



# CFP2000 Result

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## Hewlett-Packard Company

ProLiant ML370 G5 (3.0GHz, Intel Xeon processor 5160)

SPECfp\_rate2000 = 84.6

SPECfp\_rate\_base2000 = 80.1

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

| Benchmark    | Base Copies | Base Runtime | Base Ratio | Copies | Runtime | Ratio |
|--------------|-------------|--------------|------------|--------|---------|-------|
| 168.wupwise  | 4           | 66.9         | 111        | 4      | 66.9    | 111   |
| 171.swim     | 4           | 284          | 50.6       | 4      | 275     | 52.3  |
| 172.mgrid    | 4           | 216          | 38.7       | 4      | 219     | 38.2  |
| 173.applu    | 4           | 181          | 53.8       | 4      | 134     | 72.7  |
| 177.mesa     | 4           | 47.6         | 137        | 4      | 43.1    | 151   |
| 178.galgel   | 4           | 57.5         | 234        | 4      | 57.5    | 234   |
| 179.art      | 4           | 51.1         | 236        | 4      | 51.1    | 236   |
| 183.quake    | 4           | 125          | 48.4       | 4      | 98.5    | 61.3  |
| 187.facerec  | 4           | 84.3         | 105        | 4      | 77.6    | 114   |
| 188.amp      | 4           | 119          | 85.9       | 4      | 119     | 85.9  |
| 189.lucas    | 4           | 169          | 54.9       | 4      | 168     | 55.3  |
| 191.fma3d    | 4           | 162          | 60.1       | 4      | 162     | 60.1  |
| 200.sixtrack | 4           | 97.7         | 52.2       | 4      | 97.7    | 52.2  |
| 301.apsi     | 4           | 179          | 67.2       | 4      | 174     | 69.3  |

### Hardware

CPU: Intel Xeon processor 5160 (3.0GHz, 4MB L2 shared, 1333MHz bus)  
CPU MHz: 3000  
FPU: Integrated  
CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip  
CPU(s) orderable: 1,2  
Parallel: No  
Primary Cache: 32KB (I) + 32KB (D) (on chip) per core  
Secondary Cache: 4096KB(I+D) (on chip) shared  
L3 Cache: N/A  
Other Cache: N/A  
Memory: 8x2048MB PC2-5300F  
Disk Subsystem: 1x36GB 10K SAS  
Other Hardware:

### Software

Operating System: RedHat Enterprise Linux 4.0 Advanced Server for AMD64/EM64T, Update 3  
Kernel 2.6.9-34.ELsmp  
Compiler: Intel C++ Compiler for EM64T-based applications, (Version 9.1 Build 20060323)  
Intel Fortran Compiler for EM64T-based applications, (Version 9.1 Build 20060323)  
PathScale EKOPATH(TM) Compiler Suite, Release 2.4  
File System: ext2  
System State: Multi-user run level 3

## 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
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

Power Regulator set to Static High