

## Cisco Application Networking Manager (ANM), 4.1 Plug-in for VMware vCenter

*Cisco Application Networking Manager (ANM) easily integrates with VMware vCenter to show mappings between Virtual Machines (VMs) and load balancers, load balancing statistics, and how load balancing is applied to each Virtual Machine*

Cisco Application Networking Manager (ANM) 4.1 is a multi-device manager for Cisco ACE Application Delivery Controllers. ANM 4.1 includes a plug-in for VMware vCenter. The ANM plug-in for vCenter enhances vCenter by adding the following functions:

- Discovering mappings between vCenter VMs and ACE Real Servers
- Activate or suspend ACE load balancing to VMs during maintenance
- Add and remove VMs from ACE load balancing policies
- Change the load balancing weight for individual VMs
- Monitor ACE Application Delivery metrics and health for VMs

Installation is quick and easy, resulting in a single user interface that can control VMs and ACE application delivery.

Miercom engineers were shown how ANM integrates with vCenter to simplify virtualized data center management. Highlights of the ANM vCenter plug-in are discussed here.

### Simplicity

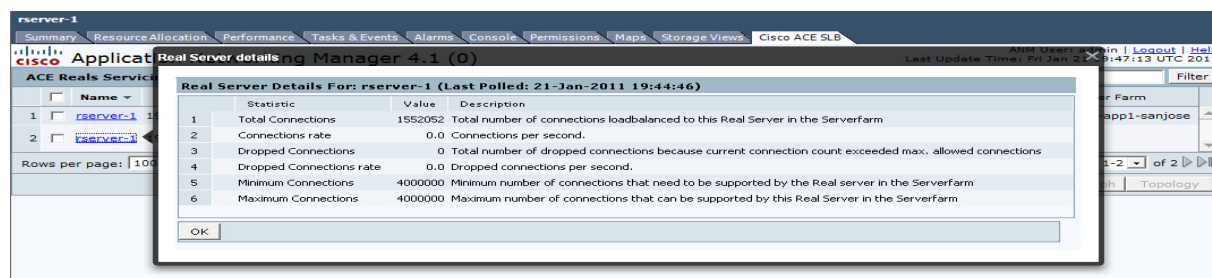
Installing the Cisco ANM plug-in into VMware

**Cisco ANM plug-in for VMware vCenter allows server and application administrators to directly manage application delivery for their VMs.**

vCenter is simple. Once an ANM user enters the IP address of their vCenter server, a username, and a password, they will notice some new options available within vCenter. These options include a new tab in the vCenter GUI for Cisco ACE, and new options in the vCenter right-click menus.

### Mapping VMs to Load Balancing Policies

Cisco ANM, when integrated with vCenter, discovers the mappings between VMs and ACE Real Servers. The plug-in then becomes immediately useful, without having to manually create mappings. vCenter administrators can easily see a VMs assigned load balancing policies. The ANM plug-in identifies the name, IP address, and port number of each ACE Real Server pointing at the VM; as well as, VIP address, and operational information.



**Example of Application Networking Manager, 4.1 providing load balancing statistics through an intuitive interface.**

## Application Delivery Statistics for VMs

The Cisco ACE Load Balancing tab within vCenter shows application delivery metrics for any selected VM. The number of concurrent connections, connection rate, dropped connections, dropped connection rate, and minimum/maximum allowed connections are displayed and frequently updated. *See the screen shot on the previous page.*

## Suspending and Activating a VM

The most commonly performed ACE configuration change is the suspension and activation of a Real Server. The action either instructs the application delivery controller to stop sending traffic to a specific server during maintenance; or, to resume sending traffic to a specific server once maintenance is completed. Within the ACE Server Load Balancing (SLB) tab in vCenter, there are three options for suspending a VM's load balancing participation. These include Graceful, Suspend, and Suspend w/Connections Cleared, each serves a specific purpose.

## Adding and Removing a VM

VMs can be added to or removed from an ACE load balancing policy within vCenter, with just a few clicks. VM name and IP address are pre-populated in the wizard, eliminating any possibility of error. Once the VM is added to an ACE load balancing policy, the new mapping appears under the ACE SLB tab in vCenter. A VM is removed from an ACE load balancing policy simply by pressing the trash can icon.

## Changing the Load Balancing Weight of a VM

In many circumstances, it becomes necessary

to manually change the weighting of the traffic load to a VM. This action causes the application delivery controller to send proportionally more or less traffic to the VM, as compared to the other VMs in the same policy. Changing the load balancing weight of a VM can be done without leaving vCenter, simply by clicking on the VM and entering a new weight for the VM. Once the weight has been changed, the ACE SLB tab within vCenter can then be used to observe the changes in traffic distribution.

## Bottom Line

Overall, Miercom found that the Cisco ANM 4.1 plug-in for VMware vCenter simplifies the management of virtualized data centers for vCenter users. Traditionally, all of the tasks outlined in this document would require the coordination of multiple silos of engineers. During server maintenance, a server or application administrator would need to request assistance from a network administrator for changes to the ACE configuration. Once maintenance was complete, they would again need the help of the network administrator to again make changes to the ACE configuration. The same type of coordination was previously required to complete all of the tasks outlined in this document. Server and application administrators also did not have any insight into the metrics being produced by the application delivery controller. With the addition of the ANM plug-in for vCenter, these restrictions disappear. Server and application administrators are able to perform their day to day activities such as VM maintenance, or adding/removing VMs from an application, without needing the assistance or guidance of a network administrator. They also gain valuable insight into the application itself, by viewing application delivery metrics for each of their VMs, seamlessly from one dashboard.

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