



# OMPM2001 Result

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## SGI

SGI Altix ICE 8400EX (Intel Xeon X5680, 3.33GHz)

SPECompMpeak2001 = 54196

SPECompMbase2001 = 51681

SPEC license #HPG0014 Tested by: SGI Test site: SGI Test date: Aug-2010 Hardware Avail: May-2010 Software Avail: Jun-2010

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	72.1	83236	72.1	83239
312.swim_m	6000	157	38134	140	42817
314.mgrid_m	7300	209	34875	192	38078
316.applu_m	4000	117	34213	117	34330
318.galgel_m	5100	114	44557	112	45433
320.quake_m	2600	57.4	45260	50.2	51749
324.apsi_m	3400	60.6	56079	60.4	56263
326.gafort_m	8700	137	63721	128	68007
328.fma3d_m	4600	111	41486	99.3	46336
330.art_m	6400	45.7	140082	46.3	138274
332.ammp_m	7000	158	44286	159	44117

### Hardware

CPU: Intel(R) Xeon(R) Processor X5680  
 CPU MHz: 3333  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core  
 CPU(s) orderable: 1-2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core  
 L3 Cache: 12 MB I+D on chip  
 Other Cache: N/A  
 Memory: 24 GB (6x4 GB dual-rank DDR3-1333 CL9 RDIMMs)  
 Disk Subsystem: 8.8 TB RAID 5  
 60 x 146 GB SAS (Seagate Cheetah 15K.5)  
 Other Hardware: None

### Software

OpenMP Threads: 24  
 Parallel: OpenMP  
 Operating System: SUSE Linux Enterprise Server 11 SP1, Kernel 2.6.32.13-0.4-default  
 Compiler: Intel C/C++ Compiler 11.1.059 for Linux  
 Intel FORTRAN Compiler 11.1.059 for Linux  
 Other: Intel Math Kernel Library 10.2.4  
 File System: NFSv3 iPoIB  
 System State: Multi-user, run level 3

## Notes/Tuning Information

### BIOS settings notes:

Intel Hyper-Threading Technology (SMT): Enabled  
 Intel Turbo Boost Technology (Turbo) : Enabled (Max 3.6GHz)  
 Patrol Scrub: Disabled

### Extra Flags:

318.galgel\_m: -FI -132  
 330.art\_m: -DINTS\_PER\_CACHELINE=16 -DDBLS\_PER\_CACHELINE=8

### General Notes and Environment variables

```
export KMP_LIBRARY=turnaround
export KMP_STACKSIZE=31M
export KMP_BLOCKTIME=infinite
export OMP_DYNAMIC=FALSE
ONESTEP=yes
ulimit -s 64000
```

For compiler/openmp flags description please refer:  
 SGI-20100816-Linux-Intel11.1-intel64.html



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## Notes/Tuning Information (Continued)

Base optimization flags and environment variables:

Medium:

```
OPTIMIZE = -O3 -xSSE4.2 -ipol -openmp
COPTIMIZE=-ansi-alias
export KMP_AFFINITY=scatter,1
```

Peak optimization flags and environment variables:

Medium:

```
OPTIMIZE = -O3 -xSSE4.2 -ipol -openmp -rcd
export KMP_AFFINITY=compact,1
```

Peak per-benchmark optimization flags and environment variables:

310.wupwise\_m

```
export KMP_AFFINITY=scatter,1
```

312.swim\_m

```
OPTIMIZE=-O3 -xSSE4.2 -ipol -openmp -opt-streaming-stores always -align -rcd
srcalt = ompl.32
export OMP_NUM_THREADS=12
```

314.mgrid\_m

```
OPTIMIZE=-O3 -xSSE4.2 -ipol -openmp -fno-alias -rcd
export OMP_NUM_THREADS=12
```

316.applu\_m

```
export KMP_AFFINITY=scatter,1
```

318.galgel\_m

```
export OMP_NUM_THREADS=6
RM_SOURCES=lapak.f90
EXTRA_LIBS=-lmkl_intel_lp64 -lmkl_intel_thread -lmkl_core
export KMP_AFFINITY=scatter,0
```

320.quake\_m

```
export OMP_NUM_THREADS=12
```

324.appsi\_m

```
OPTIMIZE=-O3 -xSSE4.2 -ipol -openmp
```

326.gafort\_m

```
srcalt = ompl.32
```

328.fma3d\_m

```
FOPTIMIZE=-no-prec-sqrt -fp-model fast=2
srcalt = ompl.32
```



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## Notes/Tuning Information (Continued)

=====

```
330.art_m
COPTIMIZE=-ansi-alias
```

=====

```
332.amp_m
OPTIMIZE=-O3 -xSSE4.2 -ipol -openmp
export KMP_AFFINITY=scatter,1
```