Lecture No.2.2: Performance Analysis

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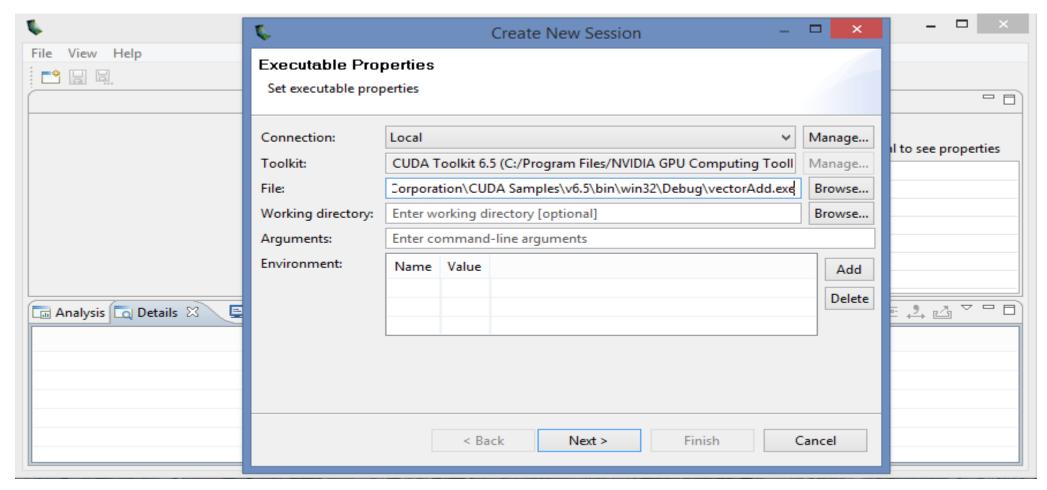


Visual Profiler

- A profiling tool that displays a timeline of your application's CPU and GPU activity
- includes an automated analysis engine to identify optimization opportunities
- Provides useful information about the code executed on GPU architecture
 - Number of integer instructions
 - Number of FP instructions
 - Instructions-Per Cycle (IPC) rate
 - L1, L2 caches hit and miss rates
 - Multiprocessor activity
 - Memory throughput

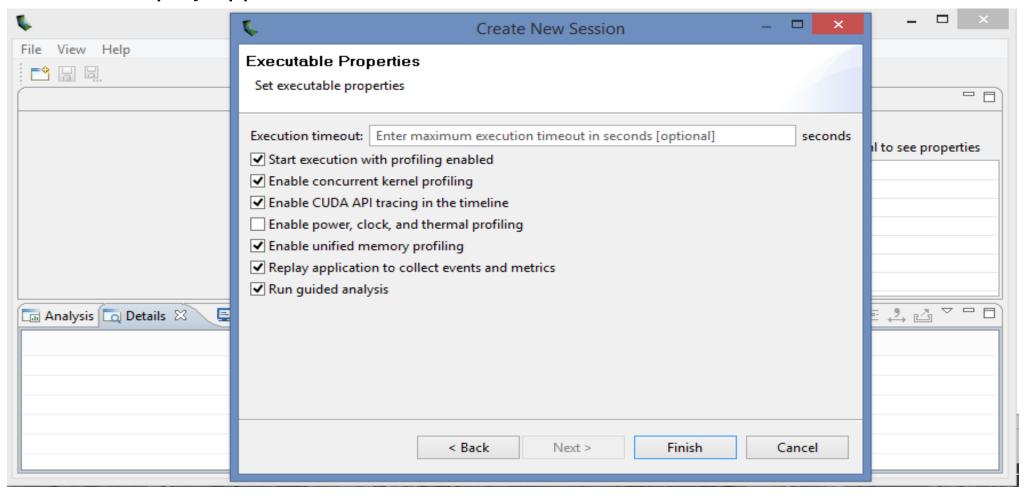
Visual Profiler (Cont.)

