Report-3

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Cache file Simulate use Gem5

Now, we are implement cache.py configure for find the Hit ratio:

Command:

build/X86/gem5.opt -d pro configs/learning_gem5/part2/simple_cache.py --cpu-type=TimingSimpleCPU --caches --l1d_size=1kB --l1d_assoc=1 --cacheline_size=16 --l2cache --num-l2caches=1 --l2_size=16kB --l2_assoc=16 --l1i_size=2kB --l1i_assoc=1 --bench= qsort/qqc -o qsort/qqc.dat

Answer:

---------- Begin Simulation Statistics ----------
simSeconds 0.005738 # Number of seconds simulated (Second)
simTicks 5737602000 # Number of ticks simulated (Tick)
finalTick 5737602000 # Number of ticks from beginning of simulation (restored from checkpoints and never reset) (Tick)
simFreq 1000000000000 # The number of ticks per simulated second ((Tick/Second))
hostSeconds 0.82 # Real time elapsed on the host (Second)
hostTickRate 7001784643 # The number of ticks simulated per host second (ticks/s) ((Tick/Second))
hostMemory 684724 # Number of bytes of host memory used (Byte)
simInsts 462907 # Number of instructions simulated (Count)
simOps 900065 # Number of ops (including micro ops) simulated (Count)
hostInstRate 564839 # Simulator instruction rate (inst/s) ((Count/Second))
hostOpRate 1098251 # Simulator op (including micro ops) rate (op/s) ((Count/Second))
system.cache.hits 708689 # Number of hits (Count)
system.cache.misses 95970 # Number of misses (Count)
system.cache.missLatency::samples 95970 # Ticks for misses to the cache

system.cache.missLatency::mean 51400.885693 # Ticks for misses to the cache
system.cache.missLatency::gmean 43617.238631 # Ticks for misses to the cache
system.cache.missLatency::stdev 35449.425571 # Ticks for misses to the cache
system.cache.missLatency::0-32767 30683 31.97% 31.97% # Ticks for misses to the cache
system.cache.missLatency::32768-65535 47212 49.19% 81.17% # Ticks for misses to the cache
system.cache.missLatency::65536-98303 13041 13.59% 94.75% # Ticks for misses to the cache
system.cache.missLatency::98304-131071 1355 1.41% 96.17% # Ticks for misses to the cache
system.cache.missLatency::131072-163839 2283 2.38% 98.55% # Ticks for misses to the cache
system.cache.missLatency::163840-196607 663 0.69% 99.24% # Ticks for misses to the cache
system.cache.missLatency::196608-229375 39 0.04% 99.28% # Ticks for misses to the cache
system.cache.missLatency::229376-262143 54 0.06% 99.33% # Ticks for misses to the cache
system.cache.missLatency::262144-294911 190 0.20% 99.53% # Ticks for misses to the cache
system.cache.missLatency::294912-327679 348 0.36% 99.89% # Ticks for misses to the cache
system.cache.missLatency::327680-360447 68 0.07% 99.96% # Ticks for misses to the cache
system.cache.missLatency::360448-393215 6 0.01% 99.97% # Ticks for misses to the cache
system.cache.missLatency::393216-425983 8 0.01% 99.98% # Ticks for misses to the cache
system.cache.missLatency::425984-458751 13 0.01% 99.99% # Ticks for misses to the cache
system.cache.missLatency::458752-491519 5 0.01% 100.00% # Ticks for misses to the cache
system.cache.missLatency::491520-524287 2 0.00% 100.00% # Ticks for misses to the cache
system.cache.missLatency::total 95970 # Ticks for misses to the cache
system.cache.hitRatio 0.880732 # The ratio of hits to the total accesses to the cache (Ratio)
system.cache.power_state.pwrStateResidencyTicks::UNDEFINED 5737602000 # Cumulative time (in ticks) in various power states (Tick)

system.clk_domain.clock 1000 # Clock period in ticks (Tick)
system.clk_domain.voltage_domain.voltage 1 # Voltage in Volts (Volt)
system.cpu.numCycles 5737602 # Number of cpu cycles simulated (Cycle)
system.cpu.numWorkItemsStarted 0 # Number of work items this cpu started (Count)
system.cpu.numWorkItemsCompleted 0 # Number of work items this cpu completed (Count)
system.cpu.exec_context.thread_0.numInsts 462907 # Number of instructions committed (Count)
system.cpu.exec_context.thread_0.numOps 900065 # Number of ops (including micro ops) committed (Count)
system.cpu.exec_context.thread_0.numIntAluAccesses 877853 # Number of integer alu accesses (Count)
system.cpu.exec_context.thread_0.numFpAluAccesses 28147 # Number of float alu accesses (Count)
system.cpu.exec_context.thread_0.numVecAluAccesses 0 # Number of vector alu accesses (Count)
system.cpu.exec_context.thread_0.numCallsReturns 11726 # Number of times a function call or return occured (Count)
system.cpu.exec_context.thread_0.numCondCtrlInsts 82335 # Number of instructions that are conditional controls (Count)
system.cpu.exec_context.thread_0.numIntInsts 877853 # Number of integer instructions (Count)
system.cpu.exec_context.thread_0.numFpInsts 28147 # Number of float instructions (Count)
system.cpu.exec_context.thread_0.numVecInsts 0 # Number of vector instructions (Count)
system.cpu.exec_context.thread_0.numIntRegReads 1716304 # Number of times the integer registers were read (Count)
system.cpu.exec_context.thread_0.numIntRegWrites 715525 # Number of times the integer registers were written (Count)
system.cpu.exec_context.thread_0.numFpRegReads 47559 # Number of times the floating registers were read (Count)
system.cpu.exec_context.thread_0.numFpRegWrites 23520 # Number of times the floating registers were written (Count)
system.cpu.exec_context.thread_0.numVecRegReads 0 # Number of times the vector registers were read (Count)
system.cpu.exec_context.thread_0.numVecRegWrites 0 # Number of times the vector registers were written (Count)
system.cpu.exec_context.thread_0.numVecPredRegReads 0 # Number of times the predicate registers were read (Count)

