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EMC SRDF Commands

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Introduction

In this article we are going to discuss about all important *emc srdf commands* you must need to know when you are working on EMC Storage Replication Technology. All these *emc srdf commands* is really handy when you have to perform various operations on these storage. We will try to show all emc srdf commands with examples wherever it is possible to show more visibility. We will try to create cheat sheet and will attach to this article so that it can be an effective doc for your convenience and reference point.

These are very highly critical operations for an organization Disaster Recovery Plans and performing these tasks efficiently must be a crucial task to avoid any loss of organization data which may result in monetary loss to organizations.

All this can be avoided by knowing what each *emc srdf commands* does exactly and what will be the impact of each commands while performing individual tasks.



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What is SRDF?

*SRDF is nothing but a short form of **Symmetrix Remote Data Facility** used by EMC Storage System.* An intelligent system for data replication from one Symmetrix Storage Array to another geographically distant location through a SAN or over an IP network. You can refer to know more about [*what is SRDF?*](#) In our previous article.

We can perform below operations on emc storage. We will start sequentially starting from validating before making any changes or performing any intensive operations.

Just for better understandings like LVM (Logical Volume Manager) or VxVM (Veritas Volume Manager) we create Volume Group simply known as VG or in VxVM called Disk Group known as DG we also groups individual disks into groups for efficient management purpose only. In EMC world it is known as Symmetrix Disk Group or SYMM DG.

Now we are ready to discuss *emc srdf commands*. So let's explore all of them one by one.



1. How to Identify an SRDF/A Group

Just to know about the SYMDG available to the system you can use below command to display SYMDG name to the system. This is most important to know as it is required for any operations.

```
# symdg list
```

DEVICE GROUPS

Number of

Name	Type	Valid	Symmetrix ID	Devs	GKs	BCVs	VDEVs	TGTs
FS_SYBDUMPS	RDF1	Yes	000190104472	1	0	0	0	0

2. How to Validate an SRDF/A Group Status

This is most important and very frequently used *emc srdf command* which give the status of SYMDG before performing any activity or verifying status after performing any activity.

```
# symrdf -g FS_SYBDUMPS query
```

Device Group (DG) Name : FS_SYBDUMPS

DG's Type : RDF1

DG's Symmetrix ID : 000190104472

Source (R1) View

Target (R2) View

MODES

```

-----
          ST          LI  ST
Standard  A          N  A
Logical   T R1 Inv  R2 Inv K   T R1 Inv  R2 Inv   RDF Pair
Device Dev  E Tracks  Tracks S Dev  E Tracks  Tracks MDA  STATE
-----

```

```

DEV001 15DB RW    0    0 RW 15DB WD    0    0 A. Consistent
-----

```

```

Total      -----
Track(s)   0    0          0    0
MB(s)      0.0  0.0        0.0  0.0

```

3. How to verify the state, cycle time and consistency of the SRDF/A group

As name suggest it shows all the details about the SYMDG including Group Type, Symmetrix ID, Creation Type and much more. You can easily see in below example.

```
# symdg show FS_SYBDUMPS
```

```
Group Name: FS_SYBDUMPS
```

```

Group Type           : RDF1  (RDFA)
Device Group in GNS  : No
Valid                : Yes
Symmetrix ID         : 000190104472

```

Group Creation Time : Sat Dec 6 20:25:25 2008
Vendor ID : EMC Corp
Application ID : SYMCLI
Number of STD Devices in Group : 1
Number of Associated GK's : 0

Standard (STD) Devices (1):

{

Sym Cap
LdevName PdevName Dev Att. Sts (MB)

DEV001 rdmp/emcpower12s2 15DB (M) RW 34856

}

Device Group RDF Information

{

RDF Type : R1

RDF (RA) Group Number : 20 (13)

Remote Symmetrix ID : 000190103503

Remote Symmetrix ID

RDF Mode : Asynchronous

RDF Mode

RDF Adaptive Copy : Disabled
RDF Adaptive Copy Write Pending State: N/A
RDF Adaptive Copy Skew (Tracks) : 65535

RDF Pair State (R1 <===> R2) : Consistent

Number of R1 Invalid Tracks : 0

Number of R2 Invalid Tracks : 0

Cycle Number : 29570

Number of Devices in the Session : 1

Session Status : Active

Session Consistency State : Enabled

Minimum Cycle Time : 00:00:05

Minimal Cycle Time and Consistency Sate = 5 Sec

Average Cycle Time : 00:00:05

Duration of Last cycle : 00:00:05

Session Priority : 33

Tracks not committed to the R2 Side 42

Difference between R1 and R2 - Tracks and time

Time that R2 is behind R1 : 00:00:09

R1 Side Percent Cache In Use : 0

R2 Side Percent Cache In Use : 0



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4. How to Suspend SRDF/A group

If you want to suspend replication of devices for such requirements you can use below set of emc srdf command to get it done.

```
# symrdf -g (dg) disable -noprompt
```

```
# symrdf -g (dg) suspend -noprompt
```

5. How to Resume SRDF/A group

If you want to resume replication which was suspended for any requirement you can use below set of command syntax to get this done.

```
#symrdf -g (dg) enable -noprompt
```

```
#symrdf -g (dg) resume -noprompt
```

6. How to Split SRDF/A group

Split activity needed in scenario like DR Test. You simply split the replication and let both R1 and R2 behaves like independent devices in simple word breaking the replication status. Mount the replicated file systems on DR side and conduct the DR Test and once completed please resume the replication. Please do remember in this scenario test data will not be available anymore once replication is established. Please use below syntax for split the replication.

```
#symrdf -g <SYMDG Name> split -force -nop
```



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7. How to Failover SRDF/A group

Before we failover SYMM DG we must (mandatory) need to perform below action on the current R1 (Production) side.

