

## Commands used:

### Anagram:

#### # Taken predictor

```
./sim-bpred -bpred taken -bpred:btb_repl lru benchmarks/anagram.alpha words <
benchmarks/anagram.in > OUT_anagram_taken_lru
./sim-bpred -bpred taken -bpred:btb_repl fifo benchmarks/anagram.alpha words <
benchmarks/anagram.in > OUT_anagram_taken_fifo
./sim-bpred -bpred taken -bpred:btb_repl random benchmarks/anagram.alpha words <
benchmarks/anagram.in > OUT_anagram_taken_random
```

#### # Not-taken predictor

```
./sim-bpred -bpred nottaken -bpred:btb_repl lru benchmarks/anagram.alpha words <
benchmarks/anagram.in > OUT_anagram_nottaken_lru
./sim-bpred -bpred nottaken -bpred:btb_repl fifo benchmarks/anagram.alpha words <
benchmarks/anagram.in > OUT_anagram_nottaken_fifo
./sim-bpred -bpred nottaken -bpred:btb_repl random benchmarks/anagram.alpha words <
benchmarks/anagram.in > OUT_anagram_nottaken_random
```

#### # Bimodal predictor

```
./sim-bpred -bpred bimod -bpred:btb_repl lru benchmarks/anagram.alpha words <
benchmarks/anagram.in > OUT_anagram_bimod_lru
./sim-bpred -bpred bimod -bpred:btb_repl fifo benchmarks/anagram.alpha words <
benchmarks/anagram.in > OUT_anagram_bimod_fifo
./sim-bpred -bpred bimod -bpred:btb_repl random benchmarks/anagram.alpha words <
benchmarks/anagram.in > OUT_anagram_bimod_random
```

#### #2lev

```
./sim-bpred -bpred 2lev -bpred:btb_repl lru benchmarks/anagram.alpha words <
benchmarks/anagram.in > OUT_anagram_2lev_lru
./sim-bpred -bpred 2lev -bpred:btb_repl fifo benchmarks/anagram.alpha words <
benchmarks/anagram.in > OUT_anagram_2lev_fifo
./sim-bpred -bpred 2lev -bpred:btb_repl random benchmarks/anagram.alpha words <
benchmarks/anagram.in > OUT_anagram_2lev_random
```

#### #comb

```
./sim-bpred -bpred comb -bpred:btb_repl lru benchmarks/anagram.alpha words <
benchmarks/anagram.in > OUT_anagram_comb_lru
./sim-bpred -bpred comb -bpred:btb_repl fifo benchmarks/anagram.alpha words <
benchmarks/anagram.in > OUT_anagram_comb_fifo
./sim-bpred -bpred comb -bpred:btb_repl random benchmarks/anagram.alpha words <
benchmarks/anagram.in > OUT_anagram_comb_random
```

#### # Taken

```
./sim-outorder -bpred taken -bpred:btb_repl lru benchmarks/anagram.alpha words <
benchmarks/anagram.in > anagram_taken_lru.out
./sim-outorder -bpred taken -bpred:btb_repl fifo benchmarks/anagram.alpha words <
benchmarks/anagram.in > anagram_taken_fifo.out
./sim-outorder -bpred taken -bpred:btb_repl random benchmarks/anagram.alpha words <
benchmarks/anagram.in > anagram_taken_random.out
```

#### # Not-taken

```
./sim-outorder -bpred nottaken -bpred:btb_repl lru benchmarks/anagram.alpha words <
benchmarks/anagram.in > anagram_nottaken_lru.out
./sim-outorder -bpred nottaken -bpred:btb_repl fifo benchmarks/anagram.alpha words <
benchmarks/anagram.in > anagram_nottaken_fifo.out
./sim-outorder -bpred nottaken -bpred:btb_repl random benchmarks/anagram.alpha words <
benchmarks/anagram.in > anagram_nottaken_random.out
```

