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

sim\_seconds 31.158520 # Number of seconds simulated

sim\_ticks 31158520203000 # Number of ticks simulated

final\_tick 31158520203000 # Number of ticks from beginning of simulation (restored from checkpoints and never reset)

sim\_freq 1000000000000 # Frequency of simulated ticks

host\_inst\_rate 190762 # Simulator instruction rate (inst/s)

host\_op\_rate 190762 # Simulator op (including micro ops) rate (op/s)

host\_tick\_rate 13362000973 # Simulator tick rate (ticks/s)

host\_mem\_usage 641808 # Number of bytes of host memory used

host\_seconds 2331.88 # Real time elapsed on the host

sim\_insts 444833057 # Number of instructions simulated

sim\_ops 444833057 # 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 31158520203000 # Cumulative time (in ticks) in various power states

system.mem\_ctrls.bytes\_read::.cpu.inst 1779332332 # Number of bytes read from this memory

system.mem\_ctrls.bytes\_read::.cpu.data 477213373 # Number of bytes read from this memory

system.mem\_ctrls.bytes\_read::total 2256545705 # Number of bytes read from this memory

system.mem\_ctrls.bytes\_inst\_read::.cpu.inst 1779332332 # Number of instructions bytes read from this memory

system.mem\_ctrls.bytes\_inst\_read::total 1779332332 # Number of instructions bytes read from this memory

system.mem\_ctrls.bytes\_written::.cpu.data 275069446 # Number of bytes written to this memory

system.mem\_ctrls.bytes\_written::total 275069446 # Number of bytes written to this memory

system.mem\_ctrls.num\_reads::.cpu.inst 444833083 # Number of read requests responded to by this memory

system.mem\_ctrls.num\_reads::.cpu.data 71634330 # Number of read requests responded to by this memory

system.mem\_ctrls.num\_reads::total 516467413 # Number of read requests responded to by this memory

system.mem\_ctrls.num\_writes::.cpu.data 39192788 # Number of write requests responded to by this memory

system.mem\_ctrls.num\_writes::total 39192788 # Number of write requests responded to by this memory

system.mem\_ctrls.bw\_read::.cpu.inst 57105803 # Total read bandwidth from this memory (bytes/s)

system.mem\_ctrls.bw\_read::.cpu.data 15315662 # Total read bandwidth from this memory (bytes/s)

system.mem\_ctrls.bw\_read::total 72421466 # Total read bandwidth from this memory (bytes/s)

system.mem\_ctrls.bw\_inst\_read::.cpu.inst 57105803 # Instruction read bandwidth from this memory (bytes/s)

system.mem\_ctrls.bw\_inst\_read::total 57105803 # Instruction read bandwidth from this memory (bytes/s)

system.mem\_ctrls.bw\_write::.cpu.data 8828065 # Write bandwidth from this memory (bytes/s)

system.mem\_ctrls.bw\_write::total 8828065 # Write bandwidth from this memory (bytes/s)

system.mem\_ctrls.bw\_total::.cpu.inst 57105803 # Total bandwidth to/from this memory (bytes/s)

system.mem\_ctrls.bw\_total::.cpu.data 24143727 # Total bandwidth to/from this memory (bytes/s)

system.mem\_ctrls.bw\_total::total 81249531 # Total bandwidth to/from this memory (bytes/s)

system.mem\_ctrls.avgPriority\_.cpu.inst::samples 444833084.00 # Average QoS priority value for accepted requests

system.mem\_ctrls.avgPriority\_.cpu.data::samples 59917653.00 # Average QoS priority value for accepted requests

system.mem\_ctrls.priorityMinLatency 0.000000018750 # per QoS priority minimum request to response latency (s)

system.mem\_ctrls.priorityMaxLatency 5.219052522750 # per QoS priority maximum request to response latency (s)

system.mem\_ctrls.numReadWriteTurnArounds 97066 # Number of turnarounds from READ to WRITE

system.mem\_ctrls.numWriteReadTurnArounds 97066 # Number of turnarounds from WRITE to READ

system.mem\_ctrls.numStayReadState 1052697305 # Number of times bus staying in READ state

system.mem\_ctrls.numStayWriteState 1457862 # Number of times bus staying in WRITE state

system.mem\_ctrls.readReqs 516467414 # Number of read requests accepted

system.mem\_ctrls.writeReqs 39192788 # Number of write requests accepted

system.mem\_ctrls.readBursts 516467414 # Number of DRAM read bursts, including those serviced by the write queue

