

Cisco Application Control Engine in the Virtual Data Center: Simplify Provisioning and Maintenance

Cisco Application Control Engine management integrated with VMware vCenter simplifies provisioning and streamlines maintenance operations.

What You Will Learn

Data centers are evolving from a model in which a physical device is deployed for applications to a virtualization model that abstracts the underlying data center hardware. Although many benefits are gained by migrating to a virtual data center, deploying a virtual data center infrastructure also involves some challenges. The Cisco® Application Control Engine (ACE) product family addresses many of the core challenges facing the virtual data center. The Cisco ACE in the Virtual Data Center (AVDC) solution addresses application deployment in a VMware environment.

Challenge

By far the most common activities related to administration of application servers are the initial creation of the servers and applications, the provisioning of traffic flows to the applications and servers, and the ongoing timely maintenance of the applications running on the servers.

While widespread use of virtual machines based on VMware as the application servers brings many significant and valuable advantages, it also introduces an additional layer of management and thus additional complexity to provisioning and monitoring tasks. To be able to gain the advantages of virtualization, organizations need simplified and secure methods for delegating common maintenance tasks and monitoring applications. Each of the following challenges of virtualization must be overcome:

- **Complexity in provisioning tasks:** The integrated capability within VMware vCenter to add a newly created virtual machine to an existing server farm simplifies the end-to-end provisioning of application servers, decreasing deployment time.
- **Low visibility:** Application owners and server administrators can see the traffic flow going through the Cisco ACE to their servers, saving them from having to open other tools to use in the administration and troubleshooting of their applications and services.
- **Change-control complexity:** With the Cisco ACE VMware vCenter plug-in installed, virtual machine maintenance and traffic management maintenance tasks can both be performed from a single pane. The normal tasks of removing target servers from the traffic flow (suspension) and managing servers can now be performed from one location instead of two, and by one process instead of two separate processes.
- **Control of securely delegated access:** Since the Cisco ACE VMware vCenter plug-in provides a transparent interface to the Cisco ACE environment through the Cisco Application Networking Manager (ANM), the full strength and security of Cisco ANM role-based access control (RBAC) can be used. As a result, individual users can be restricted to see only those servers that they have rights to manage and allowed to perform only those Cisco ACE tasks for which they are authorized.

Business Benefits

Cisco ACE in the virtual data center meets these challenges, making it possible to gain the advantages of application deployment in a VMware environment.

- **Faster application rollout:** Simplified provisioning using Cisco AVDC reduces the number of steps involved in provisioning, which saves some actual processing time. More important, the simplified provisioning, along with securely delegated change control for the most commonly performed server administration load-balancing tasks, reduces the overall time required to complete application deployment and tear-down.
- **Smooth data center transition to virtualization:** In phase 1 of Cisco AVDC, Cisco directly supports the transition from physical to virtual servers with the industry's only virtualized load-balancing and application delivery solution (Figure 1). Later phases will be based on this offering, extending Cisco AVDC intelligence to achieve greater virtual data center resilience, performance, and capability.
- **Easier troubleshooting of virtual server environments:** The VMware vCenter plug-in enables an operator to view application traffic flow at the point of the application delivery controller (the Cisco ACE). This capability makes routine operations and troubleshooting tasks much easier to perform quickly and effectively.
- **Sustained scaling:** As data centers evolve from a physical-device model based on dedicated hardware to support a given application or customer to a model that uses virtualization to abstract the underlying data center hardware, Cisco AVDC enables greater scaling without additional costs and resources for administration and management.
- **Reduced risk:** By making the relevant portions of the virtualized load-balancing and application delivery services available to authorized application owners and server administrators, Cisco AVDC reduces risk in provisioning and maintenance change control.

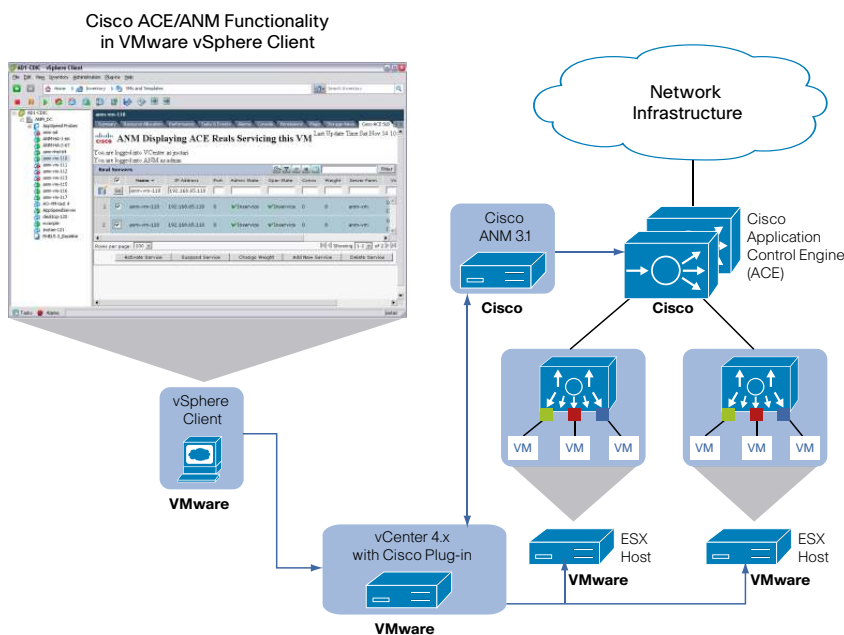
Solution

Cisco AVDC delivers simplified provisioning of application delivery services by integrating Cisco ACE with VMware vCenter through the implementation of a VMware vCenter plug-in that securely communicates with Cisco ANM 3.1.

From within VMware vCenter, using the functions integrated by the plug-in, the user can:

- Deploy virtual machines as real servers into an existing server farm
- Monitor application traffic flow for virtual machines through the Cisco ACE
- Securely activate and suspend application traffic flows through the Cisco ACE for the associated real servers

Figure 1. Phase 1 of Cisco AVDC



This single-pane provisioning, application traffic monitoring, and operations management streamlines the deployment of services and the maintenance operations for applications and virtual machines. You do not need to undertake any separate integration or management application development project to obtain these functions; they are all part of the Cisco ANM 3.1 offering.

Intelligent Networking

The Cisco AVDC solution aligns with Cisco's vision of intelligent networking that:

- Provides a foundation for communications and IT
- Supports business processes and secures infrastructure
- Accelerates innovation into your organization
- Reduces complexity and lowers total cost of ownership (TCO)

Cisco AVDC's securely integrated infrastructure results in faster deployment of services and applications while enabling granular policy controls to couple the network with business processes and services. Cisco AVDC's delivery of an integrated management system of VMware and Cisco ANM means that customers do not have to undertake custom integration. The result is reduced complexity and lower TCO, with an immediate reduction in operating expenses and systems integration costs.

Why Cisco?

Over the past 2 years, thousands of customers have turned to Cisco data center technologies to scale and simplify their data centers, and the number is growing as customers globally and across industries realize that Cisco and its ecosystem partners have full data center solutions available for implementation today. Cisco is further enhancing its existing portfolio of Data Center 3.0 solutions, expanding customers' choices and flexibility. Cisco's innovations in virtualization, network, storage, and computing give customers even more choice in their architectures and enable them to take advantage of multiple technology entry points to unified fabric, 10 Gigabit Ethernet migration, and unified computing. Cisco AVDC is another example of this innovation that further simplifies the provisioning and operations of virtual machines.



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