# CFP2000 Result

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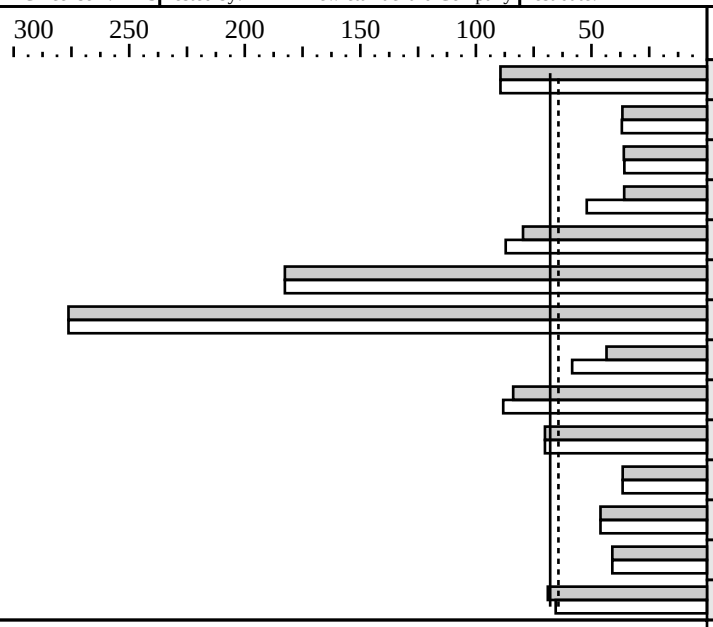
## Hewlett-Packard Company

ProLiant DL580 G4 (3.4GHz, Intel Xeon processor 7140M)

SPECfp_rate2000 = 67.9

SPECfp_rate_base2000 = 64.3

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




| Benchmark | Base Copies | Base Runtime | Base Ratio | Copies | Runtime | Ratio |
|---|---|---|---|---|---|---|
| 168.wupwise | 8 | 166 | 89.4 | 8 | 166 | 89.4 |
| 171.swim | 8 | 786 | 36.6 | 8 | 781 | 36.8 |
| 172.mgrid | 8 | 464 | 36.0 | 8 | 467 | 35.8 |
| 173.applu | 8 | 544 | 35.8 | 8 | 375 | 52.0 |
| 177.mesa | 8 | 163 | 79.6 | 8 | 149 | 87.1 |
| 178.galgel | 8 | 147 | 183 | 8 | 147 | 183 |
| 179.art | 8 | 87.3 | 276 | 8 | 87.3 | 276 |
| 183.equake | 8 | 277 | 43.5 | 8 | 207 | 58.3 |
| 187.facerec | 8 | 210 | 83.9 | 8 | 200 | 88.2 |
| 188.ammp | 8 | 291 | 70.1 | 8 | 291 | 70.1 |
| 189.lucas | 8 | 509 | 36.5 | 8 | 508 | 36.5 |
| 191.fma3d | 8 | 423 | 46.1 | 8 | 423 | 46.1 |
| 200.sixtrack | 8 | 249 | 41.0 | 8 | 249 | 41.0 |
| 301.apsi | 8 | 350 | 68.9 | 8 | 369 | 65.5 |

### Hardware

| | |
|---|---|
| CPU: | Intel Xeon processor 7140M (800MHz system bus) |
| CPU MHz: | 3400 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 2 chips, 2 cores/chip (Hyper-Threading Technology enabled) |
| CPU(s) orderable: | 1,2,4 chips |
| Parallel: | No |
| Primary Cache: | 12 K I micro-ops + 16 KB D on chip per core |
| Secondary Cache: | 1 MB I+D on chip per core |
| L3 Cache: | 16 MB on chip per chip |
| Other Cache: | N/A |
| Memory: | 32 GB (16x2048MB PC2-3200 dual-rank) |
| Disk Subsystem: | 1x36 GB 10 K SAS |
| Other Hardware: | |

### Software

| | |
|---|---|
| Operating System: | SuSE Linux Enterprise Server 9.0 for AMD64/EM64T, SP 3<br>Kernel 2.6.5-7.244-smp |
| 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
    Hyper-Threading Technology enabled
```