Using the vRealize Orchestrator Plug-In for Site Recovery Manager 8.3

Site Recovery Manager 8.3

vmware®

You can find the most up-to-date technical documentation on the VMware website at:

https://docs.vmware.com/

Contents

Using the Site Recovery Manager Plug-In

1

Using the vRealize Orchestrator Plug-In for Site Recovery Manager 8.3 guide provides information and instructions about configuring and using the VMware® vRealize Orchestrator plug-in for VMware Site Recovery Manager.

Intended Audience

The information in *Using the vRealize Orchestrator Plug-In for Site Recovery Manager* 8.3 guide is intended for experienced administrators who want to automate protection and recovery configuration tasks on a vSphere environment using the Site Recovery Manager plug-in. The information is written for experienced users who are familiar with virtual machine technology, with vRealize Orchestrator workflow development, and with VMware Site Recovery Manager.

For more information about vRealize Orchestrator, see the *vRealize Orchestrator Documentation*.

For more information about Site Recovery Manager, see the *VMware Site Recovery Manager Documentation*.

Automated Operations That the vRealize Orchestrator Plug-In for Site Recovery Manager Provides

2

With vRealize Orchestrator plug-in for Site Recovery Manager, you can automate the creation of your Site Recovery Manager infrastructure to manage resource mappings between sites, configure protection groups and recovery plans, add virtual machines to protection groups, configure recovery settings of virtual machines, and run recoveries.

With vRealize Orchestrator plug-in for Site Recovery Manager you can protect virtual machines by adding them to array-based replication, vSphere Replication or to vVols protection groups . The plug-in does not automate the configuration of vSphere Replication on virtual machines. You can use the vRealize Orchestrator Plug-In for vSphere Replication to configure vSphere Replication on virtual machines, or configure vSphere Replication manually. For information about the vRealize Orchestrator Plug-In for vSphere Replication, see the release notes of the vRealize Orchestrator Plug-In for vSphere Replication.

The vRealize Orchestrator plug-in for Site Recovery Manager includes vRealize Orchestrator actions, workflows, policy templates to trigger actions when certain events occur, and scripting objects to expose selected elements of the Site Recovery Manager API to workflows.

The plug-in provides workflows to configure local and remote sites, to remove local sites, and to log in to remote site.

Note The workflows to configure local and remote sites assume that the vRealize Orchestrator trust store already contains the local site infrastructure node SSL certificate and the local site vCenter Server SSL certificate. In an embedded configuration, the vRealize Orchestrator trust store contains only one certificate. You must rerun the appropriate workflows if an administrator updates any of the SSL certificates.

The plug-in provides actions and workflows to manage inventory mappings in Site Recovery Manager infrastructure:

- Add, get, or remove Folder Mapping

- Add, get, or remove Network Mapping

- Add, get, or remove Resource Mapping

- Add, get, or remove Test Network Mapping

The plug-in provides actions and workflows that manage and configure protection groups:

- Create, list, or remove protection groups for array-based replication, vSphere Replication or vVols

- Add or remove replicated virtual machines from vSphere Replication protection groups

- Protect or unprotect virtual machines

- Protect all virtual machines associated with a protection group

- List protected datastores

- Get unassigned replicated datastores

- Find array-based replication protection group by datastore

- Add and remove datastores in an array-based replication protection group

The plug-in provides actions and workflows that manage and configure recovery plans:

- Create or delete recovery plan

- Add to or remove protection group from recovery plan

- Add to or remove test network mapping from recovery plan

- Configure virtual machine recovery settings

- List recovery plans and get recovery plan state

- Set VM recovery settings

- Set IP settings

- Delete pre and post power-on custom recovery settings for a virtual machine

- Initiate:

  Test recovery plan

  Cleanup recovery plan

  Failover recovery plan

  Reprotect recovery plan

  Cancel recovery plan

  Planned migration recovery plan

Note   When the plug-in starts test, cleanup, failover, reprotect, planned migration, or cancel recovery plan, it performs an initial check on the recovery plan state . The workflow then succeeds or fails but does not provide information on the progress of the operation. You can monitor the plan progress in vSphere Web Client.

The plug-in provides sample automated actions and workflows:

- Convert single or multiple virtual machines to UnassignedReplicatedVM

- Create an array-based protection group, protect existing virtual machines, and add to a recovery plan
- Create and protect a virtual machine

Installing the Site Recovery Manager Plug-In

3

To create and run workflows on the protected and recovery Site Recovery Manager sites, you must install and configure the Site Recovery Manager plug-in in vRealize Orchestrator.

This chapter includes the following topics:

- Site Recovery Manager Plug-In Functional Prerequisites
- Installing, Upgrading, and Uninstalling the Site Recovery Manager Plug-In

Site Recovery Manager Plug-In Functional Prerequisites

To install and use the Site Recovery Manager plug-in, your system must meet certain functional prerequisites.

Site Recovery Manager

Verify that the version of your Site Recovery Manager plug-in is compatible with your Site Recovery Manager.

For information about the compatibility between the Site Recovery Manager plug-in and Site Recovery Manager, see *vRealize Orchestrator plug-in for Site Recovery Manager 8.3 Release Notes*.

For information about setting up Site Recovery Manager, see the *Site Recovery Manager Installation and Configuration* documentation.

vRealize Orchestrator

Verify that you have a running instance of Orchestrator and its version is compatible with the versions of your Site Recovery Manager and Site Recovery Manager plug-in.

For information about the compatibility between Site Recovery Manager and Orchestrator, see the *vRealize Orchestrator plug-in for Site Recovery Manager 8.3 Release Notes* and *Compatibility Matrices for Site Recovery Manager 8.3* documentation.

For information about setting up Orchestrator, logging in the Orchestrator client, and available authentication methods, see the *Installing and Configuring VMware vRealize Orchestrator* documentation.

Other Prerequisites

Verify that you have installed a vCenter Server plug-in. See the *Using the vCenter Server Plug-In* topic in the vRealize Orchestrator documentation.

