VQA

Feb 16, 2021 to Feb 24, 2021

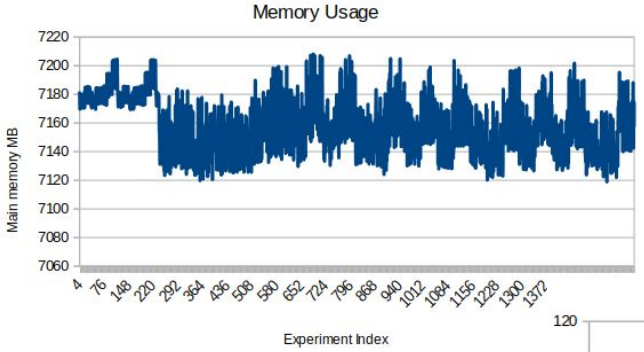
FIXSTARS®
Speed up your Business

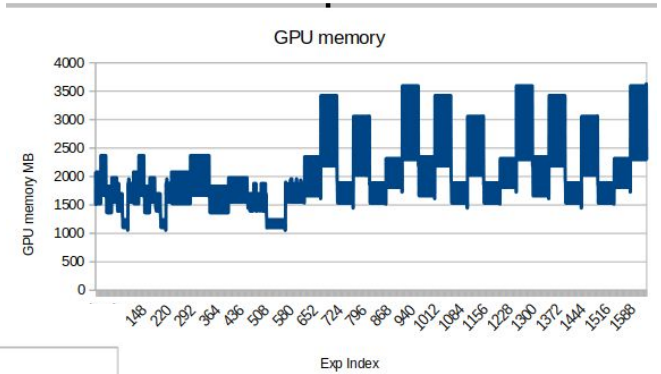
Agenda

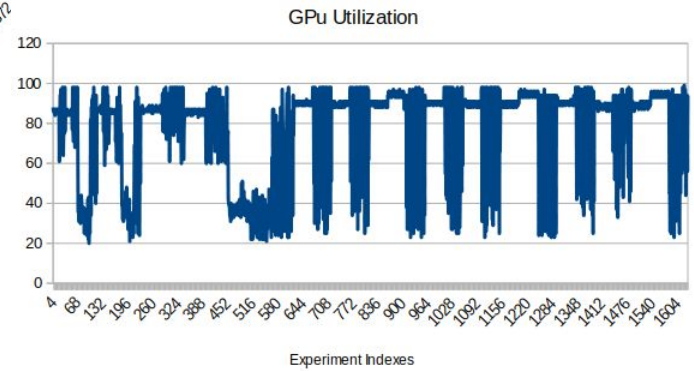
- Resource understanding
- Computation on DGX1
- Computation on OpenMind
- Comparing built and conda pytorch

Resource understanding

- ➔ We performed quick stucky of all the experiments in case 1.
- ➔ We see that peak GPU utilization happens for







DGX1

- Experiments 500 - 515 done!
- Currently processing experiment indexes 516-531.
  - Expected to finish by tomorrow afternoon.

- We made a particular branch on Gitlab for DGX1 changes.
  - Without singularity, we use simple log redirection instead of proper multilog based logging.

- Using the /home singularity, we get errors:

```
(base) gpillai@dgx1:~$ /home/software/singularity/3.7.1/bin/singularity run --nv ~/work/vqa-runtime.simg
FATAL:   while initializing starter command: /usr/local/libexec/singularity/bin/starter-suid not found, please check your installation
```

DGX1 current status

Progress Table

Tag	Status	Progress	BestValAcc	Elapsed Time
train_516	In Progress...	52.5%	0.7373046875	1 day, 2:24:35.536836
train_517	Finished	100%	0.755859375	1 day, 0:56:33.931100
train_518	In Progress...	52.2%	0.7783203125	1 day, 2:24:35.536933
train_519	Finished	100%	0.7607421875	1 day, 1:22:03.523099
train_520	In Progress...	51.9%	0.7578125	1 day, 2:24:35.537015
train_521	Finished	100%	0.7607421875	1 day, 1:38:43.508987
train_522	In Progress...	52.1%	0.755859375	1 day, 2:24:35.537094
train_523	Finished	100%	0.7578125	1 day, 1:23:16.035033
train_524	In Progress...	52.7%	0.8935546875	1 day, 2:24:35.537175
train_525	Finished	100%	0.9130859375	1 day, 0:51:53.975249
train_526	In Progress...	52.3%	0.9228515625	1 day, 2:24:35.537254
train_527	Finished	100%	0.9169921875	1 day, 0:58:12.613454
train_528	In Progress...	52.6%	0.9482421875	1 day, 2:24:35.537332
train_529	Finished	100%	0.9501953125	1 day, 1:05:17.770774
train_530	In Progress...	52.0%	0.931640625	1 day, 2:24:35.537411
train_531	Finished	100%	0.953125	1 day, 1:17:44.334394

OpenMind

- ➔ We modify the ‘Acceleration’ code base to fit the current usecase of VQA.
- ➔ Since we use singularity on OpenMind, we have the improved logging compared to DGX1.
- ➔ Currently using the high priority cbmm partition.
- ➔ Will experiment with normal priority but higher number of resources.

OpenMind Updates

Progress Table

Tag	Status	Progress	BestValAcc	Elapsed Time
train_532	Finished	100%	0.5478515625	4:08:48.554747
train_533	Finished	100%	0.5458984375	2:18:01.171682
train_534	Finished	100%	0.5498046875	3:10:34.192496
train_535	Finished	100%	0.556640625	2:18:53.636247
train_536	Finished	100%	0.7314453125	4:08:06.261655
train_537	Finished	100%	0.75	4:39:11.716260
train_538	Finished	100%	0.748046875	6:15:30.167725
train_539	Finished	100%	0.7392578125	2:13:43.961784
train_540	Finished	100%	0.546875	3:11:16.405147
train_541	Finished	100%	0.5458984375	2:10:45.326222
train_542	Finished	100%	0.5556640625	3:59:55.007113
train_543	Finished	100%	0.55859375	2:13:43.962082
train_544	Finished	100%	0.849609375	4:00:42.549393
train_545	Finished	100%	0.84375	1:12:41.011840
train_546	Finished	100%	0.8857421875	1:35:03.643437
train_547	Finished	100%	0.876953125	2:11:11.754972

Pytorch

- We compared the performance of experiment with build version of Pytorch and conda version of Pytorch.
- Version: 1.7.1 with CUDA: 11.2
- Time taken for 10000 iterations: 185 seconds (conda) and 186 seconds (built) respectively.
- Both were tested in similar singularity environments.