

IBM System Storage IBM DS8000

**Storage Replication Adapter for VMware SRM
Installation and Users Guide**

Version 1.0

About this guide

The IBM System Storage DS8000 Storage Replication Adapter for VMware SRM Installation and Users Guide provides information that helps you install and configure Storage Replication Adapter.

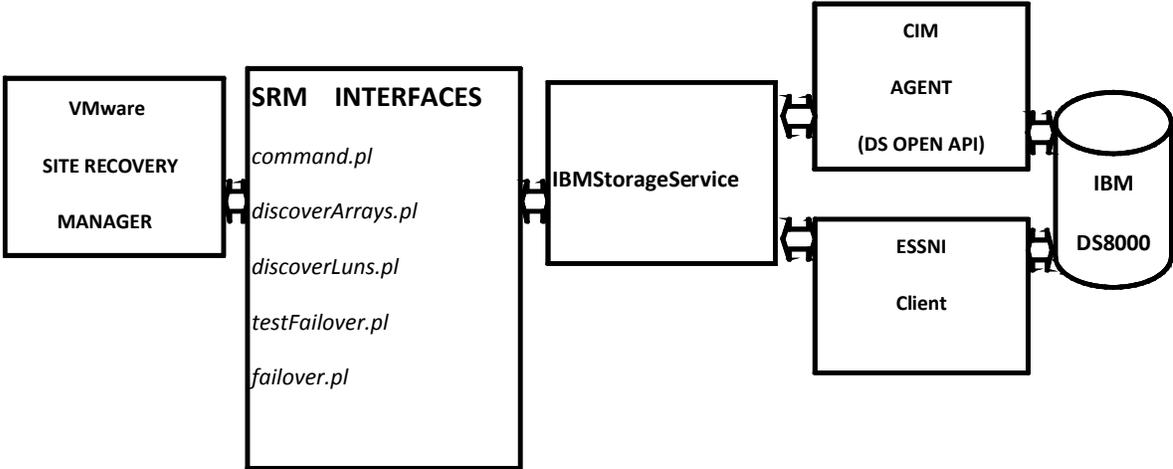
Who should use this guide

The IBM System Storage DS8000 Storage Replication Adapter for VMware SRM Installation and Users guide is intended for system administrators or others who install and use the VMware Site Recovery Manager with IBM System Storage DS8000. Before installing and using the Storage Replication Adapter for DS8000, you should have an understanding of storage area networks (SANs), DS8000 Metro Mirror Copy Services and the capabilities of your storage units. For more information on how to use Metro Mirror Copy Services, refer to IBM System Storage DS8000 Administration guide that can be downloaded from <http://www.ibm.com>.

Table of Contents

Functional Block Diagram.....	4
Installation overview.....	5
System requirements for the IBM System Storage DS8000 Storage Replication Adapter software...	5
Installing the IBM System Storage DS8000 Storage Replication Adapter software.....	6
Creating the Target Volumes and Metro Mirror Relationships.....	10
Uninstalling IBM System Storage DS8000 Storage Replication Adapter Software.....	10
Adding Array Managers to VMware Site Recovery Manager.....	10
Failback Procedure.....	12
Managing Failback.....	12
Failback Scenario.....	12
To manually execute a failback scenario.....	12

Functional Block Diagram



Installation overview

The steps for implementing the IBM System Storage DS8000 Storage Replication Adapter for VMware SRM software must be completed in the correct sequence. Before you begin, you must have experience with or knowledge of administering an IBM DS8000.

Complete the following tasks:

1. Verify that the system requirements are met.
2. Install DS8000 HMC (Management Console), if not already installed.
3. Install the DS Open API (CIM Agents) one for the protected site and one for the recovery site DS8000, if they are not already installed.

Important: Make sure you create the same Username and Passwords as the ones created on the HMC installed in Step2.

4. Install the IBM System Storage DS8000 Replication Adapter software.
5. Verify the installation.
6. Create appropriate sized target volumes on the recovery site DS8000 and create Metro Mirror relationships between the source volumes at the protected site and target volumes at the recovery site. For more information on volume creation and Metro Mirror Copy Services refer to DS8000 Configuration Guide.

Note: Release 1.0 of IBM DS8000 Storage Replication Adapter for VMware Site Recovery Manager only supports Metro Mirror (No Global Mirror support) copy service.