system.cpu.exec_context.thread_0.numVecPredRegWrites 0 # Number of times the predicate registers were written (Count)
system.cpu.exec_context.thread_0.numCCRegReads 550042 # Number of times the CC registers were read (Count)
system.cpu.exec_context.thread_0.numCCRegWrites 300671 # Number of times the CC registers were written (Count)
system.cpu.exec_context.thread_0.numMemRefs 180060 # Number of memory refs (Count)
system.cpu.exec_context.thread_0.numLoadInsts 120942 # Number of load instructions (Count)
system.cpu.exec_context.thread_0.numStoreInsts 59118 # Number of store instructions (Count)
system.cpu.exec_context.thread_0.numIdleCycles 0.001000 # Number of idle cycles (Cycle)
system.cpu.exec_context.thread_0.numBusyCycles 5737601.999000 # Number of busy cycles (Cycle)
system.cpu.exec_context.thread_0.notIdleFraction 1.000000 # Percentage of non-idle cycles (Ratio)
system.cpu.exec_context.thread_0.idleFraction 0.000000 # Percentage of idle cycles (Ratio)
system.cpu.exec_context.thread_0.numBranches 104119 # Number of branches fetched (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::No_OpClass 3655 0.41% 0.41% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::IntAlu 695284 77.23% 77.64% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::IntMult 641 0.07% 77.71% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::IntDiv 1759 0.20% 77.90% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::FloatAdd 939 0.10% 78.01% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::FloatCmp 0 0.00% 78.01% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::FloatCvt 32 0.00% 78.01% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::FloatMult 0 0.00% 78.01% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::FloatMultAcc 0 0.00% 78.01% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::FloatDiv 0 0.00% 78.01% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::FloatMisc 0 0.00% 78.01% # Class of executed instruction. (Count)

system.cpu.exec_context.thread_0.statExecutedInstType::FloatSqrt 0
0.00% 78.01% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdAdd 976
0.11% 78.12% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdAddAcc 0
0.00% 78.12% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdAlu 4240
0.47% 78.59% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdCmp 0
0.00% 78.59% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdCvt 4622
0.51% 79.10% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdMisc 7492
0.83% 79.93% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdMult 0
0.00% 79.93% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdMultAcc 0
0.00% 79.93% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdShift 481
0.05% 79.99% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdShiftAcc 0
0.00% 79.99% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdDiv 0 0.00%
79.99% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdSqrt 0
0.00% 79.99% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdFloatAdd 0
0.00% 79.99% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdFloatAlu 0
0.00% 79.99% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdFloatCmp 0
0.00% 79.99% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdFloatCvt 96
0.01% 80.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdFloatDiv 10
0.00% 80.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdFloatMisc 0
0.00% 80.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdFloatMult 0
0.00% 80.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdFloatMultAcc 0
0.00% 80.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdFloatSqrt 0
0.00% 80.00% # Class of executed instruction. (Count)

system.cpu.exec_context.thread_0.statExecutedInstType::SimdReduceAdd 0 0.00% 80.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdReduceAlu 0 0.00% 80.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdReduceCmp 0 0.00% 80.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdFloatReduceAdd 0 0.00% 80.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdFloatReduceCmp 0 0.00% 80.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdAes 0 0.00% 80.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdAesMix 0 0.00% 80.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdSha1Hash 0 0.00% 80.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdSha1Hash2 0 0.00% 80.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdSha256Hash 0 0.00% 80.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdSha256Hash2 0 0.00% 80.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdShaSigma2 0 0.00% 80.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdShaSigma3 0 0.00% 80.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::SimdPredAlu 0 0.00% 80.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::MemRead 116641 12.96% 92.96% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::MemWrite 57015 6.33% 99.29% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::FloatMemRead 4301 0.48% 99.77% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::FloatMemWrite 2103 0.23% 100.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::IprAccess 0 0.00% 100.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::InstPrefetch 0 0.00% 100.00% # Class of executed instruction. (Count)
system.cpu.exec_context.thread_0.statExecutedInstType::total 900287 # Class of executed instruction. (Count)
system.cpu.interrupts.clk_domain.clock 16000 # Clock period in ticks (Tick)

