

Cisco and Citrix: Build Application Centric, Application Delivery Controller-Enabled Data Centers

What You Will Learn

Cisco® Application Centric Infrastructure (ACI) integrates Citrix NetScaler Application Delivery Controller (ADC) appliances to reduce deployment complexity and better align applications with dynamic business requirements in existing and next-generation data centers.

Challenges

As businesses look to IT as a point of strategic differentiation, agility in the data center becomes more critical than ever. Fundamental to this change is the capability of IT to respond quickly to changing business requirements. Applications serve as the core of any business, but applications are only as agile as the infrastructure on which they run. With today's data center infrastructure, this rule can mean waiting weeks for an application change.

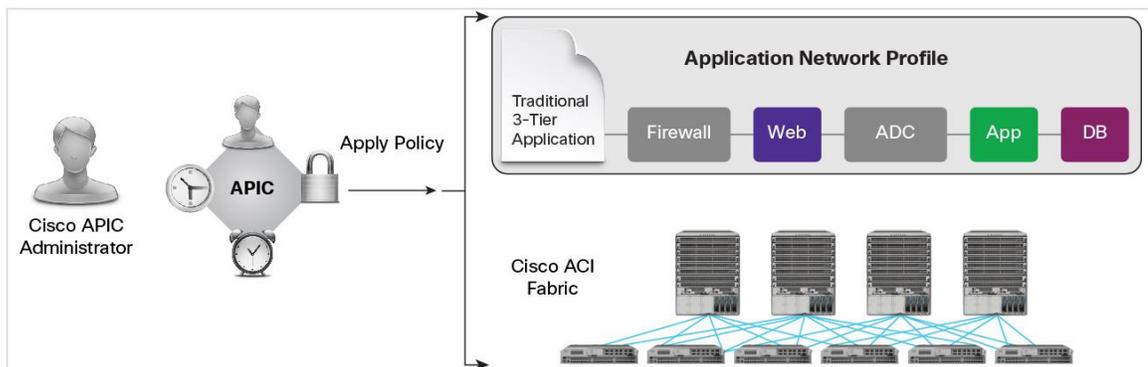
The adoption of server virtualization has reduced data center costs; however, a server-specific view of the data center is limited. The data center is still a mix of bare-metal and virtual machines. Application agility, mobility, and rapid deployment require the data center infrastructure to dynamically respond to application needs as a result of changing business requirements.

Cisco ACI is the foundation of an application-based data center. Citrix NetScaler ADCs deliver application insight to the network. Together, Cisco ACI and ADC-enabled applications can dynamically scale and migrate throughout data centers on demand and with an automated approach based on application-specific policies.

Solution Overview

Achieving the vision of a truly agile, application-based data center requires a sufficiently flexible infrastructure that can rapidly provision and configure the necessary resources independent of their location in the data center. With Cisco ACI, this is achieved with the Cisco Application Policy Infrastructure Controller (APIC), a centralized policy management and control point for the entire infrastructure (Figure 1).

Figure 1. Cisco ACI and Citrix NetScaler ADC Solution



Cisco APIC addresses the two main requirements for achieving the application centric data center vision:

- Policy-based automation framework
- Policy-based service insertion technology

A policy-based automation framework enables resources to be dynamically provisioned and configured according to application requirements. As a result, core services such as firewalls and Layer 4 through 7 switches can be consumed by applications and made ready to use in a single automated step.

A policy-based service insertion solution automates the step of routing network traffic to the correct services based on application policies. The automated addition, removal, and reordering of services allows applications to quickly change the resources that they require without the need to rewire and reconfigure the network or relocate the services. For example, if the business decision is made to use an application firewall found in a modern ADC as a cost-effective way of achieving PCI compliance, administrators would simply need to redefine the policy for the services that should be used for the related applications. The Cisco APIC can dynamically distribute new policies to the infrastructure and service nodes in minutes, without requiring the network be manually changed.

Citrix NetScaler as the Layer 4 Through 7 Service

Citrix NetScaler ADC provides Layer 4 through 7 services such as load balancing, application acceleration, and application security. Citrix NetScaler powers the world's largest cloud networks and is a leader in the enterprise networking market for both physical and virtual network appliances.

The unique joint Cisco ACI and Citrix NetScaler solution improves data center operations and application deployment, using the Cisco APIC as the central policy control and management station and Cisco ACI service-insertion technology to direct traffic to the appropriate service nodes.

The main benefits include:

- **Central point of network control with ADC service policy coordination and automation:** The Cisco APIC acts as a point of configuration management and automation for NetScaler SDX, MPX, and VPX appliances; tightly coordinates the ADC service delivery with the network automation; and provides end-to-end telemetry and visibility of service-aware applications and tenants.
Scalable and elastic architecture for physical and virtual appliances: Cisco ACI defines a policy-based service insertion mechanism for both physical and virtual ADC appliances, providing full lifecycle service management based on workload instantiation and decommissioning.
- **Investment protection:** Cisco ACI and Cisco APIC are fully compatible with existing ADC networks, preserving existing service operation models and using open standards protocols.
- **Open ecosystem for service integration:** Cisco and Citrix are guiding the IETF standard for the Network Service Header (NSH) Protocol, with the promise of agile and elastic service delivery capable of supporting the movement of service functions and application workloads.

Conclusion

As businesses quickly move to make the data center more agile, application centric automation and virtualization of both hardware and software infrastructure become increasingly important. Cisco ACI builds the critical link between business-based requirements for applications and the infrastructure that supports them. Citrix NetScaler ADC connects infrastructure and applications and makes that insight available to the Cisco APIC through deep integration.

For More Information

- Cisco ACI strategy: <http://www.cisco.com/go/aci>
- Citrix: <http://www.citrix.com/netscaler/cisco>



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