Note: For more information on how to install DS Open API (CIM Agent) refer to DS Open API Installation and Configuration Guide.

System requirements for the IBM System Storage DS8000 Storage Replication Adapter software

Ensure that your system satisfies the following requirements before you install the IBM System Storage™ DS8000 Storage Replication Adapter for VMware SRM software on a Windows Server 2003 operating system.

The following software is required:

1. DS Open API (CIM Agent) software version 5.3.0 or later installed on the IBM System Storage Productivity Center or other supported environments.

2. DS8000 with Microcode version 2.0 or later installed with the Metro Mirror and FlashCopy features enabled.
3. IBM System Storage DS8000 Storage Replication Adapter software version 1.0.
4. VMware Virtual Center Server v2.5 or later with Site Recovery Manager 1.0 or later Plug-in must be installed before you install the DS8000 Storage Replication Adapter.

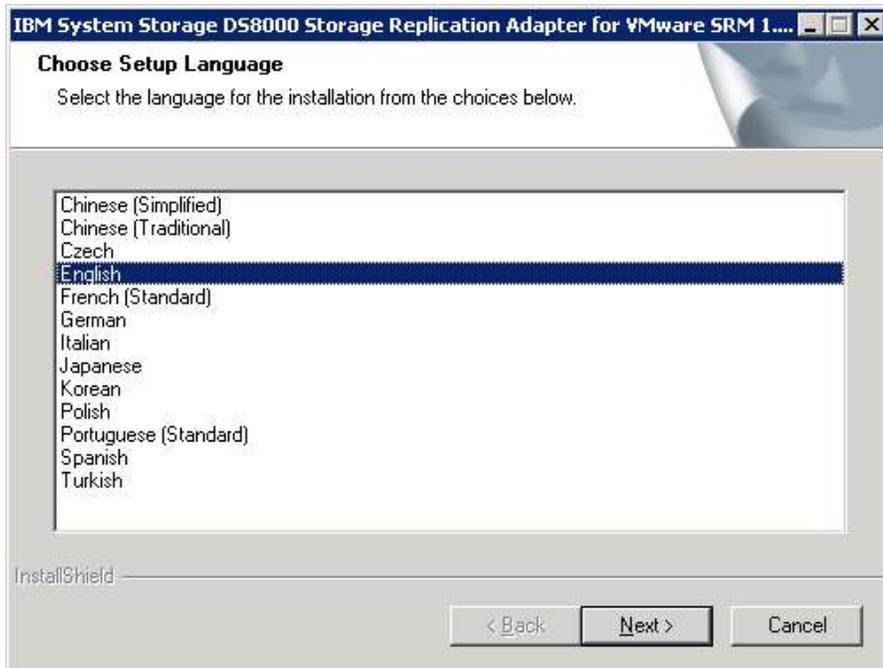
Note: For more information on how to install VMware Virtual Center Server and Site Recovery Manager Plug-in, refer VMware Virtual Center installation and administration guide.

Installing the IBM System Storage DS8000 Storage Replication Adapter software

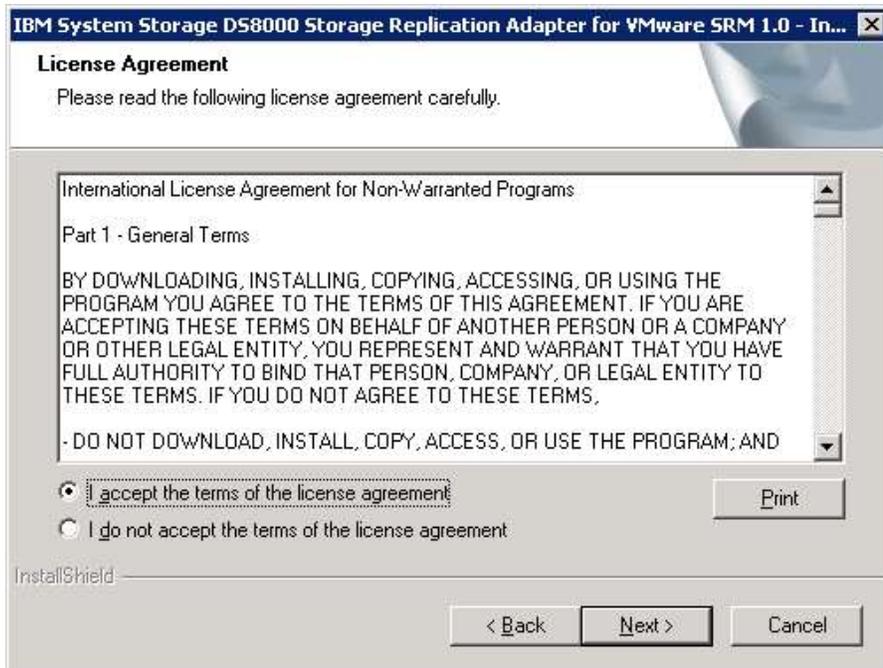
This section includes the steps to install the IBM System Storage DS8000 Storage Replication Adapter for VMware SRM software.