system.cpu.mmu.dtb.rdAccesses 120974 # TLB accesses on read requests (Count)
system.cpu.mmu.dtb.wrAccesses 59134 # TLB accesses on write requests (Count)
system.cpu.mmu.dtb.rdMisses 162 # TLB misses on read requests (Count)
system.cpu.mmu.dtb.wrMisses 29 # TLB misses on write requests (Count)
system.cpu.mmu.dtb.walker.power_state.pwrStateResidencyTicks::UNDEFINED 5737602000 # Cumulative time (in ticks) in various power states (Tick)
system.cpu.mmu.itb.rdAccesses 0 # TLB accesses on read requests (Count)
system.cpu.mmu.itb.wrAccesses 624670 # TLB accesses on write requests (Count)
system.cpu.mmu.itb.rdMisses 0 # TLB misses on read requests (Count)
system.cpu.mmu.itb.wrMisses 188 # TLB misses on write requests (Count)
system.cpu.mmu.itb.walker.power_state.pwrStateResidencyTicks::UNDEFINED 5737602000 # Cumulative time (in ticks) in various power states (Tick)
system.cpu.power_state.pwrStateResidencyTicks::ON 5737602000 # Cumulative time (in ticks) in various power states (Tick)
system.cpu.thread_0.numInsts 0 # Number of Instructions committed (Count)
system.cpu.thread_0.numOps 0 # Number of Ops committed (Count)
system.cpu.thread_0.numMemRefs 0 # Number of Memory References (Count)
system.cpu.workload.numSyscalls 159 # Number of system calls (Count)
system.mem_ctrl.avgPriority_writebacks::samples 75810.00 # Average QoS priority value for accepted requests (Count)
system.mem_ctrl.avgPriority_cpu.inst::samples 36862.00 # Average QoS priority value for accepted requests (Count)
system.mem_ctrl.avgPriority_cpu.data::samples 28425.00 # Average QoS priority value for accepted requests (Count)
system.mem_ctrl.priorityMinLatency 0.000000018750 # per QoS priority minimum request to response latency (Second)
system.mem_ctrl.priorityMaxLatency 0.000087099750 # per QoS priority maximum request to response latency (Second)
system.mem_ctrl.numReadWriteTurnArounds 4662 # Number of turnarounds from READ to WRITE (Count)
system.mem_ctrl.numWriteReadTurnArounds 4662 # Number of turnarounds from WRITE to READ (Count)

system.mem_ctrl.numStayReadState 221803 # Number of times bus staying in READ state (Count)
system.mem_ctrl.numStayWriteState 71173 # Number of times bus staying in WRITE state (Count)
system.mem_ctrl.readReqs 95970 # Number of read requests accepted (Count)
system.mem_ctrl.writeReqs 95954 # Number of write requests accepted (Count)
system.mem_ctrl.readBursts 95970 # Number of controller read bursts, including those serviced by the write queue (Count)
system.mem_ctrl.writeBursts 95954 # Number of controller write bursts, including those merged in the write queue (Count)
system.mem_ctrl.servicedByWrQ 30683 # Number of controller read bursts serviced by the write queue (Count)
system.mem_ctrl.mergedWrBursts 20144 # Number of controller write bursts merged with an existing one (Count)
system.mem_ctrl.neitherReadNorWriteReqs 0 # Number of requests that are neither read nor write (Count)
system.mem_ctrl.avgRdQLen 1.00 # Average read queue length when enqueuing ((Count/Tick))
system.mem_ctrl.avgWrQLen 25.87 # Average write queue length when enqueuing ((Count/Tick))
system.mem_ctrl.numRdRetry 0 # Number of times read queue was full causing retry (Count)
system.mem_ctrl.numWrRetry 0 # Number of times write queue was full causing retry (Count)
system.mem_ctrl.readPktSize::0 0 # Read request sizes (log2) (Count)
system.mem_ctrl.readPktSize::1 0 # Read request sizes (log2) (Count)
system.mem_ctrl.readPktSize::2 0 # Read request sizes (log2) (Count)
system.mem_ctrl.readPktSize::3 0 # Read request sizes (log2) (Count)
system.mem_ctrl.readPktSize::4 0 # Read request sizes (log2) (Count)
system.mem_ctrl.readPktSize::5 0 # Read request sizes (log2) (Count)
system.mem_ctrl.readPktSize::6 95970 # Read request sizes (log2) (Count)
system.mem_ctrl.writePktSize::0 0 # Write request sizes (log2) (Count)
system.mem_ctrl.writePktSize::1 0 # Write request sizes (log2) (Count)

