Recent Update

- Watson Machine Learning Community Edition (formerly PowerAI)
  - module load wmlce/1.6.1-py3.6
  - module load wmlce/1.6.1-py2.7
  - Tensorflow-v1.14
  - PyTorch-v1.1.0
  - RAPIDS cuML-v0.7.0 and cuDF-v0.7.2

- PowerAI-1.6.0 has a problem.
  - IBM Spectrum MPI - Evaluation Edition has expired.
Recent Update

- Horovod with PowerAI
  - Spectrum MPI is needed.
    - Native OpenMPI-4.0.0 and Spectrum MPI don’t get along
  - Test1: mpi-hello-world
    - Compile the code with spectrum mpi within “wmlce-v1.6.1-py3”
    - Use “ddlrun -nodes 1 -sockets 2 -cores 4 ./mpi-hello-world”
  - Test2: horovod-demo
    - hvd-demo.py
      - hvd.init()
    - Use “ddlrun -nodes 1 -sockets 2 -cores 4 python ./hvd-demo.py”
Recent Update

• HAL Slurm Wrapper Suite
  • updated to swsuite-v0.2
  • v0.1 => shell script to v0.2 => python script
  • “swrun”
  • “swbatch”

• New partitions include:
  • gpux1 / gpux2 / gpux4 : single node job
  • gpux8 / gpux12 / gpux16 : multiple nodes job
  • cpu : multiple nodes job
  • gpu-debug : hidden queue for single node debug job

• Old partition “debug”, “solo”, “batch” will be deprecated soon.
Recent Update

- "swrun" Usage
  - Only 4 options
    - Partition **(required)**
    - CPUs Per GPU **(optional)**
    - Wall Time **(optional)**
    - Singularity Container **(optional)**

- Restrictions
  - Partitions vary by GPU number (gpux1, gpux2, gpux3, …)
  - CPU Per GPU (12 <= c <= 36, default 12)
  - Wall Time (1 <= t <= 72, default 24 hours)

- Default if selecting 1 gpu
  - gpux1(required), 12x CPUs, 18GB Memory, 1x GPU, 24 Hrs

- Full Node Example
  - swrun -p gpux4 -c 36 -t 72
Recent Update

• “swrun” Usage
  • Debug queue
    • Only need to set time to 4 hours or less on queue “gpux1/2/3/4” and “cpu”
    • Multi-nodes queue less than 4 hours still go to normal queue
  • Singularity
    • swrun -p gpux4 -s powerai -c 36 -t 72
    • “-s”: using singularity image for this job
    • “powerai”: the name of singularity image “powerai.simg”
    • export “HAL_CONTAINER_REGISTRY” to your own directory
  • Example workflow:
    • Export HAL_CONTAINER_REGISTRY=$HOME/container/pool
    • Then specify the image as above or in your batch script as
    • #SBATCH --singularity=powerai
Recent Update

• “swbatch” Usage
  • Only 6 options
    • Partition (required)
    • CPUs Per GPU (optional)
    • Wall Time (optional)
    • Job name (required)
    • Output file (required)
    • Error file (required)
    • Singularity Container (optional)

• Restrictions
  • Partitions vary by GPU number (x1, x2, x3, …)
  • CPU Per GPU (12 <= c <= 36, default 12)
  • Wall Time (1 <= t <= 72, default 24 hours)
Recent Update

• “swbatch” example:
  • Sample run script - sample.sb

#!/bin/bash
#SBATCH --job_name="testrun1"
#SBATCH --output="testrun1.%j.%N.out"
#SBATCH --error="testrun1.%j.%N.err"
#SBATCH --partition=gpuX1
#SBATCH --singularity=demo

# Just leaving a comment here
python3 --hyperparameters=hp_config1.yaml

• Simply run as: swbatch sample.sb
THANK YOU FOR YOUR TIME!