---------- Begin Simulation Statistics ----------

sim\_seconds 0.711936 # Number of seconds simulated

sim\_ticks 711935971000 # Number of ticks simulated

final\_tick 711935971000 # Number of ticks from beginning of simulation (restored from checkpoints and never reset)

sim\_freq 1000000000000 # Frequency of simulated ticks

host\_inst\_rate 106957 # Simulator instruction rate (inst/s)

host\_op\_rate 106957 # Simulator op (including micro ops) rate (op/s)

host\_tick\_rate 7363781453 # Simulator tick rate (ticks/s)

host\_mem\_usage 626704 # Number of bytes of host memory used

host\_seconds 96.68 # Real time elapsed on the host

sim\_insts 10340659 # Number of instructions simulated

sim\_ops 10340659 # Number of ops (including micro ops) simulated

system.voltage\_domain.voltage 1 # Voltage in Volts

system.clk\_domain.clock 1000 # Clock period in ticks

system.mem\_ctrls.pwrStateResidencyTicks::UNDEFINED 711935971000 # Cumulative time (in ticks) in various power states

system.mem\_ctrls.bytes\_read::cpu.inst 41362740 # Number of bytes read from this memory

system.mem\_ctrls.bytes\_read::cpu.data 9947695 # Number of bytes read from this memory

system.mem\_ctrls.bytes\_read::total 51310435 # Number of bytes read from this memory

system.mem\_ctrls.bytes\_inst\_read::cpu.inst 41362740 # Number of instructions bytes read from this memory

system.mem\_ctrls.bytes\_inst\_read::total 41362740 # Number of instructions bytes read from this memory

system.mem\_ctrls.bytes\_written::cpu.data 6261860 # Number of bytes written to this memory

system.mem\_ctrls.bytes\_written::total 6261860 # Number of bytes written to this memory

system.mem\_ctrls.num\_reads::cpu.inst 10340685 # Number of read requests responded to by this memory

system.mem\_ctrls.num\_reads::cpu.data 1514969 # Number of read requests responded to by this memory

system.mem\_ctrls.num\_reads::total 11855654 # Number of read requests responded to by this memory

system.mem\_ctrls.num\_writes::cpu.data 888548 # Number of write requests responded to by this memory

system.mem\_ctrls.num\_writes::total 888548 # Number of write requests responded to by this memory

system.mem\_ctrls.bw\_read::cpu.inst 58098961 # Total read bandwidth from this memory (bytes/s)

system.mem\_ctrls.bw\_read::cpu.data 13972738 # Total read bandwidth from this memory (bytes/s)

system.mem\_ctrls.bw\_read::total 72071699 # Total read bandwidth from this memory (bytes/s)

system.mem\_ctrls.bw\_inst\_read::cpu.inst 58098961 # Instruction read bandwidth from this memory (bytes/s)

system.mem\_ctrls.bw\_inst\_read::total 58098961 # Instruction read bandwidth from this memory (bytes/s)

system.mem\_ctrls.bw\_write::cpu.data 8795538 # Write bandwidth from this memory (bytes/s)

system.mem\_ctrls.bw\_write::total 8795538 # Write bandwidth from this memory (bytes/s)

system.mem\_ctrls.bw\_total::cpu.inst 58098961 # Total bandwidth to/from this memory (bytes/s)

system.mem\_ctrls.bw\_total::cpu.data 22768276 # Total bandwidth to/from this memory (bytes/s)

system.mem\_ctrls.bw\_total::total 80867237 # Total bandwidth to/from this memory (bytes/s)

system.mem\_ctrls.readReqs 11855655 # Number of read requests accepted

system.mem\_ctrls.writeReqs 888548 # Number of write requests accepted

system.mem\_ctrls.readBursts 11855655 # Number of DRAM read bursts, including those serviced by the write queue

system.mem\_ctrls.writeBursts 888548 # Number of DRAM write bursts, including those merged in the write queue

