

Site Recovery Manager FAQ

January 19, 2018

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1. SRM FAQ

Frequently asked questions about Site Recovery Manager

1.1 Introduction and General Information

Introduction and General Information

What is VMware vCenter Site Recovery Manager?

VMware vCenter™ Site Recovery Manager™ is the industry leading disaster recovery management solution. Site Recovery Manager offers automated orchestration and non-disruptive testing of centralized recovery plans for all virtualized applications.

Has the name of the product changed recently?

Yes. The former official name of the product was VMware vCenter Site Recovery Manager. With the introduction of the 6.1 version, the “vCenter” family name has been removed. The new official name of the product is VMware Site Recovery Manager

How does Site Recovery Manager work?

Site Recovery Manager integrates with VMware vSphere® through VMware vCenter Server™ and an underlying replication technology. It can integrate natively with vSphere Replication™ or with a broad range of storage array-based replication solutions from leading storage vendors through storage replication adapters. Site Recovery Manager guides users through the process of configuring recovery plans. At the time of failover or testing, Site Recovery Manager automates execution of the recovery plan.

What is VMware vSphere Replication™?

vSphere Replication is VMware’s hypervisor-based replication technology for vSphere virtual machines. vSphere Replication is a robust and scalable solution that simplifies DR protection through storage-independent, VM-centric replication with customizable recovery point objectives (RPO) and multiple point-in-time recovery. vSphere Replication is a feature of the vSphere platform, included at no additional cost. For more details and answers to common questions about vSphere Replication see the FAQ located here.

Is an evaluation copy of Site Recovery Manager downloadable from vmware.com?

Yes. A 60-day evaluation copy of Site Recovery Manager Standard edition can be downloaded from the Product Evaluation Center. Only the latest generally available version of the Site Recovery Manager product is available for free evaluation.

Is an evaluation copy of vSphere Replication downloadable from vmware.com?

Yes. vSphere Replication is a feature of the vSphere platform. As such, it can be evaluated as part of the 60-day evaluation copy of vSphere or vSphere with Operations Management™.

If I can’t or don’t have the time to install Site Recovery Manager in my environment what are my options for evaluating it?

Your best option is likely the VMware Hands-on-Labs. VMware Hands-on-Labs provide an opportunity to interact with live environments and either follow the lab manual through various exercises or just try out the available products. There is a lab, HOL-1405 specifically focused on Site Recovery Manager that will allow you to experience much of what Site Recovery Manager has to offer without you spending the time installing and configuring it in your own environment.

1.2 Technical Support

Technical Support

What kind of technical support is required/available for Site Recovery Manager?

To ensure that you realize the full benefits of the Site Recovery Manager product a minimum of one year of Support and Subscription is required – either Basic or Production. Depending on the criticality of your systems being managed by Site Recovery Manager, you may want to consider purchasing

Mission Critical Support or Business Critical Support. The Mission Critical Support is a supplemental service to Production Support which provides the highest level of personalized, proactive customer support available from VMware. It includes an assigned Account Manager and quarterly business reviews. Business Critical Support is a supplemental service to Production Support which provides your centralized data center team with personalized technical support delivered by a designated team of experts familiar with your system configuration, past support experience and specific business needs. For more details on Production and Basic subscription levels, please visit the [VMware Support Services Website](#).

Does VMware offer support for earlier versions of Site Recovery Manager?

Up-to-date information regarding the Lifecycle Policy of Site Recovery Manager can be found here: <https://www.vmware.com/support/policies/enterprise-application.html>

Who provides support for the components of a Site Recovery Manager deployment?

Questions and problems that appear to be caused by Site Recovery Manager should be directed to VMware support. Questions and problems that appear to be caused by the array-based replication software, storage replication adapter (SRA) or storage array should be directed to the support services of the storage vendor. VMware and the vendors who provide replication adapters have cooperative agreements in place to ensure that support requests can be coordinated between VMware and the storage partner.

1.3 Requirements and Compatibility

Requirements and Compatibility

What components are required for a Site Recovery Manager deployment?

Instances of vSphere, vCenter Server and Site Recovery Manager are required at both the protected site and the recovery site (this does not involve licensing aspects. Licensing is covered in later segment of this document) Site Recovery Manager also requires an underlying replication product to copy virtual machines to the recovery site. Customers have the choice to use either vSphere Replication or third-party array-based replication software. When using array-based replication software, a Storage Replication Adapter (SRA) is also required.