#### # Bimodal

```
./sim-outorder -bpred bimod -bpred:btb_repl lru benchmarks/anagram.alpha words <
benchmarks/anagram.in > anagram_bimod_lru.out
./sim-outorder -bpred bimod -bpred:btb_repl fifo benchmarks/anagram.alpha words <
benchmarks/anagram.in > anagram_bimod_fifo.out
./sim-outorder -bpred bimod -bpred:btb_repl random benchmarks/anagram.alpha words <
benchmarks/anagram.in > anagram_bimod_random.out
```

#### #2lev

```
./sim-outorder -bpred 2lev -bpred:btb_repl lru benchmarks/anagram.alpha words <
benchmarks/anagram.in > anagram_2lev_lru.out
./sim-outorder -bpred 2lev -bpred:btb_repl fifo benchmarks/anagram.alpha words <
benchmarks/anagram.in > anagram_2lev_fifo.out
./sim-outorder -bpred 2lev -bpred:btb_repl random benchmarks/anagram.alpha words <
benchmarks/anagram.in > anagram_2lev_random.out
```

#### #comb

```
./sim-outorder -bpred comb -bpred:btb_repl lru benchmarks/anagram.alpha words <
benchmarks/anagram.in > anagram_comb_lru.out
./sim-outorder -bpred comb -bpred:btb_repl fifo benchmarks/anagram.alpha words <
benchmarks/anagram.in > anagram_comb_fifo.out
./sim-outorder -bpred comb -bpred:btb_repl random benchmarks/anagram.alpha words <
benchmarks/anagram.in > anagram_comb_random.out
```

## **GCC:**

```
./sim-bpred -bpred taken -bpred:btb_repl lru benchmarks/cc1.alpha -O benchmarks/1stmt.i > OUT_gcc_taken_lru
```

```
./sim-bpred -bpred taken -bpred:btb_repl fifo benchmarks/cc1.alpha -O benchmarks/1stmt.i > OUT_gcc_taken_fifo
```

```
./sim-bpred -bpred taken -bpred:btb_repl random benchmarks/cc1.alpha -O benchmarks/1stmt.i > OUT_gcc_taken_random
```

```
./sim-bpred -bpred nottaken -bpred:btb_repl lru benchmarks/cc1.alpha -O benchmarks/1stmt.i > OUT_gcc_nottaken_lru
```

```
./sim-bpred -bpred nottaken -bpred:btb_repl fifo benchmarks/cc1.alpha -O benchmarks/1stmt.i > OUT_gcc_nottaken_fifo
```

```
./sim-bpred -bpred nottaken -bpred:btb_repl random benchmarks/cc1.alpha -O benchmarks/1stmt.i > OUT_gcc_nottaken_random
```

```
./sim-bpred -bpred bimod -bpred:btb_repl lru benchmarks/cc1.alpha -O benchmarks/1stmt.i > OUT_gcc_bimod_lru
```

```
./sim-bpred -bpred bimod -bpred:btb_repl fifo benchmarks/cc1.alpha -O benchmarks/1stmt.i > OUT_gcc_bimod_fifo
```

```
./sim-bpred -bpred bimod -bpred:btb_repl random benchmarks/cc1.alpha -O benchmarks/1stmt.i > OUT_gcc_bimod_random
```

```
./sim-bpred -bpred 2lev -bpred:btb_repl lru benchmarks/cc1.alpha -O benchmarks/1stmt.i > OUT_gcc_2lev_lru
