Intel® oneAPI VTune™ Profiler 2021.1.1 Gold

Recommendations:

Increase execution time:

> Application execution time is too short. Metrics data may be unreliable. Consider reducing the sampling interval or increasing your application execution time.

Elapsed Time: 0.047s

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CPU Time: 0.043s
Memory Bound: 3.4% of Pipeline Slots
L1 Bound: 15.6% of Clockticks
L2 Bound: 1.9% of Clockticks
L3 Bound: 5.8% of Clockticks
DRAM Bound: 3.9% of Clockticks
DRAM Bandwidth Bound: 42.2% of Elapsed Time

> The system spent much time heavily utilizing DRAM bandwidth. Improve data accesses to reduce cacheline transfers from/to memory using these possible techniques: 1) consume all bytes of each cacheline before it is evicted (for example, reorder structure elements and split non-hot ones); 2) merge compute-limited and bandwidth-limited loops; 3) use NUMA optimizations on a multi-socket system. Note: software prefetches do not help a bandwidth-limited application. Run Memory Access analysis to identify data structures to be allocated in High Bandwidth Memory (HBM), if available.

Store Bound: 1.9% of Clockticks
Loads: 30,480,000
Stores: 13,080,000
LLC Miss Count: 0
Average Latency (cycles): 10
Total Thread Count: 9
Paused Time: 0s

Bandwidth Utilization:

Bandwidth Domain	Platform Maximum	Observed Maximum	Average	% of Elapsed Time with High BW Utilization(%)
DRAM, GB/sec	10	8.000	5.692	42.2%

Collection and Platform Info:

Application Command Line: ./codecs/HHI-VVC/decoder/vvdecapp "-b" "./bin/HHI-VVC/randomaccess_fast.cfg/CLASS_C/RaceHorses_416x240_30_QP_37_HHI-VVC.bin"

User Name: root

Operating System: 5.4.0-72-generic DISTRIB_ID=Ubuntu DISTRIB_RELEASE=18.04 DISTRIB_CODENAME=bionic DISTRIB_DESCRIPTION="Ubuntu 18.04.5 LTS"

Computer Name: eimon

Result Size: 24.2 MB

Collection start time: 07:51:06 19/04/2021 UTC

Collection stop time: 07:51:06 19/04/2021 UTC

Collector Type: Event-based sampling driver

CPU:

Name: Intel(R) Processor code named Kabylake ULX

Frequency: 1.992 GHz

Logical CPU Count: 8

Max DRAM Single-Package Bandwidth: 10.000 GB/s

Cache Allocation Technology:

Level 2 capability: not detected

Level 3 capability: not detected