Which editions and versions of VMware vSphere are compatible with Site Recovery Manager?

Site Recovery Manager is supported with any edition of vSphere, except for vSphere Essentials. See the [Product Interoperability Matrix](#) for specific versions of vSphere that are supported for each version of Site Recovery Manager. Site Recovery Manager does not require that all licenses of vSphere associated with its deployment be from the same edition.

Which editions and versions of vCenter Server are compatible with Site Recovery Manager?

Site Recovery Manager is supported with vCenter Server for Essentials, vCenter Server Foundation and vCenter Server Standard. See the [Product Interoperability Matrix](#) for specific versions of vCenter Server that are supported for each version of Site Recovery Manager. Note that each version of Site Recovery Manager requires a specific version of vCenter Server.

Which array-based replication products are compatible with Site Recovery Manager?

Site Recovery Manager integrates with third-party storage array-based replication products through a Storage Replication Adapter (SRA). See the [Compatibility Guide](#) for supported SRAs.

Is Site Recovery Manager compatible with stretched storage solutions?

Yes. Site Recovery Manager 6.1 and newer versions support stretched storage solutions available by some of the major VMware storage partners. For details, check their SRA documentation.

Do I need a storage replication adapter to use a stretched storage solution with Site Recovery Manager?

Yes. Just as with array-based replication options, Site Recovery Manager requires an SRA to integrate with stretched storage products. See the Compatibility Guide for supported SRAs.

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If I am upgrading the Site Recovery Manager version, do I need to re-install my SRAs?

Yes. SRAs are updated to support the latest generally available version of Site Recovery Manager. See the SRA documentation for details.

Does Site Recovery Manager work with VMware vSAN?

Yes, vSAN is fully supported as either a protected or recovery site for Site Recovery Manager when using vSphere Replication.

Will Site Recovery Manager work with VMware Virtual Volumes?

No, Site Recovery Manager is not currently compatible with Virtual Volumes.

Does Site Recovery Manager work with 'x' vSphere feature?

Site Recovery Manager works with many of the features in vSphere. For a complete list and details around usage check [here](#).

1.4 Pricing and Licensing

Pricing and Licensing

Are customers of a previous version of Site Recovery Manager entitled to the latest version?

Yes. Customers with a current Support and Subscription contract for Site Recovery Manager are entitled to licenses of the latest version of the product at no additional charge through their subscription entitlement.

Customers with current Support and Subscription contracts for bundles that contain Site Recovery Manager are entitled to new versions and new licenses based on the subscription entitlement for the individual products in the bundle.

If a customer's Support and Subscription (SnS) contract expired before the latest Site Recovery Manager release, are they entitled to upgrades? Because their SnS is expired, they are not entitled to receive an upgrade to the latest version of Site Recovery Manager. They will need to renew their SnS and pay the appropriate back fees/penalties. If you are in this situation you may request a [Support Contract Renewal](#) quote.

If a customer has an active SnS contract and does not want to upgrade licenses, can they wait to perform a version upgrade?

Yes. As long as you have an active SnS contract at the time of general availability of the latest version of Site Recovery Manager, you are entitled to perform a version upgrade on your licenses at any time.

Can a customer upgrade a subset of their licenses to the latest version of Site Recovery Manager?

Yes. You can upgrade all, some or none of your Site Recovery Manager licenses. For example, if you have 50 Site Recovery Manager 5.0 licenses and want to upgrade only 30 of them, you will have 30 licenses of the latest version of Site Recovery Manager and 20 licenses of Site Recovery Manager 5.0 after the upgrade process.

What is the current licensing metric for Site Recovery Manager?

The latest version of Site Recovery Manager can be purchased as a standalone product in two editions, Standard and Enterprise. Both editions can only be licensed "per protected virtual machine." A "protected virtual machine" is defined as a VM that is part of a Site Recovery Manager protection group, regardless of the state of the VM.

If a customer already has "per processor" Site Recovery Manager licenses, they can continue buying "per processor" licenses. Customers can also covert their "per processor" licenses to "per virtual machine" licenses and buy "per virtual machine" licenses for expansion.

