1. Full backup taken on server:-

```
2025-01-14 12:59:25,743 [809573] barman.postgres INFO: Restore point 'barman_20250114T125924' successfully created
Backup size: 29.2 MiB. Actual size on disk: 29.2 MiB (-0.00% deduplication ratio).
2025-01-14 12:59:36,575 [809573] barman.backup INFO: Backup size: 29.2 MiB. Actual size on disk: 29.2 MiB (-0.00% deduplication ratio).
Backup end at LSN: 0/48000100 (000003840000000000000048, 00000100)
2025-01-14 12:59:36,575 [809573] barman.backup INFO: Backup end at LSN: 0/48000100 (000003840000000000000048, 00000100)
Backup completed (start time: 2025-01-14 12:59:24.287294, elapsed time: 12 seconds)
2025-01-14 12:59:36,575 [809573] barman.backup INFO: Backup completed (start time: 2025-01-14 12:59:24.287294, elapsed time: 12 seconds)
2025-01-14 12:59:36,586 [809573] barman.wal_archiver INFO: Found 3 xlog segments from streaming for pg_server. Archive all segments in one run.
Processing xlog segments from streaming for pg_server
        000003840000000000000047
2025-01-14 12:59:36,586 [809573] barman.wal_archiver INFO: Archiving segment 1 of 3 from streaming: pg_server/000003840000000000000047
        000003840000000000000048
2025-01-14 12:59:36,779 [809573] barman.wal_archiver INFO: Archiving segment 2 of 3 from streaming: pg_server/000003840000000000000048
        000003840000000000000049
2025-01-14 12:59:36,887 [809573] barman.wal_archiver INFO: Archiving segment 3 of 3 from streaming: pg_server/000003840000000000000049
2025-01-14 12:59:36,997 [809573] barman.wal_archiver INFO: Found 4 xlog segments from file archival for pg_server. Archive all segments in one run.
Processing xlog segments from file archival for pg_server
        000003840000000000000047
2025-01-14 12:59:36,998 [809573] barman.wal_archiver INFO: Archiving segment 1 of 4 from file archival: pg_server/000003840000000000000047
        000003840000000000000048
2025-01-14 12:59:37,086 [809573] barman.wal_archiver INFO: Archiving segment 2 of 4 from file archival: pg_server/000003840000000000000048
        000003840000000000000048.00000028.backup
2025-01-14 12:59:37,169 [809573] barman.wal_archiver INFO: Archiving segment 3 of 4 from file archival: pg_server/000003840000000000000048.00000028.backup
        000003840000000000000049
2025-01-14 12:59:37,195 [809573] barman.wal_archiver INFO: Archiving segment 4 of 4 from file archival: pg_server/000003840000000000000049
postgres@cdbtestdcserver1:/data/barman/backups/base$ ls -lrth
total 4.0K
drwxr-x--- 3 postgres postgres 4.0K Jan 14 12:59 20250114T125924
postgres@cdbtestdcserver1:/data/barman/backups/base$
```

2. Create database and table:-

```
root@cdbtestdcserver1: ~
postgres@cdbtestdcserver1:~$ psql
psql (15.6)
Type "help" for help.

postgres=# \l
                                    List of databases
   Name    |  Owner   | Encoding | Collate |  Ctype  | ICU Locale | Locale Provider |   Access privileges
-----------+----------+----------+---------+---------+------------+-----------------+-----------------------
 postgres  | postgres | UTF8     | C.UTF-8 | C.UTF-8 |            | libc            |
 template0 | postgres | UTF8     | C.UTF-8 | C.UTF-8 |            | libc            | =c/postgres          +
           |          |          |         |         |            |                 | postgres=CTc/postgres
 template1 | postgres | UTF8     | C.UTF-8 | C.UTF-8 |            | libc            | =c/postgres          +
           |          |          |         |         |            |                 | postgres=CTc/postgres
 test      | postgres | UTF8     | C.UTF-8 | C.UTF-8 |            | libc            |
(4 rows)

postgres=# create database emp;
CREATE DATABASE
postgres=# \c emp
You are now connected to database "emp" as user "postgres".
