



CFP2000 Result

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Hewlett-Packard Company
ProLiant ML570 G4 (3.4GHz, Intel Xeon processor 7140M)

SPECfp_rate2000 = **68.0**
SPECfp_rate_base2000 = **64.3**

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 | 8 | 166 | 89.6 | 8 | 166 | 89.6 |
| 171.swim | 8 | 784 | 36.7 | 8 | 779 | 36.9 |
| 172.mgrid | 8 | 463 | 36.1 | 8 | 468 | 35.7 |
| 173.applu | 8 | 543 | 35.9 | 8 | 377 | 51.7 |
| 177.mesa | 8 | 163 | 79.9 | 8 | 150 | 86.7 |
| 178.galgel | 8 | 147 | 183 | 8 | 147 | 183 |
| 179.art | 8 | 89.0 | 271 | 8 | 89.0 | 271 |
| 183.quake | 8 | 276 | 43.7 | 8 | 207 | 58.4 |
| 187.facerec | 8 | 211 | 83.5 | 8 | 200 | 88.4 |
| 188.amp | 8 | 290 | 70.3 | 8 | 290 | 70.3 |
| 189.lucas | 8 | 507 | 36.6 | 8 | 507 | 36.6 |
| 191.fma3d | 8 | 420 | 46.4 | 8 | 420 | 46.4 |
| 200.sixtrack | 8 | 249 | 41.0 | 8 | 249 | 41.0 |
| 301.apsi | 8 | 351 | 68.8 | 8 | 357 | 67.7 |

Hardware

CPU: Intel Xeon processor 7140M (800MHz system bus)
CPU MHz: 3400
FPU: Integrated
CPU(s) enabled: 4 cores, 2 chips, 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.ammpp:     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