



# CFP2000 Result

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Hewlett-Packard Company  
ProLiant BL45p G2 (AMD Opteron (TM) 8220)

SPECfp\_rate2000 = 91.3  
SPECfp\_rate\_base2000 = 83.8

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	60.6	123	4	52.7	141
171.swim	4	182	79.0	4	179	80.5
172.mgrid	4	120	69.3	4	115	72.7
173.applu	4	109	89.7	4	98.7	98.7
177.mesa	4	65.4	99.4	4	61.3	106
178.galgel	4	98.1	137	4	90.6	148
179.art	4	113	107	4	77.0	157
183.quake	4	95.8	63.0	4	86.7	69.6
187.facerec	4	81.0	109	4	76.0	116
188.amp	4	140	73.2	4	130	78.6
189.lucas	4	124	75.1	4	117	79.4
191.fma3d	4	134	72.9	4	135	71.9
200.sixtrack	4	118	43.4	4	111	46.1
301.apsi	4	151	80.1	4	144	83.7

**Hardware**

CPU: AMD Opteron (TM) 8220  
CPU MHz: 2800  
FPU: Integrated  
CPU(s) enabled: 4 cores, 2 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: 16 GB (8x2 GB PC2-5300P CL5.0)  
Disk Subsystem: 1x36.4 GB 10 K SAS  
Other Hardware:

**Software**

Operating System: SuSE Linux Enterprise Server 9 (x86\_64) SP 3  
SuSE kernel 2.6.5-7.244-smp  
Compiler: PathScale EKOPATH(TM) Compiler Suite, Release 2.5  
AMD Core Math Library 3.5.0  
File System: Linux/ext2  
System State: Multi-user run level 3

## Notes/Tuning Information

```
+FDO: PASS1= -fb_create fbdata PASS2= -fb_opt fbdata
+ACML: Linked with AMD Core Math Library
Base tuning for C programs: -Ofast -WOPT:mem_opnds=on +FDO
Base tuning for FORTRAN programs: -Ofast -LNO:fusion=2 -OPT:fast_complex=on +FDO
Portability flags:
 178.galgel: -fixedform
Peak tuning:
 168.wupwise: -Ofast -LNO:prefetch Ahead=5:prefetch=3
              -OPT:unroll_times_max=8:unroll_size=128:IEEE NaN_Inf=off:ro=3
              -IPA:linear=on:plimit=50000:callee_limit=5000 -INLINE:aggressive=on
 171.swim:
 172.mgrid: -Ofast -CG:local_fwd_sched=on -LNO:fusion=2 -m3dnow
              -Ofast -CG:gcm=off -OPT:IEEE_a=3:unroll_size=200
              -LNO:fusion=2:fission=1:blocking=off:prefetch Ahead=2 -WOPT:mem_opnds=on:aggstr=0
 173.applu: -Ofast -CG:local_fwd_sched=on -OPT:ro=3 -TENV:X=3
              -LNO:fusion=2:fission=2:full_unroll_size=10000 +FDO
 177.mesa: -O2 -ipa -OPT:Ofast -fno-math-errno -CG:local_fwd_sched=on
              -WOPT:mem_opnds=on +FDO
```



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## Notes/Tuning Information (Continued)

```

178.galgel: -Ofast -OPT:fast_complex-on RM_SOURCES=lapak.f90 +ACML +FDO
179.art: -O3 -OPT:Ofast -fno-math-errno -mno-sse2 -m32
183.quake: -Ofast -CG:load_exe=2 -WOPT:mem_opnds=on -m32 +FDO
187.facerec: -Ofast -LNO:fusion=2 -OPT:fast_complex=on:IEEE_NaN_Inf=off:unroll_size=0 +FDO
188.ammmp: -O3 -OPT:alias=disjoint:unroll_times_max=8:Ofast:ro=3
           -fno-math-errno -TENV:X=4 +FDO
189.lucas: -Ofast -OPT:ro=3:fast_nint=off:unroll_size=256 -WOPT:mem_opnds=on +FDO
191.fma3d: -O2 -ipa -CG:load_exe=1 -OPT:Ofast:IEEE_arith=3:ro=3
           -WOPT:mem_opnds=on:retype_expr=on -IPA:pu_reorder=1 +FDO
200.sixtrack: -O3 -OPT:Ofast:Olimit=6000:early_intrinsics=on -fno-math-errno
           -CG:load_exe=1 +FDO
301.apsi: -Ofast -CG:load_exe=0 -LNO:prefetch=0:simd=2

```

BIOS Configuration Notes  
Node Interleaving is Disabled

Other Configuration Notes  
Taskset utility used to bind process to CPU(s)