How can existing “per processor” licenses be converted to the current licensing model of “per virtual machine” licenses?

Customers without an Enterprise License Agreement (ELA) who have processor licenses for Site Recovery Manager are entitled to virtual machine licenses converted at a ratio of 5 virtual machines per 1 processor. (e.g., a customer with 20 processor licenses would receive 100 virtual machine licenses). The licenses are automatically made available in the VMware License Management portal upon an upgrade of the version of Site Recovery Manager.

In cases in which the standard conversion ratio is not sufficient to support a customer’s existing deployment, customers can contact VMware support for more information.

Customers with ELAs who have existing processor licenses can choose either to upgrade using the per-virtual machine licensing model by calling VMware support or remain with processor licenses by upgrading using the License Management portal.

To request a conversion, go to the Support tab on the [My VMware® portal](#) and file a Licensing Support Request. For more information on the conversion process, please see the [per virtual machine licensing page](#).

Can a customer combine “per processor” licenses with “per virtual machine” licenses?

No. A customer can either have “per processor” licenses or “per virtual machine” licenses.

Is Site Recovery Manager currently available for purchase with “per processor” licenses?

Yes, but only if the customer currently has “per processor” Site Recovery Manager licenses. If a customer has converted all of their Site Recovery Manager licenses from “per processor” to “per virtual machine” licenses, they cannot buy or go back to Site Recovery Manager “per processor” licenses.

What is the difference between Site Recovery Manager Standard and Site Recovery Manager Enterprise?

Site Recovery Manager Enterprise provides enterprise-level protection to all virtualized applications with no licensing restriction on the number of virtual machines that can be protected. It also provides certain advanced capabilities that are not available in the Standard Edition.

Site Recovery Manager Standard is designed for smaller environments and is limited to 75 protected virtual machines per physical site and per Site Recovery Manager instance. [Check here for more details](#).

Can Standard licenses be upgraded to Enterprise licenses?

Yes. Customers may upgrade Site Recovery Manager Standard to Site Recovery Manager Enterprise in 25 virtual machine packs. When a customer wants to expand beyond the 75 virtual machine limit of Site Recovery Manager Standard, all 75 existing licenses of the Standard edition must be upgraded to Enterprise in order to acquire new virtual machine licenses.

Can Standard and Enterprise licenses be combined in a single Site Recovery Manager instance?

No. Only one edition of Site Recovery Manager can be configured under a vCenter Server instance.

Can Enterprise licenses be downgraded to Standard licenses?

No. As a general policy, VMware does not allow for edition downgrades for any of its products. Site Recovery Manager is no exception.

Can licenses of the latest version of Site Recovery Manager be downgraded to an earlier version?

Licenses of the latest version cannot be used with earlier versions of Site Recovery Manager. Customers will need to downgrade their Site Recovery Manager licenses via the License Portal. Site Recovery Manager Enterprise edition licenses may be downgraded with a conversion ratio of 1 virtual machine to 1 virtual machine. Licenses cannot be downgraded to versions earlier than Site Recovery Manager 5.0. Site Recovery Manager Standard edition licenses cannot be downgraded to an earlier version of Site Recovery Manager.

Are VMware vSphere licenses required for both the protected and recovery sites?

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Yes, vSphere licenses are required for any server on which vSphere is installed, whether that host is at a protected site or a recovery site, and whether a server is running or powered down at the recovery site. Site Recovery Manager requires at least one licensed vSphere server at both the protected site and the recovery site.

Are vCenter Server licenses required for both the protected and recovery sites?

Yes, Site Recovery Manager requires two active and licensed vCenter Server instances, one at each site (protected and recovery).

NOTE: The shared recovery sites feature in Site Recovery Manager enables multiple protected sites with multiple vCenter Server instances to be recovered at a site with a single vCenter Server instance. (i.e., the multiple instances of Site Recovery Manager running at the shared recovery site are registered with the same single instance of vCenter Server at the shared recovery site, so you do not need multiple vCenter Server instances at the shared recovery site.)

Are Site Recovery Manager licenses required for the recovery site?

