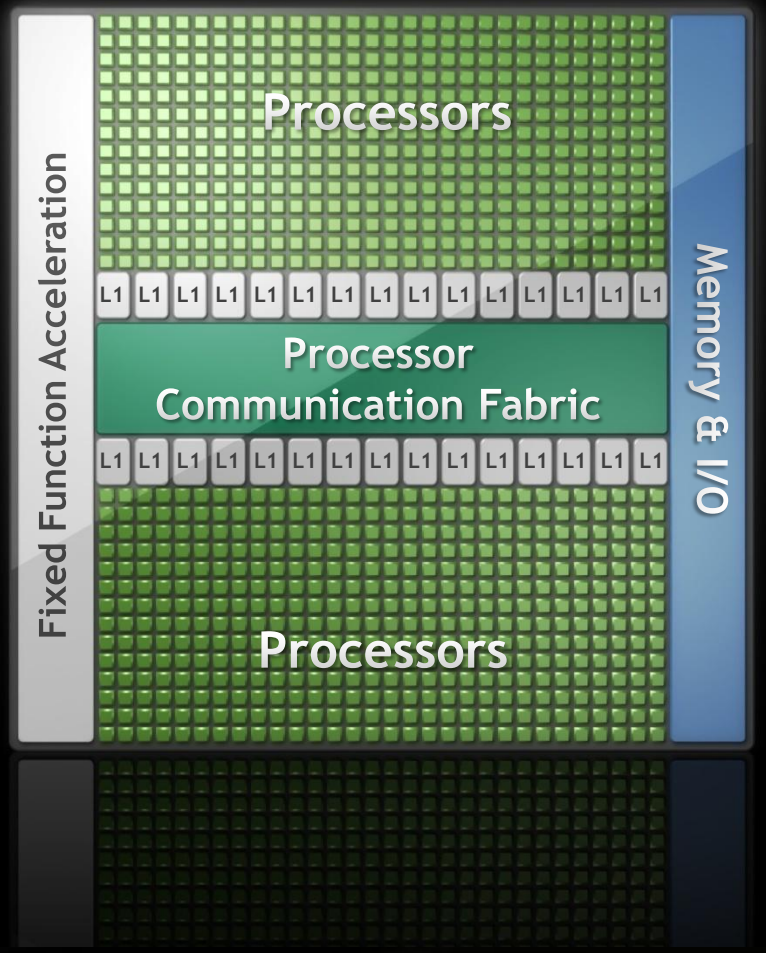
Ter@tec

July 1st 2009

Tesla: Fastest Processor Adoption in HPC History


2008
350 Million triangles/second
1.4 Billion transistors GPU
1995
5,000 triangles/second
800,000 transistors GPU
BULLY DOG
OGIO



GPU for Computing

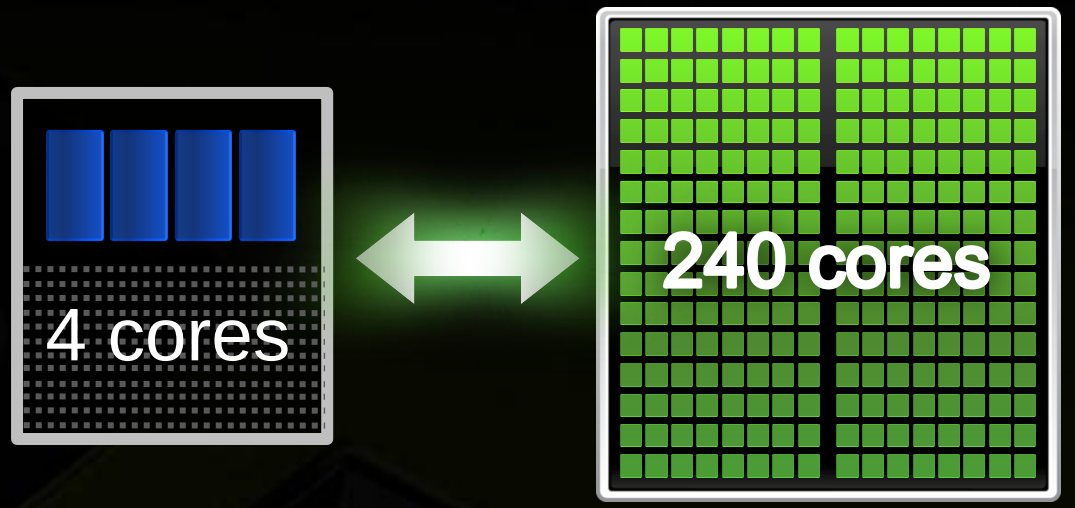
Massively parallel, throughput architecture

