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Install torque on a single node Centos 6.4

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by Peter Schmidtke

PBS is widely used as queuing system on small size to huge clusters. This is just a little post to resume somehow all installation steps necessary to get a single node torque server running on Centos 6.4 (64bit). Don't ask yourself about the use of this. You can definitely manage intelligently a heavy workload on a single machine, but here we want to do this mainly for having a development framework around torque / PBS for bigger clusters...so it'll just be a sort of testing environment. Torque is a fork of PBS and as such is very similar to the widely used PBS Pro.

Resolving dependencies :

I considered a self compiled installation of torque, so for this a few dependencies are necessary :

```
[root]# yum install libxml2-devel
```

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```
openssl-devel gcc gcc-c++ boost-  
devel
```

Configuring your firewall :

Open the following ports for tcp on your firewall : 15003, 15001 (you can use the graphical firewall setup tool available in CENTOS to do that or go through iptables).

Building torque :

First download the latest torque release from the [adaptive computing website](#) or via command line :

```
wget  
http://www.adaptivecomputing.com/downloading/?file=/torque/torque-  
4.2.9.tar.gz  
tar -xzvf torque-4.2.9.tar.gz  
cd torque-4.2.9
```

Next lets consider a default installation, where binaries and libraries will be installed to /usr/local.

```
./configure  
[root]# make  
[root]# make install
```

If not already done so add /usr/local/bin and



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/usr/local/sbin to your user and root PATH variables (add it to your .bashrc or .cshrc).

Next you need to install and start the torque authorization daemon and we can also copy all files to start torque as a server afterwards :

```
[root]# cp contrib/init.d/trqauthd /etc/init.d/  
[root]# cp contrib/init.d/pbs_mom /etc/init.d/pbs_mom  
[root]# cp contrib/init.d/pbs_server /etc/init.d/pbs_server  
[root]# cp contrib/init.d/pbs_sched /etc/init.d/pbs_sched
```

```
[root]# chkconfig --add trqauthd  
[root]# chkconfig --add pbs_mom  
[root]# chkconfig --add pbs_server  
[root]# chkconfig --add pbs_sched
```

```
[root]# echo '/usr/local/lib' > /etc/ld.so.conf.d/torque.conf  
[root]# ldconfig  
[root]# service trqauthd start
```

Configuring torque

Add the servername hosting the torque server to /var/spool/torque/server_name. Next set the library path to torque.conf :

```
[root]# echo '/usr/local/lib' > /etc/ld.so.conf.d/torque.conf  
[root]# ldconfig
```

Initialize the serverdb by executing the following



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as root :

```
[root]# ./torque.setup root
```

Add the compute node (the server itself) to the nodes file. This can be done by adding the following into the /var/spool/torque/server_priv/nodes file :

```
MYMACHINENAME np=4
```

where MYMACHINENAME is the name of your node and np indicates the number of available CPU's for the queue. Adapt this to your system.

You also need to define the server by adding the following to the /var/spool/torque/mom_priv/config file :

```
$pbsserver MYMACHINENAME  
$logeven 255
```

Here again MYMACHINENAME indicates the name of the server issuing jobs. As the node and the server is the same in our configuration, specify the same name as in the previous nodes file.

Finish the configuration with :

```
qterm -t quick  
pbs_server  
pbs_mom (normally only on the node)
```

Check if you can see your nodes by issuing the pbsnodes -a command.

Start the scheduler on the server using :

```
pbs_sched
```

As a user login at least once onto the server via ssh from the server itself to add the server to the

known hosts file :

ssh username@MYMACHINENAME

Queue configuration

Create a new queue which we name test here :

```
qmgr -c "create queue test
queue_type=execution"
qmgr -c "set queue test
enabled=true"
qmgr -c "set queue test
started=true"
qmgr -c "set server scheduling=True"
```

First test job submission

Create a sample job submission file called test.sh containing the following lines :

```
#!/bin/bash
#PBS -l walltime=00:1:00
#PBS -l nice=19
#PBS -q test
date
sleep 10
date
```

This should run during 10 seconds. Check if the job is inside the queue using qstat. Torque should produce also a test.sh.e# and test.sh.o# file as output.

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Peter

Schmidtke

8 months ago

I modified the download URL, indeed there was a recent change on the adaptive computing site...especially on the version numbering of torque.



Ashirbad

Mishra

10 months ago

I think it should be

command:

```
echo /usr/local/lib >  
/etc/ld.so.conf.d/torque.conf
```



Peter
Schmidtke

8 months ago

Ok, I just checked, both, with and without quotes work



Peter
Schmidtke

8 months ago

No, you have to insert the string with the path /usr/local/lib into torque.conf, so it is echo
'/usr/local/lib' > ...torque.conf.



Ashirbad
Mishra

10 months ago

Command:

```
echo /usr/local/lib > /etc/ld.so.conf.d
```

Error:

```
-bash: /etc/ld.so.conf.d: Is a directory
```



Peter
Schmidtke

8 months ago

that's a mistake indeed...I
corrected that...thanks for
highlighting.



Mirko 10 months ago

downloading torque using "wget
<http://www.adaptivecomputing.com/download/torque/torque-4.5.0.tar.gz>" just gives me an HTML file
and not the archive. :(



Peter
Schmidtke

8 months ago

Thanks for highlighting this : I
modified the download URL,
indeed there was a recent change
on the adaptive computing
site...especially on the version
numbering of torque.



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