



OMPL2001 Result

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SGI

SGI Altix ICE 8400EX (AMD Opteron 6180 SE, 2.5GHz)

SPECompLpeak2001 = 312131

SPECompLbase2001 = 271499

SPEC license #HPG0014 Tested by: SGI Test site: SGI Test date: Mar-2011 Hardware Avail Mar-2011 Software Avail Nov-2010

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
311.wupwise_l	9200	351	419940	351	419940
313.swim_l	12500	3303	60546	942	212423
315.mgrid_l	13500	657	328853	657	328853
317.applu_l	13500	1470	146917	1470	146917
321.quake_l	13000	850	244830	850	244830
325.apsi_l	10500	570	294851	570	294851
327.gafort_l	11000	594	296200	594	296200
329.fma3d_l	23500	1442	260825	1442	260825
331.art_l	25000	342	1169947	342	1169947

Hardware

CPU: AMD Opteron(tm) Processor 6180 SE
 CPU MHz: 2500
 FPU: Integrated
 CPU(s) enabled: 24 cores, 2 chips, 12 cores/chip
 CPU(s) orderable: 1-2 chips
 Primary Cache: 64 KB I + 64 KB D on chip per core
 Secondary Cache: 512 KB I+D on chip per core
 L3 Cache: 12 MB I+D on chip per chip, 6MB shared / 6 cores
 Other Cache: None
 Memory: 64 GB (16 x 4 GB, 2Rx4 PC3-10600R-9, ECC)
 Disk Subsystem: 16 TB RAID 5
 32 x 500 GB SATA (Seagate Barracuda 7.2K)
 Other Hardware: None

Software

OpenMP Threads: 24
 Parallel: OpenMP
 Operating System: Red Hat Enterprise Linux Server release 6.0 (Santiago)
 Kernel 2.6.32-71.el6.x86_64
 Compiler: Open64 Compiler Suite: Version 4.2.4
 File System: NFSv3 IPoIB
 System State: Run Level 3 (Multi-User)

Notes/Tuning Information

Base and Peak User Environment (bash):

```
export OMP_NUM_THREADS=24
export OMP_DYNAMIC=FALSE
export O64_OMP_SPIN_COUNT=1000000000
export O64_OMP_SPIN_USER_LOCK=TRUE
export O64_OMP_SET_AFFINITY=TRUE
export O64_OMP_AFFINITY_MAP=" 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23"
export OMP_SLAVE_STACK_SIZE=22M
ulimit -s unlimited
```

For Compiler/OpenMP flags description please refer:
 SGI-x86-open64-424-flags.html

Base and Peak tuning:

```
C : opencc -mp -Ofast -march=barcelona -mcmmodel=medium
Fortran : openf90 -mp -Ofast -march=barcelona -OPT:early_mp=on -mcmmodel=medium
ONESTEP=yes
```

Peak tuning:

basepeak=yes for all benchmarks except 311.swim_l

```
313.swim_l : FOPTIMIZE = -mp -O3 -OPT:Ofast -m3dnow -mcmmodel=medium
-LNO:simd=0:prefetch Ahead=5:prefetch=3
```

Additional notes for disk subsystem:



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Notes/Tuning Information (Continued)

The disk subsystem is mounted through NFS over IPoIB via 4x DDR InfiniBand network. There is no local disk on the system.

Additional notes for OS:

Transparent Huge Page support is enabled on the system.