1. Install Dependencies

On Ubuntu:

sudo apt-get update sudo apt-get install python3 python3-pip python3-psycopg2 python3-setuptools git gcc

On CentOS/RHEL:

sudo yum install python3 python3-pip python3-psycopg2 python3-setuptools git gcc

2. Download and Install Barman from Source Code:-

git clone https://github.com/EnterpriseDB/barman.git

cd barman

Install Barman: Install Barman using pip from the source:

sudo pip3 install .

3. Create the Barman User:-

sudo useradd -m -d /var/lib/barman -s /bin/bash barman
sudo mkdir /var/log/barman
sudo chown barman:barman /var/log/barman

4. Configure Barman:-

Create the Barman configuration file: Create or edit the global Barman configuration file:

sudo vi /etc/barman.conf

[barman]
barman_user = barman
barman_home = /var/lib/barman
log_file = /var/log/barman/barman.log
compression = gzip
log_level = INFO
immediate_checkpoint = true
basebackup_retry_times = 3
basebackup_retry_sleep = 30
last_backup_maximum_age = 1 DAYS

[pg_server]
description = "PostgreSQL Server Backup"
conninfo = host=192.168.29.46 user=barman dbname=postgres
ssh_command = ssh barman@192.168.29.46
archiver = on
backup_method = postgres
streaming_archiver = on
backup_directory = /var/lib/barman/backups
backup_options = concurrent_backup
retention_policy = RECOVERY WINDOW OF 7 DAYS
wal_retention_policy = main
retention_policy_mode = auto
minimum_redundancy=2

5. PostgreSQL Configuration:-

Create a PostgreSQL user for Barman: Log into PostgreSQL and create the barman user with replication privileges:

CREATE USER barman WITH REPLICATION PASSWORD 'yourpassword';

Update pg_hba.conf **to allow Barman access**:

```
#ip4
```
host all all 10.83.40.101/32 md5

```
#replication privilege
```
host replication barman 10.83.40.101/32 md5

Enable WAL archiving:

sudo nano /var/lib/pgsql/14/data/postgresql.conf

wal_level = replica
archive_mode = on
archive_command = 'rsync -a %p
barman@10.83.40.101:/var/lib/barman/postgresql/incoming/%f'
max_wal_senders = 3
wal_keep_size = 128MB

6. Test Barman:-

Check Barman configuration:

barman check postgresql

Perform a backup: Trigger a backup using:

barman backup postgresql

List backups: Check available backups with:

barman list-backup postgresql

Restore a backup (if needed): Recover the backup with:

barman recover postgresql latest /var/lib/pgsql/14/data/

Crontab:-

0 0 * * * /usr/local/bin/barman backup postgresql

Error:-

Server pg_server:
WAL archive: FAILED (please make sure WAL shipping is setup)
PostgreSQL: OK
no access to backup functions: FAILED (privileges for PostgreSQL backup functions are required (see documentation))
PostgreSQL streaming: OK
wal_level: OK
directories: OK
retention policy settings: OK
backup maximum age: FAILED (interval provided: 1 day, latest backup age: No available backups)
backup minimum size: OK (0 B)
wal maximum age: OK (no last_wal_maximum_age provided)
wal size: OK (0 B)
compression settings: OK
failed backups: OK (there are 0 failed backups)
minimum redundancy requirements: OK (have 0 backups, expected at least 0)
pg_basebackup: OK
pg_basebackup compatible: OK
pg_basebackup supports tablespaces mapping: OK
systemid coherence: OK (no system Id stored on disk)
pg_receivexlog: FAILED

pg_receivexlog compatible: FAILED (PostgreSQL version: 15.8, pg_receivexlog version: None)
receive-wal running: FAILED (See the Barman log file for more details)
archive_mode: OK
archive_command: OK
continuous archiving: OK
archiver errors: OK

1. ssh:-

sudo -u barman ssh-keygen -t rsa

sudo -u barman ssh-copy-id barman@10.83.40.101

sudo -u barman ssh barman@192.168.29.46

2. no access to backup functions:-

GRANT EXECUTE ON FUNCTION pg_backup_start(text, boolean) to barman;
GRANT EXECUTE ON FUNCTION pg_backup_stop(boolean) to barman;
GRANT EXECUTE ON FUNCTION pg_switch_wal() to barman;
GRANT EXECUTE ON FUNCTION pg_create_restore_point(text) to barman;

GRANT pg_read_all_settings TO barman;
GRANT pg_read_all_stats TO barman;

GRANT pg_checkpoint TO barman;

3. WAL archive: FAILED (please make sure WAL shipping is setup):-

Check manually:-

bash -c "cp /var/lib/pgsql/15/data/pg_wal/000000010000000000000001 /var/lib/barman/backups/incoming/000000010000000000000001"

To show file where wal file store:-

barman show-server pg_server | grep incoming_wals_directory