240 Processor Cores

1 Teraflops - 1,000 times Cray X-MP

IEEE Compliant Double Precision Floating Point

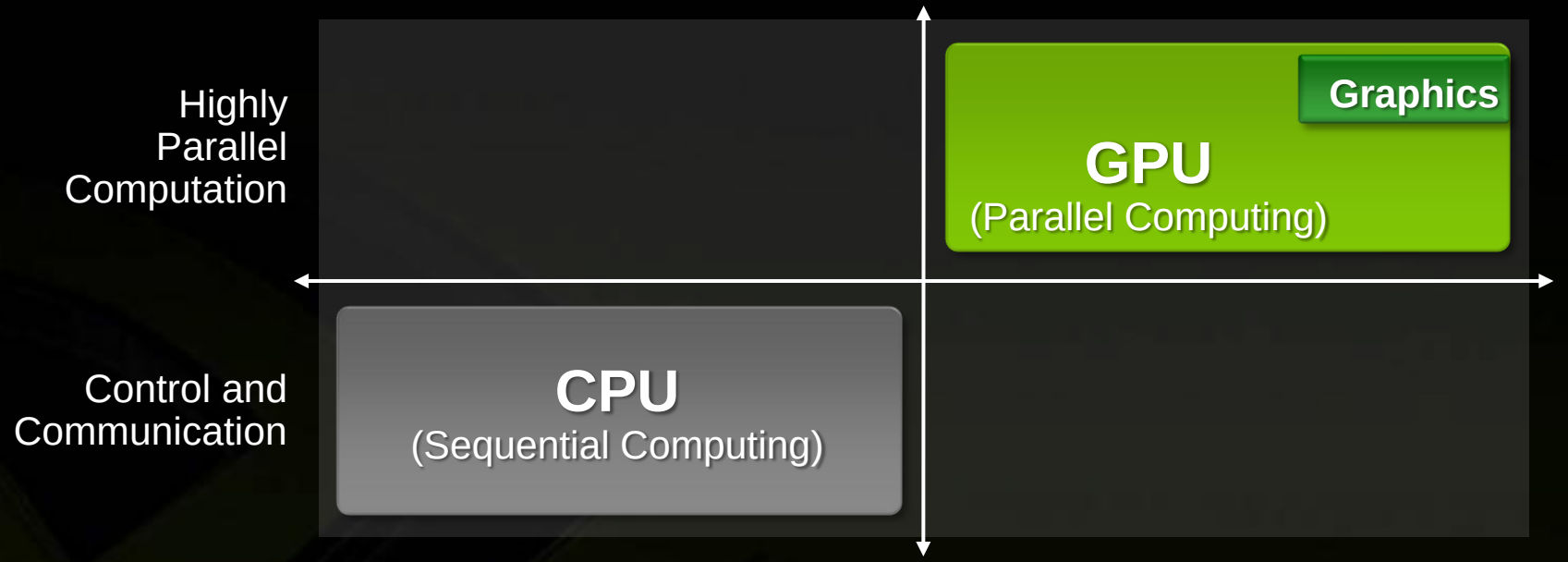
GPU Computing

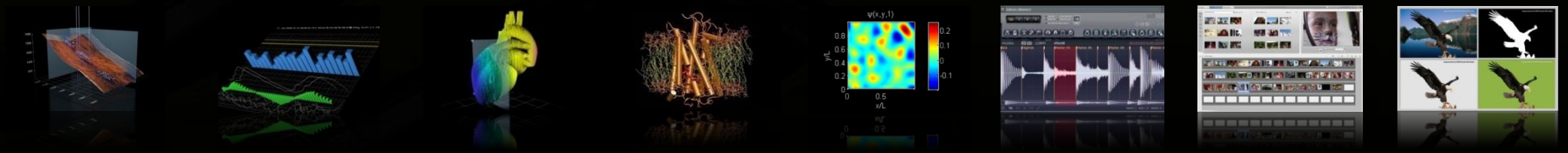


CPU + GPU Co-Processing

Heterogeneous Computing

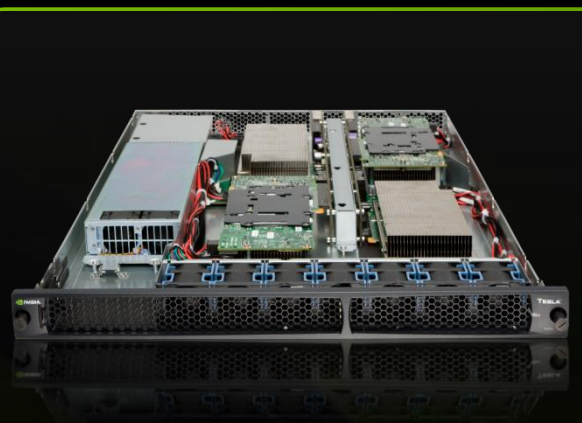
Heterogeneous Computing Domains





Oil & Gas | Finance | Medical | Biophysics | Numerics | Audio | Video | Imaging

