

Verificando arquivos...

Código-fonte do programa: Quicksort\_calloc.c

Arquivo de configuração de CPU: MyO3CPU.py --> MyO3CPU.py

Arquivo de configuração de caches e memória: MyCaches.py --> MyCaches.py

Arquivo de configuração de sistema: MySystem.py --> MySystem.py

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\* Compilando o programa ...

\* g++ -static Quicksort\_calloc.c -o Quicksort\_calloc

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\* Executando o gem5...

\* gem5 --outdir=m5out MySimulation.py -c Quicksort\_calloc

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gem5 Simulator System. <http://gem5.org>

gem5 is copyrighted software; use the --copyright option for details.

gem5 compiled Feb 16 2016 16:35:34

gem5 started Dec 14 2017 15:10:20

gem5 executing on simulacaolse3

command line: gem5 --outdir=m5out MySimulation.py -c Quicksort\_calloc

Programa a ser executado: Quicksort\_calloc

Global frequency set at 1000000000000 ticks per second

warn: DRAM device capacity (8192 Mbytes) does not match the address range assigned (512 Mbytes)

0: system.remote\_gdb.listener: listening for remote gdb on port 7002

----- Begin Simulation -----

info: Entering event queue @ 0. Starting simulation...

Vetor

info: Increasing stack size by one page.

23, 9, 16, 29, 23, 1, 22, 13, 33, 5, 6, 40, 0, 46, 2, 2, 3, 48, 45, 8, 8, 34, 0, 13, 24, 18, 18, 17,  
39, 27, 28, 13, 38, 44, 44, 13, 47, 18, 26, 32, 23, 32, 22, 24, 31, 27, 28, 36, 25, 24, 45, 33, 10,  
45, 49, 34, 16, 17, 2, 7, 46, 32, 22, 34, 28, 16, 49, 25, 34, 26, 7, 10, 8, 32, 34, 41, 9, 12, 28,  
36, 38, 23, 19, 49, 20, 18, 33, 36, 37, 37, 46, 35, 19, 18, 21, 47, 35, 21, 24, 21, 47, 32, 31, 7,  
16, 17, 49, 27, 30, 27, 13, 20, 2, 34, 19, 22, 3, 5, 11, 42, 42, 7, 28, 12, 25, 1, 11, 12, 22, 38,  
34, 19, 22, 17, 29, 38, 35, 28, 15, 17, 7, 30, 37, 9, 14, 7, 31, 17, 12, 44, 12, 6, 1, 42, 18, 29,  
43, 32, 43, 16, 20, 29, 37, 44, 47, 16, 32, 34, 46, 49, 1, 3, 29, 38, 12, 43, 47, 46, 13, 11, 42,  
27, 18, 46, 21, 38, 27, 14, 22, 20, 32, 44, 2, 22, 38, 1, 38, 22, 35, 37, 21, 36, 40, 2, 26, 5, 48,  
24, 3, 11, 37, 45, 40, 5, 43, 11, 44, 20, 25, 18, 43, 10, 13, 45, 32, 1, 46, 22, 24, 31, 9, 47, 19,  
2, 0, 45, 9, 48, 21, 12, 11, 11, 9, 1, 16, 5, 12, 12, 25, 39, 31, 18, 49, 44, 15, 33, 47, 13, 6, 21,  
46, 17, 19, 15, 21, 21, 13, 30, 19, 36, 44, 30, 47, 6, 31, 14, 11, 45, 28, 38, 34, 11, 9, 34, 7, 24,  
17, 5, 38, 25, 26, 34, 45, 47, 2, 16, 18, 15, 47, 39, 1, 43, 21, 49, 49, 4, 15, 10, 49, 45, 1, 34, 7,  
10, 20, 14, 34, 39, 19, 24, 15, 48, 11, 12, 47, 13, 28, 18, 30, 25, 7, 33, 21, 31, 34, 20, 35, 49,  
33, 37, 47, 34, 21, 4, 44, 43, 18, 30, 32, 40, 5, 49, 40, 16, 11, 37, 31, 42, 7, 11, 19, 17, 44, 40,



[illegible]

system.mem\_ctrl.bw\_read::total 44969758 # Total read bandwidth from this memory (bytes/s)  
system.mem\_ctrl.bw\_inst\_read::cpu.inst 26578593 # Instruction read bandwidth from this memory (bytes/s)  
system.mem\_ctrl.bw\_inst\_read::total 26578593 # Instruction read bandwidth from this memory (bytes/s)  
system.mem\_ctrl.bw\_total::cpu.inst 26578593 # Total bandwidth to/from this memory (bytes/s)  
system.mem\_ctrl.bw\_total::cpu.data 18391165 # Total bandwidth to/from this memory (bytes/s)  
system.mem\_ctrl.bw\_total::total 44969758 # Total bandwidth to/from this memory (bytes/s)  
system.mem\_ctrl.readReqs 736 # Number of read requests accepted  
system.mem\_ctrl.writeReqs 0 # Number of write requests accepted  
system.mem\_ctrl.readBursts 736 # Number of DRAM read bursts, including those serviced by the write queue  
system.mem\_ctrl.writeBursts 0 # Number of DRAM write bursts, including those merged in the write queue  
system.mem\_ctrl.bytesReadDRAM 47104 # Total number of bytes read from DRAM  
system.mem\_ctrl.bytesReadWrQ 0 # Total number of bytes read from write queue  
system.mem\_ctrl.bytesWritten 0 # Total number of bytes written to DRAM  
system.mem\_ctrl.bytesReadSys 47104 # Total read bytes from the system interface side  
system.mem\_ctrl.bytesWrittenSys 0 # Total written bytes from the system interface side  
system.mem\_ctrl.servicedByWrQ 0 # Number of DRAM read bursts serviced by the write queue  
system.mem\_ctrl.mergedWrBursts 0 # Number of DRAM write bursts merged with an existing one  
system.mem\_ctrl.neitherReadNorWriteReqs 0 # Number of requests that are neither read nor write  
system.mem\_ctrl.perBankRdBursts::0 73 # Per bank write bursts  
system.mem\_ctrl.perBankRdBursts::1 122 # Per bank write bursts  
system.mem\_ctrl.perBankRdBursts::2 74 # Per bank write bursts  
system.mem\_ctrl.perBankRdBursts::3 59 # Per bank write bursts  
system.mem\_ctrl.perBankRdBursts::4 71 # Per bank write bursts  
system.mem\_ctrl.perBankRdBursts::5 35 # Per bank write bursts  
system.mem\_ctrl.perBankRdBursts::6 136 # Per bank write bursts  
system.mem\_ctrl.perBankRdBursts::7 9 # Per bank write bursts  
system.mem\_ctrl.perBankRdBursts::8 12 # Per bank write bursts  
system.mem\_ctrl.perBankRdBursts::9 36 # Per bank write bursts  
system.mem\_ctrl.perBankRdBursts::10 29 # Per bank write bursts  
system.mem\_ctrl.perBankRdBursts::11 14 # Per bank write bursts  
system.mem\_ctrl.perBankRdBursts::12 27 # Per bank write bursts  
system.mem\_ctrl.perBankRdBursts::13 32 # Per bank write bursts  
system.mem\_ctrl.perBankRdBursts::14 5 # Per bank write bursts  
system.mem\_ctrl.perBankRdBursts::15 2 # Per bank write bursts  
system.mem\_ctrl.perBankWrBursts::0 0 # Per bank write bursts  
system.mem\_ctrl.perBankWrBursts::1 0 # Per bank write bursts  
system.mem\_ctrl.perBankWrBursts::2 0 # Per bank write bursts  
system.mem\_ctrl.perBankWrBursts::3 0 # Per bank write bursts  
system.mem\_ctrl.perBankWrBursts::4 0 # Per bank write bursts  
system.mem\_ctrl.perBankWrBursts::5 0 # Per bank write bursts

system.mem\_ctrl.perBankWrBursts::6 0 # Per bank write bursts  
system.mem\_ctrl.perBankWrBursts::7 0 # Per bank write bursts  
system.mem\_ctrl.perBankWrBursts::8 0 # Per bank write bursts  
system.mem\_ctrl.perBankWrBursts::9 0 # Per bank write bursts  
system.mem\_ctrl.perBankWrBursts::10 0 # Per bank write bursts  
system.mem\_ctrl.perBankWrBursts::11 0 # Per bank write bursts  
system.mem\_ctrl.perBankWrBursts::12 0 # Per bank write bursts  
system.mem\_ctrl.perBankWrBursts::13 0 # Per bank write bursts  
system.mem\_ctrl.perBankWrBursts::14 0 # Per bank write bursts  
system.mem\_ctrl.perBankWrBursts::15 0 # Per bank write bursts  
system.mem\_ctrl.numRdRetry 0 # Number of times read queue was full causing retry  
system.mem\_ctrl.numWrRetry 0 # Number of times write queue was full causing retry  
system.mem\_ctrl.totGap 1047384500 # Total gap between requests  
system.mem\_ctrl.readPktSize::0 0 # Read request sizes (log2)  
system.mem\_ctrl.readPktSize::1 0 # Read request sizes (log2)  
system.mem\_ctrl.readPktSize::2 0 # Read request sizes (log2)  
system.mem\_ctrl.readPktSize::3 0 # Read request sizes (log2)  
system.mem\_ctrl.readPktSize::4 0 # Read request sizes (log2)  
system.mem\_ctrl.readPktSize::5 0 # Read request sizes (log2)  
system.mem\_ctrl.readPktSize::6 736 # Read request sizes (log2)  
system.mem\_ctrl.writePktSize::0 0 # Write request sizes (log2)  
system.mem\_ctrl.writePktSize::1 0 # Write request sizes (log2)  
system.mem\_ctrl.writePktSize::2 0 # Write request sizes (log2)  
system.mem\_ctrl.writePktSize::3 0 # Write request sizes (log2)  
system.mem\_ctrl.writePktSize::4 0 # Write request sizes (log2)  
system.mem\_ctrl.writePktSize::5 0 # Write request sizes (log2)  
system.mem\_ctrl.writePktSize::6 0 # Write request sizes (log2)  
system.mem\_ctrl.rdQLenPdf::0 528 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::1 162 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::2 39 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::3 7 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::4 0 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::5 0 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::6 0 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::7 0 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::8 0 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::9 0 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::10 0 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::11 0 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::12 0 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::13 0 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::14 0 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::15 0 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::16 0 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::17 0 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::18 0 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::19 0 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::20 0 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::21 0 # What read queue length does an incoming req see  
system.mem\_ctrl.rdQLenPdf::22 0 # What read queue length does an incoming req see

