Managing VMware Distributed Resource Scheduler

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About VMware Distributed Resource Scheduler

VMware Distributed Resource Scheduler (DRS) is a utility that balances computing workloads with available resources in a virtualized environment. DRS dynamically allocates the available resources amongst VMs based on predefined rules called VM affinity rules. These rules are defined at the cluster level. When a VM experiences an increased load, DRS automatically allocates additional resources by redistributing VMs amongst the physical servers in the resource pool. In addition to VM affinity rules, the placement of VMs across the cluster is based on vMotion compatibility. vMotion has its own set of requirements to move the VMs across the hosts. For example, if a VM that has a local network (not connected to any physical adapter) cannot be moved using vMotion.

Using DRS Affinity Rules

You can control the placement of virtual machines on hosts within a cluster by using affinity rules.

Affinity rules

An affinity rule defines a set of VMs that should run on the same host. This rule helps to keep the VMs together under a single host, which is compatible within the cluster.
Anti-affinity rules

An anti-affinity rule defines a set of VMs that should run on different hosts. This rule helps to separate the VMs and make sure that they are not under a single host.

VM-Host Rules

A VM-Host rule defines affinity and anti-affinity relationships between VMs and hosts. This rule helps to either keep or separate the VMs as a group.

Viewing DRS Rules

Procedure

Step 1 On the menu bar, choose Virtual > Compute.
Step 2 Click the Clusters tab.
Step 3 Double-click the cluster.
Step 4 Click the SDRS Rules tab.

Adding DRS Rules

Procedure

Step 1 On the menu bar, choose Virtual > Compute.
Step 2 Click the Clusters tab.
Step 3 Double-click the cluster.
Step 4 Choose the SDRS Rules tab.
Step 5 Click Add.
Step 6 In the Add Rule dialog box, complete the fields, including the following:
  a) Choose the type of rule. You can choose Keep Virtual Machines Together to add an affinity rule, Separate Virtual Machines to add an anti-affinity rule, or Virtual Machines to hosts to add a VM-Host affinity rule.
Step 7 Click Submit.

Using DRS Automation Levels

After you create a DRS cluster, you can customize the automation level for individual VMs to override the cluster's default automation level. The automation level can be set to any one of the following:
• Manual -- A DRS enabled cluster set to manual will make recommendations to the administrator but will take no action. It is the administrator's responsibility to review and execute the recommendation.

• Partially automated -- When the VMs are powered-on, they are automatically placed on the DRS recommended hosts. VM migrations caused by resource imbalance will be recommended by DRS but won't be moved automatically

• Fully automated -- DRS automatically places the VM during power-on and also during resource imbalance on the DRS recommended hosts.

**Editing DRS Automation Level**

**Procedure**

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>On the menu bar, choose <strong>Virtual &gt; Compute</strong>.</td>
</tr>
<tr>
<td>2</td>
<td>Click the <strong>Clusters</strong> tab.</td>
</tr>
<tr>
<td>3</td>
<td>Choose the cluster that you want to enable or disable DRS.</td>
</tr>
<tr>
<td>4</td>
<td>Click <strong>Edit DRS Automation Level</strong>.</td>
</tr>
<tr>
<td>5</td>
<td>In the <strong>Edit DRS Automation Level</strong> dialog box, choose the type of DRS automation level.</td>
</tr>
<tr>
<td>6</td>
<td>Click <strong>Submit</strong>.</td>
</tr>
</tbody>
</table>

**Enabling or Disabling DRS**

**Procedure**

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<td>1</td>
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<td>2</td>
<td>Click the <strong>Clusters</strong> tab.</td>
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<tr>
<td>3</td>
<td>Choose the cluster that you want to enable or disable DRS.</td>
</tr>
<tr>
<td>4</td>
<td>Click <strong>Enable/Disable DRS</strong>.</td>
</tr>
<tr>
<td>5</td>
<td>In the <strong>Enable/Disable DRS</strong> dialog box, check or uncheck the <strong>Enable DRS</strong> check box, and choose the type of DRS automation level, if applicable.</td>
</tr>
<tr>
<td>6</td>
<td>Click <strong>Submit</strong>.</td>
</tr>
</tbody>
</table>

**About DRS Group Manager**

The DRS Group Manager feature in Cisco UCS Director allows you to group a set of VMs or Hosts for bulk migration. These groups can be used when the VM-Host affinity rules are applied.
Using DRS Group Manager

Procedure

Step 1  On the menu bar, choose Virtual > Compute.
Step 2  Click the Clusters tab.
Step 3  Double-click the cluster.
Step 4  Choose the DRS Group Manager tab.
Step 5  Click Add.
Step 6  In the Add Group dialog box, complete the fields to group a set of VMs or hosts.
Step 7  Click Submit.

About Mapping VM Affinity Rules

In Cisco UCS Director, DRS rules can be included as part of computing policies. When you create a computing policy, you can choose to map VM affinity rules. After the computing policy is created with the VM affinity rules mapped, a VM being provisioned with the computing policy will be added using those set of VM affinity rules.

Mapping VM Affinity Rules

Procedure

Step 1  On the menu bar, choose Policies > Virtual/Hypervisor Policies > Computing.
Step 2  Click the VMware Computing Policy tab.
Step 3  Choose the computing policy that you want to edit.
Step 4  Click Edit.
Step 5  In the Edit Computing Policy dialog box, complete the following fields:
   a)  In the Selected Clusters drop-down list, choose the Include Selected Clusters option.
   b)  Select the clusters to apply the policy to.
   c)  Check the Map VM Affinity Rules check box to map VM affinity rules.
   d)  Optionally, choose the affinity rules to which the VM has to be mapped after provisioning.
Step 6  Click Save.