



CFP2000 Result

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Hewlett-Packard Company
ProLiant ML350 G5 (1.86 GHz, Intel Xeon processor E5320)

SPECfp2000 = **2075**
SPECfp_base2000 = **1901**

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	
168.wupwise	1600	57.6	2779	57.6	2779	
171.swim	3100	142	2180	137	2256	
172.mgrid	1800	138	1303	106	1691	
173.applu	2100	147	1430	111	1891	
177.mesa	1400	71.1	1969	66.1	2118	
178.galgel	2900	65.1	4454	65.1	4454	
179.art	2600	34.7	7483	34.9	7459	
183.quake	1300	74.6	1742	61.2	2125	
187.facerec	1900	92.0	2065	66.4	2862	
188.amp	2200	155	1415	155	1415	
189.lucas	2000	123	1627	122	1634	
191.fma3d	2100	137	1529	137	1529	
200.sixtrack	1100	154	714	154	714	
301.apsi	2600	217	1198	206	1265	

Hardware

CPU: Intel Xeon processor E5320 (1.86 GHz, 2x4 MB L2 shared, 1066 MHz bus)
CPU MHz: 1860
FPU: Integrated
CPU(s) enabled: 1 core, 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: 8 GB (4x2 GB PC2-5300F CL5)
Disk Subsystem: 4x36 GB 10 K SAS
Other Hardware:

Software

Operating System: SuSE Linux Enterprise Server 10 (x86_64)
Kernel 2.6.16.21-0.8-default
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: 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:    icc -fast -auto_ilp32 +FDO
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

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
Single processor kernel used