Installing, Upgrading, and Uninstalling the Site Recovery Manager Plug-In

You can use the Site Recovery Manager plug-in after you install it on an Orchestrator instance. The version of the Site Recovery Manager plug-in must be compatible with your Site Recovery Manager and Orchestrator.

Installing the Site Recovery Manager Plug-In

You can install the Site Recovery Manager plug-in if your Site Recovery Manager sites are paired and your Orchestrator instance is configured to work with your vSphere environment.

You must configure Orchestrator to use the vSphere environment. For information about how to configure your Orchestrator to work with a vSphere environment, see the *Configuring vRealize Orchestrator* section in the *Installing and Configuring VMware vRealize Orchestrator* documentation.

You can download the Site Recovery Manager plug-in installation `.vmoapp` file from the download page of Site Recovery Manager.

You can install the Site Recovery Manager plug-in by using the `https://your_orchestrator_server:8283/vco-controlcenter` configuration interface. For information about how to install the `.vmoapp` file on your Orchestrator instance, see the *Manage the Orchestrator Plug-Ins* topic in the *Installing and Configuring VMware vRealize Orchestrator* documentation.

Upgrading and Uninstalling the Site Recovery Manager Plug-In

You can upgrade your Site Recovery Manager plug-in by uninstalling your plug-in and installing the new version.

You can uninstall your Site Recovery Manager plug-in by using the `https://your_orchestrator_server:8283/vco-controlcenter` configuration interface. For more information about how to uninstall your Site Recovery Manager plug-in, see the Uninstall a Plug-in topic in the *Installing and Configuring VMware vRealize Orchestrator* documentation and the following KB : https://kb.vmware.com/kb/2064575, *Uninstalling a plug-in from vRealize Orchestrator 5.5.x, 6.0.x, and 7.x*.

Using the Site Recovery Manager Plug-In Workflows

4

The Site Recovery Manager plug-in workflow library contains workflows that you can use to automate Site Recovery Manager tasks. With the predefined workflows you can run tests and cleanup, run recoveries and reprotect, and cancel recovery plans. You can use the predefined workflows to create custom workflows.

You can use the **Inventory** view in the Orchestrator client to manage the available Site Recovery Manager resources. You can use the scripting API of the plug-in to create custom workflows.

This chapter includes the following topics:

- Available Workflows in Site Recovery Manager Plug-In
- Prerequisites for Using the Site Recovery Manager Plug-In
- Configuration Workflows
- Inventory Mapping Workflows in Site Recovery Manager Plug-In
- IP Customization Workflows
- Protection Group Workflows in Site Recovery Manager Plug-In
- Recovery Plan Workflows in Site Recovery Manager Plug-In
- Storage Workflows in Site Recovery Manager plug-in

Available Workflows in Site Recovery Manager Plug-In

Site Recovery Manager plug-in provides Configuration, Inventory Mappings, Protection Groups, and Storage workflows.

Table 4-1. Configuration workflows

Workflow	Description of Operation
Configure Local Sites	Gets Site Recovery Manager URL, validates connection, imports certificate, and registers local sites associated with the local or provided Platform Services Controller
Configure Remote Site	Gets remote lookup service URL, imports certificate, gets remote vCenter Server URL, and imports certificate

Table 4-1. Configuration workflows (continued)

Workflow	Description of Operation
Login Remote Site	Logs in to remote site
Remove Local Sites	Removes local site

Table 4-2. Inventory Mapping workflows

Workflow	Description of Operation
Add Folder Mapping	Adds folder mapping between paired sites
Add Network Mapping	Adds network mapping between paired sites
Add Resource Mapping	Adds resource pool mapping between paired sites
Add Test Network Mapping	Adds test network mapping to remote site
Get Folder Mappings	Lists folder mappings for local site
Get Network Mappings	Lists network mappings for local site
Get Resource Mappings	Lists resource mappings for local site
Get Test Network Mappings	Lists test network mappings for remote site
Remove Folder Mapping	Removes folder mapping from local site
Remove Network Mapping	Removes network mapping from local site
Remove Resource Mapping	Removes resource mapping from local site
Remove Test Network Mapping	Removes remote test network mapping

Table 4-3. IP Customization workflows

Workflow	Description of Operation
Add IP Customization Rules	Customizes a previously created network mapping
Remove IP Customization Rules	Removes customization for previously created network mapping.

Table 4-4. Protection Group workflows

Workflow	Description of Operation
Add Replicated VM to vSphere Replication Protection Group	Adds selected replicated virtual machine to existing vSphere Replication protection group
Create a vVols Protection Group	Creates a vVols protection group and adds vVols replication groups to protection group
Create Protection Group for Array Based Replication	Creates array-based replication protection group based on unassigned replicated datastore
Create Protection Group for vSphere Replication	Creates vSphere Replication protection group and adds virtual machines to the protection group
Find ABR Protection Group by Datastore	Lists array-based replication protection groups on local site
Get Unassigned Replicated Datastores	Lists unassigned replicated datastores on local site
List Protected Datastores	Lists replicated datastores in protection group

Table 4-4. Protection Group workflows (continued)

Workflow	Description of Operation
List Protection Groups	Lists protection groups on local site
List Replication Groups in vVols Protection Group	Lists replication groups which are part of a vVols protection group
List Virtual Machines in a vVols Replication Group	Lists virtual machines, which are part of a vVols replication group
Protect All Unprotected Virtual Machines Associated with Protection Group	Enables protection for all unprotected virtual machines members of a protection group
Protect Virtual Machine	Enables protection for unprotected virtual machine member of a protection group
Remove Protection Group	Removes protection group
Remove Replicated VM from vSphere Replication Protection Group	Removes selected virtual machine from vSphere Replication protection group
Unprotect Virtual Machines	Disables protection for the selected virtual machines
Update Group Datastore	Adds or removes datastores in an array-based replication protection group

