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**POSTGRESQL DATABASE INSTALLATION**

**CLIENT INSTALL (v12)**

sudo yum -y update

sudo tee /etc/yum.repos.d/pgdg.repo<<EOF

[pgdg12]

name=PostgreSQL 12 for RHEL/CentOS 7 - x86\_64

baseurl=https://download.postgresql.org/pub/repos/yum/12/redhat/rhel-7-x86\_64

enabled=1

gpgcheck=0

EOF

cat /etc/yum.repos.d/pgdg.repo

[pgdg12]

name=PostgreSQL 12 for RHEL/CentOS 7 - x86\_64

baseurl=https://download.postgresql.org/pub/repos/yum/12/redhat/rhel-7-x86\_64

enabled=1

gpgcheck=0

sudo yum install postgresql12

==================================================================================================================================================================

SERVER INSTALLATION

##VERSION 12

Postgres instalation from package method or YUM method:

Pre-requisites:

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sudo dnf -y update

sudo dnf module list postgresql

--Optioonal

temporary turned off SSL check and installed the packages.

vi /etc/yum.conf

And then on the editor just add the following line

sslverify=false

Mandatory:

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• #make –version #GNU Make version should be 3.80 or above

• #rpm-qa gcc #GCC should be installed.

Optioal:

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• #rpm –qa readline #it is used for to re-call previous executed command on sql prompt.

• #rpm –qa zlib #It is used for data compression

Steps:

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step1:Get the Instructons from postgresql.org

sudo yum install -y https://download.postgresql.org/pub/repos/yum/reporpms/EL-6-x86\_64/pgdg-redhat-repo-latest.noarch.rpm

sudo yum install -y postgresql12-server

sudo service postgresql-12 initdb

sudo chkconfig postgresql-12 on

sudo service postgresql-12 start

Step-2:Install the Reposteries

sudo yum install -y https://download.postgresql.org/pub/repos/yum/reporpms/EL-6-x86\_64/pgdg-redhat-repo-latest.noarch.rpm

[root@machine4 ~]# sudo yum install -y https://download.postgresql.org/pub/repos/yum/reporpms/EL-6-x86\_64/pgdg-redhat-repo-latest.noarch.rpm

Freeing read locks for locker 0x5: 13205/140084433028864

Freeing read locks for locker 0x7: 13205/140084433028864

Loaded plugins: refresh-packagekit, security, ulninfo

Setting up Install Process

pgdg-redhat-repo-latest.noarch.rpm | 6.5 kB 00:00

Examining /var/tmp/yum-root-Wlrfc3/pgdg-redhat-repo-latest.noarch.rpm: pgdg-redhat-repo-42.0-11.noarch

Marking /var/tmp/yum-root-Wlrfc3/pgdg-redhat-repo-latest.noarch.rpm to be installed

Resolving Dependencies

--> Running transaction check

---> Package pgdg-redhat-repo.noarch 0:42.0-11 will be installed

--> Finished Dependency Resolution

Dependencies Resolved

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Package Arch Version Repository Size

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Installing:

pgdg-redhat-repo noarch 42.0-11 /pgdg-redhat-repo-latest.noarch 11 k

Transaction Summary

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Install 1 Package(s)

Total size: 11 k

Installed size: 11 k

Downloading Packages:

Running rpm\_check\_debug

Running Transaction Test

Transaction Test Succeeded

Running Transaction

Installing : pgdg-redhat-repo-42.0-11.noarch 1/1

Verifying : pgdg-redhat-repo-42.0-11.noarch 1/1

Installed:

pgdg-redhat-repo.noarch 0:42.0-11

Complete!

Step-2:Install the serve:

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[root@machine4 ~]# sudo yum install -y postgresql12-server

Loaded plugins: refresh-packagekit, security, ulninfo

Setting up Install Process

Resolving Dependencies

--> Running transaction check

---> Package postgresql12-server.x86\_64 0:12.6-2PGDG.rhel6 will be installed

--> Processing Dependency: postgresql12-libs(x86-64) = 12.6-2PGDG.rhel6 for package: postgresql12-server-12.6-2PGDG.rhel6.x86\_64

--> Processing Dependency: postgresql12(x86-64) = 12.6-2PGDG.rhel6 for package: postgresql12-server-12.6-2PGDG.rhel6.x86\_64

--> Running transaction check

---> Package postgresql12.x86\_64 0:12.6-2PGDG.rhel6 will be installed

---> Package postgresql12-libs.x86\_64 0:12.6-2PGDG.rhel6 will be installed

--> Finished Dependency Resolution

Dependencies Resolved

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Package Arch Version Repository Size

