Assignment 3. Vector Add with CUDA Streams and Pinned Memory

> Machine generated report

Environment

CPU

- Architecture: x86_64
- CPU op-mode(s): 32-bit, 64-bit
- Byte Order: Little Endian
- CPU(s): 6
- On-line CPU(s) list: 0-5
- Thread(s) per core: 1
- Core(s) per socket: 6
- Socket(s): 1
- NUMA node(s): 1
- Vendor ID: GenuineIntel
- CPU family: 6
- Model: 79
- Model name: Intel(R) Core(TM) i7-6850K CPU @ 3.60GHz
- Stepping: 1
- CPU MHz: 1200.000
- CPU max MHz: 3601.0000
- CPU min MHz: 1200.0000
- BogoMIPS: 7195.88
- Virtualization: VT-x
- L1d cache: 32K
- L1i cache: 32K
- L2 cache: 256K
- L3 cache: 15360K
- NUMA node0 CPU(s): 0-5
- Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp lm constant_tsc arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc aperfmperf eagerfpu pni pclmulqdq dtes64

ds_cpl vmx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch epb cat_l3 cdp_l3 invpcid_single intel_ppin rsb_ctxsw tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid rtm cqm rdt_a rdseed adx smap intel_pt xsaveopt cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local dtherm ida arat pln pts

GPU

- name: NVIDIA TITAN Xp
- memory.total [MiB]: 12288 MiB

Others

- Static hostname: n8
- Icon name: computer-desktop
- Chassis: desktop
- Machine ID: f05f160400af47df81f9fdcaa30ff384
- Boot ID: fd4b03eefbf24d69af159452763c9eeb
- Operating System: CentOS Linux 7 (Core)
- CPE OS Name: cpe
- Kernel: Linux 3.10.0-1160.83.1.el7.x86_64
- Architecture: x86-64

Results by Data

Data	Correctness	Importing data and creating memory on host	Performing CUDA computation	Freeing Pinned Memory
0	True	1.63874 ms	0.466984 ms	0.538834 ms
1	True	3.31773 ms	0.255063 ms	0.293143 ms
2	True	4.75059 ms	0.205194 ms	0.254448 ms
3	True	6.32941 ms	0.197028 ms	0.21859 ms
4	True	9.42369 ms	0.191218 ms	0.271807 ms
5	True	75.9913 ms	0.196598 ms	0.340823 ms
6	True	105.228 ms	0.212755 ms	0.328713 ms
7	True	182.358 ms	0.196884 ms	0.311927 ms
8	True	339.359 ms	0.2203 ms	0.309982 ms

Data	Correctness	Importing data and creating memory on host	Performing CUDA computation	Freeing Pinned Memory
9	True	791.523 ms	0.263739 ms	0.34199 ms

Results by the Number of Streams

Number of Streams	Correctness	Importing data and creating memory on host	Performing CUDA computation	Freeing Pinned Memory
1	True	746.618 ms	0.13745 ms	0.307976 ms
2	True	729.587 ms	0.140038 ms	0.307031 ms
3	True	735.354 ms	0.136876 ms	0.306211 ms
4	True	734.382 ms	0.149847 ms	0.319453 ms
5	True	739.29 ms	0.155863 ms	0.331489 ms
6	True	672.599 ms	0.162964 ms	0.305406 ms
7	True	672.264 ms	0.158396 ms	0.321882 ms
8	True	823.269 ms	0.173934 ms	0.321687 ms
9	True	693.038 ms	0.18305 ms	0.317499 ms
10	True	737.105 ms	0.181003 ms	0.335607 ms
11	True	673.904 ms	0.190667 ms	0.318196 ms
12	True	672.323 ms	0.178361 ms	0.326133 ms
13	True	752.41 ms	0.197107 ms	0.332082 ms
14	True	809.725 ms	0.195769 ms	0.336507 ms
15	True	675.872 ms	0.20466 ms	0.324709 ms
16	True	808.632 ms	0.256545 ms	0.34218 ms
17	True	692.821 ms	0.255252 ms	0.328139 ms
18	True	678.131 ms	0.260138 ms	0.323823 ms
19	True	818.187 ms	0.269758 ms	0.349887 ms
20	True	776.22 ms	0.291203 ms	0.366936 ms

Number of Streams	Correctness	Importing data and creating memory on host	Performing CUDA computation	Freeing Pinned Memory
21	True	673.209 ms	0.27979 ms	0.328515 ms
22	True	672.556 ms	0.298701 ms	0.337517 ms
23	True	718.995 ms	0.28767 ms	0.343073 ms
24	True	704.47 ms	0.292245 ms	0.337995 ms
25	True	690.441 ms	0.301499 ms	0.348236 ms
26	True	815.74 ms	0.325358 ms	0.34917 ms
27	True	679.052 ms	0.316948 ms	0.342557 ms
28	True	732.622 ms	0.331249 ms	0.361371 ms
29	True	747.725 ms	0.339496 ms	0.367599 ms
30	True	677.825 ms	0.327674 ms	0.347158 ms
31	True	673.815 ms	0.353729 ms	0.343227 ms
32	True	747.107 ms	0.364926 ms	0.361939 ms