Only virtual machines that are protected by Site Recovery Manager require Site Recovery Manager licensing. There are two scenarios to consider:

Uni-directional protection: Site Recovery Manager is configured only to fail over virtual machines from site A to the site B. In this case, licenses are required only for the protected virtual machines at protected site A

Bi-directional protection: Site Recovery Manager is configured to fail over virtual machines from site A to site B at the same time that it is configured to fail over a different set of virtual machines from site B to site A. In this case, Site Recovery Manager licenses must be purchased for the protected virtual machines at both sites.

Licenses are required for all protected virtual machines, even if they are powered off. With “per processor” licensing, customers need a license for each processor on hosts that are running protected virtual machines.

If a customer has licenses for VMware vCloud Suite Enterprise (which at the time of purchase contained Site Recovery Manager) at their primary site, what licenses are needed at the secondary/ disaster recovery site?

Licensing requirements depend on how DR is set up at the customer site. The table below shows the licensing requirements in both sites.

DR SETUP	LICENSING REQUIREMENTS AT SITE A	LICENSING REQUIREMENTS AT SITE B
Uni-directional – Site Recovery Manager is configured to fail over virtual machines from the primary site A to the secondary site B only.	<ul style="list-style-type: none">• vCloud Suite Enterprise for all CPUs with virtual machines protected by Site Recovery Manager that will fail over to site B• vCenter Server	<ul style="list-style-type: none">• vSphere for all CPUs used for either failover or production• vCenter Server• No Site Recovery Manager licenses needed
Bi-directional – Site Recovery Manager is configured to fail over virtual machines from site A to site B AND failover other virtual machines from site B to site A	<ul style="list-style-type: none">• vCloud Suite Enterprise for all CPUs with virtual machines protected by Site Recovery Manager that will fail over to site B• vCenter Server	<ul style="list-style-type: none">• vCloud Suite Enterprise for all CPUs with virtual machines protected by Site Recovery Manager that will failover to site A• vCenter Server

After failover, what are the license requirements for failback?

To fail back from site B to site A (after failover from site A to site B), Site Recovery Manager licenses are required for the “re-protected” virtual machines at Site B. The “per virtual machine” licenses

originally used at site A can be used at site B for this purpose, as long as the licenses are no longer in use at site A. If Site Recovery Manager is being licensed “per processor” through the vCloud Suite Enterprise at site A and virtual machines are failed over to a site B that originally licensed with vSphere only, the vCloud Suite licenses can be transferred to site B in order to “re-protect” and fail back the virtual machines.

When using the shared recovery sites feature, are extra licenses needed at the shared recovery site?

Site Recovery Manager licenses are required only for protected virtual machines. In a shared recovery site scenario (multiple protected sites configured to fail over into a shared recovery site) Site Recovery Manager licenses are required only at the protected sites. The shared recovery site does not require any additional Site Recovery Manager licenses to protect those sites.

What license-keys does Site Recovery Manager use?

Site Recovery Manager uses the same license-key system used by vSphere and vCenter Server.

Where are license keys for Site Recovery Manager entered?

Site Recovery Manager is licensed through vCenter Server.

Does vSphere Replication require separate licensing?

No. vSphere Replication is included with vSphere Essentials Plus and higher editions. Usage of vSphere Replication for disaster recovery with Site Recovery Manager does not require any additional licensing.

Does Site Recovery Manager have a core limitation with “per processor” licenses?

No. There is not a limitation on the number of cores in the processor when using Site Recovery Manager “per processor” licensing.

NOTE: Older version of Site Recovery Manager may show a license violation warning message if there are more than 12 cores in the protected processor. Customers can ignore this warning message. This warning message will be removed in a future release.

1.5 Key Features

Key Features

Which replication software is supported?

Site Recovery Manager requires either vSphere Replication or storage-based replication for iSCSI, FibreChannel, or NFS storage arrays. For storage-based replication, VMware works with storage partners to ensure that customers can deploy Site Recovery Manager with their choice of storage and storage replication platform. Site Recovery Manager is architected to work with a wide variety of replication software through “storage replication adapter” plug-ins developed and certified by storage vendors for use with Site Recovery Manager. The current list of storage replication adapters and supported storage is available online in the [Storage Partner Compatibility Matrix](#).

New adapters can be added at any time without requiring a new release of Site Recovery Manager. Please contact your storage partner for specific information about when specific replication adapters will be available.

Can Site Recovery Manager protect workloads on physical servers?

