Veritas™ Resiliency Platform 2.2 Update 3 Release Notes

VERITAS™

Veritas Resiliency Platform: Release Notes

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Veritas Services and Operations Readiness Tools (SORT)

Veritas Services and Operations Readiness Tools (SORT) is a website that provides information and tools to automate and simplify certain time-consuming administrative tasks. Depending on the product, SORT helps you prepare for installations and upgrades, identify risks in your datacenters, and improve operational efficiency. To see what services and tools SORT provides for your product, see the data sheet:

https://sort.veritas.com/data/support/SORT_Data_Sheet.pdf

Contents

Chapter 1

Overview

This chapter includes the following topics:

About Veritas Resiliency Platform

Veritas Resiliency Platform offers a unified solution that helps you proactively maintain business uptime across private, public, and hybrid clouds. Resiliency Platform gives you complete automation for all resiliency operations involving the virtual machines, applications, and multi-tier business-services in your data center. It safeguards the current technology investments by plugging into your existing environments and infrastructure.

For data replication, you can use the Resiliency Platform Data Mover or any third-party solution that is supported by Veritas Resiliency Platform. For a list of supported vendors and products, see *Veritas Resiliency Platform Hardware and Software Compatibility Guide*.

Resiliency Platform Data Mover is a separately licensed feature of Veritas Resiliency Platform. It provides data replication between geographically separated data centers facilitating an effective disaster recovery solution. The Resiliency Platform Data Mover can be used for the following purposes:

- For recovery of VMware virtual machines to premises data center

- For recovery of VMware and Hyper-V virtual machines to cloud data center

Resiliency Platform has the following core capabilities:

Security and Compliance	Veritas Resiliency Platform provides enhanced data encryption (for data-in-flight and data-at-rest) as well as choice of data residency.
Predictability	Customers can predictably meet critical business Recovery Time Objectives (RTOs) and Recovery Point Objectives (RPOs).
Compliance	Customers can prove compliance to internal and external business continuity mandates with audit reporting and non-disruptive, real-time disaster recovery testing.
Automation	Customers get complete automation for all resiliency operations including recovery run books, and start and stop recovery orchestration for multi-tier applications. This reduces risk of downtime from human error.
Flexibility	Customers get the flexibility to keep their existing infrastructures and can innovate on their terms, with the flexibility that Resiliency Platform provides, to enable workload migration across sites and even to the cloud.

See “About Resiliency Platform features and components” on page 9.

About Resiliency Platform features and components

The following is a brief introduction to Veritas Resiliency Platform key components and their relationships. Administrators responsible for deploying and configuring the product need to understand these in more detail.

Resiliency Manager	The component that provides resiliency capabilities within a resiliency domain. It is composed of loosely coupled services, a distributed data repository, and a management console. The Resiliency Manager is deployed as a virtual appliance.

Infrastructure Management Server (IMS)	The component that discovers, monitors, and manages the asset infrastructure within a data center. The IMS transmits information about the asset infrastructure to the Resiliency Manager. The IMS is deployed as a virtual appliance. To achieve scale, multiple IMSs can be deployed in the same data center.
Veritas InfoScale Operations Manager Management Server	The component that allows discovery of InfoScale applications that are already configured in Veritas InfoScale Operations Manager. Also referred to as Veritas InfoScale Operations Manager server. You can manage the InfoScale applications that are already configured in Veritas InfoScale Operations Manager on Linux, Solaris, AIX as well as Windows platform.
Replication Gateway	The component of Veritas Resiliency Platform Data Mover that is deployed as a virtual appliance on both data centers and used to perform replication between the data centers.
resiliency domain	The logical scope of a Resiliency Platform deployment. It can extend across multiple data centers.
data center	For a disaster recovery use case, the resiliency domain must contain at least two data centers in different locations, a production data center and recovery data center. Each data center has a Resiliency Manager and one or more IMSs.
asset infrastructure	The data center assets that you add to Resiliency Platform for discovery and monitoring by the IMS. The asset infrastructure can include hosts (Windows or Linux servers), virtualization servers for Hyper-V and VMware, and enclosures (storage arrays). Once the asset infrastructure is discovered by the IMS, the discovered virtual machines or applications are listed in the console as assets to manage or protect.
resiliency group	The unit of management and control in Resiliency Platform. You organize related assets into a resiliency group and manage and monitor them as a single entity.

service objective	A template to define the type of operations and technologies that are supported for a group of assets. You apply a service objective to each resiliency group. A template which identifies the characteristics of a service. These could be availability related characteristics such as local redundancy, and number of nodes in a cluster or DR characteristics such as remote recovery, Recovery Point Objective (RPO) SLAs, rehearsal support etc. Service objective is applied when a group of assets are being added to a resiliency group. Resiliency Platform monitors the resiliency groups based on the service objective definition and raises the risks as applicable.
Virtual Business Service (VBS)	A multi-tier business service where each VBS tier hosts one or more resiliency groups. A VBS lets you group multiple services as a single unit for visualization, automation, and controlled start and stop in the desired order. VBS uses the vertical grouping mechanism to group the multiple services.You can also perform operations such as migrate, takeover, resync, rehearsal on the entire VBS.

For more information on the above components, refer to the Deployment Guide.

New features and changes in Veritas Resiliency Platform 2.2

This release of Veritas Resiliency Platform includes the following new features, changes, and enhancements.

Updates released for Veritas Resiliency Platform 2.2

This section lists the various updates released for Veritas Resiliency Platform 2.2

Table 1-1

Update	Description
Update 3 (2.2.0.300)	This update includes some of the important bug fixes. Veritas Resiliency Platform version 2.2.0.300 update bundle is available on SORT for existing deployments. The virtual appliances version 2.2.0.300 for fresh deployments is available on MyVeritas.

