Steps to Run a Model/Program

NOTE: Please be mindful of how you are using the system. For example, consider running larger jobs in the evening or on weekends.

NOTE: Please use only Slurm commands, i.e., srun and sbatch, to run your code. If you run your code directly using the python command, it may cause conflicts on the system.

Introduction

The SambaNova workflow includes the following main steps to run a model.

1. Compile
2. Run
3. Test (optional)

The system uses the SLURM job scheduler to schedule the jobs and manage the workload on the system. For more information on Slurm, see Job Queueing and Submission.

Example Programs lists the different example applications with corresponding commands for each of the above steps.

Compile

Compiles the model and generates a `(.pef)` file. This file contains information on how to reconfigure the hardware, how many compute and memory resources are required and how they will be used in all subsequent steps. The pef files are by default saved in the 'out' directory; the SambaNova documentation advises saving pef files in separate directories with the '--output-folder' option.

It is necessary to re-compile only when the model changes, or parameters specific to the model graph change, including the batch size.

Compile times can be significant.
Compile of the Unet sample, for example, when using images of size 32x32 pixels, takes 358 (s), and 1844 (s) for images of size 256x256.

Example:

```
srun python lenet.py compile -b=1 --pef-name="lenet" --output-folder="pef"
```

Where

Argument	Default	Help
-b	1	Batch size for training

Run

This will run the application on SN nodes.

```
srun python lenet.py run --pef="pef/lenet/lenet.pef"
```

The location of the **pef** file generated in the compile step is passed as an argument to the run command.

Test (Optional)

This command is used to run the model on both the host CPU and the SambaNova node. It compares the answers from the CPU and SambaNova RDU and will raise errors if any discrepancies are found. Pass the pef file generated as part of the compile step as the input to this command.

```
srun python lenet.py test --pef="pef/lenet/lenet.pef"
```