What's New in VMware Site Recovery Manager 6.1

Technical Overview

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Introduction

VMware Site Recovery Manager™ is the industry-leading solution to enable application availability and mobility across sites in private cloud environments. Taking full advantage of the encapsulation and isolation of virtual machines, Site Recovery Manager enables simplified automation of disaster recovery to meet recovery time objectives (RTOs), reduce costs associated with business continuity plans, and achieve low-risk and predictable results for recovery of a virtual environment.

Site Recovery Manager provides unique capabilities to create, maintain, and non-disruptively test disaster recovery plans without the need for manual runbooks. The ability to automate the disaster recovery planning, maintenance, and testing process enables significant operational efficiencies.

VMware has expanded the capabilities of Site Recovery Manager with the new version 6.1 release, which delivers unprecedented levels of protection and functionality as well as new use cases through the addition of capabilities such as storage policy based protection groups, support for stretched storage with orchestrated vMotion, and enhanced integration with VMware NSX.

This paper will provide an overview of the new capabilities of Site Recovery Manager 6.1 and how they help reduce exposure to risk and improve operational efficiencies.

Storage Profile Based Protection

Site Recovery Manager 6.1 adds a new type of protection group; the storage policy-based protection groups. Storage policy-based protection groups use vSphere storage profiles to identify protected datastores and virtual machines. They automate the process of protecting and unprotecting virtual machines and adding and removing datastores from protection groups. Storage profile-based protection groups enable deep integration with virtual machine provisioning tools like VMware vRealize Automation. This combination makes it easier than ever to deploy and protect virtual machines.

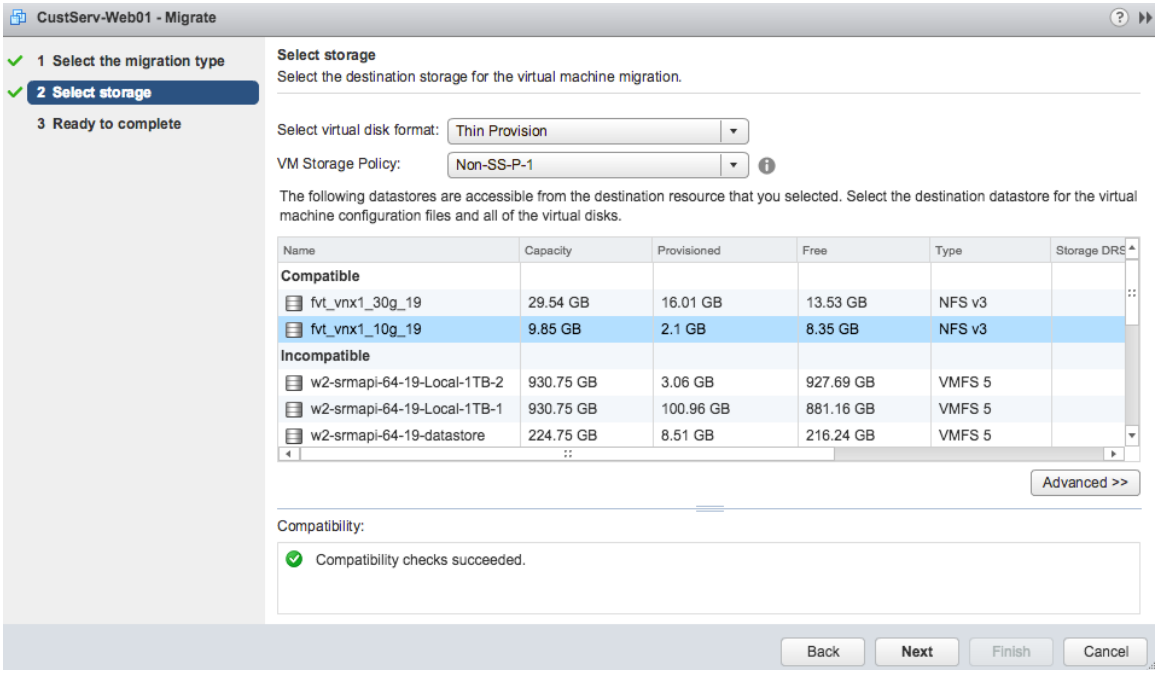

Figure 1: Storage policy based protection is as easy as selecting the VM storage policy when deploying or migrating the virtual machine

Storage policy-based protection groups utilize vSphere tags in combination with vSphere storage policy based management to enable automated policy based protection for virtual machines. Storage policy-based management enables vSphere administrators to automate the provisioning and management of virtual machines storage to meet requirements like performance, availability and protection. vSphere tags allow for the ability to attach metadata to vSphere inventory, in this case datastores, which makes these objects more sortable, searchable and possible to associate with storage policies.

