



OMPM2001 Result

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IBM
HS21 Blade servers

SPECompMpeak2001 = 11346
SPECompMbase2001 = 11209

SPEC license #PG3440A | Tested by: Indiana University | Test site: Bloomington IN | Test date: Aug-2008 | Hardware Avail: Aug-2006 | Software Avail: Apr-2008

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio	
310.wupwise_m	6000	427	14040	417	14379	
312.swim_m	6000	844	7109	844	7107	
314.mgrid_m	7300	1114	6552	1114	6555	
316.applu_m	4000	465	8608	465	8596	
318.galgel_m	5100	439	11623	437	11671	
320.quake_m	2600	248	10478	248	10495	
324.apsi_m	3400	218	15588	217	15695	
326.gafort_m	8700	629	13839	628	13844	
328.fma3d_m	4600	523	8788	511	9008	
330.art_m	6400	247	25907	244	26205	
332.ammp_m	7000	671	10426	631	11087	

Hardware

CPU: Intel Xeon 5335
 CPU MHz: 2000
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 1,2
 Primary Cache: 32KB(I)+32KB(D)/core on chip
 Secondary Cache: 8192KB/chip (I+D) on chip, 4 MB shared / 2 cores
 L3 Cache: NA
 Other Cache: NA
 Memory: 8192MB total, 8x1GB 667MHz DDR2 ECC
 Disk Subsystem: 250TB GPFS external
 36GB SAS
 340TB Lustre external
 Other Hardware: NA

Software

OpenMP Threads: 8
 Parallel: OpenMP
 Operating System: RHEL4 (2.6.9_67.0.4.EL_lustre.1.6.4.3custom)
 Compiler: Intel 10.1.013 build 20080112
 File System: GPFS
 System State: Multi User

Notes/Tuning Information

Environment:

```
KMP_STACKSIZE=31m
Sets the number of bytes to allocate for each parallel thread to use as its private stack.
OMP_NESTED=TRUE
Enables (TRUE) or disables (FALSE) nested parallelism.
OMP_NUM_THREADS=8
Sets the maximum number of threads to use for OpenMP* parallel regions if no other value is specified in the program itself.
ulimit -s unlimited
Removes limits on the maximum size of the automatically-extended stack region of the current process and each process it creates.
```

All Environment variables set externally by run script

Compiler flags for base level optimisation

```
COPTIMIZE : -O3 -xT -ipo -no-prec-div -unroll-loops0 -openmp
FOPTIMIZE : -O3 -xT -ipo -no-prec-div -unroll-loops0 -openmp
F77OPTIMIZE : -O3 -xT -ipo -no-prec-div -unroll-loops0 -openmp
```

Compiler flags for peak level optimisation

```
310.wupwise_m : -O2 -ipo -openmp
312.swim_m : basepeak=yes
314.mgrid_m : basepeak=yes
```



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Notes/Tuning Information (Continued)

```
316.applu_m      : -O2 -xT -ipo -no-prec-div -openmp
318.galgel_m     : basepeak=yes
320.quake_m      : basepeak=yes
324.apsi_m       : -O2 -xT -ipo -no-prec-div -openmp
326.gafort_m     : basepeak=yes
328.fma3d_m      : -O3 -xT -ipo -openmp
330.art_m        : -O2 -xT -ipo -no-prec-div -openmp
332.amp_m        : -O2 -xT -openmp
Flag file: Indiana-ic10.1-intel64-linux-flags-file-20080819.html
```