



OMPM2001 Result

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SGI

SGI Rackable C2112-4TY14 (Intel Xeon X5675, 3.06GHz)

SPECompMpeak2001 = 54530

SPECompMbase2001 = 51723

SPEC license #HPG0014 Tested by: SGI Test site: SGI Test date: Mar-2011 Hardware Avail: Feb-2011 Software Avail: Jan-2011

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio	
310.wupwise_m	6000	70.1	85620	70.1	85620	
312.swim_m	6000	155	38677	136	43997	
314.mgrid_m	7300	204	35730	185	39396	
316.applu_m	4000	118	33923	117	34263	
318.galgel_m	5100	114	44638	112	45679	
320.quake_m	2600	55.8	46562	48.6	53457	
324.apsi_m	3400	62.0	54815	62.0	54816	
326.gafort_m	8700	140	62174	129	67482	
328.fma3d_m	4600	113	40680	102	45243	
330.art_m	6400	45.3	141336	45.5	140711	
332.ammp_m	7000	161	43354	161	43354	

Hardware

CPU: Intel(R) Xeon(R) Processor X5675
 CPU MHz: 3067
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
 CPU(s) orderable: 1-2
 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 (6 x 4 GB, 2Rx4 PC3-10600R-9, ECC)
 Disk Subsystem: 8.2 TB RAID 5
 64 x 146 GB FC (Seagate Cheetah 15K.5)
 Other Hardware: None

Software

OpenMP Threads: 24
 Parallel: OpenMP
 Operating System: SUSE Linux Enterprise Server 11 SP1, Kernel 2.6.32.27-0.2-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 3.46GHz)

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 unlimited

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 = omp1.32
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.equake_m

```
export OMP_NUM_THREADS=12
```

324.appsi_m

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

326.gafort_m

```
srcalt = omp1.32
export KMP_AFFINITY=scatter,0
```

328.fma3d_m



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Notes/Tuning Information (Continued)

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

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

```
=====
332.ammp_m
OPTIMIZE=-O3 -xSSE4.2 -ipo1 -openmp
export KMP_AFFINITY=scatter,1
```

```
=====
Additional notes for disk subsystem:
```

```
The disk subsystem is mounted through NFS over IPoIB via 4x DDR
InfiniBand network. The local disk on the system is only for the OS.
```