



OMPM2001 Result

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Supermicro Corporation
Supermicro H8DMU

SPECompMpeak2001 = 23195
SPECompMbase2001 = 22678

SPEC license #HPG0017 | Tested by: Advanced Micro Devices | Test site: Austin TX | Test date: Sep-2008 | Hardware Avail: Nov-2008 | Software Avail: Nov-2007

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	215	27956	214	28016
312.swim_m	6000	356	16854	310	19328
314.mgrid_m	7300	305	23900	305	23900
316.applu_m	4000	268	14901	268	14901
318.galgel_m	5100	212	24076	212	24076
320.quake_m	2600	112	23236	105	24807
324.apsi_m	3400	120	28238	117	29135
326.gafort_m	8700	390	22289	390	22289
328.fma3d_m	4600	309	14899	309	14899
330.art_m	6400	95.5	67027	95.5	67027
332.ammp_m	7000	506	13831	500	13999

Hardware

CPU: Quad-Core AMD Opteron(tm) Processor 2384
 CPU MHz: 2700
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 1-2
 Primary Cache: 64 KB I + 64 KB D on chip per core
 Secondary Cache: 512 KB I+D on chip per core
 L3 Cache: 6 MB I+D on chip per chip
 Other Cache: None
 Memory: 16GB (8x2GB, PC2-6400, CL5 dual-rank)
 Disk Subsystem: 120GB 7200 RPM SATA
 Other Hardware: None

Software

OpenMP Threads: 8
 Parallel: OpenMP
 Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP1 2.6.16.46-0.12-smp
 Compiler: PathScale Compiler Suite ver. 3.1
 File System: Linux/ext3
 System State: Multi-User

Notes/Tuning Information

Extra art Base Flags

330.art_m (extra): -DINTS_PER_CACHELINE=16 -DDBLS_PER_CACHELINE=8

Alternate Sources:

314.mgrid_m (base and peak): intel
 310.wupwise_m (peak), 312.swim_m (peak), 320.quake_m (peak): omp1.32
 324.apsi_m (peak): omp1

Base tuning:

C : /opt/pathscale/bin/pathcc -gnu3 -mp -Ofast -mcpu=barcelona -mcmmodel=medium
 Fortran : /opt/pathscale/bin/pathf90 -mp -Ofast -mcpu=barcelona -OPT:early_mp=on -mcmmodel=medium
 ONESTEP=yes

Peak tuning:

310.wupwise_m: -mp -Ofast -msse3 -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
 312.swim_m: -mp -O3 -OPT:Ofast -m3dnow -mcmmodel=medium -LNO:simd=0
 314.mgrid_m: basepeak=yes
 316.applu_m: basepeak=yes
 318.galgel_m: basepeak=yes
 320.quake_m: -Ofast -mp -OPT:alias=disjoint
 324.apsi_m: -mp -O3 -OPT:Ofast -TENV:x=4 -LNO:fusion=2:prefetch=0



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Notes/Tuning Information (Continued)

```
326.gafort_m: basepeak=yes
328.fma3d_m: basepeak=yes
330.art_m: basepeak=yes
332.ammp_m: -gnu3 -mp -Ofast -mcpu=barcelona -mcmmodel=medium
            submit= PSC_OMP_GUIDED_CHUNK_MAX=700 $command
```

ONESTEP=yes for all peak tests.

Portability flags:

```
318.galgel_m : -fixedform -col80
```

Base and Peak User Environment (bash):

```
export OMP_NUM_THREADS=8
export OMP_DYNAMIC=FALSE
export PSC_OMP_AFFINITY=TRUE
export PSC_OMP_STATIC_FAIR=TRUE
export PSC_OMP_THREAD_SPIN=1000000000
ulimit -s unlimited
```

For flag descriptions, see file AMD-Jul2008-psc31_flags.txt
Default BIOS settings used, except PowerNow! disabled in Bios