Table 4-5. Recovery Plan workflows

Workflow	Description of Operation
Add Protection Group to Recovery Plan	Adds protection group to recovery plan
Add Test Network Mapping to Recovery Plan	Adds test network mapping to recovery plan
Create Recovery Plan	Creates recovery plan
Delete Recovery Plan	Deletes recovery plan
Get Recovery Plan State	Lists recovery plan state
Initiate Cancel Recovery Plan	Cancels running recovery plan
Initiate Cleanup Recovery Plan	Clean ups recovery plan after test
Initiate Failover Recovery Plan	Starts fail over to recovery site process
Initiate Planned Migration Recovery Plan	Starts planned migration to recovery site
Initiate Reprotect Recovery Plan	Starts reprotect of site and reverses protection
Initiate Test Recovery Plan	Starts test of recovery plan
List Recovery Plans	Lists recovery plans
Remove Protection Group from Recovery Plan	Removes protection group from recovery plan
Remove Test Network Mapping from Recovery Plan	Removes test network mapping from recovery plan
Set VM Recovery Settings	Sets priority group, power state, pre power on commands and prompts, and post power on commands and prompts for a virtual machine in a recovery plan

Table 4-5. Recovery Plan workflows (continued)

Workflow	Description of Operation
Set IP Settings	A nested workflow that cannot be run independently. It is called as part of the **Set VM Recovery Settings** workflow
Delete Callouts	Deletes pre and post power-on custom recovery settings for a virtual machine

Table 4-6. Storage workflows

Workflow	Description of Operation
Discover Replicated Devices	Initiates discover replicated devices operation for all available array pairs

Prerequisites for Using the Site Recovery Manager Plug-In

To use the Site Recovery Manager plug-in, your environment must meet certain requirements.

- Verify that you have Site Recovery Manager server instances installed on both sites and that they are paired.

- Verify that your Orchestrator instance is configured to work with the vSphere infrastructure. For information about how to configure your Orchestrator to work with a vSphere environment, see the *Configuring vRealize Orchestrator* section in the *Installing and Configuring VMware Realize Orchestrator* documentation.

Configuration Workflows

Configuration workflows register information about vCenter Server and Site Recovery Manager topology including lookup services, authentication providers, and platform services controllers.

Configuration workflows are a functional prerequisite - before running workflows from the inventory tree you must run Configure Local Sites, Configure Remote Site, and Login Remote Site workflows.

Configure Local Sites

The workflow registers Site Recovery Manager sites with the plug-in to provide access to the Site Recovery Manager and vCenter Server inventory.

Registering a Site Recovery Manager site as a local site in the plug-in defines the functional direction of workflows for that site. For example, running inventory mapping workflows on a local site maps inventory objects from the local sites to inventory objects on the remote site.

You can register as local sites both Site Recovery Manager protected and recovery sites in a single Orchestrator instance. To do that, you must register both vCenter Server instances with the Orchestrator client. You can then run the rest of the available workflows from the chosen direction for both sites from a single Orchestrator client.

Prerequisites

Verify that your vCenter Server is registered with your Orchestrator client. If vCenter Server is not registered with Orchestrator, the plug-in is unable to get the Site Recovery Manager URL and cannot import the Site Recovery Manager certificate.

Note For information about how to configure your Site Recovery Manager to work with a vSphere environment, see the *Configuring vRealize Orchestrator* section in the *Installing and Configuring VMware Realize Orchestrator* documentation.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box, enter `Configure Local Sites` and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-7. Configure Local Sites Workflow

Input		Description
Set local site properties	IP or host name of the local Platform Services Controller	IP or host name of the local Platform Services Controller.
	Port of the Local site	Port of the Local site (default value is set to 443).
	Path to Lookup Service	Path to Lookup Service.
Set the connection properties	Username for the Local Site	Username for the Local Site.
	Password for the Local Site	Password for the Local Site.

Configure Remote Site

The Configure Remote Site workflow registers the paired remote Site Recovery Manager site with the vRealize Orchestrator instance.

If you have registered both the protected and the recovery sites as local sites, you must run the workflow for both sites to run workflows in both directions.

The workflow imports certificates of the remote vCenter Server or Platform Services Controller so that you can log in to the remote site.

Prerequisites

Verify that the local and remote Site Recovery Manager sites are paired before running this workflow.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box, enter `Configure Remote Site` and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-8. Configure Remote Site Workflow Input

Input	Description
Local Site	Local Site Recovery Manager site.

Login Remote Site

The workflow logs you to the remote site, so that you can run other Site Recovery Manager workflows.

You must run this workflow once per each vRealize Orchestrator client session.

Orchestrator logs out of the remote Site Recovery Manager site when you log out of the Orchestrator client.

If you have registered the recovery and the protected sites as local sites, you must run the workflow for both sites. In case the protected and the recovery site are configured in Enhanced Linked Mode, it is not necessary to run the Login Remote Site workflow.

Prerequisites

Verify that the protected and the recovery Site Recovery Manager sites are paired.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box, enter `Login Remote Site` and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-9. Mandatory Inputs for Login Remote Site Workflow

Input	Description
Local Site	Local Site Recovery Manager Site.
User name	User name for the local site.
Password	Password for the local site.

Remove Local Sites

The workflow unregisters the local Site Recovery Manager site and refreshes the internal plug-in cache. Removing a local site does not remove previously set configurations such as mappings, protection groups, and so on.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Remove Local Sites` and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-10. Remove Local Sites Workflow Inputs

Input	Description
Local Platform Services Controller	Local Platform Services Controller for which Site Recovery Manager site is added.

Inventory Mapping Workflows in Site Recovery Manager Plug-In

With inventory mappings you can configure how Site Recovery Manager maps virtual machine resources on the protected site to resources on the recovery site. Inventory mappings provide default objects in the inventory on the recovery site for the recovered virtual machines to use when you run recovery.

For array-based replication, vSphere Replication and vVols, if you configure site-wide inventory mappings before you create protection groups, these mappings are used by default for all protected virtual machines. Site Recovery Manager applies the site-wide mappings to all virtual machines in an array-based replication protection group or a vSphere Replication protection group when you create the protection group. You can set site-wide inventory mappings between corresponding objects on the protected and recovery sites:

■   Networks, including test networks

■   Data centers or virtual machine folders

■   Resource pools, standalone hosts, vApps, or clusters

Note   Recovery site resource pool, folder, or network must be in the same remote data center.

