Double-Take® Move™

Double-Take Move System Center Integration Toolkit
User's Guide

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Notices

Double-Take Move System Center Integration Toolkit User's Guide Version 7.1, Tuesday, March 03, 2015

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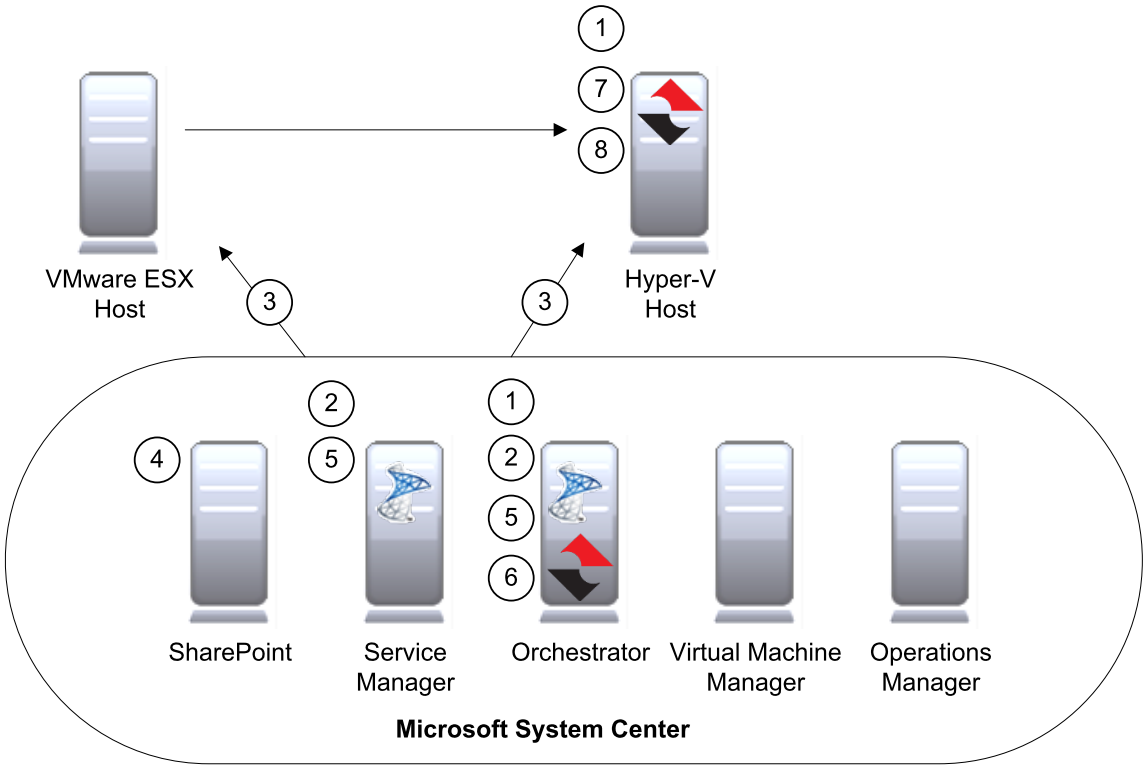
Chapter 1 Overview

Double-Take Move is a comprehensive server migration solution. It allows you to move an entire server, known as a source, by mirroring an image of that source to another server, known as the target. The image of the source contains the server's system state (the server's configured operating system and applications) and all of the source server's data.

Double-Take Move uses patented data replication technology that allows users to continue accessing and changing data during the migration. As changes are made on the source, replication keeps the image of the source stored on the target up-to-date. Double-Take Move replicates, in real-time, only the file changes, not the entire file, allowing you to more efficiently use resources. When you are ready to cutover to the new server, Double-Take Move applies the source system state and after a reboot, the source server is available and running on the target server hardware.

For those organizations that want to shift a VMware virtual machine or any other Windows server to Hyper-V, Double-Take Move makes that migration easy and affordable by reducing downtime and complexity. And if you use Double-Take Move System Center Integration Toolkit, you can manage the full migration life cycle from Microsoft System Center. System Center Integration Toolkit extends the functionality of Double-Take Move by providing integration with Microsoft System Center Service Manager, Orchestrator, Operations Manager, and Virtual Machine Manager. Using the Service Manager Console you can discover VMware virtual machines by a vSphere host query, or you can discover any other Windows server by an Active Directory query. Once discovered, you can configure and migrate these servers, live and in real-time, including automation of the process approval steps and other administrative functions.



1. You must install Double-Take Move on the Orchestrator server and on the Hyper-V server that will host your migrated virtual machines.
2. Integration packs and Runbooks must also be installed on the Orchestrator Runbook server, and the Double-Take Move Management Pack must be installed on the Service Manager server.
3. VMware hosts, VMware virtual machines, Hyper-V hosts, and Hyper-V networks are automatically discovered based on the Orchestrator Integration Packs configuration setting.
4. Double-Take Move Service Requests (single server or multiple servers) are created through the Service Manager Portal installed on the SharePoint server.
5. The Service Manager server submits the Service Request, triggering Orchestrator Runbooks which create Change Requests for each server selected for migration.
6. Runbooks on the Orchestrator server continually monitor the status of the Change Request activities. Based on the status of the activity, the following actions are performed.
    a. Install Double-Take Move on the source virtual machine, if necessary.
    b. Activate Double-Take Move on the source virtual machine, if necessary.
    c. Reboot the source virtual machine, if necessary.
    d. Create the Double-Take job.
7. The Double-Take job will create the replica virtual machines on the Hyper-V host, mount the .vhd or .vhdx files to the Hyper-V host, and then mirror and replicate data from the source virtual machine to the mount point on the Hyper-V host.
8. Upon approval, the virtual machine is tested or migrated. If the virtual machine is migrated, the Double-Take job is deleted.

Chapter 2 Components

The System Center Integration Toolkit contains the following components.

- **Double-Take Move Management Pack Bundle**—This management pack bundle (mpb), imported on the Server Manager server, contains the following management packs that make up the Service Manager component of System Center Integration Toolkit.
  - **Double-Take Move Library Management Pack**—This management pack contains the database structure and framework for integration between Double-Take Move, Orchestrator Runbooks, and the Service Manager server.
  - **Double-Take Move Request Templates Management Pack**—This management pack contains the templates and request offerings. This management pack is unsealed, so you can make modifications to the templates and request offerings without impacting the underlying framework.
- **Double-Take Move Runbooks**—These Runbooks must be imported on the Orchestrator server. They provide the parameters and logic that automates the migrations steps. The Runbooks are divided into five sets which have specific tasks. As a unit they provide the complex functionality of System Center Integration Toolkit.
  - **05-Utilities**—Provides administrative and troubleshooting tasks.
  - **10-Monitors**—Monitors tasks in Service Manager and trigger other Runbooks that perform automated tasks.
  - **20-CMDB Discovery**—Periodically inventories VMware vSphere virtual servers and Hyper-V host servers.
  - **30-Workers**—Triggered by monitor Runbooks and performs a specified task, advancing through the activities in the Service Requests and Change Requests and marking them completed as necessary.
  - **99-Common**—Performs common tasks, accepting parameters passed from one or more other Runbooks.

Chapter 3 Requirements

Before beginning, confirm your environment is properly configured.

- **System Center Components**—You must have the following System Center 2012 or 2012 R2 components installed and running in your environment.
  - **Service Manager**—You must have the Service Manager Management Server installed on the Service Manager server. You must also have the Server Manager Console installed.
  - **SharePoint**—You must have the Service Manager Web Portal installed on the SharePoint server.
  - **Orchestrator**—You will need to have the Management Server, Runbook server, Orchestration Console and Web Service, and Runbook Designer installed on your Orchestrator server. The Orchestrator server must also have Internet access in order to activate your Double-Take Move licenses.
  - **Virtual Machine Manager**—You will need the VMM Management Server and the Virtual Machine Manager Console installed on your Virtual Machine Manager server.
  - **Operations Manager**—You will need the Management Server and the Operations Manager Console installed on the Operations Manager server.

  Review the Microsoft TechNet article *Getting Started with System Center 2012 - Orchestrator* (at http://technet.microsoft.com/library/hh420344) and/or your System Center documentation for further information.
- **Hyper-V Host Server**—Your Hyper-V host server must be managed by System Center Virtual Machine Manager and you must have Double-Take Move installed and licensed as a Double-Take Move target. (Make sure that the version of Double-Take on the target is the same version as what will be installed on the source during the migration process.) See the Double-Take Move User's Guide for details on installation and licensing of your Hyper-V host.
- **Orchestrator Server**—Your Orchestrator server must meet the following requirements.
  - **Double-Take Move**—Double-Take Move must be installed, but it does not need to be licensed.
  - **Integration packs**—Your Orchestrator server must have the following integration packs installed. These integration packs are available for download from the Microsoft System Center web site.
    - Integration Pack for System Center 2012 Operations Manager (or 2012 R2)
    - Integration Pack for System Center 2012 Service Manager (or 2012 R2)
    - Integration Pack for System Center 2012 Virtual Machine Manager (or 2012 R2)
    - Integration Pack for Active Directory
  - **vSphere PowerCLI**—If you are migrating VMware virtual machines, your Orchestrator server must have VMware vSphere PowerCLI, which can be downloaded from the VMware web site.