You must satisfy all of the prerequisites that are listed in the system requirements section before starting the installation. Perform the following steps to install the IBM System Storage DS8000 Storage Replication Adapter for VMware SRM software on the Windows server.

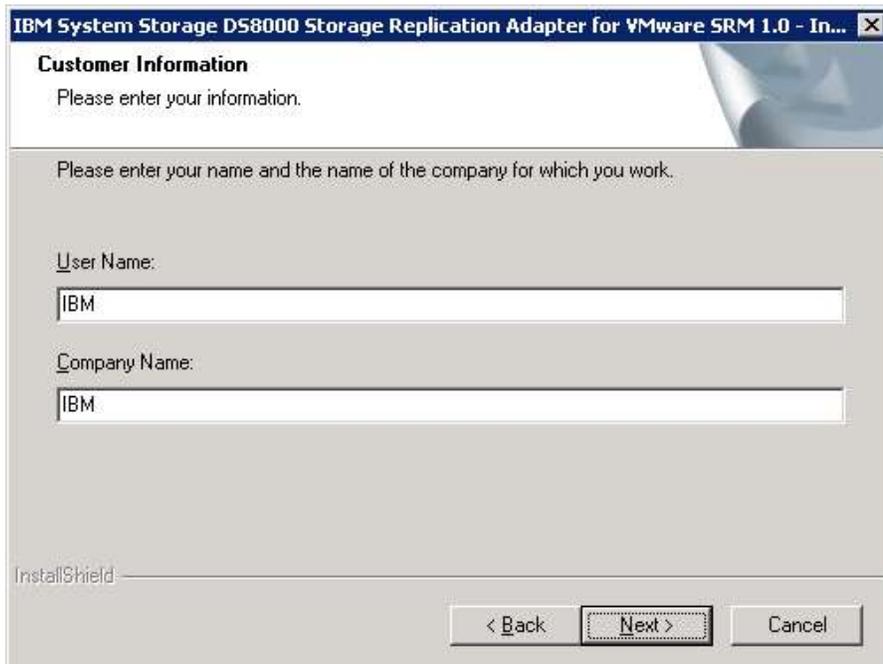
1. Log on to Windows Server where VMware Virtual Center Server and Storage Replication Manager are installed, as an administrator.
2. Double click on IBMDS8KSRA.exe that you downloaded to start the installation process. The language selection screen followed by Welcome panel is displayed.



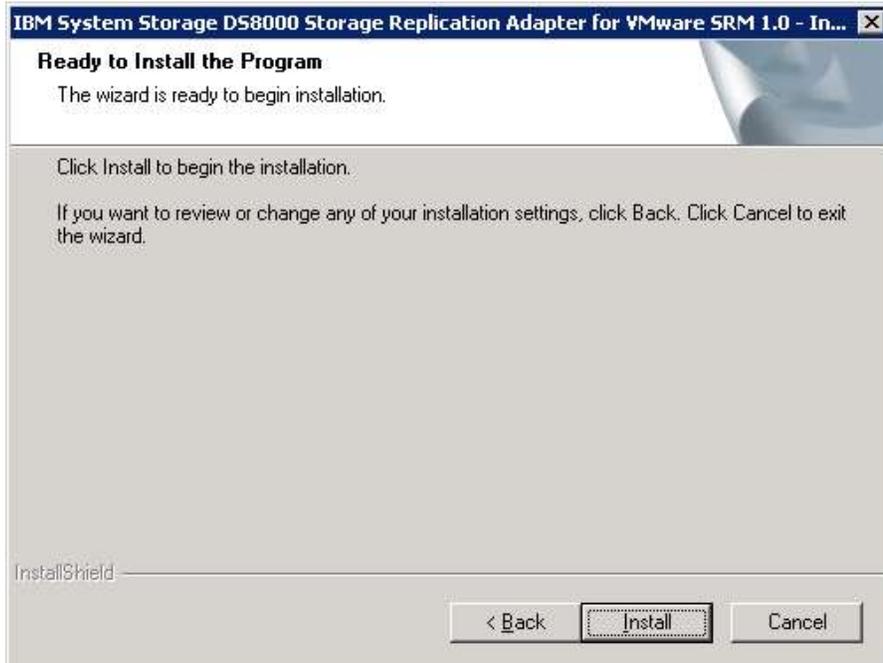
3. Click **Next** to continue. The License Agreement panel is displayed. You can click **Cancel** at any time to exit the installation. To move back to previous screens while using the wizard, click **Back**.