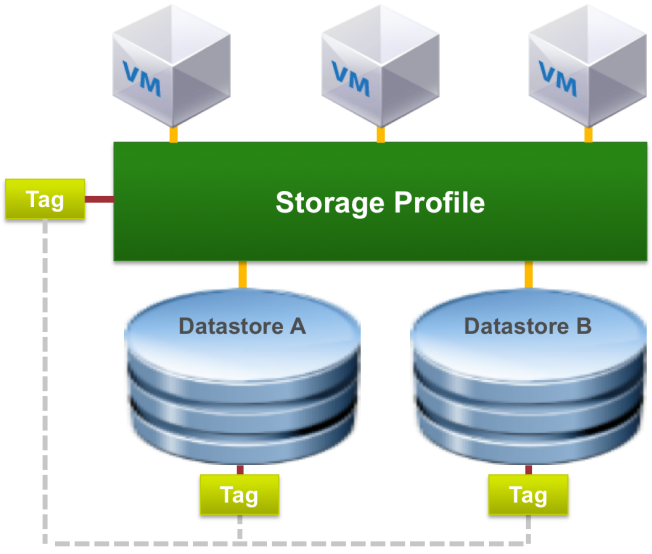

Figure 2: Integration of tags, storage policies and virtual machines

Here is how tags and storage-policy based management are used together with storage policy-based protection groups:

- A tag is created and associated with all the datastores in each desired protection group
- A tag based storage policy is created for each protection group utilizing the tag
- A storage policy-based protection group is created and associated with the storage policy

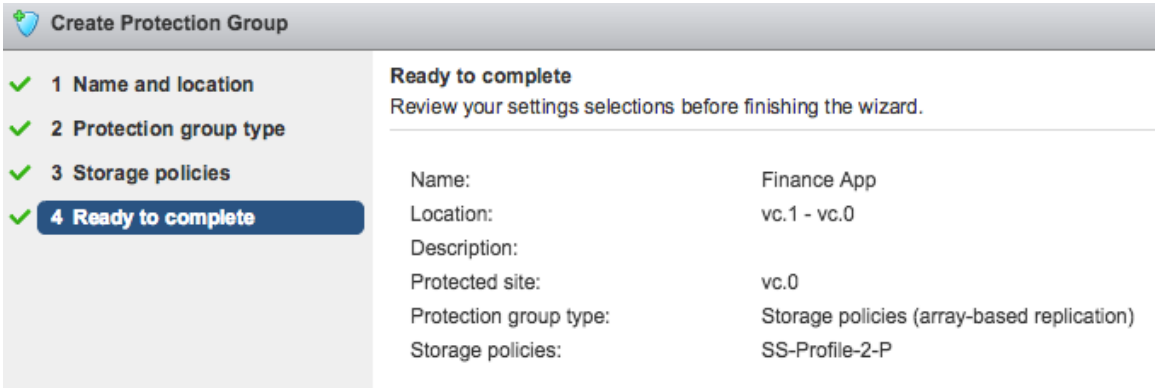

Figure 3: Details required when configuring a storage policy-based protection group

When any virtual machine, new or existing, is associated with that policy and placed on the replicated datastore, Site Recovery Manager protection is automatic. If a virtual machine is disassociated from that policy and/or moved off the datastore it is automatically unprotected. The same happens for datastores and the virtual machines on them.

Leveraging storage profiles to identify protected resources saves time and reduces cost and complexity by eliminating the previously manual operations required to protect and unprotect VMs, and to add and remove datastores from protection groups.

