**Creating a Postgres-XL cluster**

1. **Perquisite:**

**Yum update**

Yum groupinstall –y “Development tools”

yum install readline-devel

( Installing : ncurses-devel-5.7-4.20090207.el6.x86\_64)

Yum install zlib-devel

Passwordless ssh:

yum install -y openssh-server openssh-clients openssh

ssh-keygen -t rsa

cat ~/.ssh/id\_rsa.pub >> ~/.ssh/authorized\_keys

chmod 0600 ~/.ssh/authorized\_keys

service sshd start

ssh postgres@172.17.0.4 mkdir -p .ssh

cat .ssh/id\_rsa.pub | ssh postgres@172.17.0.4 'cat >> .ssh/authorized\_keys'

ssh postgres@172.17.0.4 "chmod 700 .ssh; chmod 640 .ssh/authorized\_keys"

ssh postgres@172.17.0.4

yum install -y tar

1. **Create the cluster of 4 nodes**

* **GTM**

hostname=host1  
nodename=gtm  
IP=192.168.187.130  
port=6666

* **Coordinator**

hostname=host2  
nodename=coord1  
IP=192.168.187.131  
pooler\_port=6668，port=5432

* **Datanode1**

hostname=host3  
nodename=datanode1  
IP=192.168.187.132  
pooler\_port=6669, port=15432

* **Datanode2**

hostname=host4  
nodename=datanode2  
IP=192.168.187.133  
pooler\_port=6670, port=15433

1. **Create the account postres in centos**

adduser postgres

* + **Add user to wheel folder**

Usermod –aG Wheel postgres

* + **Switch to postgres**

su postgres

1. **Create the folder postgres-xl in /opt directory**

cd /opt

mkdir postgres-xl

cd postgres-xl

1. **Download and untar the postgress-xl**

wget <https://nchc.dl.sourceforge.net/project/postgres-xl/Releases/Version_9.5r1/postgres-xl-9.5r1.4.tar.gz>

tar –zxvf postgres-xl-9.5r1.4.tar.gz

1. **Install postres-xl using the make**

cd /opt/postgres-xl/postgres-xl-9.5r1.4

./configure

make

* **Now switch to root user**

make install

By default, Postgres-xl is installed in usr/local/pgsql/

* **Setting the environmental variables in bashrc**

vim ~/.bashrc

#postgres Enviroment Variables Starts

export POST\_HOME=/usr/local/pgsql

export PATH=$POST \_HOME/bin:$PATH

#postgres Enviroment Variables Ends

source ~/.bashrc

**Install the postgres-xl with above steps in all the four nodes**

1. **Installing the pgxc\_ctl on host1(GTM):**

* **Switch to postgres user**

su postgres

* **Building the pgxc\_ctl:**
* **go to the directory ptxc\_ctl**

cd /opt/postgres-xl/postgres-xl-9.5r1.4/contrib/pgxc\_ctl

make

* **Switch to root**

su root

make install

1. **Build the Cluster:**

* **Switch to the User postgres and do the following**

cd /opt/postgres-xl/postgres-xl-9.5r1.4/contrib/pgxc\_ctl

vim pgxc\_ctl.conf

#user and path

pgxcOwner=postgres  
pgxcUser=$pgxcOwner  
pgxcInstallDir=/usr/local/pgsql

#gtm and gtmproxy  
gtmMasterDir=$HOME/pgxc/nodes/gtm  
gtmMasterPort=6666  
gtmMasterServer=192.168.187.130  
gtmSlave=n

#gtm proxy  
gtmProxy=n

#coordinator  
coordMasterDir=$HOME/pgxc/nodes/coord  
coordNames=(coord1)  
coordPorts=(5432)  
poolerPorts=(6668)  
coordPgHbaEntries=(192.168.187.0/24)  
coordMasterServers=(192.168.187.131)  
coordMasterDirs=($coordMasterDir/coord1)  
coordMaxWALsernder=0  
coordMaxWALSenders=($coordMaxWALsernder)  
coordSlave=n  
coordSpecificExtraConfig=(none none none)  
coordSpecificExtraPgHba=(none none none)

#datanode  
datanodeNames=(datanode1 datanode2)  
datanodePorts=(15432 15433)  
datanodePoolerPorts=(6669 6670)  
datanodePgHbaEntries=(192.168.187.0/24)  
datanodeMasterServers=(192.168.187.132 192.168.187.133)  
datanodeMasterDir=$HOME/pgxc/nodes/dn\_master  
datanodeMasterDirs=($datanodeMasterDir/datanode1 $datanodeMasterDir/datanode2)  
datanodeMaxWalSender=0  
datanodeMaxWALSenders=($datanodeMaxWalSender $datanodeMaxWalSender)  
datanodeSlave=n  
primaryDatanode=datanode1

1. **Create the Cluster**

* **Run following command to create the cluster**

pgxc\_ctl init all

This will initialize and start all nodes of the cluster

1. **Test the cluster**

* **Switch to the Postgres user**

su postgres

* **Create the Database:**

*On host1, start the pgxc\_ctl*

pgxc\_ctl

Createdb test

This will create the database ‘test’

A database named ‘test’ should exists in both Datanodes

* **Connect to the Coordinator Create table, insert data and read data**

cd /usr/local/pgsql/bin/

psql test  
test=# create table contact( id int, name text, phone varchar(30)) DISTRIBUTE BY REPLICATION;  
test=# insert into contact values ( 1,’tom’,’1212121′);  
test=# select \* from contact;

* **Read data on datanode1**

*On host3, connect to datanode1 and read data,*

cd /usr/local/pgsql/bin/

psql test -p 15432  
select \* from contact;

* **Read data on datanode2**

*On host4, connect to datanode2 and read data,*cd /usr/local/pgsql/bin/

psql test -p 15433  
select \* from contact;

* **Stop the cluster**

On host1, start pgxc\_ctl,  
pgxc\_ctl

1. **Then input following command to stop the cluster,**stop all