VMware vSphere PowerCLI is only required if you are migrating VMware virtual machines, and the Integration Pack for Active Directory is only required if you are migrating Windows servers that do not reside on a VMware host. However, the discovery portion of the Double-Take Move System Center Integration Toolkit is built around both of

these components. You only need to install the components for the type of server you are migrating, however if you do not install both, you will have to manually stop the runbook for the discovery method that you are not using or manually modify the runbook that starts the other runbooks for the discovery method you are not using. Having both integration packs but only using one is automatically handled by the Integration Toolkit.

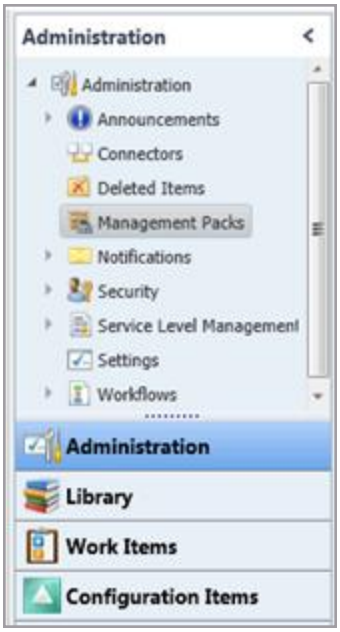
Chapter 4 Service Manager Configuration

You will need to import the Double-Take Move management pack bundle to the Service Manager server using the Service Manager Console. This console is also where you add Double-Take Move licenses, customize your request templates, and specify which activities are skipped and/or included in the request templates.

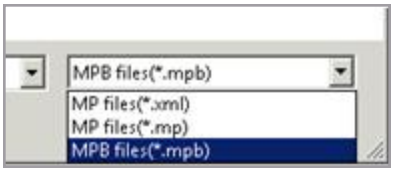
Importing the Double-Take Move Management Packs

Use the Service Manager Console to import the Double-Take Move Management Packs.

1. From the **Administration** section, expand the **Administration** heading and right-click **Management Packs**.



2. Select **Import**.
3. In the Select Management Packs to Import window, change the file type to **MPB files**.



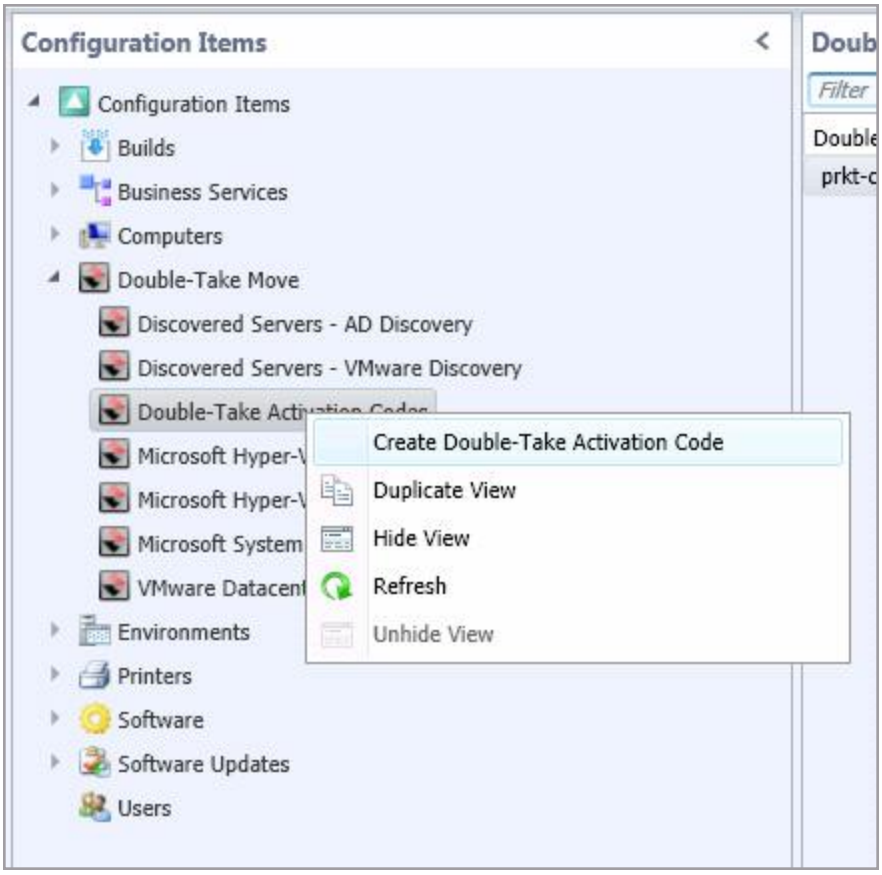
4. Locate and select your Double-Take Move Management Pack bundle, which is called DoubleTakeMoveManagementPackBundle.mpb.
5. Click **Open**.
6. Confirm that the import wizard shows two Double-Take Move management packs will be imported and click Import. A successful import is reported in the log window.
7. Close **OK** to confirm the import.

After the import is complete, the Double-Take Move Management Packs appear in the list of management packs.

Licensing the Source Virtual Machines

System Center Integration Toolkit automates the installation of Double-Take Move on your source virtual machine. It also activates the Double-Take Move licenses, as long as the Orchestrator server has Internet access. The Double-Take Activation Codes configuration item acts as a database table for tracking Double-Take Move source server licenses. Use the following procedure to add Double-Take Move source server license instances to the configuration item.

1. From the Service Manager Console, expand the **Configuration Items** section.
2. Expand **Double-Take Move** and right-click **Double-Take Activation Codes**.
3. Select **Create Double-Take Activation Code**.



4. Enter the following activation code information.

   - **Activation Code**—Enter the 24-character, alpha-numeric activation code that you received from Vision Solutions. This information is not validated here but will be validated during a push install. Once saved, this field cannot be modified. If incorrect information has

been entered and saved, you will need to delete the configuration item and create a new one with the correct code.

- **Activation Code Type**—Specify the type **Source**.
- **Number of Licenses**—Specify the number of licenses that you purchased. This number is also not validated and can be any number.
- **Number of Licenses Remaining**—Specify the number of license that you have. After successful activation, Double-Take Move System Center Integration Toolkit will automatically decrement the license count by one. When the number of licenses remaining is zero, the Install Double-Take activity will fail and you will need to update your activation code in the change request and restart the task.

5. Click **OK** to save the changes.

Request Templates

Because the management pack containing the Double-Take Request Templates is an unsealed management pack, you can make changes to the activities contained in each Service Request or Change Request. Changes made to the request templates become the new default settings when the request template is used to create new requests. Review the following tables to determine if you want to make customizations. If you do, see *Customizing the Request Templates* on page 22 for basic template modifications.

Activities that require approval before continuing have an activity type of **Review**, meaning that it must be approved within Service Manager before it continues to the next activity. Activities that have an activity type of **Manual** are generally used to trigger an Orchestrator Runbook to complete a process, which in turn marks the activity **Completed** upon successful execution. If execution of an activity fails, the activity will be marked as **Failed**.

Parallel activities group similar child activities together which can be executed in parallel. The parent **Parallel** activity will be marked as **Completed** when all of the child activities are completed. **Sequential** activities are a parent grouping that holds child activities that must be executed sequentially. When all of the child activities are completed the parent **Sequential** activity will be marked as **Completed**.

There are several exceptions where you must manually mark an activity **Completed** within Service Manager in order for it to move on to the next step. These are noted in the tables.

Activities indicated with an asterisk (*) below will require user intervention, unless the activity is to be skipped.

All of the other activities are designed to progress sequentially without user intervention until reaching an activity which requires user intervention.

See your System Center documentation for advanced information on activities and template customizations, including assigning reviewers in Request Templates.

- *Double-Take Move Service Request Template* on page 14
- *Double-Take Move Change Request Template* on page 16
- *Customizing the Request Templates* on page 22
- *Managing Request Activities* on page 23

Double-Take Move Service Request Template

01 - Approve Service Request

Default Action—Unskipped

Activity Type—Review*

Definition—Requires approval within Service Manager before the change request is created. Approval is set to automatic by default.

