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Gem5 Installation

1) sudo apt-get update

2) sudo apt-get upgrade

3) Installing all of the required dependency sofrwares:

sudo apt-get install build-essential gdb mercurial scons swig m4 libprotobuf-dev python python-dev python-protobuf zlib1g-dev protobuf-compiler libgoogle-perftools-dev gcc g++

4) hg clone http://repo.gem5.org/gem5

**** In the “gem5” directory:

5) scons build/Architecture_Name/gem5.opt -jN

Testing and Verification

1) Create a directory and open it. Then, enter the following command:

../build/Architecture_Name/gem5.opt ../configs/example/se.py -c ../tests/test-progs/hello/bin/Architecture_Name/linux/hello

2) Very Simple Simulation: In the previously created directory, just enter the following command:

../build/X86/gem5.opt --stats-file=initial.txt ../configs/My_se.py -c ../tests/test-progs/hello/bin/x86/linux/hello --caches --l2cache –cpu-type=detailed

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Important Options for “gem5.opt” file:

1) To set the output directory: --outdir=DIR

2) To specify a name for the output statistics file: --stats-file=FILE

Important Options for “My_se.py” file:

--cpu-type=CPU_TYPE   type of cpu to run with

--caches

--l2cache

--maxinsts=MAXINSTS : Total number of instructions to simulate (default: run forever)

--cmd=CMD : The binary to run in syscall emulation mode.

--options=OPTIONS : The options to pass to the binary, use " " around the entire string

--input=INPUT : Read stdin from a file.

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--simpoint-profile = Enable basic block profiling for SimPoints

--simpoint-interval=SIMPOINT_INTERVAL --> SimPoint interval in num of instructions

--take-simpoint-checkpoints=TAKE_SIMPOINT_CHECKPOINTS <simpoint file,weight file,interval-length,warmup- length>

--restore-simpoint-checkpoint
restore from a simpoint checkpoint taken with --take-simpoint-checkpoints

--checkpoint-dir=CHECKPOINT_DIR
Place all checkpoints in this absolute directory

--checkpoint-restore=CHECKPOINT_RESTORE
restore from checkpoint <N>

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