Enable Primary / Secondary Synchronous Streaming Replication on Postgres 14

- **Download Postgresql on primary server**
  Download and install postgres 14.12-2 on Master node.

- **Modify postgresql.conf on Primary Server**
  the defaule installation path is C:\Program Files\PostgreSQL\14\data\
  Edit postgesql.conf on master machine and add the below properties
  wal_level = replica
  max_wal_senders = 10

  wal_keep_size = 16

  archive_mode = on

  archive_command = 'cp %p /mnt/archive%f'

  - `wal_level = replica`: Sets the level of information written to the WAL.
  - `max_wal_senders = 10`: Sets the maximum number of concurrent connections from standby servers.
  - `wal_keep_size = 16`: Specifies the amount of WAL files to keep for standby servers.
  - `archive_mode = on`: Enables WAL archiving.
  - `archive_command`: Specifies the shell command to use to archive a WAL file.

- **Modify pg_hba.conf**
  edit the pg_hba.conf file to allow replication connection from standby server.

add the following entry in pg_hba.conf file
host replication replicator standby_ip/32 md5

- `replicator` is the replication user.
- `standby_ip` is the IP address of the standby server.

Create a replicate User on Primary Server
CREATE USER replicator REPLICATION LOGIN ENCRYPTED PASSWORD 'your_password';

Restart Master Postgresql.

- **Install postgresql on Standby server**
  after installation stop the server.
- **Delete the data directory in postgresql**
- **Take backp of data directory from Master by using the command**
  pg_basebackup -h primary_ip -D c:\progra~1\PostgreSQL\14\data -U replicator -P -v --wal-method=stream
- **create an empty file on standby server data directory with name standby.signal**
- **Edit postgresql.conf file on standby server and add the following as per your environment**
  primary_conninfo = 'host=172.31.6.226 port=5432 user=replicator password=Xaana@2024'
  primary_slot_name = 'replication_slot'
- **On standby server after copying the data directory from master there is a permission problem on the directory to fix it right click on data directoy and click properties , click on security tab and click edit**
  and then click add and enter Network Services and click check names

then add it it give it full permissions on the directory,

- **Start the server on Standby server**
- **Create replication slot on Primary Server**
  SELECT * FROM pg_create_physical_replication_slot('replication_slot');
- **Test the Replication**
  create a table and and row on Primary server, you will see it replicated on Secondary server.