Table 1-1 *(continued)*

Update	Description
Update 2 (2.2.0.200)	This update includes support for shared and non-shared Raw Device Mapping (RDM) for RecoverPoint. For details of supported versions, see the *Veritas Resiliency Platform 2.2 Hardware and Software Compatibility List*. Veritas Resiliency Platform version 2.2.0.200 update bundle is available on SORT for existing deployments. The virtual appliances version 2.2.0.200 for fresh deployments is available on MyVeritas.
Update 1 (2.2.0.100)	This update includes some of the important bug fixes. The virtual appliances version 2.2.0.100 for fresh deployments is available on MyVeritas.

Recovery of assets in vCloud

Veritas Resiliency Platform 2.2 introduces the support for recovery of the data center assets to vCloud. You can configure and protect your VMware and Hyper-V virtual machines for recovery to vCloud using the Resiliency Platform Data Mover. You will need one license for Veritas Resiliency Platform and one license for Resiliency Platform Data Mover.

You can use Resiliency Platform to seamlessly move your single-tiered or multi-tiered workloads between on-premises data center and vCloud. Resiliency Platform provides controlled recovery options for the recovery of your on-premises workload to vCloud.

Introducing two new service objectives

Two new service objectives are introduced to recover the VMware virtual machines using NetBackup backup images. Select one of these service objective, with data availability mode as Copy, while configuring the resiliency group for remote recovery.

Local recovery of hosts: Select this service objective to recover the VMware virtual machines using the backup image within the same data center.

Local and remote recovery of hosts: Select this service objective to recover the VMware virtual machines using the backup image within the same data center or on a remote data center.

NetBackup integration enhancements in Veritas Resiliency Platform 2.2

Rehearsal support:

You can now perform the rehearsal operation which creates virtual machines on the recovery data center using the selected backup image. Cleanup rehearsal operation lets you delete the virtual machines and the data that was created during the rehearsal operation.

These operations are available only to those resiliency groups that are configured using *Local and remote recovery of hosts* service objective, with data availability mode as Copy.

Local recovery support:

You can also recover VMware virtual machines using backup images from the same data center. Targeted Auto Image Replication need not be configured to do this.

Heterogeneous Virtual Business Service (VBS)

Veritas Resiliency Platform 2.2 now supports disaster recovery operations for VBSs having resiliency groups that are configured using different service objectives.

Internationalization support for Veritas Resiliency Platform

Veritas Resiliency Platform 2.2 introduces Internationalization or localization enablement. This localization enablement in Resiliency Platform can be summarized as following:

- The product operates in non-English environments, without any loss in functionality.
- The product supports regional formatting (date format, time format, currency, numeric separator) and supports non-English characters for input, output, or processing.
- Supported non-English environments are German, Japanese, and Chinese.
- Following are the upgrade constraints for internationalization support:
  - If you have Resiliency Platform 2.0 or 2.1 deployed with Resiliency Platform Data Mover in your environment, you need to upgrade the Replication Gateway appliance to version 2.2.
  - If you have Resiliency Platform 2.0 or 2.1 deployed with HyperV virtual machines in your environment, you need to upgrade the host package (VRTSsfmh) to version 2.2.

Deprecated support in Resiliency Platform 2.2

Applications configured using Microsoft Failover Clustering cannot be discovered and managed for disaster recovery using Resiliency Platform 2.2.

What is not supported?

Veritas Resiliency Platform does not support the following features:

- EFI (Extensible Firmware Interface) enabled Hyper-V Generation 2 virtual machines are not supported if replication technology is Resiliency Platform Data Mover.
- VMware fault tolerant virtual machines.
- Executing a custom script on a host that is not actively reporting to Resiliency Platform environment through Infrastructure Management Server (IMS) or Infoscale Operations Manager Management Server.
- Database user authentication for Oracle applications.
- Rehearse and cleanup rehearsal operations for applications on Microsoft Failover Cluster.
- Rehearse and cleanup rehearsal operations for applications inside virtual machines having data on raw disks mapped to virtual machines and data replicated through 3PAR RemoteCopy or NetApp SnapMirror through fibre channel.
- Rehearse and cleanup rehearsal operations if the recovery data center is in vCloud.
- Takeover operation from AWS cloud data center to on-premises data center.
- Raw Device Mapping (RDM) is not supported for virtual machine disaster recovery using Resiliency Platform Data Mover.
- Virtual compatibility mode of RDM paths is not supported.

Array-based replication does not support the following:

- Raw Device Mapping (RDM) paths stored on a datastore created from the local storage of ESX server.
- Combination of replicated and non-replicated storage to virtual machines is not supported.
- Combination of storage from multiple array technologies is not supported.

Using the product documentation

Table 1-2 lists the URLs for Veritas Resiliency Platform documentation and Table 1-3 lists the Veritas Resiliency Platform guides.

Table 1-2 URLs for Veritas Resiliency Platform documentation

URL	Description
https://sort.veritas.com/documents	The latest version of the product documentation: Product guides in PDF format and HTML format. Online help portal. The help content is also available from the product console.
https://www.veritas.com/community/business-continuity/videos	The list of Resiliency Platform videos.
http://www.veritas.com/docs/000126059	The late breaking news that is related to this release.

Table 1-3 Names of Veritas Resiliency Platform guides

Title	Description
Veritas Resiliency Platform Getting Started Guide	An overview of processes of deployment, configuration, and disaster recovery in Resiliency Platform.
Veritas Resiliency Platform Hardware and Software Compatibility List (HSCL)	The list of hardware and software compatibility.
Veritas Resiliency Platform Release Notes	The release information such as main features, known issues, and limitations.
Veritas Resiliency Platform: Deployment Guide *Veritas Resiliency Platform: Solutions for Applications* *Veritas Resiliency Platform: Solutions for Microsoft Hyper-V* *Veritas Resiliency Platform: Solutions for VMware* *Veritas Resiliency Platform: Solutions for Virtual Business Services* *Veritas Resiliency Platform: Application Enablement SDK*	The information about deploying Resiliency Platform and using the solutions.
Veritas Resiliency Platform Third-Party Software License Agreements	The information about the third-party software that is used in Resiliency Platform.

