



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 among 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 among 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), it 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 that 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

- Step 1** Choose **Virtual > Compute**.
 - Step 2** On the **Compute** page, click **Clusters**.
 - Step 3** Double-click the cluster.
 - Step 4** Click **DRS Rules**.
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Adding DRS Rules

- Step 1** On the menu bar, choose **Virtual > Compute**.
 - Step 2** Choose **Virtual > Compute**.
 - Step 3** On the **Compute** page, click **Clusters**.
 - Step 4** Double-click the cluster.
 - Step 5** Click **DRS Rules**.
 - Step 6** Click **Add**.
 - Step 7** On the **Add Rule** screen, 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 8** Click **Submit**.
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Enabling or Disabling DRS

- Step 1** Choose **Virtual > Compute**.
 - Step 2** On the **Compute** page, click **Clusters**.
 - Step 3** Click the row with the cluster on which you want to enable or disable DRS.
 - Step 4** From the **More Actions** drop-down list, choose **Enable/Disable DRS**.
 - Step 5** On the **Enable/Disable DRS** screen, check **Enable DRS** or **Disable DRS**, and choose the type of DRS automation level, if applicable.
 - Step 6** Click **Submit**.
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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 on the DRS-recommended hosts during power-on and also during resource imbalance.

Editing DRS Automation Level

- Step 1** Choose **Virtual > Compute**.
 - Step 2** On the **Compute** page, click **Clusters**.
 - Step 3** Click the row with the cluster on which want to enable or disable DRS.
 - Step 4** From the **More Actions** drop-down list, choose **Edit DRS Automation Level**.
 - Step 5** On the **Edit DRS Automation Level** screen, choose the type of DRS automation level.
 - Step 6** Click **Submit**.
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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

- Step 1** Choose **Virtual > Compute**.
 - Step 2** On the **Compute** page, click **Clusters**.
 - Step 3** Double-click the cluster.
 - Step 4** Click **DRS Group Manager**.
 - Step 5** Click **Add**.
 - Step 6** On the **Add Group** screen, complete the fields to group a set of VMs or hosts.
 - Step 7** Click **Submit**.
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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 that set of VM affinity rules.

Mapping VM Affinity Rules

- Step 1** Choose **Policies > Virtual/Hypervisor Policies > Computing**.
- Step 2** On the **Computing** page, click **VMware Computing Policy**.
- Step 3** Click the row with the computing policy that you want to edit.
- Step 4** Click **Edit**.
- Step 5** On the **Edit Computing Policy** screen, complete the following fields:
- In the **Host Node/Cluster Scope** drop-down list, choose the **Include Selected Clusters** option.
 - Select the clusters to which you want to apply the policy.
 - Check **Map VM Affinity Rules** to map VM affinity rules.
 - Optionally, choose the affinity rules to which the VM has to be mapped after provisioning.
- Step 6** Click **Submit**.
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