



# CFP2000 Result

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## Hewlett-Packard Company

ProLiant BL20p G4 (3.73GHz, Intel Xeon processor 5080)

SPECfp\_rate2000 = 24.4

SPECfp\_rate\_base2000 = 23.4

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	1	45.3	41.0	1	45.3	41.0
171.swim	1	117	30.6	1	111	32.5
172.mgrid	1	100.0	20.9	1	99.3	21.0
173.applu	1	116	21.0	1	97.7	24.9
177.mesa	1	73.4	22.1	1	69.1	23.5
178.galgel	1	79.2	42.5	1	79.2	42.5
179.art	1	42.8	70.5	1	42.8	70.5
183.quake	1	62.6	24.1	1	50.4	29.9
187.facerec	1	111	19.8	1	101	21.9
188.amp	1	161	15.8	1	161	15.8
189.lucas	1	115	20.1	1	118	19.7
191.fma3d	1	122	20.0	1	122	20.0
200.sixtrack	1	151	8.45	1	151	8.45
301.apsi	1	193	15.6	1	196	15.4

### Hardware

CPU: Intel Xeon processor 5080 (3.73GHz, 2x2MB L2, 1066MHz bus)  
CPU MHz: 3730  
FPU: Integrated  
CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip (Hyper-Threading Technology disabled)  
CPU(s) orderable: 1,2 chips  
Parallel: No  
Primary Cache: 12K micro-ops I + 16KBD (on chip) per core  
Secondary Cache: 2048KB(I+D) (on chip) per core  
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.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.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  
Hyper-Threading Technology disabled

### Other Configuration Notes

Single processor kernel used