Add Folder Mapping

The workflow adds site-wide mappings of data centers or virtual machine folders on the local site to data centers or virtual machine folders on the remote site.

You can map multiple parent (data center) and child (virtual machine folder) objects to a single object. A single object can have only one mapping. You can run the workflow multiple times for a single object, the latest workflow run sets the site-wide mapping. You can map a data center to a virtual machine folder and a virtual machine folder to a data center.

Prerequisites

Verify that the Site Recovery Manager sites are paired. If the pairing is broken, all existing mappings are deleted and no additional mappings can be added.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Add Folder Mapping` and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-11. Add Folder Mapping Workflow Inputs

Input	Description
Site	Local Site Recovery Manager site.
Local Folder	Local data center or virtual machine folder.
Remote Folder	Remote datastore or virtual machine folder.

Add Network Mapping

The workflow adds site-wide mappings of networks on the local site to networks on the remote site.

Prerequisites

Verify that the Site Recovery Manager sites are paired. If the pairing is broken, all existing mappings are deleted and no additional mappings can be added.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Add Network Mapping` and press **Enter**.

4   Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-12. Add Network Mapping Workflow Inputs

Input	Description
Site	Local Site Recovery Manager.
Local Network	Local network mapped to a remote network.
Remote Network	Remote network to which virtual machines connect when recovered.

Add Resource Mapping

The workflow adds site-wide mappings of computer resources, including pools, standalone hosts, vApps, or clusters from the local site to computer resources, including pools, standalone hosts, vApps, or clusters on the remote site.

Prerequisites

Verify that the Site Recovery Manager sites are paired. If the pairing is broken, all existing mappings are deleted and no additional mapping can be added.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box, enter `Add Resource Mapping` and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-13. Add Resource Mapping Workflow Inputs

Input	Description
Site	Local Site Recovery Manager site.
Local Resource	Local resource - resource pool, standalone host, vApp.
Remote Resource	Remote resource - resource pool, standalone host, vApp, or cluster.

Add Test Network Mapping

The workflow adds site-wide mappings of networks on the remote site to test networks on the remote site.

Prerequisites

Verify that the Site Recovery Manager sites are paired. If the pairing is broken, all existing mappings are deleted and no additional mappings can be added.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Add Test Network Mapping` and press **Enter**.

4   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-14. Add Test Network Mapping Workflow Inputs

Input	Description
Site	Local Site Recovery Manager site.
Remote Network	Remote site network.
Test Network	Remote site test network.

Get Folder Mappings

The workflow lists data centers or virtual machine folders on the local site that have existing mappings.

If the protected and the recovery sites are registered as local sites, you can check all data centers or virtual machine folders which have existing mappings on both sites. The workflow does not show the exact mapping between corresponding objects.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Get Folder Mappings` and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-15. Get Folder Mappings Workflow Inputs

Input	Description
Site	Local Site Recovery Manager site.

Get Folder Mapping Pairs

The workflow lists data centers or virtual machine folders on the local site that have existing mapping between the corresponding objects (pairs).

If the protected and the recovery sites are registered as local sites, you can check all data centers or virtual machine folders which have existing mappings on both sites.

Prerequisites

Verify that you are logged in the remote Site Recovery Manager site to see the remote part of the mapping pair.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Get Folder Mapping Pairs` and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-16. Get Folder Mapping Pairs Workflow Inputs

Input	Description
Site	Local Site Recovery Manager site.

Get Network Mappings

The workflow lists networks on the local site that have existing mappings.

If the protected and the recovery sites are registered as local sites, you can check all networks which have existing mappings on both sites. The workflow does not show the exact mapping between corresponding objects.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Get Network Mappings` and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-17. Get Network Mappings Workflow Inputs

Input	Description
Site	Local Site Recovery Manager site.

Get Network Mapping Pairs

The workflow lists networks on the local site that have existing mapping between the corresponding objects (pairs).

If the protected and the recovery sites are registered as local sites, you can check all networks which have existing mappings on both sites.

Prerequisites

Verify that you are logged in the remote Site Recovery Manager site to see the remote part of the mapping pair.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Get Network Mapping Pairs` and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-18. Get Network Mapping Pairs Workflow Inputs

Input	Description
Site	Local Site Recovery Manager site.

Get Resource Mappings

The workflow lists resources on the local site that have existing mappings.

If the protected and the recovery site are registered as local sites, you can check all resources which have existing mappings on both sites. The workflow does not show the exact mapping between corresponding objects.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Get Resource Mappings` and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-19. Get Resource Mappings Workflow Inputs

Input	Description
Site	Local Site Recovery Manager site.

Get Resource Mapping Pairs

The workflow lists resources on the local site that have existing mapping between the corresponding objects (pairs).

If the protected and the recovery site are registered as local sites, you can check all resources which have existing mappings on both sites.

Prerequisites

Verify that you are logged in the remote Site Recovery Manager site to see the remote part of the mapping pair.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Get Resource Mapping Pairs` and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-20. Get Resource Mapping Pairs Workflow Inputs

Input	Description
Site	Local Site Recovery Manager site.

Get Test Network Mappings

The workflow lists networks that have existing mappings to test networks on the remote site.

If the protected and the recovery site are registered as local sites, you can check all remote networks which have existing mappings to remote test networks on both sites. The workflow does not show the exact mapping between corresponding objects.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Get Test Network Mappings` and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-21. Get Test Network Mappings Workflow Inputs

Input	Description
Site	Local Site Recovery Manager site.

Get Test Network Mapping Pairs

The workflow lists networks that have existing mappings between the corresponding objects (pairs) to test networks on the remote site.

If the protected and the recovery site are registered as local sites, you can check all remote networks which have existing mappings to remote test networks on both sites.

Prerequisites

Verify that you are logged in the remote Site Recovery Manager site to see the remote part of the mapping pair.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box, enter `Get Test Network Mapping Pairs` and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-22. Get Test Network Mapping Pairs Workflow Inputs

Input	Description
Site	Local Site Recovery Manager site.

