



OMP2001 Result

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IBM

IBM System x iDP dx360 M2 (VirtualBox virtual machine)

SPECompMpeak2001 = --

SPECompMbase2001 = 31695

SPEC license #PG3440A Tested by: Indiana University Test site: Indiana University Test date: Jan-2011 Hardware Avail: Dec-2009 Software Avail: Jan-2010

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	110	54740		
312.swim_m	6000	213	28117		
314.mgrid_m	7300	307	23815		
316.applu_m	4000	147	27201		
318.galgel_m	5100	177	28781		
320.equake_m	2600	69.2	37558		
324.apsi_m	3400	107	31728		
326.gafort_m	8700	250	34776		
328.fma3d_m	4600	205	22394		
330.art_m	6400	95.6	66960		
332.ammp_m	7000	385	18188		

Hardware	Software
CPU: Intel Xeon E5570	OpenMP Threads: 8
CPU MHz: 2934	Parallel: --
FPU: Integrated	Operating System: RHEL5.5 (x86_64) Kernel 2.6.18-194.26.1.el5
CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip (HT off)	VirtualBox Kernel 2.6.18-194.26.1.el5
CPU(s) orderable: 1-2 chips	VirtualBox Version 3.2.12_68302_rhel5
Primary Cache: 32 KB I + 32 KB D on chip per core	Compiler: Intel C/C++ Compiler 11.1.072
Secondary Cache: 256 KB I+D on chip per core	Intel Fortran Compiler 11.1.072
L3 Cache: 8 MB I+D on chip per chip	File System: ext3; VirtualBox ext3
Other Cache: None	System State: Multi-user, run level 3
Memory: 24 GB (6*4GB DDR3-1333 RDIMMs); 16 GB VirtualBox allocated	
Disk Subsystem: Single 500GB SATA hosting a 8 GB VDI image	
Other Hardware: None	

Notes/Tuning Information

VM Configuration details:

1 VM for OMP2001 with 8 VCPUS
 Only one VM per node
 Host and guest OS installed using default parameters
 VirtualBox installed using default parameters

Intel Turbo Boost Technology (Turbo) : Disabled

ulimit -s unlimited

Removes limits on the maximum size of the automatically-extended stack region of the current process and each process it creates.

Compiler flags for base level optimization

COPTIMIZE : -O3 -xSSE3 -ipo -no-prec-div -unroll-loops0 -openmp
 FOPTIMIZE : -O3 -xSSE3 -ipo -no-prec-div -unroll-loops0 -openmp
 F77OPTIMIZE : -O3 -xSSE3 -ipo -no-prec-div -unroll-loops0 -openmp

Environment:

KMP_AFFINITY=enabled
 controls the binding of OpenMP threads to the physical processing units
 KMP_SCHEDULE=static,balanced
 used to fine tune the load balancing of parallel loops that are statically scheduled under OpenMP with no chunk size specification
 KMP_BLOCKTIME=infinite
 Sets the time, in milliseconds, that a thread should wait, after completing the execution of a parallel region, before sleeping.



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Notes/Tuning Information (Continued)

```
KMP_LIBRARY=throughput
  Selects the OpenMP run-time library
KMP_STACKSIZE=31m
  Sets the number of bytes to allocate for each parallel thread to use as
  to use as its private stack
OMP_NESTED=TRUE
  Enables (TRUE) or disables (FALSE) nested parallelism.
OMP_DYNAMIC=FALSE
  Enables (true) or disables (false) the dynamic adjustment of the number of threads.
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.
```