Tesla GPU Computing Products



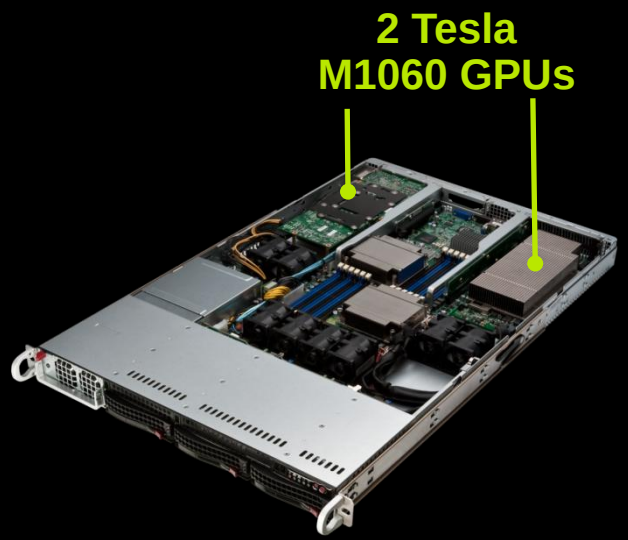
Tesla S1070 System

Tesla C1060 Processor

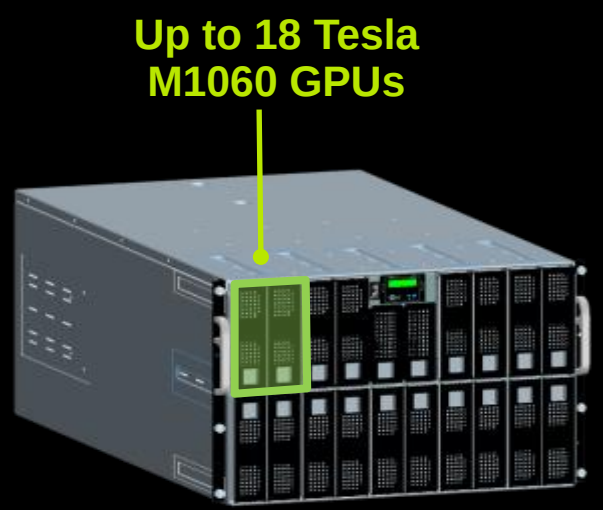
Tesla M1060 Processor

GPUs	4 Tesla GPUs	1 Tesla GPU	1 Tesla GPU
Single Precision Perf	4.14 TFlops	933 GFlops	933 GFlops
Double Precision Perf	346 GFlops	78 GFlops	78 GFlops
Memory	4 GB / GPU	4 GB	4 GB
Form Factor	1U Chassis, cables to a Host	Standard PCIe board	Custom Module

