



OMP2001 Result

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IBM

IBM System x iDP dx360 M2 (XEN virtual machine)

SPECompMpeak2001 = --

SPECompMbase2001 = 31824

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	118	50874		
312.swim_m	6000	237	25355		
314.mgrid_m	7300	327	22324		
316.applu_m	4000	152	26306		
318.galgel_m	5100	162	31443		
320.equake_m	2600	76.4	34024		
324.apsi_m	3400	103	33116		
326.gafort_m	8700	243	35779		
328.fma3d_m	4600	212	21748		
330.art_m	6400	76.7	83416		
332.ammp_m	7000	360	19463		

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.el5xen Xen DomU Kernel 2.6.18-194.26.1.el5 XEN Version 3.0.3 Release 105.el5_5.5
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip (HT off)	Compiler:	Intel C/C++ Compiler 11.1.072 Intel Fortran Compiler 11.1.072
CPU(s) orderable:	1-2 chips	File System:	ext3; XEN ext3
Primary Cache:	32 KB I + 32 KB D on chip per core	System State:	Multi-user, run level 3
Secondary Cache:	256 KB I+D on chip per core		
L3 Cache:	8 MB I+D on chip per chip		
Other Cache:	None		
Memory:	24 GB (6*4GB DDR3-1333 RDIMMs); 16 GB Xen DomU allocated		
Disk Subsystem:	Single 500GB SATA hosting a 10GB Xen 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
 XEN 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.