

# BigDataBench Gem5 Version

The gem5 simulator is a modular platform for computer system architecture research. We provide Hadoop version in Standalone mode for gem5. To speed up boot process, the operating system run in gem5 will boot into maintenance mode by default. This document gives a brief introduction on our BigDataBench gem5 version.

## 1. Prepare

- 1) Download gem5 source code via Mercurial repository. You can visit the gem5's main page [http://www.m5sim.org/Main\\_Page](http://www.m5sim.org/Main_Page) for more details.
- 2) Enter the gem5 source code directory, modify the variable 'M5\_PATH' in `configs/common/SysPaths.py` as you want.
- 3) To install gem5, you can run the command as follows when you have complete these two steps above:  
`# scons build/X86/gem5.opt debug=1`
- 4) Put `BigDataBench-gem5.img` in `$M5_PATH/disks/`  
Put `linux-bigswap2.img` in `$M5_PATH/disks/`  
Put `vmlinux-22-22-64` in `$M5_PATH/binaries/`

## 2. Run

- 1) You should use following command to run gem5:  
`# Build/X86/gem5.opt configs/example/fs.py --cpu-type=detailed --caches --l2cache --disk-image=BigDataBench-gem5.img --kernel=vmlinux-22-22-64`  
By default it will run the gem5 for single simulated core. To simulate more than one core, users should add an argument 'n=NUM', NUM is the number of simulated cores you want.
- 2) Users should use `m5term` program to connect to the simulated console, run the command as follows in another terminal:  
`# m5term localhost 3456`
- 3) The root password of the operating system in gem5 is 'root'. Then you can use following command to run the BigDataBench:  
`# ./run.sh`

The above paragraphs shows how to run Hadoop based workloads of BigDataBench, more details could be found in `BigDataBench-handbook`.