02 - Create Change Requests For Each Server Migration

Default Action—Unskipped

Activity Type—Manual

Definition—Triggers an Orchestrator Runbook to create the change request based on the information entered when the Service Request was submitted and shows as completed when the Change Request is successfully created

03 - Prepare Source Server

Default Action—Unskipped

Activity Type—Parallel

Definition—Contains child Manual activities that are marked completed by an Orchestrator Runbook when the Change Request activity **Prepare Source Server** is completed

04 - Replicate Server Using Double-Take

Default Action—Unskipped

Activity Type—Parallel

Definition—Contains child Manual activities that are marked completed by an Orchestrator Runbook when the Change Request activity **Replicate Server Using Double-Take** is completed

05 - Test Cutover Server

Default Action—Skipped

Activity Type—Parallel

Definition—Contains child Manual activities that are marked completed by an Orchestrator Runbook when the Change Request activity **Test Cutover Server** is completed

06 - Undo Test Cutover

Default Action—Skipped

Activity Type—Parallel

Definition—Contains child Manual activities that are marked completed by an Orchestrator Runbook when the Change Request activity **Undo Test Cutover** is completed

07 - Live Cutover Server

Default Action—Unskipped

Activity Type—Parallel

Definition—Contains child Manual activities that are marked completed by an Orchestrator Runbook when the Change Request activity **Live Cutover Server** is completed

08 - Final Review Complete

Default Action—Unskipped

Activity Type—Review*

Definition—Requires approval within Service Manager that the migration is complete and successful before marking the Service Request as completed. Approval is set to automatic by default.

Double-Take Move Change Request Template

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01 - Approval: Approve Change Request

Default Action—Skipped

Activity Type—Review*

Definition—Requires approval within Service Manager before the Change Request continues with its remaining activities

02 - Prepare Source Server

Default Action—Unskipped

Activity Type—Sequential

Definition—This is a parent activity. The following child activities (marked as child after the activity name) will be executed sequentially in order to prepare the source server for migration. When all of the child activities are completed or skipped, this activity will be marked as **Completed** automatically and the corresponding **Prepare Source Server** Service Request activity will be marked as **Completed**.

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01 - Runbook: Set Options for Migration (Child)

Default Action—Unskipped

Activity Type—Manual

Definition—Triggers an Orchestrator runbook to analyze the options selected for migration and sets some of the remaining tasks to Skipped depending on which options were selected in the Service Offering.

02 - Runbook: Check for VMware Tools Install (Child)

Default Action—Unskipped

Activity Type—Manual

Definition—Triggers an Orchestrator runbook to check the source server to see if VMware Tools is installed. This activity may get set to skipped automatically by the previous activity depending on if the source is being migrated using the VMware to Hyper-V Service Offering. If VMware Tools is not installed on the source server, it will mark **Approve Uninstall of VMware Tools** and **Uninstall VMware Tools** activities to skipped.

03 - Runbook: Check Double-Take Install (Child)

Default Action—Unskipped

Activity Type—Manual

Definition—Triggers an Orchestrator runbook to check if the source server has Double-Take installed and verifies that it is licensed properly for Double-Take Move migrations. If Double-Take is installed and licensed properly, it will set the **Approve Install of Double-Take** and the **Install Double-Take** activities to skipped.

04 - Runbook: Take Snapshot of Source Server (Child)

Default Action—Unskipped

Activity Type—Manual

Definition—Triggers an Orchestrator runbook to take a disk only (not memory) snapshot of a VMware source server. This activity will be set to skipped automatically by the **Set Options for Migration** activity if the source server is not VMware.

05 - Approval: Approve Uninstall of VMware Tools (Child)

Default Action—Unskipped

Activity Type—Review*

Definition—Requires approval within Service Manager before the Change Request continues with its remaining activities.

06 - Runbook: Uninstall VMware Tools (Child)

Default Action—Unskipped

Activity Type—Manual

Definition—Triggers an Orchestrator runbook to uninstall VMware Tools. VMware Tools has the potential to cause problems on the migrated server so it is best to remove it before the server is replicated to Hyper-V. As part of the VMware Tools uninstall process, it is likely that the server will need to be rebooted. The uninstall process will not reboot the server automatically. The **Check for pending reboot on Source Server** activity will verify if a reboot is necessary.

07 - Approval: Approve Install Double-Take (Child)

Default Action—Unskipped

Activity Type—Review*

Definition—Requires approval within Service Manager before the Change Request continues with the remaining activities. This activity would be skipped automatically if the **Check Double-Take Install** activity determines that Double-Take (and the appropriate version of Microsoft .NET) is installed and licensed properly for Move Migrations.

08 - Runbook: Install Double-Take (Child)

Default Action—Unskipped

Activity Type—Manual

Definition—Triggers an Orchestrator runbook to install Double-Take (and the appropriate version of Microsoft .NET) and/or license and activate the installation. This activity would be skipped automatically if the **Check Double-Take Install** activity determines that Double-Take is installed and licensed properly for Move Migrations.

09 - Runbook: Check for pending reboot on Source Server (Child)

Default Action—Unskipped

Activity Type—Manual

Definition—Triggers an Orchestrator runbook to check if there are any pending reboots on the source server due to uninstalling VMware Tools or installing Double-Take. If a reboot is not necessary, the **Approve Reboot** and **Reboot Server** activities will be skipped.

10 - Approval: Approve Reboot (Child)

Default Action—Unskipped

Activity Type—Review*

Definition—Requires approval within Service Manager before the Change Request continues with the remaining activities. This activity would be skipped automatically if the **Check for pending reboot on Source Server** activity determines that a reboot is not necessary.

11 - Runbook: Reboot Server (Child)

Default Action—Unskipped

Activity Type—Manual

Definition—Triggers an Orchestrator runbook to reboot the source server. This activity would be skipped automatically if the **Check for pending reboot on Source Server** activity determines that a reboot is not necessary.

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03 - Prepare Target Server

Default Action—Skipped

Activity Type—Sequential

Definition—This is a place holder for future expansion.

04 - Runbook: Replicate Server Using Double-Take

Default Action—Unskipped

Activity Type—Manual

Definition—Triggers an Orchestrator runbook to initiate the Double-Take Move replication job and it waits for the initial replication to be completed before marking this activity to completed. Once completed, the corresponding Service Request activity is marked as **Completed**.

05 - Approval: Approve Test Cutover

Default Action—Skipped

Activity Type—Review*

Definition—Requires approval within Service Manager before the Change Request continues with the remaining activities.

06 - Runbook: Test Cutover Server

Default Action—Skipped

Activity Type— Manual

Definition—Triggers an Orchestrator runbook to initiate a test cutover of the source server. This will start the replica virtual server on Hyper-V with networking disabled allowing users to verify that the server is working properly. Note that a full remirror will be required after if test cutover is executed.

07 - Manual: Verify Migrated Server Integrity

Default Action—Skipped

Activity Type—Manual*

Definition—This activity must be marked completed manually from within Service Manager before remaining activities will proceed.

08 - Approval: Approve Undo Test Cutover

Default Action—Skipped

Activity Type—Review*

Definition—Requires approval within Service Manager before the Change Request continues with the remaining activities. This activity will be skipped automatically if the **Test Cutover Server** activity has been skipped.

09 - Runbook: Undo Test Cutover

Default Action—Skipped

Activity Type—Manual

Definition—Triggers an Orchestrator runbook to undo the test cutover. This will require that the source and target servers to be resynchronized which can take a considerable amount of time. The corresponding Service Request activity will be marked as **Completed**. This activity will be skipped automatically if the **Test Cutover Server** activity has been skipped.

10 - Approval: Approve Live Cutover

Default Action—Unskipped

Activity Type—Review*

Definition—Requires approval within Service Manager before the Change Request continues with the remaining activities. The source server will be shut down and the replica virtual machine will be started on the Hyper-V host.

11 - Runbook: Live Cutover Server

Default Action—Unskipped

Activity Type—Manual

Definition—Triggers an Orchestrator runbook to do a live cutover of the source server. This will shutdown the source server and start up the replica virtual machine on the Hyper-V host. The corresponding Service Request activity will be marked as **Completed**.

12 - Runbook: Delete Double-Take Job

Default Action—Unskipped

Activity Type—Manual

Definition—Triggers an Orchestrator runbook to delete the Double-Take job which was used to replicate the server. This is just a cleanup operation and will not have any impact on the migrated server.

13 - Manual: Verify Migrated Server

Default Action—Skipped

Activity Type—Manual*

Definition—This activity must be marked completed manually from within Service Manager before remaining activities will proceed.

14 - Approval: Approve Deletion of Source Server

Default Action—Skipped

Activity Type—Review*

Definition—Requires approval within Service Manager before the Change Request continues with the remaining activities.

15 - Runbook: Delete Source Server

Default Action— Skipped

Activity Type—Manual

Definition—Triggers an Orchestrator runbook to delete the source virtual machine if it was running on a VMware host.

