**PostgreSQL Installation Steps**

**STEP 1:** Install the PostgreSQL RPMs as "root" user

# rpm -Uvh postgresql10-libs-10.4-1PGDG.rhel7.x86\_64.rpm

# rpm -Uvh postgresql10-10.4-1PGDG.rhel7.x86\_64.rpm

# rpm -Uvh postgresql10-docs-10.4-1PGDG.rhel7.x86\_64.rpm

# rpm -Uvh postgresql10-server-10.4-1PGDG.rhel7.x86\_64.rpm

# rpm -Uvh postgresql10-plpython-10.4-1PGDG.rhel7.x86\_64.rpm

# rpm -Uvh postgresql10-contrib-10.4-1PGDG.rhel7.x86\_64.rpm

# rpm -Uvh postgresql10-plperl-10.4-1PGDG.rhel7.x86\_64.rpm

**STEP 2:** Create "postgres" user home directory i.e. "/home/postgres" and change the permissions of "/home/postgres" directory.

# mkdir -p /home/postgres

# chown -R postgres:postgres /home/postgres

# chmod -R 755 /home/postgres

# cp /etc/skel/.bash\* /home/postgres

# chown postgres:postgre /home/postgres/.bash\_history

# chown postgres:postgres /home/postgres/.bash\_history

# chown postgres:postgres /home/postgres/.bash\_logout

# chown postgres:postgres /home/postgres/.bashrc

**STEP 3:** Update the ".bash\_profile" file by adding the following line at the end of the file so that PostgreSQL utilities are in the path of "postgres" user

export PATH=$PATH:/usr/pgsql-10/bin

**STEP 4:** Create the directory for hosting PostgreSQL database cluster and change the permissions as follows.

# mkdir -p /pgdata

# chown -R postgres:postgres /pgdata

# chmod -R 700 /pgdata

NOTE : Please make sure to set "700" as per the recommendations from PostgreSQL.

**STEP 5:** Create the database using "initdb" command as "postgres" user

[postgres@sd-f03d-8f5e ~]$ hostname

sd-f03d-8f5e.nam.nsroot.net

[postgres@sd-f03d-8f5e ~]$ date

Mon Jul 23 10:46:10 EDT 2018

[postgres@sd-f03d-8f5e ~]$ whoami

postgres

[postgres@sd-f03d-8f5e ~]$ which initdb

/usr/pgsql-10/bin/initdb

[postgres@sd-f03d-8f5e ~]$ /usr/pgsql-10/bin/initdb -D /pgdata

The files belonging to this database system will be owned by user "postgres".

This user must also own the server process.

The database cluster will be initialized with locale "en\_US.UTF-8".

The default database encoding has accordingly been set to "UTF8".

The default text search configuration will be set to "english".

Data page checksums are disabled.

fixing permissions on existing directory /pgdata ... ok

creating subdirectories ... ok

selecting default max\_connections ... 100

selecting default shared\_buffers ... 128MB

selecting dynamic shared memory implementation ... posix

creating configuration files ... ok

running bootstrap script ... ok

performing post-bootstrap initialization ... ok

syncing data to disk ... ok

WARNING: enabling "trust" authentication for local connections

You can change this by editing pg\_hba.conf or using the option -A, or

--auth-local and --auth-host, the next time you run initdb.

Success. You can now start the database server using:

    /usr/pgsql-10/bin/pg\_ctl -D /pgdata -l logfile start

**STEP 6:** Start the PostgreSQL database cluster using "pg\_ctl" command.

[postgres@sd-f03d-8f5e ~]$ /usr/pgsql-10/bin/pg\_ctl -D /pgdata start

waiting for server to start....2018-07-23 10:53:28.236 EDT [45589] LOG:  listening on IPv4 address "127.0.0.1", port 5432

2018-07-23 10:53:28.236 EDT [45589] LOG:  could not bind IPv6 address "::1": Cannot assign requested address

2018-07-23 10:53:28.236 EDT [45589] HINT:  Is another postmaster already running on port 5432? If not, wait a few seconds and retry.

2018-07-23 10:53:28.238 EDT [45589] LOG:  listening on Unix socket "/var/run/postgresql/.s.PGSQL.5432"

2018-07-23 10:53:28.242 EDT [45589] LOG:  listening on Unix socket "/tmp/.s.PGSQL.5432"

2018-07-23 10:53:28.255 EDT [45589] LOG:  redirecting log output to logging collector process

2018-07-23 10:53:28.255 EDT [45589] HINT:  Future log output will appear in directory "log".

done

server started

[postgres@sd-f03d-8f5e ~]$ ps -ef|grep -i postgres|grep -v grep

root     44470 41329  0 10:50 pts/0    00:00:00 sudo su - postgres

root     44471 44470  0 10:50 pts/0    00:00:00 su - postgres

postgres 44472 44471  0 10:50 pts/0    00:00:00 -bash

postgres 45589     1  0 10:53 pts/0    00:00:00 /usr/pgsql-10/bin/postgres -D /pgdata

postgres 45590 45589  0 10:53 ?        00:00:00 postgres: logger process

postgres 45592 45589  0 10:53 ?        00:00:00 postgres: checkpointer process

postgres 45593 45589  0 10:53 ?        00:00:00 postgres: writer process

postgres 45594 45589  0 10:53 ?        00:00:00 postgres: wal writer process

postgres 45595 45589  0 10:53 ?        00:00:00 postgres: autovacuum launcher process

postgres 45596 45589  0 10:53 ?        00:00:00 postgres: stats collector process

postgres 45597 45589  0 10:53 ?        00:00:00 postgres: bgworker: logical replication launcher

postgres 45598 44472  0 10:53 pts/0    00:00:00 ps -ef

**STEP 7:** Check the PostgreSQL database cluster status using "psql" command

[postgres@sd-f03d-8f5e ~]$ psql

psql (10.4)

Type "help" for help.

postgres=# \l

                                  List of databases

   Name    |  Owner   | Encoding |   Collate   |    Ctype    |   Access privileges

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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)

postgres=# select name, unit, setting from pg\_settings where name like '%file%';

         name          | unit |                setting

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config\_file           |      | /pgdata/postgresql.conf

external\_pid\_file     |      |

hba\_file              |      | /pgdata/pg\_hba.conf

ident\_file            |      | /pgdata/pg\_ident.conf

krb\_server\_keyfile    |      | FILE:/etc/sysconfig/pgsql/krb5.keytab

log\_file\_mode         |      | 0600

log\_filename          |      | postgresql-%a.log

log\_temp\_files        | kB   | -1

max\_files\_per\_process |      | 1000

ssl\_ca\_file           |      |

ssl\_cert\_file         |      | server.crt

ssl\_crl\_file          |      |

ssl\_dh\_params\_file    |      |

ssl\_key\_file          |      | server.key

temp\_file\_limit       | kB   | -1

(15 rows)

postgres=# \q

**PostgreSQL database configuration file :** /pgdata/postgresql.conf

**PostgreSQL Host Based Authentication file :** /pgdata/pg\_hba.conf