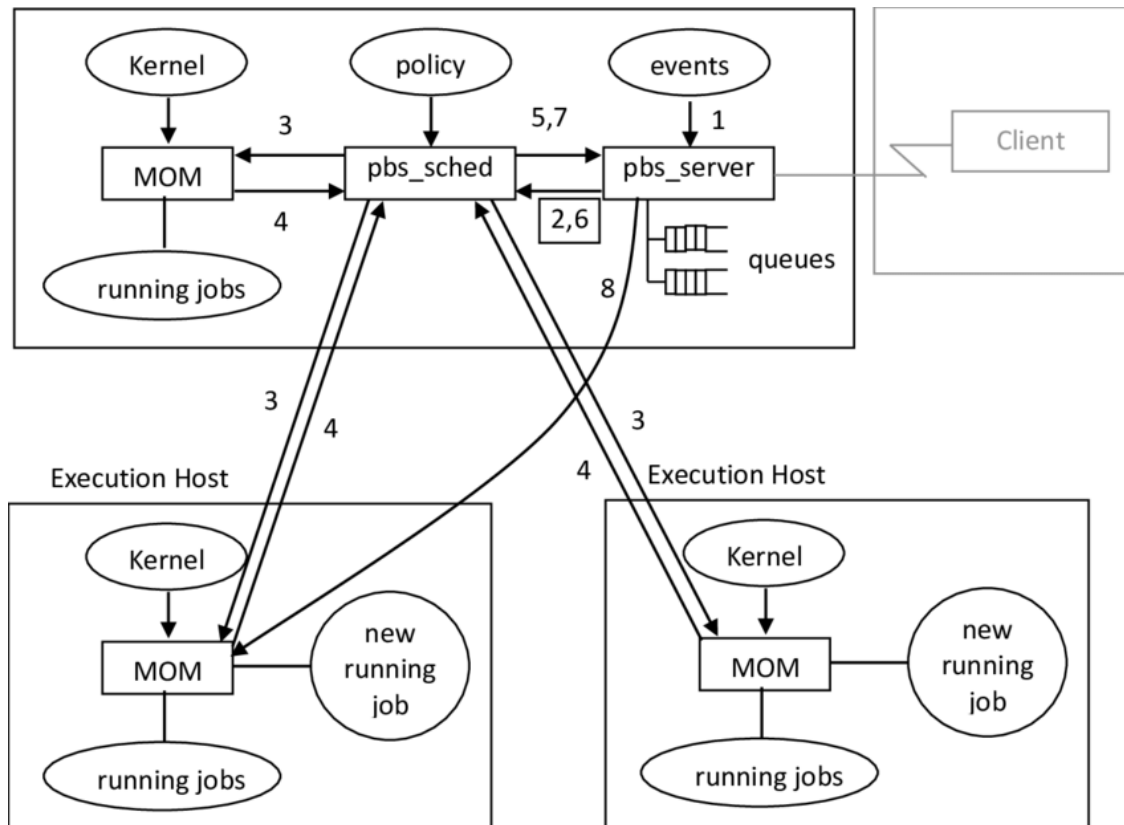


#####OPEN PBS#####

Portable Batch System

The Portable Batch System (PBS) system is **designed to manage the distribution of batch jobs and interactive sessions across the available nodes in the cluster.**



MOM-Machine Oriented Miniserver

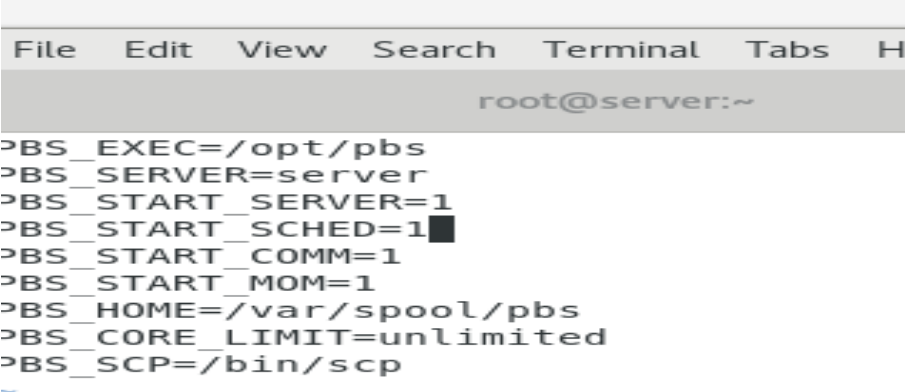
Prerequisite

```
systemctl disable firewalld
vi /etc/selinux/config
nano /etc/hosts
```

SERVER

- `yum install -y gcc make rpm-build libtool hwloc-devel \`
`libX11-devel libXt-devel libedit-devel libical-devel \`
`ncurses-devel perl postgresql-devel postgresql-contrib python3-devel tcl-devel \`
`tk-devel swig expat-devel openssl-devel libXext libXft \`
`autoconf automake gcc-c++`
- `yum install -y expat libedit postgresql-server postgresql-contrib python3 \`
`> sendmail sudo tcl tk libica`
- `wget https://github.com/openpbs/openpbs/archive/refs/tags/v20.0.1.tar.gz`
- `mv v20.0.1.tar.gz openpbs-20.0.1.tar.gz`

