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RELEASE NOTES

EMC® RecoverPoint Adapter for VMware Site Recovery Manager

Release 1.0 and Service Pack Releases

Release Notes

P/N 300-007-083
Rev A06

March 19, 2009

These release notes contain information about release 1.0 and service pack releases of EMC RecoverPoint Adapter for VMware Site Recovery Manager. System administrators using the RecoverPoint Adapter should be familiar with the setup, configuration, and administration of EMC RecoverPoint, VMware Site Recovery Manager for Windows, and VMware ESX servers.

Topics include:

Revision history

Table 1 shows the revision history for this document.

Table 1 Revision history

Revision	Date	Description
A06	March 19, 2009	• Release of RecoverPoint Adapter 1.0 SP2 P1
A05	February 9, 2009	• Release of RecoverPoint Adapter 1.0 SP1 P2 • Added support for iSCSI-attached hosts with RecoverPoint Adapter 1.0 SP2 when using VMware SRM 1.0 Update 1
A04	December 29, 2008	• Release of RecoverPoint Adapter 1.0 SP2 • Added fixed problems • Added new features
A03	September 25, 2008	• Added compatibility for RecoverPoint 3.0 SP1 P1
A02	September 15, 2008	• Release of RecoverPoint Adapter 1.0 SP1 • Added fixed and known problems • Added limitations
A01	June 13, 2008	• Release of EMC RecoverPoint Adapter 1.0

Product description

The EMC® RecoverPoint Storage Replication Adapter for VMware Site Recovery Manager (the "RecoverPoint Adapter") is a software package that allows VMware Site Recovery Manager (SRM) to implement disaster recovery using EMC RecoverPoint. The Adapter supports SRM functions, such as failover and failover testing, using RecoverPoint as the replication engine.

For the list of RecoverPoint releases and compatible RecoverPoint Adapter releases, refer to Table 6 on page 7.

EMC RecoverPoint is a comprehensive replication and data protection solution designed and built from scalable and highly available hardware appliances and software modules. RecoverPoint provides local data protection (CDP), remote data protection (CRR), and concurrent local and remote (CLR) data protection support for heterogeneous storage, server, and network environments.

Note: The RecoverPoint Adapter manages CRR consistency groups only.

By using a combination of modules, customers can protect and replicate data written over Fibre Channel to local SAN-attached storage, locally for operational recovery, remotely for disaster recovery, or both, with no production application impact. For long distances, it uses an existing IP network to send the data over a WAN. In the event of a local data corruption or a regional disaster, customers can recover data either at the local or remote site.

New features and changes

This section describes new features and changes of Adapter releases.

Features introduced in Adapter 1.0 SP2 P1

There are no new features in this release.

Features introduced in Adapter 1.0 SP1 P2

There are no new features in this release.

There is a change in how RecoverPoint-managed arrays are presented in the VMware SRM plug-in in VirtualCenter. When discovering RecoverPoint-managed arrays, in the Protection Arrays area, one production array is presented in the Array ID column and one disaster recovery (DR) array is presented in the Peer Array column.

These two arrays appear with the name **RecoverPoint-[production/DR site name]**. In previous Adapter releases ("Model" in VirtualCenter terminology), RecoverPoint-managed arrays were presentated as CLARiiON, Symmetrix, or other storage arrays.

There is no change in the way LUNs are presented in the VMware SRM plug-in in VirtualCenter.

Features introduced in Adapter 1.0 SP2

The features introduced in RecoverPoint Adapter 1.0 SP2:

- iSCSI-attached hosts are now supported for certain storage arrays when using VMware Site Recovery Manager 1.0 Update 1.

Note: For the most up-to-date list of supported arrays, refer to the EMC Support Matrix (ESM).

- LUNs can now be replicated from:
  - One array at production site to multiple arrays at remote site.
  - Multiple arrays at production site to one array at remote site.
  - Multiple arrays at production site to multiple arrays at remote site.
- RecoverPoint log collection now collects some SRM-related data that is saved in the RPA.

Features introduced in Adapter 1.0 SP1

There are no new features in this release.