system.mem\_ctrls.bytesReadDRAM 740851136 # Total number of bytes read from DRAM

system.mem\_ctrls.bytesReadWrQ 17910784 # Total number of bytes read from write queue

system.mem\_ctrls.bytesWritten 1971200 # Total number of bytes written to DRAM

system.mem\_ctrls.bytesReadSys 51310439 # Total read bytes from the system interface side

system.mem\_ctrls.bytesWrittenSys 6261860 # Total written bytes from the system interface side

system.mem\_ctrls.servicedByWrQ 279856 # Number of DRAM read bursts serviced by the write queue

system.mem\_ctrls.mergedWrBursts 857721 # Number of DRAM write bursts merged with an existing one

system.mem\_ctrls.neitherReadNorWriteReqs 0 # Number of requests that are neither read nor write

system.mem\_ctrls.perBankRdBursts::0 1261330 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::1 1628316 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::2 1456967 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::3 150029 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::4 32060 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::5 25926 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::6 1002282 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::7 395977 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::8 572 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::9 218611 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::10 49751 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::11 71868 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::12 70107 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::13 1167904 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::14 864737 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::15 3179362 # Per bank write bursts

system.mem\_ctrls.perBankWrBursts::0 0 # Per bank write bursts

system.mem\_ctrls.perBankWrBursts::1 27449 # Per bank write bursts

system.mem\_ctrls.perBankWrBursts::2 10 # Per bank write bursts

system.mem\_ctrls.perBankWrBursts::3 0 # Per bank write bursts

system.mem\_ctrls.perBankWrBursts::4 1264 # Per bank write bursts

system.mem\_ctrls.perBankWrBursts::5 0 # Per bank write bursts

system.mem\_ctrls.perBankWrBursts::6 0 # Per bank write bursts

system.mem\_ctrls.perBankWrBursts::7 0 # Per bank write bursts

system.mem\_ctrls.perBankWrBursts::8 0 # Per bank write bursts

system.mem\_ctrls.perBankWrBursts::9 1372 # Per bank write bursts

system.mem\_ctrls.perBankWrBursts::10 39 # Per bank write bursts

system.mem\_ctrls.perBankWrBursts::11 666 # Per bank write bursts

system.mem\_ctrls.perBankWrBursts::12 0 # Per bank write bursts

system.mem\_ctrls.perBankWrBursts::13 0 # Per bank write bursts

system.mem\_ctrls.perBankWrBursts::14 0 # Per bank write bursts

system.mem\_ctrls.perBankWrBursts::15 0 # Per bank write bursts

system.mem\_ctrls.numRdRetry 0 # Number of times read queue was full causing retry

system.mem\_ctrls.numWrRetry 0 # Number of times write queue was full causing retry

system.mem\_ctrls.totGap 711935894000 # Total gap between requests

system.mem\_ctrls.readPktSize::0 182125 # Read request sizes (log2)

system.mem\_ctrls.readPktSize::1 1973 # Read request sizes (log2)

system.mem\_ctrls.readPktSize::2 10562022 # Read request sizes (log2)

system.mem\_ctrls.readPktSize::3 1109535 # Read request sizes (log2)

system.mem\_ctrls.readPktSize::4 0 # Read request sizes (log2)

system.mem\_ctrls.readPktSize::5 0 # Read request sizes (log2)

system.mem\_ctrls.readPktSize::6 0 # Read request sizes (log2)

system.mem\_ctrls.writePktSize::0 75288 # Write request sizes (log2)

system.mem\_ctrls.writePktSize::1 0 # Write request sizes (log2)

system.mem\_ctrls.writePktSize::2 79877 # Write request sizes (log2)

system.mem\_ctrls.writePktSize::3 733383 # Write request sizes (log2)

system.mem\_ctrls.writePktSize::4 0 # Write request sizes (log2)

system.mem\_ctrls.writePktSize::5 0 # Write request sizes (log2)