system.mem\_ctrls.writeBursts 39192788 # Number of DRAM write bursts, including those merged in the write queue

system.mem\_ctrls.bytesReadDRAM 32204649792 # Total number of bytes read from DRAM

system.mem\_ctrls.bytesReadWrQ 849264704 # Total number of bytes read from write queue

system.mem\_ctrls.bytesWritten 99395584 # Total number of bytes written to DRAM

system.mem\_ctrls.bytesReadSys 2256545709 # Total read bytes from the system interface side

system.mem\_ctrls.bytesWrittenSys 275069446 # Total written bytes from the system interface side

system.mem\_ctrls.servicedByWrQ 13269761 # Number of DRAM read bursts serviced by the write queue

system.mem\_ctrls.mergedWrBursts 37639704 # 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 45369834 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::1 86615993 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::2 56617127 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::3 39200573 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::4 1458217 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::5 1029299 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::6 26784648 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::7 8250183 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::8 2355 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::9 10179787 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::10 2452013 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::11 329183 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::12 3275434 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::13 14197292 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::14 73281661 # Per bank write bursts

system.mem\_ctrls.perBankRdBursts::15 134154054 # Per bank write bursts

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

system.mem\_ctrls.perBankWrBursts::1 1353716 # Per bank write bursts

system.mem\_ctrls.perBankWrBursts::2 11 # Per bank write bursts

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

system.mem\_ctrls.perBankWrBursts::4 64037 # 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 89043 # Per bank write bursts

system.mem\_ctrls.perBankWrBursts::10 37 # Per bank write bursts

system.mem\_ctrls.perBankWrBursts::11 46212 # 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 31158520126000 # Total gap between requests

system.mem\_ctrls.readPktSize::0 7376787 # Read request sizes (log2)

system.mem\_ctrls.readPktSize::1 68425 # Read request sizes (log2)

system.mem\_ctrls.readPktSize::2 455786386 # Read request sizes (log2)

system.mem\_ctrls.readPktSize::3 53235816 # 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 3379538 # Write request sizes (log2)

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

system.mem\_ctrls.writePktSize::2 3704023 # Write request sizes (log2)

system.mem\_ctrls.writePktSize::3 32109227 # 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 503197653 # 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 97067 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::18 97067 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::19 97067 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::20 97067 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::21 97067 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::22 97067 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::23 97067 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::24 97067 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::25 97067 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::26 97067 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::27 97067 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::28 97066 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::29 97066 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::30 97066 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::31 97066 # What write queue length does an incoming req see

system.mem\_ctrls.wrQLenPdf::32 97066 # 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 60952940 # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::mean 529.983336 # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::gmean 316.384124 # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::stdev 414.262625 # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::0-127 16609491 27.25% 27.25% # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::128-255 7194558 11.80% 39.05% # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::256-383 3607799 5.92% 44.97% # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::384-511 3704342 6.08% 51.05% # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::512-639 3758127 6.17% 57.22% # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::640-767 1727710 2.83% 60.05% # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::768-895 1778261 2.92% 62.97% # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::896-1023 1350909 2.22% 65.18% # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::1024-1151 21221743 34.82% 100.00% # Bytes accessed per row activation

system.mem\_ctrls.bytesPerActivate::total 60952940 # Bytes accessed per row activation

system.mem\_ctrls.rdPerTurnAround::samples 97066 # Reads before turning the bus around for writes

system.mem\_ctrls.rdPerTurnAround::mean 5184.070653 # Reads before turning the bus around for writes

system.mem\_ctrls.rdPerTurnAround::gmean 3461.199674 # Reads before turning the bus around for writes

system.mem\_ctrls.rdPerTurnAround::stdev 136690.373502 # Reads before turning the bus around for writes

system.mem\_ctrls.rdPerTurnAround::0-2.09715e+06 97065 100.00% 100.00% # Reads before turning the bus around for writes

system.mem\_ctrls.rdPerTurnAround::4.1943e+07-4.40402e+07 1 0.00% 100.00% # Reads before turning the bus around for writes

system.mem\_ctrls.rdPerTurnAround::total 97066 # Reads before turning the bus around for writes

system.mem\_ctrls.wrPerTurnAround::samples 97066 # 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 97066 100.00% 100.00% # Writes before turning the bus around for reads

system.mem\_ctrls.wrPerTurnAround::total 97066 # Writes before turning the bus around for reads

system.mem\_ctrls.masterReadBytes::.cpu.inst 1779332336 # Per-master bytes read from memory