Features introduced in Adapter 1.0

This is a first release of EMC RecoverPoint Adapter for VMware SRM and therefore there are no new features or changes.

Fixed problems

This section presents problems fixed in Adapter releases.

Note: The most up-to-date product issues for EMC RecoverPoint and EMC RecoverPoint Adapter are detailed online in the EMC Issue Tracker available on the EMC Powerlink website: http://Powerlink.EMC.com.

1.0 SP2 P1 fixed problems

Table 2 lists the problems that have been fixed in RecoverPoint Adapter 1.0 SP2 P1.

Note: Problems listed here were still "known issues" as of release 1.0 SP2

Table 2 Problems fixed in release 1.0 SP2 P1

Topic	Summary
System	[15966] VMware SRM operations (failover, test faliover start/stop) fail for consistency groups that contain more than one replication set.

1.0 SP1 P2 fixed problems

Table 3 lists the problems that have been fixed in RecoverPoint Adapter 1.0 SP1 P2.

Note: Problems listed here were still "known issues" as of release 1.0 SP1

Table 3 Problems fixed in release 1.0 SP1 P2

Topic	Summary
System	[14762 and 14878] The RecoverPoint Adapter fails to discover arrays in SRM when using: • Netapp, IBM FAStT, IBM Shark, or any other storage array that shows different serial numbers for LUNs on the same array in the RecoverPoint GUI.

1.0 SP2 fixed problems

Table 4 lists the problems that have been fixed in RecoverPoint Adapter 1.0 SP2.

Note: Problems listed here were still "known issues" as of release 1.0 SP1.

Table 4 Problems fixed in release 1.0 SP2

Topic	Summary
System	[14762 and 14878] The RecoverPoint Adapter fails to discover arrays in SRM when using: • Netapp, IBM FAStT, IBM Shark, or any other storage array that shows different serial numbers for LUNs on the same array in the RecoverPoint GUI.
System	[13843] When RecoverPoint is configured with VMware Site Recovery Manager (SRM) through a network address translation (NAT) firewall, the RecoverPoint Management Application (GUI) may not be able to communicate with SRM.

1.0 SP1 fixed problems

Table 5 lists the problems that have been fixed in RecoverPoint Adapter 1.0 SP1.

Note: Problems listed here were still "known problems" as of release 1.0

Table 5 Problems fixed in release 1.0 SP1

Topic	Summary
Intelligent switch specific	[13392] When RecoverPoint Adapter 1.0 is used with RecoverPoint 3.0 and an intelligent-fabric splitter, VMware SRM 1.0 may time out during a rescan of a remote ESX Server as part of a failover operation (either real or test). The timeout may occur more frequently when there is a large number of replicated LUNs attached to the ESX Server. **Workaround for RecoverPoint Adapter 1.0:** Run the signed script published as part of Primus solution emc183371. The script adjusts the RPA to prevent SRM timeouts. For more information, contact EMC Customer Service.
System	[13215] If running VMware SRM when a consistency group is already in logged access mode, SRM will fail, but the logged access mode will be cancelled.

Environment and system requirements

Before a RecoverPoint Adapter is installed, a RecoverPoint system must be installed and configured. Instructions are presented in the *EMC RecoverPoint Installation Guide*, available on Powerlink.

Table 6 on page 7 identifies the RecoverPoint Adapter releases that are compatible with RecoverPoint releases. To upgrade the RecoverPoint Adapter to the compatible RecoverPoint release, refer to "Upgrading and uninstalling the RecoverPoint Adapter" on page 13.

Table 6 RecoverPoint releases and compatible RecoverPoint Adapter releases

RecoverPoint release	Compatible RecoverPoint Adapter release	Host Attach to RecoverPoint replicated LUNs	Compatible VMware Site Recovery Manager release
3.0	1.0	FC	1.0 and 1.0 Update 1
3.0 SP1 3.0 SP1 P1	1.0 SP1	FC	1.0 and 1.0 Update 1
3.0 SP2	1.0 SP1 P2	FC	1.0 and 1.0 Update 1
3.1 3.1 SP1	1.0 SP2 P1[a]	FC	1.0 and 1.0 Update 1
		iSCSI	1.0 Update 1 only

a.RecoverPoint Adapter 1.0 SP2 P1 has replaced 1.0 SP2.