Remove Folder Mapping

The workflow removes an existing site-wide mapping between a local folder or data center and remote folder or data center.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box, enter `Remove Folder Mapping` and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-23. Remove Folder Mapping Workflow Inputs

Input	Description
Site	Local Site Recovery Manager site.
Folder Mapping	Folder mapping to be removed.

Remove Network Mapping

The workflow removes an existing site-wide mapping between a network on the local site and a network on the remote site.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box, enter `Remove Network Mapping` and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-24. Remove Network Mapping Workflow Inputs

Input	Description
Site	Local Site Recovery Managersite.
Network mapping	Network mapping to be removed.

Remove Resource Mapping

The workflow removes an existing site-wide mapping between resources on the local site and resources on the remote site.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box, enter `Remove Resource Mapping` and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-25. Remove Resource Mapping Workflow Inputs

Input	Description
Site	Local Site Recovery Manager site.
Resource Mapping	Resource mapping to be removed.

Remove Test Network Mapping

The workflow removes an existing site-wide mapping between a network on the remote site and a test network on the remote site.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box, enter `Remove Test Network Mapping` and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-26. Remove Test Network Mapping Workflow Inputs

Input	Description
Site	Local Site Recovery Manager site.
Test Networking Mapping	Test network mapping to be removed.

IP Customization Workflows

You can customize the IP mapping rules for a selected configured virtual network mapping on the protected and recovery sites.

Add IP Customization Rules

This workflow allows you to customize a previously created network mapping.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box enter `Add IP Customization Rules` and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-27. Add IP Customization Rules Workflow Inputs

Input		Description
Network Information	Site	Local Site Recovery Manager site.
	Local Network	Local network which is part of the existing network mapping.
Subnet Details	Local Network Subnet	Valid IPv4 address to be identified as the local network.
	Remote Network Subnet	Valid IPv4 address to be identified as the remote network.
	Local and Remote Network Prefix	Number between 8 and 31 which serves as an indicator of the subnet mask.
Recovery Network Settings	Gateway	Valid IPv4 address for the gateway.
	DNS Addresses (set of IP addresses separated by semicolon)	List of IPv4 addresses, separated by semicolon.
	DNS Suffixes (domain names separated by semicolon)	Domain names, separated by semicolon.

Table 4-27. Add IP Customization Rules Workflow Inputs (continued)

Input	Description
Primary WINS Server	Valid IPv4 address only for Windows virtual machines (this address is ignored by the Linux virtual machines.)
Secondary WINS Server	Valid IPv4 address only for Windows virtual machines (this address is ignored by the Linux virtual machines.)

Remove IP Customization Rules

This workflow allows you to remove the customization of a previously created network mapping.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box enter `Remove IP Customization Rules` and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-28. Remove IP Customization Rules Workflow Inputs

Input	Description
Site	Local Site Recovery Manager site.
Network Mapping	Local network which is part of the existing network mapping.

Protection Group Workflows in Site Recovery Manager Plug-In

Protection groups are collections of virtual machines or replicated datastores that Site Recovery Manager protects together. The Site Recovery Manager plug-in enables you to organize virtual machines into protection groups based on array-based replication or vSphere Replication.

Add Replicated Virtual Machine to vSphere Replication Protection Group

The workflow adds a virtual machine configured for vSphere Replication to a vSphere Replication protection group.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Add Replicated VM to vSphere Replication Protection Group` and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-29. Add Replicated Virtual Machine to vSphere Replication Protection Group Workflow Inputs

Input	Description
vSphere Replication Protection Group	Local vSphere Replication protection group.
VM	Virtual Machine for which vSphere Replication is enabled.

Create a vVols Protection Group

With this workflow you can create a vVols protection group.

You can run the `List VMs in a vVol Replication Group` workflow before you run the `Create vVol Protection Group`, to locate your virtual machines among the vVols replication groups.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box enter `Create vVol Protection Group` and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-30. Create vVols Protection Group Workflow Inputs

Input	Description
Protection Folder	Folder under local Site Recovery Manager site in which the protection group is placed.
Name	vVols protection group name.
Description	Short description.
Fault Domain	Selecting a fault domain prevents you from selecting vVols replication groups from different domains.
Replication Groups	List of vVols replication groups that you want to include in the vVols protection group (only unprotected vVols replication groups can be selected.)

Create Protection Group for Array-Based Replication

The workflow creates an array-based replication protection group.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Create Protection Group for Array Based Replication` and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-31. Create Protection Group for Array-Based Replication Workflow Inputs

Input	Description
Protection Folder	Folder under local Site Recovery Manager site in which the protection group is placed.
Name	Protection group name.
Description	Short description.
Datastores	Datastore for which array-based replication is enabled.

Create Protection Group for vSphere Replication

The workflow creates a vSphere Replication protection group.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Create Protection Group for vSphere Replication` and click **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-32. Create Protection Group for vSphere Replication Workflow Inputs

Input	Description
Protection Folder	Folder under a local Site Recovery Manager site in which the protection group is placed.
Name	Name of protection group.
Description	Short Description.
VMs	Virtual Machines added to the protection group.

Find Array-Based Replication Protection Group by Datastore

The workflow lists the array-based replication protection group for a local datastore.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Find ABR Protection Group By Datastore` and click **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-33. Find Array-Based Replication Protection Group by Datastore Workflow Inputs

Input	Description
Site	Local Site Recovery Manager site.
Datastore	Datastore attached to the local vCenter Server.

Get Unassigned Replicated Datastores

The workflow lists all replicated datastores on the local site that are not associated with an array-based replication protection group.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Get Unassigned Replicated Datastores` and click **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-34. Get Unassigned Replicated Datastores Workflow Inputs

Inputs	Description
Site	Local Site Recovery Manager site.

List Protected Datastores

The workflow lists all replicated datastores that are associated with an array-based replication protection group.

The workflow accepts as input array-based replication protection groups only, returns a list of datastores that have array-based replication enabled and are associated with the selected protection group.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3 In the search box, enter `List Protected Datastores` and click **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-35. List Protected Datastores Workflow Inputs

Input	Description
Protection Group	Array-based replication protection group only.

