Managing VMware Datastore Clusters

This chapter contains the following sections:

About VMware Datastores

A datastore is the storage repository for virtual machines and their data. A datastore can be either a Network File System (NFS) or Virtual Machine File System (VMFS). Cisco UCS Director provides a task library to create datastores from physical storage. Newly created and existing datastores are then used in VDC storage policies to provide a policy-based framework, from which you can select an appropriate datastore during VM provisioning. Datastores can also be identified as ISO image repositories to aid in ISO-based VM provisioning.

About VMware Datastore Clusters

A VMware datastore cluster is a collection of datastores with shared resources and a shared management interface. When you create a datastore cluster, you can use VMware vSphere Storage DRS to manage storage resources.

Integrating VMware Datastore Clusters With Cisco UCS Director

Cisco UCS Director allows you to manage VMware datastore clusters. You can add, edit and delete datastore clusters. Once a datastore cluster is added, the following operations are supported in Cisco UCS Director:

- The datastore clusters are available along with datastores during Clone VM, Clone Template and Create New VM operations. If datastore clusters are selected, SDRS recommends the most suited datastore for VM provisioining.

- The datastore clusters can be selected while adding a VMware Storage policy.

- DRS affinity rules can be added to the datastore cluster.

  For more information on using DRS affinity rules, see About VMware Distributed Resource Scheduler.

Adding Datastore Clusters

Procedure

Step 1 On the menu bar, choose **Virtual** > **Storage**.

Step 2 In the **Storage for All Clouds** pane, click the VMware cloud.

Step 3 Click the **Datastore Clusters** tab.

Step 4 Click **Create**.

Step 5 In the **Create Datastore Cluster** dialog box, complete the fields including the following:

a) You can check the **Enable Storage DRS** check box to enable Storage DRS to manage storage resources for the selected datastores.

b) You can check the **Enable I/O Metric for SDRS recommendations** for Storage DRS to recommend the most suitable datastore for VM provisioning.

c) Choose the automation level. If you choose **Manual**, the placement and migration recommendations from Storage DRS are not run until you manually apply the recommendation. If you choose **Fully Automated**, the placement and migration recommendations from Storage DRS are run automatically.

Step 6 Click **Submit**.

Viewing Datastore Cluster DRS Rule Reports

Procedure

Step 1 On the menu bar, choose **Virtual** > **Storage**.

Step 2 In the **Storage for All Clouds** pane, choose the VMware cloud.

Step 3 Click the **Datastore Clusters** tab.
All the datastore clusters available in Cisco UCS Director are displayed.

Step 4 Choose a datastore cluster.

Step 5 Click **View Details**.

Step 6 Click the **SDRS Rules** tab to view DRS rules associated with the datastore cluster.
The DRS rules report displays the following types of rules:

- Inter VM Anti-Affinity Rules -- VM Anti Affinity.

- Intra VM Anti-Affinity Rules -- Anti Affinity.

- INTRA_VM_AFFINITY_ENABLED -- This rule represents the Intra VM Affinity enabled VMs.

- INTRA_VM_AFFINITY_DISABLED -- This rule represents the Intra VM Affinity disabled VMs.

Adding Datastore Cluster DRS Rules

Cisco UCS Director lets you add the following types of DRS affinity rules to a VMware datastore cluster:

- Inter-VM Anti-Affinity -- This rule specifies virtual machines that should never be on the same datastore.

- Intra-VM Anti-Affnity -- This rule specifies virtual disks, that are associated with a particular virtual machine, which must be on different datastores.

Procedure

Step 1	On the menu bar, choose **Virtual** > **Storage**.
Step 2	In the **Storage for All Clouds** pane, choose the VMware cloud.
Step 3	Click the **Datastore Clusters** tab. All the datastore clusters available in Cisco UCS Director are displayed.
Step 4	Choose a datastore cluster.
Step 5	Click **View Details**.
Step 6	Click the **SDRS Rules** tab.
Step 7	Click **Add**.
Step 8	In the **Add Rule** dialog box, complete the following fields:

Name	Description
Name field	The name of the rule.
Type drop-down list	Choose the type of rule. It can be one of the following: • **VM Anti Affinity** -- Choose this option to add an inter-VM anti-affinity rule. • **VM Disk Anti Affinity** -- Choose this option to add an intra-VM anti-affinity rule.
Status drop-down list	Choose the status of the rule. It can be one of the following: • **Enabled** • **Disabled**

Name	Description
Select VM	Select the VM.
Select Disks	If the **VM Disk Anti Affinity** rule type is chosen, select the disks.
Proceed with Conflicts check box	Check the box to proceed with conflicts.

Step 9   Click **Submit**.

Enabling or Disabling Datastore Cluster DRS Rules

By default, when a Storage DRS rule is created, enabled, or disabled, the rule is created or updated, but not automatically applied. You can either run Storage DRS rules manually through VMware vSphere web client or wait until the scheduled period for the Storage DRS rule to run. You can modify the scheduled period to check imbalances under **Advanced Options** in the **Storage DRS Runtime Settings** using the VMware vSphere Web Client. By default the scheduled period is set for every 8 hours.

Procedure

Step 1   On the menu bar, choose **Virtual** > **Storage**.

Step 2   In the **Storage for All Clouds** pane, choose the VMware cloud.

Step 3   Click the **Datastore Clusters** tab.
All the datastore clusters available in Cisco UCS Director are displayed.

Step 4   Choose a datastore cluster.

Step 5   Click **View Details**.

Step 6   Click the **SDRS Rules** tab.

Step 7   Click **Enable Intra VM Affinity** or **Disable Intra VM Affinity**.

Step 8   In the **Enable VMDK Affinity Rule** or **Disable VMDK Affinity Rule** dialog box, select the VMs on which to enable or disable the rule.

Step 9   Click **Submit**.