user@finalproject:~/gem5$ ./build/X86/gem5.opt configs/example/se.py -c tests/test-progs/hello/bin/x86/linux/hello --cpu-type=TimingSimpleCPU --caches --l2cache --l3cache --mem-type=NVMainMemory --nvmain-config=../NVmain/Config/PCM\_ISSCC\_2012\_4GB.config

gem5 Simulator System. http://gem5.org

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

gem5 compiled Jun 14 2025 22:40:21

gem5 started Jun 17 2025 16:27:47

gem5 executing on finalproject, pid 28101

command line: ./build/X86/gem5.opt configs/example/se.py -c tests/test-progs/hello/bin/x86/linux/hello --cpu-type=TimingSimpleCPU --caches --l2cache --l3cache --mem-type=NVMainMemory --nvmain-config=../NVmain/Config/PCM\_ISSCC\_2012\_4GB.config

Global frequency set at 1000000000000 ticks per second

NVMainControl: Reading NVMain config file: ../NVmain/Config/PCM\_ISSCC\_2012\_4GB.config.

0: system.remote\_gdb: listening for remote gdb on port 7000

NVMain: GlobalEventQueue: Added a memory subsystem running at 400MHz. My frequency is 2000MHz.

Config: Warning: Key EIDD0 is not set. Using '85' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD1 is not set. Using '54' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD2P0 is not set. Using '30' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD2P1 is not set. Using '30' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD2N is not set. Using '37' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD3P is not set. Using '35' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD3N is not set. Using '40' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD4R is not set. Using '160' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD4W is not set. Using '165' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD5B is not set. Using '200' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD6 is not set. Using '12' as the default. Please configure this value if this is wrong.

Config: Warning: Key Eactstdby is not set. Using '0.09009' as the default. Please configure this value if this is wrong.

Config: Warning: Key Eprestdby is not set. Using '0.083333' as the default. Please configure this value if this is wrong.

Config: Warning: Key Rtt\_nom is not set. Using '30' as the default. Please configure this value if this is wrong.

Config: Warning: Key Rtt\_wr is not set. Using '60' as the default. Please configure this value if this is wrong.

Config: Warning: Key Rtt\_cont is not set. Using '75' as the default. Please configure this value if this is wrong.

Config: Warning: Key VDDQ is not set. Using '1.5' as the default. Please configure this value if this is wrong.

Config: Warning: Key VSSQ is not set. Using '0' as the default. Please configure this value if this is wrong.

Config: Warning: Key RanksPerDIMM is not set. Using '1' as the default. Please configure this value if this is wrong.

Config: Warning: Key DataEncoder is not set. Using 'default' as the default. Please configure this value if this is wrong.

Config: Warning: Key UseLowPower is not set. Using 'true' as the default. Please configure this value if this is wrong.

Config: Warning: Key PowerDownMode is not set. Using 'FASTEXIT' as the default. Please configure this value if this is wrong.

Config: Warning: Key PrintAllDevices is not set. Using 'false' as the default. Please configure this value if this is wrong.

Config: Warning: Key PrintConfig is not set. Using 'false' as the default. Please configure this value if this is wrong.

Config: Warning: Key StaggerRefresh is not set. Using 'false' as the default. Please configure this value if this is wrong.

Config: Warning: Key UsePrecharge is not set. Using 'true' as the default. Please configure this value if this is wrong.

Config: Warning: Key OffChipLatency is not set. Using '10' as the default. Please configure this value if this is wrong.

Config: Warning: Key RBSize is not set. Using '32' as the default. Please configure this value if this is wrong.

Config: Warning: Key MemoryPrefetcher is not set. Using 'none' as the default. Please configure this value if this is wrong.

Config: Warning: Key PrefetchBufferSize is not set. Using '32' as the default. Please configure this value if this is wrong.

Config: Warning: Key MLCLevels is not set. Using '1' as the default. Please configure this value if this is wrong.

Config: Warning: Key WPVariance is not set. Using '1' as the default. Please configure this value if this is wrong.

Config: Warning: Key UniformWrites is not set. Using 'true' as the default. Please configure this value if this is wrong.

Config: Warning: Key WriteAllBits is not set. Using 'true' as the default. Please configure this value if this is wrong.

Config: Warning: Key Ereset is not set. Using '0.054331' as the default. Please configure this value if this is wrong.

Config: Warning: Key Eset is not set. Using '0.101581' as the default. Please configure this value if this is wrong.

