

Metrocluster with EMC SRDF

Version A.05.00

Release Notes



Manufacturing Part Number: B6264-90021
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1 Metrocluster with EMC SRDF Version A.05.00 Release Notes

Announcements

Metrocluster with EMC SRDF (Metrocluster/SRDF) is a member of Hewlett-Packard's family of high availability products for customers requiring integrated disaster recovery solutions. Metrocluster/SRDF provides automated reconfiguration of EMC Symmetrix arrays using SRDF in a campus or metropolitan Serviceguard cluster.

Version A.05.00 is being released on HP-UX 11i v1 and HP-UX 11i v2 update 2 with the following product number:

- B6264BA - license and media

Integrating Metrocluster/SRDF with Serviceguard allows application packages to failover:

- among local nodes that are attached to the same Symmetrix unit.
- between one system that is attached locally to a Symmetrix and another remote node that is attached locally to another Symmetrix.

Since Metrocluster configurations may be complex to configure and maintain, it is strongly recommended that you use Hewlett-Packard's high availability consulting services to ensure a smooth installation and rollout. Please contact your HP representative to inquire about high availability consulting. In addition, you should work with your HP representative to ensure that you have the latest firmware revisions for disk drives, disk controllers, LAN controllers, and other hardware.

What's In this Version

Metrocluster/SRDF provides automated failover of Serviceguard packages on local and remote EMC Symmetrix arrays that use SRDF. The A.05.00 version of Metrocluster/SRDF contains the following:

- Support for SRDF/Asynchronous Data Replication
- Support for Dynamic R1/R2 Swap
- Support for Consistency Group on HP-UX 11i v2
- Support for Serviceguard version A.11.17 (without CFS configuration).
- Fixes

Metrocluster/SRDF contains the following files:

`srdf.env`

The Metrocluster/SRDF environment template file for defining the application environment. This template must be customized for the specific EMC Symmetrix and HP 9000 system configuration. Copies of this template must be customized for each Serviceguard package.

`DRCheckDiskStatus`

A Metrocluster script that checks for the existence of `srdf.env` in the package directory. If `srdf.env` exists, then the `DRCheckSRDFDevGrp` script is executed.

`DRCheckSRDFDevGrp`

A Metrocluster script that manages the physical data replication between the EMC frames in Metrocluster/SRDF.

`Samples`

A directory containing sample shell scripts that must be edited before using. These shell scripts may help automate some configuration tasks. These scripts are contributed, and not supported:

- `pre.cmquery` splits SRDF links prior to using `cmapplyconf` to complete the Serviceguard configurations.
- `post.cmapply` restores logical SRDF links after the Serviceguard configuration has been completed with `cmapplyconf`.
- `ftpit` automates transfer of Serviceguard configuration files to other nodes in the cluster.
- `mk1VGS.nodename` automates the creation of LVM volume groups for each package in the cluster.
- `mk2imports` automates importing VGs (volume groups) to other nodes in the cluster.
- `mk3symgrps.nodename` automates the creation of EMC Symmetrix device groups for each package in the cluster.
- `mk4gatekpr.nodename` automates the creation of gatekeepers for all Serviceguard packages in a cluster.

NOTE

Sample scripts use the node names `ftsys1`, `2`, `1a`, and `2a`; change them to match your own cluster node names.

Support for SRDF/Asynchronous Data Replication

SRDF/Asynchronous provides a long-distance replication solutions with minimal impact on performance. This protection level is intended for environments that require minimal host application impact, but need to maintain a reliable copy of data at the target site. In a Metrocluster SRDF environment, when a disaster occurs at the source site, a consistent point-in-time copy of data is retained on the target side to ensure data high availability.

Limitations and Restrictions

- Consistency Group with SRDF/Asynchronous mode is not supported.
- Domino mode is not supported in SRDF/Asynchronous mode.

- Metrocluster with ECM SRDF does not support cascading configuration using SRDF/Asynchronous.

Support for Dynamic R1/R2 Swap

Version A.05.00 of Metrocluster/SRDF supports Dynamic R1/R2 Swap. This feature swaps the RDF personality of an SRDF pair, which provides the advantage of swaps using dynamic RDF devices.

Support for Consistency Group on HP-UX 11i v2

An RDF Consistency Group can be enabled for remote database consistency. The devices in the Consistency Group are configured to act in unison. This feature maintains the integrity of a database when distributed across multiple Symmetrix arrays or across multiple RDF Groups within an array.

Timing Considerations

This toolkit may increase package startup time by five minutes or more. Packages with many disk devices will take longer to start up than those with fewer devices due to the time needed to get device status from the EMC disk array or to synchronize.

Coexistence with Omniback and Advanced Tape Services

This toolkit supports the HP OmniBack Integration with EMC disk arrays only when it is used with Business Continuity Volumes (BCVs). The OmniBack integration may *not* be used with SRDF R2 volumes.

