



# OMPM2001 Result

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Tyan Computer Corporation  
Tyan Thunder n425QE (S4985E)

SPECompMpeak2001 = 30275  
SPECompMbase2001 = 29094

SPEC license #HPG0017 | Tested by: Advanced Micro Devices | Test site: Austin TX | Test date: Mar-2008 | Hardware AvailJun-2008 | Software AvailFeb-2008

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio	
310.wupwise_m	6000	141	42687	129	46668	
312.swim_m	6000	248	24224	208	28884	
314.mgrid_m	7300	218	33452	218	33452	
316.applu_m	4000	251	15923	251	15923	
318.galgel_m	5100	230	22196	230	22196	
320.quake_m	2600	98.4	26421	84.2	30866	
324.apsi_m	3400	86.5	39302	86.2	39439	
326.gafort_m	8700	285	30490	285	30490	
328.fma3d_m	4600	221	20855	221	20855	
330.art_m	6400	80.3	79733	80.3	79733	
332.ammp_m	7000	356	19640	352	19914	

### Hardware

CPU: Quad-Core AMD Opteron(tm) Processor 8360 SE  
 CPU MHz: 2500  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 4 chips, 4 cores/chip  
 CPU(s) orderable: 1,2,3,4  
 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:

ONESTEP=yes for all peak tests.  
 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=barcelona -mcmmodel=medium



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## Notes/Tuning Information (Continued)

Alternate Sources:

314.mgrid\_m (base and peak): intel

Portability 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=TRUE
export PSC_OMP_STATIC_FAIR=TRUE
export PSC_OMP_THREAD_SPIN=1000000000
ulimit -s unlimited
```

For flag descriptions, see file AMD-Jun2008-psc31\_flags.txt  
Default BIOS settings used, except PowerNow! disabled in Bios