Nano cluster
System Description

Host name: nano.ncsa.illinois.edu

Hardware
- 8x 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
  - NFS-mounted 30TB home (2x 6-drive RAID z2 with 4TB drives)
  - GlusterFS w/ 2-node fault tolerance - 62TB usable

Software
- CentOS 7
- CUDA 9.2/10.0
- PGI 16.10
- Intel ICC 16
- gcc 4.8
- gcc 5.3 via 'scl enable devtoolset-4 bash'

Instruction for running Jupyter Notebooks on compute nodes

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 -I -l nodes=nano7:ppn=1:gpus=1,walltime=3600
  - to get entire node 1 for 1 hour for exclusive interactive use:
    - qsub -I -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 and accessible from all nodes

Current System Status: https://nano.ncsa.illinois.edu:3000/d/3QVrDIFmz/nano-status

DL frameworks
- TensorFlow 1.10

Node configuration (see login message for the exact configuration):

<table>
<thead>
<tr>
<th>nano1</th>
<th>nano2</th>
<th>nano3</th>
<th>nano4</th>
</tr>
</thead>
<tbody>
<tr>
<td>2x Intel Xeon CPU E 5-2680 v4 @ 2.40 GHz</td>
<td>2x Intel Xeon CPU E 5-2620 v3 @ 2.40 GHz</td>
<td>2x Intel Xeon CPU E 5-2680 v4 @ 2.40 GHz</td>
<td>2x Intel Xeon CPU E 5-2620 v3 @ 2.40 GHz</td>
</tr>
<tr>
<td>2x NVIDIA V100 GPUs</td>
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<tr>
<td>5120 cores</td>
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<tr>
<td>16 GB HBM2</td>
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<tr>
<td>CUDA 9.2</td>
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Contact us
Request access to ISL resources: Application
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<td>2 x E 5-2620 v3</td>
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<tr>
<td>Number of GPUs</td>
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<td>2 x P100</td>
<td>4 x V100</td>
<td>4 x V100</td>
</tr>
<tr>
<td>Number of Cores</td>
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<td>3584 cores</td>
<td>5120 cores</td>
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</tr>
<tr>
<td>Memory Size</td>
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<td>16 GB HBM2</td>
<td>32 GB HBM2</td>
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