system.mem\_ctrls.masterReadBytes::.cpu.data 383590178 # Per-master bytes read from memory

system.mem\_ctrls.masterWriteBytes::.cpu.data 11255495 # Per-master bytes write to memory

system.mem\_ctrls.masterReadRate::.cpu.inst 57105803.626344315708 # Per-master bytes read from memory rate (Bytes/sec)

system.mem\_ctrls.masterReadRate::.cpu.data 12310924.122868558392 # Per-master bytes read from memory rate (Bytes/sec)

system.mem\_ctrls.masterWriteRate::.cpu.data 361233.297559371917 # Per-master bytes write to memory rate (Bytes/sec)

system.mem\_ctrls.masterReadAccesses::.cpu.inst 444833084 # Per-master read serviced memory accesses

system.mem\_ctrls.masterReadAccesses::.cpu.data 71634330 # Per-master read serviced memory accesses

system.mem\_ctrls.masterWriteAccesses::.cpu.data 39192788 # Per-master write serviced memory accesses

system.mem\_ctrls.masterReadTotalLat::.cpu.inst 12710034182750 # Per-master read total memory access latency

system.mem\_ctrls.masterReadTotalLat::.cpu.data 2117640364500 # Per-master read total memory access latency

system.mem\_ctrls.masterWriteTotalLat::.cpu.data 823456451173500 # Per-master write total memory access latency

system.mem\_ctrls.masterReadAvgLat::.cpu.inst 28572.59 # Per-master read average memory access latency

system.mem\_ctrls.masterReadAvgLat::.cpu.data 29561.81 # Per-master read average memory access latency

system.mem\_ctrls.masterWriteAvgLat::.cpu.data 21010407.61 # Per-master write average memory access latency

system.mem\_ctrls.totQLat 5392718553500 # Total ticks spent queuing

system.mem\_ctrls.totMemAccLat 14827674547250 # Total ticks spent from burst creation until serviced by the DRAM

system.mem\_ctrls.totBusLat 2515988265000 # Total ticks spent in databus transfers

system.mem\_ctrls.avgQLat 10716.90 # Average queueing delay per DRAM burst

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

system.mem\_ctrls.avgMemAccLat 29466.90 # Average memory access latency per DRAM burst

system.mem\_ctrls.avgRdBW 1033.57 # Average DRAM read bandwidth in MiByte/s

system.mem\_ctrls.avgWrBW 3.19 # Average achieved write bandwidth in MiByte/s

system.mem\_ctrls.avgRdBWSys 72.42 # Average system read bandwidth in MiByte/s

system.mem\_ctrls.avgWrBWSys 8.83 # Average system write bandwidth in MiByte/s

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

system.mem\_ctrls.busUtil 8.10 # Data bus utilization in percentage

system.mem\_ctrls.busUtilRead 8.07 # 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 27.15 # Average write queue length when enqueuing

system.mem\_ctrls.readRowHits 442432416 # Number of row buffer hits during reads

system.mem\_ctrls.writeRowHits 1365348 # Number of row buffer hits during writes

system.mem\_ctrls.readRowHitRate 87.92 # Row buffer hit rate for reads

system.mem\_ctrls.writeRowHitRate 87.91 # Row buffer hit rate for writes

system.mem\_ctrls.avgGap 56074.77 # Average gap between requests

system.mem\_ctrls.pageHitRate 87.92 # Row buffer hit rate, read and write combined

system.mem\_ctrls\_0.actEnergy 290879380260 # Energy for activate commands per rank (pJ)

system.mem\_ctrls\_0.preEnergy 154606053360 # Energy for precharge commands per rank (pJ)

system.mem\_ctrls\_0.readEnergy 1894426733220 # Energy for read commands per rank (pJ)

system.mem\_ctrls\_0.writeEnergy 7400728080 # Energy for write commands per rank (pJ)

system.mem\_ctrls\_0.refreshEnergy 2123139273840.000244 # Energy for refresh commands per rank (pJ)

system.mem\_ctrls\_0.actBackEnergy 3933684304380 # Energy for active background per rank (pJ)

system.mem\_ctrls\_0.preBackEnergy 98437761600 # Energy for precharge background per rank (pJ)

system.mem\_ctrls\_0.actPowerDownEnergy 6773467408920 # Energy for active power-down per rank (pJ)

system.mem\_ctrls\_0.prePowerDownEnergy 1242512340480 # Energy for precharge power-down per rank (pJ)

system.mem\_ctrls\_0.selfRefreshEnergy 1159373840340 # Energy for self refresh per rank (pJ)