system.mem_ctrl.writePktSize::2 0 # Write request sizes (log2) (Count)
system.mem_ctrl.writePktSize::3 0 # Write request sizes (log2) (Count)
system.mem_ctrl.writePktSize::4 0 # Write request sizes (log2) (Count)
system.mem_ctrl.writePktSize::5 0 # Write request sizes (log2) (Count)
system.mem_ctrl.writePktSize::6 95954 # Write request sizes (log2) (Count)
system.mem_ctrl.rdQLenPdf::0 65287 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::1 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::2 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::3 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::4 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::5 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::6 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::7 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::8 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::9 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::10 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::11 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::12 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::13 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::14 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::15 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::16 0 # What read queue length does an incoming req see (Count)

system.mem_ctrl.rdQLenPdf::17 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::18 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::19 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::20 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::21 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::22 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::23 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::24 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::25 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::26 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::27 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::28 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::29 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::30 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.rdQLenPdf::31 0 # What read queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::0 1 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::1 1 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::2 1 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::3 1 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::4 1 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::5 1 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::6 1 # What write queue length does an incoming req see (Count)

system.mem_ctrl.wrQLenPdf::7 1 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::8 1 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::9 1 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::10 1 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::11 1 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::12 1 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::13 1 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::14 1 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::15 287 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::16 406 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::17 3971 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::18 4746 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::19 4777 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::20 4720 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::21 4797 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::22 5227 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::23 4873 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::24 4679 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::25 4669 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::26 4663 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::27 4662 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::28 4662 # What write queue length does an incoming req see (Count)

system.mem_ctrl.wrQLenPdf::29 4662 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::30 4662 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::31 4662 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::32 4662 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::33 7 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::34 1 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::35 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::36 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::37 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::38 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::39 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::40 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::41 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::42 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::43 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::44 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::45 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::46 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::47 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::48 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::49 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::50 0 # What write queue length does an incoming req see (Count)

system.mem_ctrl.wrQLenPdf::51 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::52 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::53 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::54 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::55 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::56 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::57 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::58 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::59 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::60 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::61 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::62 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.wrQLenPdf::63 0 # What write queue length does an incoming req see (Count)
system.mem_ctrl.rdPerTurnAround::samples 4662 # Reads before turning the bus around for writes (Count)
system.mem_ctrl.rdPerTurnAround::mean 14.003861 # Reads before turning the bus around for writes (Count)
system.mem_ctrl.rdPerTurnAround::gmean 13.794488 # Reads before turning the bus around for writes (Count)
system.mem_ctrl.rdPerTurnAround::stdev 2.387118 # Reads before turning the bus around for writes (Count)
system.mem_ctrl.rdPerTurnAround::2-3 1 0.02% 0.02% # Reads before turning the bus around for writes (Count)
system.mem_ctrl.rdPerTurnAround::4-5 3 0.06% 0.09% # Reads before turning the bus around for writes (Count)
system.mem_ctrl.rdPerTurnAround::6-7 30 0.64% 0.73% # Reads before turning the bus around for writes (Count)
system.mem_ctrl.rdPerTurnAround::8-9 97 2.08% 2.81% # Reads before turning the bus around for writes (Count)
system.mem_ctrl.rdPerTurnAround::10-11 420 9.01% 11.82% # Reads before turning the bus around for writes (Count)

system.mem_ctrl.rdPerTurnAround::12-13 1332 28.57% 40.39% # Reads before turning the bus around for writes (Count)
system.mem_ctrl.rdPerTurnAround::14-15 1690 36.25% 76.64% # Reads before turning the bus around for writes (Count)
system.mem_ctrl.rdPerTurnAround::16-17 809 17.35% 93.99% # Reads before turning the bus around for writes (Count)
system.mem_ctrl.rdPerTurnAround::18-19 211 4.53% 98.52% # Reads before turning the bus around for writes (Count)
system.mem_ctrl.rdPerTurnAround::20-21 51 1.09% 99.61% # Reads before turning the bus around for writes (Count)
system.mem_ctrl.rdPerTurnAround::22-23 15 0.32% 99.94% # Reads before turning the bus around for writes (Count)
system.mem_ctrl.rdPerTurnAround::24-25 1 0.02% 99.96% # Reads before turning the bus around for writes (Count)
system.mem_ctrl.rdPerTurnAround::26-27 1 0.02% 99.98% # Reads before turning the bus around for writes (Count)
system.mem_ctrl.rdPerTurnAround::46-47 1 0.02% 100.00% # Reads before turning the bus around for writes (Count)
system.mem_ctrl.rdPerTurnAround::total 4662 # Reads before turning the bus around for writes (Count)
system.mem_ctrl.wrPerTurnAround::samples 4662 # Writes before turning the bus around for reads (Count)
system.mem_ctrl.wrPerTurnAround::mean 16.257400 # Writes before turning the bus around for reads (Count)
system.mem_ctrl.wrPerTurnAround::gmean 16.238413 # Writes before turning the bus around for reads (Count)
system.mem_ctrl.wrPerTurnAround::stdev 0.826913 # Writes before turning the bus around for reads (Count)
system.mem_ctrl.wrPerTurnAround::16 4198 90.05% 90.05% # Writes before turning the bus around for reads (Count)
system.mem_ctrl.wrPerTurnAround::17 48 1.03% 91.08% # Writes before turning the bus around for reads (Count)
system.mem_ctrl.wrPerTurnAround::18 184 3.95% 95.02% # Writes before turning the bus around for reads (Count)
system.mem_ctrl.wrPerTurnAround::19 148 3.17% 98.20% # Writes before turning the bus around for reads (Count)
system.mem_ctrl.wrPerTurnAround::20 80 1.72% 99.91% # Writes before turning the bus around for reads (Count)
system.mem_ctrl.wrPerTurnAround::21 4 0.09% 100.00% # Writes before turning the bus around for reads (Count)
system.mem_ctrl.wrPerTurnAround::total 4662 # Writes before turning the bus around for reads (Count)
system.mem_ctrl.bytesReadWrQ 1963712 # Total number of bytes read from write queue (Byte)

