Nano cluster

System Description

Host name: nano.ncsa.illinois.edu

Hardware

- SuperMicro SYS-4028GR-TR
- X10DRG-O+-CPU motherboard
- 128 GB DDR4 (8x 16 GB Micron 2133 MHz 36ASF2G72PZ-2G1A2)
- 8 PCI-E 3.0 ports, switched
- Mellanox MT27500 Family [ConnectX-3] QDR IB
- 1x 256 GB Samsung SSD 850

Software

- CentOS 7
- CUDA 8.0/9.1
- PGI 16.10
- Intel ICC 16
- gcc 4.8
- gcc 5.3 via 'scl enable devtoolset-4 bash'

To request access please fill out this form. This google form requires using your Illinois account with Google. If you need to enable it, follow instructions posted here.

Usage notes:

- nano (141.142.204.5) is the head node of the cluster. It should not be used for any computations!
- To connect to the cluster, ssh username@nano.ncsa.illinois.edu
- To get access to a particular node for interactive use, use qsub, e.g.,
  - To get one GPU and one CPU core on node 7 for 1 hour for interactive use:
    - qsub -l nodes=nano7:ppn=1:gpus=1,walltime=3600
  - To get entire node 1 for 1 hour for exclusive interactive use:
    - qsub -l -l nodes=nano1:ppn=12,walltime=3600

- Better yet, do not allocate nodes for interactive use, instead just submit batch jobs, see for example Job Scripts section at https://kb.iu.edu/d/avmy for details. This is a much better way to share computing resources.
- Interactive jobs are limited to 12 hours maximum walltime per job.
- Batch jobs are limited to 96 hours
- Submit request to staff for longer batch jobs (up to 240 hours)
- To see what’s running on the cluster, just run qstat
- This is a shared resource, please keep in mind that other users are using it as well; do not take over the system beyond what you really need.
- Home directory is cross-mounted, but there is very limited storage size
- Run ‘df -h /home’ to see how much space is available
- Current System Status: http://nano.ncsa.illinois.edu:/3000/d/3QVrDIFmz/nano-status

DL frameworks

- TensorFlow 1.8

Node configuration:

<table>
<thead>
<tr>
<th></th>
<th>nano1</th>
<th>nano2</th>
<th>nano3</th>
<th>nano4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nano</td>
<td>CPU Model</td>
<td>GPU Model</td>
<td>Cores</td>
<td>Memory</td>
</tr>
<tr>
<td>------</td>
<td>-----------</td>
<td>-----------</td>
<td>-------</td>
<td>--------</td>
</tr>
<tr>
<td>Nano5</td>
<td>Intel Xeon E5-2620 v3 @ 2.40GHz</td>
<td>NVIDIA V100</td>
<td>5120</td>
<td>16 GB</td>
</tr>
<tr>
<td>Nano6</td>
<td>Intel Xeon E5-2680 v4 @ 2.40GHz</td>
<td>NVIDIA V100</td>
<td>5120</td>
<td>16 GB</td>
</tr>
<tr>
<td>Nano7</td>
<td>Intel Xeon E5-2620 v3 @ 2.40GHz</td>
<td>NVIDIA V100</td>
<td>5120</td>
<td>16 GB</td>
</tr>
<tr>
<td>Nano8</td>
<td>Intel Xeon E5-2620 v3 @ 2.40GHz</td>
<td>NVIDIA P100</td>
<td>3584</td>
<td>16 GB</td>
</tr>
</tbody>
</table>