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**Intended Audience**

This documentation is intended for Network Storage Administrators and assumes that you have experience with data storage concepts, such as NAS, SAN, NFS, and ZFS.

**Documentation History**

The following table lists the released revisions of this documentation.

**Product Versions Applicable to this Documentation:**

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>nxs-5.1-SRAuserguide-RevA</td>
<td>June, 2018</td>
<td>GA</td>
</tr>
</tbody>
</table>

**Contacting Support**

Send your support questions and requests to support@nexenta.com.

**Comments**

Your comments and suggestions to improve this documentation are greatly appreciated. Send any feedback to doc.comments@nexenta.com and include the documentation title, number, and revision. Refer to specific pages, sections, and paragraphs whenever possible.
Using Site Recovery Manager

This chapter covers the following topics:

- About this Document
- Definition of Terms Used
- About Site Recovery Manager (SRM)
- Using NexentaStor Storage Replication Adapter (SRA)
- Pairing SRM Sites
- Installing NexentaStor Site Replication Adapter (SRA)
- Post NexentaStor SRA Installation Checks
- Post NexentaStor SRA Installation Tasks
- Verifying the Configuration Steps
- Configuring NSVP as Array Manager
- Configuring Resource Mapping
- Configuring Folder Mappings
- Configuring Network Mappings
- Configuring Placeholder Datastores
- Discovering Replication Services and Related Datastores
- Creating Protection Group
- Creating Recovery Plan
- Running Test Recovery Plan

About this Document

This document is intended for Site Recovery Manager (SRM) administrators who are looking for a disaster recovery and I/O continuity solution. To use this document, you must be familiar with NexentaStor vCenter Plugin (NSVP) that acts as the NexentaStor storage array manager and the High Performance Replication (HPR) technology NexentaStor uses. The solution discussed here automates the migration of virtual machines between protected site and a recovery site in case of a disaster.
## Definition of Terms Used

This section uses the following terms:

### Table 1-1: Terms and Descriptions

<table>
<thead>
<tr>
<th>Terms</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPR replication service (HPR)</td>
<td>HPR service is a NexentaStor data and metadata replication service between NexentaStor 5.1.1 appliances.</td>
</tr>
<tr>
<td>Protected Site</td>
<td>Protected site is the primary site where the active production applications run and network users/clients access their data.</td>
</tr>
<tr>
<td>Recovery Site</td>
<td>Recovery site is the disaster recovery location that can be either local or miles away from the protected site and is the location where the client workloads will be migrated in case of a disaster or as part of planned migration.</td>
</tr>
<tr>
<td>NexentaStor vCenter Plugin (NSVP)</td>
<td>NexentaStor vCenter Web Client Plugin is an extension to the VMware vSphere that enables management of the NexentaStor NFS folders and iSCSI LUNs as datastores in the VMware vSphere Web Client.</td>
</tr>
<tr>
<td>srmTargetGroup</td>
<td>These are logical groups that help to control the access of initiator hosts.</td>
</tr>
<tr>
<td>srmHostGroup</td>
<td>Collection of one or more initiator hosts. You can define volume-to-logical unit number (LUN) mappings to an individual host or assign a host to a host group.</td>
</tr>
<tr>
<td>Manager</td>
<td>The remote replication (HPR) service consists of two instances called manager service and agent service. In the case of local-to-remote replication, the primary appliance acts as the service manager node and will have the property “Manager” set to “Yes” and the secondary appliance acts as the service agent and will have the property “Manager” set to “No”. In case of remote-to-local replication the Manager and Agent roles are switched. For more details, see NexentaStor 5.1.1 High Performance Replication User Guide.</td>
</tr>
</tbody>
</table>
About Site Recovery Manager (SRM)

SRM is a disaster recovery solution used for the recovery of virtual machines. The solution discussed here automates the recovery of virtual machines (VMs) by moving them from protected site to a recovery site in the event of a disaster or as a planned migration. For a planned migration, SRM facilitates a clean shutdown of VMs at the protected site. To run the recovery solution, SRM uses NexentaStor Storage Replication Adapter (SRA) to discover and manage replicated datastores, and to automate migration. NexentaStor SRA orchestrates the recovery process with NexentaStor High Performance Replication (HPR) mechanism to prevent from data loss. HPR supports array-based replication by replicating the datasets.