system.mem\_ctrls.writePktSize::6 0 # Write request sizes (log2)

system.mem\_ctrls.rdQLenPdf::0 11575799 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::1 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::2 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::3 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::4 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::5 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::6 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::7 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::8 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::9 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::10 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::11 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::12 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::13 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::14 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::15 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::16 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::17 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::18 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::19 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::20 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::21 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::22 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::23 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::24 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::25 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::26 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::27 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::28 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::29 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::30 0 # What read queue length does an incoming req see

system.mem\_ctrls.rdQLenPdf::31 0 # What read queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::0 1 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::1 1 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::2 1 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::3 1 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::4 1 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::5 1 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::6 1 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::7 1 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::8 1 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::9 1 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::10 1 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::11 1 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::12 1 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::13 1 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::14 1 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::15 1 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::16 1 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::17 1926 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::18 1926 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::19 1926 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::20 1926 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::21 1926 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::22 1926 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::23 1926 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::24 1926 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::25 1926 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::26 1926 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::27 1925 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::28 1925 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::29 1925 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::30 1925 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::31 1925 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::32 1925 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::33 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::34 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::35 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::36 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::37 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::38 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::39 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::40 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::41 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::42 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::43 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::44 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::45 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::46 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::47 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::48 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::49 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::50 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::51 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::52 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::53 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::54 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::55 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::56 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::57 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::58 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::59 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::60 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::61 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::62 0 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::63 0 # What write queue length does an incoming req see

system.mem\_ctrls.bytesPerActivate::samples 1300080 # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::mean 571.364667 # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::gmean 354.550239 # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::stdev 414.826639 # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::0-127 308774 23.75% 23.75% # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::128-255 138209 10.63% 34.38% # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::256-383 84156 6.47% 40.85% # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::384-511 84732 6.52% 47.37% # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::512-639 68228 5.25% 52.62% # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::640-767 34951 2.69% 55.31% # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::768-895 42371 3.26% 58.57% # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::896-1023 28657 2.20% 60.77% # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::1024-1151 510002 39.23% 100.00% # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::total 1300080 # Bytes accessed per row activation

system.mem\_ctrls.rdPerTurnAround::samples 1925 # Reads before turning the bus around for writes

system.mem\_ctrls.rdPerTurnAround::mean 6013.071688 # Reads before turning the bus around for writes

system.mem\_ctrls.rdPerTurnAround::gmean 3075.916556 # Reads before turning the bus around for writes

system.mem\_ctrls.rdPerTurnAround::stdev 56781.994564 # Reads before turning the bus around for writes

system.mem\_ctrls.rdPerTurnAround::0-131071 1924 99.95% 99.95% # Reads before turning the bus around for writes

system.mem\_ctrls.rdPerTurnAround::2.49037e+06-2.62144e+06 1 0.05% 100.00% # Reads before turning the bus around for writes

system.mem\_ctrls.rdPerTurnAround::total 1925 # Reads before turning the bus around for writes

system.mem\_ctrls.wrPerTurnAround::samples 1925 # Writes before turning the bus around for reads

system.mem\_ctrls.wrPerTurnAround::mean 16 # Writes before turning the bus around for reads

system.mem\_ctrls.wrPerTurnAround::gmean 16.000000 # Writes before turning the bus around for reads

system.mem\_ctrls.wrPerTurnAround::16 1925 100.00% 100.00% # Writes before turning the bus around for reads

system.mem\_ctrls.wrPerTurnAround::total 1925 # Writes before turning the bus around for reads

system.mem\_ctrls.totQLat 120047681000 # Total ticks spent queuing

system.mem\_ctrls.totMemAccLat 337093912250 # Total ticks spent from burst creation until serviced by the DRAM

