* PDSF performance
* announcements
* Performance comparison for PDSF, Edison, Cori, Google Cloud (LZ simulations case)
* AOB

November 8, 2016

Jan Balewski
aggregated load on PDSF interactive nodes

https://portal-auth.nersc.gov/pdsf-mon/
CPU Utilization

PDSF maintenance

Monthly Jobs by Group

- alice: 754 (avg 721)
- atlas: 8 (avg 115)
- dayabay: 42 (avg 465)
- deepsrch: 20 (avg 4)
- lux: 1 (avg 25)
- lz: 12 (avg 20)
- majorana: 58 (avg 66)
- star: 1721 (avg 1126)

Generated 11/07/2016 00:10:02
UGE queue load

Monthly Pending Jobs by Group - Expanded

Generated 11/07/2016 00:10:02

- alice 41 (avg 293)
- atlas 2 (avg 414)
- dayabay 193 (avg 124)
- deepsrch 5 (avg 4)
- lux 3 (avg 281)
- lz 6 (avg 8)
- majorana 3 (avg 1207)
- star 535 (avg 25045)
### Disc space utilization

#### FillStatus (Quota): PROJECT (2016-11-07 16:11)

<table>
<thead>
<tr>
<th>Component</th>
<th>Size</th>
<th>Quota</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>star - size</td>
<td>52.435/70.000 TB</td>
<td>(74.90%)</td>
<td></td>
</tr>
<tr>
<td>star - inodes</td>
<td>16051074/200000000</td>
<td>(80.25%)</td>
<td></td>
</tr>
<tr>
<td>starprod - size</td>
<td>117.944/130.000 TB</td>
<td>(90.72%)</td>
<td></td>
</tr>
<tr>
<td>starprod - inodes</td>
<td>8808160/200000000</td>
<td>(44.04%)</td>
<td></td>
</tr>
<tr>
<td>alice - size</td>
<td>41.552/60.976 TB</td>
<td>(68.14%)</td>
<td></td>
</tr>
<tr>
<td>alice - inodes</td>
<td>15948130/250000000</td>
<td>(63.79%)</td>
<td></td>
</tr>
</tbody>
</table>

#### FillStatus (Quota): PROJECTA (2016-11-07 16:11)

<table>
<thead>
<tr>
<th>Component</th>
<th>Size</th>
<th>Quota</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>starprod - size</td>
<td>184.078/190.000 TB</td>
<td>(96.88%)</td>
<td></td>
</tr>
<tr>
<td>starprod - inodes</td>
<td>8768894/200000000</td>
<td>(33.84%)</td>
<td></td>
</tr>
</tbody>
</table>

STAR is close to fill the disc quota
Announcements

Bi-weekly office hours  12:30 -2:30pm
  Thursday, November 10 & 24, 59-4016-CR

PDSF user meeting
  • Tuesday, December 13, 11am - 12pm, 59-3034-CR
As default I’ll pick those from pdsf
ROOT/5.34.10
Geant4-9.5.2
ROOT/5.34.10
As default I’ll pick those from pdsf

$ make -j (to compile)

If you want to try running the executable, the instructions are:

--- test-A

cd LZSim-pdsf

time /LZSimExe LUXSimMacros/LZQuickCheckNoVis.mac &>/gs1

--- Docker/ my laptop

balewski@ubuntu:~$ docker images | grep lz

us.gcr.io/pdsf-workflows/balewski/sl64-g2-lz:latest b6550f93e0af 2 days ago 8.496 GB
balewski/sl64-g2-lz f e47b02d4d166 3 days ago 8.496 GB
balewski/sl64-g2-lz e e1f8cc6b144e 4 days ago 8.326 GB
balewski/sl64-g2-lz a f6ade3835e38 9 weeks ago 6.051 GB

us.gcr.io/jgi-workflows/balewski/sl64-lz             latest              f6ade3835e38        9 weeks ago         6.051 GB
balewski/sl64-lz                                     a                   f6ade3835e38        9 weeks ago         6.051 GB
balewski/sl64-g2-lz                                  e                   e1f8cc6b144e        4 days ago          8.326 GB

--- Docker image

us.gcr.io/pdsf-workflows/balewski/sl64-g2-lz
us.gcr.io/pdsf-workflows/balewski/sl64-g2-lz
us.gcr.io/pdsf-workflows/balewski/sl64-g2-lz
us.gcr.io/pdsf-workflows/balewski/sl64-g2-lz
us.gcr.io/pdsf-workflows/balewski/sl64-g2-lz
us.gcr.io/pdsf-workflows/balewski/sl64-g2-lz
Optimized performance for LZ simulation

Setup: singleER_flat_serial event generator, 30 events/job, few 100 jobs per run, vary # // jobs, pick best throughput/vCore/hour (more is better). One Geant4 job on Cori would run for ~150 minutes and produce ~120MB of output, input: none, no DB access was needed.

- **PDSF** 64vCore/node, 5.1 event/vCore/hour
- **Edison** 48 vCore/node, RAM limit, FOM=4.8 event/vCore/hour
- **Cori Haswell** 64 vCore/node, FOM=5.3 event/vCore/hour
- **Google Cloud** [black box, shared], FOM=6.0 event/vCore/hour