[illegible]

system.mem\_ctrl.wrQLenPdf::41 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::42 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::43 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::44 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::45 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::46 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::47 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::48 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::49 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::50 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::51 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::52 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::53 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::54 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::55 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::56 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::57 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::58 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::59 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::60 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::61 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::62 0 # What write queue length does an incoming req see  
system.mem\_ctrl.wrQLenPdf::63 0 # What write queue length does an incoming req see  
system.mem\_ctrl.bytesPerActivate::samples 189 # Bytes accessed per row activation  
system.mem\_ctrl.bytesPerActivate::mean 239.407407 # Bytes accessed per row activation  
system.mem\_ctrl.bytesPerActivate::gmean 149.185381 # Bytes accessed per row activation  
system.mem\_ctrl.bytesPerActivate::stdev 270.978660 # Bytes accessed per row activation  
system.mem\_ctrl.bytesPerActivate::0-127 79 41.80% 41.80% # Bytes accessed per row activation  
system.mem\_ctrl.bytesPerActivate::128-255 51 26.98% 68.78% # Bytes accessed per row activation  
system.mem\_ctrl.bytesPerActivate::256-383 22 11.64% 80.42% # Bytes accessed per row activation  
system.mem\_ctrl.bytesPerActivate::384-511 9 4.76% 85.19% # Bytes accessed per row activation  
system.mem\_ctrl.bytesPerActivate::512-639 6 3.17% 88.36% # Bytes accessed per row activation  
system.mem\_ctrl.bytesPerActivate::640-767 6 3.17% 91.53% # Bytes accessed per row activation  
system.mem\_ctrl.bytesPerActivate::768-895 2 1.06% 92.59% # Bytes accessed per row activation  
system.mem\_ctrl.bytesPerActivate::896-1023 4 2.12% 94.71% # Bytes accessed per row activation  
system.mem\_ctrl.bytesPerActivate::1024-1151 10 5.29% 100.00% # Bytes accessed per row activation  
system.mem\_ctrl.bytesPerActivate::total 189 # Bytes accessed per row activation  
system.mem\_ctrl.totQLat 6962500 # Total ticks spent queuing  
system.mem\_ctrl.totMemAccLat 20762500 # Total ticks spent from burst creation until serviced by the DRAM  
system.mem\_ctrl.totBusLat 3680000 # Total ticks spent in databus transfers

system.mem\_ctrl.avgQLat 9459.92 # Average queueing delay per DRAM burst  
system.mem\_ctrl.avgBusLat 5000.00 # Average bus latency per DRAM burst  
system.mem\_ctrl.avgMemAccLat 28209.92 # Average memory access latency per DRAM burst  
system.mem\_ctrl.avgRdBW 44.97 # Average DRAM read bandwidth in MiByte/s  
system.mem\_ctrl.avgWrBW 0.00 # Average achieved write bandwidth in MiByte/s  
system.mem\_ctrl.avgRdBWSys 44.97 # Average system read bandwidth in MiByte/s  
system.mem\_ctrl.avgWrBWSys 0.00 # Average system write bandwidth in MiByte/s  
system.mem\_ctrl.peakBW 12800.00 # Theoretical peak bandwidth in MiByte/s  
system.mem\_ctrl.busUtil 0.35 # Data bus utilization in percentage  
system.mem\_ctrl.busUtilRead 0.35 # Data bus utilization in percentage for reads  
system.mem\_ctrl.busUtilWrite 0.00 # Data bus utilization in percentage for writes  
system.mem\_ctrl.avgRdQLen 1.02 # Average read queue length when enqueueing  
system.mem\_ctrl.avgWrQLen 0.00 # Average write queue length when enqueueing  
system.mem\_ctrl.readRowHits 540 # Number of row buffer hits during reads  
system.mem\_ctrl.writeRowHits 0 # Number of row buffer hits during writes  
system.mem\_ctrl.readRowHitRate 73.37 # Row buffer hit rate for reads  
system.mem\_ctrl.writeRowHitRate nan # Row buffer hit rate for writes  
system.mem\_ctrl.avgGap 1423076.77 # Average gap between requests  
system.mem\_ctrl.pageHitRate 73.37 # Row buffer hit rate, read and write combined  
system.mem\_ctrl\_0.actEnergy 1020600 # Energy for activate commands per rank (pJ)  
system.mem\_ctrl\_0.preEnergy 556875 # Energy for precharge commands per rank (pJ)  
system.mem\_ctrl\_0.readEnergy 4149600 # Energy for read commands per rank (pJ)  
system.mem\_ctrl\_0.writeEnergy 0 # Energy for write commands per rank (pJ)  
system.mem\_ctrl\_0.refreshEnergy 68147040 # Energy for refresh commands per rank (pJ)  
system.mem\_ctrl\_0.actBackEnergy 209884545 # Energy for active background per rank (pJ)  
system.mem\_ctrl\_0.preBackEnergy 442061250 # Energy for precharge background per rank (pJ)  
system.mem\_ctrl\_0.totalEnergy 725819910 # Total energy per rank (pJ)  
system.mem\_ctrl\_0.averagePower 695.484610 # Core power per rank (mW)  
system.mem\_ctrl\_0.memoryStateTime::IDLE 734048000 # Time in different power states  
system.mem\_ctrl\_0.memoryStateTime::REF 34840000 # Time in different power states  
system.mem\_ctrl\_0.memoryStateTime::PRE\_PD\_N 0 # Time in different power states  
system.mem\_ctrl\_0.memoryStateTime::ACT 274743250 # Time in different power states  
system.mem\_ctrl\_0.memoryStateTime::ACT\_PD\_N 0 # Time in different power states  
system.mem\_ctrl\_1.actEnergy 340200 # Energy for activate commands per rank (pJ)  
system.mem\_ctrl\_1.preEnergy 185625 # Energy for precharge commands per rank (pJ)  
system.mem\_ctrl\_1.readEnergy 1115400 # Energy for read commands per rank (pJ)  
system.mem\_ctrl\_1.writeEnergy 0 # Energy for write commands per rank (pJ)  
system.mem\_ctrl\_1.refreshEnergy 68147040 # Energy for refresh commands per rank (pJ)  
system.mem\_ctrl\_1.actBackEnergy 45930600 # Energy for active background per rank (pJ)  
system.mem\_ctrl\_1.preBackEnergy 585872250 # Energy for precharge background per rank (pJ)  
system.mem\_ctrl\_1.totalEnergy 701591115 # Total energy per rank (pJ)  
system.mem\_ctrl\_1.averagePower 672.277304 # Core power per rank (mW)  
system.mem\_ctrl\_1.memoryStateTime::IDLE 975561250 # Time in different power states  
system.mem\_ctrl\_1.memoryStateTime::REF 34840000 # Time in different power states  
system.mem\_ctrl\_1.memoryStateTime::PRE\_PD\_N 0 # Time in different power states  
system.mem\_ctrl\_1.memoryStateTime::ACT 34236750 # Time in different power states  
system.mem\_ctrl\_1.memoryStateTime::ACT\_PD\_N 0 # Time in different power states



system.cpu.branchPred.lookups 341045 # Number of BP lookups  
system.cpu.branchPred.condPredicted 341045 # Number of conditional branches predicted  
system.cpu.branchPred.condIncorrect 8734 # Number of conditional branches incorrect  
system.cpu.branchPred.BTBLookups 231364 # Number of BTB lookups  
system.cpu.branchPred.BTBHits 185944 # Number of BTB hits  
system.cpu.branchPred.BTBCorrect 0 # Number of correct BTB predictions (this stat may not work properly).  
system.cpu.branchPred.BTBHitPct 80.368597 # BTB Hit Percentage  
system.cpu.branchPred.usedRAS 24687 # Number of times the RAS was used to get a target.  
system.cpu.branchPred.RASInCorrect 111 # Number of incorrect RAS predictions.  
system.cpu.apic\_clk\_domain.clock 8000 # Clock period in ticks  
system.cpu.workload.num\_syscalls 14 # Number of system calls  
system.cpu.numCycles 2094920 # number of cpu cycles simulated  
system.cpu.numWorkItemsStarted 0 # number of work items this cpu started  
system.cpu.numWorkItemsCompleted 0 # number of work items this cpu completed  
system.cpu.fetch.icacheStallCycles 620073 # Number of cycles fetch is stalled on an Icache miss  
system.cpu.fetch.Insts 1760603 # Number of instructions fetch has processed  
system.cpu.fetch.Branches 341045 # Number of branches that fetch encountered  
system.cpu.fetch.predictedBranches 210631 # Number of branches that fetch has predicted taken  
system.cpu.fetch.Cycles 1437224 # Number of cycles fetch has run and was not squashing or blocked  
system.cpu.fetch.SquashCycles 17647 # Number of cycles fetch has spent squashing  
system.cpu.fetch.MiscStallCycles 36 # Number of cycles fetch has spent waiting on interrupts, or bad addresses, or out of MSHRs  
system.cpu.fetch.PendingTrapStallCycles 567 # Number of stall cycles due to pending traps  
system.cpu.fetch.PendingQuiesceStallCycles 13 # Number of stall cycles due to pending quiesce instructions  
system.cpu.fetch.CacheLines 598464 # Number of cache lines fetched  
system.cpu.fetch.IcacheSquashes 2422 # Number of outstanding Icache misses that were squashed  
system.cpu.fetch.rateDist::samples 2066736 # Number of instructions fetched each cycle (Total)  
system.cpu.fetch.rateDist::mean 1.561232 # Number of instructions fetched each cycle (Total)  
system.cpu.fetch.rateDist::stdev 1.374162 # Number of instructions fetched each cycle (Total)  
system.cpu.fetch.rateDist::underflows 0 0.00% 0.00% # Number of instructions fetched each cycle (Total)  
system.cpu.fetch.rateDist::0 800312 38.72% 38.72% # Number of instructions fetched each cycle (Total)  
system.cpu.fetch.rateDist::1 202745 9.81% 48.53% # Number of instructions fetched each cycle (Total)  
system.cpu.fetch.rateDist::2 167128 8.09% 56.62% # Number of instructions fetched each cycle (Total)  
system.cpu.fetch.rateDist::3 896551 43.38% 100.00% # Number of instructions fetched each cycle (Total)  
system.cpu.fetch.rateDist::overflows 0 0.00% 100.00% # Number of instructions fetched each cycle (Total)

