xCAT 2 Setup PostgreSQL

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1.0 Switching to PostgreSQL Database on Linux

To set up the postgresql database on the Management Node follow these steps.

This example assumes:
- 11.16.0.1: IP of management node (cluster-facing NIC)
- xcatdb: database name
- xcatadmin: database role (aka user)
- cluster: database password
- 11.16.1.230 & 11.16.2.230: service nodes (mgmt node facing NIC)

Substitute your addresses and desired userid , password and database name as appropriate.

1.1 Install PostgreSQL

The following rpms should be installed from the Linux media on the Management Node (and service node when installed). These are required for postgresql.   The postgreSQL rpms are part of the base Linux OS.

1. ```
install perl-DBD-Pg postgresql-server postgresql
```

2. Initialize the database :
```
service postgresql initdb
```

3. ```
service postgresql start
```

4. ```
su - postgres
```

5. ```
createuser -SDRP xcatadmin
Enter password for new role: cluster
Enter it again: cluster
```

6. ```
createdb -O xcatadmin xcatdb
```

7. ```
exit
```

8. ```
cd /var/lib/pgsql/data/
```

```
9. vi pg_hba.conf
```

Lines should look like this (with your IP addresses substituted). This allows the service nodes to access the DB.

```
local all all ident sameuser
# IPv4 local connections:
host all all 127.0.0.1/32 md5
host all all 11.16.0.1/32 md5
host all all 11.16.1.230/32 md5
host all all 11.16.2.230/32 md5
```

where 11.16.0.1 is the MN and 11.16.1.230 and 11.16.2.230 are service nodes.

```
10.vi postgresql.conf
```
   set listen_addresses to '*':

```
listen_addresses = '*'   # This allows remote access.
```
Note: Be sure to uncomment the line

If you are working on large systems, you may need to increate the max_connections attribute in the file. This is the number of connections that can be make to the database at one time. If you are using service nodes, it is recommended that you

 set max_connections = 1000

```
11.service postgresql restart
12.chkconfig postgresql on
```

1.2 Migrate your database to PostgreSQL

1. Backup your database to migrate to the new database. (This is required even if you have not added anything to your xCAT database yet. Required default entries were created when the xCAT RPMs were installed on the management node which, and they must be migrated to the new postgresql database.)

```
mkdir -p ~/xcat-dbback
dumpxCATdb -p ~/xcat-dbback
```

2. /etc/xcat/cfgloc file should contain the following line, substituting your specific info. This points the xCAT database access code to the new database.

```
Pg:dbname=xcatdb;host=11.16.0.1|xcatadmin|cluster
```

 change to allow only root access:
```
chmod 0600 /etc/xcat/cfgloc
```

3. Restore your database to postgresql (bypass mode runs the command without xcatd):

```
XCATBYPASS=1 restorexCATdb -p ~/xcat-dbback
```

4. Start the xcatd daemon using the postgresql database
```
service xcatd restart
```

1.3 Using Postgreql (psql command line interface)

If you want to access the database through the Postgresql (psql) command, to check the database, enter the following

psql -h <hostname> -U xcatadmin -d xcatdb   (note hostname must be from the pg_hba.conf file) and you will be prompted for the password (cluster).

You can then run sql commands on the database.

Run   \h for a list of commands
Run \g so SQL commands can end in ;
Then
select * from nodelist;   to see table entries
\dt list all tables