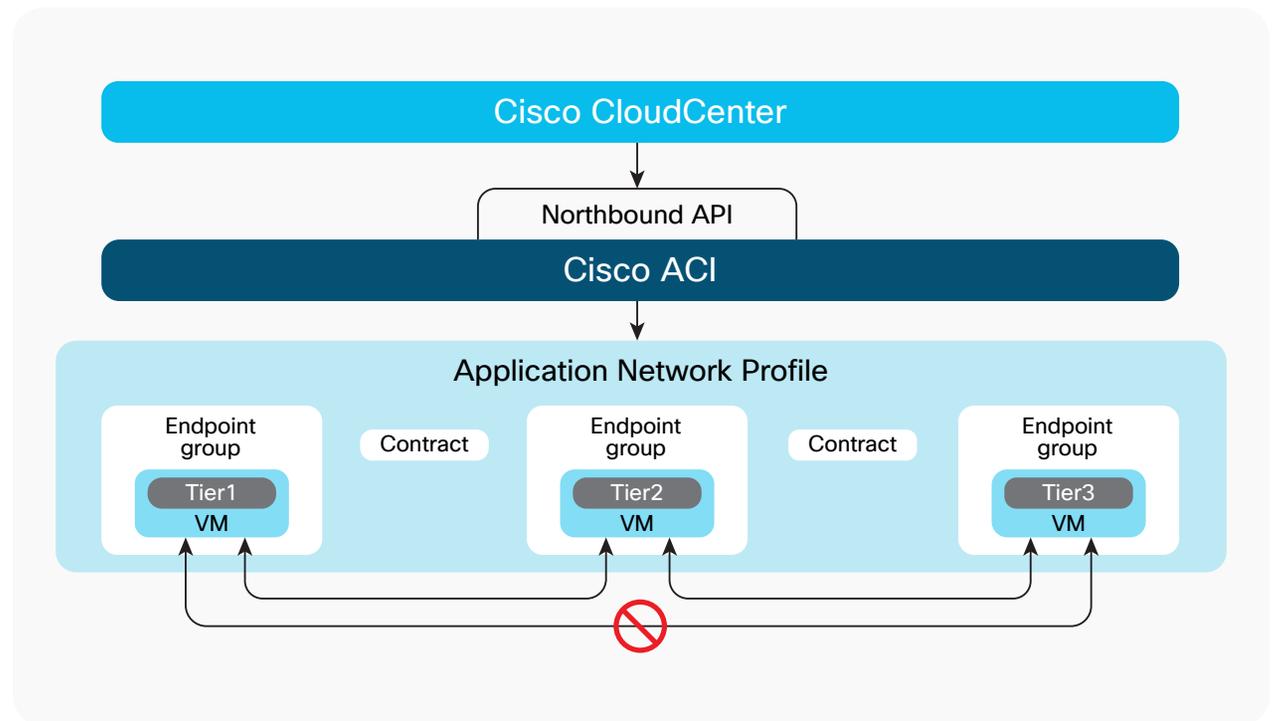
ACI with CloudCenter bundle

Cisco CloudCenter and Cisco ACI are available together as a promotional bundle for use exclusively in your Cisco ACI environment. When ordering Cisco ACI, select the CloudCenter option and add a CloudCenter Manager subscription, and you will receive a single CloudCenter orchestrator and subscription for 350 virtual machines at no cost. The use of CloudCenter will be limited to workloads deployed in a single Cisco ACI environment.

You can add more orchestrators for wider use in other on-premises and public cloud environments, subject to separate purchase and different pricing.

- Deploy application tiers: Cisco CloudCenter deploys and orchestrates all application components based on the topology and dependencies modeled in the application profile.
- Perform ongoing management: Both users and administrators can review the deployment progress and take action to help ensure proper configuration.
- Block east-west traffic: If a tier is manually or automatically scaled, Cisco CloudCenter updates Cisco ACI policies to block east-west traffic and confine breaches to a single device if a device is compromised.
- Perform end-of-life actions: Infrastructure and network policy objects are automatically deleted, preserving the integrity of the network and conserve infrastructure resources.

Figure 1. Cisco ACI and Cisco CloudCenter create Integrated Network-Aware applications



Hybrid IT options

Cisco CloudCenter provides preinstalled support for more than 20 environments and regions (Figure 2), including:

- Data center: Management solutions include Cisco UCS® Director, Cisco ACI, VMware vCenter, and other software-defined infrastructure management solutions.
- Private cloud: A wide range of OpenStack implementations as well as VMware vCloud Director, and Microsoft Azure Pack are supported.
- Public cloud: Supported services include Amazon Web Services (AWS) and AWS GovCloud, Alibaba Cloud, Microsoft Azure and Azure Government cloud, Google Cloud Platform, Dimension Data platform, IBM Bluemix, Rackspace platform, and VMware vCloud Air, among others.

Figure 2. Cisco CloudCenter supports a broad range of Private and Public Cloud Platforms