Config: Warning: Key nWP00 is not set. Using '0' as the default. Please configure this value if this is wrong.

Config: Warning: Key nWP01 is not set. Using '7' as the default. Please configure this value if this is wrong.

Config: Warning: Key nWP10 is not set. Using '5' as the default. Please configure this value if this is wrong.

Config: Warning: Key nWP11 is not set. Using '1' as the default. Please configure this value if this is wrong.

Config: Warning: Key WPMaxVariance is not set. Using '2' as the default. Please configure this value if this is wrong.

Config: Warning: Key DeadlockTimer is not set. Using '10000000' as the default. Please configure this value if this is wrong.

Config: Warning: Key EnableDebug is not set. Using 'false' as the default. Please configure this value if this is wrong.

Config: Warning: Key WritePausing is not set. Using 'false' as the default. Please configure this value if this is wrong.

Config: Warning: Key PauseThreshold is not set. Using '0.4' as the default. Please configure this value if this is wrong.

Config: Warning: Key MaxCancellations is not set. Using '4' as the default. Please configure this value if this is wrong.

NVMain: the address mapping order is

Sub-Array 1

Row 6

Column 2

Bank 4

Rank 5

Channel 3

Config: Warning: Key CONFIG\_CHANNEL0 is not set. Using '' as the default. Please configure this value if this is wrong.

Created a First Ready First Come First Serve memory controller with write queue!

Config: Warning: Key EIDD0 is not set. Using '85' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD1 is not set. Using '54' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD2P0 is not set. Using '30' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD2P1 is not set. Using '30' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD2N is not set. Using '37' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD3P is not set. Using '35' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD3N is not set. Using '40' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD4R is not set. Using '160' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD4W is not set. Using '165' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD5B is not set. Using '200' as the default. Please configure this value if this is wrong.

Config: Warning: Key EIDD6 is not set. Using '12' as the default. Please configure this value if this is wrong.

Config: Warning: Key Eactstdby is not set. Using '0.09009' as the default. Please configure this value if this is wrong.

Config: Warning: Key Eprestdby is not set. Using '0.083333' as the default. Please configure this value if this is wrong.

Config: Warning: Key Rtt\_nom is not set. Using '30' as the default. Please configure this value if this is wrong.

Config: Warning: Key Rtt\_wr is not set. Using '60' as the default. Please configure this value if this is wrong.

Config: Warning: Key Rtt\_cont is not set. Using '75' as the default. Please configure this value if this is wrong.

Config: Warning: Key VDDQ is not set. Using '1.5' as the default. Please configure this value if this is wrong.

Config: Warning: Key VSSQ is not set. Using '0' as the default. Please configure this value if this is wrong.

Config: Warning: Key RanksPerDIMM is not set. Using '1' as the default. Please configure this value if this is wrong.

Config: Warning: Key DataEncoder is not set. Using 'default' as the default. Please configure this value if this is wrong.

Config: Warning: Key UseLowPower is not set. Using 'true' as the default. Please configure this value if this is wrong.

Config: Warning: Key PowerDownMode is not set. Using 'FASTEXIT' as the default. Please configure this value if this is wrong.

Config: Warning: Key PrintAllDevices is not set. Using 'false' as the default. Please configure this value if this is wrong.

Config: Warning: Key PrintConfig is not set. Using 'false' as the default. Please configure this value if this is wrong.

Config: Warning: Key StaggerRefresh is not set. Using 'false' as the default. Please configure this value if this is wrong.

Config: Warning: Key UsePrecharge is not set. Using 'true' as the default. Please configure this value if this is wrong.

Config: Warning: Key OffChipLatency is not set. Using '10' as the default. Please configure this value if this is wrong.

Config: Warning: Key RBSize is not set. Using '32' as the default. Please configure this value if this is wrong.

Config: Warning: Key MemoryPrefetcher is not set. Using 'none' as the default. Please configure this value if this is wrong.

Config: Warning: Key PrefetchBufferSize is not set. Using '32' as the default. Please configure this value if this is wrong.

Config: Warning: Key MLCLevels is not set. Using '1' as the default. Please configure this value if this is wrong.

Config: Warning: Key WPVariance is not set. Using '1' as the default. Please configure this value if this is wrong.

Config: Warning: Key UniformWrites is not set. Using 'true' as the default. Please configure this value if this is wrong.