List Protection Groups

The workflow lists existing array-based replication and vSphere Replication protection groups.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box, enter `List Protection Groups` and press **Enter**.

4 Click the workflow and click **Run**.

5

Table 4-36. List Protection Groups Workflow Inputs

Input	Description
Site	Local Site Recovery Manager site.

List Replication Groups in vVols Protection Group

This workflow allows you to get a list of the replication groups, which are part of a vVols protection group.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box enter `List Replication Groups in vVol Protection Group` and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-37. List Replication Groups in vVols Protection Group Workflow Inputs

Input	Description
vVols Protection Group	The vVols protection group, whose replication groups you want to list.

List Virtual Machines in a vVols Replication Group

This workflow allows you to get a list of the virtual machines, which are part of a vVols protection group.

You can run this workflow before you run the **Create vVol Protection Group** workflow, to locate your virtual machines among the vVols replication groups.

Note A vVols protection group can contain multiple vVols replication groups from the same fault domain, but it cannot contain vVols replication groups from different fault domains.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box enter **List VMs in a vVol Replication Group** and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-38. List VMs in a vVols Replication Group Workflow Inputs

Input	Description
Protection Folder	Folder under local Site Recovery Manager site in which the protection group is placed.
Fault Domain	Selecting a fault domain prevents you from selecting vVols replication groups from different domains.
Unprotected Replication Group	The vVols replication group, whose virtual machines you want to list.

Protect All Unprotected Virtual Machines Associated with Protection Group

The workflow enables protection for all unprotected virtual machines that are members of a protection group and creates placeholder virtual machines on the recovery site.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter
    Protect All Unprotected Virtual Machines Associated with Protection Group and click
    Enter.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-39. Protect All Unprotected Virtual Machines Associated with Protection Group Workflow Inputs

Input	Description
Protection Group	Protection group on the local Site Recovery Manager site.

Protect Virtual Machine

The workflow enables protection for a virtual machine and creates a placeholder virtual machine on the recovery site.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Protect Virtual Machine` and click **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-40. Protect Virtual Machine Workflow Inputs

Input	Description
Protection Group	Protection group on the local Site Recovery Manager site.
VM	Virtual machine with enabled replication.

Remove Protection Group

The workflow removes a protection group.

When removing a protection group, Site Recovery Manager removes all virtual machines from the group, stops protection, and removes all placeholder virtual machines on the recovery site.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Remove Protection Group` and click **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-41. Remove Protection Group Workflow Inputs

Input	Description
Protection Group	Local protection group to be removed.

Remove Replicated Virtual Machine from vSphere Replication Protection Group

The workflow removes a virtual machine from a vSphere Replication protection group.

When running the workflow, you must select a virtual machine from the vCenter Server inventory that is a member of the protection group.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter
    `Remove Replicated VM from vSphere Replication Protection Group` and click **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-42. Remove Replicated VM from vSphere Replication Protection Group Workflow Inputs

Input	Description
Protection Group	Local Site Recovery Manager site protection group.
Virtual Machine	Virtual machine member of the selected vSphere Replication protection group.

Unprotect Virtual Machines

The workflow unprotects virtual machines from the selected protection group and removes placeholder virtual machines from the recovery site.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Unprotect Virtual Machines` and press **Enter**.

4   Click the workflow and click **Run**.

5　Enter the input parameters that the workflow requires, and click **Run**.

Table 4-43. Unprotect Virtual Machines Workflow Inputs

Input	Description
Protection Group	Local Site Recovery Manager site protection group.
Protected Virtual Machines	Protected virtual machine member of the selected protection group.

Update Group Datastore

The workflow adds or removes datastores in an array-based replication protection group.

Procedure

1　Log in to the vRealize Orchestrator Client as an administrator.

2　Navigate to **Library > Workflows**.

3　In the search box, enter `Update Group Datastore` and press **Enter**.

4　Click the workflow and click **Run**.

5　Enter the input parameters that the workflow requires, and click **Run**.

Table 4-44. Update Group Datastore Workflow Inputs

Input	Description
Protection Group	The array-based replication protection group that you want to modify.
Datastores to Remove	Datastores to remove from the protection group.
Datastores to Add	Datastores to add to the protection group.

Recovery Plan Workflows in Site Recovery Manager Plug-In

Recovery plans hold instructions on how Site Recovery Manager recovers virtual machines from the protected to the recovery site.

A recovery plan can include one or more protection groups. You can add or remove protection groups to a recovery plan using the **Add Protection Group to Recovery Plan** and **Remove Protection Group from Recovery Plan** workflows. A recovery plan can contain both array-based replication protection groups and vSphere Replication protection groups.

Add Protection Group to Recovery Plan

The workflow adds a protection group to the selected Site Recovery Manager site.

The protection group added to the recovery plan must be local to the selected Site Recovery Manager site.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box enter `Add Protection Group to Recovery Plan` and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-45. Add Protection Group to Recovery Plan Workflow Inputs

Input	Description
Recovery Plan	Recovery Plan to which you want to add the protection group.
Protection Group	Protection Group that was created on the local Site Recovery Manager site.

Add Test Network Mapping to Recovery Plan

The workflow adds a mapping between an existing network and an existing test network on the remote site for the selected recovery plan.

The test network must be created manually or through the **Create Recovery Plan** workflow. You must configure a test network for every network that a recovery plan uses during recovery.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Add Test Network Mapping to Recovery Plan` and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-46. Add Test Network Mapping to Recovery Plan Workflow Inputs

Input	Description
Recovery Plan	Recovery plan under local Site Recovery Manager site.
Remote Network	Remote network that maps to the test network.
Test Network	Remote network that assumes the role of test network.

Create Recovery Plan

The workflow creates a recovery plan and adds existing protection groups.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Create Recovery Plan` and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-47. Create Recovery Plan Workflow Inputs

Input	Description
Recovery Folder	Folder under local Site Recovery Manager site in which to place the recovery plan.
Name	Name of recovery plan.
Description	Short description.
Protection Groups	Existing array-based or vSphere Replication protection groups to add to the recovery plan.

Delete Recovery Plan

The workflow deletes a recovery plan.

