



OMPL2001 Result

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SGI

SGI Rackable C2112-4RP4 (Intel Xeon E5-2670, 2.6GHz)

SPECompLpeak2001 = 527338

SPECompLbase2001 = 482184

SPEC license #HPG0014 Tested by: SGI Test site: SGI Test date: Aug-2012 Hardware Avail Apr-2012 Software Avail May-2012

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
311.wupwise_l	9200	217	679845	214	686830
313.swim_l	12500	641	312129	585	341797
315.mgrid_l	13500	534	404450	534	404447
317.applu_l	13500	853	253363	770	280699
321.quake_l	13000	418	497992	388	536080
325.apsi_l	10500	276	609311	275	610197
327.gafort_l	11000	364	483798	328	536290
329.fma3d_l	23500	964	390211	949	396136
331.art_l	25000	354	1131188	235	1702682

Hardware

CPU: Intel(R) E5-2670
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 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: 20 MB I+D on chip
 Other Cache: N/A
 Memory: 128 GB (12 x 8 GB, 2Rx4 PC3-12800R-11, ECC)
 Disk Subsystem: 10 TB RAID 6
 10 x 1 TB SAS (Seagate Constellation ES, 7200RPM)
 Other Hardware: None

Software

OpenMP Threads: 32
 Parallel: OpenMP
 Operating System: SUSE Linux Enterprise Server 11 SP2, Kernel 3.0.26-0.7-default #1 SMP
 Compiler: Intel(R) C++ Composer XE 2011, version 12.1.3.293, Build 20120212
 Intel(R) Fortran Composer XE 2011, version 12.1.3.293, Build 20120212
 File System: NFSv3 IPoIB
 System State: Multi-user, run level 3

Notes/Tuning Information

BIOS settings notes:

Intel Hyper-Threading Technology (SMT): Enabled (default is Enabled)
 Intel Turbo Boost Technology (Turbo) : Enabled (Max 3.3GHz)

Extra Flags:

331.art_l: -DINTS_PER_CACHELINE=32 -DDBLS_PER_CACHELINE=16

General Notes and Environment variables

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

For compiler/openmp flags description please refer:

SGI-Linux-Intel12.1-intel64.html

Base optimization flags and environment variables:

=====

Large:

```
OPTIMIZE = -O2 -xAVX -ipo -openmp -mcmmodel=medium -shared-intel
COPTIMIZE = -ansi-alias
export KMP_AFFINITY=compact,0
```

Peak optimization flags and environment variables:



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Notes/Tuning Information (Continued)

Large:

```
OPTIMIZE = -O3 -xAVX -ipo -openmp
export KMP_AFFINITY=compact,0
```

Peak per-benchmark optimization flags and environment variables:

311.wupwise_1

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

313.swim_1

```
OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp -opt-streaming-stores always -align -mcmmodel=medium -shared-intel
export OMP_NUM_THREADS=16
export KMP_AFFINITY=compact,1
```

315.mgrid_1

```
OPTIMIZE=-O3 -xAVX -ipo -openmp -fno-alias
```

317.applu_1

```
OPTIMIZE=-O3 -xAVX -ipo -openmp -mcmmodel=medium -shared-intel
export KMP_AFFINITY=scatter,0
```

321.equake_1

```
export OMP_NUM_THREADS=16
export KMP_AFFINITY=compact,1
```

325.appsi_1

```
OPTIMIZE=-O2 -xAVX -ipo -openmp
```

327.gafort_1

```
OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp -mcmmodel=medium -shared-intel
export KMP_AFFINITY=scatter,0
```

329.fma3d_1

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

331.art_1

```
OPTIMIZE=-O2 -xSSE4.2 -ipo -openmp
COPTIMIZE=-ansi-alias
```

Additional notes for disk subsystem:

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

Additional notes for OS:



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Notes/Tuning Information (Continued)

Transparent Huge Page support is enabled on the system.