



# CFP2000 Result

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## Hewlett-Packard Company

ProLiant ML570 G4 (3.0GHz, Intel Xeon processor 7041)

SPECfp\_rate2000 = 42.4

SPECfp\_rate\_base2000 = 40.3

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	139	53.5	4	139	53.5
171.swim	4	585	24.6	4	574	25.1
172.mgrid	4	356	23.5	4	359	23.3
173.applu	4	402	24.3	4	285	34.1
177.mesa	4	96.4	67.4	4	89.8	72.3
178.galgel	4	137	97.9	4	137	97.9
179.art	4	115	105	4	115	105
183.quake	4	267	22.6	4	208	29.1
187.facerec	4	178	49.4	4	165	53.4
188.amp	4	217	46.9	4	217	46.9
189.lucas	4	333	27.8	4	335	27.7
191.fma3d	4	322	30.3	4	322	30.3
200.sixtrack	4	189	27.0	4	189	27.0
301.apsi	4	254	47.5	4	258	46.7

### Hardware

CPU: Intel Xeon processor 7041 (3.0GHz, 2x2MB L2, 800MHz bus)  
CPU MHz: 3000  
FPU: Integrated  
CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip (Hyper-Threading Technology disabled)  
CPU(s) orderable: 1,2,4  
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: 16x2048MB PC2-3200 ECC Dual-rank  
Disk Subsystem: 1x36GB 10K SAS  
Other Hardware:

### Software

Operating System: SuSE Linux Enterprise Server 9 (x86\_64) SP 3  
SuSE kernel 2.6.5-7.244-smp  
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
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

Hyper-Threading Technology disabled  
Adjacent Sector Prefetch disabled