16 - Approval: Verify Migration Success

Default Action—Skipped

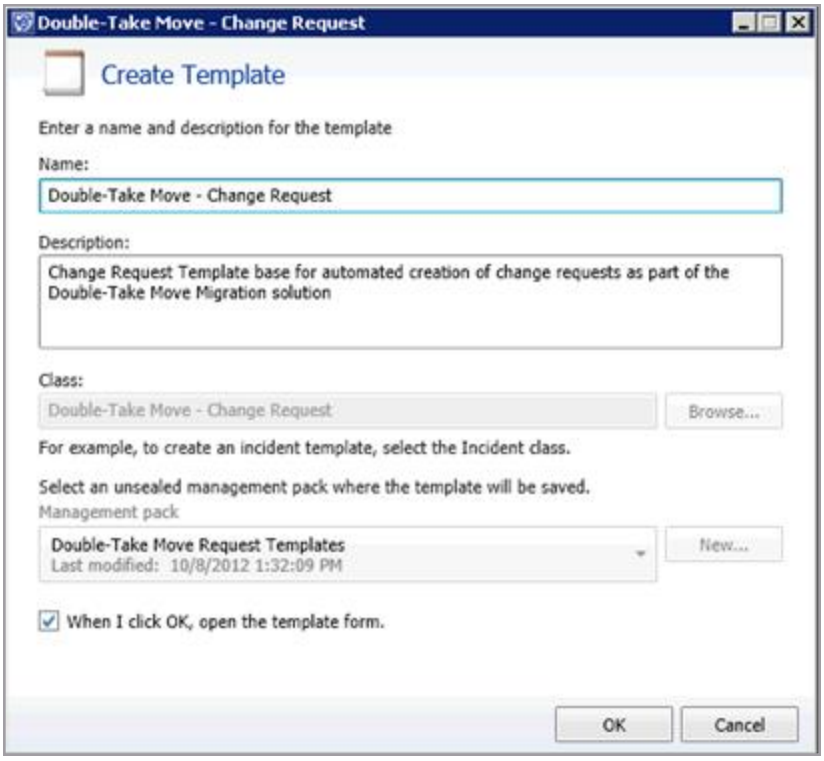
Activity Type—Review*

Definition—Requires approval within Service Manager before the Change Request continues with the remaining activities.

Customizing the Request Templates

1. From the Service Manager Console, expand **Library** and select **Templates**.

2. Double-click on the template that you would like to modify, and click **OK** to open the template.

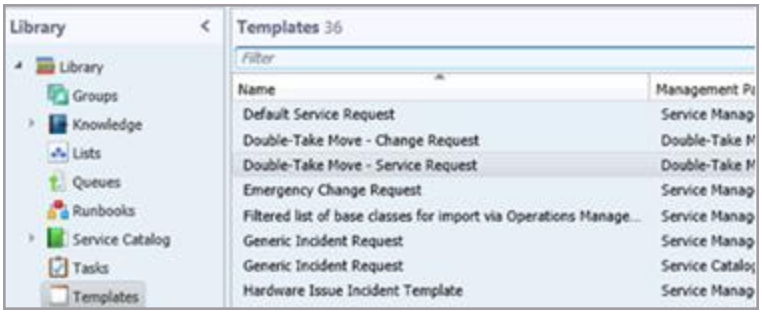


3. You can change any of the default settings, however some of the settings may be overwritten by the Runbook automation process when the template is used.This happens to avoid errors. For example, **Undo Test Cutover** can be unskipped if **Test Cutover Server** has been completed because you must undo a test cutover before a live cutover is initiated.
4. Click **OK** to save your changes.

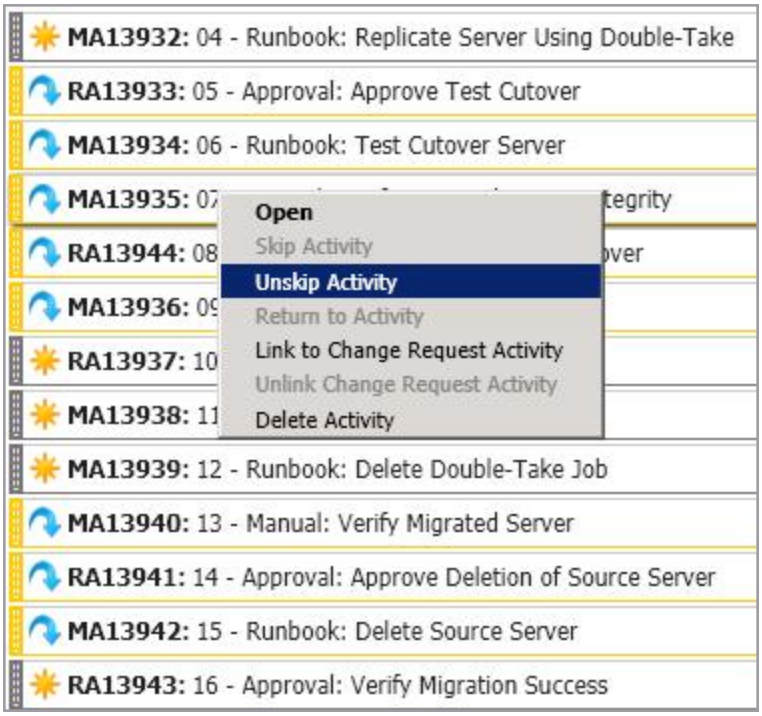
Managing Request Activities

By default, a number of the activities in the request templates are set to be skipped. There are various approval steps and tests that you can include by setting the template to unskip the activity.

1. From the Service Manager Console, expand **Library** and select **Templates**.



2. Double-click on the template that you would like to modify, and click **OK** to open the template.
3. Click on the **Activities** tab and you will notice skipped activities marked with a blue curved arrow. Included activities are marked with a yellow starburst. For details on all of the activity icons, see your System Center documentation.
4. Right-click on an activity that you want to include and select **Unskip Activity**.



5. Add a comment when prompted and click **OK**.
6. Click **OK** to save the template changes.

Removing, adding, and changing the order of activities in the Double-Take Move templates is not supported and may cause automation Runbooks to fail. The activities are sequential and the Runbooks rely on the sequence of each activity in order to orchestrate the workflow and report status of each activity.

Chapter 5 Orchestrator Configuration

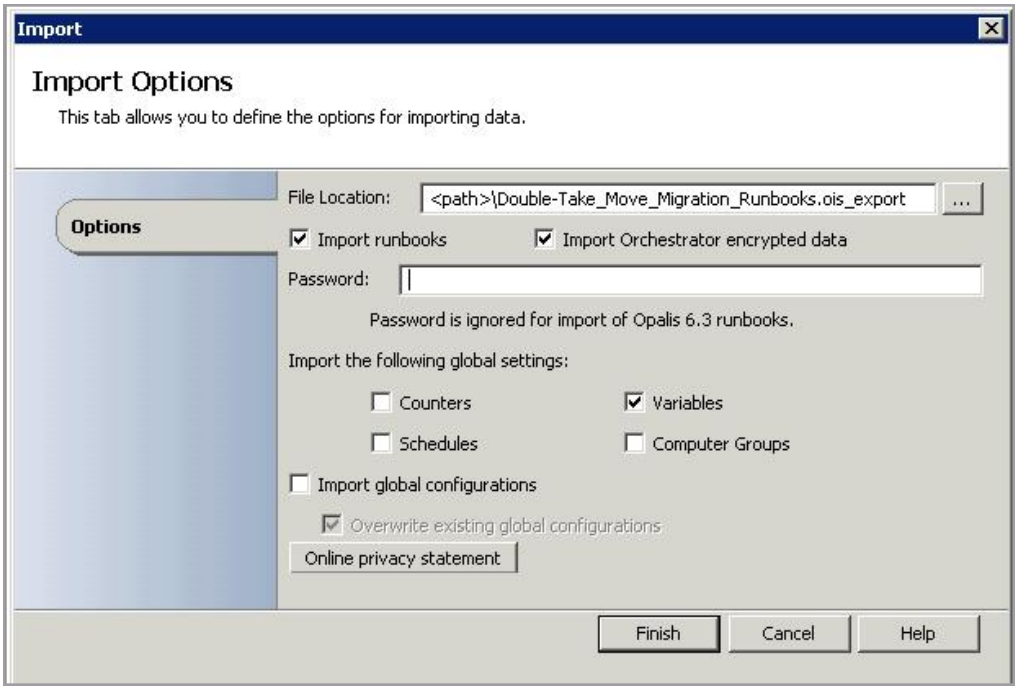
You will need to complete the following tasks, in the following order.

1. *Importing the Double-Take Move Runbooks* on page 25
2. *Configuring the Integration Packs for the Runbooks* on page 27
3. *Defining the Integration Pack Connections and Configurations* on page 28
4. *Orchestrator Variables* on page 33
5. *Starting the Runbooks* on page 34

Importing the Double-Take Move Runbooks

Use the Orchestrator Runbook Designer to import the Double-Take Move Runbooks. If you have previously configured an Integration Pack using the same configuration/connection name as the Double-Take Move Runbooks, you may need to modify the integration packs (using the instructions in the next section) after the import is complete.

1. Right-click **Runbook** and select **Import**.



2. Locate and select your Double-Take Move Runbooks file, which is called Double-Take_Move_Migration_Runbooks.ois_export.
3. Confirm that only the following options are enabled.
   - **Import runbooks**
   - **Import Orchestrator encrypted data**
   - **Variables**
4. Click **Finish**.