system.cpu.fetch.rateDist::min\_value 0 # Number of instructions fetched each cycle (Total)  
system.cpu.fetch.rateDist::max\_value 3 # Number of instructions fetched each cycle (Total)  
system.cpu.fetch.rateDist::total 2066736 # Number of instructions fetched each cycle (Total)  
system.cpu.fetch.branchRate 0.162796 # Number of branch fetches per cycle  
system.cpu.fetch.rate 0.840415 # Number of inst fetches per cycle  
system.cpu.decode.IdleCycles 648974 # Number of cycles decode is idle  
system.cpu.decode.BlockedCycles 216236 # Number of cycles decode is blocked  
system.cpu.decode.RunCycles 1137550 # Number of cycles decode is running  
system.cpu.decode.UnblockCycles 55153 # Number of cycles decode is unblocking  
system.cpu.decode.SquashCycles 8823 # Number of cycles decode is squashing  
system.cpu.decode.DecodedInsts 3096112 # Number of instructions handled by decode  
system.cpu.decode.SquashedInsts 23044 # Number of squashed instructions handled by decode  
system.cpu.rename.SquashCycles 8823 # Number of cycles rename is squashing  
system.cpu.rename.IdleCycles 691562 # Number of cycles rename is idle  
system.cpu.rename.BlockCycles 131256 # Number of cycles rename is blocking  
system.cpu.rename.serializeStallCycles 496 # count of cycles rename stalled for serializing inst  
system.cpu.rename.RunCycles 1141476 # Number of cycles rename is running  
system.cpu.rename.UnblockCycles 93123 # Number of cycles rename is unblocking  
system.cpu.rename.RenamedInsts 3066659 # Number of instructions processed by rename  
system.cpu.rename.SquashedInsts 16271 # Number of squashed instructions processed by rename  
system.cpu.rename.ROBFullEvents 64375 # Number of times rename has blocked due to ROB full  
system.cpu.rename.IQFullEvents 5035 # Number of times rename has blocked due to IQ full  
system.cpu.rename.SQFullEvents 11075 # Number of times rename has blocked due to SQ full  
system.cpu.rename.RenamedOperands 3614204 # Number of destination operands rename has renamed  
system.cpu.rename.RenameLookups 7952396 # Number of register rename lookups that rename has made  
system.cpu.rename.int\_rename\_lookups 4549480 # Number of integer rename lookups  
system.cpu.rename.fp\_rename\_lookups 156476 # Number of floating rename lookups  
system.cpu.rename.CommittedMaps 3397362 # Number of HB maps that are committed  
system.cpu.rename.UndoneMaps 216842 # Number of HB maps that are undone due to squashing  
system.cpu.rename.serializingInsts 24 # count of serializing insts renamed  
system.cpu.rename.tempSerializingInsts 24 # count of temporary serializing insts renamed  
system.cpu.rename.skidInsts 126964 # count of insts added to the skid buffer  
system.cpu.memDep0.insertedLoads 467921 # Number of loads inserted to the mem dependence unit.  
system.cpu.memDep0.insertedStores 242024 # Number of stores inserted to the mem dependence unit.  
system.cpu.memDep0.conflictingLoads 80303 # Number of conflicting loads.  
system.cpu.memDep0.conflictingStores 17900 # Number of conflicting stores.  
system.cpu.iq.iqInstsAdded 3053456 # Number of instructions added to the IQ (excludes non-spec)  
system.cpu.iq.iqNonSpecInstsAdded 65 # Number of non-speculative instructions added to the IQ

system.cpu.iq.iqInstsIssued 3003969 # Number of instructions issued  
system.cpu.iq.iqSquashedInstsIssued 2614 # Number of squashed instructions issued  
system.cpu.iq.iqSquashedInstsExamined 159193 # Number of squashed instructions iterated over during squash; mainly for profiling  
system.cpu.iq.iqSquashedOperandsExamined 197239 # Number of squashed operands that are examined and possibly removed from graph  
system.cpu.iq.iqSquashedNonSpecRemoved 50 # Number of squashed non-spec instructions that were removed  
system.cpu.iq.issued\_per\_cycle::samples 2066736 # Number of insts issued each cycle  
system.cpu.iq.issued\_per\_cycle::mean 1.453485 # Number of insts issued each cycle  
system.cpu.iq.issued\_per\_cycle::stdev 0.979634 # Number of insts issued each cycle  
system.cpu.iq.issued\_per\_cycle::underflows 0 0.00% 0.00% # Number of insts issued each cycle  
system.cpu.iq.issued\_per\_cycle::0 440702 21.32% 21.32% # Number of insts issued each cycle  
system.cpu.iq.issued\_per\_cycle::1 527569 25.53% 46.85% # Number of insts issued each cycle  
system.cpu.iq.issued\_per\_cycle::2 834422 40.37% 87.22% # Number of insts issued each cycle  
system.cpu.iq.issued\_per\_cycle::3 248616 12.03% 99.25% # Number of insts issued each cycle  
system.cpu.iq.issued\_per\_cycle::4 15427 0.75% 100.00% # Number of insts issued each cycle  
system.cpu.iq.issued\_per\_cycle::overflows 0 0.00% 100.00% # Number of insts issued each cycle  
system.cpu.iq.issued\_per\_cycle::min\_value 0 # Number of insts issued each cycle  
system.cpu.iq.issued\_per\_cycle::max\_value 4 # Number of insts issued each cycle  
system.cpu.iq.issued\_per\_cycle::total 2066736 # Number of insts issued each cycle  
system.cpu.iq.fu\_full::No\_OpClass 0 0.00% 0.00% # attempts to use FU when none available  
system.cpu.iq.fu\_full::IntAlu 425627 73.35% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::IntMult 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::IntDiv 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::FloatAdd 16 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::FloatCmp 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::FloatCvt 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::FloatMult 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::FloatDiv 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::FloatSqrt 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::SimdAdd 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::SimdAddAcc 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::SimdAlu 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::SimdCmp 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::SimdCvt 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::SimdMisc 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::SimdMult 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::SimdMultAcc 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::SimdShift 0 0.00% 73.35% # attempts to use FU when none available

system.cpu.iq.fu\_full::SimdShiftAcc 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::SimdSqrt 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::SimdFloatAdd 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::SimdFloatAlu 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::SimdFloatCmp 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::SimdFloatCvt 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::SimdFloatDiv 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::SimdFloatMisc 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::SimdFloatMult 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::SimdFloatMultAcc 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::SimdFloatSqrt 0 0.00% 73.35% # attempts to use FU when none available  
system.cpu.iq.fu\_full::MemRead 110452 19.04% 92.39% # attempts to use FU when none available  
system.cpu.iq.fu\_full::MemWrite 44158 7.61% 100.00% # attempts to use FU when none available  
system.cpu.iq.fu\_full::IprAccess 0 0.00% 100.00% # attempts to use FU when none available  
system.cpu.iq.fu\_full::InstPrefetch 0 0.00% 100.00% # attempts to use FU when none available  
system.cpu.iq.FU\_type\_0::No\_OpClass 14217 0.47% 0.47% # Type of FU issued  
system.cpu.iq.FU\_type\_0::IntAlu 2216389 73.78% 74.26% # Type of FU issued  
system.cpu.iq.FU\_type\_0::IntMult 5739 0.19% 74.45% # Type of FU issued  
system.cpu.iq.FU\_type\_0::IntDiv 28 0.00% 74.45% # Type of FU issued  
system.cpu.iq.FU\_type\_0::FloatAdd 72198 2.40% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::FloatCmp 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::FloatCvt 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::FloatMult 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::FloatDiv 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::FloatSqrt 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::SimdAdd 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::SimdAddAcc 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::SimdAlu 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::SimdCmp 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::SimdCvt 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::SimdMisc 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::SimdMult 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::SimdMultAcc 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::SimdShift 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::SimdShiftAcc 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::SimdSqrt 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::SimdFloatAdd 0 0.00% 76.85% # Type of FU issued

system.cpu.iq.FU\_type\_0::SimdFloatAlu 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::SimdFloatCmp 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::SimdFloatCvt 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::SimdFloatDiv 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::SimdFloatMisc 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::SimdFloatMult 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::SimdFloatMultAcc 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::SimdFloatSqrt 0 0.00% 76.85% # Type of FU issued  
system.cpu.iq.FU\_type\_0::MemRead 457736 15.24% 92.09% # Type of FU issued  
system.cpu.iq.FU\_type\_0::MemWrite 237662 7.91% 100.00% # Type of FU issued  
system.cpu.iq.FU\_type\_0::IprAccess 0 0.00% 100.00% # Type of FU issued  
system.cpu.iq.FU\_type\_0::InstPrefetch 0 0.00% 100.00% # Type of FU issued  
system.cpu.iq.FU\_type\_0::total 3003969 # Type of FU issued  
system.cpu.iq.rate 1.433930 # Inst issue rate  
system.cpu.iq.fu\_busy\_cnt 580253 # FU busy when requested  
system.cpu.iq.fu\_busy\_rate 0.193162 # FU busy rate (busy events/executed inst)  
system.cpu.iq.int\_inst\_queue\_reads 8468946 # Number of integer instruction queue reads  
system.cpu.iq.int\_inst\_queue\_writes 3120362 # Number of integer instruction queue writes  
system.cpu.iq.int\_inst\_queue\_wakeup\_accesses 2891991 # Number of integer instruction  
queue wakeup accesses  
system.cpu.iq.fp\_inst\_queue\_reads 188595 # Number of floating instruction queue reads  
system.cpu.iq.fp\_inst\_queue\_writes 92413 # Number of floating instruction queue writes  
system.cpu.iq.fp\_inst\_queue\_wakeup\_accesses 92257 # Number of floating instruction queue  
wakeup accesses  
system.cpu.iq.int\_alu\_accesses 3473687 # Number of integer alu accesses  
system.cpu.iq.fp\_alu\_accesses 96318 # Number of floating point alu accesses  
system.cpu.iew.lsq.thread0.forwLoads 52077 # Number of loads that had data forwarded  
from stores  
system.cpu.iew.lsq.thread0.invAddrLoads 0 # Number of loads ignored due to an invalid  
address  
system.cpu.iew.lsq.thread0.squashedLoads 39219 # Number of loads squashed  
system.cpu.iew.lsq.thread0.ignoredResponses 49 # Number of memory responses ignored  
because the instruction is squashed  
system.cpu.iew.lsq.thread0.memOrderViolation 61 # Number of memory ordering violations  
system.cpu.iew.lsq.thread0.squashedStores 6604 # Number of stores squashed  
system.cpu.iew.lsq.thread0.invAddrSwfps 0 # Number of software prefetches ignored due to  
an invalid address  
system.cpu.iew.lsq.thread0.blockedLoads 0 # Number of blocked loads due to partial load-  
store forwarding  
system.cpu.iew.lsq.thread0.rescheduledLoads 33 # Number of loads that were rescheduled  
system.cpu.iew.lsq.thread0.cacheBlocked 9 # Number of times an access to memory failed  
due to the cache being blocked  
system.cpu.iew.iewIdleCycles 0 # Number of cycles IEW is idle  
system.cpu.iew.iewSquashCycles 8823 # Number of cycles IEW is squashing  
system.cpu.iew.iewBlockCycles 38745 # Number of cycles IEW is blocking  
system.cpu.iew.iewUnblockCycles 4114 # Number of cycles IEW is unblocking  
system.cpu.iew.iewDispatchedInsts 3053521 # Number of instructions dispatched to IQ  
system.cpu.iew.iewDispSquashedInsts 0 # Number of squashed instructions skipped by  
dispatch  
system.cpu.iew.iewDispLoadInsts 467921 # Number of dispatched load instructions