```

```
./sim-bpred -bpred 2lev -bpred:btb_repl fifo benchmarks/cc1.alpha -O benchmarks/1stmt.i > OUT_gcc_2lev_fifo
```

```
./sim-bpred -bpred 2lev -bpred:btb_repl random benchmarks/cc1.alpha -O benchmarks/1stmt.i > OUT_gcc_2lev_random
```

```
./sim-bpred -bpred comb -bpred:btb_repl lru benchmarks/cc1.alpha -O benchmarks/1stmt.i > OUT_gcc_comb_lru
```

```
./sim-bpred -bpred comb -bpred:btb_repl fifo benchmarks/cc1.alpha -O benchmarks/1stmt.i > OUT_gcc_comb_fifo
```

```
./sim-bpred -bpred comb -bpred:btb_repl random benchmarks/cc1.alpha -O benchmarks/1stmt.i > OUT_gcc_comb_random
```

```
./sim-outorder -bpred taken -bpred:btb_repl lru benchmarks/cc1.alpha -O
benchmarks/1stmt.i > gcc_taken_lru.out
./sim-outorder -bpred taken -bpred:btb_repl fifo benchmarks/cc1.alpha -O
benchmarks/1stmt.i > gcc_taken_fifo.out
./sim-outorder -bpred taken -bpred:btb_repl random benchmarks/cc1.alpha -O
benchmarks/1stmt.i > gcc_taken_random.out
```

```
./sim-outorder -bpred nottaken -bpred:btb_repl lru benchmarks/cc1.alpha -O
benchmarks/1stmt.i > gcc_nottaken_lru.out
./sim-outorder -bpred nottaken -bpred:btb_repl fifo benchmarks/cc1.alpha -O
benchmarks/1stmt.i > gcc_nottaken_fifo.out
./sim-outorder -bpred nottaken -bpred:btb_repl random benchmarks/cc1.alpha -O
benchmarks/1stmt.i > gcc_nottaken_random.out
```

```
./sim-outorder -bpred bimod -bpred:btb_repl lru benchmarks/cc1.alpha -O
benchmarks/1stmt.i > gcc_bimod_lru.out
./sim-outorder -bpred bimod -bpred:btb_repl fifo benchmarks/cc1.alpha -O
benchmarks/1stmt.i > gcc_bimod_fifo.out
./sim-outorder -bpred bimod -bpred:btb_repl random benchmarks/cc1.alpha -O
benchmarks/1stmt.i > gcc_bimod_random.out
```

```
./sim-outorder -bpred 2lev -bpred:btb_repl lru benchmarks/cc1.alpha -O benchmarks/1stmt.i
> gcc_2lev_lru.out
./sim-outorder -bpred 2lev -bpred:btb_repl fifo benchmarks/cc1.alpha -O benchmarks/1stmt.i
> gcc_2lev_fifo.out
./sim-outorder -bpred 2lev -bpred:btb_repl random benchmarks/cc1.alpha -O
benchmarks/1stmt.i > gcc_2lev_random.out
```

```
./sim-outorder -bpred comb -bpred:btb_repl lru benchmarks/cc1.alpha -O
benchmarks/1stmt.i > gcc_comb_lru.out
./sim-outorder -bpred comb -bpred:btb_repl fifo benchmarks/cc1.alpha -O
benchmarks/1stmt.i > gcc_comb_fifo.out
./sim-outorder -bpred comb -bpred:btb_repl random benchmarks/cc1.alpha -O
benchmarks/1stmt.i > gcc_comb_random.out
```