After the import is complete, there will be a new **Double-Take Move-Migration** branch in the tree of Runbooks, and the subfolder **Double-Take Move Integration** will be added to the **Variables** folder under the **Global Settings** tree. It is good practice to visually check the imported Runbooks for undefined activities. They are marked by a question mark icon and indicate that an integration pack has not been imported properly. (To resolve improperly imported integration packs, you will have to delete the imported Runbooks, reinstall the missing or problematic integration packs, and then import the Runbooks again.)

The Double-Take Move Runbooks execute actions using the **Run .Net Script** action that is native to Orchestrator to execute PowerShell scripts that use Double-Take PowerShell cmdlets.

For more information about PowerShell scripting with Double-Take, see the Double-Take PowerShell Scripting Guide.

Configuring the Integration Packs for the Runbooks

After the Runbooks are registered, deployed, and imported, you will need to configure the integration packs to use the names specified in the Runbooks. Configure each of the integration packs listed below so they will connect to the components in your environment.

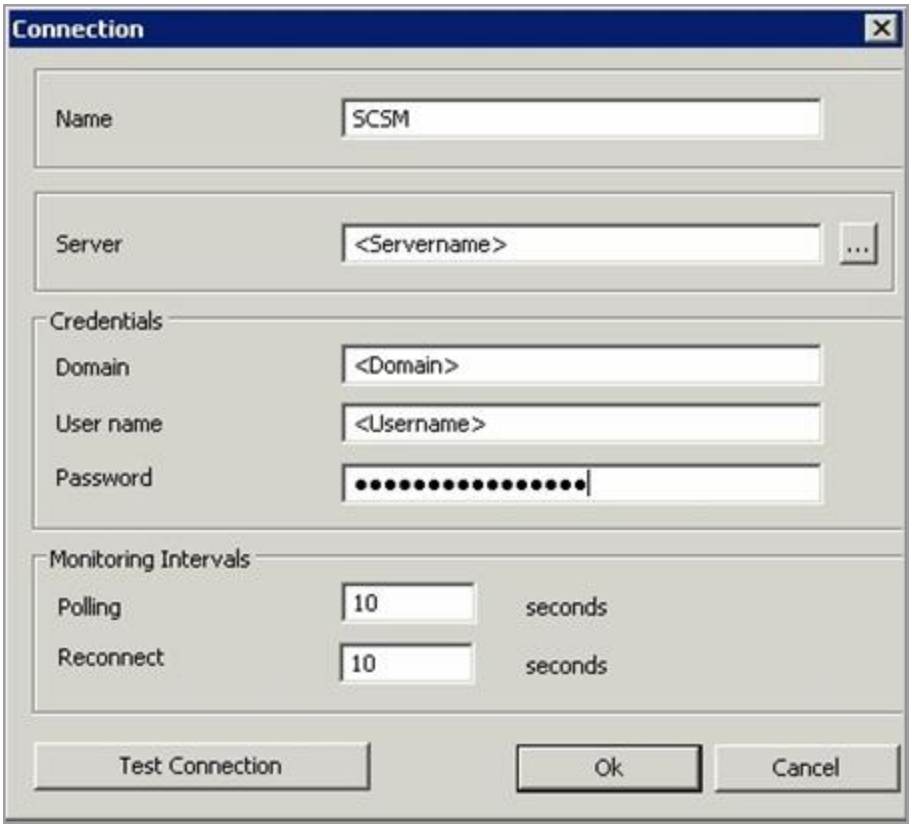
Depending on the Integration Pack being configured, the name will be referred to as a Configuration name or Connection name. Except for the Operations Manager, the name of the pack must be an exact match to the name shown below.

Integration Pack	Options Menu Name	Configuration/Connection Name	Type
System Center Integration Pack for System Center 2012 Service Manager (or 2102 R2)	SC 2012 Service Manager	SCSM	
System Center Integration Pack for System Center 2012 Operations Manager (or 2012 R2)	SC 2012 Operations Manager	Any name can be used for the Operations Manager	
System Center Integration Pack for System Center 2012 Virtual Machine Manager (or 2012 R2)	SC 2012 Virtual Machine Manager	VMM	System Center Virtual Machine Manager
Active Directory Integration Pack	Active Directory	AD Connection DT Migration	Microsoft Active Directory Domain Configuration

Defining the Integration Pack Connections and Configurations

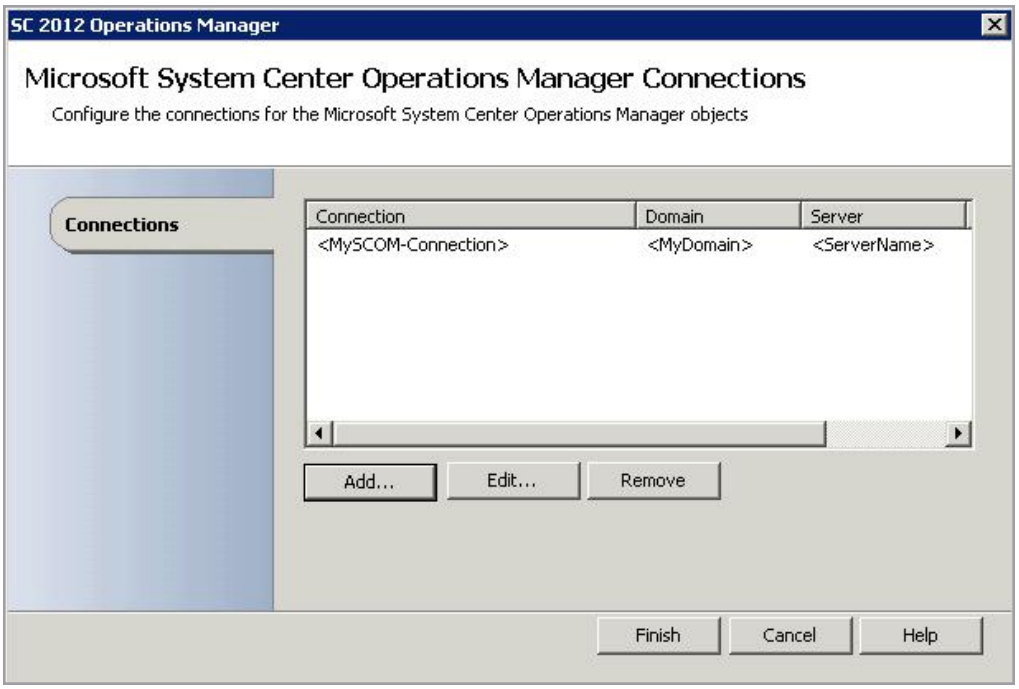
Use the Orchestrator Runbook Designer to define the connections and configurations for your installed integration packs.

1. Define the Service Manager connection.
    a. From the **Options** menu, select **SC 2012 Service Manager**.
    b. Click **Add** to add a new connection.
    c. For the connection **Name**, specify **SCSM**. The name must be an exact match.
    d. Specify **Server** and **Credentials** appropriate for your environment.

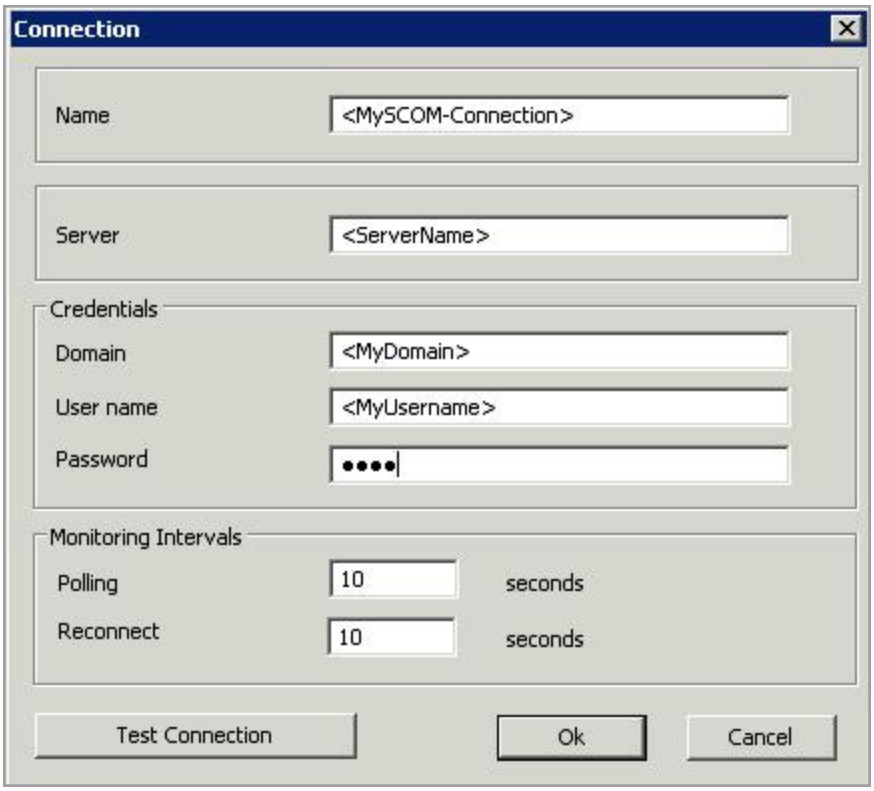


    e. Click **Test Connection** to verify the input.
    f. Click **OK** to close the connection wizard.
    g. Click **Finish** to close the connection settings.

