|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Always taken | always not taken | bimod(512) | Bimod(1024) | Two level (1,1024,8,0) | Two level (1,64,6,1) |
| sim\_total\_insn | 200000000 | 200000000 | 200000000 | 200000000 | 200000000 | 200000000 |
| sim\_total\_refs | 82299557 | 82299557 | 82299557 | 82299557 | 82299557 | 82299557 |
| sim\_elapsed\_time | 9 | 9 | 12 | 12 | 12 | 12 |
| sim\_inst\_rate | 22222222.22 | 22222222.2222 | 16666666.6667 | 16666666.6667 | 16666666.6667 | 16666666.6667 |
| sim\_num\_branches | 38932651 | 38932651 | 38932651 | 38932651 | 38932651 | 38932651 |
| sim\_IPB | 5.1371 | 5.1371 | 5.1371 | 5.1371 | 5.1371 | 5.1371 |
| bpred\_bimod.lookups | 38932651 | 38932651 | 38932651 | 38932651 | 38932651 | 38932651 |
| bpred\_bimod.updates | 38932651 | 38932651 | 38932651 | 38932651 | 38932651 | 38932651 |
| bpred\_bimod.addr\_hits | 24896713 | 22021899 | 33168606 | 33826488 | 34264216 | 34264216 |
| bpred\_bimod.dir\_hirts | 24896713 | 22021899 | 33796352 | 34459270 | 34903457 | 34903457 |
| bpred\_bimod.misses | 14035938 | 16910752 | 5136299 | 4473381 | 4029194 | 4029194 |
| bpred\_bimod.jr\_hits | 3392575 | 3392575 | 2722268 | 2722268 | 2722268 | 2722268 |
| bpred\_bimod.jr\_seen | 3392575 | 3392575 | 3392575 | 3392575 | 3392575 | 3392575 |
| bpred\_bimod.jr\_non\_ras\_hits.PP | 3392575 | 3392575 | 338933 | 338933 | 338933 | 338933 |
| bpred\_bimod.jr\_non\_ras\_seen.PP | 3392575 | 3392575 | 999722 | 999722 | 999722 | 999722 |
| bpred\_bimod.bpred\_addr\_rate | 0.6395 | 0.5656 | 0.8519 | 0.8688 | 0.8801 | 0.8801 |
| bpred\_bimod.bpred\_dir\_rate | 0.6395 | 0.5656 | 0.8681 | 0.8851 | 0.8965 | 0.8965 |
| bpred\_bimod.bpred\_jr\_rate | 1.0000 | 1.0000 | 0.8024 | 0.8024 | 0.8024 | 0.8024 |
| bpred\_bimod.bpred\_jr\_non\_ras\_rate.PP | 1.0000 | 1.0000 | 0.3390 | 0.3390 | 0.3390 | 0.3390 |
| bpred\_bimod.retstack\_pushes | 0 | 0 | 2392862 | 2392862 | 2392862 | 2392862 |
| bpred\_bimod.retstack\_pops | 0 | 0 | 2392853 | 2392853 | 2392853 | 2392853 |
| bpred\_bimod.used\_ras.PP | 0 | 0 | 2392853 | 2392853 | 2392853 | 2392853 |
| bpred\_bimod.ras\_hits.PP | 0 | 0 | 2383335 | 2383335 | 2383335 | 2383335 |
| bpred\_bimod.ras\_rate.PP | <error: divide by zero> | <error: divide by zero> | 0.9960 | 0.9960 | 0.9960 | 0.9960 |