system.cpu.iew.iewDispStoreInsts 242024 # Number of dispatched store instructions  
system.cpu.iew.iewDispNonSpecInsts 25 # Number of dispatched non-speculative instructions  
system.cpu.iew.iewIQFullEvents 3 # Number of times the IQ has become full, causing a stall  
system.cpu.iew.iewLSQFullEvents 4096 # Number of times the LSQ has become full, causing a stall  
system.cpu.iew.memOrderViolationEvents 61 # Number of memory order violations  
system.cpu.iew.predictedTakenIncorrect 5675 # Number of branches that were predicted taken incorrectly  
system.cpu.iew.predictedNotTakenIncorrect 3338 # Number of branches that were predicted not taken incorrectly  
system.cpu.iew.branchMispredicts 9013 # Number of branch mispredicts detected at execute  
system.cpu.iew.iewExecutedInsts 2992286 # Number of executed instructions  
system.cpu.iew.iewExecLoadInsts 453151 # Number of load instructions executed  
system.cpu.iew.iewExecSquashedInsts 11683 # Number of squashed instructions skipped in execute  
system.cpu.iew.exec\_swp 0 # number of swp insts executed  
system.cpu.iew.exec\_nop 0 # number of nop insts executed  
system.cpu.iew.exec\_refs 689863 # number of memory reference insts executed  
system.cpu.iew.exec\_branches 318629 # Number of branches executed  
system.cpu.iew.exec\_stores 236712 # Number of stores executed  
system.cpu.iew.exec\_rate 1.428353 # Inst execution rate  
system.cpu.iew.wb\_sent 2986484 # cumulative count of insts sent to commit  
system.cpu.iew.wb\_count 2984248 # cumulative count of insts written-back  
system.cpu.iew.wb\_producers 2073214 # num instructions producing a value  
system.cpu.iew.wb\_consumers 3243471 # num instructions consuming a value  
system.cpu.iew.wb\_penalized 0 # number of instructions required to write to 'other' IQ  
system.cpu.iew.wb\_rate 1.424516 # insts written-back per cycle  
system.cpu.iew.wb\_fanout 0.639196 # average fanout of values written-back  
system.cpu.iew.wb\_penalized\_rate 0 # fraction of instructions written-back that wrote to 'other' IQ  
system.cpu.commit.commitSquashedInsts 145458 # The number of squashed insts skipped by commit  
system.cpu.commit.commitNonSpecStalls 15 # The number of times commit has been forced to stall to communicate backwards  
system.cpu.commit.branchMispredicts 8768 # The number of times a branch was mispredicted  
system.cpu.commit.committed\_per\_cycle::samples 2024770 # Number of insts committed each cycle  
system.cpu.commit.committed\_per\_cycle::mean 1.429460 # Number of insts committed each cycle  
system.cpu.commit.committed\_per\_cycle::stdev 1.478770 # Number of insts committed each cycle  
system.cpu.commit.committed\_per\_cycle::underflows 0 0.00% 0.00% # Number of insts committed each cycle  
system.cpu.commit.committed\_per\_cycle::0 779781 38.51% 38.51% # Number of insts committed each cycle  
system.cpu.commit.committed\_per\_cycle::1 442033 21.83% 60.34% # Number of insts committed each cycle  
system.cpu.commit.committed\_per\_cycle::2 296193 14.63% 74.97% # Number of insts committed each cycle

committed each cycle  
system.cpu.commit.committed\_per\_cycle::3 167143 8.25% 83.23% # Number of insts  
committed each cycle  
system.cpu.commit.committed\_per\_cycle::4 339620 16.77% 100.00% # Number of insts  
committed each cycle  
system.cpu.commit.committed\_per\_cycle::overflows 0 0.00% 100.00% # Number of insts  
committed each cycle  
system.cpu.commit.committed\_per\_cycle::min\_value 0 # Number of insts committed each  
cycle  
system.cpu.commit.committed\_per\_cycle::max\_value 4 # Number of insts committed each  
cycle  
system.cpu.commit.committed\_per\_cycle::total 2024770 # Number of insts committed each  
cycle  
system.cpu.commit.committedInsts 1561340 # Number of instructions committed  
system.cpu.commit.committedOps 2894328 # Number of ops (including micro ops)  
committed  
system.cpu.commit.swp\_count 0 # Number of s/w prefetches committed  
system.cpu.commit.refs 664122 # Number of memory references committed  
system.cpu.commit.loads 428702 # Number of loads committed  
system.cpu.commit.membars 0 # Number of memory barriers committed  
system.cpu.commit.branches 308047 # Number of branches committed  
system.cpu.commit.fp\_insts 92175 # Number of committed floating point instructions.  
system.cpu.commit.int\_insts 2808764 # Number of committed integer instructions.  
system.cpu.commit.function\_calls 23883 # Number of function calls committed.  
system.cpu.commit.op\_class\_0::No\_OpClass 14063 0.49% 0.49% # Class of committed  
instruction  
system.cpu.commit.op\_class\_0::IntAlu 2138244 73.88% 74.36% # Class of committed  
instruction  
system.cpu.commit.op\_class\_0::IntMult 5737 0.20% 74.56% # Class of committed  
instruction  
system.cpu.commit.op\_class\_0::IntDiv 28 0.00% 74.56% # Class of committed instruction  
system.cpu.commit.op\_class\_0::FloatAdd 72134 2.49% 77.05% # Class of committed  
instruction  
system.cpu.commit.op\_class\_0::FloatCmp 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::FloatCvt 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::FloatMult 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::FloatDiv 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::FloatSqrt 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::SimdAdd 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::SimdAddAcc 0 0.00% 77.05% # Class of committed  
instruction  
system.cpu.commit.op\_class\_0::SimdAlu 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::SimdCmp 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::SimdCvt 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::SimdMisc 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::SimdMult 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::SimdMultAcc 0 0.00% 77.05% # Class of committed  
instruction  
system.cpu.commit.op\_class\_0::SimdShift 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::SimdShiftAcc 0 0.00% 77.05% # Class of committed

instruction  
system.cpu.commit.op\_class\_0::SimdSqrt 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::SimdFloatAdd 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::SimdFloatAlu 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::SimdFloatCmp 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::SimdFloatCvt 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::SimdFloatDiv 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::SimdFloatMisc 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::SimdFloatMult 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::SimdFloatMultAcc 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::SimdFloatSqrt 0 0.00% 77.05% # Class of committed instruction  
system.cpu.commit.op\_class\_0::MemRead 428702 14.81% 91.87% # Class of committed instruction  
system.cpu.commit.op\_class\_0::MemWrite 235420 8.13% 100.00% # Class of committed instruction  
system.cpu.commit.op\_class\_0::IprAccess 0 0.00% 100.00% # Class of committed instruction  
system.cpu.commit.op\_class\_0::InstPrefetch 0 0.00% 100.00% # Class of committed instruction  
system.cpu.commit.op\_class\_0::total 2894328 # Class of committed instruction  
system.cpu.commit.bw\_lim\_events 339620 # number cycles where commit BW limit reached  
system.cpu.rob.rob\_reads 4724936 # The number of ROB reads  
system.cpu.rob.rob\_writes 6121573 # The number of ROB writes  
system.cpu.timesIdled 301 # Number of times that the entire CPU went into an idle state and unscheduled itself  
system.cpu.idleCycles 28184 # Total number of cycles that the CPU has spent unscheduled due to idling  
system.cpu.committedInsts 1561340 # Number of Instructions Simulated  
system.cpu.committedOps 2894328 # Number of Ops (including micro ops) Simulated  
system.cpu.cpi 1.341745 # CPI: Cycles Per Instruction  
system.cpu.cpi\_total 1.341745 # CPI: Total CPI of All Threads  
system.cpu.ipc 0.745298 # IPC: Instructions Per Cycle  
system.cpu.ipc\_total 0.745298 # IPC: Total IPC of All Threads  
system.cpu.int\_regfile\_reads 4415068 # number of integer regfile reads  
system.cpu.int\_regfile\_writes 2342559 # number of integer regfile writes  
system.cpu.fp\_regfile\_reads 156419 # number of floating regfile reads  
system.cpu.fp\_regfile\_writes 76203 # number of floating regfile writes  
system.cpu.cc\_regfile\_reads 1844484 # number of cc regfile reads  
system.cpu.cc\_regfile\_writes 1084359 # number of cc regfile writes  
system.cpu.misc\_regfile\_reads 1319607 # number of misc regfile reads  
system.cpu.misc\_regfile\_writes 1 # number of misc regfile writes