2. Define the Operations Manager connection.
    a. From the **Options** menu, select **SC 2012 Operations Manager**.

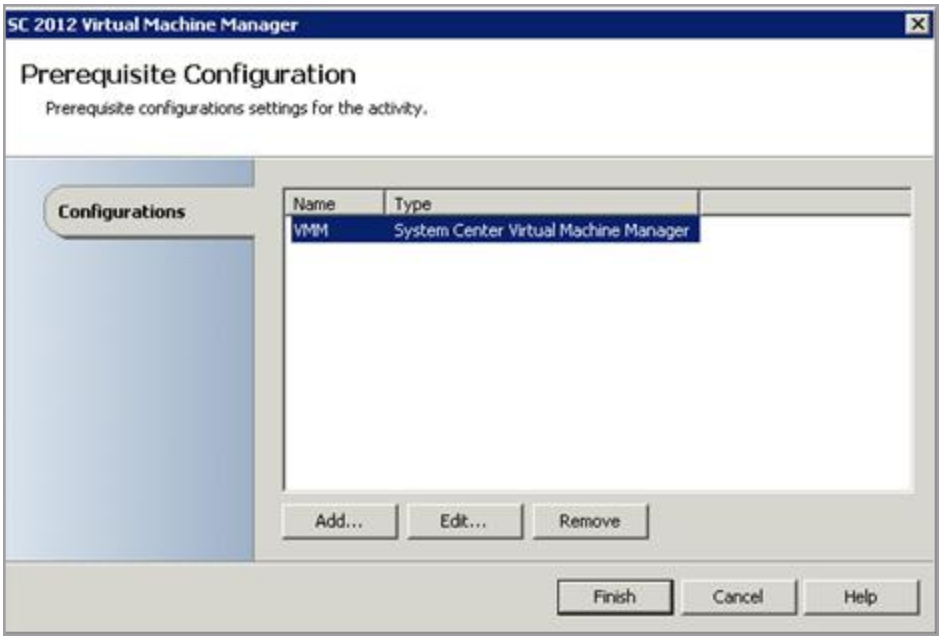


    b. Click **Add** to open the connection wizard.
    c. Specify the **Name**, **Server**, and **Credentials** for the Operations Manager server.

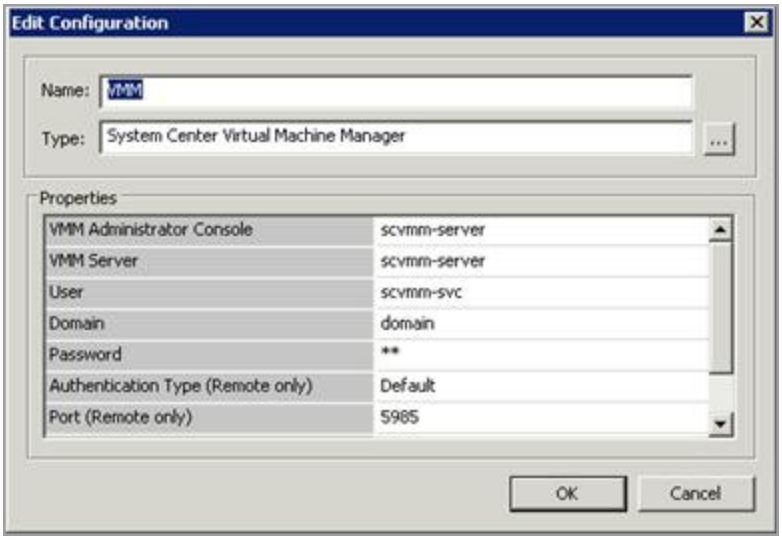


d. Click **Test** Connection to verify the input.
e. Click **OK** to close the connection wizard.
f. Note the name of the connection because it will be used when you configure the Orchestrator variables.
g. Click **Finish** to close the connection settings.

3. Define the Virtual Machine Manager configuration.
   a. From the **Options** menu, select **SC 2012 Virtual Machine Manager**.
   b. Click **Add** to add a new Virtual Machine Manager configuration.

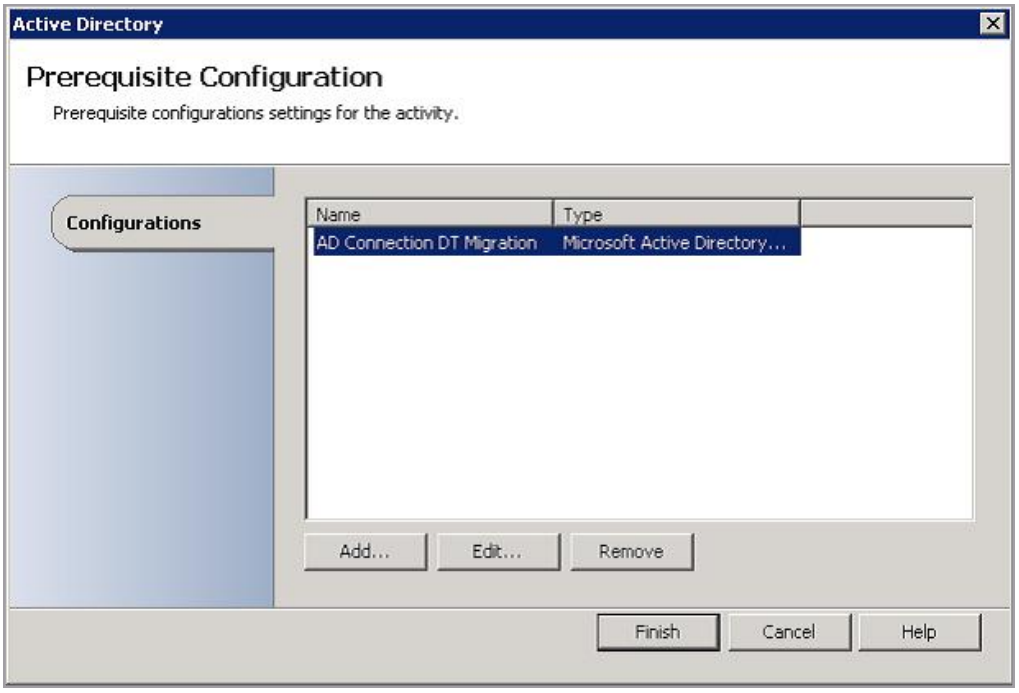


   c. For the configuration **Name**, specify **VMM**. The name must be an exact match.
   d. For the configuration **Type**, select **System Center Virtual Machine Manager**.
   e. Modify the **Properties** list to values appropriate for your environment.

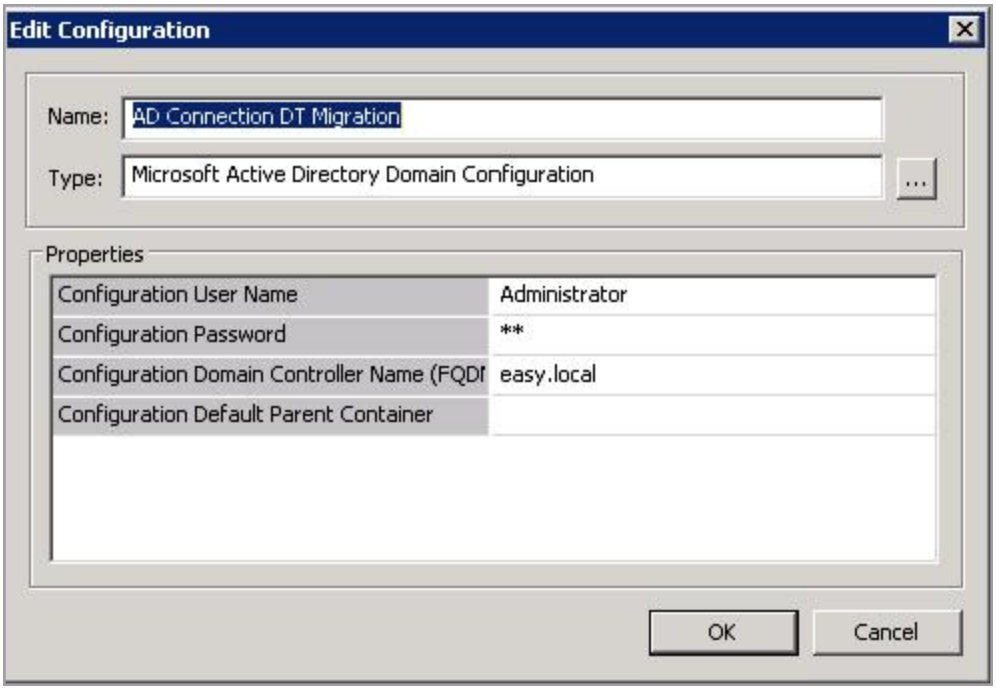


f. Click **OK** to close the connection wizard.
g. Click **Finish** to close the configuration settings.