emp=# CREATE TABLE employees (
    id SERIAL PRIMARY KEY,
    first_name VARCHAR(50),
    last_name VARCHAR(50),
    email VARCHAR(100),
    hire_date DATE
);
CREATE TABLE
emp=# INSERT INTO employees (first_name, last_name, email, hire_date)
VALUES
('John', 'Doe', 'john.doe@example.com', '2025-01-14'),
('Jane', 'Smith', 'jane.smith@example.com', '2024-12-15');
INSERT 0 2
emp=# \dt
          List of relations
 Schema |   Name    | Type  |  Owner
--------+-----------+-------+----------
 public | employees | table | postgres
(1 row)

emp=# select * from employees;
 id | first_name | last_name |         email          | hire_date
----+------------+-----------+------------------------+------------
  1 | John       | Doe       | john.doe@example.com   | 2025-01-14
  2 | Jane       | Smith     | jane.smith@example.com | 2024-12-15
(2 rows)
```

3.Incremental backup :-

```
2025-01-14 13:01:44,836 [809639] barman.postgres INFO: Restore point 'barman_20250114T130143' successfully created
Backup size: 36.2 MiB. Actual size on disk: 7.1 MiB (-80.39% deduplication ratio).
2025-01-14 13:01:47,662 [809639] barman.backup INFO: Backup size: 36.2 MiB. Actual size on disk: 7.1 MiB (-80.39% deduplication ratio).
Backup end at LSN: 0/4B000100 (000003840000000000000004B, 00000100)
2025-01-14 13:01:47,663 [809639] barman.backup INFO: Backup end at LSN: 0/4B000100 (000003840000000000000004B, 00000100)
Backup completed (start time: 2025-01-14 13:01:43.429666, elapsed time: 4 seconds)
2025-01-14 13:01:47,663 [809639] barman.backup INFO: Backup completed (start time: 2025-01-14 13:01:43.429666, elapsed time: 4 seconds)
2025-01-14 13:01:47,754 [809639] barman.wal_archiver INFO: Found 2 xlog segments from streaming for pg_server. Archive all segments in one run.
Processing xlog segments from streaming for pg_server
        000003840000000000000004A
2025-01-14 13:01:47,754 [809639] barman.wal_archiver INFO: Archiving segment 1 of 2 from streaming: pg_server/000003840000000000000004A
        000003840000000000000004B
2025-01-14 13:01:47,956 [809639] barman.wal_archiver INFO: Archiving segment 2 of 2 from streaming: pg_server/000003840000000000000004B
2025-01-14 13:01:48,071 [809639] barman.wal_archiver INFO: Found 3 xlog segments from file archival for pg_server. Archive all segments in one run.
Processing xlog segments from file archival for pg_server
        000003840000000000000004A
2025-01-14 13:01:48,071 [809639] barman.wal_archiver INFO: Archiving segment 1 of 3 from file archival: pg_server/000003840000000000000004A
        000003840000000000000004B
2025-01-14 13:01:48,163 [809639] barman.wal_archiver INFO: Archiving segment 2 of 3 from file archival: pg_server/000003840000000000000004B
        000003840000000000000004B.00000028.backup
2025-01-14 13:01:48,252 [809639] barman.wal_archiver INFO: Archiving segment 3 of 3 from file archival: pg_server/000003840000000000000004B.00000028
postgres@cdbtestdcserver1:/data/barman/backups/base$ ls -lrth
total 8.0K
drwxr-x--- 3 postgres postgres 4.0K Jan 14 12:59 20250114T125924
drwxr-x--- 3 postgres postgres 4.0K Jan 14 13:01 20250114T130143
postgres@cdbtestdcserver1:/data/barman/backups/base$ du -sch *
30M     20250114T125924
7.3M    20250114T130143
37M     total
```

4.Accidentally drop database emp:-

```
postgres=# \l
                                    List of databases
   Name    |  Owner   | Encoding | Collate |  Ctype  | ICU Locale | Locale Provider |   Access privileges
-----------+----------+----------+---------+---------+------------+-----------------+-----------------------
 emp       | postgres | UTF8     | C.UTF-8 | C.UTF-8 |            | libc            |
 postgres  | postgres | UTF8     | C.UTF-8 | C.UTF-8 |            | libc            |
 template0 | postgres | UTF8     | C.UTF-8 | C.UTF-8 |            | libc            | =c/postgres          +
           |          |          |         |         |            |                 | postgres=CTc/postgres
 template1 | postgres | UTF8     | C.UTF-8 | C.UTF-8 |            | libc            | =c/postgres          +
           |          |          |         |         |            |                 | postgres=CTc/postgres
 test      | postgres | UTF8     | C.UTF-8 | C.UTF-8 |            | libc            |
(5 rows)

postgres=# drop database emp;
DROP DATABASE
postgres=# \l
                                    List of databases
   Name    |  Owner   | Encoding | Collate |  Ctype  | ICU Locale | Locale Provider |   Access privileges
-----------+----------+----------+---------+---------+------------+-----------------+-----------------------
 postgres  | postgres | UTF8     | C.UTF-8 | C.UTF-8 |            | libc            |
 template0 | postgres | UTF8     | C.UTF-8 | C.UTF-8 |            | libc            | =c/postgres          +
           |          |          |         |         |            |                 | postgres=CTc/postgres
 template1 | postgres | UTF8     | C.UTF-8 | C.UTF-8 |            | libc            | =c/postgres          +
           |          |          |         |         |            |                 | postgres=CTc/postgres
 test      | postgres | UTF8     | C.UTF-8 | C.UTF-8 |            | libc            |
(4 rows)
```

5.Restore emp database:-

Restore lastest incremental backup:-

```
postgres@cdbtestdcserver1:/data/barman/backups/base$ barman recover pg_server  20250114T130143 /data/patroni_1
2025-01-14 13:07:00,736 [809757] barman.utils WARNING: Failed opening the requested log file. Using standard error instead.
