



# OMPM2001 Result

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Advanced Micro Devices  
Tyan Thunder n6650w (S2915) (AMD Opteron 8220)

SPECompMpeak2001 = 9143  
SPECompMbase2001 = 8601

SPEC license #HPG0017 | Tested by: AMD | Test site: Austin TX | Test date: Nov-2006 | Hardware Avail: Nov-2006 | Software Avail: Oct-2006

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio	
310.wupwise_m	6000	583	10288	572	10489	
312.swim_m	6000	765	7841	765	7841	
314.mgrid_m	7300	914	7989	870	8389	
316.applu_m	4000	510	7838	441	9079	
318.galgel_m	5100	558	9133	624	8173	
320.earthquake_m	2600	213	12193	212	12256	
324.apsi_m	3400	428	7944	328	10363	
326.gafort_m	8700	1475	5900	1475	5900	
328.fma3d_m	4600	608	7560	615	7478	
330.art_m	6400	368	17374	261	24532	
332.ammp_m	7000	1273	5499	1319	5306	

### Hardware

CPU: AMD Opteron(tm) Processor 8220  
 CPU MHz: 2800  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip  
 CPU(s) orderable: 1,2  
 Primary Cache: 64KBI + 64KBD on chip  
 Secondary Cache: 1024KB (I+D) on chip  
 L3 Cache: None  
 Other Cache: None  
 Memory: 8x512MB, PC2-4200R CL4  
 Disk Subsystem: 250GB 7200 rpm SATA  
 Other Hardware: None

### Software

OpenMP Threads: 4  
 Parallel: OpenMP + Auto Concurrentization  
 Operating System: SLES9 SP3 64bit  
 Compiler: PGI Fortran 6.2-4  
 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 : pgcc -mp -tp=k8-64 -fastsse -O4 -Minline=levels:8 -mcmmodel=medium  
 Fortran : pgf90 -mp -tp=k8-64 -fastsse -O4 -Minline=levels:8 -mcmmodel=medium  
 ONESTEP=yes

Peak tuning:

ONESTEP=yes for all peak tests.

310.wupwise\_m : -mp -tp=k8-64 -fastsse -Minline=level:8 -mcmmodel=medium

312.swim\_m : basepeak=yes

314.mgrid\_m : -mp -tp=k8-64 -fastsse -Mnofptrap -Mlongbranch

316.applu\_m : -mp -tp=k8-64 -fastsse -O4 -Minline=levels:8 -Mipa=fast,inline -Mfprelaxed=rsqrt -mcmmodel=medium  
srcalt = ompl.32

318.galgel\_m : -mp -tp=k8-64 -fastsse -Mconcur -Mipa=fast,inline -Mfprelaxed=rsqrt -mcmmodel=medium  
-I/opt/acml3.5.0/pgi64/include -L/opt/acml3.5.0/pgi64/lib -lacml  
RM\_SOURCES=lapak.f90

320.earthquake\_m : -mp -tp=k8-64 -fastsse -Mipa=fast,inline -Mfprelaxed=rsqrt -mcmmodel=medium  
srcalt = ompl.32

324.apsi\_m : -mp -tp=k8-64 -fastsse -O4 -Minline=levels:8 -mcmmodel=medium  
srcalt = ompl.32



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## Notes/Tuning Information (Continued)

```
326.gafort_m      : basepeak=yes
328.fma3d_m       : -mp -tp=k8-64 -fastsse -O4 -Mvect=assoc -Minline -mcmmodel=medium
330.art_m         : -mp -fast -Mscalarsse -Mcache_align -Mflushz -Minline -Mpa=fast,inline -Mfprelaxed=rsqrt -mcmmodel=medium
332.ampm_m        : -mp -tp=k8-64 -fastsse -O -Minline -Mframe -Mipa=fast,inline -Mfprelaxed=rsqrt
Portability flags:
318.galgel_m      : -Mfixed -Mextend
```

Base and Peak User Environment (bash):

```
export OMP_NUM_THREADS=4
export OMP_DYNAMIC=FALSE
export PGI=/opt/pgi
export LD_LIBRARY_PATH=/opt/acml3.5.0/pgi64/lib
ulimit -s unlimited
```

Default BIOS settings used.

System can be built using a standard EATX case, Matrox Millennium G450 PCI graphics adapter and an Antec True550 EPS12V power supply.  
PGI compiler flags are in AMD-20061107-pgi62\_flags.txt.