system.mem\_ctrls.totBusLat 57878995000 # Total ticks spent in databus transfers

system.mem\_ctrls.avgQLat 10370.57 # Average queueing delay per DRAM burst

system.mem\_ctrls.avgBusLat 5000.00 # Average bus latency per DRAM burst

system.mem\_ctrls.avgMemAccLat 29120.57 # Average memory access latency per DRAM burst

system.mem\_ctrls.avgRdBW 1040.61 # Average DRAM read bandwidth in MiByte/s

system.mem\_ctrls.avgWrBW 2.77 # Average achieved write bandwidth in MiByte/s

system.mem\_ctrls.avgRdBWSys 72.07 # Average system read bandwidth in MiByte/s

system.mem\_ctrls.avgWrBWSys 8.80 # Average system write bandwidth in MiByte/s

system.mem\_ctrls.peakBW 12800.00 # Theoretical peak bandwidth in MiByte/s

system.mem\_ctrls.busUtil 8.15 # Data bus utilization in percentage

system.mem\_ctrls.busUtilRead 8.13 # Data bus utilization in percentage for reads

system.mem\_ctrls.busUtilWrite 0.02 # Data bus utilization in percentage for writes

system.mem\_ctrls.avgRdQLen 1.00 # Average read queue length when enqueuing

system.mem\_ctrls.avgWrQLen 27.69 # Average write queue length when enqueuing

system.mem\_ctrls.readRowHits 10279163 # Number of row buffer hits during reads

system.mem\_ctrls.writeRowHits 27352 # Number of row buffer hits during writes

system.mem\_ctrls.readRowHitRate 88.80 # Row buffer hit rate for reads

system.mem\_ctrls.writeRowHitRate 88.73 # Row buffer hit rate for writes

system.mem\_ctrls.avgGap 55863.51 # Average gap between requests

system.mem\_ctrls.pageHitRate 88.80 # Row buffer hit rate, read and write combined

system.mem\_ctrls\_0.actEnergy 5819542680 # Energy for activate commands per rank (pJ)

system.mem\_ctrls\_0.preEnergy 3093156495 # Energy for precharge commands per rank (pJ)

system.mem\_ctrls\_0.readEnergy 42503606040 # Energy for read commands per rank (pJ)

system.mem\_ctrls\_0.writeEnergy 149934060 # Energy for write commands per rank (pJ)

system.mem\_ctrls\_0.refreshEnergy 53028066000.000008 # Energy for refresh commands per rank (pJ)

system.mem\_ctrls\_0.actBackEnergy 87026897190 # Energy for active background per rank (pJ)

system.mem\_ctrls\_0.preBackEnergy 2363081280 # Energy for precharge background per rank (pJ)

system.mem\_ctrls\_0.actPowerDownEnergy 159793833060 # Energy for active power-down per rank (pJ)

system.mem\_ctrls\_0.prePowerDownEnergy 30433499520 # Energy for precharge power-down per rank (pJ)

system.mem\_ctrls\_0.selfRefreshEnergy 23893846440 # Energy for self refresh per rank (pJ)

system.mem\_ctrls\_0.totalEnergy 408110466495 # Total energy per rank (pJ)

system.mem\_ctrls\_0.averagePower 573.240408 # Core power per rank (mW)

system.mem\_ctrls\_0.totalIdleTime 514926105000 # Total Idle time Per DRAM Rank

system.mem\_ctrls\_0.memoryStateTime::IDLE 2240502000 # Time in different power states

system.mem\_ctrls\_0.memoryStateTime::REF 22469936000 # Time in different power states

system.mem\_ctrls\_0.memoryStateTime::SREF 85243608250 # Time in different power states

system.mem\_ctrls\_0.memoryStateTime::PRE\_PDN 79254222000 # Time in different power states

system.mem\_ctrls\_0.memoryStateTime::ACT 172299428000 # Time in different power states

system.mem\_ctrls\_0.memoryStateTime::ACT\_PDN 350428274750 # Time in different power states

system.mem\_ctrls\_1.actEnergy 3463057080 # Energy for activate commands per rank (pJ)

