PostgreSQL Cluster

Database Cluster:

* Database cluster is a collection of databases that is managed by a single instance on a server.
* Initdb creates a new PostgreSQL database cluster.
* Creating a database cluster consists of creating the directories in which the data is store. We call this the” data *directory”*.
* We have to first initialize the storage area on the disk before we begin any operation on the database.
* Location of Data Directory:

Linux: /var/lib/pgsql/data (Not mandatory)

Windows: C:\Program Files\PostgreSQL\12\data (Not mandatory)

Initdb:

* We have to be logged in as PostgreSQL user (Linux) to execute the below commands.
* There are two way to initialize database.
* Syntax:
* initdb -D /usr/local/pgsql/data(Linux)
* initdb -D -U postgres /usr/local/pgsql/data(Windows)
* pg\_ctl -D -U postgres /usr/local/pgsql/data initdb
* -D = refers to the data directory location.
* -W = we can use this option to force the super user to provide password before initialize db

Start\Stop Cluster:

* Start Cluster Syntax:

Linux: systemctl start postgresql-12

Windows: pg\_ctl –D “C:\Program Files\PostgreSQL\12 \data” start

* Stop Cluster Syntax:

Linux: systemctl stop postgresql-12

Windows: pg\_ctl stop -D “C:\Program Files\Postgresql \12\data” –m shutdown mode

Types of Shutdown:

* Smart: the server disallows new connections, but let’s existing sessions end their work normally. It shuts down only after all of the sessions terminate
* Fast :( Default): The server disallows new connections and abort their current transactions and exits gracefully.
* Immediate: Quits/aborts without proper shutdown which lead to recovery on next startup.

Difference between Reload and Restart.

* When we make changes to server parameters, we need to reload the configuration for them to take effect.
* Reload will just reload the new configurations, without restarting the service.
* Few configuration changes in server parameters, Do not get reflected until we restart the service.
* Restart gracefully shutdown all activity, relinquishes the resource, close all open files and start again with new configuration.

Reload\Restart Cluster:

* Syntax for Restart of Cluster:

On Linux: system reload posgresql-11

On windows: pg\_ctl reload

* Syntax for Reload of Cluster:

On Linux: systemctl restart postgresql-11

On Windows: pg\_ctl restart

* Psql Command line: SQL: SELECT pg\_reload\_conf(); (Irrespective of Env)

Pg\_Controldata:

* Pg\_controldata – Information about cluster.

Syntax:/pg\_controldata /var/lib/pgsql/12/data/

