

HP StoreVirtual Storage SRA for VMware SRM Deployment Guide

HP Part Number: AX696-96251
Published: March 2013
Edition: 3



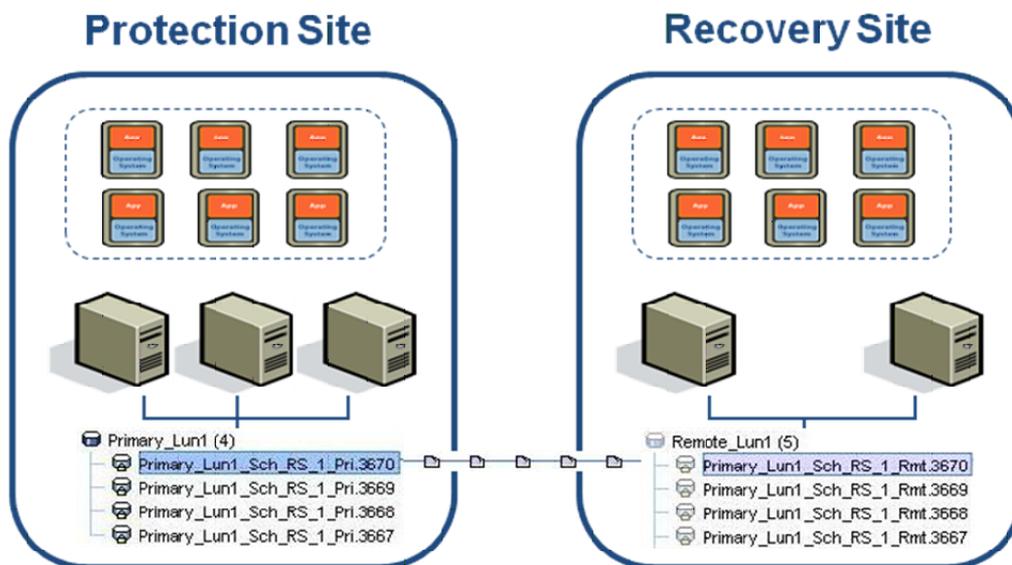
1 Using the HP StoreVirtual SRA Software for VMware vCenter SRM 5.x

The HP StoreVirtual SRA Software for VMware vCenter SRM enables full featured use of the VMware Site Recovery Manager. Combining Remote Copy replication with VMware SRM provides an automated solution for implementing and testing disaster recovery between geographically separated sites.

Configuring SRA

A typical SRM configuration involves two geographically separated sites with TCP/IP connectivity, the protection site and the recovery site. The protection site is the site that is being replicated to the recovery site for disaster recovery. Each site contains HP StoreVirtual Storage, ESX servers, a Virtual Center Server, and an SRM server.

Figure 1 Typical SRM configuration with two geographically separate sites



Requirements

- LeftHand OS release 9.5 or later
- 64-bit Windows OS
- .NET 3.5 will be installed if not present
- VMware vCenter running on two sites

Installing SRA

First install the VMware SRM at each site, and then install the SRA on the SRM server at each site. You can obtain the SRA on a DVD, or as an .ISO image downloaded from the website: <http://www.hp.com/go/StoreVirtualDownloads>. Once the SRA is installed, the SRM can discover

replicated volumes between sites by configuring arrays in the SRM. Configuring HP StoreVirtual Storage arrays in the SRM requires the following:

- The IP addresses of the HP StoreVirtual Storage managers. More than two addresses can be input by using a comma or semicolon separator.
- The same user name and password in each site. This is the administrative user name and password configured in the CMC.

The user at the recovery site must have full permissions on the management group but can be limited to read only on all other permissions.

Installing HP StoreVirtual Application Aware Snapshot Manager (optional)

Install and configure the Application Aware Snapshot Manager on both Primary and Remote site VCenter servers. For installation instructions, see the *HP StoreVirtual Storage Application Aware Snapshot Manager Deployment Guide*

The replication schedule controls the application aware snapshot integration. If the schedule has managed enabled then that enables the application managed snapshot integration, where in SRA takes managed snapshots in syncOnce and reports to the SRM the recovery points with VM snapshots using VmlmageConsistencyEnabled flag. If the schedule has managed disabled then that disables the application managed snapshot integration as no managed snapshots are taken. Exceptions: The SRA can handle any changes in configuration, but this is a normal, baseline scenario.

