

Replica Set in MongoDB

Replication is the process of synchronizing data from multiple servers. Replication provides redundancy and increased data availability for multiple data copies on many different Database Servers. Replication protects a database from the loss of a particular Server. Replication also allows you to recover data from hardware errors or service disconnections. With additional data copies, you can use it for recovery, reporting, or backup.

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Why use Replication?

To make your data safe.

High availability of data (24 * 7).

Recover data due to an error.

It doesn't take time to maintain (like backup, rebuild the index).

Expand readability (read from additional copies).

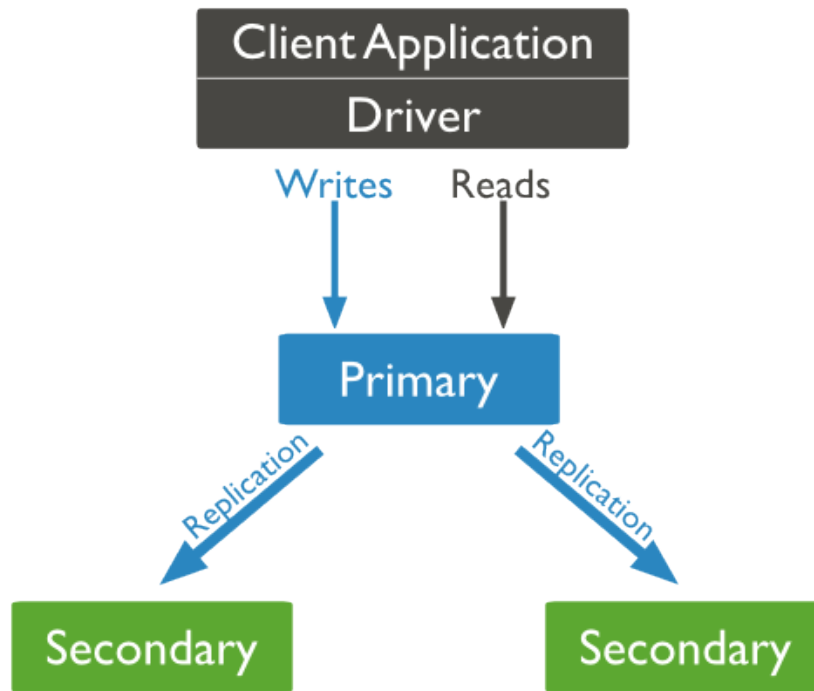
Replica Set is transparent for the application.

How Replication works in MongoDB

MongoDB uses Replica Set to implement Replication. A Replica Set is a group of mongod instances that host the same data. In a Replica, a node that is Primary node (can be called a secondary node) will receive all write operations. All other, secondary instances, apply operations from the secondary node so that they have the same data set. Replica Set can have only one secondary node.

1. Replica Set is a group of two or more nodes (generally, need at least 3 nodes).
2. In a Replica Set, a node is a secondary node and the other nodes are primary.
3. All data replicated from primary node to secondary node.
4. At the time of automatic maintenance, the selection for the primary and a primary node is selected.
5. After the node recovery has failed, it again combines Replica Set and works as a secondary node.

Below is a Replication-specific diagram in MongoDB, in which the Client application always interacts with the primary node and this primary node then recreates the data for the secondary node.



Features of Replica Set

A Cluster consists of N nodes

Any node can be primary

All activities are recorded in elementary level

Automatically maintained

Auto recovery

Install a Replica Set

In this chapter, we will convert the instance to a Replica Set. To convert to Replica Set, follow these steps:

Turn off MongoDB Server running.

Now, start MongoDB Server with the **--replSet** option specified. **--ReplSet**'s basic syntax is as follows:

```
mongod -- port "PORT" -- dbpath "YOUR_DB_DATA_PATH" -- replSet "REPLICA_SET"
```

For example

```
mongod -- port 27017 -- dbpath "D:set upmongodbdata" -- replSet rs0
```

It will start an instance with the name rs0, on port 27017. Now, start the command line and connect to this instance. In the Mongo Client notice the **rs.initiate ()** command to initialize a new Replica Set. To check the Replica Set configuration, you notice the command **rs.conf ()** . To check the status of Replica Set, you notice the command **rs.status ()** .

Add members to Replica Set

To add members to Replica Set, start instance descriptions on multiple devices. Now, start a Mongo Client and notice a command **rs.add ()**.

Syntax

The basic syntax of **rs.add ()** is as follows:

```
> rs . add ( HOST_NAME : PORT )
```

For example

Suppose the name of your **mongod instance** is **mongod1.net** and is running on port **27017** . To add this instance to Replica Set, you tell **rs.add ()** in Mongo Client:

```
> rs . add ( "mongod1.net:27017" ) >
```

You can add an instance to Replica Set only if you are connected to the primary node. To check if you have connected to this primary node, you report the **db.isMaster ()** command in Mongo Client.

According to Tutorialspoint

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