New Class of Co-Processing Supercomputers



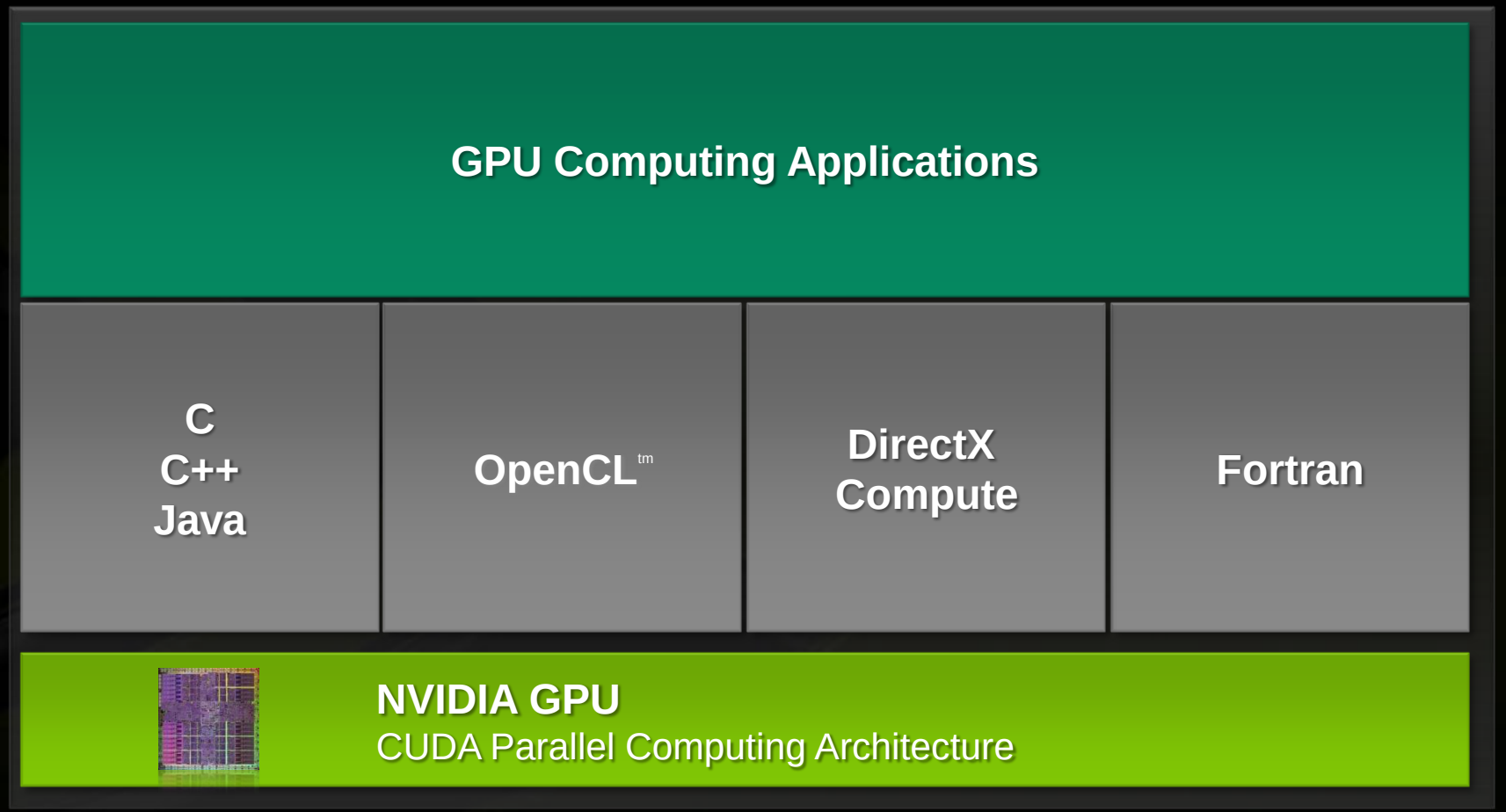
