**Greenplum database CE installation guide**

**CE 4.2.2.4 on RH5**

* **First, configure OS parameters for all hosts including the master and segment hosts**

1. Copy the greenplum CE zip package to the master RH5 Linux, and unzip it
2. Open README\_INSTALL file as a reference
3. su to root and Config /etc/sysctl.conf, /etc/security/limits.conf, /etc/hosts according to the README\_INSTALL
4. As root, set read ahead value to 16384 for each disk device   
   */sbin/blockdev --getra /dev/sd\* # verify if they have 16384 read ahead size  
   /sbin/blockdev --setra 16384 /dev/sd\**
5. Repeat step 3) and 4) for all seg-hosts

* **Second, install the db on master (actually we are just unpacking the bin package, which will be for use later)**

1. As root, execute the following command to install the db (accepts all default (yes), unless we need customize the installation path etc)  
   */bin/bash greenplum-db-4.2.2.4-build-1-CE-RHEL5-x86\_64.bin*

* **Then install the db on all hosts (including the master and the segment hosts) from the master node**

1. As root, *source /usr/local/greenplum-db/greenplum\_path.sh*
2. Create *hostfile\_exkeys* which contains the hostname and the host interface. If there are multiple interfaces for each host, put all of the host interfaces below under the host name. Make sure all of the host names in this file are in the /etc/hosts file. If we are installing single node, then there will be only master hostname and interface showing in this file.  
   *lpgpdev # Master hostname  
   10.5.6.37 # Master ip interface1  
   10.5.6.38 # Master ip interface 2  
   lpgpdev2 # Segment hostname  
   10.5.6.36 # Segement host ip interface   
   …*
3. Execute the following command to exchange the RSA keys for all hosts (including master and seg-hosts)  
   *gpssh-exkeys -f hostfile\_exkeys*
4. Execute the following command to install gp db on all hosts (this command will create gpadmin user/group account, install the gp database and chown the gp db installation dir (/usr/local/greenplum-db) to gpadmin/gpadmin etc)  
   *gpseginstall -f hostfile\_exkeys -u gpadmin –p gpadmin*
5. Verify all of the installation is good.
   1. Logon master as gpadmin or “su - gpadmin” if we are already on the master
   2. *source /usr/local/greenplum-db/greenplum\_path.sh*
   3. if the following cmd executes without issues, we are good *gpssh -f hostfile\_exkeys -e ls -l $GPHOME*
   4. if we are prompted for a password, then rerun the following cmd to reexchange the RSA key *gpssh-exkeys -f hostfile\_exkeys*

* **Create the data storage areas**

1. Create data directory location on master
   1. As root, *mkdir -p /data/master*
   2. *chown gpadmin /data/master*
   3. If we have standby master, then create master directory location on the standby master, for eg:  
      *source /usr/local/greenplum-db/greenplum\_path.sh  
      gpssh -h sandby-master-hostname -e ‘mkdir -p /data/master’  
      pssh -h sandby-master-hostname -e ‘chown gpadmin /data/master’*
2. Create data directory location on seg-hosts from master
   1. su - root, create a file called *hostfile\_gpssh\_segonly*. This file should have only one machine configured hostname for each seg-host. For eg, the following contains two seg-hosts:  
      *lpgpdev   
      lpgpdev2*
   2. Create the primary and mirror data directory locations on all seg-hosts, for eg: *source /usr/local/greenplum-db/greenplum\_path.sh  
      gpssh -f hostfile\_gpssh\_segonly -e ‘mkdir -p /data/primary’  
      gpssh -f hostfile\_gpssh\_segonly -e ‘mkdir -p /data/mirror’  
      gpssh -f hostfile\_gpssh\_segonly -e ‘chown gpadmin /data/primary’  
      gpssh -f hostfile\_gpssh\_segonly -e ‘chown gpadmin /data/mirror’*

* **Synchronize System Clock (for multiple nodes only)**

1. Log on master as root, edit /etc/ntp.conf file to let it point to a NTP time server. For eg (if there is no public NTP server, we can setup one on the master): *server 10.5.6.36*
2. On each seg-host, login as root and edit /etc/ntp.conf, set the fist server parameter to point to the master host, and the second server parameter to the standby master host. For eg:  
   *server master\_hostname(or ip) prefer  
   server standby\_master\_hostname(or ip)*
3. On the standby master host, login as root, edit the /etc/ntp.conf to set the first server parameter to point to the primary master host, and the second server parameter to the public NTP server. For eg:  
   *server master\_hostname(or ip) prefer  
   server 10.5.6.36*
4. On the master host, use the NTP deamon synchronize the system clocks on all Greenplum hosts. For eg: *gpssh -f hostfile\_gpssh\_allhosts -v -e ‘ntpd’*

* **Initialize the Greenplum database system**

1. Create the initialization host file – gpinitsystem\_config, this file should only contain seg-host addresses (not master or standby master, but for single node configuration, seg-host is actually also master host). For seg-host with more than one network interface, this file should list the host address names for each interface – one per line.
2. Log in master host as gpadmin, create a file named *hostfile\_gpinitsystem*. Add the ip address of the seg-host interfaces. For eg, the following shows 4 seg-hosts each with 2 network interfaces.  
   *sdw1-1  
   sdw1-2  
   sdw2-1  
   sdw2-2  
   sdw3-1  
   sdw3-2  
   sdw4-1  
   sdw4-2*
3. Make a copy of *gpinitsystem\_config* from $GPHOME/docs/cli\_help/gpconfigs/gpinitsystem\_config. Edit the file with vim. For eg (without mirror segments):  
   *ARRAY\_NAME="EMC Greenplum DW"  
   SEG\_PREFIX=gpseg  
   PORT\_BASE=40000  
   declare -a DATA\_DIRECTORY=(/data1/primary /data1/primary /data1/primary /data2/primary /data2/primary /data2/primary)  
   MASTER\_HOSTNAME=mdw  
   MASTER\_DIRECTORY=/data/master  
   MASTER\_PORT=5432  
   TRUSTED SHELL=ssh  
   CHECK\_POINT\_SEGMENT=8  
   ENCODING=UNICODE*
4. Create data directory. *mkdir -p /data1/primary /data2/primary*
5. Initialize the database system  
   *gpinitsystem -c gpinitsystem\_config -h hostfile\_gpinitsystem*
6. Add the following lines to /home/gpadmin/.bashrc and then source ~/.bashrc  
   *# User specific aliases and functions  
   source /usr/local/greenplum-db/greenplum\_path.sh  
     
   MASTER\_DATA\_DIRECTORY=/data/master/gpseg-1  
   export MASTER\_DATA\_DIRECTORY*
7. Verify the database and create database/role  
   *[gpadmin@lpgpdev2 gp\_ce]$ psql -d postgres –U gpadmin  
   postgres-#\l; => list all databases  
   postgres=# CREATE DATABASE launchpad TEMPLATE template0;  
   postgres=# CREATE ROLE ecrpuser WITH LOGIN;  
   postgres=# ALTER ROLE ecrpuser WITH PASSWORD 'emc123';  
   postgres=# ALTER ROLE ecrpuser VALID UNTIL 'infinity';*
8. Add the following entry to $MASTER\_DATA\_DIRECTORY/pg\_hba.conf  
   *host launchpad ecrpuser 0.0.0.0/0 password 🡸 new entry*
9. Load the new pg\_hba.conf  
   *[gpadmin@lpgpdev2 gp\_ce]$ pg\_ctl reload -D $MASTER\_DATA\_DIRECTORY*