

```
cd /
mkdir BARMAN
cd BARMAN/
sudo apt-get update
```

```
root@cdbtestdcserver3:~# cd /
root@cdbtestdcserver3:~# mkdir BARMAN
root@cdbtestdcserver3:~# cd BARMAN/
root@cdbtestdcserver3:/BARMAN# sudo apt-get update
Hit:1 http://archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Get:3 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Hit:4 http://archive.ubuntu.com/ubuntu jammy-backports InRelease
Get:5 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [2079 kB]
Fetched 2336 kB in 5s (468 kB/s)
Reading package lists... Done
```

```
sudo apt-get install python3 python3-pip python3-psycopg2 python3-setuptools
```

```
root@cdbtestdcserver3:/BARMAN# sudo apt-get install python3 python3-pip python3-psycopg2 python3-setuptools
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
python3-psycopg2 is already the newest version (2.9.2-1build2).
python3-psycopg2 set to manually installed.
python3 is already the newest version (3.10.6-1~22.04.1).
python3 set to manually installed.
python3-setuptools is already the newest version (59.6.0-1.2ubuntu0.22.04.2).
python3-pip is already the newest version (22.0.2+dfsg-lubuntu0.5).
The following packages were automatically installed and are no longer required:
  libevent-pthreads-2.1-7 libopts25 sntp
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 48 not upgraded.
```

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

```
root@cdbtestdcserver3:/BARMAN# git clone https://github.com/EnterpriseDB/barman.git
Cloning into 'barman'...
remote: Enumerating objects: 16272, done.
remote: Counting objects: 100% (411/411), done.
remote: Compressing objects: 100% (174/174), done.
remote: Total 16272 (delta 299), reused 261 (delta 235), pack-reused 15861 (from 2)
Receiving objects: 100% (16272/16272), 11.11 MiB | 5.66 MiB/s, done.
Resolving deltas: 100% (12712/12712), done.
```

```
mkdir /var/log/barman
chown postgres:postgres /var/log/barman
```

```
root@cdbtestdcserver3:/BARMAN# mkdir /var/log/barman
root@cdbtestdcserver3:/BARMAN# chown postgres:postgres /var/log/barman
```

```
cd barman/
ls -lrth
```

```
root@cdbtestdcserver3:/BARMAN# ls -lrth
total 4.0K
drwxr-x--- 9 root root 4.0K Feb 18 00:39 barman
root@cdbtestdcserver3:/BARMAN# cd barman/
root@cdbtestdcserver3:/BARMAN/barman# ls -lrth
total 176K
-rw-r----- 1 root root 451 Feb 18 00:39 TODO
-rw-r----- 1 root root 78K Feb 18 00:39 RELNOTES.md
-rw-r----- 1 root root 2.1K Feb 18 00:39 README.rst
-rw-r----- 1 root root 238 Feb 18 00:39 MANIFEST.in
-rw-r----- 1 root root 35K Feb 18 00:39 LICENSE
-rw-r----- 1 root root 121 Feb 18 00:39 INSTALL.md
-rw-r----- 1 root root 1.4K Feb 18 00:39 AUTHORS
drwxr-x--- 5 root root 4.0K Feb 18 00:39 barman
drwxr-x--- 11 root root 4.0K Feb 18 00:39 docs
-rwxr-x--- 1 root root 7.0K Feb 18 00:39 setup.py
-rw-r----- 1 root root 244 Feb 18 00:39 setup.cfg
drwxr-x--- 2 root root 4.0K Feb 18 00:39 scripts
-rw-r----- 1 root root 15 Feb 18 00:39 requirements-tox.txt
drwxr-x--- 9 root root 4.0K Feb 18 00:39 old_docs
-rw-r----- 1 root root 1.3K Feb 18 00:39 tox.ini
drwxr-x--- 3 root root 4.0K Feb 18 00:39 tests
```

sudo pip3 install .
barman --version

```
root@cdbtestdcserver3:/BARMAN/barman# sudo pip3 install .
Processing /BARMAN/barman
  Preparing metadata (setup.py) ... done
Requirement already satisfied: psycopg2<2.4.2 in /usr/local/lib/python3.10/dist-packages (from barman==3.12.1) (2.9.9)
Requirement already satisfied: python-dateutil in /usr/lib/python3/dist-packages (from barman==3.12.1) (2.8.1)
Building wheels for collected packages: barman
  Building wheel for barman (setup.py) ... done
  Created wheel for barman: filename=barman-3.12.1-py2.py3-none-any.whl size=465297 sha256=132eefc65e10681634bf38758e2e0521f50840a2af8ec10196cbc3e24f8ec18b
  Stored in directory: /tmp/pip-ephem-wheel-cache-65gm12se/wheels/c2/a9/d6/1689ec000abel29c546cb8c75d4106ed3dcd3894e74fb14496
Successfully built barman
Installing collected packages: barman
Successfully installed barman-3.12.1
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead: https://pip.pypa.io/warnings/venv
root@cdbtestdcserver3:/BARMAN/barman# barman --version
3.12.1 Barman by EnterpriseDB (www.enterprisedb.com)
```

