



OMPL2001 Result

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Quanta
Quanta QSSC-S4R Server System

SPECompLpeak2001 = 622890
SPECompLbase2001 = 611054

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	168	876915	168	875614
313.swim_l	12500	436	458260	412	485657
315.mgrid_l	13500	412	524621	404	534619
317.applu_l	13500	532	405982	538	401536
321.quake_l	13000	405	513826	405	513322
325.apsi_l	10500	268	627567	263	639637
327.gafort_l	11000	316	557512	294	598006
329.fma3d_l	23500	844	445748	831	452725
331.art_l	25000	231	1731706	230	1739507

Hardware

CPU: Intel(R) Xeon(R) Processor E7-8837
CPU MHz: 2660
FPU: Integrated
CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip 1 thread/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: 24 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: 32
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 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 -mmodel=medium -shared-intel
COPTIMIZE = -ansi-alias



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Notes/Tuning Information (Continued)

```
export KMP_AFFINITY=compact,0
```

Peak optimization flags and environment variables:

Large:

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

Peak per-benchmark optimization flags and environment variables:

313.swim_l

```
OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp -opt-streaming-stores always -align -rcd -mcmmodel=medium -shared-intel
```

315.mgrid_l

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

317.applu_l

```
OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp -rcd -mcmmodel=medium -shared-intel
export KMP_AFFINITY=scatter,0
```

325.appsi_l

```
OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp
export KMP_AFFINITY=scatter,0
```

327.gafort_l

```
OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp -rcd -mcmmodel=medium -shared-intel
export KMP_AFFINITY=scatter,0
```

329.fma3d_l

```
FOPTIMIZE=-no-prec-sqrt -fp-model fast=2
```

331.art_l

```
COPTIMIZE=-ansi-alias
```