



Managing VMware vMotion

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About VMware vMotion and vCenter Storage vMotion

VMware vMotion (vMotion) technology allows users to migrate running virtual machines between compatible physical servers with zero downtime continuous service availability, and complete transaction integrity. The entire state of a VM is encapsulated by a set of files stored on shared storage, and VMware's VMFS cluster file system allows both the source and the target ESX Server to access these VM files concurrently. The active memory and precise execution state of a VM can then be rapidly transmitted over a high-speed network. Since the network is also virtualized by ESX Server, the VM retains its network identity and connections, ensuring a seamless migration process.

With VMware vCenter Storage vMotion (Storage vMotion), a VM and its disk files can be migrated from one datastore to another while the VM is running. These datastores can be on the same or separate storage arrays. The following terms are important for understanding the vMotion technology.

Host

A physical server that is part of the VMware infrastructure hardware resources pool.

Cold migration

Migration of a VM that has been powered off on the source host. The VM is powered on again on the destination host after the transfer of the VM is complete.

Hot migration

Migration of a VM that is powered on. The VM (and applications) previously running on the source host continue execution on the destination host, without being affected by changes, after the hot migration is complete.

Migration Options

Based on the running state of the VM, there are small differences in the migrations options available for the user. A *powered-off* VM provides the full range of migration options that can occur simultaneously, whereas a *powered-on* VM is restricted to migrating either the resources or the data in the same job.

Table 1: Migration options

| Option | Description | Type | VM State |
|--------------------------------|---|--------------------------------------|--|
| Change host | Move the VM to another ESX/ESXi host. | vMotion | Powered-off (Cold) or Powered-on (Hot) |
| Change datastore | Move the VM's configuration file and virtual disks. | Storage vMotion | Powered-off (Cold) or Powered-on (Hot) |
| Change both host and datastore | Move the VM to another ESX/ESXi host and move its configuration file and virtual disks. | Combined vMotion and Storage vMotion | Powered-off (Cold) Note You cannot perform vMotion and Storage vMotion simultaneously on a running VM. |

Migration using the Migrate VM Wizard

Follow the steps below to execute vMotion or Storage vMotion.

Procedure

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- Step 1** On the menu bar, choose **Virtual > Compute**.
 - Step 2** Click the **VMs** tab.
 - Step 3** Choose the VM you want to migrate and click the down arrow button. Choose **Migrate VM**.
 - Step 4** In the **Migrate VM** dialog, choose the type of migration, and choose the host node or datastore of the VM to be migrated, if applicable.
 - Step 5** Click **Submit**.
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Migration using the Migrate VM Workflow Task

You can add the **Migrate VM** task from the Cisco UCS Director task library to a workflow for migration.

**Note**

The **Migration VM** task supports VM migration for all three options discussed in [Migration Options](#), on [page 2](#).

Procedure

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- Step 1** On the menu bar, choose **Policies > Orchestration**.
 - Step 2** Click the **Workflows** tab.
 - Step 3** Open the workflow in **Workflow Designer**.
 - Step 4** In the **Available Tasks** pane, navigate to the **Virtualization Taks/VMware Tasks/VMware VM Tasks** folder.
 - Step 5** Drag and drop the **Migrate VM** folder into the **Workflow Designer** pane.
 - Step 6** In the **Add Task (Migrate VM)** dialog box, complete the fields for the workflow task basic information.
 - Step 7** In the **User Input Mapping** screen, choose which of the attributes you would like to use values from the workflow input fields.
 - Step 8** In the **Task Inputs** screen, choose the values for the task inputs that are not mapped to workflow inputs.
 - Step 9** In the **User Output Mappings** screen, check the **Map to User Output** check boxes for the task output attributes that you want to use for the workflow outputs.
 - Step 10** Click **Submit**.
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