利用GPGPU進行雲端分析之效能評估

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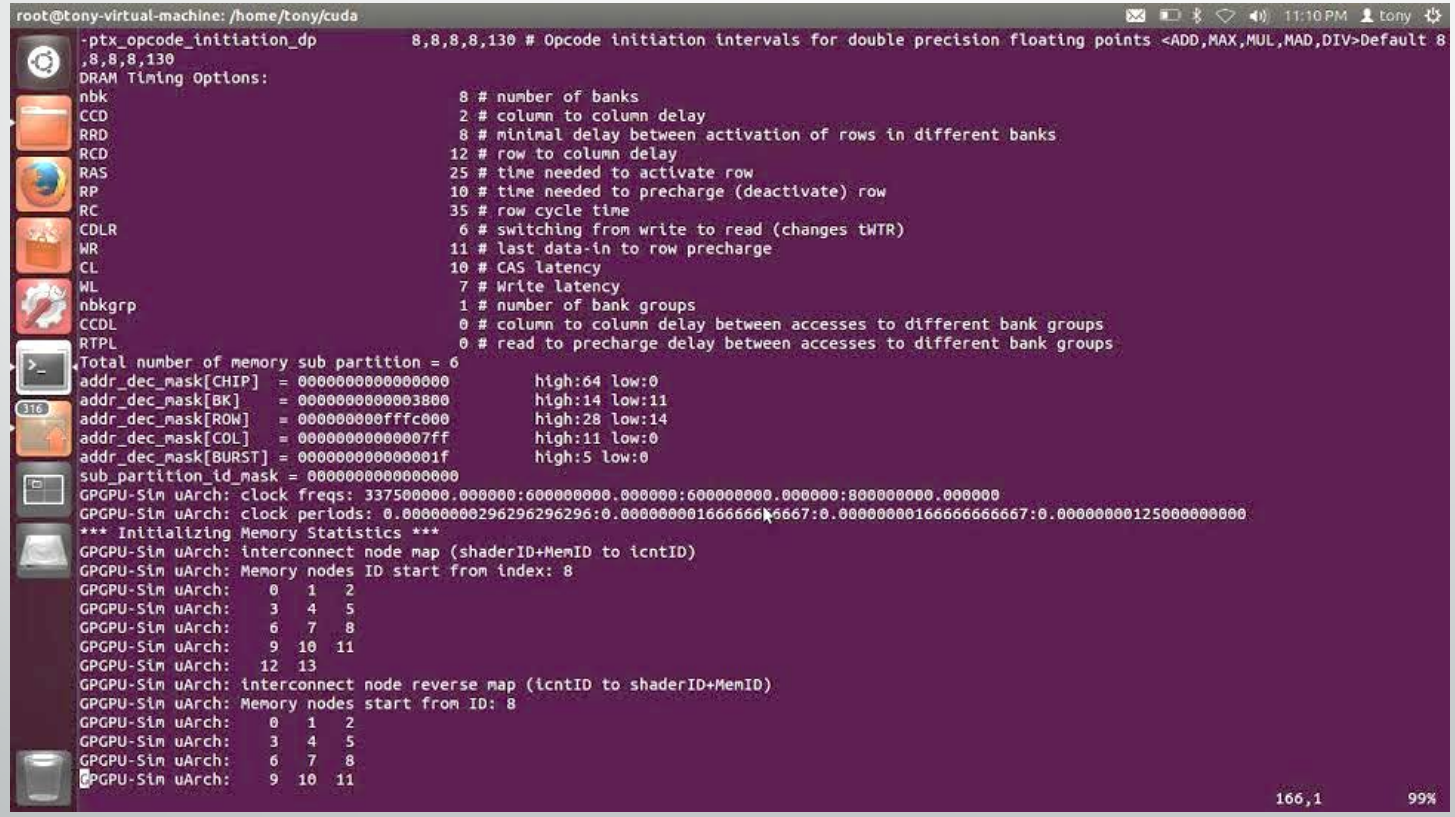
Status Report (1/3)

- Familiar with OpenCL parallel optimization strategy
  - Ex : matrix multiplication (200x ~ 600x speedup)
- Use these strategies to accelerate bigger program (HEVC)
  - Still working on it
  - Based on HM 12.0

	800	1024	1600	2048	3200
Serialize	4.263 s	16.351	45.813 s	258.812 s	377.182 s
Uncoalesced	1.704 s	3.989 s	14.823 s	32.017 s	118.497 s
Coalesced	0.099 s	0.174 s	0.742 s	1.269 s	5.884 s
Vector	0.074 s	0.151 s	0.582 s	1.143 s	4.674 s
TILE_N	0.055 s	0.114 s	0.427 s	0.889 s	3.423 s
TILE_M_N	0.042 s	0.086 s	0.331 s	0.665 s	2.628 s
Double	0.043 s	0.076 s	0.292 s	0.594 s	2.328 s
Tetraploid	0.031 s	0.057 s	0.211 s	0.441 s	1.686 s

Status Report (2/3)

- Install and start using with gpgpu-sim for future analysis



Status Report (3/3)

- Simple machine learning program implementation
  - K^{th} Nearest Neighbor learning
  - Neural Network
  - AdaBoost Algorithm
  - Support Vector Machine

Future Schedule

- 2014/7～2014/9

  Accelerate Image Processing Libraries based on OpenCL

- 2014/9～2014/10

  Finish the HEVC parallel acceleration project

- 2014/11～2015/2

  Using gpgpu-sim to analysis the OpenCL based program