system.mem\_ctrls\_1.preEnergy 1840643310 # Energy for precharge commands per rank (pJ)

system.mem\_ctrls\_1.readEnergy 40147591680 # Energy for read commands per rank (pJ)

system.mem\_ctrls\_1.writeEnergy 10841940 # Energy for write commands per rank (pJ)

system.mem\_ctrls\_1.refreshEnergy 56173178880.000008 # Energy for refresh commands per rank (pJ)

system.mem\_ctrls\_1.actBackEnergy 78616532370 # Energy for active background per rank (pJ)

system.mem\_ctrls\_1.preBackEnergy 2899365600 # Energy for precharge background per rank (pJ)

system.mem\_ctrls\_1.actPowerDownEnergy 179476263660 # Energy for active power-down per rank (pJ)

system.mem\_ctrls\_1.prePowerDownEnergy 37885782720 # Energy for precharge power-down per rank (pJ)

system.mem\_ctrls\_1.selfRefreshEnergy 12535369380 # Energy for self refresh per rank (pJ)

system.mem\_ctrls\_1.totalEnergy 413057507040 # Total energy per rank (pJ)

system.mem\_ctrls\_1.averagePower 580.189124 # Core power per rank (mW)

system.mem\_ctrls\_1.totalIdleTime 531956854500 # Total Idle time Per DRAM Rank

system.mem\_ctrls\_1.memoryStateTime::IDLE 2691101000 # Time in different power states

system.mem\_ctrls\_1.memoryStateTime::REF 23795796000 # Time in different power states

system.mem\_ctrls\_1.memoryStateTime::SREF 39711785500 # Time in different power states

system.mem\_ctrls\_1.memoryStateTime::PRE\_PDN 98660814750 # Time in different power states

system.mem\_ctrls\_1.memoryStateTime::ACT 153490721250 # Time in different power states

system.mem\_ctrls\_1.memoryStateTime::ACT\_PDN 393585752500 # Time in different power states

system.pwrStateResidencyTicks::UNDEFINED 711935971000 # Cumulative time (in ticks) in various power states

