# OMPM2001 Result

Copyright 1999-2008, Standard Performance Evaluation Corporation

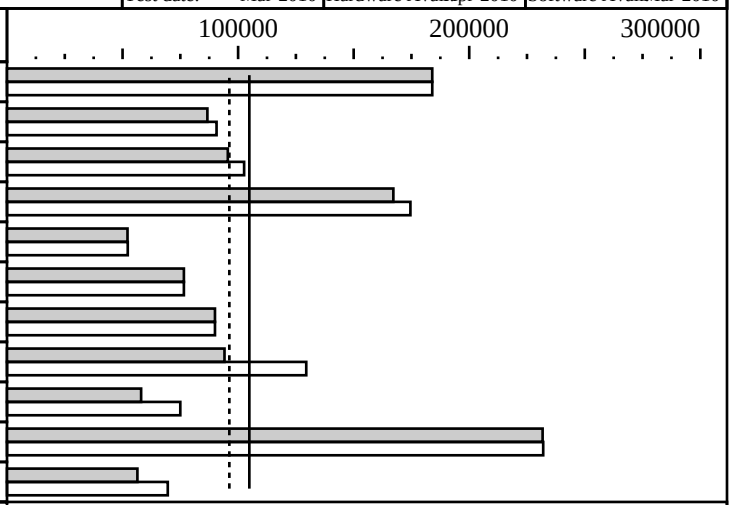
## Quanta
## Quanta QSSC-S4R Server System

SPECompMpeak2001 = 104857

SPECompMbase2001 = 96208

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 | 32.6 | 184003 | 32.6 | 184005 |
| 312.swim_m | 6000 | 69.2 | 86704 | 66.2 | 90672 |
| 314.mgrid_m | 7300 | 76.4 | 95544 | 71.1 | 102601 |
| 316.applu_m | 4000 | 23.9 | 167173 | 22.9 | 174552 |
| 318.galgel_m | 5100 | 97.8 | 52142 | 97.6 | 52247 |
| 320.equake_m | 2600 | 34.0 | 76541 | 34.0 | 76538 |
| 324.apsi_m | 3400 | 37.8 | 89987 | 37.8 | 89988 |
| 326.gafort_m | 8700 | 92.4 | 94112 | 67.2 | 129485 |
| 328.fma3d_m | 4600 | 79.3 | 58035 | 61.3 | 74984 |
| 330.art_m | 6400 | 27.6 | 231755 | 27.6 | 232012 |
| 332.ammp_m | 7000 | 124 | 56423 | 101 | 69564 |




### 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<br>Intel FORTRAN Compiler 11.1.059 for Linux<br>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 Disabled

================================================================================
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 Enviroment 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
```

## Notes/Tuning Information (Continued)

```
Base optimization flags and enviroment variables:
================================================================================
Medium:
  OPTIMIZE  = -O3 -xSSE4.2 -ipo1 -openmp
  COPTIMIZE  = -ansi-alias
  export OMP_NUM_THREADS=32
  export KMP_AFFINITY=compact,1

Peak optimization flags and enviroment variables:
================================================================================
Medium:
  OPTIMIZE  = -O3 -xSSE4.2 -ipo1 -openmp -rcd
  export KMP_AFFINITY=compact,1
  export OMP_NUM_THREADS=64

Peak per-benchamrk optimization flags and enviroment variables:
================================================================================
310.wupwise_m
  export OMP_NUM_THREADS=32

================================================================================
312.swim_m
  OPTIMIZE=-O3 -xSSE4.2 -ipo1 -openmp -opt-streaming-stores always -align -rcd
  srcalt = ompl.32
  export OMP_NUM_THREADS=32

================================================================================
314.mgrid_m
  OPTIMIZE=-O3 -xSSE4.2 -ipo1 -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 -ipo1 -openmp
  export OMP_NUM_THREADS=32

================================================================================
326.gafort_m
  srcalt = ompl.32
  export KMP_AFFINITY=scatter,0

================================================================================
328.fma3d_m
```

## 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
```