2025-01-14 13:07:00,749 [809757] barman.wal_archiver INFO: No xlog segments found from streaming for pg_server.
2025-01-14 13:07:00,749 [809757] barman.wal_archiver INFO: No xlog segments found from file archival for pg_server.
Starting local restore for server pg_server using backup 20250114T130143
2025-01-14 13:07:00,752 [809757] barman.recovery_executor INFO: Starting local restore for server pg_server using backup 20250114T130143
Destination directory: /data/patroni_1
2025-01-14 13:07:00,752 [809757] barman.recovery_executor INFO: Destination directory: /data/patroni_1
2025-01-14 13:07:00,756 [809757] barman.recovery_executor WARNING: Unable to retrieve safe horizon time for smart rsync copy: The /data/patroni_1/.barman-re
Copying the base backup.
2025-01-14 13:07:00,763 [809757] barman.recovery_executor INFO: Copying the base backup.
2025-01-14 13:07:00,765 [809757] barman.copy_controller INFO: Copy started (safe before None)
2025-01-14 13:07:00,765 [809757] barman.copy_controller INFO: Copy step 1 of 4: [global] analyze PGDATA directory: /data/barman/backups/base/20250114T130143/
2025-01-14 13:07:00,895 [809757] barman.copy_controller INFO: Copy step 2 of 4: [global] create destination directories and delete unknown files for PGDATA (
ase/20250114T130143/data/
2025-01-14 13:07:00,958 [809757] barman.copy_controller INFO: Copy step 4 of 4: [global] skipping copy files with checksum from PGDATA directory: /data/barma
ata/
2025-01-14 13:07:00,958 [809772] barman.copy_controller INFO: Copy step 3 of 4: [bucket 0] starting copy safe files from PGDATA directory: /data/barman/backu
```

```
root@cdbtestdcserver1: ~
postgres@cdbtestdcserver1:/data/patroni_1$
postgres@cdbtestdcserver1:/data/patroni_1$
postgres@cdbtestdcserver1:/data/patroni_1$ ls -lrth
total 200K
drwx------ 2 postgres postgres 4.0K Sep 18 03:09 pg_twophase
drwx------ 2 postgres postgres 4.0K Sep 18 03:09 pg_tblspc
drwx------ 2 postgres postgres 4.0K Sep 18 03:09 pg_stat_tmp
drwx------ 2 postgres postgres 4.0K Sep 18 03:09 pg_snapshots
drwx------ 2 postgres postgres 4.0K Sep 18 03:09 pg_serial
drwx------ 2 postgres postgres 4.0K Sep 18 03:09 pg_notify
drwx------ 4 postgres postgres 4.0K Sep 18 03:09 pg_multixact
drwx------ 2 postgres postgres 4.0K Sep 18 03:09 pg_dynshmem
drwx------ 2 postgres postgres 4.0K Sep 18 03:09 pg_commit_ts
-rw------- 1 postgres postgres    3 Sep 18 03:09 PG_VERSION
drwx------ 2 postgres postgres 4.0K Sep 18 03:09 pg_xact
-rw------- 1 postgres postgres 1.6K Sep 22 00:45 pg_ident.conf
-rw------- 1 postgres postgres   88 Sep 22 00:45 postgresql.auto.conf.origin
-rw------- 1 postgres postgres  175 Sep 22 00:45 backup_label.old
drwx------ 2 postgres postgres 4.0K Sep 22 00:50 pg_subtrans
-rw-r--r-- 1 postgres postgres  935 Oct  1 14:13 postgresql.conf.backup
-rw------- 1 postgres postgres  29K Oct  1 14:13 postgresql.base.conf.backup
-rw------- 1 postgres postgres 1.6K Oct  1 14:13 pg_ident.conf.backup
-rw------- 1 postgres postgres 5.1K Oct  1 14:13 pg_hba.conf.backup
drwx------ 2 postgres postgres 4.0K Oct  1 14:13 pg_replslot