## Compress:

```
./sim-bpred -bpred taken -bpred:btb_repl lru benchmarks/compress95.alpha <  
benchmarks/compress95.in > OUT_compress_taken_lru
```

```
./sim-bpred -bpred taken -bpred:btb_repl fifo benchmarks/compress95.alpha <  
benchmarks/compress95.in > OUT_compress_taken_fifo
```

```
./sim-bpred -bpred taken -bpred:btb_repl random benchmarks/compress95.alpha <  
benchmarks/compress95.in > OUT_compress_taken_random
```

```
./sim-bpred -bpred nottaken -bpred:btb_repl lru benchmarks/compress95.alpha <  
benchmarks/compress95.in > OUT_compress_nottaken_lru
```

```
./sim-bpred -bpred nottaken -bpred:btb_repl fifo benchmarks/compress95.alpha <  
benchmarks/compress95.in > OUT_compress_nottaken_fifo
```

```
./sim-bpred -bpred nottaken -bpred:btb_repl random benchmarks/compress95.alpha <  
benchmarks/compress95.in > OUT_compress_nottaken_random
```

```
./sim-bpred -bpred bimod -bpred:btb_repl lru benchmarks/compress95.alpha <  
benchmarks/compress95.in > OUT_compress_bimod_lru
```

```
./sim-bpred -bpred bimod -bpred:btb_repl fifo benchmarks/compress95.alpha <  
benchmarks/compress95.in > OUT_compress_bimod_fifo
```

```
./sim-bpred -bpred bimod -bpred:btb_repl random benchmarks/compress95.alpha <  
benchmarks/compress95.in > OUT_compress_bimod_random
```

```
./sim-bpred -bpred 2lev -bpred:btb_repl lru benchmarks/compress95.alpha <  
benchmarks/compress95.in > OUT_compress_2lev_lru
```

```
./sim-bpred -bpred 2lev -bpred:btb_repl fifo benchmarks/compress95.alpha <  
benchmarks/compress95.in > OUT_compress_2lev_fifo
```

```
./sim-bpred -bpred 2lev -bpred:btb_repl random benchmarks/compress95.alpha <  
benchmarks/compress95.in > OUT_compress_2lev_random
```

```
./sim-bpred -bpred comb -bpred:btb_repl lru benchmarks/compress95.alpha <  
benchmarks/compress95.in > OUT_compress_comb_lru
```

```
./sim-bpred -bpred comb -bpred:btb_repl fifo benchmarks/compress95.alpha <  
benchmarks/compress95.in > OUT_compress_comb_fifo
```

```
./sim-bpred -bpred comb -bpred:btb_repl random benchmarks/compress95.alpha <  
benchmarks/compress95.in > OUT_compress_comb_random
```

```
./sim-outorder -bpred taken -bpred:btb_repl lru benchmarks/compress95.alpha <
benchmarks/compress95.in > compress95_taken_lru.out
./sim-outorder -bpred taken -bpred:btb_repl fifo benchmarks/compress95.alpha <
benchmarks/compress95.in > compress95_taken_fifo.out
./sim-outorder -bpred taken -bpred:btb_repl random benchmarks/compress95.alpha <
benchmarks/compress95.in > compress95_taken_random.out
```

```
./sim-outorder -bpred nottaken -bpred:btb_repl lru benchmarks/compress95.alpha <
benchmarks/compress95.in > compress95_nottaken_lru.out
./sim-outorder -bpred nottaken -bpred:btb_repl fifo benchmarks/compress95.alpha <
benchmarks/compress95.in > compress95_nottaken_fifo.out
./sim-outorder -bpred nottaken -bpred:btb_repl random benchmarks/compress95.alpha <
benchmarks/compress95.in > compress95_nottaken_random.out
```

```
./sim-outorder -bpred bimod -bpred:btb_repl lru benchmarks/compress95.alpha <
benchmarks/compress95.in > compress95_bimod_lru.out
./sim-outorder -bpred bimod -bpred:btb_repl fifo benchmarks/compress95.alpha <
benchmarks/compress95.in > compress95_bimod_fifo.out
./sim-outorder -bpred bimod -bpred:btb_repl random benchmarks/compress95.alpha <
benchmarks/compress95.in > compress95_bimod_random.out
```

```
./sim-outorder -bpred 2lev -bpred:btb_repl lru benchmarks/compress95.alpha <
benchmarks/compress95.in > compress95_2lev_lru.out
./sim-outorder -bpred 2lev -bpred:btb_repl fifo benchmarks/compress95.alpha <
benchmarks/compress95.in > compress95_2lev_fifo.out
./sim-outorder -bpred 2lev -bpred:btb_repl random benchmarks/compress95.alpha <
benchmarks/compress95.in > compress95_2lev_random.out
```

```
./sim-outorder -bpred comb -bpred:btb_repl lru benchmarks/compress95.alpha <
benchmarks/compress95.in > compress95_comb_lru.out
./sim-outorder -bpred comb -bpred:btb_repl fifo benchmarks/compress95.alpha <
benchmarks/compress95.in > compress95_comb_fifo.out
./sim-outorder -bpred comb -bpred:btb_repl random benchmarks/compress95.alpha <
benchmarks/compress95.in > compress95_comb_random.out
```

