



OMPM2001 Result

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SGI

SGI Altix UV 10 (Intel Xeon X7560, 2.26 GHz)

SPECompMpeak2001 = 107248

SPECompMbase2001 = 96797

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio	
310.wupwise_m	6000	33.6	178667	33.3	180188	
312.swim_m	6000	69.5	86298	66.7	89917	
314.mgrid_m	7300	76.1	95978	71.3	102442	
316.applu_m	4000	24.3	164661	23.3	171797	
318.galgel_m	5100	94.2	54119	67.6	75404	
320.earthquake_m	2600	34.2	75934	34.2	75932	
324.apsi_m	3400	37.4	90863	37.4	90865	
326.gafort_m	8700	89.9	96746	67.3	129327	
328.fma3d_m	4600	75.7	60780	60.5	76017	
330.art_m	6400	29.1	219575	30.4	210835	
332.ammp_m	7000	118	59498	99.7	70216	

Hardware

CPU: Intel(R) Xeon(R) Processor X7560
 CPU MHz: 2260
 FPU: Integrated
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip, 2 threads/core
 CPU(s) orderable: 1-4
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 24 MB I+D on chip per chip
 Other Cache: N/A
 Memory: 128 GB (64x2GB dual-rank DDR3-1066 CL7 RDIMMs)
 Disk Subsystem: 1 x 150 GB SATA (Western Digital VelociRaptor 10k rpm)
 Other Hardware:

Software

OpenMP Threads: 64
 Parallel: OpenMP
 Operating System: SUSE Linux Enterprise Server 11 (x86_64) SP1 Beta, kernel 2.6.32.7-0.2-default
 Compiler: Intel C/C++ Compiler 11.1.059 for Linux
 Intel FORTRAN Compiler 11.1.059 for Linux
 GNU C Compiler 4.3.2
 Other: Intel Math Kernel Library 10.2.4
 File System: Linux ext3
 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 2.66 GHz)
 Patrol Scrub: Disabled
 CKE Low Policy: Disabled

Extra Flags:

318.galgel_m: -FI -132
 330.art_m: -DINTS_PER_CACHELINE=16 -DDBLS_PER_CACHELINE=8 -D_OPENMP
 all: -gcc-name=/usr/bin/gcc

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:



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Notes/Tuning Information (Continued)

Intel-ic11.1-intel64-linux-flags-file-Feb-25-2010.html

Base optimization flags and environment variables:

Medium:

```
OPTIMIZE = -O3 -xSSE4.2 -ipol -openmp
COPTIMIZE = -ansi-alias
export OMP_NUM_THREADS=32
export KMP_AFFINITY=compact,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 OMP_NUM_THREADS=32
```

312.swim_m

```
OPTIMIZE=-O3 -xSSE4.2 -ipol -openmp -opt-streaming-stores always -align -rcd
srcalt = omp1.32
export OMP_NUM_THREADS=32
```

314.mgrid_m

```
OPTIMIZE=-O3 -xSSE4.2 -ipol -openmp -fno-alias -rcd
export OMP_NUM_THREADS=32
```

316.applu_m

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

318.galgel_m

```
export OMP_NUM_THREADS=16
export KMP_AFFINITY=granularity=fine,scatter,0
RM_SOURCES=lapak.f90
EXTRA_LIBS=-lmkl_intel_lp64 -lmkl_intel_thread -lmkl_core
```

320.equake_m

```
export OMP_NUM_THREADS=32
```

324.appsi_m

```
OPTIMIZE=-O3 -xSSE4.2 -ipol -openmp
export OMP_NUM_THREADS=32
```

326.gafort_m

```
srcalt = omp1.32
```



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Notes/Tuning Information (Continued)

```
export KMP_AFFINITY=scatter,0
```

```

=====
328.fma3d_m
FOPTIMIZE=-no-prec-sqrt -fp-model fast=2
srcalt = ompl.32

```

```

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

```

```

=====
332.ammp_m
OPTIMIZE=-O3 -xSSE4.2 -ipol -openmp

```