1. Primary - RW mode, Standby - R mode

Status: Verified

1. Check if the server is primary

Command: SELECT count(\*) FROM pg\_stat\_wal\_receiver;

Note: primary node should return count as 0

Status: Verified

1. Confirm if slots in Primary are individually assigned to Standby's

Command: select \* from pg\_stat\_replication where client\_addr='<standby-ip>';

Status: Verified

1. Confirm if replication actively happens (i.e proportional to number of slots)

Command: select count(\*) from pg\_replication\_slots where active=true;

Status: Verified

1. Check replication lag and confirm within 1sec

Command: select write\_lag, flush\_lag, replay\_lag from pg\_stat\_replication;

Note: replay\_lag [Replication lag] = write\_lag + flush\_lag + application\_of\_wall\_fille

Status: Verified

1. FailOvers/Disaster recovery

Postgresql doesn't promote standby to Primary on its own. We have to do them manually

1. Instruction to promote a slave to Primary :
   1. login to container
   2. switch to postgres user, "su postgres"
   3. Promote Command: pg\_ctl promote -D /var/lib/postgresql/data/pgdat
   4. enter postgres cli ("psql -U cisco")
   5. create replication slots for current active Primary

- SELECT \* FROM pg\_create\_physical\_replication\_slot('standby\_x\_slot');

Note: This promotion doesn't update any postgresql.conf , but will be setup in internal file contexts., so even if this container restarts, it will still act as master

1. Instruction to promote other slaves to get informed about new Primary:
   1. login to container
   2. update 'primary\_conninfo' in slaves postrgres.conf with latest primary conn info

- sed -i -E "s/^(primary\_conninfo\s\*=\s\*').\*/primary\_conninfo = 'host=10.81.1.19 port=6432 user=replicator password=ciscoreplLogin123'/" /etc/postgres/postgresql.conf

* 1. update 'primaryprimary\_slot\_nameconninfo' in slaves postrgres.conf with latest primary node's slot

- sed -i -E "s/^(primary\_slot\_name\s\*=\s\*').\*/primary\_slot\_name = 'standby\_x\_slot'/" /etc/postgres/postgresql.conf

* 1. switch to postgres user, "su postgres"
  2. Reload config

- pg\_ctl reload -D /var/lib/postgresql/data/pgdata

1. Instruction to de-promote older-master to slave
   1. Master pg\_data host data can be directly deleted
   2. Slave image can be directly applied

Note: There is no de-promotion as such, this is the easiest way.

Status: Manually done and verified