SuperMicro 1U
GPU Server



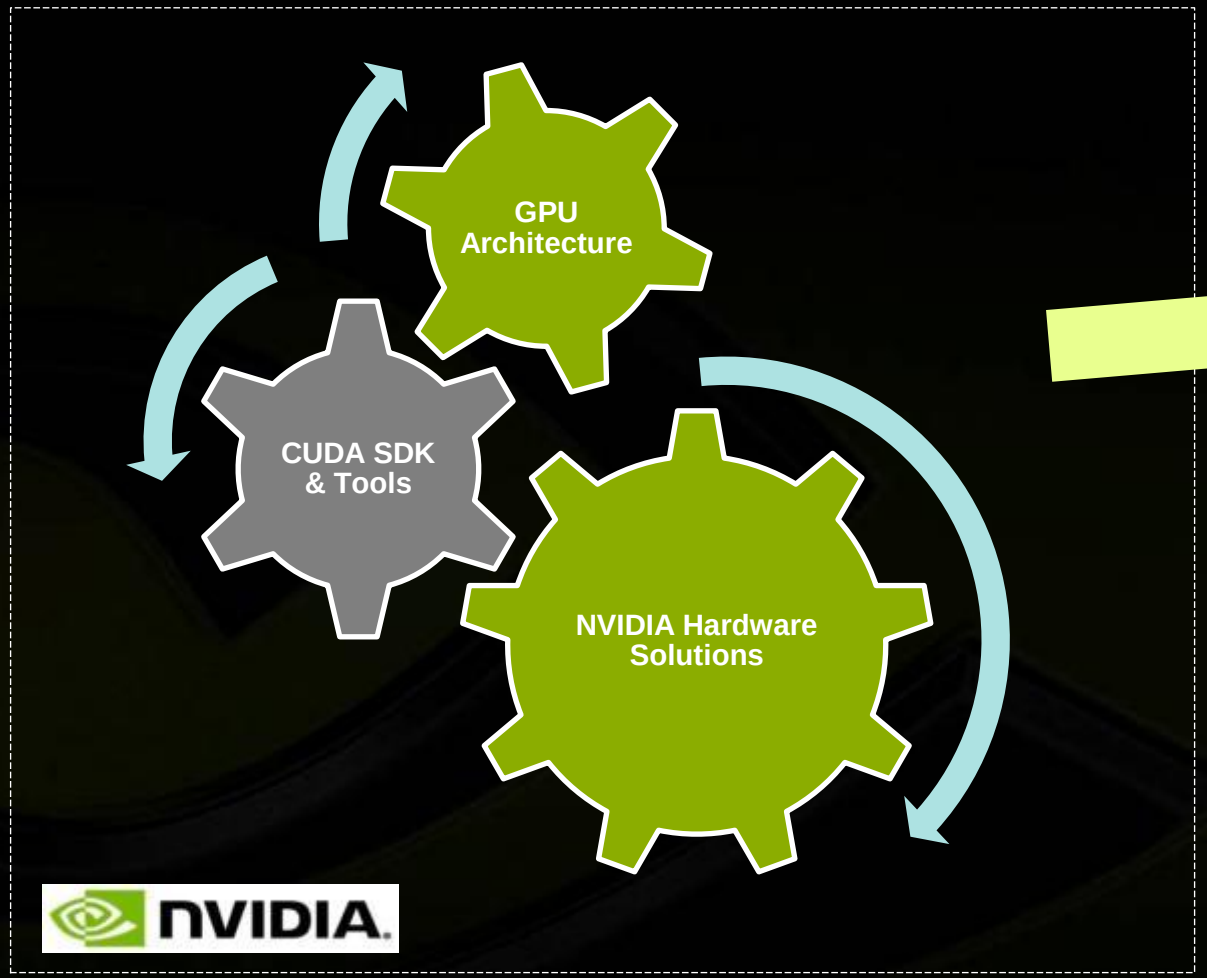
Bull Bullx
Blade Enclosure

