OMPM2001 Result

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SGI

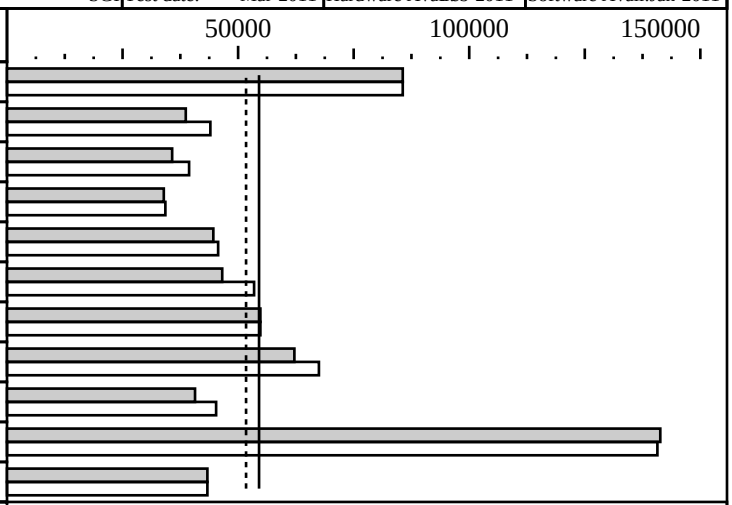
SGI Rackable C2112-4TY14 (Intel Xeon X5675, 3.06GHz)

SPECompMpeak2001 = 54530

SPECompMbase2001 = 51723

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
310.wupwise_m	6000	70.1	85620	70.1	85620
312.swim_m	6000	155	38677	136	43997
314.mgrid_m	7300	204	35730	185	39396
316.applu_m	4000	118	33923	117	34263
318.galgel_m	5100	114	44638	112	45679
320.equake_m	2600	55.8	46562	48.6	53457
324.apsi_m	3400	62.0	54815	62.0	54816
326.gafort_m	8700	140	62174	129	67482
328.fma3d_m	4600	113	40680	102	45243
330.art_m	6400	45.3	141336	45.5	140711
332.ammp_m	7000	161	43354	161	43354



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 Other: Intel Math Kernel Library 10.2.4
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:
  318.galgel_m: -FI -132
  330.art_m: -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
```

Notes/Tuning Information (Continued)

```
Base optimization flags and environment variables:
================================================================================
Medium:
  OPTIMIZE  = -O3 -xSSE4.2 -ipo1 -openmp
  COPTIMIZE=-ansi-alias
  export KMP_AFFINITY=scatter,1

Peak optimization flags and environment variables:
================================================================================
Medium:
  OPTIMIZE  = -O3 -xSSE4.2 -ipo1 -openmp -rcd
  export KMP_AFFINITY=compact,1

Peak per-benchmark optimization flags and environment variables:
================================================================================
310.wupwise_m
  export KMP_AFFINITY=scatter,1

================================================================================
312.swim_m
  OPTIMIZE=-O3 -xSSE4.2 -ipo1 -openmp -opt-streaming-stores always -align -rcd
  srcalt = ompl.32
  export OMP_NUM_THREADS=12

================================================================================
314.mgrid_m
  OPTIMIZE=-O3 -xSSE4.2 -ipo1 -openmp -fno-alias -rcd
  export OMP_NUM_THREADS=12

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

================================================================================
318.galgel_m
  export OMP_NUM_THREADS=6
  RM_SOURCES=lapak.f90
  EXTRA_LIBS=-lmkl_intel_lp64 -lmkl_intel_thread -lmkl_core
  export KMP_AFFINITY=scatter,0

================================================================================
320.equake_m
  export OMP_NUM_THREADS=12

================================================================================
324.appsi_m
  OPTIMIZE=-O3 -xSSE4.2 -ipo1 -openmp

================================================================================
326.gafort_m
  srcalt = ompl.32
  export KMP_AFFINITY=scatter,0

================================================================================
328.fma3d_m
```

Notes/Tuning Information (Continued)

```
  FOPTIMIZE=-no-prec-sqrt -fp-model fast=2
  srcalt = ompl.32

==============================================================================
330.art_m
  COPTIMIZE=-ansi-alias

==============================================================================
332.ammp_m
  OPTIMIZE=-O3 -xSSE4.2 -ipo1 -openmp
  export KMP_AFFINITY=scatter,1

==============================================================================
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.
```