Using NexentaStor SRA, SRM supports SAN storage environments, VMFS (iSCSI and FC).

Figure 1-1: Architecture of Site Recovery Manager with NexentaStor SRA.

About NexentaStor Storage Replication Adapter (SRA)

To use the HPR service offered by NexentaStor, you must install NexentaStor SRA. NexentaStor SRA is an interface that facilitates the interaction between Site Recovery Manager (SRM) and replicated storage arrays or array manager/storage controller. For the storage arrays to be visible to the SRA, you must have registered NexentaStor appliances using NexentaStor vCenter Plugin (NSVP) that acts as a storage array manager. Once you have registered the NexentaStor appliances using NSVP, you can discover their replication services and related datastores using SRA.

See Using NexentaStor Storage Replication Adapter (SRA) for more information on the prerequisites to be met to use SRA.
Use NexentaStor SRA to enable SRM to execute the following work flows:

- discover arrays and replicated storage;
- compute datastore groups;
- initiate storage operations;
- non-disruptive failover test using a writable copy of replicated data;
- emergency or planned failover;
- reverse replication after failover as part of failback;
- restore replication after failover as part of a production test.

Using NexentaStor Storage Replication Adapter (SRA)

Prerequisites for NexentaStor SRA Installation

This section lists the high level recommendations to be met to install NexentaStor Storage Replication Adapter (SRA) as disaster recovery solution. Ensure that your environment meets the following requirements on both protected and recovery sites.

- vCenter server 6.0, 6.5 configured.
- SRM version 6.1 installed on each vCenter instances or on dedicated VM.
  
  SRM is needed to create disaster recovery plans.
- SRM plug-in installed on both sites’ hosts where SRM server and vSphere client are installed.
- Protected site and recovery site must be paired by a reliable IP network.
  
  See Pairing SRM Sites

For some of the tasks listed here, you may have to use VMware documentation and other NexentaStor documentations in conjunction with this document.

Once you have done the above, install SRA as described in Installing NexentaStor Site Replication Adapter (SRA)

Pairing SRM Sites

Once you installed SRM on both protected and recovery sites, you can pair the sites from any one of the sites. Once you successfully complete the pairing, you may verify it by following the steps listed in Verify the Pairing.

- To configure the pairing from the protected site:
  1. Using the vSphere web client, login to your protected site.
  2. Click Home.
  3. Click the SRM icon on the home page.
4. Click on Sites > Objects tab.  
   Now you will see the name of the protected site under Sites.

5. Click Pair Sites.

6. Type the Platform Services Controller (PSC) address of your SRM remote site which is recovery site in this case.  
   The address that you provide for the Platform Services Controller must be an exact match of the address that you provided when you installed Site Recovery Manager Server on the remote site.

7. Leave the Port number as default, if you do not have any custom port for PSC.

8. Click Next.

9. Click Select vCenter Server.  
   This displays the vCenter server instance on which the SRM server is registered on the remote site.

10. Type the vCenter server Single sign-on (SSO) credentials.

11. Click Finish.  
    When you provide the correct credentials, the pairing is established with the appropriate privileges.
12. Now you should be able to see the remote site (recovery site) appear under Sites in the SRM interface.

**Verify the Pairing**

- **To verify the pairing, do the following from any one of the sites:**
  1. Login to the protected site.
  2. Click Home.
  3. Select SRM.
  4. Click on sites.
  5. Select any one of the sites from the listed sites.
  6. Click Summary tab.

This displays the summary of the primary site and the paired site. You will be able to see the connection details from the other site too.
Installing NexentaStor Site Replication Adapter (SRA)

To install NexentaStor SRA, you must have SRM set up on both the sites (Install SRM once you have paired the protected and recovery site). Also ensure that you run HPR on both sites. Once you install SRA, it identifies the available NexentaStor arrays and the replicated datasets.

To install NexentaStor SRA:
1. Download NexentaSRA.exe file from NexentaStor 5.1.1 download site.
2. Copy the file over to the SRM server on the protected site.
3. Log in to the SRM Server, and run the NexentaStor SRA installer file.
4. Complete the SRA Installation Wizard:
   a) Verify the environment prerequisites.
   b) Read and accept the End User License Agreement (EULA).
   c) Verify the destination installation folder.
5. Repeat the above steps in the recovery site.

