Disaster Recovery Failover Plan
Unix
Replica Server

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Table of Contents

1 Overview

The replica servers are being replicated using the Perforce built in server to server replication via the "p4 pull" command and a rsync script to replicate checkpoints. This document provides the steps to failover from the main server to a replica server.

For an unplanned failover, start at section 2.4 below.

2 Failover Procedure

2.1 Check replica status

This is just a verification that replication is up to date before we start the whole process.

On the replica machine, run `p4 pull -lj` to check the status of the replication. The command should return two matching journal sequence numbers.

2.2 Stop access to master server – done on master server

Change the protect table to block access from everyone except the admin user and the service user. To do that, make the last three lines of the protect take look like this:

> list user * * -//…
> super user service * * //…
> super user perforce * * //…

2.3 Check replica status

On the replica machine by running `p4 pull -lj` to check the status of the replication. You want to wait for the replica to fully catch up before shutting down the master and replica instances. Once you have verified the replication is up to date:

2.4 Stop the servers

> stop the replica by running `/p4/1/bin/p4d_1_init stop` on the replica server
> stop the master by running `/p4/1/bin/p4d_1_init stop` on the master server
> (Only if the master is still available)

2.5 Change the replica to become the master

Change the DNS entry for the machine you are failing over to point to the new master server.

On the replica server, edit `/p4/<INSTANCE>/root/server.id` and change the `name to:`

`master`

and save the file. Now you can restart the server as the master by running `/p4/1/bin/p4d_1_init start`.

Edit the protect table and remove the list user * * -//… line that was added in the earlier step.

After this is done, the former replica is now the master.

Next run:

```
rm /p4/1/root/state
rm /p4/1/root/rdb.lbr
```

2.6 Update the crontab (Run all commands as perforce user)

On the new master server, originally the replica, run `crontab /p4/p4.crontab` to reset the crontab to run the master server crontab settings.

On the original master server, now the replica, run `crontab /p4/p4.crontab.replica` to change it to run the replica scripts.

It is a good idea to use crontab -l > p4.crontab on the master and crontab -l > p4.crontab.replica on the replica before you make these changes on each machine just to be sure that you have the current crontab settings saved. You can copy these files to the other machine to make sure you load the current settings on the other machine as well.

2.7 Check the edge and replica server status

On each edge and replica, make sure that the servers are replicating properly by running:

p4 pull -lj

If they are not, then do the following on the edge/replica:

1. `/p4/1/bin/p4d_1_init stop`
2. `/p4/common/bin/p4master_run 1 p4 -p <master_server:port> login < /p4/common/config/.p4passwd.p4_1.admin`
3. `/p4/common/bin/p4master_run 1 p4 -p <master_server:port> login service`
4. `rm -f /p4/1/root/state /p4/1/root/rdb.lbr`
5. `rm -f /p4/1/root/statejcopy /p4/1/journals.rep/* (These only exist if the replica is using journalcopy rather than pull)`
6. `/p4/1/bin/p4d_1_init start`

2.8 Change the original master to become the replica

On the original master, edit `/p4/1/root/server.id` and change the name to:

```
replica
```

and save the file.

Move `/p4/1/logs/journal`, e.g. to `/p4/1/logs/journal.orig.master`
Delete the following files if they exist: `/p4/1/root/state` and `/p4/1/root/rdb.lbr` .
You also need to login into the master server as the service user on the replica so that
replication can run.

Run:
```
/p4/common/bin/p4master_run 1 p4 -p ssl:master_dns_name:1666 login <
/p4/common/config/.p4passwd.p4_1.admin

/p4/common/bin/p4master_run <instance> p4 -p ssl:master:port login service
```

Now, start the server as a replica by running `/p4/1/bin/p4d_1_init start`

Check replication by running:

```
p4 login  < /p4/common/config/.p4passwd.p4_1.admin
p4 pull -lj
```

You should see two matching journal sequence numbers. The `p4 pull -lj` will only
succeed when run on a replica pulling from a master. So this proves that the roles have
been switched.

Finally, run these final two steps:

On the new replica server, run the `sync_replica.sh` command that cron normally runs
in order to make sure it is working properly.

```
/p4/common/bin/p4master_run 1 /p4/common/bin/sync_replica.sh
```

NOTE 1: *If the master server has been down for more than 7 days*, you will have to reset
the replica as follows before starting it. The reason for the 7 days value is that the number
of old checkpoints and journals to keep is set to 7 in the `p4_vars` file. The replication
uses the old journals in order to catch up from where it last stopped, so if the old ones
have rotated off, you have to reset the replica with a new checkpoint and updated
versioned files.

To reset the replica, from the replica run:

Since your servers are set up to rsync without a password, you can reset the replica by
running:

```
/p4/common/bin/p4master_run 1 /p4/common/bin/recreate_db_sync_replica.sh
```

`recreate_db_sync_replica.sh` performs the following steps:

```
rsync -avz --delete perforce@master_server:/p4/1/checkpoints/
      /p4/1/checkpoints
rm -r -f /p4/1/root/db.*
rm -r -f /p4/1/offline_db/db.*
rm -r -f /p4/1/logs/journal
ls -lah /p4/1/checkpoints
```

Make note of the highest numbered p4_1.ckp.#.gz file in that directory. Assume it is 10 for this example:

```
/p4/1/bin/p4d_1 -r /p4/1/root -jr -z /p4/1/checkpoints/p4_1.ckp.10.gz
/p4/1/bin/p4_1 -p master_server:port -u service login
/p4/1/bin/p4d_1_init start
/p4/1/bin/p4d_1 -r /p4/1/offline_db -jr –z
      /p4/1/checkpoints/p4_1.ckp.10.gz
```

Optionally, you may want to run:
```
rsync -avz --delete perforce@master_server:/p4/1/depots/ /p4/1/depots
```

or

```
/p4/common/bin/p4master_run 1 /p4/common/bin/p4verify.sh
```

to make sure the depot files are up to date.