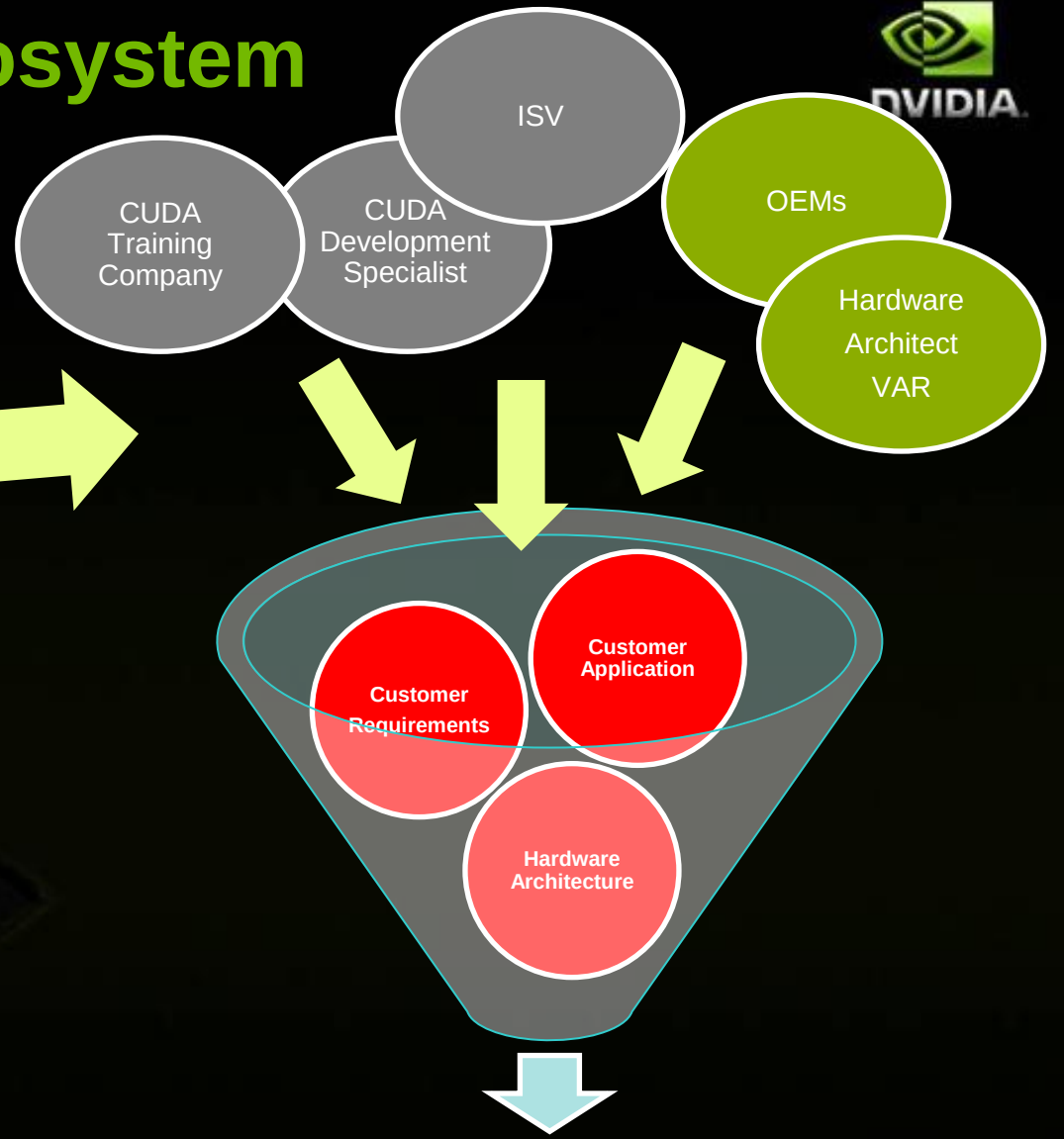
Tesla M1060 it is only available in OEM systems