mkdir /BARMAN/backup
chown postgres:postgres /BARMAN/backup

```
root@cdbtestdcserver3:/BARMAN# mkdir backup
root@cdbtestdcserver3:/BARMAN# chown postgres:postgres backup
root@cdbtestdcserver3:/BARMAN#
root@cdbtestdcserver3:/BARMAN#
```

vi /etc/barman.conf

```
root@cdbtestdcserver3:~# cat /etc/barman.conf
[barman]
barman_user = postgres
#barman_home = /var/lib/barman
barman_home = /home/postgres
#configuration_files_directory = /etc/barman.conf
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 = 5 DAYS
#path_prefix = /usr/lib/pgsql-15.6/bin:/usr/local/bin:/usr/bin
#path_prefix = /usr/lib/pgsql-15.6/bin
```

```
[pg_server]
description = "PostgreSQL Local Server Backup"
conninfo = host=localhost user=postgres dbname=postgres
#ssh_command = ssh postgres@10.83.40.101 -q
#reuse_backup = link
archiver = on
backup_method = local-rsync
streaming_archiver = on
parallel_jobs = 2
backup_directory = /BARMAN/backup
backup_options = concurrent_backup
retention_policy = RECOVERY WINDOW OF 7 DAYS
wal_retention_policy = main
retention_policy_mode = auto
path_prefix = /usr/lib/pgsql-15.6/bin/
#minimum_redundancy=2
```

```

root@cdbtestdcserver3:~# cat /etc/barman.conf
[barman]
barman_user = postgres
#barman_home = /var/lib/barman
barman_home = /home/postgres
#configuration_files_directory = /etc/barman.conf
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 = 5 DAYS
#path_prefix = /usr/lib/pgsql-15.6/bin/:/usr/local/bin:/usr/bin
#path_prefix = /usr/lib/pgsql-15.6/bin

[pg_server]
description = "PostgreSQL Local Server Backup"
conninfo = host=localhost user=postgres dbname=postgres
#ssh_command = ssh postgres@10.83.40.101 -q
#reuse_backup = link
archiver = on
backup_method = local-rsync
streaming_archiver = on
parallel_jobs = 2
backup_directory = /BARMAN/backup
backup_options = concurrent_backup
retention_policy = RECOVERY WINDOW OF 7 DAYS
wal_retention_policy = main
retention_policy_mode = auto
path_prefix = /usr/lib/pgsql-15.6/bin/
#minimum_redundancy=2
root@cdbtestdcserver3:~# █

```

chown postgres:postgres barman.conf

```

root@cdbtestdcserver3:/etc# chown postgres:postgres barman.conf

```

chown postgres:postgres -R BARMAN/

```

root@cdbtestdcserver3:/# chown postgres:postgres -R BARMAN/

```

barman show-server server-name(pg-server) | grep incoming_wals_directory

vi postgresql.conf

```

postgres=# show wal_keep_size ;
-----
5GB
(1 row)

postgres=# show max_wal_senders;
-----
10
(1 row)

postgres=# show wal_level ;
-----
replica
(1 row)

postgres=# show archive_mode ;
-----
on
(1 row)

postgres=# show archive_command ;
-----
cp %p /BARMAN/backup/incoming/%f
(1 row)

postgres=#

```

barman cron

```

postgres@cdbtestdcserver3:/$ barman cron
Traceback (most recent call last):
  File "/usr/local/bin/barman", line 5, in <module>
    from barman.cli import main
ModuleNotFoundError: No module named 'barman.cli'
postgres@cdbtestdcserver3:/$ which barman
/usr/local/bin/barman