system.mem_ctrl.bytesReadSys 6142080 # Total read bytes from the system interface side (Byte)
system.mem_ctrl.bytesWrittenSys 6141056 # Total written bytes from the system interface side (Byte)
system.mem_ctrl.avgRdBWSys 1070496001.63970947 # Average system read bandwidth in Byte/s ((Byte/Second))
system.mem_ctrl.avgWrBWSys 1070317529.86700726 # Average system write bandwidth in Byte/s ((Byte/Second))
system.mem_ctrl.totGap 5737598000 # Total gap between requests (Tick)
system.mem_ctrl.avgGap 29895.16 # Average gap between requests ((Tick/Count))
system.mem_ctrl.requestorReadBytes::cpu.inst 2359168 # Per-requestor bytes read from memory (Byte)
system.mem_ctrl.requestorReadBytes::cpu.data 1819200 # Per-requestor bytes read from memory (Byte)
system.mem_ctrl.requestorWriteBytes::writebacks 4850688 # Per-requestor bytes write to memory (Byte)
system.mem_ctrl.requestorReadRate::cpu.inst 411176655.334406256676 # Per-requestor bytes read from memory rate ((Byte/Second))
system.mem_ctrl.requestorReadRate::cpu.data 317066258.691348791122 # Per-requestor bytes read from memory rate ((Byte/Second))
system.mem_ctrl.requestorWriteRate::writebacks 845420787.290578961372 # Per-requestor bytes write to memory rate ((Byte/Second))
system.mem_ctrl.requestorReadAccesses::cpu.inst 46855 # Per-requestor read serviced memory accesses (Count)
system.mem_ctrl.requestorReadAccesses::cpu.data 49115 # Per-requestor read serviced memory accesses (Count)
system.mem_ctrl.requestorWriteAccesses::writebacks 95954 # Per-requestor write serviced memory accesses (Count)
system.mem_ctrl.requestorReadTotalLat::cpu.inst 1189973250 # Per-requestor read total memory access latency (Tick)
system.mem_ctrl.requestorReadTotalLat::cpu.data 1018136250 # Per-requestor read total memory access latency (Tick)
system.mem_ctrl.requestorWriteTotalLat::writebacks 142026632000 # Per-requestor write total memory access latency (Tick)
system.mem_ctrl.requestorReadAvgLat::cpu.inst 25396.93 # Per-requestor read average memory access latency ((Tick/Count))
system.mem_ctrl.requestorReadAvgLat::cpu.data 20729.64 # Per-requestor read average memory access latency ((Tick/Count))
system.mem_ctrl.requestorWriteAvgLat::writebacks 1480153.32 # Per-requestor write average memory access latency ((Tick/Count))
system.mem_ctrl.dram.bytesRead::cpu.inst 2998720 # Number of bytes read from this memory (Byte)

system.mem_ctrl.dram.bytesRead::cpu.data 3143360 # Number of bytes read from this memory (Byte)
system.mem_ctrl.dram.bytesRead::total 6142080 # Number of bytes read from this memory (Byte)
system.mem_ctrl.dram.bytesInstRead::cpu.inst 2998720 # Number of instructions bytes read from this memory (Byte)
system.mem_ctrl.dram.bytesInstRead::total 2998720 # Number of instructions bytes read from this memory (Byte)
system.mem_ctrl.dram.bytesWritten::writebacks 6141056 # Number of bytes written to this memory (Byte)
system.mem_ctrl.dram.bytesWritten::total 6141056 # Number of bytes written to this memory (Byte)
system.mem_ctrl.dram.numReads::cpu.inst 46855 # Number of read requests responded to by this memory (Count)
system.mem_ctrl.dram.numReads::cpu.data 49115 # Number of read requests responded to by this memory (Count)
system.mem_ctrl.dram.numReads::total 95970 # Number of read requests responded to by this memory (Count)
system.mem_ctrl.dram.numWrites::writebacks 95954 # Number of write requests responded to by this memory (Count)
system.mem_ctrl.dram.numWrites::total 95954 # Number of write requests responded to by this memory (Count)
system.mem_ctrl.dram.bwRead::cpu.inst 522643432 # Total read bandwidth from this memory ((Byte/Second))
system.mem_ctrl.dram.bwRead::cpu.data 547852570 # Total read bandwidth from this memory ((Byte/Second))
system.mem_ctrl.dram.bwRead::total 1070496002 # Total read bandwidth from this memory ((Byte/Second))
system.mem_ctrl.dram.bwInstRead::cpu.inst 522643432 # Instruction read bandwidth from this memory ((Byte/Second))
system.mem_ctrl.dram.bwInstRead::total 522643432 # Instruction read bandwidth from this memory ((Byte/Second))
system.mem_ctrl.dram.bwWrite::writebacks 1070317530 # Write bandwidth from this memory ((Byte/Second))
system.mem_ctrl.dram.bwWrite::total 1070317530 # Write bandwidth from this memory ((Byte/Second))
system.mem_ctrl.dram.bwTotal::writebacks 1070317530 # Total bandwidth to/from this memory ((Byte/Second))
system.mem_ctrl.dram.bwTotal::cpu.inst 522643432 # Total bandwidth to/from this memory ((Byte/Second))
system.mem_ctrl.dram.bwTotal::cpu.data 547852570 # Total bandwidth to/from this memory ((Byte/Second))
system.mem_ctrl.dram.bwTotal::total 2140813532 # Total bandwidth to/from this memory ((Byte/Second))