Site Recovery Manager orchestrates the recovery process for virtual machines. In cases in which some workloads are running on physical servers with a separate disaster recovery solution, Site Recovery Manager coordinates the recovery process by allowing users to create custom scripts that ensure that workloads are restored in appropriate order.

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Should I use vSphere Replication or my storage vendor's replication software?

Site Recovery Manager provides a choice between vSphere Replication and storage-based replication, enabling customers to choose the best solution for their specific needs. For a detailed comparison of the differences between array-based replication and vSphere replication please review this [blog post](#).

Does Site Recovery Manager provide automated failback?

Yes, Site Recovery Manager 6.0 provides automated failback. The first step is to perform a “reprotect” of the virtual machines from the failover site to the original production site. This consists in coordinating the reversal of replication to the original site, and mapping virtual machines back to their original virtual machine folders, virtual switches, and resource pools. The second step is to execute the planned migration back to the original site, using the original recovery plan executed in reverse direction.

What is the difference between planned migration and DR failover?

Planned migration and DR failover both leverage the same recovery plans. DR failover is used in the event of a disaster and is designed to quickly recover virtual machines at the failover site. Planned migration is used for preventive failovers or for routine migrations. Planned migration ensures an orderly shutdown of virtual machines at the protected site, synchronizes the data with the failover site by ensuring complete replication of all the data, and finally recovers virtual machines at the failover site. Planned migration ensures application-consistent to the secondary site with no data loss.

Does Site Recovery Manager provide application-consistent or crash-consistent recovery?

The level of consistency depends on the recovery process and the underlying replication solution. For DR failovers, consistency is provided by the underlying replication solution. With storage-based replication, many VMware partners offer solutions to ensure application-consistent replication and recoveries. vSphere Replication supports VSS-based application consistency for Windows environments. In all other environments, Site Recovery Manager provides file-consistent recovery. When executing a planned migration (as opposed to DR failover), Site Recovery Manager provides fully application-consistent migrations between sites, since virtual machines are gracefully shutdown before completing replication and initiating the recovery plan.

Does Site Recovery Manager support active/active sites?

Yes, Site Recovery Manager supports configurations in which both sites are running active virtual machines that Site Recovery Manager can recover at the other site. Site Recovery Manager also supports active/passive sites in which Site Recovery Manager recovers virtual machines from a protected site at a recovery site that is not running other virtual machines during normal operation.

In an active/active scenario, users configure recovery plan workflows in one direction from Site 1 to Site 2 for the protected virtual machines at Site 1. Recovery plan workflows are configured in the opposite direction from Site 2 to Site 1 for the protected virtual machines at Site 2.

Does Site Recovery Manager support a many-to-one disaster recovery configuration?

Yes. Site Recovery Manager provides the option to protect multiple sites using a common “shared recovery site”. At this shared recovery site, you will still need to have multiple instances of Site Recovery Manager running. Each instance manages the pairing with one of the protected sites. However, to provide simpler disaster recovery management in a many- to-one configuration, only one instance of vCenter Server is required at the shared recovery site. All instances of Site Recovery Manager register with that single vCenter Server instance. Please consult the product documentation for more details on how to use this feature.

In addition to the shared recovery site configuration, Site Recovery Manager also allows and supports shared protected site (1:N) and many-to-many (N:N) configurations. It is also supported to begin with a standard two site SRM deployment and later on add additional site pairings to add in more complex topologies. Keep in mind that while Site Recovery Manager does allow for the failover of different VMs to different sites, it does not support the failover of the same VM to multiple recovery sites. Site Recovery Manager only supports a VM being protected by a single Site Recovery Manager pair.

Does Site Recovery Manager replace other products for disaster recovery?

Site Recovery Manager provides capabilities for disaster recovery automation and management for a virtual environment. Work with your VMware and VMware partner contacts to understand which products complement VMware technology for disaster recovery and the use cases to which they apply.

Does VMware have preferred storage and replication partners for Site Recovery Manager?

VMware does not have preferred storage and replication partners, only a list of currently supported replication adapters provided by partners.

Is server-based replication software supported by Site Recovery Manager?

Site Recovery Manager does not support server-based replication.

1.6 Product Requirements

Product Requirements

Which versions of vSphere does Site Recovery Manager support?

