



OMPM2001 Result

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Quanta
Quanta QSSC-S4R Server System

SPECompMpeak2001 = 106369
SPECompMbase2001 = 98288

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio	
310.wupwise_m	6000	32.2	186338	32.2	186333	
312.swim_m	6000	69.2	86710	66.2	90674	
314.mgrid_m	7300	74.6	97874	70.3	103778	
316.applu_m	4000	23.5	170090	22.5	177703	
318.galgel_m	5100	95.4	53464	95.6	53355	
320.quake_m	2600	33.6	77463	33.6	77464	
324.apsi_m	3400	36.4	93483	36.4	93489	
326.gafort_m	8700	91.0	95579	66.4	131043	
328.fma3d_m	4600	76.4	60189	60.7	75822	
330.art_m	6400	27.4	233509	27.2	235574	
332.ammp_m	7000	118	59118	100	69988	

Hardware

CPU: Intel(R) Xeon(R) Processor X7560
 CPU MHz: 2260
 FPU: Integrated
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip 2 threads/core
 CPU(s) orderable: 1,2,3,4
 Primary Cache: 32KB I + 32KB D on chip per core
 Secondary Cache: 256KB I+D on chip per core
 L3 Cache: 24MB I+D on chip per chip
 Other Cache: N/A
 Memory: 256 GB (64 x 4GB DDR3 - 1066 Dual Rank RDIMMs)
 Disk Subsystem: Seagate 500 GB ST300655SS
 Other Hardware:

Software

OpenMP Threads: 64
 Parallel: OpenMP
 Operating System: Red Hat EL 5.3, kernel 2.6.18-128
 Compiler: Intel C/C++ Compiler 11.1.059 for Linux
 Intel FORTRAN Compiler 11.1.059 for Linux
 GNU C Compiler 4.1.2 20070115
 File System: Linux ext3
 System State: Default

Notes/Tuning Information

BIOS settings notes:

Intel Hyper-Threading Technology (SMT): Enabled
 Intel Turbo Boost Technology up to 2.66 GHz

Extra Flags:

318.galgel_m: -FI -132
 330.art_m: -DINTS_PER_CACHELINE=16 -DDBLS_PER_CACHELINE=8 -D_OPENMP
 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-Feb-25-2010.html



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Notes/Tuning Information (Continued)

Base optimization flags and environment variables:

Medium:

```
OPTIMIZE = -O3 -xSSE4.2 -ipol -openmp
COPTIMIZE = -ansi-alias
export OMP_NUM_THREADS=32
export KMP_AFFINITY=compact,1
```

Peak optimization flags and environment variables:

Medium:

```
OPTIMIZE = -O3 -xSSE4.2 -ipol -openmp -rcd
export KMP_AFFINITY=compact,1
export OMP_NUM_THREADS=64
```

Peak per-benchmark optimization flags and environment variables:

310.wupwise_m

```
export OMP_NUM_THREADS=32
```

312.swim_m

```
OPTIMIZE=-O3 -xSSE4.2 -ipol -openmp -opt-streaming-stores always -align -rcd
srcalt = omp1.32
export OMP_NUM_THREADS=32
```

314.mgrid_m

```
OPTIMIZE=-O3 -xSSE4.2 -ipol -openmp -fno-alias -rcd
export OMP_NUM_THREADS=32
```

316.applu_m

```
export KMP_AFFINITY=scatter,1
```

318.galgel_m

```
export OMP_NUM_THREADS=32
```

320.equake_m

```
export OMP_NUM_THREADS=32
```

324.appsi_m

```
OPTIMIZE=-O3 -xSSE4.2 -ipol -openmp
export OMP_NUM_THREADS=32
```

326.gafort_m

```
srcalt = omp1.32
export KMP_AFFINITY=scatter,0
```

328.fma3d_m



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Notes/Tuning Information (Continued)

```
FOPTIMIZE=-no-prec-sqrt -fp-model fast=2  
srcalt = ompl.32
```

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

```
=====  
332.ammp_m  
OPTIMIZE=-O3 -xSSE4.2 -ipo1 -openmp
```