CUDA GPU Computing Architecture



NVIDIA GPU Computing Ecosystem





CUDA Ecosystem

Over 200 Universities Teaching CUDA

UIUC
MIT
Harvard
Berkeley
Cambridge
Oxford
…

IIT Delhi
Dortmundt
ETH Zurich
Uni. Perpignan
Ecole Centrale
Paris 6 Jussieu
…

Languages

C, C++
DirectX
Fortran
Java
OpenCL
Python

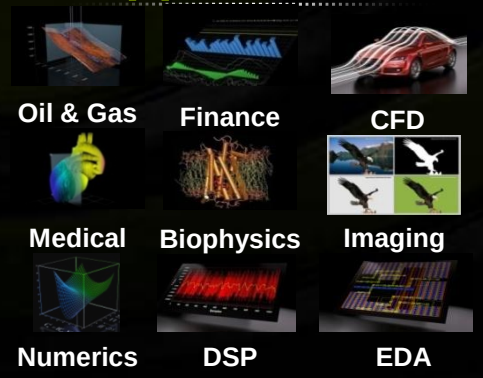
Compilers

PGI Fortran
CAPS HMPP
MCUDA
MPI
NOAA Fortran2C
OpenMP

Debuggers

Alinea
TotalView

Applications



Libraries

FFT
BLAS
LAPACK
Image processing
Video processing
Signal processing
Vision

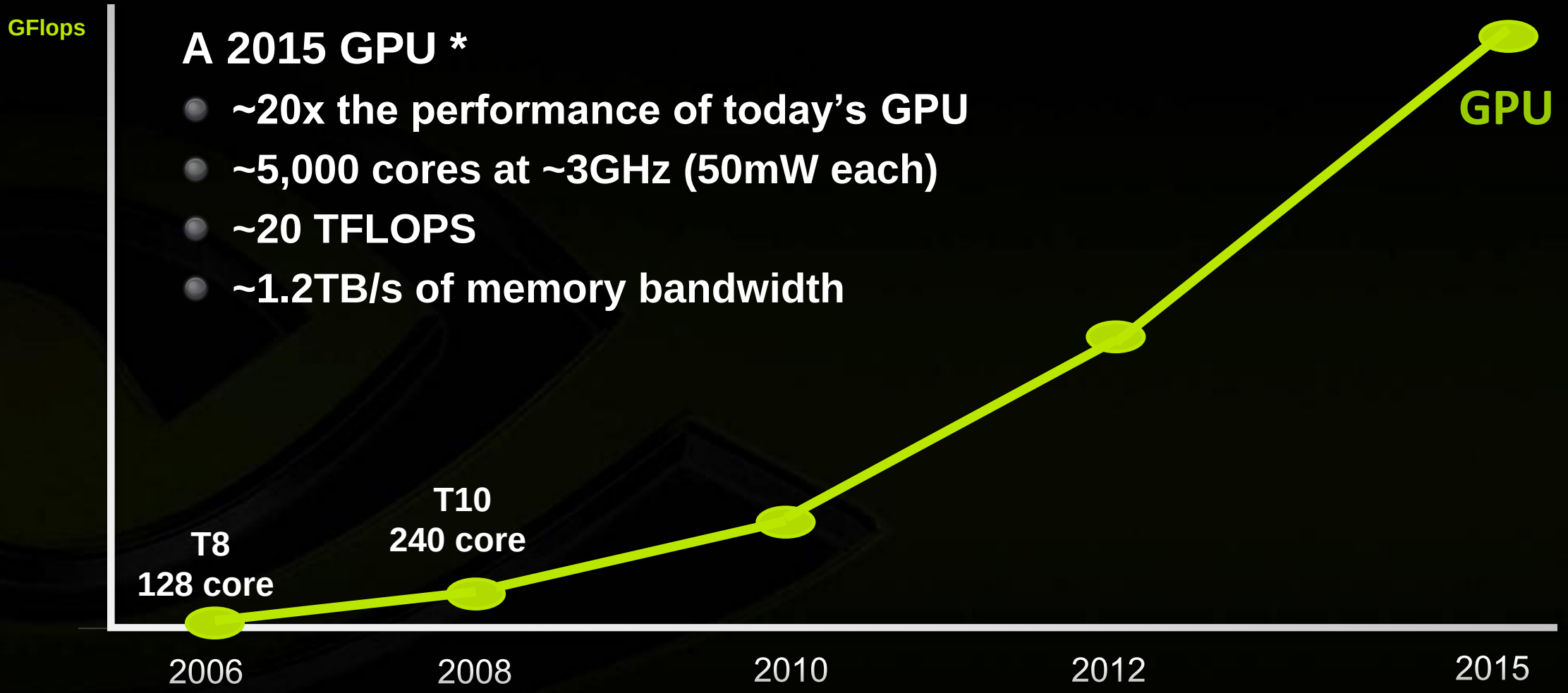
Consultants

acceleware
HPC Project
aneo
Scalable Graphics
CAPS
Stone Ridge Technology
EM Photonics
TECH
GASS
GPU-Tech
WIPRO

OEMs

DELL
hp
Penguin Computing
CRAY
Sun
Supermicro
sgi
FUJITSU
BULL
APPRO
lenovo 联想
NEC

GPU Revolutionizing Computing



* This is a sketch of a what a GPU in 2015 might look like, it does not reflect any actual product plans