Config: Warning: Key WriteAllBits is not set. Using 'true' as the default. Please configure this value if this is wrong.

Config: Warning: Key Ereset is not set. Using '0.054331' as the default. Please configure this value if this is wrong.

Config: Warning: Key Eset is not set. Using '0.101581' as the default. Please configure this value if this is wrong.

Config: Warning: Key nWP00 is not set. Using '0' as the default. Please configure this value if this is wrong.

Config: Warning: Key nWP01 is not set. Using '7' as the default. Please configure this value if this is wrong.

Config: Warning: Key nWP10 is not set. Using '5' as the default. Please configure this value if this is wrong.

Config: Warning: Key nWP11 is not set. Using '1' as the default. Please configure this value if this is wrong.

Config: Warning: Key WPMaxVariance is not set. Using '2' as the default. Please configure this value if this is wrong.

Config: Warning: Key DeadlockTimer is not set. Using '10000000' as the default. Please configure this value if this is wrong.

Config: Warning: Key EnableDebug is not set. Using 'false' as the default. Please configure this value if this is wrong.

Config: Warning: Key WritePausing is not set. Using 'false' as the default. Please configure this value if this is wrong.

Config: Warning: Key PauseThreshold is not set. Using '0.4' as the default. Please configure this value if this is wrong.

Config: Warning: Key MaxCancellations is not set. Using '4' as the default. Please configure this value if this is wrong.

Config: Warning: Key Decoder is not set. Using '' as the default. Please configure this value if this is wrong.

Config: Warning: Key RankType is not set. Using '' as the default. Please configure this value if this is wrong.

Creating 4 banks in all 8 devices.

Config: Warning: Key BankType is not set. Using '' as the default. Please configure this value if this is wrong.

NVMain: the address mapping order is

Sub-Array 1

Row 6

Column 2

Bank 4

Rank 5

Channel 3

defaultMemory.channel0.FRFCFS-WQF capacity is 4096 MB.

Creating 4 command queues.

\*\*\*\* REAL SIMULATION \*\*\*\*

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

Hello world!

Exiting @ tick 78168000 because exiting with last active thread context

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.subArrayEnergy 4.33674nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.activeEnergy 4.1412nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.burstEnergy 0.195536nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.writeEnergy 0nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.refreshEnergy 0nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.cancelledWrites 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.cancelledWriteTime 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.pausedWrites 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.averagePausesPerRequest 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.measuredPauses 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.averagePausedRequestProgress 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.measuredProgresses 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.reads 121

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.activates 51

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.precharges 50

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.refreshes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.worstCaseEndurance 18446744073709551615

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.averageEndurance 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.actWaits 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.actWaitTotal 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.actWaitAverage -nan

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.worstCaseWrite 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.num00Writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.num01Writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.num10Writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.num11Writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.averageWriteTime 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.measuredWriteTimes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.mlcTimingHisto {}

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.cancelCountHisto {}

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.wpPauseHisto {}

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.subarray0.wpCancelHisto {}

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.bankEnergy 4.33674nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.activeEnergy 4.1412nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.burstEnergy 0.195536nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.refreshEnergy 0nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.bankPower 277409W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.activePower 264901W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.burstPower 12507.9W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.refreshPower 0W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.bandwidth 1585.16MB/s

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.dataCycles 484

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.powerCycles 15633

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.utilization 0.0309601

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.reads 121

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.activates 51

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.precharges 50

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.refreshes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.activeCycles 15633

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.standbyCycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.fastExitActiveCycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.fastExitPrechargeCycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.slowExitPrechargeCycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.actWaits 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.actWaitTotal 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.actWaitAverage -nan

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.averageEndurance 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank0.worstCaseEndurance 18446744073709551615

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.subArrayEnergy 9.05725nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.activeEnergy 8.7696nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.burstEnergy 0.287648nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.writeEnergy 0nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.refreshEnergy 0nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.cancelledWrites 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.cancelledWriteTime 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.pausedWrites 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.averagePausesPerRequest 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.measuredPauses 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.averagePausedRequestProgress 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.measuredProgresses 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.reads 178

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.activates 108

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.precharges 107

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.refreshes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.worstCaseEndurance 18446744073709551615

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.averageEndurance 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.actWaits 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.actWaitTotal 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.actWaitAverage -nan

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.worstCaseWrite 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.num00Writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.num01Writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.num10Writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.num11Writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.averageWriteTime 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.measuredWriteTimes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.mlcTimingHisto {}