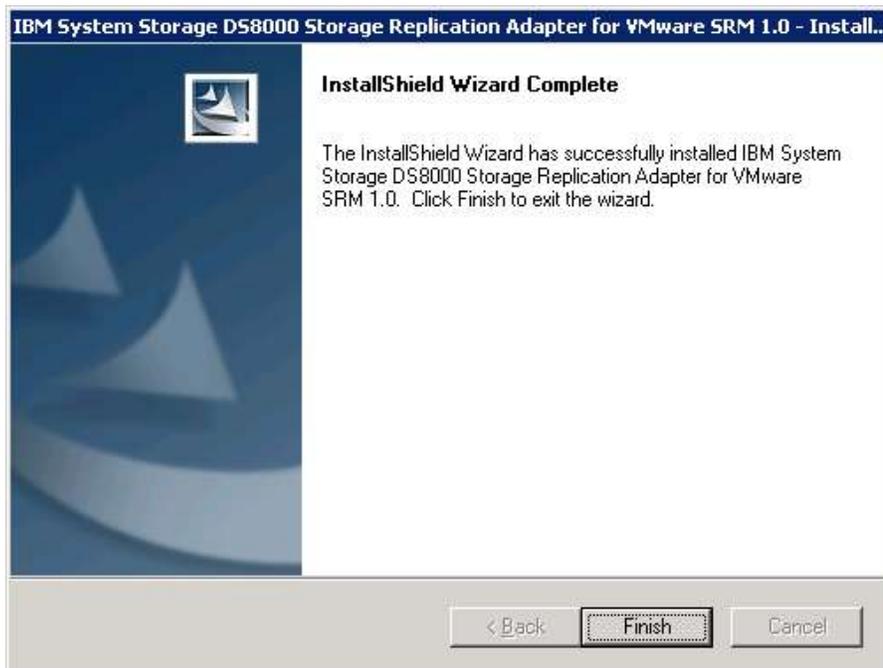
4. Read the license agreement information. Select whether you accept the terms of the license agreement, and click **Next**. If you do not accept, you cannot continue with the installation.
5. The Customer information page is displayed. Enter the appropriate user and organization names.



6. On the next page, click **Install**.



7. After the install completes, click **Finish**. If necessary, the InstallShield Wizard prompts you to restart the system.



Creating the Target Volumes and Metro Mirror Relationships

You must create equal number of target volumes (for Metro Mirror targets), on the recovery site DS8000, to source volumes.

Important: When creating volumes on the recovery site make sure that the DS8000 has double the amount of free space that is needed for the target volumes. This space will be used by the Storage Replication Adapter during TestFailover operations.

Create Metro Mirror relationships between the source and target volumes. For more information on Metro Mirror Copy Services refer to IBM System Storage DS8000 Administration Guide.

Important: Before you start using the DS8000 Storage Replication Adapter, make sure the Metro Mirror relationships are in “Full Duplex” mode.

Uninstalling IBM System Storage DS8000 Storage Replication Adapter Software

You must use the Storage Replication Adapter installation executable to uninstall the IBM System Storage DS8000 Storage Replication Adapter software from the Windows server. Perform the following steps to uninstall the software:

1. Log on to the Windows server as the local administrator.
2. Double-click on the IBMD8KSRA.exe and select Remove.
3. Click Finish on the final screen to complete the uninstall. If necessary, InstallShield will prompt the user to re-start the system.