system.mem_ctrl.dram.readBursts 65287 # Number of DRAM read bursts (Count)
system.mem_ctrl.dram.writeBursts 75792 # Number of DRAM write bursts (Count)
system.mem_ctrl.dram.perBankRdBursts::0 8665 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankRdBursts::1 2955 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankRdBursts::2 525 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankRdBursts::3 1430 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankRdBursts::4 276 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankRdBursts::5 1749 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankRdBursts::6 674 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankRdBursts::7 3972 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankRdBursts::8 13108 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankRdBursts::9 909 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankRdBursts::10 1256 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankRdBursts::11 1339 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankRdBursts::12 4441 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankRdBursts::13 2849 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankRdBursts::14 13659 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankRdBursts::15 7480 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankWrBursts::0 10057 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankWrBursts::1 3163 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankWrBursts::2 549 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankWrBursts::3 1580 # Per bank write bursts (Count)

system.mem_ctrl.dram.perBankWrBursts::4 384 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankWrBursts::5 2021 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankWrBursts::6 758 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankWrBursts::7 4361 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankWrBursts::8 17963 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankWrBursts::9 1003 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankWrBursts::10 1383 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankWrBursts::11 1362 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankWrBursts::12 4662 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankWrBursts::13 3207 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankWrBursts::14 15499 # Per bank write bursts (Count)
system.mem_ctrl.dram.perBankWrBursts::15 7840 # Per bank write bursts (Count)
system.mem_ctrl.dram.totQLat 983978250 # Total ticks spent queuing (Tick)
system.mem_ctrl.dram.totBusLat 326435000 # Total ticks spent in databus transfers (Tick)
system.mem_ctrl.dram.totMemAccLat 2208109500 # Total ticks spent from burst creation until serviced by the DRAM (Tick)
system.mem_ctrl.dram.avgQLat 15071.58 # Average queueing delay per DRAM burst ((Tick/Count))
system.mem_ctrl.dram.avgBusLat 5000.00 # Average bus latency per DRAM burst ((Tick/Count))
system.mem_ctrl.dram.avgMemAccLat 33821.58 # Average memory access latency per DRAM burst ((Tick/Count))
system.mem_ctrl.dram.readRowHits 42474 # Number of row buffer hits during reads (Count)
system.mem_ctrl.dram.writeRowHits 68351 # Number of row buffer hits during writes (Count)
system.mem_ctrl.dram.readRowHitRate 65.06 # Row buffer hit rate for reads (Ratio)
system.mem_ctrl.dram.writeRowHitRate 90.18 # Row buffer hit rate for writes (Ratio)