system.cpu.dcache.tags.replacements 10 # number of replacements  
system.cpu.dcache.tags.tagsinuse 263.000865 # Cycle average of tags in use  
system.cpu.dcache.tags.total\_refs 636063 # Total number of references to valid blocks.  
system.cpu.dcache.tags.sampled\_refs 302 # Sample count of references to valid blocks.  
system.cpu.dcache.tags.avg\_refs 2106.168874 # Average number of references to valid blocks.  
system.cpu.dcache.tags.warmup\_cycle 0 # Cycle when the warmup percentage was hit.  
system.cpu.dcache.tags.occ\_blocks::cpu.data 263.000865 # Average occupied blocks per requestor  
system.cpu.dcache.tags.occ\_percent::cpu.data 0.513674 # Average percentage of cache occupancy  
system.cpu.dcache.tags.occ\_percent::total 0.513674 # Average percentage of cache occupancy  
system.cpu.dcache.tags.occ\_task\_id\_blocks::1024 292 # Occupied blocks per task id  
system.cpu.dcache.tags.age\_task\_id\_blocks\_1024::0 10 # Occupied blocks per task id  
system.cpu.dcache.tags.age\_task\_id\_blocks\_1024::2 89 # Occupied blocks per task id  
system.cpu.dcache.tags.age\_task\_id\_blocks\_1024::3 193 # Occupied blocks per task id  
system.cpu.dcache.tags.occ\_task\_id\_percent::1024 0.570312 # Percentage of cache occupancy per task id  
system.cpu.dcache.tags.tag\_accesses 2546018 # Number of tag accesses  
system.cpu.dcache.tags.data\_accesses 2546018 # Number of data accesses  
system.cpu.dcache.ReadReq\_hits::cpu.data 400855 # number of ReadReq hits  
system.cpu.dcache.ReadReq\_hits::total 400855 # number of ReadReq hits  
system.cpu.dcache.WriteReq\_hits::cpu.data 235208 # number of WriteReq hits  
system.cpu.dcache.WriteReq\_hits::total 235208 # number of WriteReq hits  
system.cpu.dcache.demand\_hits::cpu.data 636063 # number of demand (read+write) hits  
system.cpu.dcache.demand\_hits::total 636063 # number of demand (read+write) hits  
system.cpu.dcache.overall\_hits::cpu.data 636063 # number of overall hits  
system.cpu.dcache.overall\_hits::total 636063 # number of overall hits  
system.cpu.dcache.ReadReq\_misses::cpu.data 154 # number of ReadReq misses  
system.cpu.dcache.ReadReq\_misses::total 154 # number of ReadReq misses  
system.cpu.dcache.WriteReq\_misses::cpu.data 212 # number of WriteReq misses  
system.cpu.dcache.WriteReq\_misses::total 212 # number of WriteReq misses  
system.cpu.dcache.demand\_misses::cpu.data 366 # number of demand (read+write) misses  
system.cpu.dcache.demand\_misses::total 366 # number of demand (read+write) misses  
system.cpu.dcache.overall\_misses::cpu.data 366 # number of overall misses  
system.cpu.dcache.overall\_misses::total 366 # number of overall misses  
system.cpu.dcache.ReadReq\_miss\_latency::cpu.data 11156250 # number of ReadReq miss cycles  
system.cpu.dcache.ReadReq\_miss\_latency::total 11156250 # number of ReadReq miss cycles  
system.cpu.dcache.WriteReq\_miss\_latency::cpu.data 15009000 # number of WriteReq miss cycles  
system.cpu.dcache.WriteReq\_miss\_latency::total 15009000 # number of WriteReq miss cycles  
system.cpu.dcache.demand\_miss\_latency::cpu.data 26165250 # number of demand (read+write) miss cycles  
system.cpu.dcache.demand\_miss\_latency::total 26165250 # number of demand (read+write) miss cycles  
system.cpu.dcache.overall\_miss\_latency::cpu.data 26165250 # number of overall miss cycles

system.cpu.dcache.overall\_miss\_latency::total 26165250 # number of overall miss cycles  
system.cpu.dcache.ReadReq\_accesses::cpu.data 401009 # number of ReadReq  
accesses(hits+misses)  
system.cpu.dcache.ReadReq\_accesses::total 401009 # number of ReadReq  
accesses(hits+misses)  
system.cpu.dcache.WriteReq\_accesses::cpu.data 235420 # number of WriteReq  
accesses(hits+misses)  
system.cpu.dcache.WriteReq\_accesses::total 235420 # number of WriteReq  
accesses(hits+misses)  
system.cpu.dcache.demand\_accesses::cpu.data 636429 # number of demand (read+write)  
accesses  
system.cpu.dcache.demand\_accesses::total 636429 # number of demand (read+write)  
accesses  
system.cpu.dcache.overall\_accesses::cpu.data 636429 # number of overall (read+write)  
accesses  
system.cpu.dcache.overall\_accesses::total 636429 # number of overall (read+write) accesses  
system.cpu.dcache.ReadReq\_miss\_rate::cpu.data 0.000384 # miss rate for ReadReq accesses  
system.cpu.dcache.ReadReq\_miss\_rate::total 0.000384 # miss rate for ReadReq accesses  
system.cpu.dcache.WriteReq\_miss\_rate::cpu.data 0.000901 # miss rate for WriteReq  
accesses  
system.cpu.dcache.WriteReq\_miss\_rate::total 0.000901 # miss rate for WriteReq accesses  
system.cpu.dcache.demand\_miss\_rate::cpu.data 0.000575 # miss rate for demand accesses  
system.cpu.dcache.demand\_miss\_rate::total 0.000575 # miss rate for demand accesses  
system.cpu.dcache.overall\_miss\_rate::cpu.data 0.000575 # miss rate for overall accesses  
system.cpu.dcache.overall\_miss\_rate::total 0.000575 # miss rate for overall accesses  
system.cpu.dcache.ReadReq\_avg\_miss\_latency::cpu.data 72443.181818 # average ReadReq  
miss latency  
system.cpu.dcache.ReadReq\_avg\_miss\_latency::total 72443.181818 # average ReadReq miss  
latency  
system.cpu.dcache.WriteReq\_avg\_miss\_latency::cpu.data 70797.169811 # average WriteReq  
miss latency  
system.cpu.dcache.WriteReq\_avg\_miss\_latency::total 70797.169811 # average WriteReq  
miss latency  
system.cpu.dcache.demand\_avg\_miss\_latency::cpu.data 71489.754098 # average overall  
miss latency  
system.cpu.dcache.demand\_avg\_miss\_latency::total 71489.754098 # average overall miss  
latency  
system.cpu.dcache.overall\_avg\_miss\_latency::cpu.data 71489.754098 # average overall miss  
latency  
system.cpu.dcache.overall\_avg\_miss\_latency::total 71489.754098 # average overall miss  
latency  
system.cpu.dcache.blocked\_cycles::no\_mshrs 229 # number of cycles access was blocked  
system.cpu.dcache.blocked\_cycles::no\_targets 0 # number of cycles access was blocked  
system.cpu.dcache.blocked::no\_mshrs 6 # number of cycles access was blocked  
system.cpu.dcache.blocked::no\_targets 0 # number of cycles access was blocked  
system.cpu.dcache.avg\_blocked\_cycles::no\_mshrs 38.166667 # average number of cycles  
each access was blocked  
system.cpu.dcache.avg\_blocked\_cycles::no\_targets nan # average number of cycles each  
access was blocked  
system.cpu.dcache.fast\_writes 0 # number of fast writes performed

system.cpu.dcache.cache\_copies 0 # number of cache copies performed  
system.cpu.dcache.writebacks::writebacks 9 # number of writebacks  
system.cpu.dcache.writebacks::total 9 # number of writebacks  
system.cpu.dcache.ReadReq\_mshr\_hits::cpu.data 64 # number of ReadReq MSHR hits  
system.cpu.dcache.ReadReq\_mshr\_hits::total 64 # number of ReadReq MSHR hits  
system.cpu.dcache.demand\_mshr\_hits::cpu.data 64 # number of demand (read+write) MSHR hits  
system.cpu.dcache.demand\_mshr\_hits::total 64 # number of demand (read+write) MSHR hits  
system.cpu.dcache.overall\_mshr\_hits::cpu.data 64 # number of overall MSHR hits  
system.cpu.dcache.overall\_mshr\_hits::total 64 # number of overall MSHR hits  
system.cpu.dcache.ReadReq\_mshr\_misses::cpu.data 90 # number of ReadReq MSHR misses  
system.cpu.dcache.ReadReq\_mshr\_misses::total 90 # number of ReadReq MSHR misses  
system.cpu.dcache.WriteReq\_mshr\_misses::cpu.data 212 # number of WriteReq MSHR misses  
system.cpu.dcache.WriteReq\_mshr\_misses::total 212 # number of WriteReq MSHR misses  
system.cpu.dcache.demand\_mshr\_misses::cpu.data 302 # number of demand (read+write) MSHR misses  
system.cpu.dcache.demand\_mshr\_misses::total 302 # number of demand (read+write) MSHR misses  
system.cpu.dcache.overall\_mshr\_misses::cpu.data 302 # number of overall MSHR misses  
system.cpu.dcache.overall\_mshr\_misses::total 302 # number of overall MSHR misses  
system.cpu.dcache.ReadReq\_mshr\_miss\_latency::cpu.data 6845000 # number of ReadReq MSHR miss cycles  
system.cpu.dcache.ReadReq\_mshr\_miss\_latency::total 6845000 # number of ReadReq MSHR miss cycles  
system.cpu.dcache.WriteReq\_mshr\_miss\_latency::cpu.data 14617000 # number of WriteReq MSHR miss cycles  
system.cpu.dcache.WriteReq\_mshr\_miss\_latency::total 14617000 # number of WriteReq MSHR miss cycles  
system.cpu.dcache.demand\_mshr\_miss\_latency::cpu.data 21462000 # number of demand (read+write) MSHR miss cycles  
system.cpu.dcache.demand\_mshr\_miss\_latency::total 21462000 # number of demand (read+write) MSHR miss cycles  
system.cpu.dcache.overall\_mshr\_miss\_latency::cpu.data 21462000 # number of overall MSHR miss cycles  
system.cpu.dcache.overall\_mshr\_miss\_latency::total 21462000 # number of overall MSHR miss cycles  
system.cpu.dcache.ReadReq\_mshr\_miss\_rate::cpu.data 0.000224 # mshr miss rate for ReadReq accesses  
system.cpu.dcache.ReadReq\_mshr\_miss\_rate::total 0.000224 # mshr miss rate for ReadReq accesses  
system.cpu.dcache.WriteReq\_mshr\_miss\_rate::cpu.data 0.000901 # mshr miss rate for WriteReq accesses  
system.cpu.dcache.WriteReq\_mshr\_miss\_rate::total 0.000901 # mshr miss rate for WriteReq accesses  
system.cpu.dcache.demand\_mshr\_miss\_rate::cpu.data 0.000475 # mshr miss rate for demand accesses  
system.cpu.dcache.demand\_mshr\_miss\_rate::total 0.000475 # mshr miss rate for demand accesses  
system.cpu.dcache.overall\_mshr\_miss\_rate::cpu.data 0.000475 # mshr miss rate for overall