Lets consider again the vector addition application

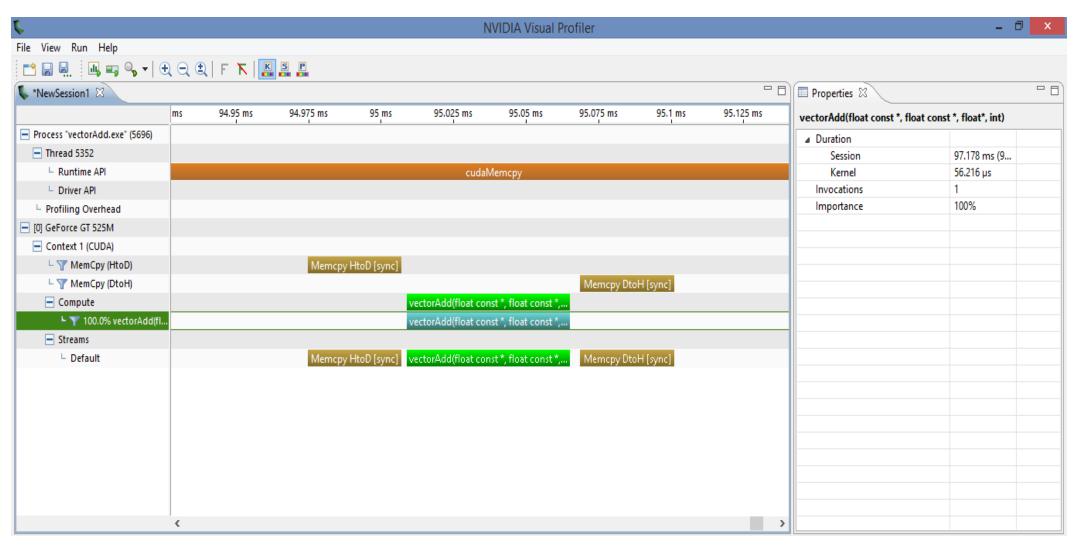


Visual Profiler (Cont.)

Check the "replay application to collect events and metrics"

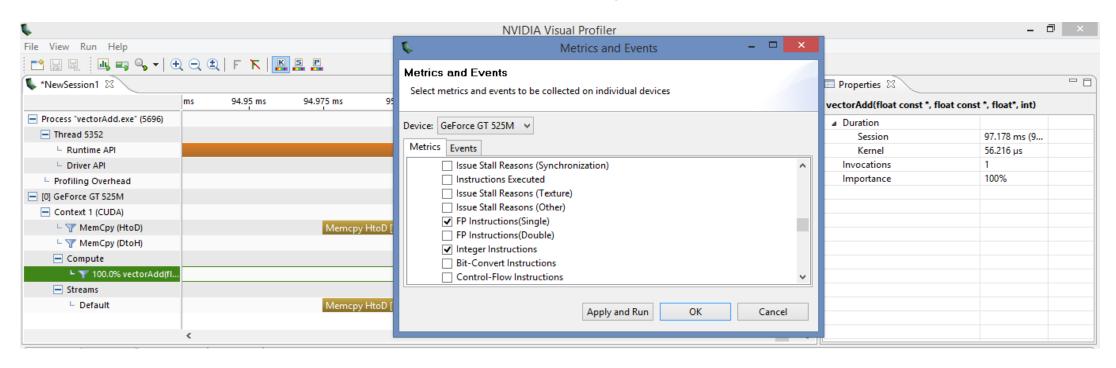


Vector Add – Profiling Timeline



Vector Add - Executed Instructions

Select the executed IPC, FP instructions and Integer instructions



Analysis 🗖 Details 🛱 📮 Console 🗔 Settings											\ : ♣ ♣ > □ □
Name	Start Time	Duration	Grid Size	Block Size	Regs	Static SMem	Dynamic SMem	FP Instructions(Single)	Executed IPC	Integer Instructions	
vectorAdd(float const *, float const *, float*, int)	95.009 ms	56.216 µs	[196,1,1]	[256,1,1]	7	0	0	50000	1.452	450528	