Replication Management
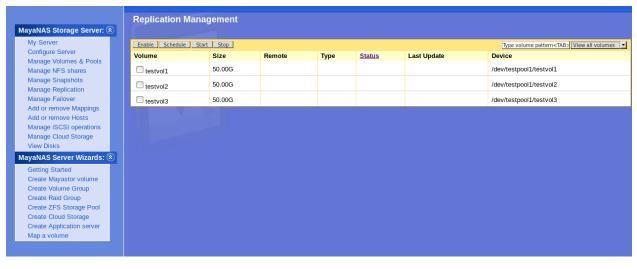
Mayastor provides following replication services for disaster recovery and data protection needs.
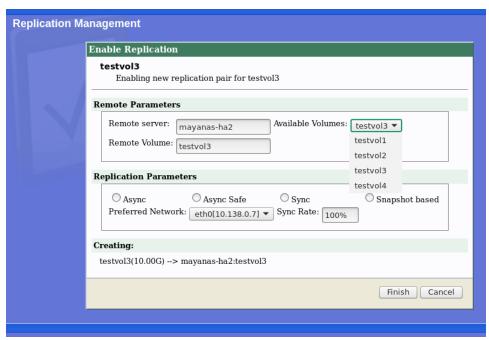
Replication	Description	
Synchronous mirroring	This type of mirroring is for servers with embedded nothing shared storage. Data writes to secondary server are acknowledged only after stable writes. This mode of operation guarantees the best data integrity but with expense of increased latency. Recommended for deployment that cannot tolerate any dataloss.	- Best RPO - Requires identical storage with same performance characteristics. - Low Latency, high-performance network connection required. - rack-level fault isolation
Asynchronous mirroring	In unsafe mode of asynchronous mirroring data write from primary server do not wait for any acknowledgement from secondary. This may provide better performance but some amount of recent changes will be lost in the event of primary server failure. There is async-safe mirroring which will wait for acknowledgement from secondary mirror that data writes were received in memory but not yet written to stable storage.	- Typically lose 5 seconds worth of recent changes - Secondary storage can have different performance characteristics. But may take a while to become uptodate. - Can be in a different metro
Snapshot Based	In mode of mirroring periodic snapshots are taken at regular intervals defined in the policy and only the changes tracked between the recent two snapshots will be replicated. The secondary server will maintain point in time consistence till the last snapshot that was received. The lowest snapshot schedule of 1 min is the RPO (Recovery Point Objective) achievable in this mode.	- RPO of 1 mnute - Ideal for connecting to object storage - Geographically isolated

To setup and mange replication from web console:

1. Click **Manage Replication** sidebar menu to enable, start, stop or schedule replication service.
2. Select **Volume** by clicking on the check-box.
3. Click **Enable** to create replication pair which opens up to following dialog

     a. Enter **Remote Server** IP address that will be the replication target and hitting <Tab> will automatically populate **Available Volumes** from remote server

     b. Select **Remote Volume** which will be destination.

     c. Select the type of replication in **Replication Parameters**

d. Select the **Preferred Network** interface if you have other networks intended for replication traffic
e. Enter **Sync Rate** which specifies how much network bandwidth the replication traffic can use, if you are sharing the network with the regular data traffic. You may set to 100% if there is dedicated network for replication traffic.

Replication Management

Enable Replication

testvol3
Enabling new replication pair for testvol3

Remote Parameters

Remote server:	mayanas-ha2	Available Volumes: testvol3 ▼
Remote Volume:	testvol3	testvol1
		testvol2
		testvol3
		testvol4

Replication Parameters

◯ Async   ◯ Async Safe   ◯ Sync   ◯ Snapshot based
Preferred Network: eth0[10.138.0.7] ▼   Sync Rate: 100%
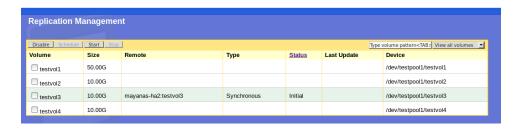
Creating:

testvol3(10.00G) --> mayanas-ha2:testvol3

[Finish] [Cancel]

4. Click Finish to save the replication configuration.
5. For snapshot based replication set the replication policy by clicking **Schedule** as shown for another volume testvol1

Replication Management

Scheduling Replication

testvol1
Scheduling automatic replication for testvol1

Setting policy   [Create]

Enter time parameters that will be used to create policy for automatic replication

Run Task:	frequent ▼	Starting Time:	
Repeat Every:	1 ▼ mins	Hours: 0 Mins: 0 Secs:	
		0	
Keep:	4		

[Finish] [Cancel]

6. Then **start** the initial replication and track the progress of replication.

Replication Management

[Disable] [Schedule] [Start] [Stop]   Type volume pattern<TAB> | View all volumes ▼

Volume	Size	Remote	Type	Status	Last Update	Device
☐ testvol1	50.00G					/dev/testpool1/testvol1
☐ testvol2	10.00G					/dev/testpool1/testvol2
☐ testvol3	10.00G	mayanas-ha2:testvol3	Synchronous	Initial		/dev/testpool1/testvol3
☐ testvol4	10.00G					/dev/testpool1/testvol4

Replication Management

Disable	Schedule	[Start]	Stop		Type volume pattern<TAB>	View all volumes ▼

Volume	Size	Remote	Type	Status	Last Update	Device
☐ testvol1	50.00G					/dev/testpool1/testvol1
☐ testvol2	10.00G					/dev/testpool1/testvol2
☐ testvol3	10.00G	mayanas-ha2:testvol3	Synchronous	**Active** Time:0:01:16 28.9% 97,656 (97,608) K/sec	Thu Sep 06 2018 16:37:54 (PDT)	/dev/testpool1/testvol3
☐ testvol4	10.00G					/dev/testpool1/testvol4

Replication Management

Disable	Schedule	Start	Stop		Type volume pattern<TAB>	View all volumes ▼

Volume	Size	Remote	Type	Status	Last Update	Device
☐ testvol1	50.00G					/dev/testpool1/testvol1
☐ testvol2	10.00G					/dev/testpool1/testvol2
☐ testvol3	10.00G	mayanas-ha2:testvol3	Synchronous	**Updated**	Thu Sep 06 2018 16:39:44 (PDT)	/dev/testpool1/testvol3
☐ testvol4	10.00G					/dev/testpool1/testvol4

After initial sync completes successfully the **Status** changes to Updated.