



# OMPM2001 Result

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

SPECompMpeak2001 = 88107  
SPECompMbase2001 = 79336

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	43.7	137448	40.2	149174	
312.swim_m	6000	91.5	65598	81.6	73574	
314.mgrid_m	7300	117	62592	98.3	74260	
316.applu_m	4000	48.3	82804	51.1	78267	
318.galgel_m	5100	85.8	59463	66.9	76237	
320.quake_m	2600	40.9	63618	30.2	86193	
324.apsi_m	3400	46.2	73571	46.2	73594	
326.gafort_m	8700	105	82997	91.9	94638	
328.fma3d_m	4600	83.8	54920	71.1	64731	
330.art_m	6400	26.2	244619	26.6	240935	
332.ammp_m	7000	130	54043	128	54553	

### 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) : Enabled (Max 3.3GHz)

### 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:

=====

### 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

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

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