



OMPL2001 Result

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SGI

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

SPECompLpeak2001 = 284560

SPECompLbase2001 = 276450

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
311.wupwise_l	9200	384	383094	383	384601
313.swim_l	12500	1267	157843	1112	179793
315.mgrid_l	13500	1074	201196	1075	201005
317.applu_l	13500	1727	125039	1727	125052
321.quake_l	13000	852	244061	815	255190
325.apsi_l	10500	522	321719	518	324202
327.gafort_l	11000	546	322635	505	348183
329.fma3d_l	23500	1384	271578	1375	273355
331.art_l	25000	444	901105	448	893851

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
 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:

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-20100816-Linux-Intel11.1-intel64.html

Base optimization flags and environment variables:

```
Large:
OPTIMIZE = -O3 -xSSE4.2 -ipo1 -openmp -mcmmodel=medium -shared-intel
```



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Notes/Tuning Information (Continued)

```
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=compact,1
```

Peak per-benchmark optimization flags and environment variables:

311.wupwise_1

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

313.swim_m

```
OPTIMIZE=-O3 -xSSE4.2 -ipol -openmp -opt-streaming-stores always -align -rcd
-mcmodel=medium -shared-intel
export OMP_NUM_THREADS=12
```

315.mgrid_1

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

317.aplu_1

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

321.quake_1

```
export OMP_NUM_THREADS=12
```

325.appsi_1

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

327.gafort_1

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

329.fma3d_1

```
FOPTIMIZE=-no-prec-sqrt -fp-model fast=2
```

331.art_1

```
COPTIMIZE=-ansi-alias
```

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.