Verify Installation of SRA

You may verify the status of SRA installation using the vSphere Web Client. Once you have successfully completed the SRA installation on both protected and recovery sites, you will notice a green OK check mark in the Status row of the SRA window.

Note: Status will not change to Green OK checkmark until you install SRA on both sites.

1. Using the vSphere Web Client, connect to Site Recovery Manager.
2. Home > Site Recovery Manager > Select a site under Sites > Monitor > SRA > Rescan SRAs.
   This action refreshes SRA information, allowing Site Recovery Manager to discover the SRA.
Now that you have installed NexentaStor SRA on both sites, you can configure the array manager after running the checklist given below.

**Post NexentaStor SRA Installation Checks**

Once you install SRA on the same host as SRM instances, ensure that you have the following configured on both sites.

- NexentaStor 5.1.1 host or cluster installed and configured.
- NexentaStor vCenter plugin (NSVP) installed on each vCenter server.
  
  NSVP supports SRM/SRA and provides the management capabilities for NexentaStor appliances.
- NexentaStor/Cluster registered on each site using NexentaStor vCenter Plugin UI.
  
  To use SRA, protected site NexentaStor must be registered using protected NSVP manager and recovery site NexentaStor must be registered using recovery NSVP manager.

Also ensure the following:

- Ensure that the recovery and protected sites have sufficient storage resources to handle the computation and to provide VMS failover.
- Since you will be using HPR for replication, ensure that your network connectivity meets the HPR network requirements.
- Ensure both sites have access to comparable public and private networks.
Prepare NexentaStor on Protected Site

To use SRA also ensure that you have the following set up on NexentaStor side:

- Volumes created for replication usage.
- Volume groups prepared and created for volumes.
- srmTargetGroup created for replication purposes.
- srmHostGroup created to access luns from required ESXi hosts.
- Created Lun mappings for replication volumes, target group and host group.
- Configured Scheduled HPR service between protected site and recovery site.

<table>
<thead>
<tr>
<th>Note:</th>
</tr>
</thead>
<tbody>
<tr>
<td>In order to support reverse replication after failover as part of failback, do not configure HPR service with multiple replication targets on the recovery host. Multiple replication prevents the reverse replication.</td>
</tr>
<tr>
<td>Also note that only Scheduled HPR service will be discovered over SRM.</td>
</tr>
<tr>
<td>Newly created Scheduled HPR service on the protected side must be Manager to be discovered by SRM.</td>
</tr>
<tr>
<td>Multiple hpr services from a single source not allowed.</td>
</tr>
</tbody>
</table>

- Once you have configured the HPR service, execute hpr run-once command to force zvol creation on the recovery side.
  
  `CLI@nexenta> hpr run-once <hpr-service-name>`

- See NexentaStor 5.1.1 High Performance Replication (HPR) User Guide for information on configuring HPR services and the related tasks.

Post NexentaStor SRA Installation Tasks

Once you have installed SRA, complete the steps listed here in the order in which they are presented, to plan, test, and run the recovery of vCenter server VMs.

Table 1-2: Task Map

<table>
<thead>
<tr>
<th>Task</th>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Specify NSVP as Array Manager</td>
<td>For information, see Configuring NSVP as Array Manager and NexentaStor 5.1.1 vCenter Plugin QuickStart Guide</td>
</tr>
</tbody>
</table>
2. Discover Replication Services and Related Datastores
Once you specify NSVP as array manager, SRM discovers the paired VMs that run the HPR replication services between the protected site and the recovery site. SRM also discovers the storage datastores that are part of the HPR services and checks for errors.
Follow the steps listed in this section to view the direction of replication and the details associated with the replication service when it gets discovered.

For information, see Discover Replication Services and Related Datastores and NexentaStor 5.1.1 High Performance Replication (HPR) User Guide

3. Configure Resource Mapping
Once you establish the pairing between protected and recovery site, map the resources on the protected site to the resources on the recovery site. This mapping is generally done to define which computed resources are used at the recovery site when virtual machines are recovered. This step will ensure that the VMs under the mapped protected site host will be powered ON at the recovery site host in case of a disaster.

For information, see Configuring Resource Mapping

4. Configure Folder Mappings
Protected site vCenter server might contain lot of VMs and data centers grouped into folders that holds the network clients’/users’ workload. Create folder mappings to avoid all VMs from being dumped into the recovery site during a disaster. This step is essential for better management.