This product can also coexist with the Advanced Tape Services (ATS) feature of Serviceguard, but using ATS in a Metrocluster package is not a standard configuration. With ATS, a single tape drive (or set of tape drives) is shared between two nodes within a cluster of up to 4 nodes. All of the tape drives are located within a single data center. If the power were to be lost, the tape drives would not be accessible even if the package were to be failed over to the other data center with a Metrocluster package. Therefore, ATS should not be configured in a Metrocluster package.

Compatibility Information and Installation Requirements

Metrocluster/SRDF has to be installed on all nodes that:

- run a package in the Serviceguard cluster, and
- whose data are on an EMC Symmetrix ICDA, and
- data are replicated to a second EMC Symmetrix ICDA using the Symmetrix Remote Data Facility (SRDF).

Installation and configuration of Metrocluster/SRDF must be done on all the cluster nodes as is done for any other Serviceguard package.

To use Metrocluster/SRDF, the following hardware and software must be installed and configured on each HP 9000 server or HP Integrity server that might execute the application package that has been configured for Metrocluster/SRDF.

NOTE

For more information on support, compatibility and features for Metrocluster EMC/SRDF, refer to the *Disaster Tolerant Clusters Product Compatibility and Feature Matrix (Metrocluster/EMC SRDF-MC/SRDF)* located at: <http://docs.hp.com/en/ha.html>

Hardware Requirements

EMC Symmetrix Hardware Requirements

HP-UX 11i v1 and HP-UX 11i v2:

- EMC Symmetrix DMX is required for SRDF/Asynchronous data replication.
- The following Symmetrix models are supported with Metrocluster/SRDF:
 - Symmetrix “3”
 - 3130 or 5130

- 3230 or 5230
- 3500 or 5500
- Symmetrix “4”
 - 3330 or 5330
 - 3430 or 5430
 - 3700 or 5700
- Symmetrix “4.8”
 - 3630 or 5630
 - 3830 or 5830
 - 3930 or 5930
- Symmetrix “5”
 - 8130
 - 8230
 - 8430
 - 8530
 - 8730
 - 8830
- Symmetrix “6”
 - 800
 - 1000
 - 2000
 - 3000

The two Symmetrix ICDAs connected by SRDF may be different models. DMX requires a minimum of Symmetrix “5” for an SRDF connection.

- Symmetrix microcode level must be one of the following:
 - HP-UX 11i v1:
 - 5264.57.47 or greater

- 5265.38.24 or greater
- HP-UX 11i v2:

NOTE

For the supported Symmetrix microcode level on HP-UX 11i v2, refer to the *Disaster Tolerant Clusters Product Compatibility and Feature Matrix (Metrocluster/EMC SRDF-MC/SRDF)* located at: <http://docs.hp.com/en/ha.html>.

- SRDF firmware must be configured, and hardware installed on both Symmetrix units.
- M by N configurations are supported on Symmetrix “4”, “4.8,” “5,” and “6” models. They are *not* supported on Symmetric “3” models. M by N requires microcode level 5266.xx.xx or greater for models “4” and “4.8” and microcode level 5566.xx.xx or greater for models “5” and “6” Symmetrix arrays.
- The R1/R2 personality swap is enabled on Symmetrix “5” and later models (i.e., not supported on Symmetrix 4) with microcode level 5567.34.19A or greater.

Binary file changes are needed on each Symmetrix that the user wants to perform the R1/R2 swap on. To check to see if binary changes have been made, invoke the following command:

```
# symcfg list -v
```

The *Dynamic RDF Configuration State* field should be “Enabled” after the binary file changes have been made.

NOTE

If changes are needed in the binary file, EMC personnel are required to perform these binary changes.

Host System Hardware Requirements

HP-UX 11i v1:

- HP 9000 servers.
- Fast/Wide SCSI adapters, or FibreChannel mass storage host bus adapters cabled to a FibreChannel switch or to a FibreChannel SCSI Bridge which is connected via F/W SCSI to the EMC series disk array.

HP-UX 11i v2:

- HP Integrity servers and/or HP 9000 servers
- Fast/Wide SCSI adapters, or FibreChannel mass storage host bus adapters cabled to a FibreChannel switch to the EMC series disk array.

HP Software Requirements

HP 9000 server specific requirements on **HP-UX 11i v1** are:

- Serviceguard version A.11.15 or later

HP 9000 server specific requirements on **HP-UX 11i v2** are:

- Serviceguard version A.11.16 or later

HP Integrity server specific requirements on **HP-UX 11i v2** are:

- Serviceguard version A.11.15 or later

EMC Symmetrix Software Requirements

HP-UX 11i v1:

- M by N configurations also require the EMC PowerPath software version 4.3.1, which must be installed on all nodes connected to the Symmetrix arrays.
- EMC Solutions Enabler version 6.0.
- EMC Enginuity Level 5671.

HP-UX 11i v2:

- PowerPath version 4.3.1 for Consistency Group is required.
- EMC Solutions Enabler version 6.0.
- EMC Enginuity Level 5671 is required for SRDF/Asynchronous support.