-rw------- 1 postgres postgres  190 Nov 25 17:02 patroni.dynamic.json
-rw-r--r-- 1 postgres postgres  935 Jan  7 16:07 postgresql.conf.origin
-rw------- 1 postgres postgres  29K Jan  7 16:47 postgresql.base.conf
drwx------ 2 postgres postgres 4.0K Jan  7 16:47 pg_stat
-rw------- 1 postgres postgres 5.3K Jan 10 19:10 pg_hba.conf
drwx------ 2 postgres postgres 4.0K Jan 14 00:00 log
-rw------- 1 postgres postgres   44 Jan 14 00:00 current_logfiles
drwx------ 7 postgres postgres 4.0K Jan 14 13:01 base
drwx------ 4 postgres postgres 4.0K Jan 14 13:01 pg_logical
drwx------ 2 postgres postgres 4.0K Jan 14 13:01 global
-rw-r----- 1 postgres postgres  243 Jan 14 13:01 backup_label
drwx------ 3 postgres postgres 4.0K Jan 14 13:07 pg_wal
-rw-r--r-- 1 postgres postgres  983 Jan 14 13:07 postgresql.conf
-rw------- 1 postgres postgres   88 Jan 14 13:07 postgresql.auto.conf
postgres@cdbtestdcserver1:/data/patroni_1$ pwd
/data/patroni_1
postgres@cdbtestdcserver1:/data/patroni_1$
```

root@cdbtestdcserver1: ~

```
postgres@cdbtestdcserver1:/data/patroni_1$
postgres@cdbtestdcserver1:/data/patroni_1$
postgres@cdbtestdcserver1:/data/patroni_1$
postgres@cdbtestdcserver1:/data/patroni_1$ /usr/lib/pgsql-15.6/bin/pg_ctl -D /data/patroni_1 start
waiting for server to start....2025-01-14 13:10:08.379 IST [809825] WARNING:  parameter "cron.log_statement" requires a Boolean value
2025-01-14 13:10:08.394 IST [809825] LOG:  redirecting log output to logging collector process
2025-01-14 13:10:08.394 IST [809825] HINT:  Future log output will appear in directory "log".
 done
server started
postgres@cdbtestdcserver1:/data/patroni_1$ psql
psql (15.6)
Type "help" for help.

postgres=# \l
                                      List of databases
   Name    |  Owner   | Encoding | Collate |  Ctype  | ICU Locale | Locale Provider |   Access privileges
-----------+----------+----------+---------+---------+------------+-----------------+-----------------------
 emp       | postgres | UTF8     | C.UTF-8 | C.UTF-8 |            | libc            |
 postgres  | postgres | UTF8     | C.UTF-8 | C.UTF-8 |            | libc            |
 template0 | postgres | UTF8     | C.UTF-8 | C.UTF-8 |            | libc            | =c/postgres          +
           |          |          |         |         |            |                 | postgres=CTc/postgres
 template1 | postgres | UTF8     | C.UTF-8 | C.UTF-8 |            | libc            | =c/postgres          +
           |          |          |         |         |            |                 | postgres=CTc/postgres
 test      | postgres | UTF8     | C.UTF-8 | C.UTF-8 |            | libc            |
(5 rows)

postgres=# \c emp
You are now connected to database "emp" as user "postgres".
emp=# select * from employees;
 id | first_name | last_name |         email          | hire_date
----+------------+-----------+------------------------+------------
  1 | John       | Doe       | john.doe@example.com   | 2025-01-14
  2 | Jane       | Smith     | jane.smith@example.com | 2024-12-15
(2 rows)

emp=# show data_directory;
 data_directory
-----------------
 /data/patroni_1
(1 row)

emp=#
```