For information, see Configuring Folder Mappings

5. Configure Network Mappings
To access the VMs that are powered on at the recovery Site configure network mappings.

For information, see Configuring Network Mappings

6. Configure Placeholder Datastores
When a VM is added to a protection group, SRM creates a placeholder VM at the recovery site. And in case of a disaster, when a protected virtual machine is recovered, SRM replaces its placeholder with the recovered VM and powers it on according to the settings of the recovery plan.

Once you have configured the inventory mappings, reserve a place for protected virtual machines in the recovery site by configuring a placeholder datastore. Pick non-replicated placeholder datastore and these datastores must be visible to all ESXi hosts in the cluster.

Configure placeholder datastores on both protected and recovery sites to support failback.

For information, see Configuring Placeholder Datastores
<table>
<thead>
<tr>
<th>Task</th>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Create Protection Group</td>
<td>For information, see Creating Protection Group</td>
</tr>
<tr>
<td>Create a protection group to include a list of virtual machines that you wish to fail over together to the recovery site during a disaster.</td>
<td></td>
</tr>
<tr>
<td>8. Create Recovery Plan</td>
<td>For information, see Creating Recovery Plan</td>
</tr>
<tr>
<td>Create a recovery plan to automatically recover virtual machines from the protected site to the recovery site. In a recovery plan you may include one or more protection groups and you can include the same protection group to more than one recovery plan. You create one recovery plan to handle a planned migration or other can be created only to recover specific application or services by only including specific protection groups as part of the recovery plan.</td>
<td></td>
</tr>
<tr>
<td>9. Test Run the Recovery Plan</td>
<td>For information, see Running Test Recovery Plan</td>
</tr>
<tr>
<td>Once you have configured all the SRM settings, you can test run the recovery plan to ensure that the disaster recovery plan works as planned.</td>
<td></td>
</tr>
</tbody>
</table>
Verifying the Configuration Steps

At any instance, you may verify the configuration steps that you must complete to set up the recovery plan. Navigate to this page to view the list of completed tasks and tasks yet to finish.

- To verify:
  1. Login to the protected site.
  2. Click Home.
  3. Select SRM.
  4. Click on sites.
  5. Select any one of the sites from the listed sites.
  6. Click Summary tab.
  7. In the Guide to configuring SRM window, you will notice that the steps that are successfully completed will appear with the green check mark as shown in the diagram below.

![Guide to configuring SRM](image-url)
Configuring NSVP as Array Manager

Once you installed SRA, you must configure NSVP as array managers for both sites so that the SRM can discover the replicated storage, compute datastore groups and initiate storage operations.

- To configure NSVP as array manager on both the sites:
  1. Select Array Managers in the Site Recovery Manager interface, and select the site on which you want to configure array managers.
  2. Under the Related Objects tab, click Array Based Replication.
  3. Click Add Array Manager.
  4. In the Add Array Manager window, choose the “Add a pair of array managers” option to add two array managers, one for each site.
  5. If you selected “Add a pair of array managers”, your protected and recovery site will be automatically picked up in the next Location window.
  6. Verify the information displayed for your sites before moving on to the next window.

7. Now Nexenta Storage Replication Adapter (SRA) gets detected automatically since they were installed on both the sites.

   If the manager type “Nexenta Storage Replication Adapter” did not appear in the drop down box, rescan for SRAs or check that you have installed an SRA on the Site Recovery Manager Server host on both sites.

   Provide the required information for the type of SRA you selected.

8. In the Configure array manager window, Type a name for the array manager in the Display Name text box.

   Specify a name that will help you to recognize the storage associated with this array manager.
9. Provide the connection parameters for NSVP array manager you are configuring.

10. The connection parameters include the IP address of the NexentaStor vCenter Plugin (NSVP) or the name of the already registered (using NSVP) NexentaStor HA cluster appliance on that site.

11. Enter IPs or FQDNs for each NSVP or NexentaStor HA cluster name for each replication site.

12. Follow the above steps to complete the configuration of the paired array manager of the other site.

13. Now you enable the array pairs to be used with SRM.

14. In the Ready to complete window, review your settings before clicking finish.

15. Click Finish.

Verify the Array Manager Configuration

To verify both the array managers are configured successfully, navigate to the page that displays both the array managers.