## GO:

```
./sim-bpred -bpred taken -bpred:btb_repl lru benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > OUT_go_taken_lru  
./sim-bpred -bpred taken -bpred:btb_repl fifo benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > OUT_go_taken_fifo  
./sim-bpred -bpred taken -bpred:btb_repl random benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > OUT_go_taken_random
```

```
./sim-bpred -bpred nottaken -bpred:btb_repl lru benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > OUT_go_nottaken_lru  
./sim-bpred -bpred nottaken -bpred:btb_repl fifo benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > OUT_go_nottaken_fifo  
./sim-bpred -bpred nottaken -bpred:btb_repl random benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > OUT_go_nottaken_random
```

```
./sim-bpred -bpred bimod -bpred:btb_repl lru benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > OUT_go_bimod_lru  
./sim-bpred -bpred bimod -bpred:btb_repl fifo benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > OUT_go_bimod_fifo  
./sim-bpred -bpred bimod -bpred:btb_repl random benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > OUT_go_bimod_random
```

### # 2-level

```
./sim-bpred -bpred 2lev -bpred:btb_repl lru benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > OUT_go_2lev_lru  
./sim-bpred -bpred 2lev -bpred:btb_repl fifo benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > OUT_go_2lev_fifo  
./sim-bpred -bpred 2lev -bpred:btb_repl random benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > OUT_go_2lev_random
```

### # Combined

```
./sim-bpred -bpred comb -bpred:btb_repl lru benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > OUT_go_comb_lru  
./sim-bpred -bpred comb -bpred:btb_repl fifo benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > OUT_go_comb_fifo  
./sim-bpred -bpred comb -bpred:btb_repl random benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > OUT_go_comb_random
```

```
./sim-outorder -bpred taken -bpred:btb_repl lru benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_taken_lru.out  
./sim-outorder -bpred taken -bpred:btb_repl fifo benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_taken_fifo.out  
./sim-outorder -bpred taken -bpred:btb_repl random benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_taken_random.out
```

```
./sim-outorder -bpred nottaken -bpred:btb_repl lru benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_nottaken_lru.out  
./sim-outorder -bpred nottaken -bpred:btb_repl fifo benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_nottaken_fifo.out  
./sim-outorder -bpred nottaken -bpred:btb_repl random benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_nottaken_random.out
```

```
./sim-outorder -bpred bimod -bpred:btb_repl lru benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_bimod_lru.out  
./sim-outorder -bpred bimod -bpred:btb_repl fifo benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_bimod_fifo.out  
./sim-outorder -bpred bimod -bpred:btb_repl random benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_bimod_random.out
```

```
./sim-outorder -bpred 2lev -bpred:btb_repl lru benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_2lev_lru.out  
./sim-outorder -bpred 2lev -bpred:btb_repl fifo benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_2lev_fifo.out  
./sim-outorder -bpred 2lev -bpred:btb_repl random benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_2lev_random.out
```

```
./sim-outorder -bpred comb -bpred:btb_repl lru benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_comb_lru.out  
./sim-outorder -bpred comb -bpred:btb_repl fifo benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_comb_fifo.out  
./sim-outorder -bpred comb -bpred:btb_repl random benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_comb_random.out
```



## Effect on various replacement algorithms with various BTB Sizes(# sets)

### Anagram:

```
# ---- LRU ----(128,256,512 )(number of entries)
./sim-bpred -bpred bimod -bpred:btb 128 4 -bpred:btb_repl lru benchmarks/anagram.alpha
words < benchmarks/anagram.in > anagram_bimod_lru_btb128.out
./sim-bpred -bpred bimod -bpred:btb 256 4 -bpred:btb_repl lru benchmarks/anagram.alpha
words < benchmarks/anagram.in > anagram_bimod_lru_btb256.out
./sim-bpred -bpred bimod -bpred:btb 512 4 -bpred:btb_repl lru benchmarks/anagram.alpha
words < benchmarks/anagram.in > anagram_bimod_lru_btb512.out
```

```
# ---- FIFO ----(128,256,512 )(number of entries)
./sim-bpred -bpred bimod -bpred:btb 128 4 -bpred:btb_repl fifo benchmarks/anagram.alpha
words < benchmarks/anagram.in > anagram_bimod_fifo_btb128.out
./sim-bpred -bpred bimod -bpred:btb 256 4 -bpred:btb_repl fifo benchmarks/anagram.alpha
words < benchmarks/anagram.in > anagram_bimod_fifo_btb256.out
./sim-bpred -bpred bimod -bpred:btb 512 4 -bpred:btb_repl fifo benchmarks/anagram.alpha
words < benchmarks/anagram.in > anagram_bimod_fifo_btb512.out
```

```
# ---- RANDOM ----(128,256,512 )(number of entries)
./sim-bpred -bpred bimod -bpred:btb 128 4 -bpred:btb_repl random
benchmarks/anagram.alpha words < benchmarks/anagram.in >
anagram_bimod_random_btb128.out
./sim-bpred -bpred bimod -bpred:btb 256 4 -bpred:btb_repl random
benchmarks/anagram.alpha words < benchmarks/anagram.in >
anagram_bimod_random_btb256.out
./sim-bpred -bpred bimod -bpred:btb 512 4 -bpred:btb_repl random
benchmarks/anagram.alpha words < benchmarks/anagram.in >
anagram_bimod_random_btb512.out
```

