



# CFP2000 Result

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**Hewlett-Packard Company**  
ProLiant DL580 G4 (3.4GHz, Intel Xeon processor 7140M)

SPECfp\_rate2000 = 45.7  
SPECfp\_rate\_base2000 = 43.9

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	103	72.2	4	103	72.2
171.swim	4	380	37.9	4	376	38.2
172.mgrid	4	236	35.4	4	238	35.2
173.applu	4	295	33.0	4	239	40.7
177.mesa	4	162	40.1	4	148	43.9
178.galgel	4	147	91.3	4	147	91.3
179.art	4	87.6	138	4	87.6	138
183.quake	4	152	39.6	4	119	50.7
187.facerec	4	192	45.8	4	184	47.9
188.amp	4	288	35.5	4	288	35.5
189.lucas	4	267	34.8	4	266	34.8
191.fma3d	4	268	36.4	4	268	36.4
200.sixtrack	4	249	20.5	4	249	20.5
301.apsi	4	333	36.2	4	344	35.1

### Hardware

CPU: Intel Xeon processor 7140M (800MHz system bus)  
CPU MHz: 3400  
FPU: Integrated  
CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip (Hyper-Threading Technology enabled)  
CPU(s) orderable: 1,2,4 chips  
Parallel: No  
Primary Cache: 12 K I micro-ops + 16 KB D on chip per core  
Secondary Cache: 1 MB I+D on chip per core  
L3 Cache: 16 MB on chip per chip  
Other Cache: N/A  
Memory: 32 GB (16x2048MB PC2-3200 dual-rank)  
Disk Subsystem: 1x36 GB 10 K SAS  
Other Hardware:

### Software

Operating System: SuSE Linux Enterprise Server 9.0 for AMD64/EM64T, SP 3  
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: 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  
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 +FDO
188.amm: 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 enabled