```
# Install initial PostgreSQL 10 cluster and verify it exists
sudo pg_lsclusters

# create a second postgres cluster
sudo pg_createcluster 10 replica1
sudo pg_ctlcluster 10 replica1 status
sudo systemctl status postgresql@10-main

# create archive directories for both clusters
sudo -H -u postgres mkdir /var/lib/postgresql/pg_log_archive/main
sudo -H -u postgres mkdir /var/lib/postgresql/pg_log_archive/replica1

## Configure Main Cluster (Primary / Master)
#####################################################

# edit configuration file
sudo nano /etc/postgresql/10/main/postgresql.conf

  wal_level = replica
  wal_log_hints = on
  archive_mode = on # (change requires restart)
  archive_command = 'test ! -f /var/lib/postgresql/pg_log_archive/main/%f && cp
%p /var/lib/postgresql/pg_log_archive/main/%f'
  max_wal_senders = 10
  wal_keep_segments = 64
  hot_standby = on

# edit host based access file
sudo nano /etc/postgresql/10/main/pg_hba.conf

  local replication rep_user trust # DO NOT USE. Configure your own connection
and authentication information

# create replication user
sudo -H -u postgres psql -c "CREATE USER rep_user WITH replication;"

# restart the main cluster
sudo systemctl restart postgresql@10-main

## Configure Replica1 Cluster
#########################################################################
```

```
# stop replica1 cluster
sudo systemctl stop postgresql@10-replica1

# edit configuration file
sudo nano /etc/postgresql/10/replica1/postgresql.conf

  wal_level = replica
  wal_log_hints = on
  archive_mode = on # (change requires restart)
  archive_command = 'test ! -f /var/lib/postgresql/pg_log_archive/replica1/%f &&
cp %p /var/lib/postgresql/pg_log_archive/replica1/%f'
  max_wal_senders = 10
  wal_keep_segments = 64
  hot_standby = on

# edit host based access file
sudo nano /etc/postgresql/10/replica1/pg_hba.conf

  local replication rep_user trust

## Setup Replica1 Cluster Replication
############################################################

# remove replica1 existing database files
sudo su - postgres
rm -rf /var/lib/postgresql/10/replica1

# sync replica1 with main cluster
pg_basebackup -D /var/lib/postgresql/10/replica1 -U rep_user -w -P -R # -X stream

# configure recovery.conf
nano /var/lib/postgresql/10/replica1/recovery.conf

  restore_command = 'cp /var/lib/postgresql/pg_log_archive/replica1/%f %p'
  recovery_target_timeline = 'latest'
  standby_mode = 'on'
  primary_conninfo = 'user=rep_user passfile=''/var/lib/postgresql/.pgpass''
host''/var/run/postgresql'' port=5432 sslmode=prefer sslcompression=1
krbsrvname=postgres target_session_attrs=any'
  archive_cleanup_command = 'pg_archivecleanup
/var/lib/postgresql/pg_log_archive/replica1 %r'
```

```
# start replica cluster and verify in sync
sudo pg_ctlcluster 10 replica1 start
tail -n 100 /var/log/postgresql/postgresql-10-replica1.log

## Verify Replica1 Cluster In Sync
################################################################

# create database with some data
sudo su - postgres
psql -c "create database test;" -p 5432
psql test -c "
create table posts (
  id integer,
  title character varying(100),
  content text,
  published_at timestamp without time zone,
  type character varying(100)
);

insert into posts (id, title, content, published_at, type) values
(100, 'Intro to SQL', 'Epic SQL Content', '2018-01-01', 'SQL'),
(101, 'Intro to PostgreSQL', 'PostgreSQL is awesome!', now(), 'PostgreSQL');
"

# verify data has been replicated on replica1
psql test -c "select * from posts;" -p 5433

# stop main cluster (simulate failure condition)
sudo systemctl status postgresql@10-main

# promote replica1
sudo pg_ctlcluster 10 replica1 promote

# verify replica1 is now a master / primary cluster
tail -n 100 /var/log/postgresql/postgresql-10-replica1.log

psql test -c "insert into posts (id, title, content, type) values
(102, 'Intro to SQL Where Clause', 'Easy as pie!', 'SQL'),
(103, 'Intro to SQL Order Clause', 'What comes first?', 'SQL');" -p 5433

psql test -c "select * from posts;" -p 5433
```