IMPORTANT

Users of RecoverPoint Adapter 1.0 SP2 are strongly recommended to upgrade to RecoverPoint Adapter 1.0 SP2 P1.

CRR consistency groups and their respective replication policies should be defined using the RecoverPoint Management Application (GUI) or Command Line Interface (CLI). The consistency group policies include enabling reservations support and setting VMware ESX or VMware ESX Windows as the host operating system.

The RecoverPoint Adapter requires Java Runtime Environment (JRE) version 1.6 or higher to be installed on the VirtualCenter servers. If a compatible version is not installed, the Adapter installation will automatically invoke an installer of JRE version 1.6, contained in the RecoverPoint executable file, to complete the Adapter installation.

The RecoverPoint Adapter is supported by a variety of EMC and third-party storage arrays. For the most up-to-date list of supported arrays, refer to the EMC Support Matrix (ESM).

For VMware system requirements, refer to the *VMware Site Recovery Manager Administration Guide*.

Known problems and limitations

This section lists the known problems and limitations in the current RecoverPoint release.

Note: The most up-to-date product issues for EMC RecoverPoint and EMC RecoverPoint Adapter are detailed online in the EMC Issue Tracker available on the EMC Powerlink website: http://Powerlink.EMC.com.

- When using EMC Symmetrix DMX storage arrays with VMware ESX Server version 3.x, ensure that the SPC-2 bit is enabled on the Symmetrix arrays. Refer to Primus solutions emc71378 and emc206829, and VMware documentation, for more information.
- VMware SRM 1.0 works only with replication between two remote sites. Therefore, the RecoverPoint Adapter only manages CRR consistency groups.
- When using VMware SRM 1.0, RDM/V and RDM/P are supported for experimental use only and not for production use.

  Note: When using VMware SRM 1.0 Update 1 and higher, RDM/V and RDM/P are supported for production use by all RecoverPoint Adapters.

- When consistency groups and their LUNs are *not* integrated with VMware SRM 1.0, the consistency groups can be of any replication type: CRR, CDP, or CLR.
- Table 7 on page 8 identifies the machine ports (TCP) that must be open to ensure within-site communication between RPAs and machines that have RecoverPoint Adapters installed on them. Verify communication by running the RecoverPoint GUI from each VirtualCenter machine that has a RecoverPoint Adapter installed on it.

Table 7 RecoverPoint Adapter releases and open machine ports

RecoverPoint Adapter	Open machine ports (TCP)
1.0 1.0 SP1 1.0 SP1 P2	1099 and 4401
1.0 SP2 P1[a]	7115

a.RecoverPoint Adapter 1.0 SP2 P1 has replaced 1.0 SP2.

- The RecoverPoint Adapter does not support the RecoverPoint host-based splitter (KDriver). It does support intelligent fabric-based splitters and array-based splitters. For the most up-to-date list of supported splitters, refer to the ESM.
- ESX Servers and RPAs must be zoned to the same storage ports at each site. If they are not, VMware SRM may not work properly.
- VMware SRM 1.0 enforces a timeout of 300 seconds (5 minutes) for all RecoverPoint Adapter operations. In the event the Adapter does not complete an operation within this time limit, the SRM will terminate the operation, possibly causing the environment to be in undesired state. For information on how to change the timeout value, refer to the relevant VMware SRM documentation.
- When using RecoverPoint Adapter version 1.0 or 1.0 SP1, the SRM logs may contain messages that state: "main - SystemModel: Debug Level set to 0". These are Adapter messages that appear as errors, but they are not errors and can be ignored.

Note: Problems fixed in each Adapter release are listed in "Fixed problems" on page 4.

Technical notes

This section contains important information about deploying RecoverPoint and VMware Site Recovery Manager.

Deploying RecoverPoint with intelligent fabric based splitters

Special instructions for deploying RecoverPoint with a SANTap-based intelligent switch are presented in the *EMC RecoverPoint Deploying RecoverPoint with SANTap and SAN-OS Technical Notes*.