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Installing:

postgresql12-server x86\_64 12.6-2PGDG.rhel6 pgdg12 5.6 M

Installing for dependencies:

postgresql12 x86\_64 12.6-2PGDG.rhel6 pgdg12 1.7 M

postgresql12-libs x86\_64 12.6-2PGDG.rhel6 pgdg12 340 k

Transaction Summary

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Install 3 Package(s)

Total download size: 7.6 M

Installed size: 30 M

Downloading Packages:

(1/3): postgresql12-12.6-2PGDG.rhel6.x86\_64.rpm | 1.7 MB 00:02

(2/3): postgresql12-libs-12.6-2PGDG.rhel6.x86\_64.rpm | 340 kB 00:00

(3/3): postgresql12-server-12.6-2PGDG.rhel6.x86\_64.rpm | 5.6 MB 00:06

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Total 717 kB/s | 7.6 MB 00:10

warning: rpmts\_HdrFromFdno: Header V4 DSA/SHA1 Signature, key ID 442df0f8: NOKEY

Retrieving key from file:///etc/pki/rpm-gpg/RPM-GPG-KEY-PGDG

Importing GPG key 0x442DF0F8:

Userid : PostgreSQL RPM Building Project <pgsqlrpms-hackers@pgfoundry.org>

Package: pgdg-redhat-repo-42.0-11.noarch (@/pgdg-redhat-repo-latest.noarch)

From : /etc/pki/rpm-gpg/RPM-GPG-KEY-PGDG

Running rpm\_check\_debug

Running Transaction Test

Transaction Test Succeeded

Running Transaction

Installing : postgresql12-libs-12.6-2PGDG.rhel6.x86\_64 1/3

Installing : postgresql12-12.6-2PGDG.rhel6.x86\_64 2/3

Installing : postgresql12-server-12.6-2PGDG.rhel6.x86\_64 3/3

Verifying : postgresql12-server-12.6-2PGDG.rhel6.x86\_64 1/3

Verifying : postgresql12-12.6-2PGDG.rhel6.x86\_64 2/3

Verifying : postgresql12-libs-12.6-2PGDG.rhel6.x86\_64 3/3

Installed:

postgresql12-server.x86\_64 0:12.6-2PGDG.rhel6

Dependency Installed:

postgresql12.x86\_64 0:12.6-2PGDG.rhel6 postgresql12-libs.x86\_64 0:12.6-2PGDG.rhel6

Complete!

Step-3:Create the cluster

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[root@machine4 ~]# sudo service postgresql-12 initdb

Initializing database: [ OK ]

Step-4: execute the below one.

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[root@machine4 ~]# sudo chkconfig postgresql-12 on

Step-5:To start the services

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[root@machine4 ~]# sudo service postgresql-12 start

Starting postgresql-12 service: [ OK ]

Step-6:To check the cluster Data Directory

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[root@machine4 ~]# su - postgres

-bash-4.1$ ps -efa|grep postgres

postgres 13898 1 0 16:43 ? 00:00:00 /usr/pgsql-12/bin/postmaster -D /var/lib/pgsql/12/data

postgres 13900 13898 0 16:43 ? 00:00:00 postgres: logger

postgres 13902 13898 0 16:43 ? 00:00:00 postgres: checkpointer

postgres 13903 13898 0 16:43 ? 00:00:00 postgres: background writer

postgres 13904 13898 0 16:43 ? 00:00:00 postgres: walwriter

postgres 13905 13898 0 16:43 ? 00:00:00 postgres: autovacuum launcher

postgres 13906 13898 0 16:43 ? 00:00:00 postgres: stats collector

postgres 13907 13898 0 16:43 ? 00:00:00 postgres: logical replication launcher

root 14074 13795 0 16:46 pts/2 00:00:00 su - postgres

postgres 14075 14074 0 16:46 pts/2 00:00:00 -bash

postgres 14106 14075 3 16:46 pts/2 00:00:00 ps -efa

postgres 14107 14075 0 16:46 pts/2 00:00:00 grep postgres

Step-7:To connect the server

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#su - postgres

-bash-4.1$ psql

psql (8.4.20, server 12.6)

WARNING: psql version 8.4, server version 12.0.

Some psql features might not work.

Type "help" for help.

postgres=# \l

List of databases

Name | Owner | Encoding | Collation | Ctype | Access privileges

-----------+----------+----------+-------------+-------------+-----------------------

postgres | postgres | UTF8 | en\_US.UTF-8 | en\_US.UTF-8 |

template0 | postgres | UTF8 | en\_US.UTF-8 | en\_US.UTF-8 | =c/postgres

: postgres=CTc/postgres

template1 | postgres | UTF8 | en\_US.UTF-8 | en\_US.UTF-8 | =c/postgres

: postgres=CTc/postgres

(3 rows)

