# CFP2000 Result

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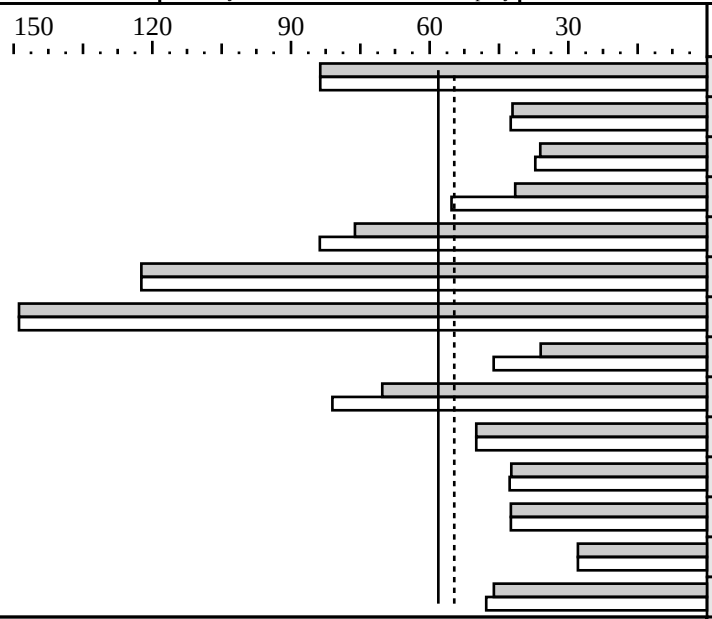
## Hewlett-Packard Company

ProLiant BL20p G4 (1.60 GHz, Intel Xeon processor 5110)

SPECfp_rate2000 = 58.1

SPECfp_rate_base2000 = 54.7

SPEC license #: 3 | Tested by: Hewlett-Packard Company | Test date: Jul-2006 | Hardware Avail: Jun-2006 | Software Avail: May-2006




| Benchmark | Base Copies | Base Runtime | Base Ratio | Copies | Runtime | Ratio |
|---|---|---|---|---|---|---|
| 168.wupwise | 4 | 88.7 | 83.7 | 4 | 88.7 | 83.7 |
| 171.swim | 4 | 342 | 42.1 | 4 | 339 | 42.5 |
| 172.mgrid | 4 | 232 | 36.1 | 4 | 225 | 37.1 |
| 173.applu | 4 | 235 | 41.5 | 4 | 176 | 55.3 |
| 177.mesa | 4 | 85.3 | 76.2 | 4 | 77.5 | 83.8 |
| 178.galgel | 4 | 110 | 122 | 4 | 110 | 122 |
| 179.art | 4 | 81.1 | 149 | 4 | 81.1 | 149 |
| 183.equake | 4 | 168 | 36.0 | 4 | 131 | 46.2 |
| 187.facerec | 4 | 125 | 70.3 | 4 | 109 | 81.0 |
| 188.ammp | 4 | 205 | 49.9 | 4 | 205 | 49.9 |
| 189.lucas | 4 | 219 | 42.3 | 4 | 217 | 42.7 |
| 191.fma3d | 4 | 230 | 42.4 | 4 | 230 | 42.4 |
| 200.sixtrack | 4 | 183 | 27.9 | 4 | 183 | 27.9 |
| 301.apsi | 4 | 262 | 46.1 | 4 | 253 | 47.8 |

### Hardware

| | |
|---|---|
| CPU: | Intel Xeon processor 5110 (1.60 GHz, 4 MB L2 shared, 1066 MHz bus) |
| CPU MHz: | 1600 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 2 chips, 2 cores/chip |
| CPU(s) orderable: | 1,2 chips |
| Parallel: | No |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 4 MB I+D on chip per chip |
| L3 Cache: | N/A |
| Other Cache: | N/A |
| Memory: | 16 GB (8x2048 MB PC2-5300F) |
| Disk Subsystem: | 1x36 GB 10 K SAS |
| Other Hardware: | |

### Software

| | |
|---|---|
| Operating System: | RedHat Enterprise Linux 4.0 Advanced Server for AMD64/EM64T, Update 3 Kernel 2.6.9-34.ELsmp |
| Compiler: | Intel C++ Compiler for EM64T-based applications, (Version 9.1 Build 20060323)<br>Intel Fortran Compiler for EM64T-based applications, (Version 9.1 Build 20060323)<br>PathScale EKOPath(TM) Compiler Suite, Release 2.4 |
| File System: | ext2 |
| System State: | Default |

## Notes/Tuning Information

```
+FDO: PASS1= -prof_gen  PASS2=-prof_use (Intel Compiler)
+FDO: PASS1= -fb_create fbdata PASS2=-fb_opt fbdata (PathScale Compiler)
ifort is the Intel Fortran compiler, icc is the Intel C++ compiler; and
pathf95 is PathScale Fortran compiler, pathcc is the PathScale C compiler.
Base tuning for C programs:  icc -fast -auto_ilp32 +FDO
Base tuning for FORTRAN programs:  ifort -fast +FDO
Portability:
  -DSPEC_CPU2000_LP64 applied to all benchmarks
  178.galgel:   -FI
Peak tuning:
  168.wupwise:  basepeak=1
  171.swim:     pathf95 -Ofast -LNO:fusion=2:simd=0 -WOPT:val=0 -march=em64t
  172.mgrid:    pathf95 -Ofast -CG:load_exe=0 -LNO:blocking=off:prefetch_ahead=5
                -OPT:ro=3:unroll_size=256 -WOPT:mem_opnds=on -march=em64t
  173.applu:    pathf95 -O3 -ipa -CG:load_exe=0
                -LNO:fission=1:fusion=2:blocking=off:full_unroll_size=9000
                -OPT:IEEE_a=3:ro=3 -TENV:X=3 -march=em64t
```

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## Notes/Tuning Information (Continued)

```
    177.mesa:     pathcc -O2 -ipa -OPT:Ofast -fno-math-errno -CG:local_fwd_sched=on
                  -GRA:optimize_boundary=on -march=em64t +FDO
    178.galgel:   basepeak=1
    179.art:      basepeak=1
    183.equake:   icc -fast +FDO ONESTEP=yes -rcd -auto-ilp32
    187.facerec:  pathf95 -Ofast -IPA:plimit=1500 -LNO:fusion=2
                  -OPT:IEEE_NaN_Inf=off:ro=3:unroll_size=0 -march=em64t +FDO
    188.ammp:     basepeak=1
    189.lucas:    ifort -fast ONESTEP=yes
    191.fma3d:    basepeak=1
    200.sixtrack: basepeak=1
    301.apsi:     pathf95 -Ofast -CG:load_exe=0 -LNO:opt=0:prefetch=1 -march=em64t
  BIOS Configuration Notes
    Power Regulator set to Static High Performance Mode
```