



# CFP2000 Result

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**Hewlett-Packard Company**  
ProLiant ML350 G5 (1.6 GHz, Intel Xeon processor 5110)

SPECfp2000 = **1918**  
SPECfp\_base2000 = **1762**

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	
168.wupwise	1600	54.6	2932	54.6	2932	
171.swim	3100	136	2275	132	2350	
172.mgrid	1800	156	1154	116	1548	
173.applu	2100	136	1540	111	1895	
177.mesa	1400	83.0	1687	76.1	1839	
178.galgel	2900	76.5	3789	76.5	3789	
179.art	2600	40.7	6392	40.7	6392	
183.quake	1300	71.3	1823	59.0	2204	
187.facerec	1900	103	1840	74.8	2540	
188.amp	2200	183	1201	183	1201	
189.lucas	2000	130	1544	129	1556	
191.fma3d	2100	152	1379	152	1379	
200.sixtrack	1100	180	611	180	611	
301.apsi	2600	237	1098	226	1152	

### Hardware

CPU: Intel Xeon processor 5110 (1.6 GHz, 4 MB L2 shared, 1066 MHz bus)  
CPU MHz: 1600  
FPU: Integrated  
CPU(s) enabled: 1 core, 1 chip, 2 cores/chip  
CPU(s) orderable: 1,2 chips  
Parallel: No  
Primary Cache: 32 KB I + 32 KB D on chip per core  
Secondary Cache: 4 MB I+D on chip per chip  
L3 Cache: N/A  
Other Cache: N/A  
Memory: 8 GB (4x2048 MB PC2-5300F)  
Disk Subsystem: 1x36 GB 15 K SAS  
Other Hardware:

### Software

Operating System: RedHat Enterprise Linux 4.0 Advanced Server for AMD64/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.quake: 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

Other Configuration Notes  
Single-processor kernel was used