Chapter 2

System requirements

This chapter includes the following topics:

Supported hypervisors for deploying Resiliency Platform virtual appliance

This section lists the hypervisor versions that are supported for Resiliency Platform virtual appliance.

Microsoft Hyper-V:

- Windows Server 2012 with Hyper-V
- Windows Server 2012 R2 with Hyper-V

VMware:

- ESXi 5.1, 5.5, 6.0, 6.0U1, 6.0U2, 6.5
- vCenter Server 5.1, 5.5, 6.0, 6.0U1, 6.0U2, 6.5

Note: The lists of supported platforms for deployment of virtual appliance and for disaster recovery of virtual machines are different. For information on platform support for disaster recovery of virtual machines, see the *Veritas Resiliency Platform Hardware and Software Compatibility List*.

System resource requirements for Resiliency Platform

The amount of virtual CPUs, memory, and disk space that Veritas Resiliency Platform requires are listed in this section.

The minimum configuration that is recommended for a virtual appliance for Resiliency Manager, Infrastructure Management Server (IMS), Replication Gateway, and YUM repository server:

Table 2-1 Recommended configurations

Component	Recommended configurations
Resiliency Manager	Disk space 60 GB RAM 32 GB Virtual CPU 8
Infrastructure Management Server (IMS)	Disk space 60 GB RAM 16 GB Virtual CPU 8
Gateway	Disk space 40 GB RAM 16 GB Virtual CPU 8 Additional external disk of 50 GB

Note: You need to reserve the resources for Resiliency Manager and IMS to ensure that these resources do not get swapped in case of virtual machines getting overloaded.

If the virtual appliance does not meet the minimum configuration, you get a warning during the bootstrap of the virtual appliance and you are required to confirm if you want to continue with the current configuration.

If you plan not to use the YUM virtual appliance, you need a Linux server with a minimum of 50-GB disk space, to be configured as the repository server. Provisioning for the repository server is optional, it is required to install the Veritas Resiliency Platform patches or updates in the future.

If you want to enable dynamic memory on Hyper-V, make sure that the following prerequisites are met:

- Startup memory and minimal memory should be equal to or greater than the amount of memory that the distribution vendor recommends.
- If you are using dynamic memory on a Windows Server 2012 operating system, specify Startup memory, Minimum memory, and Maximum memory parameters in multiples of 128 megabytes (MB). Failure to do so can lead to dynamic memory failures, and you may not see any memory increase in a guest operating system. Even if you are using dynamic memory, the above mentioned minimum configuration should be met.

Network and firewall requirements

The following are the network requirements for Veritas Resiliency Platform:

- Before you use the hostname and the IP address in the **Network settings**, you need to register them with the DNS server.
- The hostname or the IP address which is used for product configuration, should not have multiple entries in the DNS server. For example, the IP address should not be associated with multiple hostnames, or the hostname should not be associated with multiple IP addresses.
- Ensure that ports 88 and 750 on DNS server are open for communication with IMS.
- In case of recovery to cloud, ensure that port 53 on DNS server is open for bi-directional communication with the cloud data center.
- The hostname that you use for a virtual appliance must not start with a digit and must not contain the underscore (_) character.
- Veritas Resiliency Platform supports only Internet protocol version (IPV) 4.
- If you plan to use the DHCP server, the DHCP server should be in the same subnet where you plan to deploy the product.

The following ports are used for Veritas Resiliency Platform:

Table 2-2 Ports used for Resiliency Manager

Ports used	Purpose	For communication between	Direction	Protocol
443	Used for SSL communication	Resiliency Manager and web browser	Browser to Resiliency Manager	HTTPS, TLS v1.1+

Table 2-2 Ports used for Resiliency Manager *(continued)*

Ports used	Purpose	For communication between	Direction	Protocol
14176	Used for communication between the Resiliency Manager and Infrastructure Management Server (IMS)	Resiliency Manager and IMS	Bi-directional	HTTPS, TLS v1.1+
7001	Used for database replication	Resiliency Manager and IMS	Bi-directional	TCP with SSL/TLS1.1+
389	Used for communication with LDAP/AD server	Resiliency Manager and LDAP/AD server	Bi-directional	TCP, user provided
636	Used for communication with LDAP/AD server	Resiliency Manager and LDAP/AD server	Bi-directional	TCP with SSL/TLS, user provided
22	Used for communication between remote host to the appliance klish access	Appliance and the hosts	Bi-directional	TCP
123	Used for NTP synchronization	Appliance and the NTP server	Bi-directional	TCP
14180	Used for accessing API service	Resiliency Manager and the API service	Bi-directional	HTTS, TLSv1.1+

Table 2-3 Ports used for on-premises IMS and in-cloud IMS

Ports used	Description	For communication between	Direction	Protocol
14176	Used for communication between the Resiliency Manager and Infrastructure Management Server (IMS)	Resiliency Manager and IMS	Bi-directional	HTTPS, TLSv1.1+
5634	Used for IMS configuration	IMS and the hosts	Bi-directional	HTTPS, TLSv1.1+
14161	Used for running the IMS console	Resiliency Manager and IMS	Resiliency Manager to IMS	HTTPS, TLSv1.1+
22	Used for communication between remote host to the appliance klish access Used for remote deployment of the packages on remote UNIX host from IMS	IMS and the hosts	Bi-directional	TCP
135	Used for remote deployment on client computer (inbound)	Host and remote Windows hosts	Bi-directional	TCP
123	Used for NTP synchronization	Appliance and the NTP server	Bi-directional	TCP

Table 2-4 Ports used for on-premises Replication Gateway and in-cloud Replication Gateway

Ports used	Description	For communication between	Direction	Protocol
33056	Used for replication	On-premises virtual machine and Replication Gateway/Storage Proxy	Bi-directional	TCP

Table 2-4 Ports used for on-premises Replication Gateway and in-cloud Replication Gateway *(continued)*

