Upgrade to the Latest Revision of MongoDB

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Major and Minor upgrades

A few examples:

- 2.4 to 2.6 new authentication algorithm.
- 3.0 to 3.2 pluggable storage engine. WiredTiger.
- 3.2 to 3.4 config servers are now replicasets, data new types, huge changes in WiredTiger, improvements on initial sync.
- 3.4 to 3.6 pre transactions, sessions.
- 3.6 to 4.0 transactions.

Feature Compatibility Version

Since version 3.4 it has been possible to turn off new version features to keep compatibility with previous versions.

With that option, it is possible to make 3.4 behave like 3.2, and the same is true for 3.6

Upgrade to the Latest Revision of MongoDB

- MongoDB versioning have the form X.Y.Z where Z refers to the revision/patch number.
- Revisions provide security patches, bug fixes, and new or changed features that generally do not contain any backward breaking changes.
- Always upgrade to the latest revision in your release series.
- Odd series are always for development environment
- Even series are only for production environment

Before Upgrading

1. Backup
   - Ensure you have an up-to-date backup of your data set. See MongoDB Backup Methods.
2. Compatibility Considerations
   - Consult the following documents for any special considerations or compatibility issues specific to your MongoDB release:
     - The release notes
     - The documentation for your driver.

Before Upgrading

3. Maintenance Window

- If your installation includes replica sets, plan the upgrade during a predefined maintenance window.

4. Change Streams

- Starting in MongoDB 4.0.7, change streams use a version 1 v1 resume tokens. MongoDB versions earlier than 4.0.7 use v0 resume tokens.

- When upgrading from MongoDB 4.0.6 or earlier to MongoDB 4.0.7 or later, a client may try to resume change streams using the new v1 resume token when connected to a member that has not been updated (i.e. only accepts v0 or BinData token) and fail. In such cases, the client must wait for the upgrade to complete before resuming change streams.

Staging Environment Check

- Before you upgrade a production environment, upgrade a staging environment that reproduces your production environment, to ensure that your production configuration is compatible with all changes.

Upgrade a MongoDB Instance

- To upgrade a mongod or mongos instance, use one of the following approaches:
- Upgrade the instance using the operating system's package management tool and the official MongoDB packages. This is the preferred approach.
- Upgrade the instance by replacing the existing binaries with new binaries.

Replace the Existing Binaries

- Download the binaries for the latest MongoDB revision from the MongoDB Download Page and store the binaries in a temporary location.
- The binaries download as compressed files that uncompress to the directory structure used by the MongoDB installation.
- Shutdown the instance.
- Replace the existing MongoDB binaries with the downloaded binaries.
- Restart the instance.

Upgrade Replica Sets

- To upgrade a replica set, upgrade each member individually, starting with the secondaries and finishing with the primary.
- Plan the upgrade during a predefined maintenance window.

Upgrade Secondaries

- Upgrade each secondary separately as follows:
- Upgrade the secondary's mongod binary by following the instructions in Upgrade a MongoDB Instance.
- After upgrading a secondary, wait for the secondary to recover to the SECONDARY state before upgrading the next instance. To check the member's state, issue rs.status() in the mongo shell.
- The secondary may briefly go into STARTUP2 or RECOVERING. This is normal. Make sure to wait for the secondary to fully recover to SECONDARY before you continue the upgrade.

Upgrade the Primary

- Step down the primary to initiate the normal failover procedure. Using one of the following:
  - The rs.stepDown() helper in the mongo shell.
  - The replSetStepDown database command.
- During failover, the set cannot accept writes. Typically this takes 10-20 seconds. Plan the upgrade during a predefined maintenance window.
- Stepping down the primary is preferable to directly shutting down the primary. Stepping down expedites the failover procedure.
- Once the primary has stepped down, call the rs.status() method from the mongo shell until you see that another member has assumed the PRIMARY state.
- Shut down the original primary and upgrade its instance by following the instructions in Upgrade a MongoDB Instance.

Upgrading a replica-set

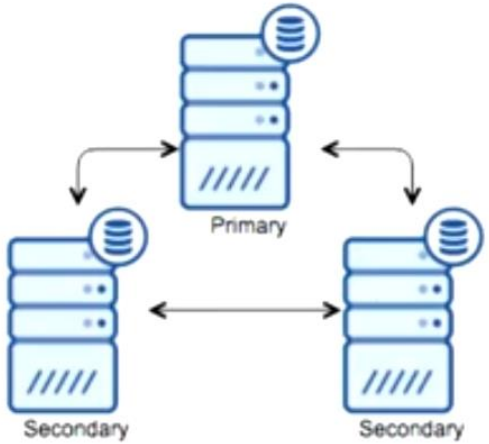
It is not necessary to remove the old versions while updating. We can set the instance as `hidden : true` in the rs.config() before removing them.

