



# OMPM2001 Result

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Intel Corporation  
Intel(R) G29051-202 (Endeavor Node)

SPECompMpeak2001 = 82934  
SPECompMbase2001 = 74576

SPEC license #HPG0013 | Tested by: Intel Corporation | Test site: -- | Test date: Feb-2012 | Hardware Avail: Mar-2012 | Software Avail: Aug-2011

| Benchmark     | Reference Time | Base Runtime | Base Ratio | Peak Runtime | Peak Ratio |  |
|---------------|----------------|--------------|------------|--------------|------------|--|
| 310.wupwise_m | 6000           | 44.9         | 133575     | 41.5         | 144568     |  |
| 312.swim_m    | 6000           | 92.8         | 64675      | 82.4         | 72849      |  |
| 314.mgrid_m   | 7300           | 118          | 61848      | 103          | 71085      |  |
| 316.applu_m   | 4000           | 50.6         | 79123      | 49.5         | 80746      |  |
| 318.galgel_m  | 5100           | 90.9         | 56115      | 73.7         | 69229      |  |
| 320.quake_m   | 2600           | 42.5         | 61194      | 30.7         | 84695      |  |
| 324.apsi_m    | 3400           | 50.9         | 66838      | 50.5         | 67369      |  |
| 326.gafort_m  | 8700           | 110          | 79005      | 98.3         | 88500      |  |
| 328.fma3d_m   | 4600           | 92.5         | 49712      | 79.3         | 58008      |  |
| 330.art_m     | 6400           | 29.3         | 218338     | 29.3         | 218291     |  |
| 332.ammp_m    | 7000           | 147          | 47693      | 147          | 47707      |  |

### Hardware

CPU: Intel(R) Xeon(R) Processor E5-2670  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip, 2 threads/core  
 CPU(s) orderable: 1,2  
 Primary Cache: 32KB(I)+32KB(D) per core on chip  
 Secondary Cache: 256KB per core (I+D) on chip  
 L3 Cache: 20MB (I+D) per chip on chip  
 Other Cache: N/A  
 Memory: 64 GB (8 x 8 GB 2Rx4 PC3-12800R, ECC, running at 1333MHz and CL9)  
 Disk Subsystem: 1x600GB SSD SEAGATE ST9600205SS  
 Other Hardware:

### Software

OpenMP Threads: 32  
 Parallel: OpenMP  
 Operating System: Red Hat EL 6.1, kernel 2.6.32-131  
 Compiler: Intel C++ Composer XE 2011 for Linux, Version 12.0.5.220 Build 20110719  
 Intel C++ Composer XE 2011 for Linux, Version 12.0.5.220 Build 20110719  
 Intel Fortran Composer XE 2011 for Linux, Version 12.0.5.220 Build 20110719  
 GNU C Compiler 4.4.6-3 20110731  
 File System: Linux ext3  
 System State: Default

## Notes/Tuning Information

### BIOS settings notes:

Intel Hyper-Threading Technology (SMT): Enabled (default is Disabled)  
 Intel Turbo Boost Technology (Turbo) : Disabled

### Portability Flags:

318.galgel\_m: -FI -132

### Extra Flags:

330.art\_m: -DINTS\_PER\_CACHELINE=32 -DDBLS\_PER\_CACHELINE=16  
 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

### For compiler/openmp flags description please refer:

Intel-ic12.0-intel64-linux-flags-file-Feb-22-2012.html

### Base optimization flags and environment variables:

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### Medium:

OPTIMIZE = -O2 -xAVX -ipo -openmp  
 COPTIMIZE = -ansi-alias  
 export KMP\_AFFINITY=compact,0



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## Notes/Tuning Information (Continued)

Peak optimization flags and environment variables:

Medium:

```
OPTIMIZE = -O3 -xAVX -ipo -openmp
export KMP_AFFINITY=compact,0
```

Peak per-benchmark optimization flags and environment variables:

310.wupwise\_m

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

312.swim\_m

```
OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp -opt-streaming-stores always -align
srcalt = omp1.32
export OMP_NUM_THREADS=16
export KMP_AFFINITY=compact,1
```

314.mgrid\_m

```
OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp -fno-alias
export OMP_NUM_THREADS=16
export KMP_AFFINITY=compact,1
```

316.applu\_m

```
export KMP_AFFINITY=compact,1
```

318.galgel\_m

```
export OMP_NUM_THREADS=16
OPTIMIZE=-O2 -xAVX -ipo -openmp
FOPTIMIZE=-mkl
RM_SOURCES=lapak.f90
export KMP_AFFINITY=compact,1
```

320.equake\_m

```
export OMP_NUM_THREADS=16
export KMP_AFFINITY=compact,1
```

324.appsi\_m

```
OPTIMIZE=-O2 -xAVX -ipo -openmp
```

326.gafort\_m

```
srcalt = omp1.32
OPTIMIZE=-O3 -xSSE4.2 -ipo -openmp
export KMP_AFFINITY=scatter,0
```

328.fma3d\_m

```
FOPTIMIZE=-no-prec-sqrt -fp-model fast=2
export KMP_AFFINITY=compact,1
```



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## Notes/Tuning Information (Continued)

srcalt = ompl.32

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330.art\_m  
OPTIMIZE=-O2 -xSSE4.2 -ipo -openmp

=====

332.amp\_m  
OPTIMIZE=-O3 -xAVX -ipo -openmp