* To verify the array managers:
  2. Click Array Based Replication from the left panel.
  3. Under the Objects tab, you will see that the configured protected site and recovery site array managers are displayed with the Status “OK”.

![Array Based Replication](image)
Configuring Resource Mapping

Once you establish the pairing between protected and recovery site, you can configure to map the resources on the protected site to the resources on the recovery site. The mapping is generally done to define which compute resources are used at the recovery site when virtual machines are recovered. This step will ensure that the VMs under the mapped protected site host will be powered on at the recovery site host that you map to.

To create the resource mapping:

1. Using the vSphere Web Client, login to the protected site.
2. Click Home.
3. Click Site recover on the home page.
4. Select protected site listed under the Sites.
5. Click Summary tab.
6. In the Guide to configuring SRM, select Create resource mappings.

7. In the Create Resource Mapping window, select the resource pool from the protected site and map it to the appropriate mapping object in the recovery site.
8. Click Add mappings.

In the figure below you will see that the ESXi host in the production site is mapped to the ESXi host on the recovery site. This mapping ensures that all VMs in the host from the production site will be powered ON in the recovery site host in case of a disaster. To successfully fail over in an event, ensure that you have also configured the HPR service for the storage replication. Also ensure that the replication LUNs are mapped to the recovery site host.
Prepare Reverse Mappings

To fail back from recovery site to protected site, configure reverse mapping. To configure reverse mapping, select all the mapped objects and click Select all applicable and click Finish.

View or Modify the Resource Mapping

Note: Once you configure mappings at the protected site, configure inventory mappings at the recovery site to enable reprotect.

- To view and modify the resource mapping you just created:
  1. Using the vSphere Web Client, login to the protected site.
  2. Click Home.
3. Click Site recover on the home page.
4. Select protected site listed under the Sites.
5. Click Manage tab.
6. Click Resource Mappings tab.

Configuring Folder Mappings

There could be lot of VMs and data centers grouped into folders on the protected site vCenter server that holds the networks clients/users workloads. Create folder mappings to avoid all VMs from being dumped into the recovery site during a disaster. This step is essential for better management.

- To create the folder mappings:
  1. Using the vSphere Web Client, login to the protected site.
  2. Click Home.
  3. Click Site recover on the home page.
  4. Select protected site listed under the Sites.
  5. Click Summary tab.
  6. In the Guide to configuring SRM, select Create folder mappings.
7. Select either automatic or manual option to create the folder mapping.
8. Select the Datacenter or folder from the protected site and select appropriate mapping folder in the right side from recovery site and click on Add Mappings.
9. To configure reverse mapping click Select all applicable.
10. Once you have configured the folder mapping, you can view it and reconfigure it by navigating to this page: home > Site recovery icon > Sites > protected site > Manage > Folder mappings.
11. To reconfigure, select the mapping and click on Edit mapping.

Configuring Network Mappings

To access the VMs that are powered on at the recovery Site configure network mappings.

1. Repeat steps 1 to 5 from Configuring Folder Mappings
2. In the Guide to configuring SRM, select Create network mappings.
3. Select the mode of creating the network mappings.
4. Select the networks from the protected site and map them to the appropriate networks on the recovery site.
5. Click Add mappings to create the mappings.
6. To configure the reverse mapping for the paired site, click Select all applicable that creates the network mapping between DR site and protected site.
7. Click on Finish.
8. View or reconfigure the network mappings by navigating to this page: Home > Site recovery icon > Sites > protected site > Manage > Network mappings.
9. To reconfigure, select the mapping and click on Edit mapping.
Configuring Placeholder Datastores

Once you have configured the inventory mappings, assign a place for protected virtual machines in the recovery site by configuring a placeholder datastore. Pick a non-replicated placeholder datastore. Ensure that the datastore you select is visible to all ESXi hosts in the cluster.

Configure placeholder datastores on both primary and secondary sites to support failback.

- To configure placeholder datastores:
  1. Using the vSphere Web Client, login to the protected site.
  2. Click Home.
  3. Click Site recovery on the home page.
  4. Select protected site listed under the Sites.
  5. Click Summary tab.
  6. In the Guide to configuring SRM, select Configure placeholder datastore.
  7. From the Configure Placeholder Datastore, select the datastores.

These datastores can be on local storage or on shared storage available to all ESXi hosts in the cluster.