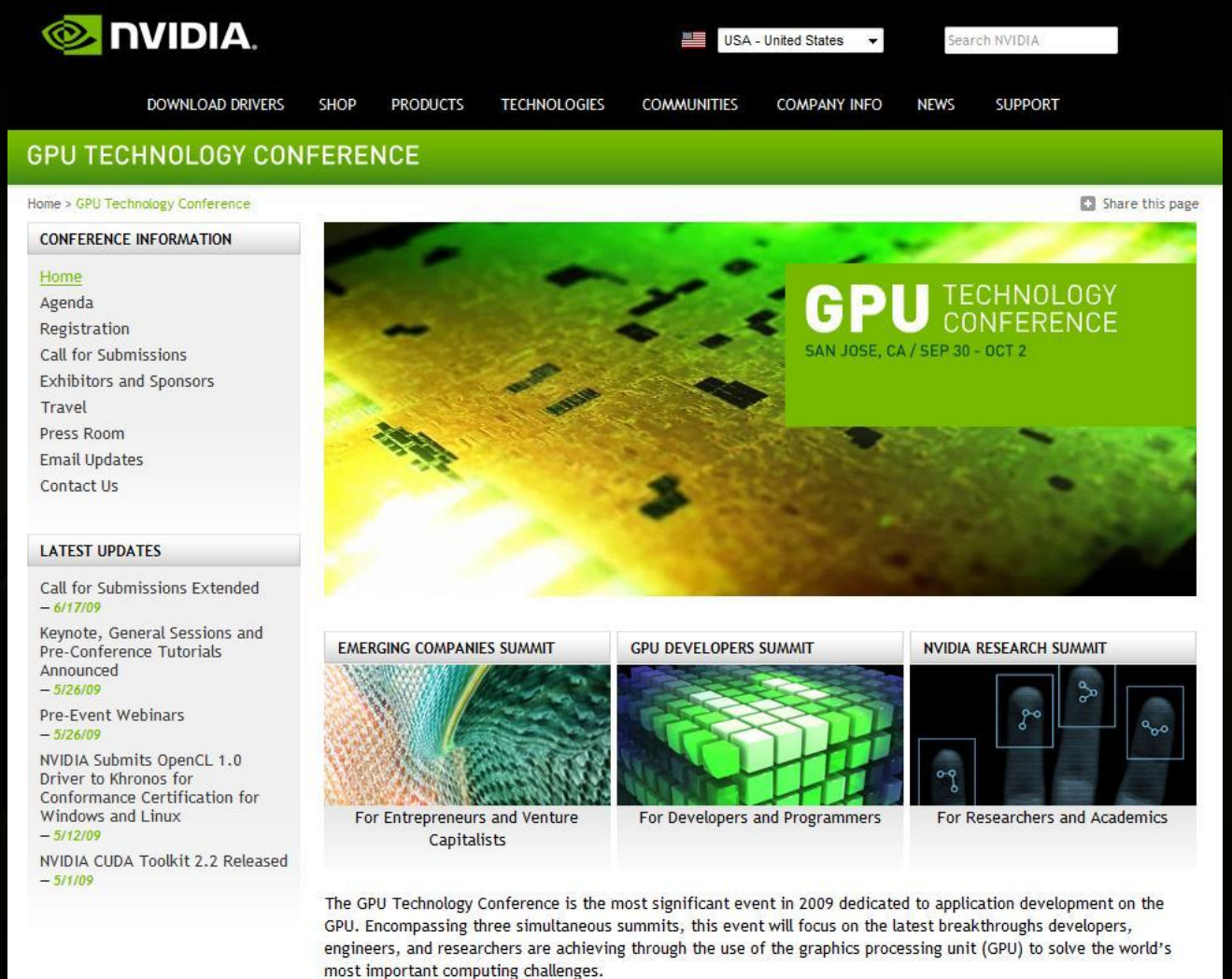
We bring Solutions to your Questions

GPU Technology Conference

Sept 30 – Oct 2, 2009

San Jose, CA

www.nvidia.com/gtc



NVIDIA GPU Computing Links

NVIDIA CUDA Zone

NVIDIA High Performance Computing Solutions

NVIDIA Tesla S1070 – Product Description
NVIDIA Tesla C1060 – Product Description

Tesla Personal Supercomputer
Tesla Personal Supercomputer – Where to Buy?

YouTube – Tesla videos

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