



# OMPL2001 Result

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## SGI

SGI Altix UV1000 (Intel Xeon E7-8837, 2.66GHz)

SPECompLpeak2001 = 1892885

SPECompLbase2001 = 1473725

SPEC license #HPG0014 Tested by: SGI Test site: SGI Test date: Feb-2011 Hardware AvailApr-2011 Software AvailMar-2011

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
311.wupwise_l	9200	48.3	3050172	48.3	3050172
313.swim_l	12500	54.7	3653006	52.5	3807916
315.mgrid_l	13500	197	1098489	142	1519252
317.applu_l	13500	189	1141226	167	1296433
321.quake_l	13000	374	556498	312	667023
325.apsi_l	10500	147	1140329	106	1583599
327.gafort_l	11000	312	564406	162	1083371
329.fma3d_l	23500	203	1849670	153	2460425
331.art_l	25000	113	3543447	82.6	4843431

### Hardware

CPU: Intel(R) Xeon(R) Processor E7-8837  
CPU MHz: 2660  
FPU: Integrated  
CPU(s) enabled: 512 cores, 64 chips, 8 cores/chip  
CPU(s) orderable: 2-256 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: 24 MB I+D on chip  
Other Cache: N/A  
Memory: 2 TB (512 x 4 GB 4Rx8 PC3-8500R-7, ECC)  
Disk Subsystem: 1 x 146 GB SAS (Seagate Savvio 15K.2)  
Other Hardware: Routed quad-plane fat tree topology

### Software

OpenMP Threads: 512  
Parallel: OpenMP  
Operating System: SUSE Linux Enterprise Server 11 SP1, Kernel 2.6.32.12-0.7.1-uv  
Compiler: Intel(R) C++ Composer XE 2011 for Linux, version 12.0.1.107, Build 20101116  
Intel(R) Fortran Composer XE 2011 for Linux, version 12.0.1.107, Build 20101116  
File System: xfs  
System State: Multi-user, run level 3

## Notes/Tuning Information

### BIOS settings notes:

Intel Turbo Boost Technology (Turbo) : Enabled (Max 2.80GHz)

### OS notes:

Kernel is generally available as 2.6.32.29-0.3.1.2687.3.PTF-default

### Extra Flags:

331.art\_l: -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-Linux-Intel12.0-intel64.html

Base optimization flags and environment variables:



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## Notes/Tuning Information (Continued)

Large:

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

Peak optimization flags and environment variables:

Large:

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

Peak per-benchmark optimization flags and environment variables:

```
311.wupwise_l
basepeak=yes
```

```
313.swim_l
```

```
OPTIMIZE=-O3 -xSSE4.2 -ipol -openmp -mcmmodel=medium -shared-intel
COPTIMIZE=-ansi-alias
export OMP_NUM_THREADS=256
export KMP_AFFINITY=scatter,0
```

```
315.mgrid_l
```

```
OPTIMIZE=-O3 -xSSE4.2 -ipol -openmp -rcd
export OMP_NUM_THREADS=256
```

```
317.applu_l
```

```
OPTIMIZE=-O3 -xSSE4.2 -ipol -openmp -rcd -mcmmodel=medium -shared-intel
export OMP_NUM_THREADS=416
```

```
321.quake_l
```

```
export OMP_NUM_THREADS=256
```

```
325.apsi_l
```

```
OPTIMIZE=-O3 -xSSE4.2 -ipol -openmp
export KMP_AFFINITY=scatter,0
export OMP_NUM_THREADS=256
```

```
327.gafort_l
```

```
OPTIMIZE=-O3 -xSSE4.2 -ipol -openmp -rcd -mcmmodel=medium -shared-intel
export KMP_AFFINITY=scatter,0
export OMP_NUM_THREADS=448
```

```
329.fma3d_l
```

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

```
331.art_l
```



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## Notes/Tuning Information (Continued)

```
COPTIMIZE=-ansi-alias
export OMP_NUM_THREADS=256
```