

# OMPM2001 Result

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CISCO Systems, Inc.  
Cisco UCS C460 M1

SPECompMpeak2001 = 109077

SPECompMbase2001 = 100258

SPEC license #: HPG9019 | Tested by: Amarnath Murahari, amarnath@cisco.com | Test date: Mar-2010 | Hardware Avail: May-2010 | Software Avail: March-2010

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	
310.wupwise_m	6000	31.4	191199	31.4	191185	
312.swim_m	6000	67.0	89611	64.1	93563	
314.mgrid_m	7300	74.2	98421	69.3	105307	
316.applu_m	4000	22.9	174666	21.7	184407	
318.galgel_m	5100	94.2	54161	94.6	53931	
320.equake_m	2600	31.9	81391	31.7	81903	
324.apsi_m	3400	36.0	94533	36.0	94535	
326.gafort_m	8700	88.0	98901	64.3	135231	
328.fma3d_m	4600	75.4	61003	59.0	77908	
330.art_m	6400	27.2	235356	27.3	234298	
332.ampm_m	7000	119	59024	96.4	72633	

## 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: 512 GB (RDIMM 64x8GB 1066 MHz)  
Disk Subsystem: 146 GB SAS, 10K RPM  
Other Hardware: None

## 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 (Turbo) : Enabled (Max 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 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.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
```

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.ammmp_m  
OPTIMIZE=-O3 -xSSE4.2 -ipol -openmp
```