The application driver must be aware of the replica-set configuration, otherwise the application may face downtime.

It is preferable to trigger an election (to step down the primary) as the last operation in the upgrade.

Upgrading a replica-set

In order to upgrade a replica-set, we will take advantage of high availability.



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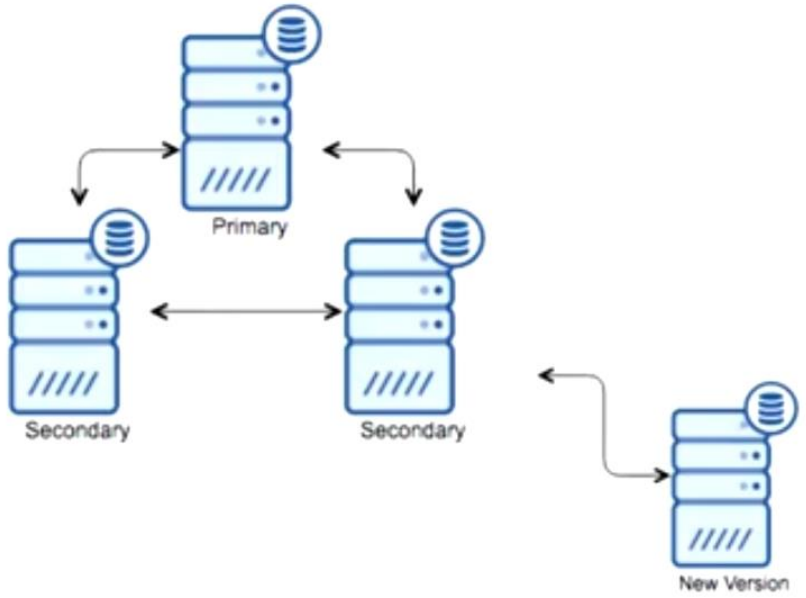
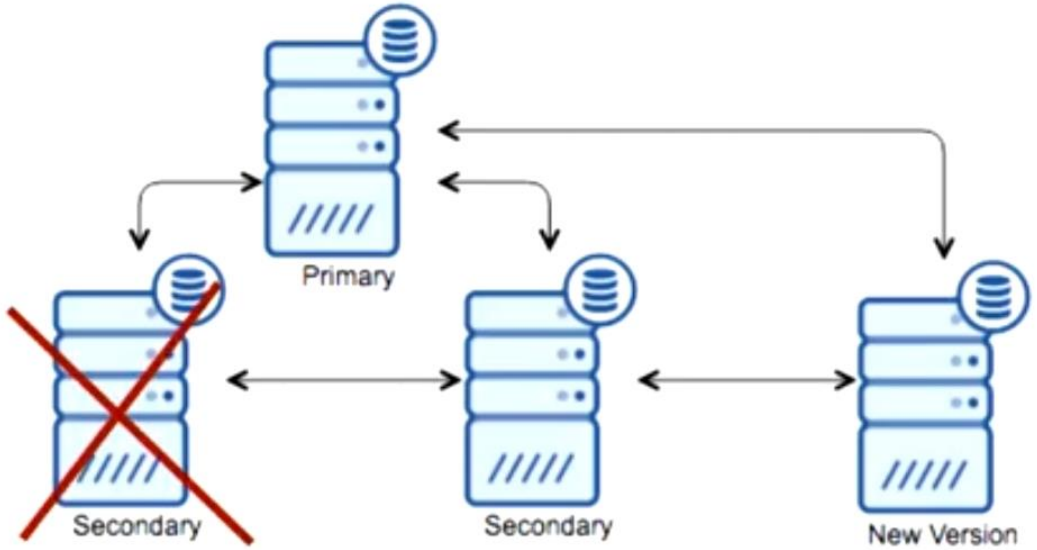