Ports used	Description	For communication between	Direction	Protocol
5634	Used for communication with IMS	IMS and Replication Gateway/Storage Proxy	Bi-directional	HTTPS, TLSv1.1+
8089	Used for replication	in-cloud component and on-premises component	Bi-directional	TCP
443	Used for communication between paired Gateways	Paired Gateways	Bi-directional	HTTPS, TLS v1.1+

Table 2-5 Ports used for target Gateway in resync operation

Ports used	Description	For communication between	Direction	Protocol
67	BOOTP server	Target Gateway enabled with DHCP role and physical host	Uni-directional	UDP
68	BOOTP client	Target Gateway enabled with DHCP role and physical host	Uni-directional	UDP
69	TFTP protocol	Target Gateway enabled with PXE role and physical host	Uni-directional	TCP/UDP

Table 2-6 Ports used for virtual machines

Ports used	Description	For communication between	Direction	Protocol
22	Used for communication between remote host to the appliance klish access Used for remote deployment of the packages on remote UNIX host from IMS	IMS and the hosts	Bi-directional	TCP
5634	Used for communication with IMS	IMS and the hosts	Bi-directional	HTTPS, TLSv1.1+
33056	Used for replication	On-premises virtual machine and Replication Gateway	Bi-directional	TCP

Chapter 3

Fixed issues

This chapter includes the following topics:

Fixed issues

This chapter lists the issues that have been fixed after releasing Veritas Resiliency Platform version 2.0 HF5 (2.0.0.500).

Table 3-1 Issues fixed in Veritas Resiliency Platform 2.2 Update 3 (2.2.0.300)

Incident number	Abstract
10162	DR operation fails if the password of the target vCenter server contains special character such as '$'
9350	Configuration files and Veritas Replication Set information on the ESX server does not get cleaned up after deletion of resiliency group containing VMware VAIO virtual machines
9917	Resiliency Platform Applications add-on gets pushed to Veritas InfoScale Operations Manager as part of upgrade
9999	Lookup entries for IMS in the Resiliency Manager memory local cache do not get refreshed after deletion of IMS
9377	No support for InfoScale application DR running on a virtual machine which is discovered by Veritas Resiliency Platform through vCenter server configuration
9933	Add host operation fails if you uninstall the ITRP add-on from the host and then try to add the host again

Table 3-1 Issues fixed in Veritas Resiliency Platform 2.2 Update 3 (2.2.0.300) *(continued)*

Incident number	Abstract
9267	Assets Lookup service has multiple mappings if a virtual machine gets discovered from vCenter server as well as by Veritas InfoScale Operations Manager
9918	Secure SMTP configuration not validated before passing the user information for email alert configuration
9608	Stale entries for NIC objects in the database do not get deleted
9607	Stale entries for LUNs in the database do not get deleted
10047	Hosts that have underscore in names not blocked during bootstrap
9675	If Veritas Resiliency Platform Data Mover bundle is uninstalled from the host, and then IMS is not accessible from the host where the bundle was uninstalled, subsequent installation of Data Mover bundle on that host may fail.
9998	Custom Script Execution fails if a virtual machine gets discovered from vCenter server as well as by Veritas InfoScale Operations Manager, or if some of the hosts belonging to an ESX server are added as host while others get discovered by the vCenter server
10046	Resiliency Manager upgrade from console is not supported and needs to be blocked
9251	IP customization fails after the timeout of one minute
10063	User needs to be notified that running `loggather` command with full option stops the IMS services
8762	No option to automatically cleanup loggather files
9854	Risks raised before upgrade do not get cleared after upgrade

Table 3-2 Issues fixed in Veritas Resiliency Platform 2.2 Update 2 (2.2.0.200)

Incident number	Abstract
9500	Access profile service fails to restart in first attempt
9471	keytab file does not get passed correctly to IMS

Table 3-2 Issues fixed in Veritas Resiliency Platform 2.2 Update 2 (2.2.0.200) *(continued)*

Incident number	Abstract
9348	Entries in `/etc/krb5.conf` file keep on increasing
9385	DNS operation shows success even when `kinit` fails and actual operation fails
9384	HyperV `ITRP_NR` discovery triggers unnecessary full HyperV discovery if HyperV virtual machine name is long
9126	IP customization fails with the error: unable to create VRP directory
9388	Filter IO throttling option needs to be provided
9258	After Upgrade to Resiliency Platform 2.2, Hyper-V virtual machines are not discovered
9053	Resiliency Platform Subnet network pair gets deleted from list after DR Rehearsal network is changed
9269	Veritas InfoScale Operations Manager (VIOM) side APIs getting directed to IMS instead of VIOM since VIOM server was treated as addressable object
9351	Recovery Operations on resiliency group using VAIO replication fails if resiliency group is edited on recovery data center
9278	IOTAP virtual machine configured for recovery to AWS gets crashed
9345	Retry count for Datastore unmount operation should be configurable
9556	In case of VMware VAIO, if there are multiple clusters and datastores, the target cluster selection page becomes unresponsive
9268	Upgrade should work even if there are some stale resiliency group entries exist
6764	Resiliency plan becomes unresponsive if you edit the plan while it is getting executed
8899	InfoScale operations should not become unresponsive even if entire cluster is down
8636	Create resiliency group operation fails for HyperV virtual machines if the LUN size is greater than 1 TB

Table 3-2 Issues fixed in Veritas Resiliency Platform 2.2 Update 2 (2.2.0.200) *(continued)*

Incident number	Abstract
9018	Show appropriate error if user generating keytab file does not have enough privileges to update DNS
8752	After restarting the gateway appliance, the gateway state remains faulted and the gateway pair in disconnected state

Table 3-3 Issues fixed prior to Veritas Resiliency Platform 2.2 Update 2 (2.2.0.200)