Site Recovery Manager requires a supported version of vSphere and a supported version of vCenter Server. Consult the Site Recovery Manager Compatibility Matrix at http://www.vmware.com/support/pubs/srm_pubs.html for your specific version of Site Recovery Manager.

Is Site Recovery Manager compatible with vSphere Essentials?

Site Recovery Manager 6.0 is compatible with vSphere Essentials Plus. It is not compatible with vSphere Essentials.

Does Site Recovery Manager support vSphere ESXi?

Site Recovery Manager does not support the free version of vSphere ESXi but does support licensed versions of vSphere ESXi used with a supported vSphere or VMware Infrastructure edition and version. See the [Compatibility Matrix](#) for the latest information.

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Does Site Recovery Manager require two active vCenter Server instances?

Yes, Site Recovery Manager requires two active and licensed vCenter Server instances, one at each site (protected and recovery). NOTE: The shared recovery/protected sites feature in Site Recovery Manager enables multiple protected or recovery sites with multiple vCenter Server instances to be recovered or protected at a site with a single vCenter Server instance. (I.e., the multiple instances of Site Recovery Manager running at the shared recovery/protection sites are registered with the same single instance of vCenter Server at the shared recovery/protection site, so you do not need multiple vCenter Server instances at the shared recovery/protection site.).

Do I need Site Recovery Manager installed at both sites (protected and recovery)?

The Site Recovery Manager Service must be installed at both the primary site and the recovery site. However, Site Recovery Manager licenses are required for both sites (protected virtual machines) only when each site acts as a recovery site for the other. For protection in one direction (e.g., Site 1 site fails over to Site 2), licenses are required only for the protected virtual machines at Site 1.

Does the Site Recovery Manager Service run on the same physical server as vCenter Server or on a different physical server?

The Site Recovery Manager Service can run on either the same physical server as vCenter Server or a separate server. The VMware recommendation would be that both vCenter and Site Recovery Manager be installed on Virtual Machines to take advantage of the benefits virtual machines provide (HA, DRS, snapshots, etc.). We would also recommend that vCenter and SRM be installed on separate VMs (eg. VM for vCenter, VM for SRM) to allow for easier maintenance, troubleshooting and performance.

Can I run the Site Recovery Manager Service in a virtual machine?

Yes. This is the recommended installation method.

Does the server where Site Recovery Manager is running need to have host bus adapters?

The answer depends on the communication needs for the storage array and replication software in use. Consult your storage vendor's documentation for more details.

What are the requirements for the Site Recovery Manager database?

Site Recovery Manager provides the option of its own embedded vPostgres database. This database requires no separate licensing or configuration. Site Recovery Manager also provides the option of utilizing external databases. These databases must be installed by the user. Each Site Recovery Manager service requires Open Database Connectivity (ODBC) only to the database at its own site. See the [VMware Product Interoperability Matrixes](#) for a list of specific databases and database versions supported with Site Recovery Manager.

Are there any restrictions (number of protected VMs, etc) when using the vCenter Site Recovery Manager vPostgres embedded database?

No, it is fully supported for all environments up to all configuration maximums.

1.7 Product Features

Product Features

Does Site Recovery Manager support virtual machines using raw disk mapping (RDM) disks?

Yes, Site Recovery Manager provides full support for virtual machines using RDMs.

Does Site Recovery Manager require that protected site and recovery site networks be the same?

No. Site Recovery Manager can change the IP address and VLAN of virtual machines at the time of recovery to the configuration the user specifies during setup.

Does Site Recovery Manager update Domain Name System (DNS) tables at the recovery site?

Site Recovery Manager can update the IP address and virtual switch for recovered virtual machines but does not update DNS tables at the recovery site. However, both Windows and Linux have dynamic DNS options that can do this. There is an example script for updating Microsoft DNS and BIND servers included in the scripts folder on Site Recovery Manager servers.

During failover, are virtual machines shut down and started serially or in parallel?

Virtual machines are shut down serially on each host but can be configured to start in parallel throughout a datacenter. The user can specify which virtual machines must be started serially because of dependencies, and which other virtual machines should start in parallel.

How much overhead does Site Recovery Manager place on each virtual machine?

Site Recovery Manager does not run any components in the virtual machine or on the vSphere ESX® server during normal operation, so it does not affect the performance of virtual machines.