system.mem_ctrl.dram.bytesPerActivate::samples 30243 # Bytes accessed per row activation (Byte)
system.mem_ctrl.dram.bytesPerActivate::mean 298.467745 # Bytes accessed per row activation (Byte)
system.mem_ctrl.dram.bytesPerActivate::gmean 203.358310 # Bytes accessed per row activation (Byte)
system.mem_ctrl.dram.bytesPerActivate::stdev 270.854203 # Bytes accessed per row activation (Byte)
system.mem_ctrl.dram.bytesPerActivate::0-127 7394 24.45% 24.45% # Bytes accessed per row activation (Byte)
system.mem_ctrl.dram.bytesPerActivate::128-255 8957 29.62% 54.07% # Bytes accessed per row activation (Byte)
system.mem_ctrl.dram.bytesPerActivate::256-383 4803 15.88% 69.95% # Bytes accessed per row activation (Byte)
system.mem_ctrl.dram.bytesPerActivate::384-511 3329 11.01% 80.95% # Bytes accessed per row activation (Byte)
system.mem_ctrl.dram.bytesPerActivate::512-639 1761 5.82% 86.78% # Bytes accessed per row activation (Byte)
system.mem_ctrl.dram.bytesPerActivate::640-767 1097 3.63% 90.40% # Bytes accessed per row activation (Byte)
system.mem_ctrl.dram.bytesPerActivate::768-895 635 2.10% 92.50% # Bytes accessed per row activation (Byte)
system.mem_ctrl.dram.bytesPerActivate::896-1023 390 1.29% 93.79% # Bytes accessed per row activation (Byte)
system.mem_ctrl.dram.bytesPerActivate::1024-1151 1877 6.21% 100.00% # Bytes accessed per row activation (Byte)
system.mem_ctrl.dram.bytesPerActivate::total 30243 # Bytes accessed per row activation (Byte)
system.mem_ctrl.dram.bytesRead 4178368 # Total number of bytes read from DRAM (Byte)
system.mem_ctrl.dram.bytesWritten 4850688 # Total number of bytes written to DRAM (Byte)
system.mem_ctrl.dram.avgRdBW 728.242914 # Average DRAM read bandwidth in MiBytes/s ((Byte/Second))
system.mem_ctrl.dram.avgWrBW 845.420787 # Average DRAM write bandwidth in MiBytes/s ((Byte/Second))
system.mem_ctrl.dram.peakBW 12800.00 # Theoretical peak bandwidth in MiByte/s ((Byte/Second))
system.mem_ctrl.dram.busUtil 12.29 # Data bus utilization in percentage (Ratio)
system.mem_ctrl.dram.busUtilRead 5.69 # Data bus utilization in percentage for reads (Ratio)
system.mem_ctrl.dram.busUtilWrite 6.60 # Data bus utilization in percentage for writes (Ratio)

system.mem_ctrl.dram.pageHitRate 78.56 # Row buffer hit rate, read and write combined (Ratio)
system.mem_ctrl.dram.power_state.pwrStateResidencyTicks::UNDEFINED 5737602000 # Cumulative time (in ticks) in various power states (Tick)
system.mem_ctrl.dram.rank0.actEnergy 77019180 # Energy for activate commands per rank (pJ) (Joule)
system.mem_ctrl.dram.rank0.preEnergy 40917690 # Energy for precharge commands per rank (pJ) (Joule)
system.mem_ctrl.dram.rank0.readEnergy 144556440 # Energy for read commands per rank (pJ) (Joule)
system.mem_ctrl.dram.rank0.writeEnergy 119397060 # Energy for write commands per rank (pJ) (Joule)
system.mem_ctrl.dram.rank0.refreshEnergy 452375040.000000 # Energy for refresh commands per rank (pJ) (Joule)
system.mem_ctrl.dram.rank0.actBackEnergy 2446938180 # Energy for active background per rank (pJ) (Joule)
system.mem_ctrl.dram.rank0.preBackEnergy 142659840 # Energy for precharge background per rank (pJ) (Joule)
system.mem_ctrl.dram.rank0.actPowerDownEnergy 0 # Energy for active power-down per rank (pJ) (Joule)
system.mem_ctrl.dram.rank0.prePowerDownEnergy 0 # Energy for precharge power-down per rank (pJ) (Joule)
system.mem_ctrl.dram.rank0.selfRefreshEnergy 0 # Energy for self refresh per rank (pJ) (Joule)
system.mem_ctrl.dram.rank0.totalEnergy 3423863430 # Total energy per rank (pJ) (Joule)
system.mem_ctrl.dram.rank0.averagePower 596.741187 # Core power per rank (mW) (Watt)
system.mem_ctrl.dram.rank0.totalIdleTime 0 # Total Idle time Per DRAM Rank (Tick)
system.mem_ctrl.dram.rank0.pwrStateTime::IDLE 348160500 # Time in different power states (Tick)
system.mem_ctrl.dram.rank0.pwrStateTime::REF 191360000 # Time in different power states (Tick)
system.mem_ctrl.dram.rank0.pwrStateTime::SREF 0 # Time in different power states (Tick)
system.mem_ctrl.dram.rank0.pwrStateTime::PRE_PDN 0 # Time in different power states (Tick)
system.mem_ctrl.dram.rank0.pwrStateTime::ACT 5198081500 # Time in different power states (Tick)
system.mem_ctrl.dram.rank0.pwrStateTime::ACT_PDN 0 # Time in different power states (Tick)
system.mem_ctrl.dram.rank1.actEnergy 138994380 # Energy for activate commands per rank (pJ) (Joule)

