1. *Galera Cluster is a synchronous multi-master database cluster, based on synchronous replication and Oracle’s MySQL/InnoDB.*
2. *When Galera Cluster is in use, you can direct reads and writes to any node.*
3. *HAProxy is a very fast and reliable solution for high availability, load balancing, It supports TCP and HTTP-based applications.*
4. *Nowadays maximizing websites up-time is very crucial for heavy traffic websites.*
5. *It is not possible with a single server setup. Then we need some high availability environment which can easily manage with a single server failure.*

***Percona XtraDB Cluster with Haproxy***

*percona1 192.168.72.80*

*percona2 192.168.72.81*

*haproxy 192.168.72.85*

***Now disable selinux***

*vi /etc/sysconfig/selinux*

*SELINUX=disabled*

save the configuration file and do

*init 6*

***Now Add port for firewall***

*firewall-cmd --permanent --add-port={3306/tcp,4444/tcp,4567/tcp,4568/tcp}*

*firewall-cmd --reload*

***Now Install percona repository***

yum install https://repo.percona.com/yum/percona-release-latest.noarch.rpm

vi /etc/yum.repos.d/percona-original-release.repo

*gpgcheck=0*

*gpgcheck=0*

*yum install Percona-XtraDB-Cluster-57 -y*

*systemctl start mysqld*

***Run the below command for getting the temporary password***

sudo grep 'temporary password' /var/log/mysqld.log

***u will get temp pass like this***

******

***Enter password in mysql***

*mysql -u root -p*

*password:* *{paste above temporary password}*

*mysql> ALTER USER 'root'@'localhost' IDENTIFIED BY 'temp';*

*mysql> exit*

*systemctl stop mysqld*

***And now open file given below***

*vi /etc/my.cnf*

*[mysqld]*

*wsrep\_provider=/usr/lib64/galera3/libgalera\_smm.so*

*wsrep\_cluster\_name=pxc-cluster*

*wsrep\_cluster\_address=gcomm://192.168.72.80,192.168.72.81*

*wsrep\_node\_name=pxc1*

*wsrep\_node\_address=192.168.72.80*

*wsrep\_sst\_method=xtrabackup-v2*

*wsrep\_sst\_auth=sstuser:temp*

*pxc\_strict\_mode=ENFORCING*

*binlog\_format=ROW*

*default\_storage\_engine=InnoDB*

*innodb\_autoinc\_lock\_mode=2*

***These steps should be on both nodes and after that we need to configure only at first node***

*systemctl start mysql@bootstrap*

*mysql -u root -p*

*mysql> CREATE USER 'sstuser'@'localhost' IDENTIFIED BY 'temp';*

*mysql>GRANT RELOAD, LOCK TABLES, PROCESS, REPLICATION CLIENT ON \*.\* TO 'sstuser'@'localhost';*

*mysql>FLUSH PRIVILEGES;*

***After it we will start mysql on second node***

*systemctl start mysqld*

mysql -u root -p

*mysql> show status like '%wsrep%';*

***At both cluster node run the following commands.***

*yum install xinetd*

*service xinetd restart*

***Open the file given below***

*vi /etc/services*

***Add the following lines to the end of file***

mysqlchk 9200/tcp # mysqlchk

Then go in mysql and create clustercheckuser for sync the both nodes with haproxy..........!!!!!!

*mysql -u root -p*

*mysql> GRANT PROCESS ON \*.\* TO 'clustercheckuser'@'localhost' IDENTIFIED BY 'clustercheckpassword!';*

*mysql> flush privileges;*

***Now Check the cluster is sync or not***

*clustercheck*

***At load balancer node run the following command.***

yum install haproxy

*Now Configure /etc/haproxy/haproxy.cfg*

*vi /etc/haproxy/haproxy.cfg*

global

log 127.0.0.1 local0

log 127.0.0.1 local1 notice

maxconn 4096

chroot /usr/share/haproxy

user haproxy

group haproxy

daemon

defaults

log global

mode http

option tcplog

option dontlognull

retries 3

option redispatch

maxconn 2000

contimeout 5000

clitimeout 50000

srvtimeout 50000

frontend pxc-front

bind \*:3306

mode tcp

default\_backend pxc-back

frontend stats-front

bind \*:8080

mode http

default\_backend stats-back

backend pxc-back

mode tcp

balance leastconn

option httpchk

server percona1 192.168.72.80:3306 check port 9200 inter 12000 rise 3 fall 3

server percona2 192.168.72.81:3306 check port 9200 inter 12000 rise 3 fall 3

backend stats-back

mode http

balance roundrobin

stats enable

stats uri /haproxy?stats

stats auth abhi:temp

***Now check the syntax***

*haproxy -f /etc/haproxy/haproxy.cfg*

service haproxy restart

***we need to stop firewall***

*systemctl stop firewalld*

***we also need to check port is listening or not***

*netstat -ntl*

***If ok then open the browser and type***

*http://192.168.72.82:8080/haproxy?stats*