

OVERVIEW

TTG Apptimizer is an autotuning toolkit that accelerates your GPU-based software. Application performance will increase significantly due to a better mapping of computations onto GPUs. It will be done automatically. And even without you.



APPLICABILITY



TTG Apptimizer can accelerate any GPGPU-based software from any subject area. The only limitation is the software should be GPU-bound and written using NVIDIA CUDA or OpenCL technology.

TTG APPTIMIZER

Since now
your software
will optimize itself!

KEY FEATURES

- Get free speed-up of up to 20-50% without rewriting your software.
- Forget about builds for different GPU types. Now a single build can be used for any GPUs.
- Just upgrade your hardware. Software will re-optimize itself.



HOW IT WORKS



You should embed our primitives into your computing kernels. During runtime, the optimizer will gather information about available GPUs and processing data. After that, each kernel will be tuned for a current usage scenario and computations will be efficiently distributed between all GPUs.

Learn more at <http://ttgLabs.com>

Benchmarking results

Molecular dynamics, GFlops

Particles	GF 8800	GF 9800	GF 285	GF 480	GF 580	GF 680
0.5K	10.8 + 48.1%	13.1 + 56.8%	11.9 + 30.2%	15.3 + 2.8%	19.0 + 3.5%	18.1 + 0.5%
1.0K	22.4 + 48.1%	27.6 + 52.0%	24.8 + 28.3%	30.8 + 2.9%	38.4 + 3.4%	36.8 + 0.7%
2.0K	48.2 + 43.8%	60.5 + 45.7%	55.2 + 27.2%	65.3 + 1.3%	78.2 + 3.3%	75.2 - 0.0%
8.0K	90.9 + 0.0%	112.9 - 1%	103.8 + 55.3%	126.7 + 29.9%	229.9 - 0.1%	256.8 + 4.5%
16.0K	101 - 0.1%	127.7 - 0.0%	157.5 + 29.4%	125.3 + 15.2%	252.7 + 0.7%	364.3 + 11.7%
32.0K	103.9 - 0.3%	131.7 - 0.1%	198.5 + 11.1%	160.6 + 19.6%	255.3 + 0.7%	391.1 + 5.3%
Average	+23.3%	+25.6%	+30.3%	+12.0%	+1.9%	+3.7%

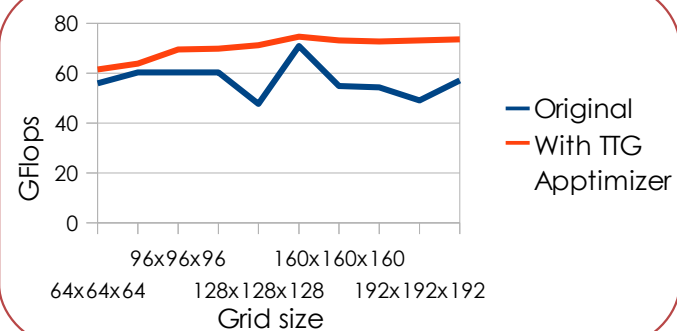
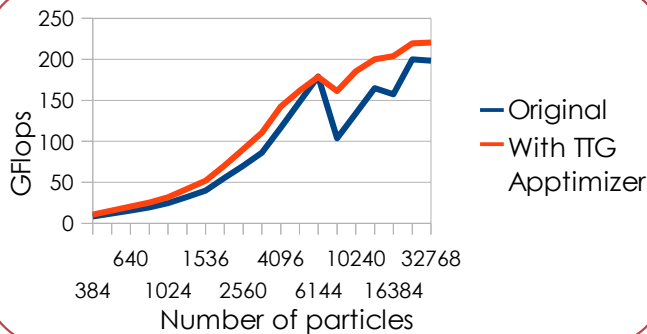
NVidia GeForce 680 GTX

GF 680

364.3 + 11.7%

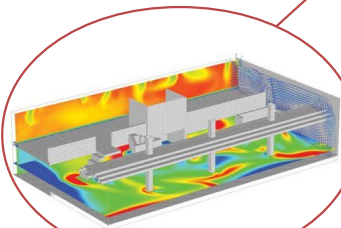
TTG Apptimizer speed up

Original performance



CFD Simulation, GFlops

Grid size	GF 8800	GF 9800	GF 285	GF 480	GF 580	GF 680
64x64x64	9.7 + 10.1%	11.7 + 0.4%	23.1 + 4.1%	54.2 + 3.0%	61.1 + 17.9%	55.9 + 9.9%
96x96x96	10.1 + 18.5%	12.3 + 9.2%	29.9 + 1.9%	59.0 + 22.9%	69.3 + 25.0%	60.3 + 15.2%
128x128x128	10.2 + 16.1%	9.4 + 30.4%	23.1 + 4.2%	55.2 + 25.4%	63.5 + 28.6%	47.7 + 49.2%
160x160x160	10.3 + 21.2%	11.7 + 9.6%	25.5 + 16.8%	61.5 + 22.7%	71.4 + 33.1%	54.9 + 33.2%
192x192x192	10.2 + 21.2%	10.8 + 12.0%	25.8 + 6.1%	60.5 + 22.7%	70.4 + 33.5%	49.1 + 48.9%
Average	+17.4%	+12.3%	+6.6%	+19.4%	+27.6%	+31.3%



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