Discovering Replication Services and Related Datastores

For replication services and datastores to be discovered, you must have created volumes, hpr services and datastores.
Once you have configured NSVP as array manager, you may discover the paired VMs that run the HPR replication services between the protected site and the recovery site. SRA also discovers the storage datastores that are part of the HPR services and checks for errors. You can also view the direction of replication in the Status column.

- **To discover replication services and their related datastores:**
  2. Click Array Based Replication from the left panel.
  3. Under the Objects tab, you will see that the configured protected site and recovery site array managers are displayed with the Status “OK”
  4. Select any array managers.
  5. Under Manage tab click Array Pairs button.

6. The above example displays information for the protected site manager with outgoing replication service.

Once you run the check, you can include these discovered devices in the SRM protection group. To do this you must have created the protection group. Before you create a protection group you may want to define the inventory mappings so that SRM can create placeholder VMs in the recovery site. However, SRM does not enforce an inventory mapping as a requirement. If you create protection groups without mapping the inventories, you will end up configuring each protected VM individually.

### Creating Protection Group

Create a protection group to include a collection of virtual machines that SRM will protect together during a recovery session. An array-based protection group can contain one or more datastore groups.

**Note:**
- The virtual machines that you are planning to include in a protection group must be configured to implement the same type of replication mechanism.

- **To create a protection group:**
  1. Using the vSphere Web Client, login to the protected site.
  2. Click Home.
3. Click Site recovery on the home page.
4. Select protected site listed under the Sites.
5. Click Summary tab.
6. In the Guide to configuring SRM, select Create a Protection Group.
7. Specify the name and location for the protection group.
8. Select the Protected site and type of replication for this protection group.
9. Select the datastore groups from the list to be grouped to use for this protection group. All the virtual machines stored on these datastore groups will be recovered together as part of this protection group.
10. Review your settings selection and click Finish.

Now that you have created a protection group, you can create recovery plan to associate with your protection groups.
Creating Recovery Plan

Once you create a protection group, you can create recovery plan to include one or more protection groups. In the recovery plan, you can specify the order in which virtual machines will start up on the recovery site. This step is essential so that in case of a DR and you invoke a recovery plan, the SRM server at the recovery site will know the preferences for bringing the replicated VMs.

To create a recovery plan:

1. Using the vSphere Web Client, login to the protected site.
2. Click Home.
3. Click Site recovery on the home page.
4. Select protected site listed under the Sites.
5. Click Summary tab.
6. In the Guide to configuring SRM, select Create a recovery plan.
7. Specify the name and location for the recovery plan you are creating.

8. Select the site to which the VMs in this recovery plan will be recovered.

9. Select the list of protection groups which will be included as part of this recovery plan.
10. Select the networks to use while running tests of this recovery plan.

You can manually select the test networks if you have created for the test purposes or you can leave the default auto created test network called "Auto".

When you are performing the test recovery, use "Auto" for the recovered virtual machines to isolate from production virtual machines.

11. Review all the settings you specified while creating the recovery plan and click Finish to create the recovery plans.

12. After creating the recovery plans, you can review them by navigating to Site > Protected Site > Related Objects > Recovery Plans.

You can edit the recovery plans to include custom steps, or to reconfigure the VM priority and so on.
Running Test Recovery Plan

Once you have configured the SRM settings discussed in the previous sections, you can test run the recovery plan to ensure that the disaster recovery plan works as planned. Before testing the recovery plan, verify that you have completed all the configuration steps for SRM as described in this section Verifying the Configuration Steps.

You can test run the recovery plan as often as needed and anytime since it does not disrupt replication or any other activities at either site.

To test run:

1. Using the vSphere Web Client, login to the protected site.
2. Click Home.
3. Click Site recovery on the home page.
4. Select protected site listed under the Sites.
5. Click Monitor tab.
6. Click on the recovery plan from the left panel that you want to run.
7. Under the Recovery Steps tab, click on the green play button.

8. In the test window, specify whether to replicate the recent changes to the recovery site.

9. Review your settings before invoking the test.

10. Once you initiate a test run, you can monitor the status of the steps involved as part of the recovery process as displayed in this diagram.
11. Once the test run is finished successfully, you can view the recovery steps and status of the test in the following window.

12. Now you will see that the virtual machines included as part of the protection group in the recovery plan is powered ON in both protected and recovery site without disrupting the production virtual machines.