



# CFP2000 Result

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Hewlett-Packard Company  
ProLiant DL585 (AMD Opteron (TM) 852)

SPECfp\_rate2000 = 87.9  
SPECfp\_rate\_base2000 = 79.6

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

| Benchmark    | Base Copies | Base Runtime | Base Ratio | Copies | Runtime | Ratio |
|--------------|-------------|--------------|------------|--------|---------|-------|
| 168.wupwise  | 4           | 74.4         | 99.8       | 4      | 58.6    | 127   |
| 171.swim     | 4           | 132          | 109        | 4      | 132     | 109   |
| 172.mgrid    | 4           | 111          | 75.5       | 4      | 102     | 82.0  |
| 173.applu    | 4           | 133          | 73.3       | 4      | 111     | 87.8  |
| 177.mesa     | 4           | 70.4         | 92.3       | 4      | 64.5    | 101   |
| 178.galgel   | 4           | 102          | 132        | 4      | 93.0    | 145   |
| 179.art      | 4           | 129          | 93.5       | 4      | 92.8    | 130   |
| 183.quake    | 4           | 95.8         | 62.9       | 4      | 88.3    | 68.3  |
| 187.facerec  | 4           | 97.8         | 90.2       | 4      | 93.0    | 94.8  |
| 188.amp      | 4           | 157          | 64.9       | 4      | 147     | 69.4  |
| 189.lucas    | 4           | 101          | 91.6       | 4      | 101     | 91.8  |
| 191.fma3d    | 4           | 144          | 67.7       | 4      | 139     | 70.4  |
| 200.sixtrack | 4           | 151          | 33.8       | 4      | 131     | 39.0  |
| 301.apsi     | 4           | 158          | 76.4       | 4      | 156     | 77.4  |

**Hardware**

CPU: AMD Opteron (TM) 852  
CPU MHz: 2600  
FPU: Integrated  
CPU(s) enabled: 4 cores, 4 chips, 1 core/chip  
CPU(s) orderable: 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: 16x2048MB 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-smp  
Compiler: PathScale EKO Compiler Suite, Release 2.0  
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 +ACML
179.art: -O3 -OPT:ro=2:div_split=on:alias=typed -fno-math-errno -m32 +FDO
183.quake: -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=1800 +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
```