



# CFP2000 Result

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**Hewlett-Packard Company**  
ProLiant DL360 G5 (1.86 GHz, Intel Xeon processor E5320)

SPECfp2000 = **2082**  
SPECfp\_base2000 = **1906**

SPEC license #: 3 Tested by: Hewlett-Packard Company Test date: Jan-2007 Hardware Avail: Jan-2007 Software Avail: Nov-2006

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	
168.wupwise	1600	57.5	2782	57.5	2782	
171.swim	3100	141	2195	136	2276	
172.mgrid	1800	138	1305	106	1699	
173.applu	2100	146	1438	110	1906	
177.mesa	1400	71.0	1972	65.9	2126	
178.galgel	2900	65.1	4455	65.1	4455	
179.art	2600	35.2	7379	34.9	7456	
183.quake	1300	74.0	1756	61.2	2125	
187.facerec	1900	92.1	2063	66.6	2852	
188.amp	2200	156	1414	156	1414	
189.lucas	2000	121	1652	120	1662	
191.fma3d	2100	137	1531	137	1531	
200.sixtrack	1100	154	715	154	715	
301.apsi	2600	215	1210	203	1278	

### Hardware

CPU: Intel Xeon processor E5320 (1.86 GHz, 2x4 MB L2 shared, 1066 MHz bus)  
CPU MHz: 1860  
FPU: Integrated  
CPU(s) enabled: 1 core, 1 chip, 4 cores/chip  
CPU(s) orderable: 1,2 chips  
Parallel: No  
Primary Cache: 32 KB I + 32 KB D on chip per core  
Secondary Cache: 8 MB I+D on chip per chip (4 MB shared per 2 cores)  
L3 Cache: N/A  
Other Cache: N/A  
Memory: 16 GB (8x2 GB PC2-5300F CL5)  
Disk Subsystem: 2x72 GB 10K SAS  
Other Hardware:

### Software

Operating System: SuSE Linux Enterprise Server 10 (x86\_64)  
Kernel 2.6.16.21-0.8-default  
Compiler: Intel C++ Compiler for EM64T-based applications, (Version 9.1 Build 20061101)  
Intel Fortran Compiler for EM64T-based applications, (Version 9.1 Build 20061101)  
PathScale EKOPath(TM) Compiler Suite, Release 2.5  
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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SPECfp\_base2000 = 1906

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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:    icc -fast -auto_ilp32 +FDO
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.ammmp: 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  
Adjacent Sector Prefetch disabled

### Other Configuration Notes

Taskset utility used to bind process to CPU(s)  
"ulimit -s unlimited" set  
Single processor kernel used