OMPM2001 Result

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SGI

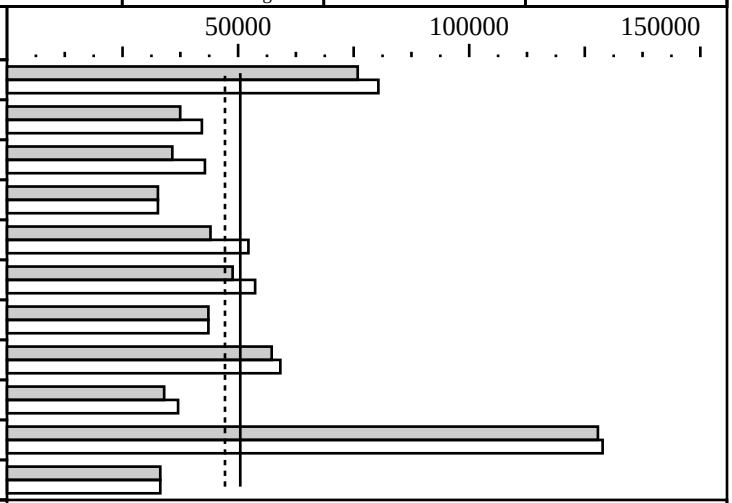
SGI Rackable C2005-TY3 (Intel Xeon X5687, 3.60GHz)

SPECompMpeak2001 = 50470

SPECompMbase2001 = 47161

SPEC license #HPG0014 | Tested by: SGI | Test site: SGI | Test date: Aug-2011 | Hardware Avail: Feb-2011 | Software Avail: Jul-2011

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	79.1	75877	74.7	80347
312.swim_m	6000	160	37472	142	42162
314.mgrid_m	7300	204	35766	170	42818
316.applu_m	4000	122	32653	122	32653
318.galgel_m	5100	116	44022	97.6	52232
320.equake_m	2600	53.3	48814	48.4	53681
324.apsi_m	3400	78.0	43572	78.0	43572
326.gafort_m	8700	152	57266	147	59135
328.fma3d_m	4600	135	34003	124	37014
330.art_m	6400	50.1	127844	49.7	128861
332.ammp_m	7000	211	33163	211	33163



Hardware

CPU:	Intel(R) Xeon(R) Processor X5687
CPU MHz:	3600
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 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:	12 MB I+D on chip
Other Cache:	N/A
Memory:	48 GB (6 x 8 GB, 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem:	5.8 TB RAID 5 20 x 146 GB FC (Seagate Cheetah 15K.4) 40 x 73 GB FC (Seagate Cheetah 15K.4)
Other Hardware:	None

Software

OpenMP Threads:	16
Parallel:	OpenMP
Operating System:	SUSE Linux Enterprise Server 11 SP1 (x86_64), Kernel 2.6.32.36-0.5-default
Compiler:	Intel C/C++ Compiler 11.1.059 for Linux Intel Fortran Compiler 11.1.059 for Linux Intel(R) C++ Composer XE 2011 for Linux, version 12.0.5.220 Build 20110719 Intel(R) Fortran Composer XE 2011 for Linux, version 12.0.5.220 Build 20110719 Other: Intel Math Kernel Library 10.2.6
File System:	NFSv3 IPoIB
System State:	Multi-user, run level 3

Notes/Tuning Information

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================================================================================
BIOS settings notes:
  Intel Hyper-Threading Technology (SMT): Enabled
  Intel Turbo Boost Technology (Turbo)  : Enabled (Max 3.86GHz)

================================================================================
Extra Flags:
  318.galgel_m: -FI -132
  330.art_m: -DINTS_PER_CACHELINE=16 -DDBLS_PER_CACHELINE=8

================================================================================
General Notes and Environment variables
  CC   = /sw/sdev/intel/Compiler/11.1/059/bin/intel64/icc
  FC   = /sw/sdev/intel/Compiler/11.1/059/bin/intel64/ifort
  export LD_LIBRARY_PATH=/sw/sdev/intel/Compiler/11.1/059/lib/intel64
  export KMP_LIBRARY=turnaround
  export KMP_STACKSIZE=31M
  export KMP_BLOCKTIME=infinite
  export OMP_DYNAMIC=FALSE
  ONESTEP=yes
  ulimit -s unlimited
```

Notes/Tuning Information (Continued)

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================================================================================
For compiler/openmp flags description please refer:
SGI-20100816-Linux-Intel11.1-intel64.html
SGI-Linux-Intel12.0-intel64.html

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
  CC=/sw/sdev/intel/composerxe-2011.5.220/composerxe-2011.5.220/bin/intel64/icc
  FC=/sw/sdev/intel/composerxe-2011.5.220/composerxe-2011.5.220/bin/intel64/ifort
  export LD_LIBRARY_PATH=/sw/sdev/intel/composerxe-2011.5.220/lib/intel64

================================================================================
312.swim_m
  OPTIMIZE=-O3 -xSSE4.2 -ipo1 -openmp -opt-streaming-stores always -align -rcd
  srcalt = ompl.32
  export OMP_NUM_THREADS=8

================================================================================
314.mgrid_m
  OPTIMIZE=-O3 -xSSE4.2 -ipo1 -openmp -fno-alias -rcd
  export OMP_NUM_THREADS=8
  CC=/sw/sdev/intel/composerxe-2011.5.220/composerxe-2011.5.220/bin/intel64/icc
  FC=/sw/sdev/intel/composerxe-2011.5.220/composerxe-2011.5.220/bin/intel64/ifort
  export LD_LIBRARY_PATH=/sw/sdev/intel/composerxe-2011.5.220/lib/intel64

================================================================================
316.applu_m
  basepeak=1

================================================================================
318.galgel_m
  export OMP_NUM_THREADS=4
  RM_SOURCES=lapak.f90
  EXTRA_LIBS=-lmkl_intel_lp64 -lmkl_intel_thread -lmkl_core
  export KMP_AFFINITY=scatter,0
  export LD_LIBRARY_PATH=/sw/sdev/intel/Compiler/11.1/059/mkl/lib/em64t:/sw/sdev/intel/Compiler/11.1/059/lib/intel64

================================================================================
320.equake_m
```

Notes/Tuning Information (Continued)

```
  export OMP_NUM_THREADS=8

==============================================================================
324.appsi_m
   basepeak=1

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

==============================================================================
328.fma3d_m
  FOPTIMIZE=-no-prec-sqrt -fp-model fast=2
  srcalt = ompl.32

==============================================================================
330.art_m
  COPTIMIZE=-ansi-alias
  CC=/sw/sdev/intel/composerxe-2011.5.220/composerxe-2011.5.220/bin/intel64/icc
  FC=/sw/sdev/intel/composerxe-2011.5.220/composerxe-2011.5.220/bin/intel64/ifort
  export LD_LIBRARY_PATH=/sw/sdev/intel/composerxe-2011.5.220/lib/intel64

==============================================================================
332.ammp_m
  OPTIMIZE=-O3 -xSSE4.2 -ipo1 -openmp -mcmodel=medium -shared-intel
  COPTIMIZE=-ansi-alias
  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.
```