



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.quake_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 -mmodel=medium -shared-intel



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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_1

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

313.swim_1

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

315.mgrid_1

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

317.aplu_1

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

321.quake_1

```
export OMP_NUM_THREADS=40
export KMP_AFFINITY=compact,1
```

325.appsi_1

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

327.gafort_1

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

329.fma3d_1

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

331.art_1

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