4. Define the Active Directory configuration.
   a. From the **Options** menu, select **Active Directory**.
   b. Click **Add** to add a new Active Directory configuration.



   c. For the configuration **Name**, specify **AD Connection DT Migration**. The name must be an exact match.
   d. For the configuration **Type**, select **Microsoft Active Directory Domain Configuration**.
   e. Modify the **Properties** list to values appropriate for your environment.



f. Click **OK** to close the connection wizard.

g. Click **Finish** to close the configuration settings.

Orchestrator Variables

After the Runbooks are imported, the Variables folder will contain a subfolder called Double-Take Move Integration. The subfolder contains essential variables for System Center Integration Toolkit. You will need to configure the variables according to your target environment.

1. From the Orchestrator Runbook Designer, expand your Runbook server.
2. Expand the **Global Settings** folder, then the **Variables** folder, then the **Double-Take Move Integration** folder.
3. Double-click each of the variable names in the table below and configure the variable as appropriate for your environment.

Variable	Description
Double-Take PowerShell Module Path	This is the path to the Double-Take PowerShell module. It is the DoubleTake.PowerShell.dll file located in the \Service directory in the location where you installed Double-Take.
Double-Take Source Password	This password will be used for all Double-Take Move source server connections.
Double-Take Source Username	This username will be used for all Double-Take Move source server connections.
Double-Take Target Password	This password will be used for all Double-Take Move target server connections.
Double-Take Target Username	This username will be used for all Double-Take Move target server connections.
Install: Double-Take Install Base Path	This path should contain two folders, i386 and x64. These folders should contain setup.exe for their respective versions of the Double-Take installer.
OpsManager Connection	This is the connection name that the Operations Manager connection uses for alerting. This should be the same name as specified when defining the Operations Manager Connection in step 2 of *Defining the Integration Pack Connections and Configurations* on page 28.
vSphere Host IP or Name	This is the name or IP address of the vCenter server or ESX host server.
vSphere Password	This is the password associated with the vSphere Username.
vSphere Username	This is a user account with rights to gather inventory information and take snapshots of servers.

Starting the Runbooks

Before creating the first service request, several Double-Take Move Runbooks need to be running in order for the request to be processed. However, all of the Runbooks that need to be started can be started with a single Runbook.

1. In the System Center Orchestrator Runbook Designer, expand the Runbook Designer server.
2. Expand the **Runbooks** folder, the **Double-Take Move—Migration** folder, and the **05-Utilities** folder.
3. Select the folder **05.01-Start Monitor Runbooks** and click **Run**.

This Runbook will start other Runbooks that continually monitor Service Manager for changes in activities. It also starts Runbooks that are responsible for discovering information about your environment such as VMware virtual machines, VMware Datacenters, Hyper-V hosts and Hyper-V host virtual networks. See your System Center documentation if you need more information on managing and troubleshooting Orchestrator Runbooks.

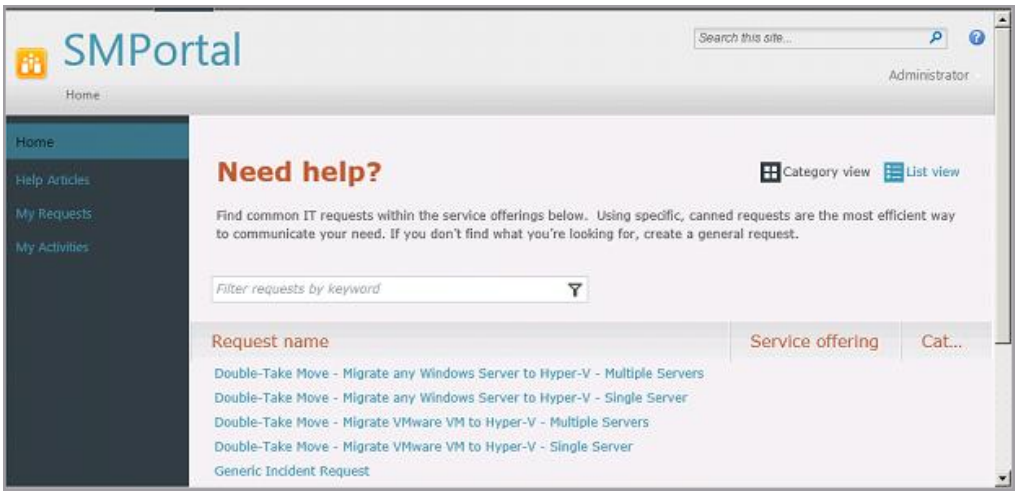
Chapter 6 Creating a Service Request (Migrating a Server)

In the SMPortal, you will see the different types of migration requests.

- **Double-Take Move - Migrate any Windows Server to Hyper-V - Multiple Servers**—This request allows you to select multiple Windows servers for migration, tracking them under a single Service Request which generates a Change Request for each server selected. You will be presented with a list of servers that were discovered in Active Directory through an Orchestrator runbook discovery process. The migrated (replica) servers will use the same configuration for the number of processors and memory as the source server.
- **Double-Take Move - Migrate any Windows Server to Hyper-V - Single Server**—This request allows you to select a single Windows server for migration, tracking it under a single Service Request which generates a Change Request for the selected server. You will be presented with a list of servers that were discovered in Active Directory through an Orchestrator runbook discovery process. This request allows you to customize various migrated (replica) settings such as the number of processors, amount of memory, and the source volumes to replicate.
- **Double-Take Move - Migrate VMware VM to Hyper-V - Multiple Servers**—This request allows you to select multiple VMware virtual machines for migration, tracking them under a single Service Request which generates a Change Request for each server selected. You will be presented with a list of servers that were discovered on your VMware host through an Orchestrator runbook discovery process. The migrated (replica) servers must use the same configuration for the number of processors and memory as the source virtual machines. You will have the option to uninstall VMware Tools and take a VMware snapshot before making any changes to the source virtual machine.
- **Double-Take Move - Migrate VMware VM to Hyper-V - Single Server**—This request allows you to select a single VMware virtual machine for migration, tracking it under a single Service Request which generates a Change Request for the selected server. You will be presented with a list of servers that were discovered on your VMware host through an Orchestrator runbook discovery process. This request allows you to customize various migrated (replica) settings such as the number of processors, amount of memory, and the source volumes to replicate.You will have the option to uninstall VMware Tools and take a VMware snapshot before making any changes to the source virtual machine.

The following example is for a single server request for a VMware virtual machine. This workflow addresses all available options. If you are using one of the other workflows, you may not be presented with each of these options.

1. Login to the SMPortal on your SharePoint server.
2. Click **List View** and the **Double-Take Request** offerings will be displayed.

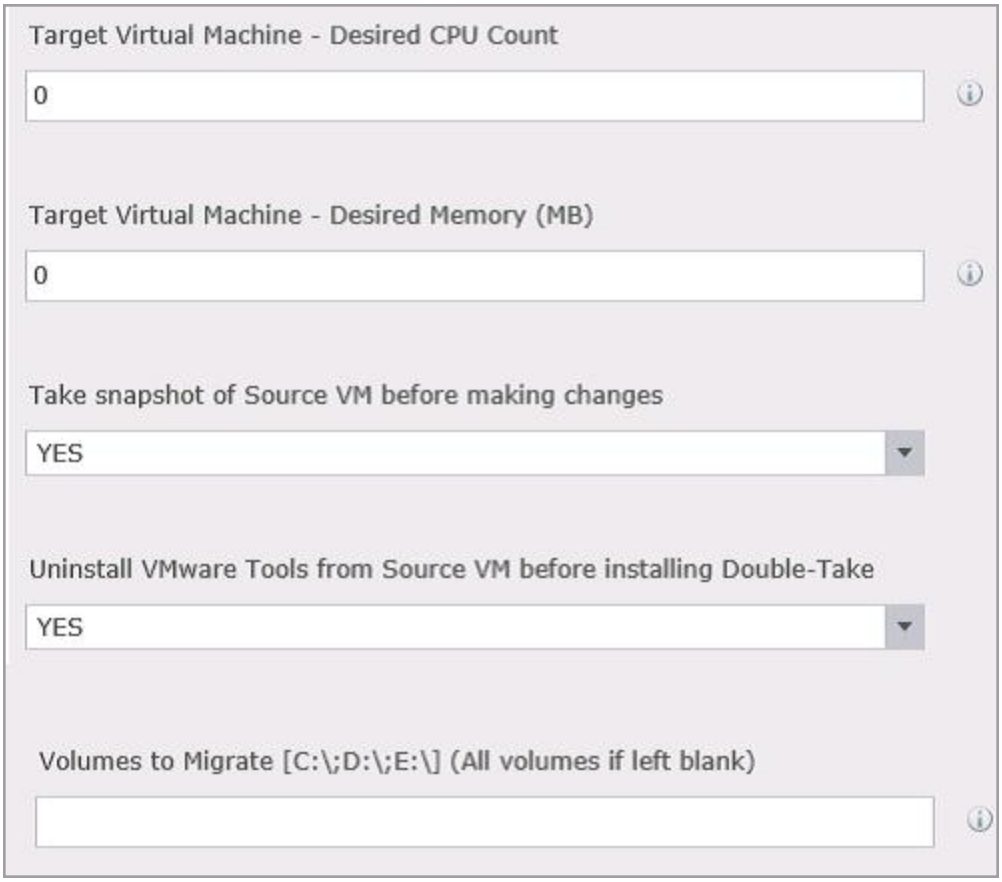


3. Click **Double-Take Move - Migrate VMware to Hyper-V - Single Server**.
4. Click **Go to request** on the right side of the page
5. Although there are many fields on the first screen, only **Title** is required and used. Depending on your screen resolution, you may see two scroll bars, and you may need to use both to see all of the options and to click the navigation buttons at the bottom of the window. Enter the **Title**, which will be the name of the Service Request that is created. Since the other fields are not used by Double-Take Move, you can skip them.