How the SRA works with VMware SRM 5.x

The SRA has three primary functions for the SRM:

- **Test Failover**—A Test scenario that checks failover conditions and parameters. This will create temporary writable sources at the Backup Site. In the case of HP StoreVirtual Storage, SmartClone volumes will be created.
- **Failover**—Transitioning production services from a Primary Site to a Backup Site, with the Primary Site either available or not.
- **Reprotect**—After a Failover, planned or unplanned, transitioning production services from the Backup Site back to the Primary Site. This entails reversing Replication so Replication goes from Backup to Primary Site, doing a Failover in Reverse, and then reversing Replication again so replication goes from the Primary to Backup Site.

These functions each depend on specific configuration information in a HP StoreVirtual Storage management group.

Array and volume discovery

The SRM gets information from the SRA about what volumes are being replicated by the LeftHand OS software. The SRM then compares that list to the volumes it recognizes in a VMware environment.

For normal SRM operation, a replicated volume needs to have a Remote Copy schedule with completed remote copies at a different HP StoreVirtual Storage management group under a remote volume that is not mounted at the remote site. This is a standard HP StoreVirtual Storage Remote Copy configuration.

For instructions on how to configure Remote Copy schedules, see the *HP StoreVirtual Storage Remote Copy User Guide*. The latest version of this document can be found at: <http://www.hp.com/support/StoreVirtualManuals>. The same information is available from the HP StoreVirtual Storage Online Help in the HP StoreVirtual Centralized Management Console.

Volumes recognized by the SRA

Volumes must be configured with scheduled remote snapshots or they will not be considered for the SRM by the SRA. The SRA recognizes the scheduled remote snapshots as replicated LUNs for

the SRM to manage. Volumes that are being remote copied only manually are not updated consistently enough to be useful for disaster recovery and the SRM.

If a volume has scheduled remote snapshots, and you create an ad hoc manual remote snapshot of that volume, then the SRA will recognize the manual remote snapshot along with the scheduled remote snapshots. Such ad hoc remote snapshots may be useful to test failover with a more recent copy than the schedule has, or to push the latest updates to the remote site before a foreseeable disaster occurs.

-
- ❗ **IMPORTANT:** A volume in the protected site should not have two or more schedules going to multiple volumes on the same remote management group.
-

Volumes ignored by the SRA

Remote snapshots within the same HP StoreVirtual Storage management group are ignored. These snapshots are not considered disaster recovery copies since they are usually created to clone a volume in the HP StoreVirtual Storage, and copies that reside on the same SAN are not useful for disaster recovery.

Testing failover at the recovery site

The SRM performs test failovers at the recovery site when requested. When test failovers are requested, the SRA performs the following steps:

1. Select the replicated volumes.
2. Identify the latest complete Remote Copy snapshot.
3. Delete any temporary writable space on that snapshot to ensure an unedited snapshot is presented to ESX servers.
Use this snapshot to create a SmartClone volume.
4. Configure authentication for ESX servers to directly mount SmartClone volumes.
5. When testing stops, to conserve space on the SAN, delete the temporary writable space that was used during the test.

Actual failover at the recovery site

In the event of a disaster, the SRM can perform actual failover when requested to. When actual failover is requested, the SRA performs the following steps:

1. Select the replicated volumes.
2. Identify and remove any incomplete remote copies that are in progress and present the most recent completed Remote Copy as a primary volume.
3. Convert remote volumes into primary volumes and configure authentication for ESX servers to mount them.

If an actual failover does not run completely for any reason, the failover can be called many times to try to complete the run. If, for example, only one volume failed to restore and that was due to a normal snapshot being present, the snapshot could be manually deleted and the failover be requested again.

Reprotect at the recovery site

After a failover, the SRM can perform reprotect when requested to. When actual reprotect is requested, the SRA performs the following steps:

1. On the original protected site (which will become recovery site after reprotect is executed)
 - a. Pause any schedules going from the primary volume to the remote volume.
 - b. Remove any ESX Server assignments.
 - c. Change the primary volume to the backup volume.

2. On the original recovery site (which will become protected after reprotect is executed), create a remote schedule with the primary volume as the target, or un-pause remote schedules.
3. Delete any SRA-created snapshots and schedules.