Stretched Storage and Orchestrated vMotion

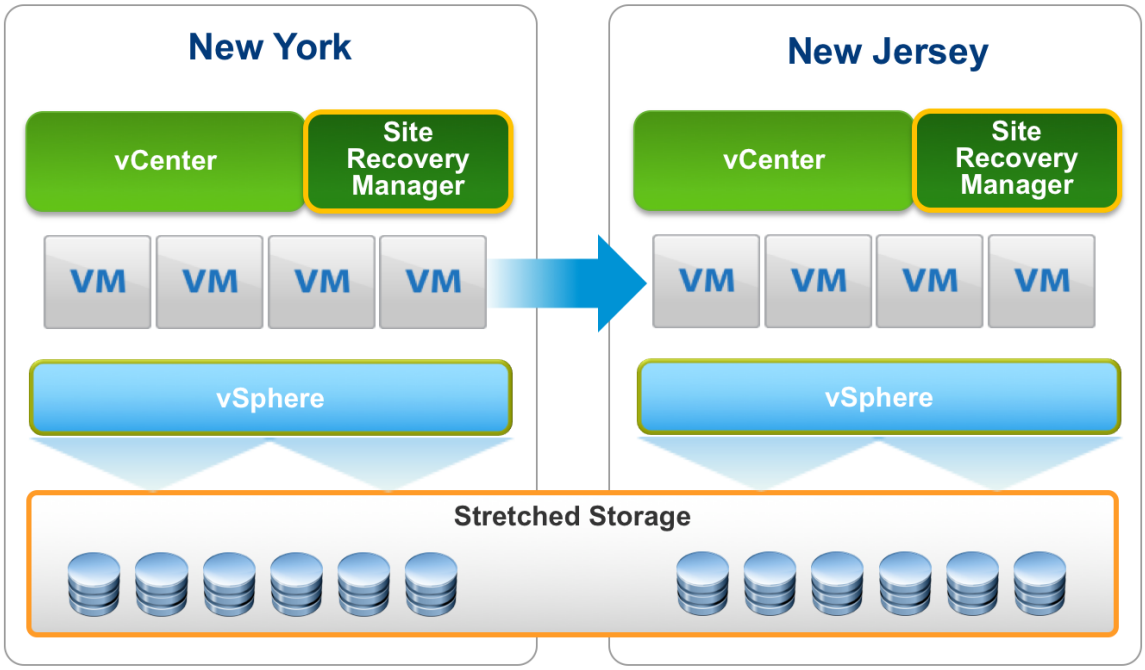

Figure 4: Architecture components of Site Recovery Manager 6.1 with stretched storage

Prior to Site Recovery Manager 6.1 customers had to make a choice between using Site Recovery Manager or vSphere Metro Storage Clusters/Stretched Storage to provide a multisite solution that was optimized for either site mobility or disaster recovery without being able to attain the benefits of both solutions simultaneously. Site Recovery Manager 6.1 now supports using cross-vCenter vMotion in combination with stretched storage, thereby combining the benefits of Site Recovery Manager with the advantages of stretched storage.

	vSphere Metro Storage Cluster	Previous Site Recovery Manager	Site Recovery Manager 6.1
Downtime Avoidance	●	◔	●
Disaster Avoidance	◕	◑	●
Non-disruptive Testing	○	●	●
Orchestrated Failover	◔	●	●
Management Resiliency	◔	●	●

Table 1: Comparison of features between vMSC, Previous SRM and SRM 6.1

The integration of stretched storage with Site Recovery Manager 6.1 allows customers to achieve what was previously only possible with vSphere Metro Storage Clusters:

- Planned maintenance downtime avoidance – Orchestrated cross-site vMotion and recovery plans allow for workload migration transparent to app owners or end users
- Zero-downtime disaster avoidance – Utilizing the ability to live migrate workloads using cross-site vMotion and the planned migration workflow in Site Recovery Manager 6.1, customers can avoid downtime instead of recovering from it

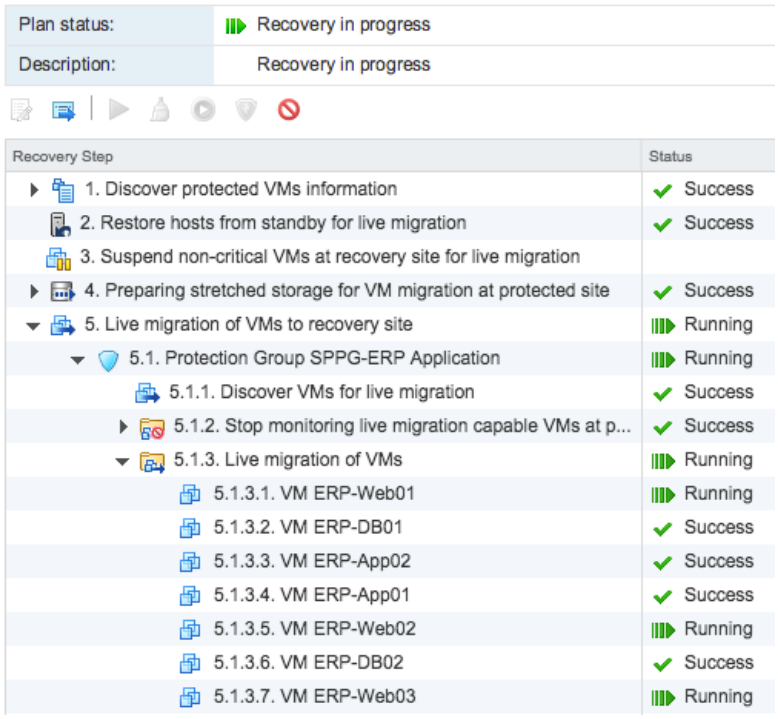

Figure 5: Site Recovery Manager 6.1 Recovery Plan Orchestrated Live Migration of Virtual Machines