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.cancelCountHisto {}

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.wpPauseHisto {}

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.subarray0.wpCancelHisto {}

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.bankEnergy 9.05725nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.activeEnergy 8.7696nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.burstEnergy 0.287648nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.refreshEnergy 0nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.bankPower 579367W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.activePower 560967W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.burstPower 18400.1W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.refreshPower 0W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.bandwidth 2331.89MB/s

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.dataCycles 712

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.powerCycles 15633

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.utilization 0.0455447

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.reads 178

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.activates 108

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.precharges 107

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.refreshes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.activeCycles 15564

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.standbyCycles 69

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.fastExitActiveCycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.fastExitPrechargeCycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.slowExitPrechargeCycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.actWaits 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.actWaitTotal 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.actWaitAverage -nan

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.averageEndurance 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank1.worstCaseEndurance 18446744073709551615

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.subArrayEnergy 1.61229nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.activeEnergy 1.5428nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.burstEnergy 0.069488nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.writeEnergy 0nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.refreshEnergy 0nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.cancelledWrites 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.cancelledWriteTime 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.pausedWrites 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.averagePausesPerRequest 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.measuredPauses 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.averagePausedRequestProgress 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.measuredProgresses 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.reads 43

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.activates 19

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.precharges 18

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.refreshes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.worstCaseEndurance 18446744073709551615

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.averageEndurance 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.actWaits 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.actWaitTotal 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.actWaitAverage -nan

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.worstCaseWrite 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.num00Writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.num01Writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.num10Writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.num11Writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.averageWriteTime 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.measuredWriteTimes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.mlcTimingHisto {}

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.cancelCountHisto {}

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.wpPauseHisto {}

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.subarray0.wpCancelHisto {}

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.bankEnergy 1.61229nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.activeEnergy 1.5428nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.burstEnergy 0.069488nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.refreshEnergy 0nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.bankPower 103134W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.activePower 98688.7W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.burstPower 4444.96W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.refreshPower 0W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.bandwidth 563.321MB/s

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.dataCycles 172

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.powerCycles 15633

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.utilization 0.0110024

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.reads 43

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.activates 19

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.precharges 18

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.refreshes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.activeCycles 7649

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.standbyCycles 7984

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.fastExitActiveCycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.fastExitPrechargeCycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.slowExitPrechargeCycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.actWaits 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.actWaitTotal 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.actWaitAverage -nan

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.averageEndurance 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank2.worstCaseEndurance 18446744073709551615

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.subArrayEnergy 1.09115nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.activeEnergy 1.0556nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.burstEnergy 0.035552nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.writeEnergy 0nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.refreshEnergy 0nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.cancelledWrites 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.cancelledWriteTime 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.pausedWrites 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.averagePausesPerRequest 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.measuredPauses 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.averagePausedRequestProgress 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.measuredProgresses 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.reads 22

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.activates 13

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.precharges 12

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.refreshes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.worstCaseEndurance 18446744073709551615

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.averageEndurance 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.actWaits 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.actWaitTotal 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.actWaitAverage -nan

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.worstCaseWrite 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.num00Writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.num01Writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.num10Writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.num11Writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.averageWriteTime 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.measuredWriteTimes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.mlcTimingHisto {}

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.cancelCountHisto {}

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.wpPauseHisto {}

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.subarray0.wpCancelHisto {}

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.bankEnergy 1.09115nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.activeEnergy 1.0556nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.burstEnergy 0.035552nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.refreshEnergy 0nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.bankPower 69798W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.activePower 67523.8W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.burstPower 2274.16W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.refreshPower 0W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.bandwidth 288.211MB/s

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.dataCycles 88

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.powerCycles 15633

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.utilization 0.00562912

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.reads 22

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.activates 13

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.precharges 12

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.refreshes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.activeCycles 15241

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.standbyCycles 392

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.fastExitActiveCycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.fastExitPrechargeCycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.slowExitPrechargeCycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.actWaits 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.actWaitTotal 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.actWaitAverage -nan

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.averageEndurance 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.bank3.worstCaseEndurance 18446744073709551615

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.totalEnergy 1440.57nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.backgroundEnergy 1408.38nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.activateEnergy 15.5092nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.burstEnergy 0.588224nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.refreshEnergy 0nJ