How much bandwidth is required between sites?

Bandwidth requirements depend on the amount of data being replicated, the frequency of replication and the specific replication software. Site Recovery Manager sends very little information between sites itself and as a result generally has no impact on the bandwidth required between sites. If using vSphere Replication, use the [vSphere Replication Bandwidth Calculator](#) to estimate bandwidth requirements. If using array-based replication, your replication vendor can help to determine the required bandwidth for replication.

Does Site Recovery Manager verify that the virtual machines have booted successfully at the recovery site?

Yes. Site Recovery Manager monitors whether VMware Tools has started running in each virtual machine to determine whether the virtual machines have booted successfully.

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If Site Recovery Manager is running in a virtual machine and the virtual machine fails, can Site Recovery Manager still execute failover?

Execution of recovery does not depend on the vCenter Server or Site Recovery Manager Service at the protected site. However, recovery does depend on having a running vCenter Server and Site Recovery Manager Service at the recovery site. When the Site Recovery Manager Service is running in a virtual machine, vSphere High Availability can be used to restart the Site Recovery Manager virtual machine in the event of a physical server failure.

How does Site Recovery Manager handle loss of network connectivity between sites?

Site Recovery Manager notifies the administrator when it cannot connect to the remote site. Failover is always manually initiated to avoid split-brain scenarios. Recovery does not require connectivity to the protected site.

Are logs of test and failover execution exportable from Site Recovery Manager?

Yes. They are available in the History section of each Recovery Plan.

Can Site Recovery Manager recover virtual machine images that have been converted from physical systems?

This scenario has not been tested with Site Recovery Manager.

Can Site Recovery Manager automatically initiate failover?

Site Recovery Manager does not automatically initiate failover. Failover initiation must be done manually. A best practice is to strictly limit which users have permission to initiate failover. Site Recovery Manager does include an SDK that can be used to externally initiate failover if required.

If we have two sites with enough bandwidth between them, why do we need Site Recovery Manager rather than just using vSphere vMotion® between the sites?

vSphere vMotion® is useful only when the virtual machine is still running. If an outage occurs, vSphere vMotion has no running virtual machine to operate on. Site Recovery Manager is designed to handle cases in which virtual machines are no longer running at the production site because of an outage and must be recovered at a recovery site.

Can Site Recovery Manager be integrated with other disaster recovery management software?

VMware provides an SDK for Site Recovery Manager that enables some degree of custom integration with other disaster recovery software. Site Recovery Manager does not provide built-in integration with third-party software products other than array-based replication software.

What happens if I run a DR workflow with the sites disconnected and then want to use my recovery plan again?

After running the recovery connect the sites (first making sure that the originally protected VMs are powered off) and run a planned migration of the recovery plan that they had done a disaster recovery

of. SRM is intelligent enough to know that it has already performed a failover and will skip unnecessary steps. Rerunning the plan will ensure that the steps that weren't completed at the original site are completed and get's the plan back into the appropriate state to reverse the direction of replication.

How is a forced failover different from a regular failover?

Forced recovery was introduced to handle a scenario where the source array is down but the vSphere layer is up. In early versions of SRM that scenario meant failovers would sometimes timeout waiting for a reply. Forced failover fixes that bluntly by telling SRM to override its normal safety checks so be careful how you use it. If the original site returns after running a forced recovery to get things back in sync run the failover again, then run it as a planned migration to get things synched up.

1.8 Replication

Replication

What is vSphere Replication?

vSphere Replication is the industry's first hypervisor-based replication, purpose-built for vSphere and Site Recovery Manager. vSphere Replication enables replication between sites at an individual virtual machine level and is managed directly in vCenter Server. With vSphere Replication, customers can deploy heterogeneous storage arrays across sites, reducing costs by using lower-end storage at the failover site.

What RPO can I expect with vSphere Replication?

With vSphere Replication, users can select the replication schedule for each individual ESX host. The RPO can be selected from a range of 15 minutes to 24 hours.

Are there any additional restrictions for using vSphere Replication?

vSphere Replication cannot be used in conjunction with VMs that are not powered on, vSphere Fault Tolerance, Virtual Machine templates, linked clones, and physical RDMs.

