# CFP2000 Result

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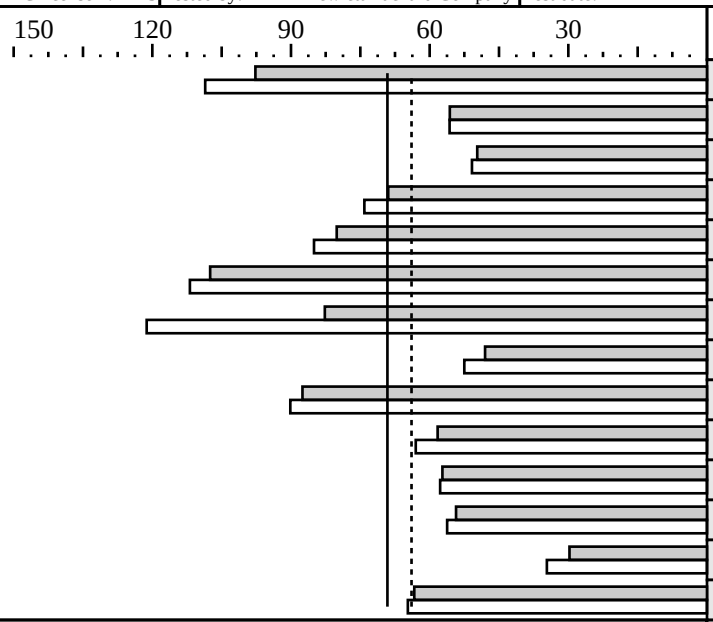
## Hewlett-Packard Company

## ProLiant BL45p (AMD Opteron (TM) 875)

SPECfp_rate2000 = 69.1

SPECfp_rate_base2000 = 63.9

SPEC license #: 3 | Tested by: Hewlett-Packard Company | Test date: Apr-2005 | Hardware Avail: May-2005 | Software Avail: Apr-2005




| Benchmark | Base Copies | Base Runtime | Base Ratio | Copies | Runtime | Ratio |
|---|---|---|---|---|---|---|
| 168.wupwise | 4 | 76.0 | 97.7 | 4 | 68.4 | 109 |
| 171.swim | 4 | 259 | 55.6 | 4 | 258 | 55.7 |
| 172.mgrid | 4 | 168 | 49.7 | 4 | 164 | 50.8 |
| 173.applu | 4 | 141 | 69.0 | 4 | 131 | 74.1 |
| 177.mesa | 4 | 81.1 | 80.1 | 4 | 76.4 | 85.0 |
| 178.galgel | 4 | 125 | 107 | 4 | 120 | 112 |
| 179.art | 4 | 146 | 82.7 | 4 | 99.5 | 121 |
| 183.equake | 4 | 126 | 48.0 | 4 | 115 | 52.5 |
| 187.facerec | 4 | 101 | 87.5 | 4 | 97.8 | 90.1 |
| 188.ammp | 4 | 175 | 58.3 | 4 | 162 | 63.0 |
| 189.lucas | 4 | 162 | 57.2 | 4 | 161 | 57.7 |
| 191.fma3d | 4 | 179 | 54.3 | 4 | 173 | 56.2 |
| 200.sixtrack | 4 | 172 | 29.8 | 4 | 147 | 34.6 |
| 301.apsi | 4 | 190 | 63.3 | 4 | 186 | 64.7 |

### Hardware

| | |
|---|---|
| CPU: | AMD Opteron (TM) 875 |
| CPU MHz: | 2200 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 2 chips, 2 cores/chip |
| CPU(s) orderable: | 2,4 |
| Parallel: | No |
| Primary Cache: | 64KBI + 64KBD (on chip) per core |
| Secondary Cache: | 1024KB(I+D) (on chip) per core |
| L3 Cache: | N/A |
| Other Cache: | N/A |
| Memory: | 8x2048MB PC3200 CL3.0 |
| Disk Subsystem: | 1x36.4GB 15K Ultra320 SCSI |
| Other Hardware: | |

### Software

| | |
|---|---|
| Operating System: | SuSE Linux Enterprise Server 9 (x86_64) SP 1<br>SuSE kernel 2.6.5-7.139-smp |
| Compiler: | PathScale EKO Compiler Suite, Release 2.1<br>AMD Core Math Library 2.5.1 |
| File System: | Linux/ext2 |
| System State: | Multi-user run level 3 |

## Notes/Tuning Information

```
+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
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 -TENV:X=4
                 -IPA:space=1000:linear=on:plimit=50000:callee_limit=5000
                 -INLINE:aggressive=on +FDO
  171.swim:      -Ofast -LNO:fusion=2
  172.mgrid:     -O3 -LNO:fusion=2:blocking=off
                -OPT:Ofast:unroll_times_max=8:unroll_size=256:ro=3 -CG:gcm=off:cflow=off
  173.applu:     -Ofast -CG:local_fwd_sched=on
                 -LNO:fusion=2:fission=2:full_unroll_size=10000:prefetch=3
                 -OPT:ro=3 -TENV:X=3 -WOPT:val=2
  177.mesa:      -O2 -ipa -OPT:Ofast -fno-math-errno -CG:local_fwd_sched=on +FDO
```

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## Notes/Tuning Information (Continued)

```
    178.galgel:    -Ofast -OPT:fast_complex -CG:use_movlpd=on RM_SOURCES=lapak.f90 +ACML
    179.art:        -O3 -OPT:ro=2:div_split=on:alias=typed -fno-math-errno -m32 +FDO
    183.equake:     -Ofast -WOPT:mem_opnds=on -CG:local_fwd_sched=on -m32
    187.facerec:    -Ofast -OPT:treeheight=on:IEEE_NaN_Inf=off:ro=3 -CG:load_exe=0
                    -LNO:fusion=2 -IPA:plimit=1500 +FDO
    188.ammp:       -O3 -OPT:alias=disjoint:unroll_times_max=8:Ofast:ro=3
                    -fno-math-errno -TENV:X=4 -LNO:prefetch=0 +FDO
    189.lucas:      -Ofast -CG:local_fwd_sched=on -LNO:fusion=2 +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:   -Ofast -CG:load_exe=1 +FDO
    301.apsi:       -Ofast -TENV:X=4 -LNO:fusion=2:prefetch=0
  BIOS Configuration Notes
    Node Interleaving is Disabled
  Other Configuration Notes
    Taskset utility used to bind process to CPU(s)
```