



# CFP2000 Result

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**Hewlett-Packard Company**  
ProLiant ML370 G5 (1.86GHz, Intel Xeon processor E5320)

SPECfp\_rate2000 = 50.4  
SPECfp\_rate\_base2000 = 47.0

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	126	59.0	4	126	59.0
171.swim	4	527	27.3	4	522	27.6
172.mgrid	4	331	25.2	2	160	26.2
173.applu	4	362	26.9	4	258	37.8
177.mesa	4	74.8	86.8	4	68.0	95.5
178.galgel	4	102	132	4	102	132
179.art	4	87.5	138	2	35.0	172
183.quake	4	233	25.9	4	179	33.8
187.facerec	4	138	64.0	2	71.3	61.9
188.amp	4	176	57.9	4	176	57.9
189.lucas	4	310	30.0	4	309	30.0
191.fma3d	4	292	33.4	4	292	33.4
200.sixtrack	4	156	32.8	4	156	32.8
301.apsi	4	254	47.5	4	244	49.4

### Hardware

CPU: Intel Xeon processor E5320 (1.86 GHz, 2x4 MB L2 shared, 1066 MHz bus)  
CPU MHz: 1860  
FPU: Integrated  
CPU(s) enabled: 4 cores, 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: 2x72GB 10K SAS  
Other Hardware:

### Software

Operating System: SuSE Linux Enterprise Server 10 (x86\_64)  
Kernel 2.6.16.21-0.8-smp  
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: Default

## 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
              users=2
  173.applu: pathf95 -O3 -ipa -CG:load_exe=0
              -LNO:fission=1:fusion=2:blocking=off:full_unroll_size=9000
```



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## Notes/Tuning Information (Continued)

```

-Opt:IEEE_a=3:ro=3 -TENV:X=3 -march=em64t
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 users=2
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
             users=2
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
Adjacent Sector Prefetch disabled
Other Configuration Notes
Taskset utility used to bind process to CPU(s)
"ulimit -s unlimited" set

```