



# CFP2000 Result

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Hewlett-Packard Company  
ProLiant BL45p (AMD Opteron (TM) 854)

SPECfp2000 = 2260  
SPECfp\_base2000 = 2052

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

| Benchmark    | Reference Time | Base Runtime | Base Ratio | Runtime | Ratio | 1000 2000 3000 4000            |  |  |  |
|--------------|----------------|--------------|------------|---------|-------|--------------------------------|--|--|--|
| 168.wupwise  | 1600           | 56.6         | 2825       | 48.6    | 3293  | [Bar chart showing ratio 3293] |  |  |  |
| 171.swim     | 3100           | 118          | 2635       | 114     | 2720  | [Bar chart showing ratio 2720] |  |  |  |
| 172.mgrid    | 1800           | 95.9         | 1877       | 90.8    | 1982  | [Bar chart showing ratio 1982] |  |  |  |
| 173.applu    | 2100           | 95.9         | 2190       | 82.6    | 2541  | [Bar chart showing ratio 2541] |  |  |  |
| 177.mesa     | 1400           | 64.2         | 2179       | 60.5    | 2314  | [Bar chart showing ratio 2314] |  |  |  |
| 178.galgel   | 2900           | 85.2         | 3405       | 76.3    | 3802  | [Bar chart showing ratio 3802] |  |  |  |
| 179.art      | 2600           | 95.7         | 2716       | 69.6    | 3735  | [Bar chart showing ratio 3735] |  |  |  |
| 183.quake    | 1300           | 75.6         | 1720       | 68.0    | 1912  | [Bar chart showing ratio 1912] |  |  |  |
| 187.facerec  | 1900           | 70.8         | 2682       | 68.0    | 2796  | [Bar chart showing ratio 2796] |  |  |  |
| 188.amp      | 2200           | 137          | 1601       | 128     | 1725  | [Bar chart showing ratio 1725] |  |  |  |
| 189.lucas    | 2000           | 92.4         | 2164       | 92.8    | 2156  | [Bar chart showing ratio 2156] |  |  |  |
| 191.fma3d    | 2100           | 127          | 1658       | 119     | 1770  | [Bar chart showing ratio 1770] |  |  |  |
| 200.sixtrack | 1100           | 136          | 811        | 115     | 959   | [Bar chart showing ratio 959]  |  |  |  |
| 301.apsi     | 2600           | 147          | 1766       | 144     | 1810  | [Bar chart showing ratio 1810] |  |  |  |

### Hardware

CPU: AMD Opteron (TM) 854  
CPU MHz: 2800  
FPU: Integrated  
CPU(s) enabled: 1 core, 1 chip, 1 core/chip  
CPU(s) orderable: 1, 2, 4  
Parallel: No  
Primary Cache: 64KBI + 64KBD on chip  
Secondary Cache: 1024KB(I+D) on chip  
L3 Cache: N/A  
Other Cache: N/A  
Memory: 4x2048MB PC3200 CL3.0  
Disk Subsystem: 1x36.4GB 15K Ultra320 SCSI  
Other Hardware:

### Software

Operating System: SuSE Linux Enterprise Server 9 (x86\_64) SP 1  
SuSE kernel 2.6.5-7.139-default  
Compiler: PathScale EKOPATH(TM) Compiler Suite, Release 2.1  
AMD Core Math Library 2.5.1  
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
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
 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)

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178.galgel: -Ofast -OPT:fast_complex=on RM_SOURCES=lapak.f90 +ACML
179.art: -O3 -OPT:ro=2:div_split=on:alias=typed -fno-math-errno -m32 +FDO
183.quake: -Ofast -CG:load_exe=2 -WOPT:mem_opnds=on -m32 +FDO
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 +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  
Single-processor kernel was used