system.cpu\_voltage\_domain.voltage 1 # Voltage in Volts

system.cpu\_clk\_domain.clock 500 # Clock period in ticks

system.cpu.dtb.fetch\_hits 0 # ITB hits

system.cpu.dtb.fetch\_misses 0 # ITB misses

system.cpu.dtb.fetch\_acv 0 # ITB acv

system.cpu.dtb.fetch\_accesses 0 # ITB accesses

system.cpu.dtb.read\_hits 1514969 # DTB read hits

system.cpu.dtb.read\_misses 21 # DTB read misses

system.cpu.dtb.read\_acv 0 # DTB read access violations

system.cpu.dtb.read\_accesses 1514990 # DTB read accesses

system.cpu.dtb.write\_hits 888548 # DTB write hits

system.cpu.dtb.write\_misses 5 # DTB write misses

system.cpu.dtb.write\_acv 0 # DTB write access violations

system.cpu.dtb.write\_accesses 888553 # DTB write accesses

system.cpu.dtb.data\_hits 2403517 # DTB hits

system.cpu.dtb.data\_misses 26 # DTB misses

system.cpu.dtb.data\_acv 0 # DTB access violations

system.cpu.dtb.data\_accesses 2403543 # DTB accesses

system.cpu.itb.fetch\_hits 10340686 # ITB hits

system.cpu.itb.fetch\_misses 36 # ITB misses

system.cpu.itb.fetch\_acv 0 # ITB acv

system.cpu.itb.fetch\_accesses 10340722 # ITB accesses

system.cpu.itb.read\_hits 0 # DTB read hits

system.cpu.itb.read\_misses 0 # DTB read misses

system.cpu.itb.read\_acv 0 # DTB read access violations

system.cpu.itb.read\_accesses 0 # DTB read accesses

system.cpu.itb.write\_hits 0 # DTB write hits

system.cpu.itb.write\_misses 0 # DTB write misses

system.cpu.itb.write\_acv 0 # DTB write access violations

system.cpu.itb.write\_accesses 0 # DTB write accesses

system.cpu.itb.data\_hits 0 # DTB hits

system.cpu.itb.data\_misses 0 # DTB misses

system.cpu.itb.data\_acv 0 # DTB access violations

system.cpu.itb.data\_accesses 0 # DTB accesses

system.cpu.workload.numSyscalls 7437 # Number of system calls

system.cpu.pwrStateResidencyTicks::ON 711935971000 # Cumulative time (in ticks) in various power states

system.cpu.numCycles 1423871942 # 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.committedInsts 10340659 # Number of instructions committed

system.cpu.committedOps 10340659 # Number of ops (including micro ops) committed

system.cpu.num\_int\_alu\_accesses 9933411 # Number of integer alu accesses

system.cpu.num\_fp\_alu\_accesses 93114 # Number of float alu accesses

system.cpu.num\_vec\_alu\_accesses 0 # Number of vector alu accesses

system.cpu.num\_func\_calls 261957 # number of times a function call or return occured

system.cpu.num\_conditional\_control\_insts 1101750 # number of instructions that are conditional controls

system.cpu.num\_int\_insts 9933411 # number of integer instructions

system.cpu.num\_fp\_insts 93114 # number of float instructions

system.cpu.num\_vec\_insts 0 # number of vector instructions

system.cpu.num\_int\_register\_reads 14707599 # number of times the integer registers were read

system.cpu.num\_int\_register\_writes 7807352 # number of times the integer registers were written

system.cpu.num\_fp\_register\_reads 115691 # number of times the floating registers were read

system.cpu.num\_fp\_register\_writes 59353 # number of times the floating registers were written

system.cpu.num\_vec\_register\_reads 0 # number of times the vector registers were read

system.cpu.num\_vec\_register\_writes 0 # number of times the vector registers were written

system.cpu.num\_mem\_refs 2403543 # number of memory refs

system.cpu.num\_load\_insts 1514990 # Number of load instructions

system.cpu.num\_store\_insts 888553 # Number of store instructions

system.cpu.num\_idle\_cycles 0 # Number of idle cycles

system.cpu.num\_busy\_cycles 1423871942 # Number of busy cycles

system.cpu.not\_idle\_fraction 1 # Percentage of non-idle cycles

system.cpu.idle\_fraction 0 # Percentage of idle cycles

system.cpu.Branches 1505942 # Number of branches fetched

system.cpu.op\_class::No\_OpClass 203010 1.96% 1.96% # Class of executed instruction

system.cpu.op\_class::IntAlu 7610240 73.60% 75.56% # Class of executed instruction

system.cpu.op\_class::IntMult 65686 0.64% 76.19% # Class of executed instruction

system.cpu.op\_class::IntDiv 0 0.00% 76.19% # Class of executed instruction

system.cpu.op\_class::FloatAdd 30763 0.30% 76.49% # Class of executed instruction

system.cpu.op\_class::FloatCmp 3934 0.04% 76.53% # Class of executed instruction

system.cpu.op\_class::FloatCvt 8299 0.08% 76.61% # Class of executed instruction

system.cpu.op\_class::FloatMult 8547 0.08% 76.69% # Class of executed instruction

system.cpu.op\_class::FloatMultAcc 0 0.00% 76.69% # Class of executed instruction

system.cpu.op\_class::FloatDiv 1468 0.01% 76.71% # Class of executed instruction

system.cpu.op\_class::FloatMisc 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::FloatSqrt 248 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdAdd 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdAddAcc 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdAlu 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdCmp 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdCvt 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdMisc 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdMult 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdMultAcc 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdShift 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdShiftAcc 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdSqrt 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdFloatAdd 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdFloatAlu 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdFloatCmp 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdFloatCvt 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdFloatDiv 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdFloatMisc 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdFloatMult 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdFloatMultAcc 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::SimdFloatSqrt 0 0.00% 76.71% # Class of executed instruction

