OMPL2001 Result

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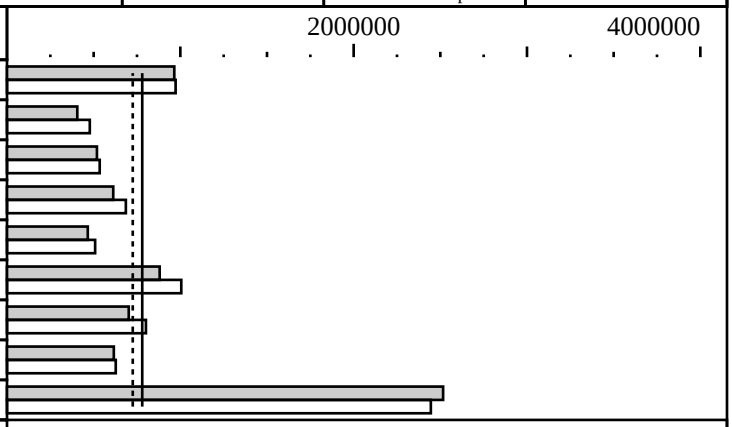
Quanta
Quanta QSSC-S4R Server System

SPECompLpeak2001 = 780208

SPECompLbase2001 = 725475

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
311.wupwise_l	9200	153	965129	151	972795
313.swim_l	12500	493	405601	419	477663
315.mgrid_l	13500	416	518880	404	534821
317.applu_l	13500	352	612916	315	685703
321.equake_l	13000	446	466098	409	508448
325.apsi_l	10500	191	880835	167	1005452
327.gafort_l	11000	251	702388	220	801548
329.fma3d_l	23500	610	616289	599	627400
331.art_l	25000	159	2516033	164	2445265



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:
  331.art_l: -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

Base optimization flags and environment variables:
================================================================================
Large:
  OPTIMIZE  = -O3 -xSSE4.2 -ipo -openmp -mcmodel=medium -shared-intel
```

Notes/Tuning Information (Continued)

```
  COPTIMIZE  = -ansi-alias
  export KMP_AFFINITY=compact,1

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

Peak per-benchmark optimization flags and environment variables:
================================================================================
311.wupwise_l
  export KMP_AFFINITY=compact,0

================================================================================
313.swim_l
  OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp -opt-streaming-stores always -align -rcd -mcmodel=medium -shared-intel
  export OMP_NUM_THREADS=40
  export KMP_AFFINITY=compact,1

================================================================================
315.mgrid_l
  OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp -fno-alias -rcd

================================================================================
317.applu_l
  OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp -rcd -mcmodel=medium -shared-intel
  export KMP_AFFINITY=scatter,0

================================================================================
321.equake_l
  export OMP_NUM_THREADS=40
  export KMP_AFFINITY=compact,1

================================================================================
325.appsi_l
  OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp
  export KMP_AFFINITY=compact,0

================================================================================
327.gafort_l
  OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp -rcd -mcmodel=medium -shared-intel
  export KMP_AFFINITY=scatter,0

================================================================================
329.fma3d_l
  FOPTIMIZE=-no-prec-sqrt -fp-model fast=2

================================================================================
331.art_l
  OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp
  export KMP_AFFINITY=compact,0
```