Incident number	Abstract
7709	Refresh operation for EMC SRDF enclosure does not work
7704	Remove DNS operation fails if DNS customization done by editing resiliency group
7717	VLAN pairing for distributed port group gets deleted after upgrade
8735	Custom script execution as part of resiliency plan fails intermittently
8730	Create resiliency group operation fails with the error: No gateway pair found for the assets
8661	Migration fails due to HP 3PAR discovery issue
8599	Virtual machines do not get powered on due to missing VLAN configuration after failback
8240	Resiliency group creation using VAIO fails due to failure in fetching virtual machine profile from vCenter
8095	Network mapping for VLAN gets deleted after upgrade
8094	Web UI performance slow after upgrade
8093	After upgrade to 2.1, VMware migration fails with the error: Invalid technology workflow
8074	Create resilience group operation with Resiliency Platform data mover fails with not enough space available error, even tough enough space is available on the data store

Table 3-3 Issues fixed prior to Veritas Resiliency Platform 2.2 Update 2 (2.2.0.200) *(continued)*

Incident number	Abstract
7982	Orchestration workflow fails due to error in fetching information for VMware
7861	Resiliency group using VAIO replication gets created without name if ESX runs out of memory
7756	VCS applications in a resiliency group cannot be brought online or taken offline
6309	VRP and VIOM disconnected state displayed in the risk section
6297	Migration of resiliency group fails with the error: Invalid technology
6133	Distributed vSwitch not available after re-adding vCenter
6092	Virtual machines on the replicated storage are not included in the disaster recovery configuration

Chapter 4

Known issues

This chapter includes the following topics:

- VBS DR operations fail when an application resiliency group with unconfigured DR is added in VBS (3794105)
- Expired resiliency plan cannot be executed even after editing the schedule (3861955)
- Resiliency groups for Hitachi enclosures are not displayed on dashboard under Top RG by replication lag chart (3861173)
- Snapshot disk is read only after rehearse operation is performed in Hyper-V with SRDF replication (3862088)
- Static IP customization may not work under certain conditions (3862916, 3862237)
- Need to manually refresh all assets after a site recovery (3861929)
- Disk utilization risk not resolved after DR operations
- Migrate operation becomes unresponsive if the operation is initiated from an unavailable site (3862253)
- Remote cluster group dependencies not validated before migrate (3863082)
- VBS migrate operation cannot be performed after failure (3862124)
- Resiliency group state does not get updated when production site is down (3863081)
- Replication information error (5170)
- DNS customization does not work if FQDN is not defined (5037)
- Previously configured network mapping may not work after re-adding a VMware vCenter server
- Some versions of VMware Tools are not supported (4969)
- Login to the Resiliency Manager console fails at times
- Resiliency group and VBS names in charts are displayed incorrectly in Japanese and Chinese (8465)
- Warning message may be displayed for network mapping (8644)
- Cannot edit application discovery frequency for the uploaded application bundles from console (8433)
- Metering report does not work for third-party replication technologies (8617)

- Replication information not discovered for Hyper-V virtual machines configured in Microsoft Failover Clustering environment using Non-English characters in the CSV path (8697)
- An operation may fail if invoked at a time when virtual machine is being migrated using Vmotion (6476)
- vLan mapping compulsory for DRS enabled Vmware virtual machines (10322)
- Known issues: Resiliency Platform Data Mover
- Known issues: Recovery to Amazon Web services (AWS)
- Known issues: NetBackup integration
- Known issues: Recovery to vCloud

Disaster recovery (DR) configuration for resiliency group fails if Microsoft Hyper-V Replica is configured after you add a virtual machine in Resiliency Platform

This issue applies to the disaster recovery (DR) configuration for a resiliency group. The DR configuration operation fails if a Hyper-V Replica is configured on the Hyper-V virtual machine after you add the virtual machine to the Infrastructure Management Server (IMS).

Workaround:

Use the Resiliency Platform console to refresh the Hyper-V host manually. It discovers the Hyper-V Replica information, and the configuration DR operation functions as expected.

In the VM Inventory report, instead of allocated memory, Resiliency Platform shows the total memory of the virtual machines

In the VM Inventory report, for the virtual machines on the Hyper-V Server, the Resiliency Platform console displays the total memory instead of their allocated memory.

Certain validations do not work while creating a resiliency group of applications (3721289)

When you create a resiliency group of applications, the following validations do not work:

- Check if theResiliency Platform Applications Enablement add-on is deployed on the host. If the Veritas Resiliency Platform Applications Enablement add-on is not correctly installed on the managed host, the create resiliency group operation for application fails. In such situation, you need to install the add-on on the host before creating the resiliency group for applications.
- If the workflow fails, resiliency group should not get created.

Rehearsal does not work after being aborted

If you abort a rehearsal operation, that rehearsal operation does not work afterwards.

Workaround:

Run cleanup rehearsal operation before performing Rehearsal again.

The configure DR operation fails if virtual machines in the resiliency group belong to different servers

If you try to configure disaster recovery (DR) for a resiliency group with multiple virtual machines that belong to different servers, the configure DR operation fails.

For resiliency groups containing VMware virtual machines with NFS datastore mounted from a NetApp volume with substring vol, Migrate or takeover operations may fail

If a VMware datastore is mounted from a NetApp replicated volume and the volume name contains the substring **vol**, the corresponding resiliency groups may fail to migrate across data centers.

Workaround:

Rename the NetApp volume to remove the substring **vol** from the name.

The license expiry status is inconsistent on Resiliency Managers configured on different time zones

If Resiliency Managers are configured on different time zones, then the license on one Resiliency Manager may expire before the license on the other Resiliency Manager. This behavior is seen on the second Resiliency Manager for almost 12 hours.

In the Hyper-V guest environment, the writable disk is shown in the Read-Only state (3785911)

In the Hyper-V guest environment, if a disk is writable but the disk manager or any other Windows utility shows that the disk is in the Read-only state, you need to restart the Hyper-V guest machine.

This can occur in the recovery data center during the migrate and takeover operation.

Long SRDF device group names are not discovered (3786826)

Symmetrix Remote Data Facility (SRDF) device groups with names longer than 18 characters cannot be discovered in the Resilience Manager web console.