accesses  
system.cpu.dcache.overall\_mshr\_miss\_rate::total 0.000475 # mshr miss rate for overall accesses  
system.cpu.dcache.ReadReq\_avg\_mshr\_miss\_latency::cpu.data 76055.555556 # average ReadReq mshr miss latency  
system.cpu.dcache.ReadReq\_avg\_mshr\_miss\_latency::total 76055.555556 # average ReadReq mshr miss latency  
system.cpu.dcache.WriteReq\_avg\_mshr\_miss\_latency::cpu.data 68948.113208 # average WriteReq mshr miss latency  
system.cpu.dcache.WriteReq\_avg\_mshr\_miss\_latency::total 68948.113208 # average WriteReq mshr miss latency  
system.cpu.dcache.demand\_avg\_mshr\_miss\_latency::cpu.data 71066.225166 # average overall mshr miss latency  
system.cpu.dcache.demand\_avg\_mshr\_miss\_latency::total 71066.225166 # average overall mshr miss latency  
system.cpu.dcache.overall\_avg\_mshr\_miss\_latency::cpu.data 71066.225166 # average overall mshr miss latency  
system.cpu.dcache.overall\_avg\_mshr\_miss\_latency::total 71066.225166 # average overall mshr miss latency  
system.cpu.dcache.no\_allocate\_misses 0 # Number of misses that were no-allocate  
system.cpu.icache.tags.replacements 32 # number of replacements  
system.cpu.icache.tags.tagsinuse 345.941109 # Cycle average of tags in use  
system.cpu.icache.tags.total\_refs 597949 # Total number of references to valid blocks.  
system.cpu.icache.tags.sampled\_refs 438 # Sample count of references to valid blocks.  
system.cpu.icache.tags.avg\_refs 1365.180365 # Average number of references to valid blocks.  
system.cpu.icache.tags.warmup\_cycle 0 # Cycle when the warmup percentage was hit.  
system.cpu.icache.tags.occ\_blocks::cpu.inst 345.941109 # Average occupied blocks per requestor  
system.cpu.icache.tags.occ\_percent::cpu.inst 0.675666 # Average percentage of cache occupancy  
system.cpu.icache.tags.occ\_percent::total 0.675666 # Average percentage of cache occupancy  
system.cpu.icache.tags.occ\_task\_id\_blocks::1024 406 # Occupied blocks per task id  
system.cpu.icache.tags.age\_task\_id\_blocks\_1024::0 65 # Occupied blocks per task id  
system.cpu.icache.tags.age\_task\_id\_blocks\_1024::2 133 # Occupied blocks per task id  
system.cpu.icache.tags.age\_task\_id\_blocks\_1024::3 208 # Occupied blocks per task id  
system.cpu.icache.tags.occ\_task\_id\_percent::1024 0.792969 # Percentage of cache occupancy per task id  
system.cpu.icache.tags.tag\_accesses 2394294 # Number of tag accesses  
system.cpu.icache.tags.data\_accesses 2394294 # Number of data accesses  
system.cpu.icache.ReadReq\_hits::cpu.inst 597949 # number of ReadReq hits  
system.cpu.icache.ReadReq\_hits::total 597949 # number of ReadReq hits  
system.cpu.icache.demand\_hits::cpu.inst 597949 # number of demand (read+write) hits  
system.cpu.icache.demand\_hits::total 597949 # number of demand (read+write) hits  
system.cpu.icache.overall\_hits::cpu.inst 597949 # number of overall hits  
system.cpu.icache.overall\_hits::total 597949 # number of overall hits  
system.cpu.icache.ReadReq\_misses::cpu.inst 515 # number of ReadReq misses  
system.cpu.icache.ReadReq\_misses::total 515 # number of ReadReq misses  
system.cpu.icache.demand\_misses::cpu.inst 515 # number of demand (read+write) misses

system.cpu.icache.demand\_misses::total 515 # number of demand (read+write) misses  
system.cpu.icache.overall\_misses::cpu.inst 515 # number of overall misses  
system.cpu.icache.overall\_misses::total 515 # number of overall misses  
system.cpu.icache.ReadReq\_miss\_latency::cpu.inst 35176500 # number of ReadReq miss cycles  
system.cpu.icache.ReadReq\_miss\_latency::total 35176500 # number of ReadReq miss cycles  
system.cpu.icache.demand\_miss\_latency::cpu.inst 35176500 # number of demand (read+write) miss cycles  
system.cpu.icache.demand\_miss\_latency::total 35176500 # number of demand (read+write) miss cycles  
system.cpu.icache.overall\_miss\_latency::cpu.inst 35176500 # number of overall miss cycles  
system.cpu.icache.overall\_miss\_latency::total 35176500 # number of overall miss cycles  
system.cpu.icache.ReadReq\_accesses::cpu.inst 598464 # number of ReadReq accesses(hits+misses)  
system.cpu.icache.ReadReq\_accesses::total 598464 # number of ReadReq accesses(hits+misses)  
system.cpu.icache.demand\_accesses::cpu.inst 598464 # number of demand (read+write) accesses  
system.cpu.icache.demand\_accesses::total 598464 # number of demand (read+write) accesses  
system.cpu.icache.overall\_accesses::cpu.inst 598464 # number of overall (read+write) accesses  
system.cpu.icache.overall\_accesses::total 598464 # number of overall (read+write) accesses  
system.cpu.icache.ReadReq\_miss\_rate::cpu.inst 0.000861 # miss rate for ReadReq accesses  
system.cpu.icache.ReadReq\_miss\_rate::total 0.000861 # miss rate for ReadReq accesses  
system.cpu.icache.demand\_miss\_rate::cpu.inst 0.000861 # miss rate for demand accesses  
system.cpu.icache.demand\_miss\_rate::total 0.000861 # miss rate for demand accesses  
system.cpu.icache.overall\_miss\_rate::cpu.inst 0.000861 # miss rate for overall accesses  
system.cpu.icache.overall\_miss\_rate::total 0.000861 # miss rate for overall accesses  
system.cpu.icache.ReadReq\_avg\_miss\_latency::cpu.inst 68303.883495 # average ReadReq miss latency  
system.cpu.icache.ReadReq\_avg\_miss\_latency::total 68303.883495 # average ReadReq miss latency  
system.cpu.icache.demand\_avg\_miss\_latency::cpu.inst 68303.883495 # average overall miss latency  
system.cpu.icache.demand\_avg\_miss\_latency::total 68303.883495 # average overall miss latency  
system.cpu.icache.overall\_avg\_miss\_latency::cpu.inst 68303.883495 # average overall miss latency  
system.cpu.icache.overall\_avg\_miss\_latency::total 68303.883495 # average overall miss latency  
system.cpu.icache.blocked\_cycles::no\_mshrs 32 # number of cycles access was blocked  
system.cpu.icache.blocked\_cycles::no\_targets 0 # number of cycles access was blocked  
system.cpu.icache.blocked::no\_mshrs 1 # number of cycles access was blocked  
system.cpu.icache.blocked::no\_targets 0 # number of cycles access was blocked  
system.cpu.icache.avg\_blocked\_cycles::no\_mshrs 32 # average number of cycles each access was blocked  
system.cpu.icache.avg\_blocked\_cycles::no\_targets nan # average number of cycles each access was blocked  
system.cpu.icache.fast\_writes 0 # number of fast writes performed

system.cpu.icache.cache\_copies 0 # number of cache copies performed  
system.cpu.icache.ReadReq\_mshr\_hits::cpu.inst 76 # number of ReadReq MSHR hits  
system.cpu.icache.ReadReq\_mshr\_hits::total 76 # number of ReadReq MSHR hits  
system.cpu.icache.demand\_mshr\_hits::cpu.inst 76 # number of demand (read+write) MSHR hits  
system.cpu.icache.demand\_mshr\_hits::total 76 # number of demand (read+write) MSHR hits  
system.cpu.icache.overall\_mshr\_hits::cpu.inst 76 # number of overall MSHR hits  
system.cpu.icache.overall\_mshr\_hits::total 76 # number of overall MSHR hits  
system.cpu.icache.ReadReq\_mshr\_misses::cpu.inst 439 # number of ReadReq MSHR misses  
system.cpu.icache.ReadReq\_mshr\_misses::total 439 # number of ReadReq MSHR misses  
system.cpu.icache.demand\_mshr\_misses::cpu.inst 439 # number of demand (read+write) MSHR misses  
system.cpu.icache.demand\_mshr\_misses::total 439 # number of demand (read+write) MSHR misses  
system.cpu.icache.overall\_mshr\_misses::cpu.inst 439 # number of overall MSHR misses  
system.cpu.icache.overall\_mshr\_misses::total 439 # number of overall MSHR misses  
system.cpu.icache.ReadReq\_mshr\_miss\_latency::cpu.inst 30126000 # number of ReadReq MSHR miss cycles  
system.cpu.icache.ReadReq\_mshr\_miss\_latency::total 30126000 # number of ReadReq MSHR miss cycles  
system.cpu.icache.demand\_mshr\_miss\_latency::cpu.inst 30126000 # number of demand (read+write) MSHR miss cycles  
system.cpu.icache.demand\_mshr\_miss\_latency::total 30126000 # number of demand (read+write) MSHR miss cycles  
system.cpu.icache.overall\_mshr\_miss\_latency::cpu.inst 30126000 # number of overall MSHR miss cycles  
system.cpu.icache.overall\_mshr\_miss\_latency::total 30126000 # number of overall MSHR miss cycles  
system.cpu.icache.ReadReq\_mshr\_miss\_rate::cpu.inst 0.000734 # mshr miss rate for ReadReq accesses  
system.cpu.icache.ReadReq\_mshr\_miss\_rate::total 0.000734 # mshr miss rate for ReadReq accesses  
system.cpu.icache.demand\_mshr\_miss\_rate::cpu.inst 0.000734 # mshr miss rate for demand accesses  
system.cpu.icache.demand\_mshr\_miss\_rate::total 0.000734 # mshr miss rate for demand accesses  
system.cpu.icache.overall\_mshr\_miss\_rate::cpu.inst 0.000734 # mshr miss rate for overall accesses  
system.cpu.icache.overall\_mshr\_miss\_rate::total 0.000734 # mshr miss rate for overall accesses  
system.cpu.icache.ReadReq\_avg\_mshr\_miss\_latency::cpu.inst 68624.145786 # average ReadReq mshr miss latency  
system.cpu.icache.ReadReq\_avg\_mshr\_miss\_latency::total 68624.145786 # average ReadReq mshr miss latency  
system.cpu.icache.demand\_avg\_mshr\_miss\_latency::cpu.inst 68624.145786 # average overall mshr miss latency  
system.cpu.icache.demand\_avg\_mshr\_miss\_latency::total 68624.145786 # average overall mshr miss latency  
system.cpu.icache.overall\_avg\_mshr\_miss\_latency::cpu.inst 68624.145786 # average overall mshr miss latency