Installing Metrocluster/SRDF

Metrocluster/SRDF can be installed while the system is running in multi-user mode using the following steps:

1. Run `swinstall (1m)` to install Metrocluster/SRDF product from a SD depot. (Skip this step if the software has been preinstalled.) The software will reside in the following two directories:
 - `/opt/cmcluster/toolkit/SGSRDF`
 - `/usr/sbin`
2. Install the SymCLI software on each node that has data residing on the EMC Symmetrix arrays.

Changes to Script Templates in A.05.00 and Later

The following variables have been added to provide new functionality:

- `RDF_MODE` (new) - This variable is used to indicate the data replication node.
- `AUTORIRWSUSP` (new) - This variable is used to indicate whether the package should auto start when the pairstate is suspended.
- `SYMCLI_MODE` - If this variable is already set, then unset. Otherwise, do not set.

Compatibility Issues

Metrocluster/SRDF is currently *not* supported with Serviceguard Extension for RAC (formerly known as Serviceguard OPS Edition).

What Manuals are Available for this Version

For information about configuring packages, refer to the following manual, which is shipped with Metrocluster/SRDF version number A.05.00.

See the following manuals for more information:

- *Designing Disaster Tolerant High Availability Clusters*, (B7660-90017)
- *Managing Serviceguard Twelfth Edition*, (B3936-90095)

For the most current version of these documents including updates to this document, refer to <http://docs.hp.com/en/ha.html>

NOTE

Contact EMC for any EMC product related documentation.

Before attempting to use VxVM storage with Serviceguard, please refer to the following for your version of VERITAS software:

- *VERITAS Volume Manager Administrator's Guide*. This contains a glossary of VERITAS terminology.
- *VERITAS Volume Manager Storage Administrator Administrator's Guide*
- *VERITAS Volume Manager Reference Guide*
- *VERITAS Volume Manager Migration Guide*
- *VERITAS Volume Manager for HP-UX Release Notes*

The August 1999 HP World presentation “*Disaster-Tolerant Campus Architectures Using Serviceguard*” and other documentation on Metrocluster/SRDF is available from

<http://docs.hp.com/hpux/ha>

Further Reading

Additional information about Metrocluster with EMC SRDF and related high availability topics may be found on Hewlett-Packard's HA web page:

<http://www.hp.com/go/ha>

Support information, including current information on patches and known problems, is available from Hewlett-Packard IT center:

<http://itrc.hp.com> (Americas and Asia Pacific)

<http://europe.itrc.hp.com> (Europe)

To receive the latest news about recommended patches, product support matrices, and recently supported hardware, go to the IT Resource Center site above, and subscribe to the high availability programs tips and issues digest.

For more information on support, compatibility and features for Metrocluster EMC/SRDF, refer to the *Disaster Tolerant Clusters Product Compatibility and Feature Matrix (Metrocluster/EMC SRDF-MC/SRDF)* located at: **<http://docs.hp.com/en/ha.html>**.

Patches and Fixes in this Version

There are no patches required for Metrocluster/SRDF version A.05.00 at the time of publication. However, this is subject to change without notice. For the most current information contact your HP support representative or Hewlett Packard IT Resource Center.

Additional patch requirements:

- Install any required patches for Serviceguard and Cluster Object Manager for your version.
- All HP-UX patches required by Serviceguard are also required in a Metrocluster/SRDF configuration.

NOTE

Patches can be superseded or withdrawn at any time. Be sure to check the status of any patch before downloading it.

An updated list of patches is available on the Hewlett Packard IT Resource Center:

<http://itrc.hp.com> (Americas and Asia Pacific)

<http://europe.itrc.hp.com> (Europe)

Fixes

The following defects have been fixed in version A.05.00 of Metrocluster/SRDF:

SR Number	Problem and Resolution
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SR: 8606383908	
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(JAGaf44099)	<i>Problem:</i> Incorrect <code>grep</code> for <code>DEVICE_GROUP</code> in <code>/usr/sbin/DRCheckSRDFDevGrp</code> .
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	<i>Resolution:</i> The problem is fixed in this version.
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SR Number	Problem and Resolution
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SR: 8606392239	
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(JAGaf52371)	<i>Problem:</i> Metrocluster/SRDF needs to be enhanced in order to support EMC Enabler SDK v5.4 or later. This is due to the backward compatibility of <code>SYMCLI</code> .
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	<i>Resolution:</i> The problem is fixed in this version.
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SR Number	Problem and Resolution
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SR: 8606392241	
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(JAGaf52373)	<i>Problem:</i> Metrocluster/SRDF (<code>DRCheckSRDFGrpDev script</code>) failed to find the path for <code>PowerPath</code> .
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	<i>Resolution:</i> The problem is fixed in this version.
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Known Problems and Workarounds

There are no known problems at the time of publication. However, this is subject to change without notice. For the most current information contact your HP support representative.

More recent information on known problems and workarounds may be available on the Hewlett Packard IT Resource Center:

<http://itrc.hp.com> (Americas and Asia Pacific)

<http://europe.itrc.hp.com> (Europe)

Software Availability in Native Languages

Metrocluster/SRDF is not available in native language versions.

