# CFP2000 Result

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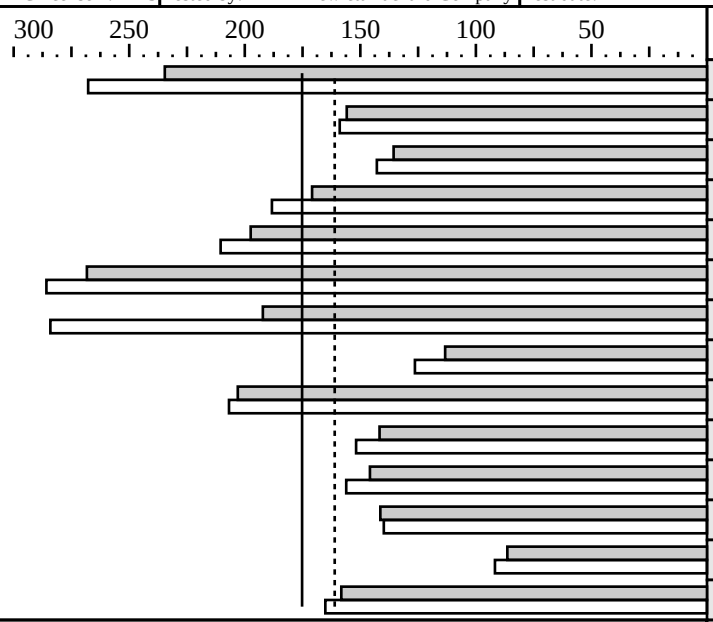
## Hewlett-Packard Company

ProLiant BL45p G2 (AMD Opteron (TM) 8220)

SPECfp_rate2000 = 175

SPECfp_rate_base2000 = 161

SPEC license #: 3 | Tested by: Hewlett-Packard Company | Test date: Oct-2006 | Hardware Avail: Feb-2007 | Software Avail: Sep-2006




| Benchmark | Base Copies | Base Runtime | Base Ratio | Copies | Runtime | Ratio |
|---|---|---|---|---|---|---|
| 168.wupwise | 8 | 63.3 | 235 | 8 | 55.5 | 268 |
| 171.swim | 8 | 185 | 156 | 8 | 181 | 159 |
| 172.mgrid | 8 | 123 | 136 | 8 | 117 | 143 |
| 173.applu | 8 | 114 | 171 | 8 | 104 | 188 |
| 177.mesa | 8 | 65.8 | 197 | 8 | 61.7 | 210 |
| 178.galgel | 8 | 100 | 268 | 8 | 94.2 | 286 |
| 179.art | 8 | 126 | 192 | 8 | 84.9 | 284 |
| 183.equake | 8 | 106 | 113 | 8 | 95.5 | 126 |
| 187.facerec | 8 | 86.8 | 203 | 8 | 85.3 | 207 |
| 188.ammp | 8 | 144 | 142 | 8 | 134 | 152 |
| 189.lucas | 8 | 127 | 146 | 8 | 119 | 156 |
| 191.fma3d | 8 | 138 | 141 | 8 | 139 | 140 |
| 200.sixtrack | 8 | 118 | 86.4 | 8 | 111 | 91.8 |
| 301.apsi | 8 | 152 | 158 | 8 | 146 | 165 |

### Hardware

| | |
|---|---|
| CPU: | AMD Opteron (TM) 8220 |
| CPU MHz: | 2800 |
| FPU: | Integrated |
| CPU(s) enabled: | 8 cores, 4 chips, 2 cores/chip |
| CPU(s) orderable: | 2,4 chips |
| Parallel: | No |
| Primary Cache: | 64 KB I + 64 KB D on chip per core |
| Secondary Cache: | 1 MB I+D on chip per core |
| L3 Cache: | N/A |
| Other Cache: | N/A |
| Memory: | 32 GB (16x2 GB PC2-5300P CL5.0) |
| Disk Subsystem: | 1x36.4 GB 10 K SAS |
| Other Hardware: | |

### Software

| | |
|---|---|
| Operating System: | SuSE Linux Enterprise Server 9 (x86_64) SP 3<br>SuSE kernel 2.6.5-7.244-smp |
| Compiler: | PathScale EKOPath(TM) Compiler Suite, Release 2.5<br>AMD Core Math Library 3.5.0 |
| File System: | Linux/ext2 |
| System State: | Multi-user run level 3 |

## Notes/Tuning Information

```
+FDO: PASS1= -fb_create fbdata  PASS2= -fb_opt fbdata
+ACML: Linked with AMD Core Math Library
Base tuning for C programs: -Ofast -WOPT:mem_opnds=on +FDO
Base tuning for FORTRAN programs: -Ofast -LNO:fusion=2 -OPT:fast_complex=on +FDO
Portability flags:
  178.galgel:    -fixedform
Peak tuning:
  168.wupwise:   -Ofast -LNO:prefetch_ahead=5:prefetch=3
                 -OPT:unroll_times_max=8:unroll_size=128:IEEE_NaN_Inf=off:ro=3
                -IPA:linear=on:plimit=50000:callee_limit=5000 -INLINE:aggressive=on
  171.swim:      -Ofast -CG:local_fwd_sched=on -LNO:fusion=2 -m3dnow
  172.mgrid:     -Ofast -CG:gcm=off -OPT:IEEE_a=3:unroll_size=200
               -LNO:fusion=2:fission=1:blocking=off:prefetch_ahead=2 -WOPT:mem_opnds=on:aggstr=0
  173.applu:     -Ofast -CG:local_fwd_sched=on -OPT:ro=3 -TENV:X=3
                 -LNO:fusion=2:fission=2:full_unroll_size=10000 +FDO
  177.mesa:      -O2 -ipa -OPT:Ofast -fno-math-errno -CG:local_fwd_sched=on
                  -WOPT:mem_opnds=on +FDO
```

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## Notes/Tuning Information (Continued)

```
    178.galgel:    -Ofast -OPT:fast_complex-on RM_SOURCES=lapak.f90 +ACML +FDO
    179.art:       -O3 -OPT:Ofast -fno-math-errno -mno-sse2 -m32
    183.equake:    -Ofast -CG:load_exe=2 -WOPT:mem_opnds=on -m32 +FDO
    187.facerec:   -Ofast -LNO:fusion=2 -OPT:fast_complex=on:IEEE_NaN_Inf=off:unroll_size=0 +FDO
    188.ammp:      -O3 -OPT:alias=disjoint:unroll_times_max=8:Ofast:ro=3
                   -fno-math-errno -TENV:X=4 +FDO
    189.lucas:     -Ofast -OPT:ro=3:fast_nint=off:unroll_size=256 -WOPT:mem_opnds=on +FDO
    191.fma3d:     -O2 -ipa -CG:load_exe=1 -OPT:Ofast:IEEE_arith=3:ro=3
                   -WOPT:mem_opnds=on:retype_expr=on -IPA:pu_reorder=1 +FDO
    200.sixtrack:  -O3 -OPT:Ofast:Olimit=6000:early_intrinsics=on -fno-math-errno
                   -CG:load_exe=1 +FDO
    301.apsi:      -Ofast -CG:load_exe=0 -LNO:prefetch=0:simd=2
  BIOS Configuration Notes
    Node Interleaving is Disabled
  Other Configuration Notes
    Taskset utility used to bind process to CPU(s)
```