Does Site Recovery Manager support discrete, asynchronous or synchronous replication?

Site Recovery Manager can support discrete, asynchronous and synchronous replication. See the Storage Partner Compatibility Matrix [Compatibility Matrixes for vCenter Site Recovery Manager 6.0](#) to determine which storage replication adapters support which types of replication for a specific array.

What is the purpose of the storage replication adapters?

The storage replication adapters translate generic commands generated by Site Recovery Manager for tasks such as querying replicated datastores and promoting replicated data stores into array-specific commands. They enable Site Recovery Manager to work with a variety of array types.

Where can I find the current list of replication adapters and supported replication for Site Recovery Manager?

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The Storage Partner Compatibility Matrix [Compatibility Matrixes for vCenter Site Recovery Manager 6.0](#) includes a list of storage replication adapters that have passed VMware certification for Site Recovery Manager as well as the storage array and replication with which they are supported.

Will new storage replication adapters be available in the future, and will they require a new release of Site Recovery Manager?

VMware continues to work with additional storage partners to help them develop new adapters for Site Recovery Manager. New adapters can be added and used at any time without requiring a new release of Site Recovery Manager. If you are interested in using Site Recovery Manager with replication solutions that are not currently supported, contact your storage vendor. Also, let VMware know about your request by contacting your VMware representative or reseller.

Does the storage replication adapter need to be installed on the same server as Site Recovery Manager?

Yes.

Can multiple storage replication adapters be used with Site Recovery Manager simultaneously?

Yes. Multiple replication adapters can be installed in Site Recovery Manager to enable it to communicate with multiple arrays simultaneously. Keep in mind that a VM with VMDKs stored on multiple arrays cannot be protected with SRM. All VM files must be located on the same array.

Is Site Recovery Manager compatible with storage virtualization solutions?

Site Recovery Manager is designed to work with all devices that present themselves as storage targets and can replicate their underlying storage. Many storage- virtualization solutions can operate in this manner. For Site Recovery Manager to work with a given storage- virtualization device, a storage replication adapter must be available for that device. The Storage Partner Compatibility Matrix [Compatibility Matrixes for vCenter Site Recovery Manager 6.0](#) includes a complete list of supported storage virtualization solutions.

Does Site Recovery Manager support NFS arrays?

Yes. Site Recovery Manager supports NFS storage and replication.

Does Site Recovery Manager monitor the status of replication?

Site Recovery Manager monitors the replication configuration to detect when replication is turned off for a datastore containing protected virtual machines, so that it can notify administrators.

Does Site Recovery Manager support using consistency groups in the replication configuration?

Site Recovery Manager takes consistency groups into account, although support varies depending on storage vendor. Consult the storage vendor storage replication adapter readme for details.

How does Site Recovery Manager run a test without actually failing-over storage?

The answer depends on the capabilities of the array. For some arrays, the storage replication adapter takes a snapshot or clone of the datastore replica and presents it to the vSphere ESX hosts to use for testing. For other arrays, it halts replication temporarily to do testing.

Can we write our own storage replication adapter?

VMware supports configurations that use storage replication adapters written by storage partners only. Storage partners who wish to write a new adapter should contact VMware directly.

Who provides support for Site Recovery Manager deployments?

Problems that appear to be caused by Site Recovery Manager should be directed to VMware support. Problems that appear to be caused by the replication software, storage replication adapter or storage array should be directed to the appropriate storage partner's support services. VMware and the vendors who provide replication adapters have cooperative support agreements in place to ensure that support requests can be coordinated between VMware and the storage partner.

Where should we ask additional questions about whether Site Recovery Manager works with software from storage partners?

VMware publishes a list of currently supported storage and replication in the [Storage Partner Compatibility Matrix](#). Remaining questions should be directed to the appropriate storage vendor.

1.9 Design

Design

Where can I find a list of recommendations or best practices for Site Recovery Manager?

There is a white paper located [here](#) that covers Site Recovery Manager best practices in regards to performance/reduced RTO. This paper is currently (May 2015) in the process of being updated and expanded. The new version will be available in the next few months.

What applications can I protect with Site Recovery Manager?

Any application that is supported on vSphere is supported for protection with Site Recovery Manager. That said there are some things that shouldn't be protected with Site Recovery Manager. This [blog](#) has the details.