```

python3 -m pip show barman

```

postgres@cdbtestdcserver3:~$ python3 -m pip show barman
ERROR: Exception:
Traceback (most recent call last):
  File "/usr/lib/python3/dist-packages/pip/_internal/cli/base_command.py", line 165, in exc_logging_wrapper
    status = run_func(*args)
  File "/usr/lib/python3/dist-packages/pip/_internal/commands/show.py", line 45, in run
    if not print_results(
  File "/usr/lib/python3/dist-packages/pip/_internal/commands/show.py", line 146, in print_results
    for i, dist in enumerate(distributions):
  File "/usr/lib/python3/dist-packages/pip/_internal/commands/show.py", line 77, in search_packages_info
    env = get_default_environment()
  File "/usr/lib/python3/dist-packages/pip/_internal/metadata/_init_.py", line 24, in get_default_environment
    from .pkg_resources import Environment
  File "/usr/lib/python3/dist-packages/pip/_internal/metadata/pkg_resources.py", line 9, in <module>
    from pip._vendor import pkg_resources
  File "/usr/lib/python3/dist-packages/pip/_vendor/pkg_resources/_init_.py", line 3252, in <module>
    def _initialize_master_working_set():
  File "/usr/lib/python3/dist-packages/pip/_vendor/pkg_resources/_init_.py", line 3235, in _call_aside
    f(*args, **kwargs)
  File "/usr/lib/python3/dist-packages/pip/_vendor/pkg_resources/_init_.py", line 3264, in _initialize_master_working_set
    working_set = WorkingSet._build_master()
  File "/usr/lib/python3/dist-packages/pip/_vendor/pkg_resources/_init_.py", line 574, in _build_master
    ws = cls()
  File "/usr/lib/python3/dist-packages/pip/_vendor/pkg_resources/_init_.py", line 567, in _init_
    self.add_entry(entry)
  File "/usr/lib/python3/dist-packages/pip/_vendor/pkg_resources/_init_.py", line 623, in add_entry
    for dist in find_distributions(entry, True):
  File "/usr/lib/python3/dist-packages/pip/_vendor/pkg_resources/_init_.py", line 2065, in find_on_path
    for dist in factory(fullpath):
  File "/usr/lib/python3/dist-packages/pip/_vendor/pkg_resources/_init_.py", line 2127, in distributions_from_metadata
    if len(os.listdir(path)) == 0:
PermissionError: [Errno 13] Permission denied: '/usr/local/lib/python3.10/dist-packages/setuptools-75.1.0.dist-info'

```

cd /usr/local/lib/python3.10/dist-packages

chown postgres:postgres * -R

```

root@cdbtestdcserver3:/usr/local/lib/python3.10/dist-packages# chown postgres:postgres * -R
root@cdbtestdcserver3:/usr/local/lib/python3.10/dist-packages# su - postgres
postgres@cdbtestdcserver3:~$ python3 -m pip show barman
Name: barman
Version: 3.12.1
Summary: Backup and Recovery Manager for PostgreSQL
Home-page: https://www.pgbarman.org/
Author: EnterpriseDB
Author-email: barman@enterprisedb.com
License: GPL-3.0
Location: /usr/local/lib/python3.10/dist-packages
Requires: psycopg2, python-dateutil
Required-by:
postgres@cdbtestdcserver3:~$

```

barman cron

barman check pg_server

cd /data/patroni/pg_wal/

```
ls -lrth
cp 0000000100000000000000002 /BARMAN/backup/incoming/
barman cron
barman check pg_server
barman cron
barman check pg_server
cd /data/patroni/pg_wal/
ls -lrth
cp 0000000100000000000000002 /BARMAN/backup/incoming/
barman cron
barman check pg_server
```

Fullbackup: barman backup pg_server_1

Incremental backup: barman backup reuse-backup=link pg_server_1

Transactinal backup: barman cron

PITR: barman recover --target-time "2025-02-17 19:50:00" pg_server 20250217T195010 /data1

Normal restore: barman recover pg_server 20250217T195010 /data1

Summary of Key Directories:

- **identity.json:** Contains server identity and metadata.
- **errors:** Stores error logs for backup operations.
- **wals:** Stores archived WAL files for point-in-time recovery.
- **base:** Stores full (base) backups of the PostgreSQL database.
- **streaming:** Stores real-time streamed WAL files.
- **incoming:** Temporarily stores WAL files before processing.

These directories help Barman manage backups, WAL archiving, and provide mechanisms for restoring the PostgreSQL database to a specific point in time.

Incremental backup restore:-

Step1:- used barman command

```
barman recover --target-time "2025-02-17 19:50:00" pg_server 20250217T195010 /data1
```

Step2:- start postgresql service

Step3:- connect database & excute two command because pg_is_in_recovery(); result show true:-

```
SELECT pg_wal_replay_resume();
```

```
SELECT pg_is_in_recovery();
```