Special instructions for deploying the RecoverPoint system with a SAS-based intelligent switch are presented in the *EMC RecoverPoint Deploying RecoverPoint with Connectrix AP-7600B and PB-48K-AP4-18 Technical Notes.*

Deploying RecoverPoint with CLARiiON splitter

Special instructions for deploying RecoverPoint with the CLARiiON splitter are presented in the *EMC RecoverPoint Installation Guide*, *EMC RecoverPoint Administrator's Guide*, and *EMC RecoverPoint and RecoverPoint/SE Release Notes*.

Failback

A failback operation switches data processing from the recovery site (target) to the protection site (source). As SRM 1.0 does not support automated failback using the SRM GUI, you can perform failback with SRM (partially automated) and without SRM (manual). VMware recommends performing failback with SRM.

To leverage SRM to perform failback, refer to the relevant VMware SRM documentation.

A high-level overview of the failback process is presented here:

1. Delete protection groups at the protection site and recovery plan at the recovery site.
2. Create protection groups at the recovery site and recovery plan at the protection site.
3. Execute recovery plan at the protection site in test mode.
4. If the test is successful, execute recovery plan in recovery mode.
5. Delete protection groups at the recovery site and recovery plan at the protection site.
6. Create protection groups at the protection site and a recovery plan at the recovery site.

Note: protection site = production/primary site; recovery site = remote/secondary site; protection group = replication group on protection site/shadow group on recovery site

For information about perform failback using RecoverPoint—called Resume Production in the RecoverPoint system—refer to the *EMC RecoverPoint Administrator's Guide*.

Consistency groups and SRM protection groups

A RecoverPoint consistency group is a data set of SAN-attached storage volumes at the production site and DR site. An SRM protection group is a group of virtual machines (VMs) that are failed over together (during testing and actual failover).

When SRM performs failover, it instructs RecoverPoint to operate on all the LUNs of all the VMs in the protection group.

RecoverPoint, on the other hand, uses consistency groups to define groups of LUNs that are replicated together. Therefore, it is recommended to:

- Group *all* SRM protection groups LUNs into a single or a number of RecoverPoint consistency groups. This grouping is to prevent SRM protection groups LUNs from being left out of RecoverPoint consistency groups.
- Ensure RecoverPoint consistency groups containing SRM protection group LUNs do *not* contain non-SRM protection group LUNs. Otherwise, if such LUNs are added to the consistency group, they will be handled by SRM.
- Ensure RecoverPoint consistency groups do *not* contain LUNs from more than one SRM protection group. Otherwise, SRM may attempt to operate on the same consistency group concurrently. This attempt may cause SRM operations to fail, or not behave as intended.

Documentation

For the most current VMware SRM documentation, refer to the VMware website (http://www.vmware.com/support/pubs).

For the most current RecoverPoint Adapter documentation, on the EMC Powerlink website (http://Powerlink.EMC.com), refer to the VMware Support section (Home > Support > Product and Diagnostic Tools > VMware Support), or contact EMC Customer Support.

Use the release of any of the following documents, available in the Documentation Library on EMC Powerlink, that matches your installed RecoverPoint version:

- *EMC RecoverPoint Installation Guide*
- *EMC RecoverPoint Administrator's Guide*
- *EMC RecoverPoint CLI Reference Guide*
- *EMC RecoverPoint and RecoverPoint/SE Release Notes*
- *Replicating VMware ESX 3.X with EMC RecoverPoint Technical Notes*

For a detailed view of the interoperability capabilities of RecoverPoint, refer to the ESM, Errata, and E-Lab Interoperability Navigator™ (http://elabnavigator.EMC.com).

Software media, organization, and files

The RecoverPoint software is downloaded and installed by EMC personnel, and is not customer-accessible.

Once you download the SRM software from the VMware website (http://www.vmware.com/download/srm), the EMC RecoverPoint Storage Replication Adapter becomes available for download:

- The 1.0 and 1.0 SP1 Adapter are distributed as zip files containing a single-file installer.
- The 1.0 SP1 P2 and 1.0 SP2 P1 Adapters are distributed as executable files.

