Nano cluster

System Description

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 -I nodes=nano7:ppn=1:gres=1:walltime=3600
  - to get entire node 1 for 1 hour for exclusive interactive use:
    - qsub -l -I 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>
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<tbody>
<tr>
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<tr>
<td>Node</td>
<td>CPU Model</td>
<td>GPU Model</td>
<td>Cores</td>
<td>RAM</td>
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<tr>
<td>nano5</td>
<td>2x Intel Xeon CPU E5-2620 v3 @ 2.40GHz</td>
<td>2x NVIDIA P100 GPUs</td>
<td>3584</td>
<td>16 GB</td>
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<tr>
<td>nano6</td>
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<td>2x NVIDIA V100 GPUs</td>
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<td>nano8</td>
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<td>2x NVIDIA V100 GPUs</td>
<td>5120</td>
<td>16 GB</td>
</tr>
</tbody>
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(Use this node for all non-GPU jobs)