OMPM2001 Result

Copyright 1999-2008, Standard Performance Evaluation Corporation

SGI

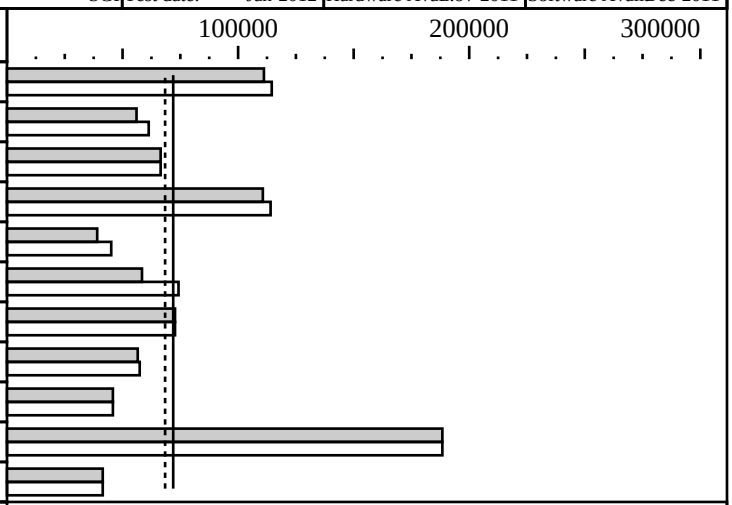
SGI Altix ICE 8400EX (AMD Opteron 6282 SE, 2.6GHz)

SPECompMpeak2001 = 71916

SPECompMbase2001 = 68417

SPEC license #: HPG0014 | Tested by: SGI | Test site: SGI | Test date: Jan-2012 | Hardware Avail: Nov-2011 | Software Avail: Dec-2011

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	54.0	111167	52.4	114550
312.swim_m	6000	107	56048	97.9	61317
314.mgrid_m	7300	110	66478	110	66478
316.applu_m	4000	36.1	110703	35.1	114055
318.galgel_m	5100	131	39031	113	45099
320.equake_m	2600	44.5	58408	35.0	74217
324.apsi_m	3400	46.8	72706	46.8	72706
326.gafort_m	8700	154	56568	152	57420
328.fma3d_m	4600	100	45821	100	45821
330.art_m	6400	34.0	188376	34.0	188376
332.ammp_m	7000	169	41427	169	41427



Hardware

CPU:	AMD Opteron(tm) Processor 6282 SE
CPU MHz:	2600
FPU:	Integrated
CPU(s) enabled:	32 cores, 2 chips, 16 cores/chip
CPU(s) orderable:	1-2 chips
Primary Cache:	512 KB I on chip per chip, 64 KB I shared / 2 cores; 16 KB D on chip per core
Secondary Cache:	16 MB I+D on chip per chip, 2 MB I+D on chip per core
L3 Cache:	16 MB I+D on chip per chip, 8 MB shared / 8 cores
Other Cache:	None
Memory:	128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem:	16 TB RAID 5 32 x 500 GB SATA (Seagate Barracuda 7.2K)
Other Hardware:	None

Software

OpenMP Threads:	32
Parallel:	OpenMP
Operating System:	SUSE Linux Enterprise Server 11 SP1 (x86_64) Kernel 2.6.32.46-0.3-default #1 SMP
Compiler:	Open64 4.5.1
File System:	NFSv3 IPoIB
System State:	Run Level 3 (Multi-User)

Notes/Tuning Information

```
AMD Turbo CORE technology up to 3.30 GHz

Base and Peak User Environment (bash):
  export OMP_NUM_THREADS=32
  export OMP_DYNAMIC=FALSE
  export O64_OMP_SPIN_COUNT=1000000000
  export O64_OMP_SPIN_USER_LOCK=TRUE
  export OMP_SLAVE_STACK=22M
  export O64_OMP_SET_AFFINITY=TRUE
 export O64_OMP_AFFINITY_MAP=0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31
  ulimit -s unlimited

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

Base tuning:
  C       : opencc  -mp -march=bdver1 -Ofast -mcmodel=medium
  Fortran : openf90 -mp -march=bdver1 -Ofast -OPT:early_mp=on -mcmodel=medium
  ONESTEP=yes

Extra art Base Flags
  330.art_m : -DINTS_PER_CACHELINE=16 -DDBLS_PER_CACHELINE=8
```

Notes/Tuning Information (Continued)

```
Portablility flags:
  318.galgel_m    : -fixedform -col80

Peak tuning:
  ONESTEP=yes for all benchmarks.

 310.wupwise_m : FOPTIMIZE = -mp -Ofast -msse3 -OPT:early_mp=on -LNO:prefetch_ahead=5:prefetch=3 -march=bdver1
                 -mcmodel=medium -OPT:unroll_times_max=8:unroll_size=128:IEEE_NaN_Inf=off:ro=3
                -IPA:linear=on:plimit=50000:callee_limit=5000 -INLINE:aggressive=on -CG:load_exe=0
  312.swim_m    : srcalt=ompl.32
                  FOPTIMIZE = -mp -O3 -OPT:Ofast -m3dnow -mcmodel=medium -LNO:simd=0
                  OMP_NUM_THREADS=16
                  O64_OMP_AFFINITY_MAP=1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31
  314.mgrid_m   : basepeak=yes
  316.applu_m   : srcalt=ompl
                  FOPTIMIZE =-Ofast -march=bdver1 -OPT:early_mp=on -mcmodel=medium
  318.galgel_m  : OMP_NUM_THREADS=16
                  O64_OMP_AFFINITY_MAP=1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31
                  COPTIMIZE      = -Ofast -march=bdver1 -mcmodel=medium
                 FOPTIMIZE      = -Ofast -march=bdver1 -OPT:early_mp=on -mcmodel=medium
  320.equake_m  : srcalt=ompl
                 COPTIMIZE = -Ofast -mp -OPT:alias=disjoint -march=bdver1 -mcmodel=medium
  324.apsi_m    : basepeak=yes
  326.gafort_m : FOPTIMIZE      = -Ofast -march=barcelona -OPT:early_mp=on -mcmodel=medium
  328.fma3d_m   : basepeak=yes
  330.art_m     : basepeak=yes
  332.ammp_m    : basepeak=yes

Alternate Sources :
  314.mgrid_m (base,peak): intel
  312.swim_m (peak): ompl.32
  316.applu_m (peak): ompl
  320.equake_m (peak): ompl

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