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.totalPower 0.0364479W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.backgroundPower 0.036036W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.activatePower 0.000396832W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.burstPower 1.50508e-05W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.refreshPower 0W

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.reads 364

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.activeCycles 15633

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.standbyCycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.fastExitActiveCycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.fastExitPrechargeCycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.slowExitCycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.actWaits 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.actWaitTotal 0

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.actWaitAverage -nan

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.rrdWaits 1

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.rrdWaitTotal 3

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.rrdWaitAverage 3

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.fawWaits 1

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.fawWaitTotal 19

i0.defaultMemory.channel0.FRFCFS-WQF.channel0.rank0.fawWaitAverage 19

i0.defaultMemory.channel0.FRFCFS-WQF.mem\_reads 364

i0.defaultMemory.channel0.FRFCFS-WQF.mem\_writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.rq\_rb\_hits 173

i0.defaultMemory.channel0.FRFCFS-WQF.rq\_rb\_miss 191

i0.defaultMemory.channel0.FRFCFS-WQF.wq\_rb\_hits 0

i0.defaultMemory.channel0.FRFCFS-WQF.wq\_rb\_miss 0

i0.defaultMemory.channel0.FRFCFS-WQF.total\_drains 0

i0.defaultMemory.channel0.FRFCFS-WQF.total\_drain\_writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.average\_writes\_per\_drain 0

i0.defaultMemory.channel0.FRFCFS-WQF.minimum\_drain\_writes 10000000000

i0.defaultMemory.channel0.FRFCFS-WQF.maximum\_drain\_writes 0

i0.defaultMemory.channel0.FRFCFS-WQF.total\_drain\_cycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.average\_drain\_cycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.minimum\_drain\_cycles 10000000000

i0.defaultMemory.channel0.FRFCFS-WQF.maximum\_drain\_cycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.total\_non\_drain\_cycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.average\_drain\_spacing 0

i0.defaultMemory.channel0.FRFCFS-WQF.minimum\_drain\_spacing 10000000000

i0.defaultMemory.channel0.FRFCFS-WQF.maximum\_drain\_spacing 0

i0.defaultMemory.channel0.FRFCFS-WQF.total\_read\_cycles 0

i0.defaultMemory.channel0.FRFCFS-WQF.average\_read\_spacing 0

i0.defaultMemory.channel0.FRFCFS-WQF.minimum\_read\_spacing 10000000000

i0.defaultMemory.channel0.FRFCFS-WQF.maximum\_read\_spacing 0

i0.defaultMemory.channel0.FRFCFS-WQF.total\_readqueue\_size 0

i0.defaultMemory.channel0.FRFCFS-WQF.average\_predrain\_readqueue\_size 0

i0.defaultMemory.channel0.FRFCFS-WQF.minimum\_predrain\_readqueue\_size 10000000000

i0.defaultMemory.channel0.FRFCFS-WQF.maximum\_predrain\_readqueue\_size 0

i0.defaultMemory.channel0.FRFCFS-WQF.total\_reads\_during\_drain 0

i0.defaultMemory.channel0.FRFCFS-WQF.average\_reads\_during\_drain 0

i0.defaultMemory.channel0.FRFCFS-WQF.minimum\_reads\_during\_drain 10000000000

i0.defaultMemory.channel0.FRFCFS-WQF.maximum\_reads\_during\_drain 0

i0.defaultMemory.channel0.FRFCFS-WQF.starvation\_precharges 11

i0.defaultMemory.channel0.FRFCFS-WQF.averageLatency 40.7527

i0.defaultMemory.channel0.FRFCFS-WQF.averageQueueLatency 1

i0.defaultMemory.channel0.FRFCFS-WQF.averageTotalLatency 41.7527

i0.defaultMemory.channel0.FRFCFS-WQF.measuredLatencies 364

i0.defaultMemory.channel0.FRFCFS-WQF.measuredQueueLatencies 364

i0.defaultMemory.channel0.FRFCFS-WQF.measuredTotalLatencies 364

i0.defaultMemory.channel0.FRFCFS-WQF.simulation\_cycles 15633

i0.defaultMemory.channel0.FRFCFS-WQF.wakeupCount 934

i0.defaultMemory.totalReadRequests 364

i0.defaultMemory.totalWriteRequests 0

i0.defaultMemory.successfulPrefetches 0

i0.defaultMemory.unsuccessfulPrefetches 0