Current   116 - global_latency (1, 1, 1)   Time: n/a   Cycles: n/a   Regs: 40   GPU: Tesla P40   SM Frequency: n/a   CC: 6.1   Process: [60946] all_cs_original
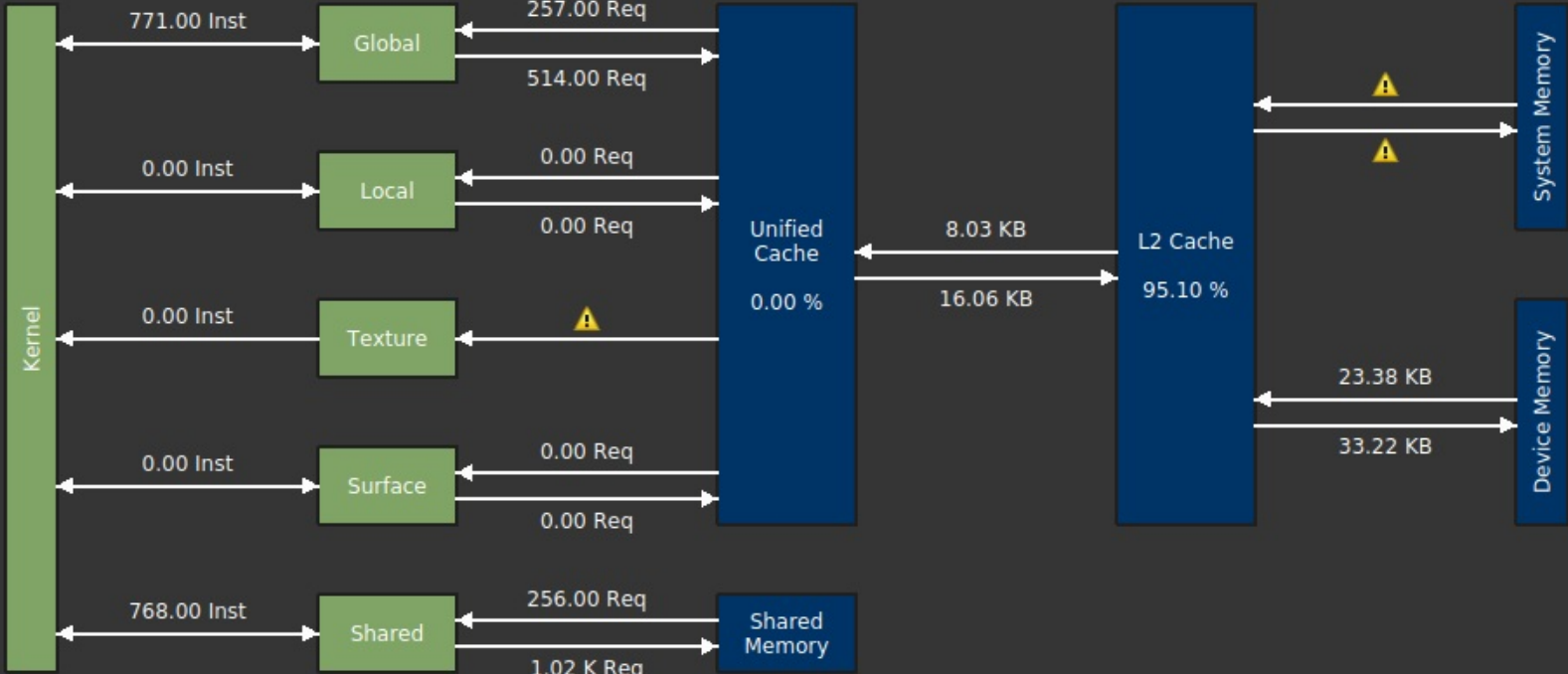
Memory Workload Analysis

All

Detailed analysis of the memory resources of the GPU. Memory can become a limiting factor for the overall kernel performance when fully utilizing the involved hardware units (Mem Busy), exhausting the available communication bandwidth between those units (Max Bandwidth), or by reaching the maximum throughput of issuing memory instructions (Mem Pipes Busy). Detailed chart of the memory units. Detailed tables with data for each memory unit.

Memory Throughput [Mbyte/second]	566.82	Mem Busy [%]	0.98
L1 Hit Rate [%]	0	Max Bandwidth [%]	0.98
L2 Hit Rate [%]	95.10	Mem Pipes Busy [%]	0.59

Memory Chart

Shared Memory

	Instructions	Requests	% Peak	Bank Conflicts
Shared Load	128	256	0.20	0
Shared Store	640	1,024	0.78	0
Shared Atomic	0	-	-	-
Total	768	1,280	0.98	0

First-Level (Unified) Cache

	Instructions	SM->TEX Requests	% Peak	Hit Rate	TEX->L2 Requests	% Peak	L2->TEX Returns	% Peak	TEX->SM Returns	% Peak
Global Load Cached	257	0	0	0	-	-	0	0	257	0.00
Global Load Uncached		257	0.20	-	-	-	257	0.00		
Local Load Cached	0	0	0	0	-	-	0	0		
Local Load Uncached		0	0	-	-	-	0	0		
Surface Load	0	0	0	-	-	-	0	0		
Texture Load	0									
Global Store	514	514	0.39	-	514	0.01	-	-	-	-
Local Store	0	0	0	-	0	0	-	-	-	-
Surface Store	0	0	0	-	0	0	-	-	-	-
Global Reduction	0	0	0	-	0	0	-	-	-	-
Surface Reduction	0	0	0	-	0	0	-	-	-	-
Global Atomic	0	0	0	-	0	0	0	0	0	0
Global Atomic Cas		0	0	-						
Surface Atomic	0	0	0	-	0	0	0	0	0	0
Surface Atomic Cas		0	0	-					0	0
Loads	257	257	0.20	0	-	-	257	0.00	257	0.00
Stores	514	514	0.39	-	514	0.01	-	-	-	-
Total	771	771	0.59	0	514	0.01	257	0.00	257	0.00

Second-Level (L2) Cache

	TEX->L2 Requests	% Peak	L2->TEX Returns	% Peak	Total Bytes	Total Throughput
Global Load Cached	-	-	0	0	0	0
Global Load Uncached	-	-	257	0.00	8,224	8,04,38,184.66
Local Load Cached	-	-	0	0	0	0
Local Load Uncached	-	-	0	0	0	0
Surface Load	-	-	0	0	0	0
Texture Load						
Global Store	514	0.02	-	-	16,448	16,08,76,369.33
Local Store	0		-	-	0	0
Surface Store	0	0	-	-	0	0
Global Reduction	0	0	-	-	0	0
Surface Reduction	0	0	-	-	0	0
Global Atomic	0	0	0	0	0	0
Global Atomic Cas						
Surface Atomic	0	0	0	0	0	0
Surface Atomic Cas						
Loads	-	-	257	0.00	8,224	8,04,38,184.66
Stores	514	0.02	-	-	16,448	16,08,76,369.33
Total	514	0.02	257	0.00	24,672	24,13,14,553.99

Device Memory (FB)

	L2<->FB Sectors	% Peak	Bytes	Throughput
Load	748	0.07	23,936	23,41,15,805.95
Store	1,063	0.10	34,016	33,27,07,355.24
Total	1,811	0.18	57,952	56,68,23,161.19