



OMPM2001 Result

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Quanta
Quanta QSSC-S4R Server System

SPECompMpeak2001 = 115203
SPECompMbase2001 = 109320

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	203956	29.4	204248	
312.swim_m	6000	58.7	102243	51.0	117594	
314.mgrid_m	7300	66.1	110366	62.5	116860	
316.applu_m	4000	20.5	194905	20.5	195216	
318.galgel_m	5100	87.9	58007	68.1	74848	
320.quake_m	2600	32.2	80845	32.2	80848	
324.apsi_m	3400	32.3	105138	32.3	105148	
326.gafort_m	8700	78.7	110552	73.4	118476	
328.fma3d_m	4600	67.7	67905	62.9	73137	
330.art_m	6400	26.4	242333	26.8	238858	
332.ammp_m	7000	106	66236	106	65737	

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:

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

Base optimization flags and environment variables:



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Notes/Tuning Information (Continued)

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Medium:

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

Peak optimization flags and environment variables:

=====
Medium:

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

Peak per-benchmark optimization flags and environment variables:

=====
312.swim_m

```
OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp -opt-streaming-stores always -align -rcd
srcalt = ompl.32
```

=====
314.mgrid_m

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

=====
318.galgel_m

```
FOPTIMIZE=-mkl
RM_SOURCES=lapak.f90
```

=====
324.appsi_m

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

=====
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
```

=====
330.art_m

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

=====
332.amp_m

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