system.mem\_ctrls\_0.totalEnergy 17678195101050 # Total energy per rank (pJ)

system.mem\_ctrls\_0.averagePower 567.363116 # Core power per rank (mW)

system.mem\_ctrls\_0.totalIdleTime 22275077839000 # Total Idle time Per DRAM Rank

system.mem\_ctrls\_0.memoryStateTime::IDLE 97596210000 # Time in different power states

system.mem\_ctrls\_0.memoryStateTime::REF 898113060000 # Time in different power states

system.mem\_ctrls\_0.memoryStateTime::SREF 4185274474000 # Time in different power states

system.mem\_ctrls\_0.memoryStateTime::PRE\_PDN 3235709377750 # Time in different power states

system.mem\_ctrls\_0.memoryStateTime::ACT 7887733094000 # Time in different power states

system.mem\_ctrls\_0.memoryStateTime::ACT\_PDN 14854093987250 # Time in different power states

system.mem\_ctrls\_1.actEnergy 144324647040 # Energy for activate commands per rank (pJ)

system.mem\_ctrls\_1.preEnergy 76710353940 # Energy for precharge commands per rank (pJ)

system.mem\_ctrls\_1.readEnergy 1698404502060 # Energy for read commands per rank (pJ)

system.mem\_ctrls\_1.writeEnergy 706224240 # Energy for write commands per rank (pJ)

system.mem\_ctrls\_1.refreshEnergy 2323500850320.000488 # Energy for refresh commands per rank (pJ)

system.mem\_ctrls\_1.actBackEnergy 3350676194160 # Energy for active background per rank (pJ)

system.mem\_ctrls\_1.preBackEnergy 124416542400 # Energy for precharge background per rank (pJ)

system.mem\_ctrls\_1.actPowerDownEnergy 7944412995630 # Energy for active power-down per rank (pJ)

system.mem\_ctrls\_1.prePowerDownEnergy 1690921718400 # Energy for precharge power-down per rank (pJ)

system.mem\_ctrls\_1.selfRefreshEnergy 532202970360 # Energy for self refresh per rank (pJ)

system.mem\_ctrls\_1.totalEnergy 17887823851560 # Total energy per rank (pJ)

system.mem\_ctrls\_1.averagePower 574.090930 # Core power per rank (mW)

system.mem\_ctrls\_1.totalIdleTime 23483073130000 # Total Idle time Per DRAM Rank

system.mem\_ctrls\_1.memoryStateTime::IDLE 120279335000 # Time in different power states

system.mem\_ctrls\_1.memoryStateTime::REF 982868380000 # Time in different power states

system.mem\_ctrls\_1.memoryStateTime::SREF 1657706299250 # Time in different power states

system.mem\_ctrls\_1.memoryStateTime::PRE\_PDN 4403439572750 # Time in different power states

system.mem\_ctrls\_1.memoryStateTime::ACT 6572298164750 # Time in different power states

system.mem\_ctrls\_1.memoryStateTime::ACT\_PDN 17421928451250 # Time in different power states

system.pwrStateResidencyTicks::UNDEFINED 31158520203000 # 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 71634330 # 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 71634351 # DTB read accesses

system.cpu.dtb.write\_hits 39192788 # 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 39192793 # DTB write accesses

system.cpu.dtb.data\_hits 110827118 # DTB hits

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

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

system.cpu.dtb.data\_accesses 110827144 # DTB accesses

system.cpu.itb.fetch\_hits 444833084 # ITB hits

system.cpu.itb.fetch\_misses 37 # ITB misses

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

system.cpu.itb.fetch\_accesses 444833121 # 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 167539 # Number of system calls

system.cpu.pwrStateResidencyTicks::ON 31158520203000 # Cumulative time (in ticks) in various power states

system.cpu.numCycles 62317040406 # 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 444833057 # Number of instructions committed

system.cpu.committedOps 444833057 # Number of ops (including micro ops) committed

system.cpu.num\_int\_alu\_accesses 428420383 # Number of integer alu accesses

system.cpu.num\_fp\_alu\_accesses 3069064 # Number of float alu accesses

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

system.cpu.num\_func\_calls 12302405 # number of times a function call or return occured

system.cpu.num\_conditional\_control\_insts 46966307 # number of instructions that are conditional controls

system.cpu.num\_int\_insts 428420383 # number of integer instructions

system.cpu.num\_fp\_insts 3069064 # number of float instructions

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

system.cpu.num\_int\_register\_reads 631484715 # number of times the integer registers were read