### Gcc:

```
# ---- LRU ----(128,256,512 )(number of entries)
./sim-bpred -bpred bimod -bpred:btb 128 4 -bpred:btb_repl lru benchmarks/cc1.alpha -O
benchmarks/1stmt.i > gcc_bimod_lru_btb128.out
./sim-bpred -bpred bimod -bpred:btb 256 4 -bpred:btb_repl lru benchmarks/cc1.alpha -O
benchmarks/1stmt.i > gcc_bimod_lru_btb256.out
./sim-bpred -bpred bimod -bpred:btb 512 4 -bpred:btb_repl lru benchmarks/cc1.alpha -O
benchmarks/1stmt.i > gcc_bimod_lru_btb512.out
```

```
# ---- FIFO ----(128,256,512 )(number of entries)
./sim-bpred -bpred bimod -bpred:btb 128 4 -bpred:btb_repl fifo benchmarks/cc1.alpha -O
benchmarks/1stmt.i > gcc_bimod_fifo_btb128.out
./sim-bpred -bpred bimod -bpred:btb 256 4 -bpred:btb_repl fifo benchmarks/cc1.alpha -O
benchmarks/1stmt.i > gcc_bimod_fifo_btb256.out
```

```
./sim-bpred -bpred bimod -bpred:btb 512 4 -bpred:btb_repl fifo benchmarks/cc1.alpha -O
benchmarks/1stmt.i > gcc_bimod_fifo_btb512.out
```

```
# ----- RANDOM -----(128,256,512 )(number of entries)
```

```
./sim-bpred -bpred bimod -bpred:btb 128 4 -bpred:btb_repl random benchmarks/cc1.alpha
-O benchmarks/1stmt.i > gcc_bimod_random_btb128.out
```

```
./sim-bpred -bpred bimod -bpred:btb 256 4 -bpred:btb_repl random benchmarks/cc1.alpha
-O benchmarks/1stmt.i > gcc_bimod_random_btb256.out
```

```
./sim-bpred -bpred bimod -bpred:btb 512 4 -bpred:btb_repl random benchmarks/cc1.alpha
-O benchmarks/1stmt.i > gcc_bimod_random_btb512.out
```

