OMPM2001 Result

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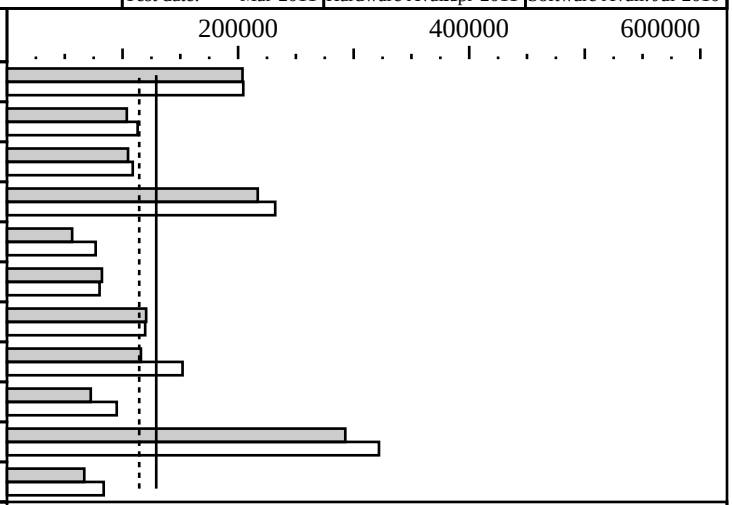
Quanta
Quanta QSSC-S4R Server System

SPECompMpeak2001 = 129152

SPECompMbase2001 = 114434

SPEC license #HPG0013 | Tested by: Intel Corporation | Test site: -- | Test date: Mar-2011 | Hardware Avail: Apr-2011 | Software Avail: Jul-2010

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	29.4	203806	29.3	204474
312.swim_m	6000	57.9	103683	53.1	113053
314.mgrid_m	7300	69.7	104759	67.1	108825
316.applu_m	4000	18.4	216993	17.2	232111
318.galgel_m	5100	90.5	56377	66.5	76725
320.equake_m	2600	31.6	82153	32.5	80108
324.apsi_m	3400	28.2	120429	28.4	119574
326.gafort_m	8700	75.1	115899	57.3	151924
328.fma3d_m	4600	63.5	72483	48.4	94966
330.art_m	6400	21.9	292760	19.9	321903
332.ammp_m	7000	105	66872	83.7	83678



Hardware

CPU:	Intel(R) Xeon(R) Processor E7-4870
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	40 cores, 4 chips, 10 cores/chip 2 threads/core
CPU(s) orderable:	1,2,3,4
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	30 MB I+D on chip per chip
Other Cache:	N/A
Memory:	256 GB (64 x 4 GB DDR3 - 1066 RDIMM)
Disk Subsystem:	Intel RS2BL080 300 GB SATA HDD 10kRPM
Other Hardware:	

Software

OpenMP Threads:	80
Parallel:	OpenMP
Operating System:	Red Hat Enterprise Linux Server release 6.0 (Santiago), kernel 2.6.32-71
Compiler:	Intel C/C++ Compiler 11.1.059 for Linux Intel FORTRAN Compiler 11.1.059 for Linux GNU C Compiler 4.4.4 20100726
File System:	ext3
System State:	Default

Notes/Tuning Information

```
================================================================================
BIOS settings notes:
  Intel Hyper-Threading Technology (SMT): Enabled
  Intel Turbo Boost Technology (Turbo)  : Enabled (Max 2.8 GHz)

================================================================================
Extra Flags:
  318.galgel_m: -FI -132
  330.art_m: -DINTS_PER_CACHELINE=16 -DDBLS_PER_CACHELINE=8
  all: -gcc-name=/usr/bin/gcc

================================================================================
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 64000

For compiler/openmp flags description please refer:
Intel-ic11.1-intel64-linux-flags-file-Mar-15-2011.html
```

Notes/Tuning Information (Continued)

Base optimization flags and environment variables:

```
Medium:
  OPTIMIZE  = -O3 -xSSE4.2 -ipo -openmp
  COPTIMIZE  = -ansi-alias
  export OMP_NUM_THREADS=40
  export KMP_AFFINITY=compact,1

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

Peak per-benchmark optimization flags and environment variables:
310.wupwise_m
  export OMP_NUM_THREADS=40

312.swim_m
  OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp -opt-streaming-stores always -align -rcd
  srcalt = ompl.32
  export OMP_NUM_THREADS=40

314.mgrid_m
  OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp -fno-alias -rcd
  export OMP_NUM_THREADS=40

318.galgel_m
  FOPTIMIZE=-mkl
  RM_SOURCES=lapak.f90

320.equake_m
  export OMP_NUM_THREADS=40

324.appsi_m
  OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp
  export OMP_NUM_THREADS=40

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
```

Notes/Tuning Information (Continued)

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

==============================================================================
332.ammp_m
  OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp
```