



# OMPM2001 Result

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Tyan Computer Corporation  
Tyan Thunder n425QE (S4985E)

SPECompMpeak2001 = 28283  
SPECompMbase2001 = 27001

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio	
310.wupwise_m	6000	146	41227	134	44895	
312.swim_m	6000	251	23941	212	28351	
314.mgrid_m	7300	239	30496	239	30496	
316.applu_m	4000	260	15391	260	15391	
318.galgel_m	5100	244	20928	244	20928	
320.quake_m	2600	105	24748	87.3	29789	
324.apsi_m	3400	96.1	35383	90.8	37452	
326.gafort_m	8700	295	29469	295	29469	
328.fma3d_m	4600	251	18314	251	18314	
330.art_m	6400	82.7	77397	82.7	77397	
332.ammp_m	7000	446	15684	440	15902	

### Hardware

CPU: AMD Opteron Processor 8356  
CPU MHz: 2300  
FPU: Integrated  
CPU(s) enabled: 16 cores, 4 chips, 4 cores/chip  
CPU(s) orderable: 1-4  
Primary Cache: 64 KB I + 64 KB D on chip per core  
Secondary Cache: 512 KB I+D on chip per core  
L3 Cache: 2 MB I+D on chip per chip  
Other Cache: None  
Memory: 32GB (16x2GB, PC2-5300, CL5 dual-rank)  
Disk Subsystem: 250GB 7200 RPM SATA  
Other Hardware: None

### Software

OpenMP Threads: 16  
Parallel: OpenMP  
Operating System: SLES10 SP1 64bit  
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

Base Tuning:

C : pathcc -mp -Ofast -mcmmodel=medium  
Fortran : pathf90 -mp -Ofast -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  
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  
326.gafort\_m: basepeak=yes  
328.fma3d\_m: basepeak=yes  
330.art\_m: basepeak=yes  
332.ammp\_m: -mp -Ofast -mcpu=opteron -mcmmodel=medium



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## Notes/Tuning Information (Continued)

Portablility flags:

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

Base and Peak User Environment (bash):

```
export OMP_NUM_THREADS=16
export OMP_DYNAMIC=FALSE
export PSC_OMP_AFFINITY_MAP=15,14,13,12,11,10,9,8,7,6,5,4,3,2,1,0
export PSC_OMP_STATIC_FAIR=TRUE
export PSC_OMP_THREAD_SPIN=1000000000
ulimit -s unlimited
```

For flag descriptions, see file AMD-Apr2008-psc31\_flags.txt

Phoenix BIOS v.2.02.

Default BIOS settings used, except ECC was set to "basic" instead of none.