The workflow performs a check for the recovery plan state when running. If the recovery plan is in an incorrect state, the workflow fails with the following error message: `This operation is not allowed in the current state.`

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Delete Recovery Plan` and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-48. Delete Recovery PlanWorkflow Inputs

Input	Description
Recovery Plan	Recovery plan under the local Site Recovery Manager site.

Initiate Cancel Recovery Plan

The workflow initiates a cancel of failover or test of a recovery plan.

When you cancel a test or recovery, Site Recovery Manager does not start processes, and uses certain rules to stop processes that are in progress. Canceling a failover requires you to rerun the failover. Canceling a test requires you to run a cleanup.

- Processes that cannot be stopped, such as powering on or waiting for a heartbeat, run to completion before the cancellation finishes.

- If you cancel, processes that add or remove storage devices are undone by cleanup operations.

The workflow performs a check for the recovery plan state when running. If the recovery plan is in state **running**, you can cancel a recovery or a test.

Recovery plans are created with a specified direction of protection between the paired sites. You can run an **Initiate Cancel Recovery Plan** workflow to cancel recovery or test on the recovery (receiving) site.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Initiate Cancel Recovery Plan` and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-49. Initiate Cancel Recovery Plan Workflow Inputs

Input	Description
Recovery Plan	Recovery plan on the remote Site Recovery Manager site in state running.

Get Recovery Plan State

The workflow lists the selected recovery plan state.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Get Recovery Plan State` and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-50. Get Recovery Plan State Workflow Inputs

Input	Description
Recovery Plan	The recovery plan whose state you want to check.

Site Recovery Manager external API assigns different recovery plan states compared to the default internal ones. The following table shows the mapping between external API recovery plan states and internal Site Recovery Manager recovery plan statuses.

Table 4-51. Mapping of External Recovery Plan States

State	Local state	Peer state
running	testInitiated	testInitiated
	testInProgress	testInProgress
	cleanupInProgress	cleanupInProgress
	failoverInitiated	failoverInitiated
	failoverInProgress	failoverInProgress
	reprotectInitiated	reprotectInitiated
	reprotectInProgress	reprotectInProgress
	rollbackInitiated	rollbackInitiated
	rollbackInProgress	rollbackInProgress
failedOver	failedOver	failedOver
	partialRollback	partialRollback
needsReprotect	partialReprotect	partialReprotect
	reprotectIncomplete	reprotectIncomplete
	reprotectInterrupted	reprotectInterrupted
needsCleanup	testComplete	testComplete
	cleanupIncomplete	cleanupIncomplete
	cleanupInterrupted	cleanupInterrupted
needsFailover	partialFailover	failedOverSplit
	failedOverSplit	failoverIncomplete
	failoverIncomplete	failoverInterrupted
	failoverInterrupted	
needsRollback	rollbackIncomplete	rollbackIncomplete
	rollbackInterrupted	rollbackInterrupted
error	readyMixed	readyMixed
	noProtectionGroups	noProtectionGroups
	deleting	deleting
	groupsInUse	groupsInUse
	unknownState	unknownState
	syncConflict	syncConflict
ready	readyReceiving	
	testInterrupted	

Initiate Cleanup Recovery Plan

The workflow initiates a cleanup of recovery plan.

The workflow performs a check for the recovery plan state when running. If the recovery plan is in state **needsCleanup**, you can clean up a test.

Recovery plans are created with a specified direction of protection between the paired sites. You can run the **Initiate Cleanup Recovery Plan** workflow to clean up a test of a recovery plan on the recovery site.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box, enter `Initiate Cleanup Recovery Plan` and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-52. Initiate Cleanup Recovery Plan Workflow Inputs

Input	Description
Recovery Plan	Recovery plan on the recovery Site Recovery Manager site.

Initiate Failover Recovery Plan

The workflow starts a disaster recovery failover from the protected to the recovery site through the selected recovery plan.

When completing a disaster recovery failover, Site Recovery Manager recovers virtual machines to the recovery site. If an error occurs on the protected site during operations, the disaster recovery failover continues and does not fail.

You can run the **Initiate Failover Recovery Plan** workflow on the recovery site.

The workflow performs a check for the recovery plan state when running. If the recovery plan is in state **ready**, you can run a failover.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box, enter **Initiate Failover Recovery Plan** and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-53. Initiate Failover Recovery Plan Workflow Inputs

Input	Description
Recovery Plan	Recovery plan that fails over from the protected to the recovery site.

Initiate Planned Migration Recovery Plan

The workflow starts a planned migration failover from the protected to the recovery site through the selected recovery plan.

When completing a planned migration failover, Site Recovery Manager migrates virtual machines to the recovery site and attempts to shut down corresponding virtual machines on the protected site.

If errors occur on the protected site, the planned migration operation stops so that you can resolve the errors and rerun the plan.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box, enter `Initiate Planned Migration Recovery Plan` and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-54. Initiate Planned Migration Recovery Plan Workflow Inputs

Input	Description
Recovery Plan	Recovery plan on the recovery Site Recovery Manager site.

Initiate Reprotect Recovery Plan

The workflow starts a reprotect process to protect the virtual machines on the recovery site after a failover has been completed.

You can initiate a reprotect process only if the recovery finishes without errors and the originally protected site is operational. Reverse folder, network, and resource mappings must exist from the original recovery to the original protected sites. During a reprotect process, Site Recovery Manager reverses the direction of protection, then forces a synchronization of the storage from the new protected site to the new recovery site.

You can run the **Initiate Reprotect Recovery Plan** workflow on the recovery site.

The workflow performs a check for the recovery plan state when running. If the recovery plan is in state **failedOver**, you can run a reprotect workflow.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box, enter `Initiate Reprotect Recovery Plan` and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-55. Initiate Reprotect Recovery Plan Workflow Inputs

Input	Description
Recovery Plan	Recovery plan that is failed over from the protected to the recovery site.

Initiate Test Recovery Plan

The workflow starts a test of the selected recovery plan.

The workflow performs a check for the recovery plan state when running. If the recovery plan is in state **ready**, you can run a test.