This new functionality augments the other features of Site Recovery Manager, which can be used with or without stretched storage:

- Non-disruptive automated testing – enables customers to test and verify recovery plans as frequently as desired without any disruption to production systems or replication
- Automated recovery plan orchestration – all steps of the failover and failback are handled with minimal required interaction
- Management Resiliency – having an active vCenter at each site helps ensure that vCenter and its management and integration functionality is readily available when needed

Adding stretched storage to a Site Recovery Manager deployment fundamentally reduces recovery times. In the case of a disaster, recovery happens more quickly either because workloads are able to be live migrated making them available without interruption, or if not, because stretched storage architecture presents the same storage to both sites and utilizes synchronous replication. This makes getting virtual machines registered and powered up, when required, much faster.

Integrating stretched storage with Site Recovery Manager gives customers the best capabilities of both stretched storage and Site Recovery Manager. Site Recovery Manager 6.1 provides improved availability with cross-vCenter vMotion providing zero downtime disaster avoidance and faster recovery as well as continuing to provide management resiliency, non-disruptive testing and complete disaster recovery plan orchestration. This makes it easier than ever to support and protect workloads with the highest availability requirements.

Enhanced integration with VMware NSX

Networking is typically one of the more complex and cumbersome aspects of a disaster recovery plan. Ensuring that the proper networks, firewall rules and routing are configured correctly and available can quite challenging. Making an isolated test network with all the same capabilities can be even more so. Additionally, solutions like cross-vCenter vMotion require a stretched layer-2 network which can create even more difficulty.

NSX 6.2 has a number of new features which enhance Site Recovery Manager. This means that organizations can now use NSX and Site Recovery Manager to simplify the creation, testing and execution of recovery plans as well as accelerate recovery times.

NSX 6.2 supports creating "Universal Logical Switches", which allow for the creation of layer-2 networks that span vCenter boundaries. This means that when utilizing Universal Logical Switches with NSX there will be a virtual port group at both the protected and recovery site that connect to the same layer-2 network.

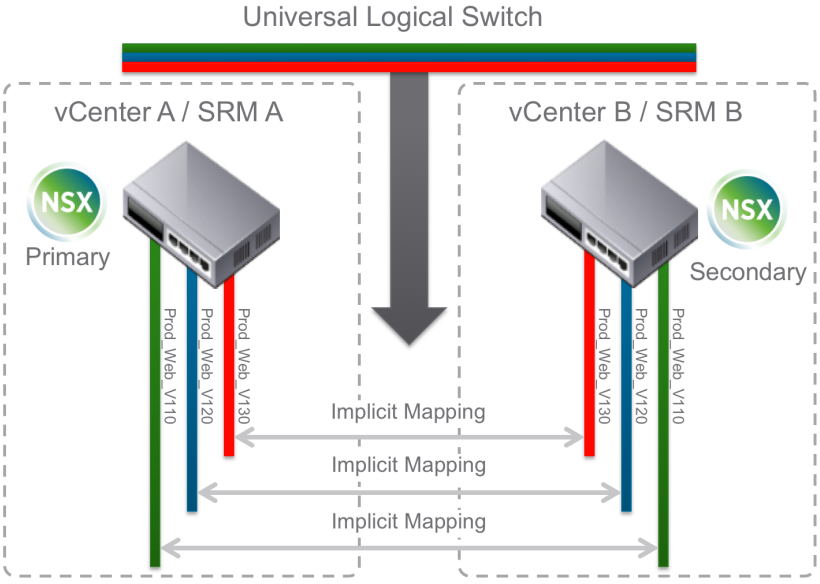

Figure 6: NSX 6.2 Universal Logical Switch integration with Site Recovery Manager 6.1 automatic network mapping

When virtual machines are connected to port groups that are backed by Universal Logical Switches, Site Recovery Manager 6.1 will automatically recognize this and not require manual network mapping between the protected and recovery locations. Site Recovery Manager intelligently understands that it is logically the same network on both sites and thereby automatically links the protected and recovery networks.