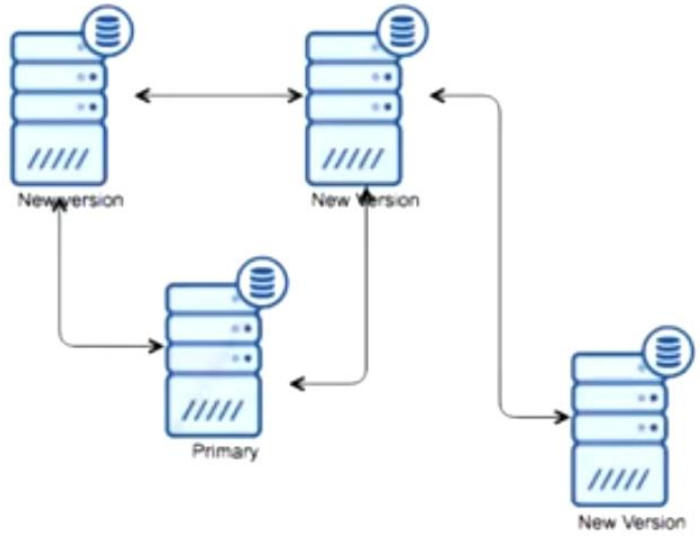
Upgrading a replica-set

Removing a secondary or setting the instance as hidden:



Upgrading a replica-set

Step the primary down and replace the remaining old instance.



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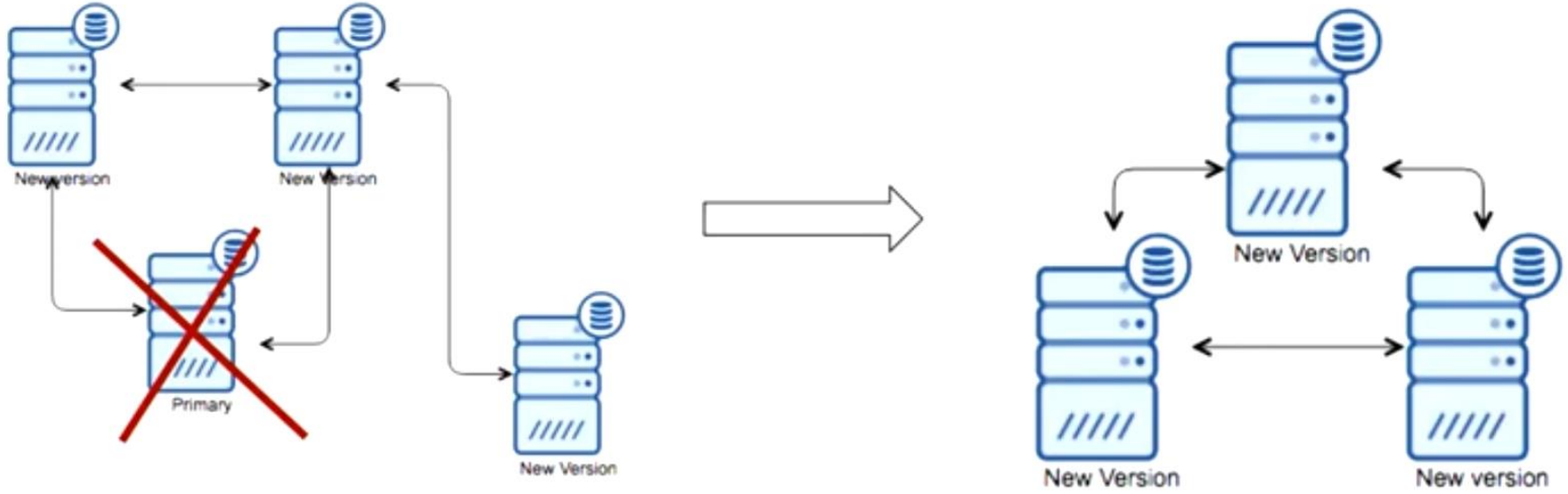