system.cpu.icache.overall\_avg\_mshr\_miss\_latency::total 68624.145786 # average overall mshr miss latency  
system.cpu.icache.no\_allocate\_misses 0 # Number of misses that were no-allocate  
system.cpu.l2cache.tags.replacements 0 # number of replacements  
system.cpu.l2cache.tags.tagsinuse 438.960073 # Cycle average of tags in use  
system.cpu.l2cache.tags.total\_refs 6 # Total number of references to valid blocks.  
system.cpu.l2cache.tags.sampled\_refs 531 # Sample count of references to valid blocks.  
system.cpu.l2cache.tags.avg\_refs 0.011299 # Average number of references to valid blocks.  
system.cpu.l2cache.tags.warmup\_cycle 0 # Cycle when the warmup percentage was hit.  
system.cpu.l2cache.tags.occ\_blocks::writebacks 5.288939 # Average occupied blocks per requestor  
system.cpu.l2cache.tags.occ\_blocks::cpu.inst 356.250786 # Average occupied blocks per requestor  
system.cpu.l2cache.tags.occ\_blocks::cpu.data 77.420348 # Average occupied blocks per requestor  
system.cpu.l2cache.tags.occ\_percent::writebacks 0.000081 # Average percentage of cache occupancy  
system.cpu.l2cache.tags.occ\_percent::cpu.inst 0.005436 # Average percentage of cache occupancy  
system.cpu.l2cache.tags.occ\_percent::cpu.data 0.001181 # Average percentage of cache occupancy  
system.cpu.l2cache.tags.occ\_percent::total 0.006698 # Average percentage of cache occupancy  
system.cpu.l2cache.tags.occ\_task\_id\_blocks::1024 531 # Occupied blocks per task id  
system.cpu.l2cache.tags.age\_task\_id\_blocks\_1024::0 76 # Occupied blocks per task id  
system.cpu.l2cache.tags.age\_task\_id\_blocks\_1024::2 154 # Occupied blocks per task id  
system.cpu.l2cache.tags.age\_task\_id\_blocks\_1024::3 301 # Occupied blocks per task id  
system.cpu.l2cache.tags.occ\_task\_id\_percent::1024 0.008102 # Percentage of cache occupancy per task id  
system.cpu.l2cache.tags.tag\_accesses 6743 # Number of tag accesses  
system.cpu.l2cache.tags.data\_accesses 6743 # Number of data accesses  
system.cpu.l2cache.ReadReq\_hits::cpu.inst 3 # number of ReadReq hits  
system.cpu.l2cache.ReadReq\_hits::cpu.data 1 # number of ReadReq hits  
system.cpu.l2cache.ReadReq\_hits::total 4 # number of ReadReq hits  
system.cpu.l2cache.Writeback\_hits::writebacks 9 # number of Writeback hits  
system.cpu.l2cache.Writeback\_hits::total 9 # number of Writeback hits  
system.cpu.l2cache.demand\_hits::cpu.inst 3 # number of demand (read+write) hits  
system.cpu.l2cache.demand\_hits::cpu.data 1 # number of demand (read+write) hits  
system.cpu.l2cache.demand\_hits::total 4 # number of demand (read+write) hits  
system.cpu.l2cache.overall\_hits::cpu.inst 3 # number of overall hits  
system.cpu.l2cache.overall\_hits::cpu.data 1 # number of overall hits  
system.cpu.l2cache.overall\_hits::total 4 # number of overall hits  
system.cpu.l2cache.ReadReq\_misses::cpu.inst 436 # number of ReadReq misses  
system.cpu.l2cache.ReadReq\_misses::cpu.data 89 # number of ReadReq misses  
system.cpu.l2cache.ReadReq\_misses::total 525 # number of ReadReq misses  
system.cpu.l2cache.ReadExReq\_misses::cpu.data 212 # number of ReadExReq misses  
system.cpu.l2cache.ReadExReq\_misses::total 212 # number of ReadExReq misses  
system.cpu.l2cache.demand\_misses::cpu.inst 436 # number of demand (read+write) misses  
system.cpu.l2cache.demand\_misses::cpu.data 301 # number of demand (read+write) misses  
system.cpu.l2cache.demand\_misses::total 737 # number of demand (read+write) misses

system.cpu.l2cache.overall\_misses::cpu.inst 436 # number of overall misses  
system.cpu.l2cache.overall\_misses::cpu.data 301 # number of overall misses  
system.cpu.l2cache.overall\_misses::total 737 # number of overall misses  
system.cpu.l2cache.ReadReq\_miss\_latency::cpu.inst 29653500 # number of ReadReq miss cycles  
system.cpu.l2cache.ReadReq\_miss\_latency::cpu.data 6653000 # number of ReadReq miss cycles  
system.cpu.l2cache.ReadReq\_miss\_latency::total 36306500 # number of ReadReq miss cycles  
system.cpu.l2cache.ReadExReq\_miss\_latency::cpu.data 14193000 # number of ReadExReq miss cycles  
system.cpu.l2cache.ReadExReq\_miss\_latency::total 14193000 # number of ReadExReq miss cycles  
system.cpu.l2cache.demand\_miss\_latency::cpu.inst 29653500 # number of demand (read+write) miss cycles  
system.cpu.l2cache.demand\_miss\_latency::cpu.data 20846000 # number of demand (read+write) miss cycles  
system.cpu.l2cache.demand\_miss\_latency::total 50499500 # number of demand (read+write) miss cycles  
system.cpu.l2cache.overall\_miss\_latency::cpu.inst 29653500 # number of overall miss cycles  
system.cpu.l2cache.overall\_miss\_latency::cpu.data 20846000 # number of overall miss cycles  
system.cpu.l2cache.overall\_miss\_latency::total 50499500 # number of overall miss cycles  
system.cpu.l2cache.ReadReq\_accesses::cpu.inst 439 # number of ReadReq accesses(hits+misses)  
system.cpu.l2cache.ReadReq\_accesses::cpu.data 90 # number of ReadReq accesses(hits+misses)  
system.cpu.l2cache.ReadReq\_accesses::total 529 # number of ReadReq accesses(hits+misses)  
system.cpu.l2cache.Writeback\_accesses::writebacks 9 # number of Writeback accesses(hits+misses)  
system.cpu.l2cache.Writeback\_accesses::total 9 # number of Writeback accesses(hits+misses)  
system.cpu.l2cache.ReadExReq\_accesses::cpu.data 212 # number of ReadExReq accesses(hits+misses)  
system.cpu.l2cache.ReadExReq\_accesses::total 212 # number of ReadExReq accesses(hits+misses)  
system.cpu.l2cache.demand\_accesses::cpu.inst 439 # number of demand (read+write) accesses  
system.cpu.l2cache.demand\_accesses::cpu.data 302 # number of demand (read+write) accesses  
system.cpu.l2cache.demand\_accesses::total 741 # number of demand (read+write) accesses  
system.cpu.l2cache.overall\_accesses::cpu.inst 439 # number of overall (read+write) accesses  
system.cpu.l2cache.overall\_accesses::cpu.data 302 # number of overall (read+write) accesses  
system.cpu.l2cache.overall\_accesses::total 741 # number of overall (read+write) accesses  
system.cpu.l2cache.ReadReq\_miss\_rate::cpu.inst 0.993166 # miss rate for ReadReq accesses  
system.cpu.l2cache.ReadReq\_miss\_rate::cpu.data 0.988889 # miss rate for ReadReq accesses  
system.cpu.l2cache.ReadReq\_miss\_rate::total 0.992439 # miss rate for ReadReq accesses  
system.cpu.l2cache.ReadExReq\_miss\_rate::cpu.data 1 # miss rate for ReadExReq accesses  
system.cpu.l2cache.ReadExReq\_miss\_rate::total 1 # miss rate for ReadExReq accesses



system.cpu.l2cache.demand\_miss\_rate::cpu.inst 0.993166 # miss rate for demand accesses  
system.cpu.l2cache.demand\_miss\_rate::cpu.data 0.996689 # miss rate for demand accesses  
system.cpu.l2cache.demand\_miss\_rate::total 0.994602 # miss rate for demand accesses  
system.cpu.l2cache.overall\_miss\_rate::cpu.inst 0.993166 # miss rate for overall accesses  
system.cpu.l2cache.overall\_miss\_rate::cpu.data 0.996689 # miss rate for overall accesses  
system.cpu.l2cache.overall\_miss\_rate::total 0.994602 # miss rate for overall accesses  
system.cpu.l2cache.ReadReq\_avg\_miss\_latency::cpu.inst 68012.614679 # average ReadReq miss latency  
system.cpu.l2cache.ReadReq\_avg\_miss\_latency::cpu.data 74752.808989 # average ReadReq miss latency  
system.cpu.l2cache.ReadReq\_avg\_miss\_latency::total 69155.238095 # average ReadReq miss latency  
system.cpu.l2cache.ReadExReq\_avg\_miss\_latency::cpu.data 66948.113208 # average ReadExReq miss latency  
system.cpu.l2cache.ReadExReq\_avg\_miss\_latency::total 66948.113208 # average ReadExReq miss latency  
system.cpu.l2cache.demand\_avg\_miss\_latency::cpu.inst 68012.614679 # average overall miss latency  
system.cpu.l2cache.demand\_avg\_miss\_latency::cpu.data 69255.813953 # average overall miss latency  
system.cpu.l2cache.demand\_avg\_miss\_latency::total 68520.352782 # average overall miss latency  
system.cpu.l2cache.overall\_avg\_miss\_latency::cpu.inst 68012.614679 # average overall miss latency  
system.cpu.l2cache.overall\_avg\_miss\_latency::cpu.data 69255.813953 # average overall miss latency  
system.cpu.l2cache.overall\_avg\_miss\_latency::total 68520.352782 # average overall miss latency  
system.cpu.l2cache.blocked\_cycles::no\_mshrs 0 # number of cycles access was blocked  
system.cpu.l2cache.blocked\_cycles::no\_targets 0 # number of cycles access was blocked  
system.cpu.l2cache.blocked::no\_mshrs 0 # number of cycles access was blocked  
system.cpu.l2cache.blocked::no\_targets 0 # number of cycles access was blocked  
system.cpu.l2cache.avg\_blocked\_cycles::no\_mshrs nan # average number of cycles each access was blocked  
system.cpu.l2cache.avg\_blocked\_cycles::no\_targets nan # average number of cycles each access was blocked  
system.cpu.l2cache.fast\_writes 0 # number of fast writes performed  
system.cpu.l2cache.cache\_copies 0 # number of cache copies performed  
system.cpu.l2cache.ReadReq\_mshr\_misses::cpu.inst 436 # number of ReadReq MSHR misses  
system.cpu.l2cache.ReadReq\_mshr\_misses::cpu.data 89 # number of ReadReq MSHR misses  
system.cpu.l2cache.ReadReq\_mshr\_misses::total 525 # number of ReadReq MSHR misses  
system.cpu.l2cache.ReadExReq\_mshr\_misses::cpu.data 212 # number of ReadExReq MSHR misses  
system.cpu.l2cache.ReadExReq\_mshr\_misses::total 212 # number of ReadExReq MSHR misses  
system.cpu.l2cache.demand\_mshr\_misses::cpu.inst 436 # number of demand (read+write) MSHR misses  
system.cpu.l2cache.demand\_mshr\_misses::cpu.data 301 # number of demand (read+write) MSHR misses