Troubleshooting the SRA

Table 1 Troubleshooting the SRA

Problem	Cause	Solution
The HP StoreVirtual Storage array does not appear in the drop down list of arrays for the SRM.	The SRA might not be installed or the SRM service has not restarted since the SRA was installed.	Install the SRA and restart the VMware SRM Service.
The SRM does not see the volumes that are replicated.	Volumes are only reported as replicated to the SRM if they have a Remote Copy schedule.	Create a Remote Copy schedule for all volumes that are to be managed by the SRM.
CHAP-authenticated ESX servers are failing to perform test failovers or actual failover.	The SRM does not store or pass CHAP passwords to the SRA. For CHAP authentication to work, the authentication group with correct password must be already configured on the LeftHand OS management group.	Create authentication groups for any CHAP authentication required on the recovery site before running test failover or failover.
The SRA fails to connect to the SAN.	SRM servers running the SRA must be able to route TCP/IP traffic to the SAN that is to be managed, and must have a valid username and password.	Configure a network that can route from the SRM servers to the HP StoreVirtual Storage, and verify the user account configured in the SRM.
When the HP StoreVirtual Storage array is discovered, an error message states there are duplicate LUNs.	Both the primary and remote volume might be mounted at the same site.	Do not mount primary and remote volumes at the same site at the same time.



TIP: Read the messages that are displayed in the SRM UI during various functions as they provide useful information.

2 Support and other resources

Contacting HP

For worldwide technical support information, see the HP support website:

<http://www.hp.com/support>

Before contacting HP, collect the following information:

- Product model names and numbers
- Technical support registration number (if applicable)
- Product serial numbers
- Error messages
- Operating system type and revision level
- Detailed questions

Subscription service

HP recommends that you register your product at the Subscriber's Choice for Business website:

<http://www.hp.com/go/e-updates>

After registering, you will receive e-mail notification of product enhancements, new driver versions, firmware updates, and other product resources.

Rack stability

Rack stability protects personnel and equipment.

⚠ WARNING! To reduce the risk of personal injury or damage to equipment:

- Extend leveling jacks to the floor.
 - Ensure that the full weight of the rack rests on the leveling jacks.
 - Install stabilizing feet on the rack.
 - In multiple-rack installations, fasten racks together securely.
 - Extend only one rack component at a time. Racks can become unstable if more than one component is extended.
-

Customer self repair

HP customer self repair (CSR) programs allow you to repair your HP product. If a CSR part needs replacing, HP ships the part directly to you so that you can install it at your convenience. Some parts do not qualify for CSR. Your HP-authorized service provider will determine whether a repair can be accomplished by CSR.

For more information about CSR, contact your local service provider, or see the CSR website:

<http://www.hp.com/go/selfrepair>

HP Insight Remote Support Software

HP strongly recommends that you install HP Insight Remote Support software to complete the installation or upgrade of your product and to enable enhanced delivery of your HP Warranty, HP Care Pack Service or HP contractual support agreement. HP Insight Remote Support supplements your monitoring, 24x7 to ensure maximum system availability by providing intelligent event diagnosis, and automatic, secure submission of hardware event notifications to HP, which will

initiate a fast and accurate resolution, based on your product's service level. Notifications may be sent to your authorized HP Channel Partner for on-site service, if configured and available in your country. The software is available in two variants:

- HP Insight Remote Support Standard: This software supports server and storage devices and is optimized for environments with 1-50 servers. Ideal for customers who can benefit from proactive notification, but do not need proactive service delivery and integration with a management platform.
- HP Insight Remote Support Advanced: This software provides comprehensive remote monitoring and proactive service support for nearly all HP servers, storage, network, and SAN environments, plus selected non-HP servers that have a support obligation with HP. It is integrated with HP Systems Insight Manager. A dedicated server is recommended to host both HP Systems Insight Manager and HP Insight Remote Support Advanced.

Details for both versions are available at: <http://www.hp.com/go/insightremotesupport>

To download the software, go to Software Depot:

<http://www.software.hp.com>.

Select **Insight Remote Support** from the menu on the right.

Related information

You can find the documents referenced in this guide from the Manuals page:

<http://www.hp.com/support/StoreVirtualManuals>

HP websites

For additional information, see the following HP websites:

- <http://www.hp.com>
- <http://www.hp.com/go/storage>
- http://www.hp.com/service_locator
- <http://www.hp.com/support/manuals>
- <http://www.hp.com/support/downloads>
- <http://www.hp.com/storage/whitepapers>

3 Documentation feedback

HP is committed to providing documentation that meets your needs. To help us improve the documentation, send any errors, suggestions, or comments to Documentation Feedback (docsfeedback@hp.com). Include the document title and part number, version number, or the URL when submitting your feedback.