system.cpu.num\_int\_register\_writes 336126519 # number of times the integer registers were written

system.cpu.num\_fp\_register\_reads 3630971 # number of times the floating registers were read

system.cpu.num\_fp\_register\_writes 1772082 # 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 110827144 # number of memory refs

system.cpu.num\_load\_insts 71634351 # Number of load instructions

system.cpu.num\_store\_insts 39192793 # Number of store instructions

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

system.cpu.num\_busy\_cycles 62317040406 # 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 65078964 # Number of branches fetched

system.cpu.op\_class::No\_OpClass 8646356 1.94% 1.94% # Class of executed instruction

system.cpu.op\_class::IntAlu 321159161 72.20% 74.14% # Class of executed instruction

system.cpu.op\_class::IntMult 2406685 0.54% 74.68% # Class of executed instruction

system.cpu.op\_class::IntDiv 0 0.00% 74.68% # Class of executed instruction

system.cpu.op\_class::FloatAdd 897130 0.20% 74.88% # Class of executed instruction

system.cpu.op\_class::FloatCmp 191234 0.04% 74.93% # Class of executed instruction

system.cpu.op\_class::FloatCvt 281149 0.06% 74.99% # Class of executed instruction

system.cpu.op\_class::FloatMult 204955 0.05% 75.04% # Class of executed instruction

system.cpu.op\_class::FloatMultAcc 0 0.00% 75.04% # Class of executed instruction

system.cpu.op\_class::FloatDiv 60615 0.01% 75.05% # Class of executed instruction

system.cpu.op\_class::FloatMisc 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::FloatSqrt 4361 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdAdd 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdAddAcc 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdAlu 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdCmp 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdCvt 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdMisc 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdMult 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdMultAcc 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdShift 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdShiftAcc 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdSqrt 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdFloatAdd 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdFloatAlu 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdFloatCmp 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdFloatCvt 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdFloatDiv 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdFloatMisc 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdFloatMult 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdFloatMultAcc 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdFloatSqrt 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdAes 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdAesMix 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdSha1Hash 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdSha1Hash2 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdSha256Hash 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdSha256Hash2 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdShaSigma2 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::SimdShaSigma3 0 0.00% 75.05% # Class of executed instruction

system.cpu.op\_class::MemRead 71215571 16.01% 91.06% # Class of executed instruction

system.cpu.op\_class::MemWrite 38336246 8.62% 99.68% # Class of executed instruction

system.cpu.op\_class::FloatMemRead 573072 0.13% 99.81% # Class of executed instruction

system.cpu.op\_class::FloatMemWrite 856548 0.19% 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 444833083 # 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 31158520203000 # Cumulative time (in ticks) in various power states

system.membus.trans\_dist::ReadReq 516313122 # Transaction distribution

system.membus.trans\_dist::ReadResp 516467413 # Transaction distribution

system.membus.trans\_dist::WriteReq 39038496 # Transaction distribution

system.membus.trans\_dist::WriteResp 39038496 # Transaction distribution

system.membus.trans\_dist::LoadLockedReq 154292 # Transaction distribution

system.membus.trans\_dist::StoreCondReq 154292 # Transaction distribution

system.membus.trans\_dist::StoreCondResp 154292 # Transaction distribution

system.membus.pkt\_count\_system.cpu.icache\_port::system.mem\_ctrls.port 889666167 # Packet count per connected master and slave (bytes)

system.membus.pkt\_count\_system.cpu.dcache\_port::system.mem\_ctrls.port 221654236 # Packet count per connected master and slave (bytes)

system.membus.pkt\_count::total 1111320403 # Packet count per connected master and slave (bytes)

system.membus.pkt\_size\_system.cpu.icache\_port::system.mem\_ctrls.port 1779332332 # Cumulative packet size per connected master and slave (bytes)

system.membus.pkt\_size\_system.cpu.dcache\_port::system.mem\_ctrls.port 752282819 # Cumulative packet size per connected master and slave (bytes)

system.membus.pkt\_size::total 2531615151 # 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 555660202 # 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 555660202 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 555660202 # Request fanout histogram

system.membus.reqLayer0.occupancy 594852990000 # Layer occupancy (ticks)

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

system.membus.respLayer1.occupancy 1014107214000 # Layer occupancy (ticks)

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

system.membus.respLayer2.occupancy 204492752500 # Layer occupancy (ticks)

system.membus.respLayer2.utilization 0.7 # Layer utilization (%)

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