



# CFP2000 Result

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**Hewlett-Packard Company**  
ProLiant BL20p G4 (3.0GHz, Intel Xeon processor 5160)

SPECfp2000 = **3008**  
SPECfp\_base2000 = **2769**

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio
168.wupwise	1600	39.2	4082	39.2	4082
171.swim	3100	109	2845	106	2930
172.mgrid	1800	92.2	1953	76.0	2367
173.applu	2100	97.7	2149	71.2	2949
177.mesa	1400	45.3	3092	41.6	3366
178.galgel	2900	41.6	6977	41.6	6977
179.art	2600	21.8	11926	21.8	11926
183.quake	1300	58.5	2221	47.1	2760
187.facerec	1900	63.2	3006	48.3	3936
188.amp	2200	102	2155	102	2155
189.lucas	2000	96.1	2080	95.6	2093
191.fma3d	2100	97.6	2151	97.6	2151
200.sixtrack	1100	96.0	1146	96.0	1146
301.apsi	2600	155	1681	148	1760

### Hardware

CPU: Intel Xeon processor 5160 (3.0GHz, 4MB L2 shared, 1333MHz bus)  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip  
 CPU(s) orderable: 1,2 chips  
 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: 8x1024MB PC2-5300F  
 Disk Subsystem: 1x36GB 10K SAS  
 Other Hardware:

### Software

Operating System: RedHat Enterprise Linux 4.0 Advanced Server for AMD/EM64T, Update 3 Kernel 2.6.9-34.EL  
 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 +FDO
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 Performance Mode

### Other Configuration Notes

Single processor kernel used