Multiple repository paths on the same host are not allowed for the repository server (3734149)

While you add a repository server, you cannot add multiple repository paths on the same host as multiple entries for repository server.

Unknown state displayed for the Resiliency groups of dark sites that are part of VBS (3794650)

If a virtual business service (VBS) contains a resiliency group that belongs to dark sites, the state of the individual resiliency group is displayed as unknown if it in not online.

An Oracle custom application is not discovered if the instance names do not match (3796579)

When you add an Oracle custom application, Resiliency Platform to discover, the **Application Inputs** screen includes two **Instance name** fields. You must specify the same name in each field; otherwise, the application is not discovered.

VBS DR operations fail when an application resiliency group with unconfigured DR is added in VBS (3794105)

User cannot perform disaster recovery operations when the VBS consists of an application resiliency group which is not configured for DR.

Expired resiliency plan cannot be executed even after editing the schedule (3861955)

Once a resiliency plan schedule expires, it cannot be executed even after editing the schedule. No error is encountered when you try to edit the schedule, but the plan is not executed on edited schedule.

Workaround:

Delete the previous resiliency plan schedule and create a new resiliency plan schedule.

Resiliency groups for Hitachi enclosures are not displayed on dashboard under Top RG by replication lag chart (3861173)

In case of Hitachi enclosures, the resiliency groups are not displayed on the dashboard under Top RG by replication lag since replication lag for Hitachi enclosures is reported in percentage and the chart being displayed on the dashboard uses *HH:MM:SS* format.

[However, resiliency group details page displays the replication lag for a specific resiliency group.]

Snapshot disk is read only after rehearse operation is performed in Hyper-V with SRDF replication (3862088)

We use `Diskpart` command to clear read only flag. But the command does not work intermittently. Hence during rehearse operation in Hyper-V SRDF replication environment, sometimes the snapshot disk gets mounted in read only mode.

Workaround:

- Take the disk offline and then bring it online.
- Power on the virtual machine.

Static IP customization may not work under certain conditions (3862916, 3862237)

Hyper-V provides Linux Integration Services(LIS) which allows static IP customization for Linux guest. However sometimes the operation does not succeed even though the operation reports success. In such cases, the IP is not assigned to the Linux guest.

Workaround:

Log in to the virtual machine console and manually assign the IP address.

Need to manually refresh all assets after a site recovery (3861929)

After a primary site is recovered, you need to manually refresh all the asset configurations such as configurations of enclosures, virtual machines, discovery host.

Following is the order in which the asset configuration needs to be refreshed:

- For EMC VNX, EMC RecoverPoint and Hitachi, refresh the discovery host first, then refresh the enclosures, and then finally refresh the VMware vCenter servers.
- For NetApp, first refresh the VMware vCenter server and then refresh the enclosures.

Disk utilization risk not resolved after DR operations

The disk utilization risk is not resolved if the disk is made available after the resiliency group associated with the risk, is migrated to the recovery site.

Migrate operation becomes unresponsive if the operation is initiated from an unavailable site (3862253)

If you try to perform the migrate operation instead of the takeover operation from a site which is currently not available, the operation becomes unresponsive indefinitely.

Remote cluster group dependencies not validated before migrate (3863082)

Veritas Resiliency Platform allows you to migrate a global service group which is mapped as a resiliency group and has dependent service groups on DR cluster which are not online. As a result, the start resiliency group operation on the recovery site may fail.

VBS migrate operation cannot be performed after failure (3862124)

If the workflow fails during a VBS migrate operation, then migrate operation cannot be retried for the VBS.

Workaround:

Fix the issue which caused the failure and then bring the VBS online on production site and then perform the Migrate operation. You can also try to perform migrate operation on individual resiliency group after fixing the issue which caused the failure.

Resiliency group state does not get updated when production site is down (3863081)

If the production site where a resiliency group is online, goes down, the state of the resiliency group does not change. However, the state of the application changes to display **Online(Stale)** to reflect that the online state of the resiliency group is stale and may not be recent.

Replication information error (5170)

For virtual machines or applications, at times you may encounter an error as **No replication information found**.

Workaround:

Remove the associated appliance, enclosure, or discovery host and add it back.

DNS customization does not work if FQDN is not defined (5037)

This issue occurs if FQDN is not defined for virtual machines running on Hyper-V platform (Linux and Windows).

Previously configured network mapping may not work after re-adding a VMware vCenter server

If you re-add a previously configured VMware vCenter server to the Resiliency Manager, the previous network mapping is displayed as healthy in the console. However, the network mapping may not work as expected.

Workaround:

You need to remove the previously configured network mapping and set it up once again.

Some versions of VMware Tools are not supported (4969)

Resiliency Platform uses vSphere web service API, ValidateCredentialsInGuest(), which does not work with some versions of VMware Tools that are installed in guest

virtual machine. This issue may lead to failure in IP customization of Windows virtual machines in vSphere environment.

Workaround

Install the latest version of VMware Tools.

vSphere web service API, ValidateCredentialsInGuest(), works with VMware Tools version 9.4.10.2092844.

Login to the Resiliency Manager console fails at times

Sometimes, login to the Resiliency Manager console fails.

Workaround:

Stop the Resiliency Manager instance and then restart it.

Resiliency group and VBS names in charts are displayed incorrectly in Japanese and Chinese (8465)

In some reports, the names of resiliency groups and Virtual Business Services (VBS) in the charts are not displayed correctly in Japanese and Chinese languages.

If the resiliency group or the VBS name is a combination of English and Japanese or Chinese characters, then only the English characters are displayed correctly.

Warning message may be displayed for network mapping (8644)

At times, even if the network mapping is set up in the environment, you may get a warning message for network mapping similar to the following while performing a disaster recovery operation:

```
Some virtual machines may not connect to network after migrate as
the required network mapping are not defined.
```

Workaround:

You need to click on Continue and the operation proceeds as expected.

Cannot edit application discovery frequency for the uploaded application bundles from console (8433)

For the uploaded custom applications bundles, the operation for editing the application discovery frequency does not work.