- `rpmbuild -ta openpbs-20.0.1.tar.gz`
- `yum install libtool-ltdl-devel`
- `rpmbuild -ta openpbs-20.0.1.tar.gz`
- `Cd /root/rpmbuild/RPMS/x86_64/`
- `Vi /etc/pbs.conf`



```
File Edit View Search Terminal Tabs H
root@server:~
>PBS_EXEC=/opt/pbs
>PBS_SERVER=server
>PBS_START_SERVER=1
>PBS_START_SCHED=1
>PBS_START_COMM=1
>PBS_START_MOM=1
>PBS_HOME=/var/spool/pbs
>PBS_CORE_LIMIT=unlimited
>PBS_SCP=/bin/scp
```

- `/etc/init.d/pbs start`

```
[root@server etc]# /etc/init.d/pbs start
Starting PBS
PBS Home directory /var/spool/pbs needs updating.
Running /opt/pbs/libexec/pbs_habitat to update it.
***
*** Setting default queue and resource limits.
***
Connecting to PBS dataservice.....connected to PBS dataservice@server
*** End of /opt/pbs/libexec/pbs_habitat
Home directory /var/spool/pbs updated.
/opt/pbs/sbin/pbs_comm ready (pid=49570), Proxy Name:server:17001, Threads:4
PBS comm
PBS mom
PBS sched
Connecting to PBS dataservice.....connected to PBS dataservice@server
Licenses valid for 10000000 Floating hosts
PBS server
```
- `./etc/profile.d/pbs.sh` → to set the environment in systempath
- `qstat` → Squeue
- `qsub` → Sbatch
- `qdel` → Scancel
- `qsub -l` → login to user (su - hpcsa) to submit the job

Now add node

- `rsync`
`/root/rpmbuild/RPMS/x86_64/openpbs-execution-20.0.1-0.x86_64.rpm`
`root@node1:/root`
- `rsync`
`/root/rpmbuild/RPMS/x86_64/openpbs-execution-20.0.1-0.x86_64.rpm`
`root@node2:/root`

On node1

- rpm -ivh openpbs-execution-20.0.1-0.x86_64.rpm
- yum install hwloc-libs
- yum install libhwloc.so.5* -y
- yum install libpython3.6m.so.1.0* -y
- yum install libtcl8.5.so* -y
- yum install libtk8.5.so* -y
- yum install python3* -y
- rpm -ivh openpbs-execution-20.0.1-0.x86_64.rpm
- vi /var/spool/pbs/mom_priv/config

```
$clienthost server
```

- vi /etc/pbs.conf

```
PBS_EXEC=/opt/pbs
PBS_SERVER=server
PBS_START_SERVER=0
PBS_START_SCHED=0
PBS_START_COMM=0
PBS_START_MOM=1
PBS_HOME=/var/spool/pbs
PBS_CORE_LIMIT=unlimited
PBS_SCP=/bin/scp
```

- . /etc/init.d/pbs start
- . /etc/profile.d/pbs.sh

On node2

Same as node1

On Server

- vi /var/spool/pbs/server_priv/nodes

```
node1 np=1
node2 np=1
```

-
- qmgr -c "create node node1"
- qmgr -c "create node node2"
- . /etc/profile.d/pbs.sh
- pbsnodes -a → to see the active nodes.

```
[root@server ~]# pbsnodes -a
server
  Mom = server
  Port = 15002
  pbs_version = 20.0.1
  ntype = PBS
  state = free
  pcpus = 12
  resources_available.arch = linux
  resources_available.host = server
  resources_available.mem = 3861000kb
  resources_available.ncpus = 12
  resources_available.vnode = server
  resources_assigned.accelerator_memory = 0kb
  resources_assigned.hbmem = 0kb
  resources_assigned.mem = 0kb
  resources_assigned.naccelerators = 0
  resources_assigned.ncpus = 0
  resources_assigned.vmem = 0kb
  resv_enable = True
  sharing = default_shared
  last_state_change_time = Mon Jan 23 16:03:00 2023
  last_used_time = Mon Jan 23 15:28:45 2023

node1
  Mom = node1
  Port = 15002
  pbs_version = 20.0.1
  ntype = PBS
  state = free
  pcpus = 12
  resources_available.arch = linux
  resources_available.host = node1
  resources_available.mem = 3861000kb
  resources_available.ncpus = 12
  resources_available.vnode = node1
  resources_assigned.accelerator_memory = 0kb
  resources_assigned.hbmem = 0kb
  resources_assigned.mem = 0kb
  resources_assigned.naccelerators = 0
  resources_assigned.ncpus = 0
  resources_assigned.vmem = 0kb
  resv_enable = True
  sharing = default_shared
  last_state_change_time = Mon Jan 23 16:03:00 2023

node2
  Mom = node2
  Port = 15002
  pbs_version = 20.0.1
  ntype = PBS
  state = free
  pcpus = 12
  resources_available.arch = linux
  resources_available.host = node2
  resources_available.mem = 3861000kb
  resources_available.ncpus = 12
  resources_available.vnode = node2
  resources_assigned.accelerator_memory = 0kb
  resources_assigned.hbmem = 0kb
  resources_assigned.mem = 0kb
  resources_assigned.naccelerators = 0
  resources_assigned.ncpus = 0
  resources_assigned.vmem = 0kb
  resv_enable = True
  sharing = default_shared
  last_state_change_time = Mon Jan 23 16:20:07 2023
```