Recovery plans are created with a specified direction of protection between the paired sites. You can run the **Initiate Test Recovery Plan** workflow on the recovery site. After a test of a recovery plan, you must run a cleanup of the recovery plan to return it to its original state.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box, enter `Initiate Test Recovery Plan` and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-56. Initiate Test Recovery Plan Workflow Inputs

Input	Description
Recovery Plan	Recovery plan to run a test on the recovery site.

List Recovery Plans

The workflow lists all recovery plans.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box, enter `List Recovery Plans` and press **Enter**.

4 Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-57. List Recovery Plans Workflow Inputs

Input	Description
Site	Local Site Recovery Manager site.

Remove Protection Group from Recovery Plan

The workflow removes a protection group from a recovery plan.

The workflow performs a check for the recovery plan state when running. If a recovery plan is in state **ready**, you can remove a protection group from it.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Remove Protection Group from Recovery Plan` and press **Enter**.

4   Click the workflow and click **Run**.

5   Enter the input parameters that the workflow requires, and click **Run**.

Table 4-58. Remove Protection Group from Recovery Plan Workflow Inputs

Input	Description
Recovery Plan	Local Site Recovery Manager site recovery plan.
Protection Group	Protection group member of the selected recovery plan.

Remove Test Network Mapping from Recovery Plan

The workflow removes a test network mapping from a recovery plan.

The workflow performs a check for the recovery plan state when running. If the recovery plan is in state **ready**, you can remove a protection group from it.

Procedure

1   Log in to the vRealize Orchestrator Client as an administrator.

2   Navigate to **Library > Workflows**.

3   In the search box, enter `Remove Test Network Mapping from Recovery Plan` and press **Enter**.

4   Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-59. Remove Test Network Mapping from Recovery Plan Workflow Inputs

Input	Description
Recovery Plan	Local Site Recovery Manager site recovery plan.
Test Network	Remote test network mapping to be removed.

Set IP Settings

The workflow customizes IP settings for individual virtual machines. It is a nested workflow that cannot be run on its own. The Set IP Settings workflow is called only as part of the Set Virtual Machine Recovery Settings workflow.

For more information on how to automate IP settings customization for individual virtual machines, see Set Virtual Machine Recovery Settings.

Set Virtual Machine Recovery Settings

When recovering a virtual machine, Site Recovery Manager runs predefined steps in a specific order.

You can use the Set VM Recovery Settings workflow to configure and customize how the virtual machine is recovered. You can add custom steps by using the Command or Prompt inputs available in the workflow.

You can also customize the IP settings of individual virtual machines. Customizing the IP properties of a virtual machine overrides the default IP settings when the recovered virtual machine starts at the recovery site.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box, enter `Set VM Recovery Settings` and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-60. Set VM Recovery Settings Workflow Inputs

Input		Description
Choose objects	Recovery Plan	Local site recovery plan.
	VM	Virtual machine to be configured.
VM final power state	Power	The power state in which the virtual machine is recovered, for example powered-on, suspended, or powered-off.
VM recovery priority group	Priority Group	Specifies the shut-down and power-on order of virtual machines from the highest priority, which is 1, to the lowest priority, which is 5.

Table 4-60. Set VM Recovery Settings Workflow Inputs (continued)

Input		Description
Pre Power On Command	Command Name	Specifies the command name.
	Command Text	Specifies the command or script to run.
	Command Timeout	Sets timeout after execution.
Pre Power On Prompt	Prompt Name	Specifies the prompt name.
	Prompt Text	Prompts user to perform a task or provides information that the user must acknowledge.
Post Power On Command	Command Name	Specifies the command name.
	Command Text	Specifies the command or script to run.
	Command Timeout	Sets timeout after execution.
	Command Run in Recovered VM	Specifies the command name, which was run in the recovered virtual machine.
Post Power On Prompt	Prompt Name	Specifies the prompt name.
	Prompt Text	Prompts user to perform a task or provides information that the user must acknowledge.

Table 4-60. Set VM Recovery Settings Workflow Inputs (continued)

Input		Description	
Mode	Select an IP customization mode	Auto	Allows Site Recovery Manager to control the IP customization through the advanced recovery setting `recovery.useIpMapperAutomatically`. If its value is set to **True** and if you defined IP mapping rules earlier, Site Recovery Manager applies the rules during recovery. If the value is set to **False**, Site Recovery Manager does not apply any IP mapping rules to the virtual machine during recovery, even if such rules exist.
		Use IP customization rules if applicable	Uses IP customization rules that you defined earlier.

Table 4-60. Set VM Recovery Settings Workflow Inputs (continued)

Input	Description	
	No IP customization	Does not apply the IP customization to the virtual machine.
	Manual IP customization	Customize manually the IP settings that Site Recovery Manager pushes to the VM during recovery.
		1 Select the NIC whose IP settings you want to modify.
		2 Configure IPv4, IPv6, DNS settings, and primary and secondary WINS addresses.

Delete Callouts

The workflow deletes pre and post power-on steps, such as commands and prompts that you specified earlier and that are run at the VM level during recovery.

When recovering a virtual machine, Site Recovery Manager runs predefined steps in a specific order. You can use the Delete Callouts workflow to remove the pre and post power-on steps that you have specified for a virtual machine.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box, enter `Delete Callouts` and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-61. Delete Callouts Workflow Inputs

Input	Description
Recovery Plan	Local Site Recovery Manager site recovery plan.
VM	Virtual machine to be configured.
Commands	Command names.
Prompts	Prompt names.

Storage Workflows in Site Recovery Manager plug-in

Discover Replicated Devices

The workflow initiates discover replicated devices operation on all enabled array pairs.

Procedure

1 Log in to the vRealize Orchestrator Client as an administrator.

2 Navigate to **Library > Workflows**.

3 In the search box, enter `Discover Replicated Devices` and press **Enter**.

4 Click the workflow and click **Run**.

5 Enter the input parameters that the workflow requires, and click **Run**.

Table 4-62. Discover Replicated Devices Workflow Inputs

Input	Description
Site	Local Site Recovery Manager site.