Guidance to run Tensorflow GA-Net model on Intel PVC GPUs

Log in to ACES cluster and run the commands below.

$cd $SCRATCH

$mkdir pvc-benchmarks

$cd pvc-benchmarks

$git clone https://github.com/IntelAI/models.git

$module purge

$ml GCCcore/11.2.0 Python/3.9.6

$python3 -m venv tfenv

$ source tfenv/bin/activate

$ pip install tensorflow==2.15 intel-extension-for-tensorflow[xpu]==2.15 intel-optimization-for-horovod==0.28.1.4 torch==2.1.0.post0 torchvision==0.16.0.post0 torchaudio==2.1.0.post0 intel_extension_for_pytorch==2.1.20+xpu oneccl-bind-pt==2.1.200 deepspeed==0.14.0 --extra-index-url https://pytorch-extension.intel.com/release-whl-aitools/

$cd tensorflow /GA-Net

$./setup.sh

$deactivate

create a slurm job file pt_multi_py_env.slurm and copy and paste the content below to it.

$sbatch pt_multi_py_env.slurm

```
#!/bin/bash
##NECESSARY JOB SPECIFICATIONS

#SBATCH --job-name=cifar10_pvc
#SBATCH --time=03:00:00
#SBATCH --nodes=1
#SBATCH --output=cifar10_pvc.slurm_run.%j
#SBATCH --nodelist=ac094
##SBATCH --exclusive
#SBATCH --mem=480GB
#SBATCH --gres=gpu:pvc:4
#SBATCH --partition=pvc
#SBATCH --nodelist=ac092
#SBATCH --exclusive

# load all the necessary modules
module load WebProxy
module load Miniconda3/23.5.2-0
ml GCCcore/11.2.0 Python/3.9.6

# activate the python virtal env
python -m venv tfenv
source tfenv/bin/activate
source /sw/hprc/sw/oneAPI/2024.1/setvars.sh
python --version


pip install tensorflow==2.15 intel-extension-for-tensorflow[xpu]==2.15 intel-optimization-for-horovod==0.28.1.4
torch==2.1.0.post0 torchvision==0.16.0.post0 torchaudio==2.1.0.post0 intel_extension_for_pytorch==2.1.20+xpu oneccl-
bind-pt==2.1.200 deepspeed==0.14.0 --extra-index-url https://pytorch-extension.intel.com/release-whl-aitools/
pip show tensorflow


cd  tensorflow /GA-Net
python GA-Net.py
```