Adding Array Managers to VMware Site Recovery Manager

To add arrays to VMware Site Recovery Manager execute the following.

1. Log on to the VMware Virtual Center Server machine
2. Click Site Recovery on the VI client toolbar
3. Click **Configure** option next to Array Manager in the Setup panel.
4. Click **Add** in the Configure Array Manager panel.
5. Enter array manager information on the Add Array Manager screen. Reinststate the connection information for the array. Click Connect.

- **Display Name** - Enter the name of your array.
- **Manager Type** - From the pull down menu, select the type of array you are using
- **IP1** – Enter the IP address and the port number of the CIM agent. For example, 192.168.15.2:5989, where 5989 is the CIM agent's port number.

Note: IBM System Storage DS8000 Storage Replication Adapter only supports secure ports for CIM agents and only one DS8000 device managed by each CIM agent

- **IP2** – Enter the IP address of the DS8000 device's HMC. For example, 192.168.15.3.
- **User Name** - Enter the user name configured for the CIM agent.
- **Password** - Enter the password configured for the CIM agent.

The screenshot shows a Windows-style dialog box titled "Add Array Manager". It contains the following fields and controls:

- Array Manager Information** (Section Header)
- Display Name:** Text box containing "Protected-D58K"
- Manager Type:** Dropdown menu showing "IBM-DS8000-Native"
- IP1:** Text box containing "192.168.15.2:5989"
- IP2:** Text box containing "192.168.15.3"
- Username:** Text box containing "admin"
- Password:** Text box containing "*****"
- Connect** (Button)
- Table:** A table with two columns: "Array ID" and "Model". The table is currently empty.
- Help** (Button)
- OK** (Button)
- Cancel** (Button)

For the next steps on how to configure IBM System Storage DS8000 Storage Replication Adapter for VMware SRM 1.0, refer to VMware Site Recovery Manager Administration Guide

Failback Procedure

Managing Failback

Managing failback using SRM is a manual process given that the protection site could have completely different hardware and network configuration after a disaster occurs. Failback can be managed like any planned server migration.

Failback Scenario

The following failback scenario uses SRM as a failback tool to Site A after executing a recovery plan R1 at Site B in recovery mode for recovered virtual machines.

To manually execute a failback scenario

1. Delete recovery plan R1 at Site B.
2. If Site A still has DR protection configured for the protection groups P1 in recovery plan R1, delete protection groups P1 at Site A.
3. .If it is not already in place, use the VI Client at Site B to establish Site A as the secondary site for Site B. (If Site A does not have SRM installed, install SRM at Site A.)
4. Establish appropriate array replication from Site B to Site A for the datastores containing recovered virtual machines.
 - Mask the volumes on the protected site DS8000 from the ESX server at Site A.
 - On the protected DS8000 at Site A, remove the stale Metro Mirror relationships (that are listed as being in Simplex mode as a result of the Failover).
 - Create Metro Mirror relationships between Site B and Site A volumes, with Site B volumes as sources and Site A volumes as targets.
 - Start the Metro Mirror relationships and wait till their states change to “Full Duplex”.

5. Create protection group or groups P2 at Site B to protect recovered virtual machines to Site A.
6. At Site A, create a recovery plan R2 for the protection group or groups P2.
7. After the user has determined that the virtual machines have been fully replicated to Site A, execute recovery plan R2 at Site A in test mode.
8. If the test is successful, execute recovery plan R2 in recovery mode.
9. At this point, the user may want to re-protect recovered virtual machines to Site B:
10. Delete recovery plan R2 at Site A.
11. Delete protection group(s) P2 at Site B.
12. Establish appropriate array replication from Site A to Site B for datastores containing recovered virtual machines.
 - Mask the volumes on the protected site DS8000 from the ESX server at Site B.
 - On the recovery DS8000 at Site B, remove the stale Metro Mirror relationships (that are listed as being in Simplex mode as a result of the Failover).
 - Create Metro Mirror relationships between Site A and Site B volumes, with Site A volumes as source volumes and Site B volumes as target volumes.
 - Start the Metro Mirror relationships and wait till their states change to “Full Duplex”.
13. Create protection group(s) P3 at Site A to protect recovered virtual machines from Site A to Site B.

Create a recovery plan R3 at Site B for the groups.