The OSU College of Engineering DGX System
for Advanced GPU Computing

OSU's College of Engineering bought six Nvidia DGX-2 systems

Each DGX server:
- Has 16 NVidia Tesla V100 GPUs
- Has 28TB of disk, all SSD
- Has two 24-core Intel Xeon 8168 Platinum 2.7GHz CPUs
- Has 1.5TB of DDR4-2666 System Memory
- Runs the CentOS 7 Linux operating system

Overall compute power:
- Each V100 NVidia Tesla card has 5,120 CUDA Cores and 640 Tensor Cores
- This gives each 16-V100 DGX server a total of 81,920 CUDA cores and 10,240 Tensor cores
- This gives the entire 6-DGX package a total of 491,520 CUDA Cores and 61,440 Tensor Cores
Performance Comparison with one of our previous Systems

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How to SSH to the DGX Systems and Check on Them

ssh submit-c.hpc.engr.oregonstate.edu

submit-c 142% module load slurm

Do this to set your path correctly

submit-c 143% sinfo

System Information

Check on the queues

Submit-c 144% squeue

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Check on the queues
Submitting a job to the DGX Systems using Slurm

Create a shell file

submit.bash:

```bash
#!/bin/bash
#SBATCH -J ArrayMult
#SBATCH -A cs475-575
#SBATCH -p class
#SBATCH --gres=gpu:1
#SBATCH -o arraymul.out
#SBATCH -e arraymul.err
#SBATCH --mail-type=BEGIN,END,FAIL
#SBATCH --mail-user=jparallel@oregonstate.edu
./arrayMul
```

Note: A single dash (-) is used for a single character flag
A double dash (--) is used for a word (more than a single character) flag

This is the queue name we use for classes

Double dash

Submit the job described in your shell file

submit-c 143% sbatch submit.bash
Submitted batch job 474

Open an interactive shell on the DGX

submit-c 144% srun --A cs475-575 --p student --gres=gpu:1 --pty bash bash-4.2$ ./arrayMul

Double dash