[root@machine1 ~]# ps -efa|grep postgres

postgres 3576 1 0 02:22 ? 00:00:00 /usr/pgsql-11/bin/postmaster -D /var/lib/pgsql/11/data

postgres 3578 3576 0 02:22 ? 00:00:00 postgres: logger

postgres 3580 3576 0 02:22 ? 00:00:00 postgres: checkpointer

postgres 3581 3576 0 02:22 ? 00:00:00 postgres: background writer

postgres 3582 3576 0 02:22 ? 00:00:00 postgres: walwriter

postgres 3583 3576 0 02:22 ? 00:00:00 postgres: autovacuum launcher

postgres 3584 3576 0 02:22 ? 00:00:00 postgres: stats collector

postgres 3585 3576 0 02:22 ? 00:00:00 postgres: logical replication launcher

root 3590 3342 0 02:22 pts/1 00:00:00 grep postgres

sudo yum install postgresql13 postgresql13-server

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##VERSION 14

sudo dnf -y update

sudo dnf module list postgresql

sudo dnf install -y https://download.postgresql.org/pub/repos/yum/reporpms/EL-8-x86\_64/pgdg-redhat-repo-latest.noarch.rpm

sudo dnf -qy module disable postgresql

sudo dnf install -y postgresql14-server

sudo /usr/pgsql-14/bin/postgresql-14-setup initdb

This will create the initial data as well as the main configuration file, which will be written to

/var/lib/pgsql/14/data/postgresql.conf

systemctl enable postgresql-14

systemctl status postgresql-14

systemctl start postgresql-14

service postgresql-14 status

sudo -u postgres psql

sudo -i -u postgres

psql

psql -c "alter user postgres with password 'M@PS0luti0ns'"

CREATE DATABASE testdb;

SHOW data\_directory;

data\_directory

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/var/lib/pgsql/14/data

mkdir /postgresql/data

chown -R postgres:postgres /postgresql/data

OLD DIR

/var/lib/pgsql/14/data

NEW DIR

/postgresql/data

chown -R postgres:postgres /postgresql/

service postgresql-14 stop

service postgresql-14 status

sudo rsync -av /var/lib/pgsql/14/data /postgresql/

vi /var/lib/pgsql/14/data/postgresql.conf

Output:

….

….

….

#------------------------------------------------------------------------------

# FILE LOCATIONS

#------------------------------------------------------------------------------

# The default values of these variables are driven from the -D command-line

# option or PGDATA environment variable, represented here as ConfigDir

data\_directory = '/postgresql/data' # use data in another directory

# (change requires restart)

hba\_file = '/etc/postgresql/9.5/main/pg\_hba.conf' # host-based authentication file

# (change requires restart)

ident\_file = '/etc/postgresql/9.5/main/pg\_ident.conf' # ident configuration file

….

….

listen\_addresses = '\*' # what IP address(es) to listen on;

cat /var/lib/pgsql/14/data/postgresql.conf

vi /var/lib/pgsql/14/data/postgresql.conf

data\_directory = '/dbdata/pgsql/data' # use data in another directory

# (change requires restart)

vi /var/lib/pgsql/14/data/pg\_hba.conf

# IPv4 local connections:

host all all 0.0.0.0/0 scram-sha-256

# IPv6 local connections:

host all all ::/0 scram-sha-256

RESTART/START

service postgresql-14 status

service postgresql-14 start

LOGIN

sudo -u postgres psql

or

sudo -i -u postgres

or

psql

SHOW data\_directory;

data\_directory

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/postgresql/data

(1 row)

4GB RAM / 4 CORE CPU

max\_connections = 10000

shared\_buffers = 7GB

wal\_buffers

effective\_cache\_size

max\_wal--4GB

work\_mem --2GB

maintenance\_work\_mem

Max\_parallel\_workers -- set to 8 or above)

max\_worker\_processes --set to 8 or above)

max\_parallel\_workers\_per\_gather (pls set to 6 or above)

temp\_buffers

Checkpoint timeout -- 30 min and max\_val\_size as 2gb is required

log\_statement

select \* from pg\_settings where name like '%max\_connections%';

select \* from pg\_settings where name like '%shared\_buffers%';

select \* from pg\_settings where name like '%wal\_buffers%';

select \* from pg\_settings where name like '%effective\_cache\_size%';

select \* from pg\_settings where name like '%max\_wal%';

select \* from pg\_settings where name like '%work\_mem%';

select \* from pg\_settings where name like '%maintenance\_work\_mem%';

select \* from pg\_settings where name like '%max\_parallel\_workers%';

select \* from pg\_settings where name like '%max\_worker\_processes%';

select \* from pg\_settings where name like '%max\_parallel\_workers\_per\_gather%';

select \* from pg\_settings where name like '%temp\_buffers%';

select \* from pg\_settings where name like '%checkpoint%';

select \* from pg\_settings where name like '%pg\_stat\_statements%';

select \* from pg\_settings where name like '%statement%';