1. *Application must be in shutdown state.*
2. *Database must be in shutdown state.*
3. *Unmount all the replicated File Systems and Deport Veritas Volume Group or VG.*

The SYMM DG failover to R2 can be accomplished by following in sequence. Before Failover SYMDG must be in consistent state.

```
#symrdf -g <SYMDG Name> query >> Verify SYMDG State  
#symrdf -g < SYMDG Name > failover -force -nop >> Force Failover  
#symrdf -g < SYMDG Name > disable >> Disable SYMDG  
#symrdf -g < SYMDG Name > swap >> Swap SYMDG  
#symrdf -g < SYMDG Name > enable >> Enable SYMDG  
#symrdf -g < SYMDG Name > query >> Verify Consistency  
#symdg show < SYMDG Name > Session State must be "Enabled"
```

This concludes Failover Steps.



8. How to Failover during Real Disaster in Production Environment

During a complete real disaster in the production environment where the production site is down the SYMM DG's RDF pair state will be **"TransIdle"** state.

We can verify status of SYMM DG using query. Please refer to below example.

symrdf -g FS_SYBDUMPS query

Device Group (DG) Name : FS_SYBDUMPS

DG's Type : RDF1

DG's Symmetrix ID : 000190104472

Source (R1) View		Target (R2) View		MODES
ST	LI	ST		
Standard	A	N	A	
Logical	T R1 Inv	R2 Inv K	T R1 Inv	R2 Inv RDF Pair
Device Dev	E Tracks	Tracks S	Dev E Tracks	Tracks MDA STATE
DEV001	15DB RW	0	0 RW 15DB WD	0 NA A.. TransIdle

Total	-----	-----		
Track(s)	0	0	0	0
MB(s)	0.0	0.0	0.0	0.0

Note: In this state to bring the R2 side operational we can use the “failover immediate” option. This will bring the R2 side to an R/W mode. This should only be used in a true Disaster Scenario.

```
#symrdf -g <SYMDG Name> failover -immediate
```

9. How to Switch Between Sync and Async

Let us understand when this might be helpful while it consumes lot of bandwidth but sometime it is handy to replicate data faster.

For example you are failing over a huge system which contains too much amount of data to be replicated and stayed to other side for few hours and system gets data updated fast. If for some region you need to sync the date it might take longer.

ASYNC TO SYNC

If you have to switch from async to sync we can follow below process.

```
# symrdf -g FS_SYBDUMPS query → If must be in Async state.
# symrdf -g FS_SYBDUMPS disable → Disable SYMDG before change.
# symrdf -g FS_SYBDUMPS set mode sync → Set Mode SYNC
# symrdf -g FS_SYBDUMPS query → Validate State
```

SYNC TO ASYNC

If you have to switch from sync to async we can follow below process.

```
# symrdf -g FS_SYBDUMPS query → If must be in sync state.  
# symrdf -g FS_SYBDUMPS set mode async → Set Mode ASYNC  
# symrdf -g FS_SYBDUMPS enable → Enable SYMDG  
# symrdf -g FS_SYBDUMPS query → Verify SYMDG
```

10. EMC SRDF Command For Enabling SYMDG

If you want to enable any SYMDG which is in disabled state for any reason we can use below command syntax. `-noprompt` option will help to ignore if any confirmation required.

```
#!/symrdf -g (dg) enable -noprompt
```

11. EMC SRDF Command For Swap Personalities

```
#!/symrdf -g (dg) swap -noprompt
```

```
#!/symrdf -g (dg) enable -noprompt
```

12. EMC SRDF Command For Failback

```
#!/symrdf -g (dg) failback -noprompt
```

```
#!/symrdf -g (dg) enable -noprompt
```

13. EMC SRDF Failover Command

```
#!/symrdf -g (dg) failover -force -noprompt
```

```
#!/symrdf -g (dg) disable
```

14. EMC SRDF Command For Establishing Replication

```
#!/symrdf -g (dg) establish -noprompt
```

Conclusion

As mentioned earlier this article is about *emc srdf commands* .We tried to summarize all the *emc srdf commands* mostly used while working on SRDF storage. We hope you must have liked it and as committed we will upload cheat sheet which you can download as reference material.

You can use it applying your better understanding as this is shared to help for better understanding. You need to have better understanding about SRDF technology.

Thanks for downloading and going through this article. Hope it will help for better control of SRDF activities as part of your responsibilities.