system.cpu.l2cache.demand\_mshr\_misses::total 737 # number of demand (read+write) MSHR misses  
system.cpu.l2cache.overall\_mshr\_misses::cpu.inst 436 # number of overall MSHR misses  
system.cpu.l2cache.overall\_mshr\_misses::cpu.data 301 # number of overall MSHR misses  
system.cpu.l2cache.overall\_mshr\_misses::total 737 # number of overall MSHR misses  
system.cpu.l2cache.ReadReq\_mshr\_miss\_latency::cpu.inst 27288500 # number of ReadReq MSHR miss cycles  
system.cpu.l2cache.ReadReq\_mshr\_miss\_latency::cpu.data 6175000 # number of ReadReq MSHR miss cycles  
system.cpu.l2cache.ReadReq\_mshr\_miss\_latency::total 33463500 # number of ReadReq MSHR miss cycles  
system.cpu.l2cache.ReadExReq\_mshr\_miss\_latency::cpu.data 13059000 # number of ReadExReq MSHR miss cycles  
system.cpu.l2cache.ReadExReq\_mshr\_miss\_latency::total 13059000 # number of ReadExReq MSHR miss cycles  
system.cpu.l2cache.demand\_mshr\_miss\_latency::cpu.inst 27288500 # number of demand (read+write) MSHR miss cycles  
system.cpu.l2cache.demand\_mshr\_miss\_latency::cpu.data 19234000 # number of demand (read+write) MSHR miss cycles  
system.cpu.l2cache.demand\_mshr\_miss\_latency::total 46522500 # number of demand (read+write) MSHR miss cycles  
system.cpu.l2cache.overall\_mshr\_miss\_latency::cpu.inst 27288500 # number of overall MSHR miss cycles  
system.cpu.l2cache.overall\_mshr\_miss\_latency::cpu.data 19234000 # number of overall MSHR miss cycles  
system.cpu.l2cache.overall\_mshr\_miss\_latency::total 46522500 # number of overall MSHR miss cycles  
system.cpu.l2cache.ReadReq\_mshr\_miss\_rate::cpu.inst 0.993166 # mshr miss rate for ReadReq accesses  
system.cpu.l2cache.ReadReq\_mshr\_miss\_rate::cpu.data 0.988889 # mshr miss rate for ReadReq accesses  
system.cpu.l2cache.ReadReq\_mshr\_miss\_rate::total 0.992439 # mshr miss rate for ReadReq accesses  
system.cpu.l2cache.ReadExReq\_mshr\_miss\_rate::cpu.data 1 # mshr miss rate for ReadExReq accesses  
system.cpu.l2cache.ReadExReq\_mshr\_miss\_rate::total 1 # mshr miss rate for ReadExReq accesses  
system.cpu.l2cache.demand\_mshr\_miss\_rate::cpu.inst 0.993166 # mshr miss rate for demand accesses  
system.cpu.l2cache.demand\_mshr\_miss\_rate::cpu.data 0.996689 # mshr miss rate for demand accesses  
system.cpu.l2cache.demand\_mshr\_miss\_rate::total 0.994602 # mshr miss rate for demand accesses  
system.cpu.l2cache.overall\_mshr\_miss\_rate::cpu.inst 0.993166 # mshr miss rate for overall accesses  
system.cpu.l2cache.overall\_mshr\_miss\_rate::cpu.data 0.996689 # mshr miss rate for overall accesses  
system.cpu.l2cache.overall\_mshr\_miss\_rate::total 0.994602 # mshr miss rate for overall accesses  
system.cpu.l2cache.ReadReq\_avg\_mshr\_miss\_latency::cpu.inst 62588.302752 # average

ReadReq mshr miss latency  
 system.cpu.l2cache.ReadReq\_avg\_mshr\_miss\_latency::cpu.data 69382.022472 # average  
 ReadReq mshr miss latency  
 system.cpu.l2cache.ReadReq\_avg\_mshr\_miss\_latency::total 63740 # average ReadReq mshr  
 miss latency  
 system.cpu.l2cache.ReadExReq\_avg\_mshr\_miss\_latency::cpu.data 61599.056604 # average  
 ReadExReq mshr miss latency  
 system.cpu.l2cache.ReadExReq\_avg\_mshr\_miss\_latency::total 61599.056604 # average  
 ReadExReq mshr miss latency  
 system.cpu.l2cache.demand\_avg\_mshr\_miss\_latency::cpu.inst 62588.302752 # average  
 overall mshr miss latency  
 system.cpu.l2cache.demand\_avg\_mshr\_miss\_latency::cpu.data 63900.332226 # average  
 overall mshr miss latency  
 system.cpu.l2cache.demand\_avg\_mshr\_miss\_latency::total 63124.151967 # average overall  
 mshr miss latency  
 system.cpu.l2cache.overall\_avg\_mshr\_miss\_latency::cpu.inst 62588.302752 # average  
 overall mshr miss latency  
 system.cpu.l2cache.overall\_avg\_mshr\_miss\_latency::cpu.data 63900.332226 # average  
 overall mshr miss latency  
 system.cpu.l2cache.overall\_avg\_mshr\_miss\_latency::total 63124.151967 # average overall  
 mshr miss latency  
 system.cpu.l2cache.no\_allocate\_misses 0 # Number of misses that were no-allocate  
 system.l2bus.trans\_dist::ReadReq 529 # Transaction distribution  
 system.l2bus.trans\_dist::ReadResp 528 # Transaction distribution  
 system.l2bus.trans\_dist::Writeback 9 # Transaction distribution  
 system.l2bus.trans\_dist::ReadExReq 212 # Transaction distribution  
 system.l2bus.trans\_dist::ReadExResp 212 # Transaction distribution  
 system.l2bus.pkt\_count\_system.cpu.icache.mem\_side::system.cpu.l2cache.cpu\_side 877 #  
 Packet count per connected master and slave (bytes)  
 system.l2bus.pkt\_count\_system.cpu.dcache.mem\_side::system.cpu.l2cache.cpu\_side 613 #  
 Packet count per connected master and slave (bytes)  
 system.l2bus.pkt\_count::total 1490 # Packet count per connected master and slave (bytes)  
 system.l2bus.pkt\_size\_system.cpu.icache.mem\_side::system.cpu.l2cache.cpu\_side 28032 #  
 Cumulative packet size per connected master and slave (bytes)  
 system.l2bus.pkt\_size\_system.cpu.dcache.mem\_side::system.cpu.l2cache.cpu\_side 19904 #  
 Cumulative packet size per connected master and slave (bytes)  
 system.l2bus.pkt\_size::total 47936 # Cumulative packet size per connected master and slave  
 (bytes)  
 system.l2bus.snoops 0 # Total snoops (count)  
 system.l2bus.snoop\_fanout::samples 750 # Request fanout histogram  
 system.l2bus.snoop\_fanout::mean 1 # Request fanout histogram  
 system.l2bus.snoop\_fanout::stdev 0 # Request fanout histogram  
 system.l2bus.snoop\_fanout::underflows 0 0.00% 0.00% # Request fanout histogram  
 system.l2bus.snoop\_fanout::0 0 0.00% 0.00% # Request fanout histogram  
 system.l2bus.snoop\_fanout::1 750 100.00% 100.00% # Request fanout histogram  
 system.l2bus.snoop\_fanout::2 0 0.00% 100.00% # Request fanout histogram  
 system.l2bus.snoop\_fanout::overflows 0 0.00% 100.00% # Request fanout histogram  
 system.l2bus.snoop\_fanout::min\_value 1 # Request fanout histogram  
 system.l2bus.snoop\_fanout::max\_value 1 # Request fanout histogram  
 system.l2bus.snoop\_fanout::total 750 # Request fanout histogram

system.l2bus.reqLayer0.occupancy 393000 # Layer occupancy (ticks)  
system.l2bus.reqLayer0.utilization 0.0 # Layer utilization (%)  
system.l2bus.respLayer0.occupancy 1190000 # Layer occupancy (ticks)  
system.l2bus.respLayer0.utilization 0.1 # Layer utilization (%)  
system.l2bus.respLayer1.occupancy 808500 # Layer occupancy (ticks)  
system.l2bus.respLayer1.utilization 0.1 # Layer utilization (%)  
system.membus.trans\_dist::ReadReq 524 # Transaction distribution  
system.membus.trans\_dist::ReadResp 524 # Transaction distribution  
system.membus.trans\_dist::ReadExReq 212 # Transaction distribution  
system.membus.trans\_dist::ReadExResp 212 # Transaction distribution  
system.membus.pkt\_count\_system.cpu.l2cache.mem\_side::system.mem\_ctrl.port 1472 #  
Packet count per connected master and slave (bytes)  
system.membus.pkt\_count\_system.cpu.l2cache.mem\_side::total 1472 # Packet count per  
connected master and slave (bytes)  
system.membus.pkt\_count::total 1472 # Packet count per connected master and slave (bytes)  
system.membus.pkt\_size\_system.cpu.l2cache.mem\_side::system.mem\_ctrl.port 47104 #  
Cumulative packet size per connected master and slave (bytes)  
system.membus.pkt\_size\_system.cpu.l2cache.mem\_side::total 47104 # Cumulative packet  
size per connected master and slave (bytes)  
system.membus.pkt\_size::total 47104 # Cumulative packet size per connected master and  
slave (bytes)  
system.membus.snoops 0 # Total snoops (count)  
system.membus.snoop\_fanout::samples 736 # Request fanout histogram  
system.membus.snoop\_fanout::mean 0 # Request fanout histogram  
system.membus.snoop\_fanout::stdev 0 # Request fanout histogram  
system.membus.snoop\_fanout::underflows 0 0.00% 0.00% # Request fanout histogram  
system.membus.snoop\_fanout::0 736 100.00% 100.00% # Request fanout histogram  
system.membus.snoop\_fanout::1 0 0.00% 100.00% # Request fanout histogram  
system.membus.snoop\_fanout::overflows 0 0.00% 100.00% # Request fanout histogram  
system.membus.snoop\_fanout::min\_value 0 # Request fanout histogram  
system.membus.snoop\_fanout::max\_value 0 # Request fanout histogram  
system.membus.snoop\_fanout::total 736 # Request fanout histogram  
system.membus.reqLayer2.occupancy 368000 # Layer occupancy (ticks)  
system.membus.reqLayer2.utilization 0.0 # Layer utilization (%)  
system.membus.respLayer0.occupancy 1988500 # Layer occupancy (ticks)  
system.membus.respLayer0.utilization 0.2 # Layer utilization (%)