Workaround:

You can change the application discovery frequency by editing the following file on the application host:

- On Linux host:
  /var/opt/VRTSsfmh/scheduler.conf
- On Windows host:
  C:\ProgramData\Symantec\VRTSsfmh\scheduler.conf

Metering report does not work for third-party replication technologies (8617)

The metering report does not work for any third-party replication technologies. It works only if you use Resiliency Platform Data Mover for replication.

Replication information not discovered for Hyper-V virtual machines configured in Microsoft Failover Clustering environment using Non-English characters in the CSV path (8697)

If you configure a Hyper-V virtual machine in Microsoft Failover Clustering environment using Non-English characters in the CSV (Cluster Shared Volume) path, the replication information for the virtual machine is not discovered and the **Data Availability** column in the Resiliency Manager console is displayed as blank.

An operation may fail if invoked at a time when virtual machine is being migrated using Vmotion (6476)

In case a virtual machine is being migrated through VMotion or through DRS and at the same time, any VRP operation is invoked on that particular virtual machine, the operation may fail as the resources are in transient state.

Workaround:

You need to re-launch the operation once the migration of the virtual machine completes.

vLan mapping compulsory for DRS enabled Vmware virtual machines (10322)

If vSphere DRS is enabled for a VMware HA cluster and virtual machine has port group attached from distributed switch, then you must do vLan mapping for successfully performing the migrate operation.

This is applicable only to vCenter server and ESXi version lower than 6.5.

Known issues: Resiliency Platform Data Mover

The following known issues are applicable to Resiliency Platform Data Mover:

Virtual Machine protection using Data Mover has a few policy related limitations (5181)

Virtual Machine protection using Data Mover has SPBM (Storage Policy Based Management) from VMware related limitations. You may not be able to protect your virtual machines if it has any non-default policy attached that does not have vtstap filter.

Workaround:

You need to apply the policy with vtstap filter as one of the rules in it.

Iofilter bundle not removed from ESX hosts even after unconfiguring virtual machines (5178)

In case you are using Resiliency Platform Data Mover, even after you unconfigure all the virtual machines in the cluster that were configured for recovery, iofilter bundle does not get removed from the cluster.

Storage policy needs to be manually removed after all the virtual machines are unconfigured (5180)

The storage policy for virtual machines does not automatically get removed After all the protected virtual machines in the VMware vSphere server are unconfigured. It needs to be manually removed from virtual machine's storage policies.

VMDK and VMX files need to be in the same folder(5167)

Protection of virtual machines using Resiliency Platform Data Mover does not work if it has vmdk and vmx files in two different folder.

Workaround:

Put the vmdk and vmx files in the same folder.

Edit resiliency group operation may fail after rehearsal or cleanup rehearsal (5092)

The edit resiliency group operation may fail after performing a rehearsal or cleanup rehearsal operation.

Workaround:

Refresh the vCenter on the datacenter where rehearsal is performed after rehearsal or cleanup rehearsal operation.

Replication gets paused if you perform add disk operation (5182)

If you add a disk to the protected virtual machine, replication is paused and you are not able to perform any operation on the associated resiliency group.

Workaround:

Edit the resiliency group to remove the affected virtual machine and then add it back.

Cannot perform any operation after deleting disk from virtual machine (5182)

If you delete a disk from a virtual machine, you cannot perform any operation on the associated resiliency group.

Workaround:

Edit the resiliency group to remove the affected virtual machine and add it back.

Data Mover virtual machine in no op mode risk cannot be resolved (5183)

The **Data mover virtual machine in no op mode** risk cannot be resolved once it gets generated.

Risks not generated after taking snapshot of virtual machine replicated using Data Mover(6886)

If you take a snapshot of the virtual machine that is a part of a Resiliency Group that gets replicated using Resiliency Platform Data Mover, the risks are not generated after taking the snapshot.

Workaround:

You need to perform edit Resiliency Group operation after you take the snapshot of any virtual machine.

Known issues: Recovery to Amazon Web services (AWS)

The following known issues are applicable to AWS:

Some DHCP enabled NICs are not present on Cloud after migrate (7407)

If DHCP is enabled for NICs but network pairing is not complete, then during the migrate operation these NICs are ignored.

Workaround

Create a network pair for the DHCP enabled NICs so that the IP addresses are shown on AWS Cloud. Or you need to manually create the network interface after migrate operation is successfully completed.

One or more NICs of a migrated Windows virtual machine may not be visible (7718)

After migration, one or more network interface cards (NIC) associated with a Windows virtual machine may not be visible from the operating system. You may not be able to connect to the migrated virtual machine using the IP address assigned to these invisible NICs.

Workaround:

In device manager, under network connections, all the NICs are listed. The NICs that are not visible in Network Connections are also listed here, but they show an error similar to the following:

```
Windows could not load drivers for this interface.
```

Right click on the network interface that is showing the error and click on Uninstall Device.

After the uninstallation, scan for hardware changes in the device manager. The NIC gets installed properly and is visible.

Cloud IPs get added to on-premise NICs after migrate back to the on-premise site and reboot (7713)

After the successful migration to the production site (on-premise) and reboot of the Windows virtual machines, the cloud IP addresses get associated with the on-premise NICs.

This is because of some issue in networking script that causes the cloud IPs to be added to premise NICs on reboot after migrate back.

Workaround:

You need to manually remove the additional IPs from the on-premise NIC.

Migrate or takeover operations fail at the Add Network for AWS task and Create Network Interface sub-task (7719)

Due to some error, the cloud IPs get added to the on-premise NICs after migrating back to the premise. After that, if you perform the edit resiliency group operation or delete and again create the resiliency group, the migrate and takeover operations fail with the following error:

```
An error occurred (InvalidParameterValue) when calling the
CreateNetworkInterface operation: invalid value for parameter address:
[]
```

Workaround:

Start the virtual machine and manually remove the cloud IPs.