system.mem_ctrl.dram.rank1.preEnergy 73854495 # Energy for precharge commands per rank (pJ) (Joule)
system.mem_ctrl.dram.rank1.readEnergy 321592740 # Energy for read commands per rank (pJ) (Joule)
system.mem_ctrl.dram.rank1.writeEnergy 276237180 # Energy for write commands per rank (pJ) (Joule)
system.mem_ctrl.dram.rank1.refreshEnergy 452375040.000000 # Energy for refresh commands per rank (pJ) (Joule)
system.mem_ctrl.dram.rank1.actBackEnergy 2571144030 # Energy for active background per rank (pJ) (Joule)
system.mem_ctrl.dram.rank1.preBackEnergy 38065440 # Energy for precharge background per rank (pJ) (Joule)
system.mem_ctrl.dram.rank1.actPowerDownEnergy 0 # Energy for active power-down per rank (pJ) (Joule)
system.mem_ctrl.dram.rank1.prePowerDownEnergy 0 # Energy for precharge power-down per rank (pJ) (Joule)
system.mem_ctrl.dram.rank1.selfRefreshEnergy 0 # Energy for self refresh per rank (pJ) (Joule)
system.mem_ctrl.dram.rank1.totalEnergy 3872263305 # Total energy per rank (pJ) (Joule)
system.mem_ctrl.dram.rank1.averagePower 674.892282 # Core power per rank (mW) (Watt)
system.mem_ctrl.dram.rank1.totalIdleTime 0 # Total Idle time Per DRAM Rank (Tick)
system.mem_ctrl.dram.rank1.pwrStateTime::IDLE 77377250 # Time in different power states (Tick)
system.mem_ctrl.dram.rank1.pwrStateTime::REF 191360000 # Time in different power states (Tick)
system.mem_ctrl.dram.rank1.pwrStateTime::SREF 0 # Time in different power states (Tick)
system.mem_ctrl.dram.rank1.pwrStateTime::PRE_PDN 0 # Time in different power states (Tick)
system.mem_ctrl.dram.rank1.pwrStateTime::ACT 5468864750 # Time in different power states (Tick)
system.mem_ctrl.dram.rank1.pwrStateTime::ACT_PDN 0 # Time in different power states (Tick)
system.mem_ctrl.power_state.pwrStateResidencyTicks::UNDEFINED 5737602000 # Cumulative time (in ticks) in various power states (Tick)
system.membus.transDist::ReadReq 95970 # Transaction distribution (Count)
system.membus.transDist::ReadResp 95970 # Transaction distribution (Count)
system.membus.transDist::WritebackDirty 95954 # Transaction distribution (Count)

system.membus.pktCount_system.cache.mem_side::system.mem_ctrl.port 287894 # Packet count per connected requestor and responder (Count)
system.membus.pktCount_system.cache.mem_side::total 287894 # Packet count per connected requestor and responder (Count)
system.membus.pktCount::total 287894 # Packet count per connected requestor and responder (Count)
system.membus.pktSize_system.cache.mem_side::system.mem_ctrl.port 12283136 # Cumulative packet size per connected requestor and responder (Byte)
system.membus.pktSize_system.cache.mem_side::total 12283136 # Cumulative packet size per connected requestor and responder (Byte)
system.membus.pktSize::total 12283136 # Cumulative packet size per connected requestor and responder (Byte)
system.membus.snoops 0 # Total snoops (Count)
system.membus.snoopTraffic 0 # Total snoop traffic (Byte)
system.membus.snoopFanout::samples 95970 # Request fanout histogram
system.membus.snoopFanout::mean 0 # Request fanout histogram
system.membus.snoopFanout::stdev 0 # Request fanout histogram
system.membus.snoopFanout::underflows 0 0.00% 0.00% # Request fanout histogram
system.membus.snoopFanout::0 95970 100.00% 100.00% # Request fanout histogram
system.membus.snoopFanout::overflows 0 0.00% 100.00% # Request fanout histogram
system.membus.snoopFanout::min_value 0 # Request fanout histogram
system.membus.snoopFanout::max_value 0 # Request fanout histogram
system.membus.snoopFanout::total 95970 # Request fanout histogram
system.membus.power_state.pwrStateResidencyTicks::UNDEFINED 5737602000 # Cumulative time (in ticks) in various power states (Tick)
system.membus.reqLayer2.occupancy 575740000 # Layer occupancy (ticks) (Tick)
system.membus.reqLayer2.utilization 0.1 # Layer utilization (Ratio)
system.membus.respLayer0.occupancy 503654500 # Layer occupancy (ticks) (Tick)
system.membus.respLayer0.utilization 0.1 # Layer utilization (Ratio)
system.membus.snoop_filter.totRequests 0 # Total number of requests made to the snoop filter. (Count)

system.membus.snoop_filter.hitSingleRequests 0 # Number of requests hitting in the snoop filter with a single holder of the requested data. (Count)
system.membus.snoop_filter.hitMultiRequests 0 # Number of requests hitting in the snoop filter with multiple (>1) holders of the requested data. (Count)
system.membus.snoop_filter.totSnoops 0 # Total number of snoops made to the snoop filter. (Count)
system.membus.snoop_filter.hitSingleSnoops 0 # Number of snoops hitting in the snoop filter with a single holder of the requested data. (Count)
system.membus.snoop_filter.hitMultiSnoops 0 # Number of snoops hitting in the snoop filter with multiple (>1) holders of the requested data. (Count)
system.workload.inst.arm 0 # number of arm instructions executed (Count)
system.workload.inst.quiesce 0 # number of quiesce instructions executed (Count)

---------- End Simulation Statistics ----------