OMPM2001 Result

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SGI

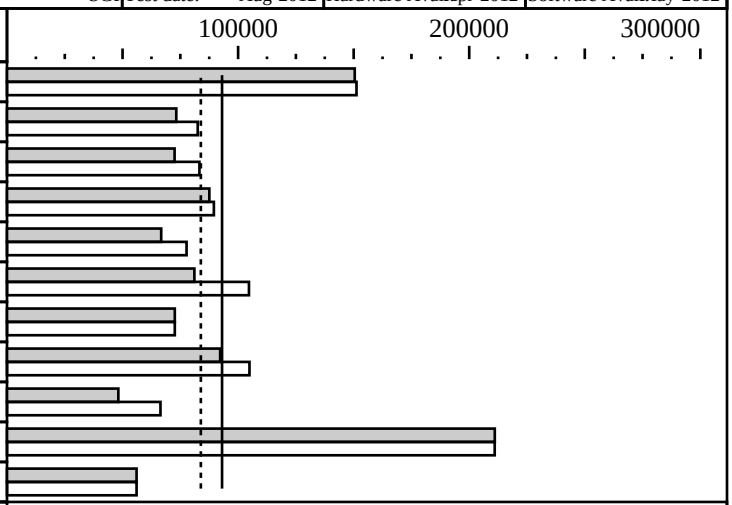
SGI Rackable C2112-4RP4 (Intel Xeon E5-2670, 2.6GHz)

SPECompMpeak2001 = 93051

SPECompMbase2001 = 83875

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
310.wupwise_m	6000	39.9	150463	39.7	151226
312.swim_m	6000	81.9	73251	72.7	82525
314.mgrid_m	7300	101	72515	87.7	83262
316.applu_m	4000	45.7	87553	44.7	89514
318.galgel_m	5100	76.4	66721	65.6	77699
320.equake_m	2600	32.1	81083	24.8	104694
324.apsi_m	3400	46.8	72608	46.8	72606
326.gafort_m	8700	94.3	92234	82.9	104917
328.fma3d_m	4600	95.5	48180	69.3	66407
330.art_m	6400	30.3	211065	30.3	211028
332.ammp_m	7000	125	56064	125	56064



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 , version 13.0 Beta, Build 20120425 Intel(R) Fortran Composer XE , version 13.0 Beta, Build 20120425 Intel(R) Math Kernel Library Version 10.3.9, Build 20120131
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)
    Portability Flags:
        318.galgel_m: -FI -132
    Extra Flags:
        330.art_m: -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
ONESTEP=yes
ulimit -s unlimited

For compiler/openmp flags description please refer:
SGI-Linux-Intel12.1-intel64.html

Base optimization flags and environment variables:
========================================================================
Medium:
```

Notes/Tuning Information (Continued)

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

Peak optimization flags and environment variables:
================================================================================
Medium:
  OPTIMIZE  = -O3 -xAVX -ipo -openmp
  export KMP_AFFINITY=compact, 0

Peak per-benchmark optimization flags and environment variables:
================================================================================
310.wupwise_m
  OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp

================================================================================
312.swim_m
  OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp -opt-streaming-stores always -align
  srcalt = ompl.32
  export OMP_NUM_THREADS=16
  export KMP_AFFINITY=compact,1

================================================================================
314.mgrid_m
  OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp -fno-alias
  export OMP_NUM_THREADS=16
  export KMP_AFFINITY=compact,1

================================================================================
316.applu_m
  export KMP_AFFINITY=compact,1

================================================================================
318.galgel_m
  export OMP_NUM_THREADS=16
  OPTIMIZE=-O2 -xAVX -ipo -openmp
  FOPTIMIZE=-mkl
  RM_SOURCES=lapak.f90
  export KMP_AFFINITY=compact,1

================================================================================
320.equake_m
  export OMP_NUM_THREADS=16
  export KMP_AFFINITY=compact,1

================================================================================
324.appsi_m
  OPTIMIZE=-O2 -xAVX -ipo -openmp

================================================================================
326.gafort_m
  srcalt = ompl.32
  OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp
  export KMP_AFFINITY=scatter,0
```

Notes/Tuning Information (Continued)

```
==============================================================================
328.fma3d_m
  FOPTIMIZE=-no-prec-sqrt -fp-model fast=2
  export KMP_AFFINITY=compact,1
  srcalt = ompl.32

==============================================================================
330.art_m
  OPTIMIZE=-O2 -xSSE4.2 -ipo -openmp

==============================================================================
332.ammp_m
  OPTIMIZE=-O3 -xAVX -ipo -openmp

==============================================================================
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:
  Transparent Huge Page support is enabled on the system.
```