Refresh the host and vCenter server or Hyper-V.

Edit the resiliency group and then retry the migrate or takeover operation.

Sometimes network comes up on only one NIC although there are multiple NICs (8232)

Sometimes the RHEL virtual machines having multiple NICs are accessible using only one NIC IP after performing disaster recovery (DR) operations such as migrate, take over, and rehearsal. It happens because the DHCP client is unable to get the DHCP offer from the server which prevents the routing table to get the load. Hence, the virtual machines are not accessible by other NIC IPs.

Workaround

Using the available IP, access the virtual machine, and restart the network services.

Known issues: NetBackup integration

The following known issues are applicable to NetBackup integration:

MAC address starting with 00:0c:29 not supported for VMware virtual machines (7103)

If you want to restore an image on a VMware virtual machine with MAC address starting with 00:0c:29, the machine does not get powered on.

Workaround:

You need to edit the virtual machine settings and change the MAC address type of the Network adapter to Automatic. This changes the MAC address of the machine. You can then power on the virtual machine again.

A virtual machine backed up by multiple NBU master servers gets mapped with only one master server in the console (7608)

If a virtual machine gets backed up by multiple NBU master servers, it is mapped with only one master server in the Resiliency Manager console. You can create resiliency group or restore virtual machine only with the mapped master server.

A transient virtual machine remains in the ESX server in one scenerio (7413)

If you restore a resiliency group from site A to site B and then restore it back to site A, then two virtual machines are seen on the ESX server of site A.

Workaround:

Restart the services on the vCenter server.

Operations for virtual machine do not work if the remote master server gets reconfigured (8600)

If the remote master server is reconfigured, the remote master association for the virtual machine gets detached and no operation works for the virtual machine.

Workaround:

You need to remove and then add both the master servers again.

Known issues: Recovery to vCloud

The following known issues are applicable to recovery to vCloud:

Resiliency group details in the console displays stale vCloud virtual machine entries after migrating back a resiliency group to the premises site (8326)

After migrating back a resiliency group to the premises site, the details page of resiliency group in the console may show stale vCloud virtual machine entries in some cases. The operation succeeds and there is no harmful side effect otherwise.

Chapter 5

Limitations

This chapter includes the following topics:

Rehearsal is not supported if volume is configured using asynchronous replication in IBM XIV enclosure

If the consistency group or the volume is configured using asynchronous replication in IBM XIV array, then the snapshot operation is not supported by XIV enclosure. Hence if the resiliency group is configured with virtual machines that are using asynchronous consistency group or volume-based replication, then the rehearsal operation fails at the ‘create snapshot’ step.

Limitations for on-premises Windows hosts for Resiliency Platform Data Mover replication

Following limitations are applicable only for on-premises hosts on Windows platform and the replication is Resiliency Platform Data Mover:

- To perform the Initialize Disk operation, consistency group must be in PAUSED or STOPPED state.
- If system recovery is done manually, then you need to first stop the replication and then start the replication using the CLI.
  - “C:\Program Files\Veritas\VRTSitrptap\cli\vxtapaction.exe” stop –cg <*CGID*>
  - “C:\Program Files\Veritas\VRTSitrptap\cli\vxtapaction.exe” start –cg <*CGID*> where *CGID* is the consistency group ID.

Hyper-V hosts having snapshots not supported for recovery to AWS

A Hyper-V host having snapshots is not supported for recovery to AWS.

Computer name of virtual machine on vCloud differs if the name exceeds permitted character limit

The maximum allowed character limit for a Computer name on vCloud is, 15 for Windows and 63 for Linux. If the host name part of the fully qualified domain name (FQDN) of a virtual machine exceeds the limit, then after performing migrate or take over operation the Computer name of the virtual machine on vCloud has a default name.

The name can be edited as required.

Localization of adding application type is not supported

Localization of adding applications type is not supported due to back-end limitations. The **Add Application Type** wizard in **Settings** > **Application Support** > **Uploaded** tab does not accept the inputs in non-English characters.

Datastore name with special characters

Datastore name having special character is not supported.

Appendix A

Virtual appliance security features

This appendix includes the following topics:

Operating system security

Veritas Resiliency Platform appliance operating system is hardened against potential security exploitation by removing the operating system packages that are not used by the Resiliency Platform. All the default yum repository files that are shipped with the operating system are removed.

The Control + Alt + Delete key combination has been disabled to avoid any accidental reboot of the virtual appliance. Exec-shied is enabled to protect the virtual appliance from stack, heap, and integer overflows.

Management Security

Only two users are available on the appliance: admin user and support user. These two user accounts are used to access the appliance based on the requirement.

Only admin login is available for the appliance. The password policy of admin login is modified to prompt the user to change the password on the first login.

If the admin user password is lost, you need to contact Veritas support for resetting the admin user password.

On successful completion of the product bootstrap, admin user can only access a limited menu of commands through klish. Besides admin user, support user is also supported in the appliance but remote login of support user is disabled. To access the support user, one need to login as an admin and go through **klish**. An option `support > shell` is provided in the **klish** menu to switch the user to support and access the bash shell of support. After selecting this option, the support user is given superuser privileges. Using this option is not recommended and it should be used only with the assistance of technical support.

Timeout of the bash shells of all users is set to 900 seconds.

Network security

The TCP timestamp responses are disabled in Resiliency Platform virtual appliance. Another network security feature of the appliance is that during the product bootstrap process, only those ports that are used by the product for communication and data transfer, are opened through the firewall and all the other communications are blocked.

Uncommon network protocols such as DCCP, SCTP, RDC, TIPC have been disabled so that any process cannot load them dynamically.

See “Network and firewall requirements” on page 18.

Access control security

Resiliency Platform virtual appliance implements certain access control measures. The umask is set to 0700 across the appliance. The access permissions of some of the files such as home folder of root, the log directory etc. is restricted. All the security and the authorization messages are logged into the appliance.

Physical security

In the Resiliency Platform virtual appliance, the USB storage access is disabled.