6. Click **Next** to continue.

7. Select the source virtual machine that you want to migrate. All virtual machines are listed even if they are unsupported or powered off. You can search for a server or click **Next** at the bottom of the screen to browse page by page. For the single server request, you will only be able to select one machine. For the multiple server request, you will be able to select multiple machines.

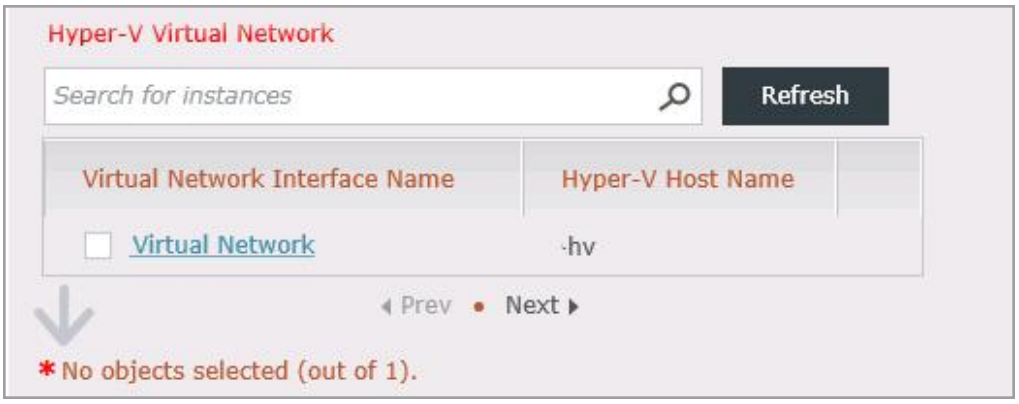
8. Select the desired values for the replica virtual machine on the target. Not all of the fields are applicable to non-VMware migrations and to multiple server requests. For multiple server requests, the default values will be used.



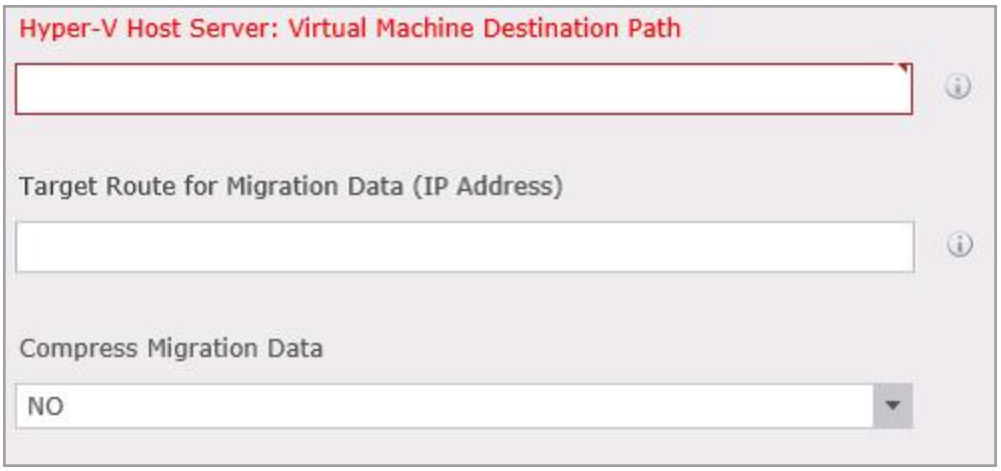
- **Target Virtual Machine - Desired CPU Count**—This is the number of CPUs to create on the replica virtual machine. The default is zero (0), which indicates the replica virtual machine will be configured identically to the source virtual machine. Modify this value if desired.
- **Target Virtual Machine - Desired Memory**—This is the amount of memory assigned to the replica virtual machine. The default is zero (0), which indicates the replica virtual machine will be configured identically to the source virtual machine. Modify this value if desired. If left at the default of 0 then it will match the configuration of the source machine.
- **Take snapshot of Source VM before making changes**—Specify **YES** to have VMware take a snapshot of the source virtual machine before installing Double-Take Move. The default setting is **YES**. You must have selected the VMware discovery option initially to use this option. It is not available with Active Directory discovery.
- **Uninstall VMware Tools from Source VM before installing Double-Take**—Specify **YES** to have VMware Tools removed on the source virtual machine before installing Double-Take Move. The default setting is **YES**. You must have selected the VMware discovery option initially to use this option. It is not available with Active Directory discovery.
- **Volumes to Migrate**—Specify the volumes you want to migrate, using a comma-separated list of volume letters formatted as letter colon backslash, for example C:\. Leave the field blank if you want all of the volumes on the source to be migrated.

9. Select the target Hyper-V host from the list of hosts managed by System Center Virtual Machine Manager. Select the Hyper-V host with Double-Take Move installed with the Double-Take Move target activation code.

10. Select the Hyper-V network to attach to the migrated source's NICs. You must click **Refresh** after selecting the Hyper-V host to see the virtual network interface names.



11. Specify the destination of the replica virtual machine, target route, and compression.



- **Hyper-V Host Server: Virtual Machine Destination Path**—This is the path where the virtual machines will be created. A sub-folder with the name of the source will be created under this path for each machine migrated. For example, if you specify D:\Migrated VMs\, the source virtual machine called Source1 will be sent to D:\Migrated VMs\Source1\ and the source virtual machine called Source2 will be sent to D:\Migrated VMs\Source2.
- **Target Route for Migration Data**—If desired, enter an IP address for the Double-Take Move job to send data to on the target. If the field is left blank, Double-Take Move will automatically determine the route.
- **Compress Migration Data**—Specify if you want to compress the data the Double-Take Move sends to the target. Typically, compression is enabled in a WAN environment where no other WAN accelerators are present. Enabling this option is equivalent to the medium compression level in Double-Take Move. The default setting is **NO**.

12. Select the activation code to use on the source. If Double-Take Move is already installed with an activated Double-Take Move source code, this field will not be used, even if it is configured.

13. Review the job options and click **Submit** to continue. A Service Request will be created and follow the activities located within the request.

See your System Center documentation for details on monitoring a service request once it has been submitted.

Chapter 7 Completing a Request

By default, when the approval is given for the live cutover it will cause Double-Take Move to initiate the live cutover. Once completed, the Double-Take Move job is deleted and the Change Request completes. When the Change Request is completed, the Service Request also completes. However, depending on changes to the defaults, you may have to manually complete a Service Request.

Completing a Change Request from Service Manager

1. From the Service Manager Console, expand **Work Items**, expand **Change Management**, and select **All Change Requests**.
2. Double-click on the Change Request you would like to complete.
3. Click on the **Activities** tab. It is easier to view the activities if you select the **List View** in the upper right corner of the activities pane.
4. If there are activities that need approval and are in progress, open the activities and select **Approve**.
5. Enter a comment and click **OK**.
6. If there are activities that are manual, are not skipped, and are in progress, open the activities and select **Mark as Completed**.
7. Enter a comment and click **OK**.
8. For all other activities that are in progress or pending, right-click and select **Skip Activity** if you want to skip that activity and complete the Change Request. If you skip an activity, that task will not be performed and you may have to perform that task manually.
9. Enter a comment and click **OK**.
10. Click **OK** to complete the change request.

Completing a Service Request from Service Manager

1. From the Service Manager Console, expand **Work Items**, expand **Service Request Fulfillment**, and select **All Open Service Requests**.
2. Double-click on the Service Request you would like to complete.
3. Click on the **Activities** tab. It is easier to view the activities if you select the **List View** in the upper right corner of the activities pane.
4. If there are activities that need approval and are in progress, open the activities and select **Approve**.
5. Enter a comment and click **OK**.
6. If there are activities that are manual, are not skipped, and are in progress, open the activities and select **Mark as Completed**.
7. Enter a comment and click **OK**.
8. For all other activities that are in progress or pending, right-click and select **Skip Activity** if you want to skip that activity and complete the Service Request. If you skip an activity, that task will not be performed and you may have to perform that task manually.
9. Enter a comment and click **OK**.
10. Click **OK** to complete the service request.

At this point the Service Request is complete and the virtual machine has been migrated to Hyper-V.

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