



CFP2000 Result

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Hewlett-Packard Company
ProLiant BL685c (AMD Opteron (TM) 8220)

SPECfp_rate2000 = 224
SPECfp_rate_base2000 = 191

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

				Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
2000	1500	1000	500	168.wupwise	8	60.3	246	8	59.4	250
				171.swim	8	76.5	376	8	74.2	388
				172.mgrid	8	125	134	8	119	141
				173.applu	8	98.0	199	8	92.2	211
				177.mesa	8	83.4	156	8	69.0	188
				178.galgel	8	106	253	8	70.5	382
				179.art	8	39.7	608	8	17.3	1392
				183.quake	8	54.0	224	8	50.4	240
				187.facerec	8	73.8	239	8	46.8	377
				188.amp	8	155	132	8	166	123
				189.lucas	8	145	128	8	145	128
				191.fma3d	8	128	153	8	126	155
				200.sixtrack	8	197	51.8	8	181	56.4
				301.apsi	8	119	202	8	109	222

Hardware

CPU: AMD Opteron (TM) 8220
 CPU MHz: 2800
 FPU: Integrated
 CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip
 CPU(s) orderable: 2,4 chips
 Parallel: No
 Primary Cache: 64 KB I + 64 KB D on chip per core
 Secondary Cache: 1 MB I+D on chip per core
 L3 Cache: N/A
 Other Cache: N/A
 Memory: 32 GB (16x2 GB PC2-5300P CL5)
 Disk Subsystem: 1x72 GB 10K SAS
 Other Hardware: None

Software

Operating System: Solaris 10 6/06
 Compiler: Sun Studio 11 with Patches
 File System: ufs
 System State: Multi-user

Notes/Tuning Information

Compiler invocation:

```
C: cc
F90: f90
F77: f90
```

```
FDO: PASS1= -xprofile=collect:./feedback PASS2= -xprofile=use:./feedback
fdo_pre0: rm -rf ./feedback.profile
```

Floating point base flags:

```
F90: -fast -xipo=2 -xarch=amd64 -xprefetch_level=3 ONESTEP=yes
C: -fast -xipo=2 -xalias_level=std -xpagesize=2m ONESTEP=yes
```

Floating point peak flags:

ONESTEP=yes for all benchmarks

```
168.wupwise: -fast -xautopar -xpad=common:3969 -xipo=2 -xarch=amd64 -xprefetch_level=3 -xpagesize_heap=2m
```



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Notes/Tuning Information (Continued)

```

171.swim:      -fast -xpad=common:3969 -xipo=2 -xvector=simd -xprefetch_level=3 -Qoption iropt
              -Atile:skewp,-Ainline:cs=700 -xarch=amd64 -Qoption ube_ipa -inl_alt
              -xpagesize_stack=2m
172.mgrid:    -fast -xautopar -stackvar -xpad=common:900 -xipo=2 -xarch=amd64 -xprefetch_level=3
              -xvector -xpagesize=2m -Qoption ld -M,/usr/lib/ld/map.bssalign
173.applu:    -fast -xautopar -unroll=5 -stackvar -xO4 -xipo=2 -xprefetch_level=3 -xarch=amd64a
              -qoption iropt -Rloop_dist -xpagesize_heap=2m
177.mesa:     -fast -xautopar -xO4 -xipo=2 -Wd,-iropt-prof -xarch=amd64 -xalias_level=strong -xpagesize=2m +FDO
178.galgel:   -fast -xcache=64/32/4:1024/64/4 -xipo=2 -xpagesize_heap=2m -xvector=simd -xarch=amd64 -xprefetch_level=3
              RM_SOURCES=lapak.f90
              EXTRALIBS=-xlic_lib=sunperf
179.art:      -fast -xipo=2 -xalias_level=strong -xprefetch -Wd,-iropt-prof -xpagesize=2m +FDO
183.earthquake: -fast -Wd,-iropt-prof -xipo=2 -xprefetch -xalias_level=strong -xpagesize=2m -lmopt -lm +FDO
187.facerec:  -fast -xO4 -xipo=2 -xprefetch_level=3 -xpagesize=2m
              RM_SOURCES=cfft.f90 cfft.f90 cfft.f90
              EXTRALIBS=-xlic_lib=sunperf
188.amm:      -fast -xcache=64/32/4:1024/64/4 -xO4 -xipo=2 -xarch=amd64a -xalias_level=std -xpagesize_heap=2m -lmopt -lm
189.lucas:    -fast -Qoption ube_ipa -inl_alt -xipo=2 -xarch=amd64 -xprefetch_level=3
191.fma3d:    -fast -xcache=64/32/4:1024/64/4 -unroll=5 -fsimple=1 -xipo=2
              -xprefetch_level=3 -xarch=amd64 -xpagesize_heap=2m +FDO
200.sixtrack: -fast -xipo=2 -O -xprefetch_level=3 -xarch=amd64
              -xpagesize_heap=2m -Qoption ld -M,/usr/lib/ld/map.bssalign +FDO
301.apsi:     -fast -xO4 -xipo=2 -xprefetch_level=3 -xarch=amd64a -xpagesize=2m

```

Portability:
178.galgel: -fixed

Shell Environments:
Stack size set to unlimited via "ulimit -s unlimited"

The following patches were applied to Sun Studio 11 compiler:

```

120759-09 : x86/x64
121016-05 : x86 C
121018-08 : x86 C++
121020-04 : x86 F90
121022-02 : x86 F90

```

Kernel Parameters (/etc/system):
autoup=900
tune_t_fsflushr=1

Processes were bound to CPUs using submit=pbind

Node Interleaving disabled in BIOS