### **Compress:**

```
# ----- LRU -----(128,256,512 )(number of entries)
```

```
./sim-bpred -bpred bimod -bpred:btb 128 4 -bpred:btb_repl lru
benchmarks/compress95.alpha < benchmarks/compress95.in >
compress_bimod_lru_btb128.out
```

```
./sim-bpred -bpred bimod -bpred:btb 256 4 -bpred:btb_repl lru
benchmarks/compress95.alpha < benchmarks/compress95.in >
compress_bimod_lru_btb256.out
```

```
./sim-bpred -bpred bimod -bpred:btb 512 4 -bpred:btb_repl lru
benchmarks/compress95.alpha < benchmarks/compress95.in >
compress_bimod_lru_btb512.out
```

```
# ----- FIFO -----(128,256,512 )(number of entries)
```

```
./sim-bpred -bpred bimod -bpred:btb 128 4 -bpred:btb_repl fifo
benchmarks/compress95.alpha < benchmarks/compress95.in >
compress_bimod_fifo_btb128.out
```

```
./sim-bpred -bpred bimod -bpred:btb 256 4 -bpred:btb_repl fifo
benchmarks/compress95.alpha < benchmarks/compress95.in >
compress_bimod_fifo_btb256.out
```

```
./sim-bpred -bpred bimod -bpred:btb 512 4 -bpred:btb_repl fifo
benchmarks/compress95.alpha < benchmarks/compress95.in >
compress_bimod_fifo_btb512.out
```

```
# ----- RANDOM -----(128,256,512 )(number of entries)
```

```
./sim-bpred -bpred bimod -bpred:btb 128 4 -bpred:btb_repl random
benchmarks/compress95.alpha < benchmarks/compress95.in >
compress_bimod_random_btb128.out
```

```
./sim-bpred -bpred bimod -bpred:btb 256 4 -bpred:btb_repl random
benchmarks/compress95.alpha < benchmarks/compress95.in >
compress_bimod_random_btb256.out
```

```
./sim-bpred -bpred bimod -bpred:btb 512 4 -bpred:btb_repl random
benchmarks/compress95.alpha < benchmarks/compress95.in >
compress_bimod_random_btb512.out
```

**Go:**

**# ---- LRU ----(128,256,512 )(number of entries)**

```
./sim-bpred -bpred bimod -bpred:btb 128 4 -bpred:btb_repl lru benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_bimod_lru_btb128.out
```

```
./sim-bpred -bpred bimod -bpred:btb 256 4 -bpred:btb_repl lru benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_bimod_lru_btb256.out
```

```
./sim-bpred -bpred bimod -bpred:btb 512 4 -bpred:btb_repl lru benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_bimod_lru_btb512.out
```

**# ---- FIFO ----(128,256,512 )(number of entries)**

```
./sim-bpred -bpred bimod -bpred:btb 128 4 -bpred:btb_repl fifo benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_bimod_fifo_btb128.out
```

```
./sim-bpred -bpred bimod -bpred:btb 256 4 -bpred:btb_repl fifo benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_bimod_fifo_btb256.out
```

```
./sim-bpred -bpred bimod -bpred:btb 512 4 -bpred:btb_repl fifo benchmarks/go.alpha 50 9  
benchmarks/2stone9.in > go_bimod_fifo_btb512.out
```

**# ---- RANDOM ----(128,256,512 )(number of entries)**

```
./sim-bpred -bpred bimod -bpred:btb 128 4 -bpred:btb_repl random benchmarks/go.alpha 50  
9 benchmarks/2stone9.in > go_bimod_random_btb128.out
```

```
./sim-bpred -bpred bimod -bpred:btb 256 4 -bpred:btb_repl random benchmarks/go.alpha 50  
9 benchmarks/2stone9.in > go_bimod_random_btb256.out
```

```
./sim-bpred -bpred bimod -bpred:btb 512 4 -bpred:btb_repl random benchmarks/go.alpha 50  
9 benchmarks/2stone9.in > go_bimod_random_btb512.out
```

Additional work commands( adaptive replacement policy):

# Taken predictor

```
./sim-bpred -bpred taken -bpred:btb_repl adaptive benchmarks/anagram.alpha words <  
benchmarks/anagram.in > OUT_anagram_taken_adaptive
```

# Not-taken predictor

```
./sim-bpred -bpred nottaken -bpred:btb_repl adaptive benchmarks/anagram.alpha words <  
benchmarks/anagram.in > OUT_anagram_nottaken_adaptive
```

# Bimodal predictor

```
./sim-bpred -bpred bimod -bpred:btb_repl adaptive benchmarks/anagram.alpha words <  
benchmarks/anagram.in > OUT_anagram_bimod_adaptive
```

# 2-level predictor

```
./sim-bpred -bpred 2lev -bpred:btb_repl adaptive benchmarks/anagram.alpha words <  
benchmarks/anagram.in > OUT_anagram_2lev_adaptive
```

# Combined predictor

```
./sim-bpred -bpred comb -bpred:btb_repl adaptive benchmarks/anagram.alpha words <  
benchmarks/anagram.in > OUT_anagram_comb_adaptive
```