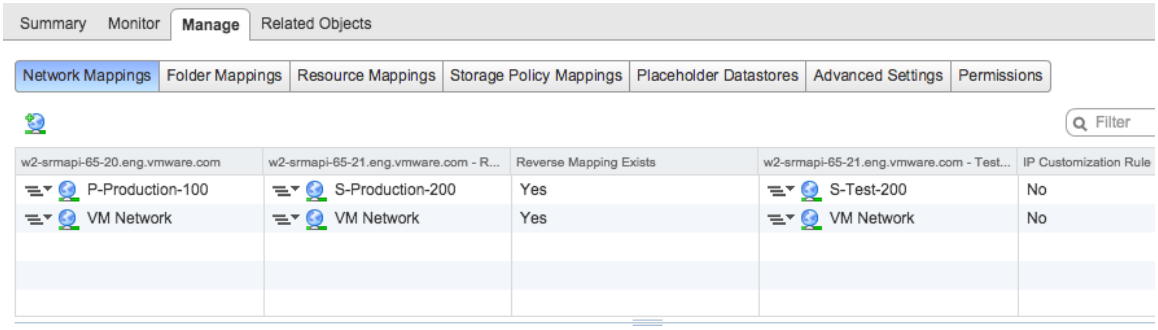

Figure 7: **Manual Mapping is not required when utilizing Universal Logical Switches and Storage Policy Based Protection Groups**

The ability to create a network that spans vCenter boundaries and creates a cross-site layer-2 network means that after failover, it is no longer necessary to re-configure IP addresses. This can reduce recovery time by as much as 40%. Security policies, such as security groups, firewall settings and edge configurations are also preserved on recovered virtual machines, further decreasing the need for manual configurations post-recovery.

NSX 6.2 also supports the synchronization of firewall rules as well as routing information and configuration. These capabilities make it easy to ensure that the network configurations of production and recovery sites stay in-sync while also making it easier to create an isolated duplicate of the recovery site network in order to non-disruptively test recovery plans.

The implicit mapping of network resources, stretched layer-2 capabilities and enhanced test network capabilities provided by NSX and Site Recovery Manager when combined with Storage Policy-Based Protection Groups, greatly simplifies operations, lowers operational expenses, increases testing capabilities and reduces recovery times.

VMware NSX provides an integrated and comprehensive solution to many of these problems. For more details on the specific capabilities and requirements of NSX 6.2 see the product page.

Conclusion

Site Recovery Manager 6.1 introduces a new set of enhancements and features that enable new levels of automation, control and protection, ranging from policy based protection to support for and integration with stretched storage.

Changes of note between Site Recovery Manager 6.0 and 6.1 include:

- Storage policy-based management to simplify the process of adding and removing protection to virtual machines
- Support for stretched storage solutions combined with cross-vCenter vMotion allows companies to achieve application mobility without incurring downtime, while taking advantage of all the benefits of Site Recovery Manager

- Enhancements to and integration with NSX 6.2 that simplify both the creation and execution of recovery plans and accelerate recovery time

These new features maintain Site Recovery Manager 6.1 as the pre-eminent technology for protection and recovery of a virtual environment. Use of Site Recovery Manager 6.1 enables rapid recovery time objectives through easy non-disruptive testing and rapid automation of recovery plans, and helps you eliminate the complexity of managing disaster recovery. Site Recovery Manager 6.1 removes the risk and worry from disaster recovery.

Next Steps

Automate and Orchestrate Your DR Plans with Site Recovery Manager

Make Site Recovery Manager a part of your vSphere 6.1 deployments and improve your virtual machine availability while reducing your risk. Take the Site Recovery Manager Hands on Lab today and register for a free trial of Site Recovery Manager and start enjoying the benefits of automated and orchestrated protection of your critical virtual machines as an integrated part of your IT platform.

Additional Resources

For more information about VMware Site Recovery Manager, please visit the product pages.

Below are links to documentation and other resources:

- Product Documentation
- Technical Overview (link?)
- Installation Guide
- Administration Guide
- API Documentation
- VMTN Community Forums
- FAQ
- Evaluation Guide
- Hands on Lab

Providing Feedback

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How useful was the information in this guide? What other specific topics would you like to see covered?

Please send your feedback to docfeedback@vmware.com, with "VMware Site Recovery Manager 6.1 Overview" in the subject line. Thank you for your help in making this guide a valuable resource.

About the Author

GS Khalsa is a Senior Technical Marketing Manager at VMware. He works on business continuity and disaster recovery solutions in the Storage and Availability group. GS started as a VMware customer in 2005 and has also worked as a VMware partner. He has worked in Technical Marketing at VMware since 2013.

- GS's blogs at http://blogs.vmware.com/vsphere/uptime
- Follow GS on Twitter: @gurusimran

VMware, Inc. 3401 Hillview Avenue Palo Alto CA 94304 USA Tel 877-486-9273 Fax 650-427-5001 www.vmware.com