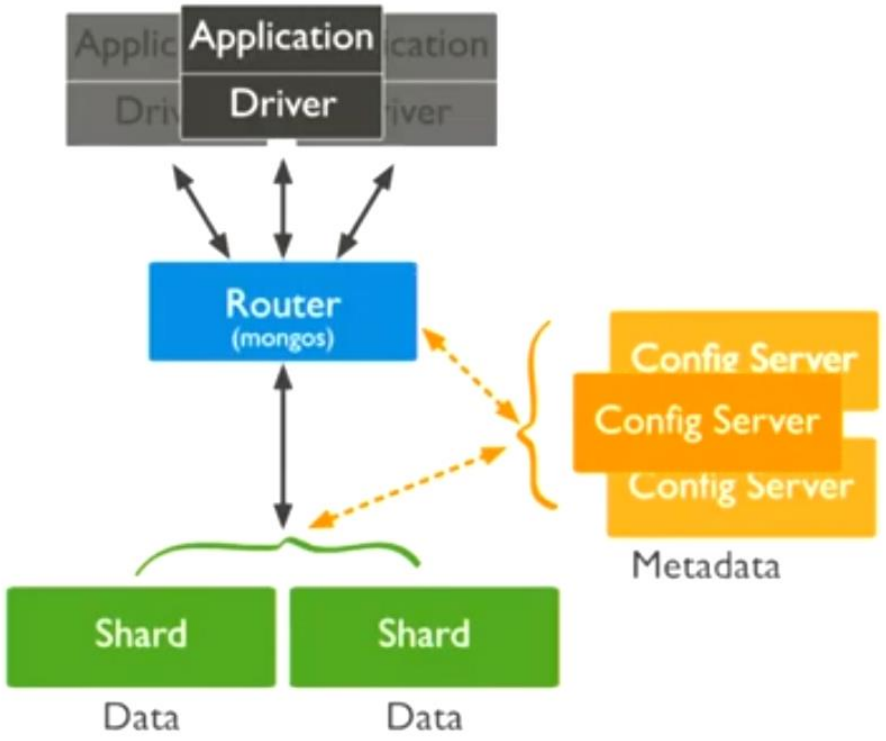
Upgrade Sharded Clusters

- Disable the cluster's balancer.
- Upgrade the config servers.
- To upgrade the config server replica set, use the procedures in Upgrade Replica Sets.
- Upgrade each shard.
- If a shard is a replica set, upgrade the shard using the procedure using Upgrade Replica Sets.
- If a shard is a standalone instance, upgrade the shard using the procedure using Upgrade a MongoDB Instance.
- Once the config servers and the shards have been upgraded, upgrade each mongos instance by following the instructions in Upgrade a MongoDB Instance.
- Can upgrade the mongos instances in any order.
- Re-enable the balancer

Upgrading a sharded environment

Upgrading a sharded cluster

1. Stop the balancer
2. Upgrade the config servers
3. Upgrade the shards
4. Upgrade the mongos
5. Re-enable the balancer



Review

- The driver plays a very important part in keeping the application online.
- Do not move from an ancient version to a new one.
- Test the new version before applying it in production.
- Create backups before upgrading.

Upgrading MongoDB on Amazon Linux, Red Hat Enterprise Linux, CentOS and Fedora

- First of all, you need to create a /etc/yum.repos.d/mongodb-org-4.4.repo file so that yum knows where to find latest MongoDB packages. Please replace redhat/7 with the codename appropriate for your distribution and version as listed below:

[mongodb-org-4.4]

name=MongoDB Repository

baseurl=https://repo.mongodb.org/yum/redhat/7/mongodb-org/4.4/x86_64/

gpgcheck=1

enabled=1

gpgkey=https://www.mongodb.org/static/pgp/server-4.4.asc

- RHEL 5 | CentOS 5 | Fedora Core 6: redhat/5
- RHEL 6 | CentOS 6 | Fedora 12–14: redhat/6
- RHEL 7 | CentOS 7 | Fedora 19–25: redhat/7
- Amazon Linux: amazon/2013.03
- Now you can simply issue the following command to install the latest version of MongoDB:
- $ sudo yum install -y mongodb-org

Upgrading MongoDB manually

- If you have not installed MongoDB using a package manager, you can manually download the MongoDB binaries from the MongoDB Download Center.
- For example, to download the latest release through the shell, issue the following:

```
$ curl -O https://fastdl.mongodb.org/linux/mongodb-linux-x86_64-4.4.2.tgz
```

- Then extract the files from the downloaded archive.
- From a system shell, you can extract through the tar command:

```
$ tar -zxvf mongodb-linux-x86_64-4.4.2.tgz
```

- Now copy the extracted folder to the location from which you wish MongoDB to run:

```
$ mkdir -p mongodb
$ cp -R -n mongodb-linux-x86_64-4.4.2/ mongodb
```

Upgrading MongoDB manually

- The MongoDB binaries are in the bin/ directory of the archive. To ensure that the binaries are in your PATH, you can modify your PATH.
- For example, you can add the following line to your shell's rc file (e.g. ~/.bashrc):

export PATH=<mongodb-install-directory>/bin:$PATH

- Remember to replace <mongodb-install-directory> with the path to the extracted MongoDB archive.
- Now reload mongod and that's all!

$ sudo service mongodb reload