system.cpu.op\_class::MemRead 1503467 14.54% 91.25% # Class of executed instruction

system.cpu.op\_class::MemWrite 865168 8.37% 99.61% # Class of executed instruction

system.cpu.op\_class::FloatMemRead 16469 0.16% 99.77% # Class of executed instruction

system.cpu.op\_class::FloatMemWrite 23386 0.23% 100.00% # Class of executed instruction

system.cpu.op\_class::IprAccess 0 0.00% 100.00% # Class of executed instruction

system.cpu.op\_class::InstPrefetch 0 0.00% 100.00% # Class of executed instruction

system.cpu.op\_class::total 10340685 # Class of executed instruction

system.membus.snoop\_filter.tot\_requests 0 # Total number of requests made to the snoop filter.

system.membus.snoop\_filter.hit\_single\_requests 0 # Number of requests hitting in the snoop filter with a single holder of the requested data.

system.membus.snoop\_filter.hit\_multi\_requests 0 # Number of requests hitting in the snoop filter with multiple (>1) holders of the requested data.

system.membus.snoop\_filter.tot\_snoops 0 # Total number of snoops made to the snoop filter.

system.membus.snoop\_filter.hit\_single\_snoops 0 # Number of snoops hitting in the snoop filter with a single holder of the requested data.

system.membus.snoop\_filter.hit\_multi\_snoops 0 # Number of snoops hitting in the snoop filter with multiple (>1) holders of the requested data.

system.membus.pwrStateResidencyTicks::UNDEFINED 711935971000 # Cumulative time (in ticks) in various power states

system.membus.trans\_dist::ReadReq 11850709 # Transaction distribution

system.membus.trans\_dist::ReadResp 11855654 # Transaction distribution

system.membus.trans\_dist::WriteReq 883602 # Transaction distribution

system.membus.trans\_dist::WriteResp 883602 # Transaction distribution

system.membus.trans\_dist::LoadLockedReq 4946 # Transaction distribution

system.membus.trans\_dist::StoreCondReq 4946 # Transaction distribution

system.membus.trans\_dist::StoreCondResp 4946 # Transaction distribution

system.membus.pkt\_count\_system.cpu.icache\_port::system.mem\_ctrls.port 20681371 # Packet count per connected master and slave (bytes)

system.membus.pkt\_count\_system.cpu.dcache\_port::system.mem\_ctrls.port 4807034 # Packet count per connected master and slave (bytes)

system.membus.pkt\_count::total 25488405 # Packet count per connected master and slave (bytes)

system.membus.pkt\_size\_system.cpu.icache\_port::system.mem\_ctrls.port 41362740 # Cumulative packet size per connected master and slave (bytes)

system.membus.pkt\_size\_system.cpu.dcache\_port::system.mem\_ctrls.port 16209555 # Cumulative packet size per connected master and slave (bytes)

system.membus.pkt\_size::total 57572295 # Cumulative packet size per connected master and slave (bytes)

system.membus.snoops 0 # Total snoops (count)

system.membus.snoopTraffic 0 # Total snoop traffic (bytes)

system.membus.snoop\_fanout::samples 12744203 # 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 12744203 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 12744203 # Request fanout histogram

system.membus.reqLayer0.occupancy 13632751000 # Layer occupancy (ticks)

system.membus.reqLayer0.utilization 1.9 # Layer utilization (%)

system.membus.respLayer1.occupancy 23542766250 # Layer occupancy (ticks)

system.membus.respLayer1.utilization 3.3 # Layer utilization (%)

system.membus.respLayer2.occupancy 4368605250 # Layer occupancy (ticks)

system.membus.respLayer2.utilization 0.6 # Layer utilization (%)

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