Postgres replication

1. Will create postgres-1 container.
2. Persist its data to volume.
3. Archiving and write-ahead-logging
4. Launch postgres-2 container
5. Postgres-2 container will take a backup from postgres-1 container (data volume)

It will automatically create data directory that is set up to stream from the main directory using utility called pg-based backup, this will give us volume which we can launch second postgres instance in standby mode.

pg-based backup: it’s a tool to create standby instance, it connects to primary as a replication user and take a backup and restore it to a data folder, this data folder will look almost like the same data folder of our postgres primary instance but this folder will be ready to receive replica requests from the primary.

From this data directory we will create docker volume for the standby instance, and once a new standby starts up, it will automatically read the transactions logs from the primary server and starts the replication process.

(statefulset- docker compose)

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Operator:

An Operator is an application-specific controller that extends the Kubernetes API to create, configure, and manage instances of complex stateful applications on behalf of a Kubernetes user.