The EMC Powerlink website also has the most current RecoverPoint Adapter information.

Installation

This section contains important information about downloading, installing, updating, and uninstalling the RecoverPoint Adapter.

Downloading and installing the RecoverPoint Adapter

Before installing the RecoverPoint Adapter, ensure that VMware SRM and VMware SRM licenses are installed on the VirtualCenter servers.

To download and install the RecoverPoint Adapter:

1. Configure your RecoverPoint entities (consistency groups, replication sets, journals, and so on) from the RecoverPoint Management Application (GUI) or CLI.
2. Download the RecoverPoint Adapter file:
   - The 1.0 and 1.0 SP1 files are zip files.The integrity of the zip file can be verified using an md5sum tool.

     Unzip and extract the executable file.
   - The 1.0 SP1 P2 and 1.0 SP2 P1 files are executable files.

3. Run the executable file to install the Adapter on the two VirtualCenter servers:
   - The 1.0 and 1.0 SP1 Adapter executable files are titled **setup.exe**.
   - The 1.0 SP1 P2 and 1.0 SP2 P1 Adapter executable files are titled **RecoverPoint_SRA_[release_number].exe**.

   The Adapter installer (InstallShield Wizard) does not require any configuration. The Adapter will be installed in the folder: <VMware SRM folder>/scripts/SAN.
4. To start using the Adapter, additional steps, such as restarting the VMware SRM service, may be required. For more information, refer to VMware SRM documentation.
5. Once the Adapter is installed, in the VMware SRM GUI choose "RecoverPoint" as the array manager.
6. You will be prompted for a username and a password. Use a RecoverPoint username with administrative privileges to access the RecoverPoint array manager.

   Ensure that the consistency groups to be used with SRM are enabled and replicating.
7. Following the instructions of the *VMware Site Recovery Manager Administration Guide*, build your recovery plans and run failover or failover tests through VirtualCenter.

You can use the RecoverPoint GUI or CLI to monitor the RecoverPoint system, in addition to VMware SRM. It is not recommended to concurrently perform operations on the same consistency group through VMware SRM and the RecoverPoint GUI or CLI, as operations performed this way may interfere with one another.

Upgrading and uninstalling the RecoverPoint Adapter

To upgrade the RecoverPoint Adapter:

1. Uninstall the current RecoverPoint Adapter:
   a. From the **Start** menu, select **Settings** > **Control Panel** > **Add or Remove Programs**.
   b. Select **EMC RecoverPoint for VMware Site Recovery Manager** and click **Remove**.

2. Install the new RecoverPoint Adapter by following the procedure "Downloading and installing the RecoverPoint Adapter" on page 12.

To uninstall the RecoverPoint Adapter, perform step 1 on page 13.

Troubleshooting and getting help

Where to get help

EMC support and product information can be obtained as follows.

Product information — For documentation, release notes, software updates, or for information about EMC products, licensing, and service, go to the EMC Powerlink website (registration required) at:

`http://Powerlink.EMC.com`

EMC and VMware have cooperative support agreements in place to ensure that support requests can be triaged and routed to the most appropriate support organization as needed.

It is anticipated that most issues experienced in a VMware SRM-managed site failover will be exposed to you via the VMware SRM console. The appropriate first contact for resolution of the issue should be your VMware SRM solution provider.

EMC provides full support for the RecoverPoint Adapter and its corresponding replication solution. Contact EMC Technical Support if you see an error message in the EMC RecoverPoint or RecoverPoint Adapter log file that does not appear to be related to the VMware SRM product.

Technical support — For technical support, go to EMC Customer Service on Powerlink. To open a service request through Powerlink, you must have a valid support agreement. Please contact your EMC sales representative for details about obtaining a valid support agreement or to answer any questions about your account.

Your comments

Please include the title, part number, and revision of the document. If you have issues, comments, or questions about specific information or procedures, include the relevant page numbers and any other information that will help us locate the information you are addressing.

SSG_Documentation@EMC.com