



OMPM2001 Result

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IBM

IBM System x (r) iDataPlex (tm) dx360 M2

SPECompMpeak2001 = 44411

SPECompMbase2001 = 43231

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio	
310.wupwise_m	6000	81.3	73835	80.5	74571	
312.swim_m	6000	161	37366	160	37392	
314.mgrid_m	7300	215	34024	215	33882	
316.applu_m	4000	128	31365	129	30974	
318.galgel_m	5100	125	40715	125	40651	
320.earthquake_m	2600	56.4	46116	53.2	48918	
324.apsi_m	3400	86.5	39323	86.1	39483	
326.gafort_m	8700	160	54542	159	54698	
328.fma3d_m	4600	151	30393	142	32450	
330.art_m	6400	65.3	97998	59.8	106934	
332.ammp_m	7000	251	27911	230	30396	

Hardware

CPU: Intel Xeon X5570
 CPU MHz: 2934
 FPU: Integrated
 CPU(s) enabled: CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core
 CPU(s) orderable: 1-2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 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)
 Disk Subsystem: No physical hard drives used
 Other Hardware: None

Software

OpenMP Threads: 16
 Parallel: OpenMP
 Operating System: RHEL5.3 (x86_64) 2.6.18-164.11.1.el5
 Kernel 2.6.18-164.11.1.el5
 Compiler: Intel C/C++ Compiler 11.1.059
 Intel Fortran Compiler 11.1.059
 File System: Linux tmpfs, 12 GB
 System State: Multi-user, run level 3

Notes/Tuning Information

Intel Hyper-Threading Technology (SMT): Enabled

Intel Turbo Boost Technology up to 3.33 GHz

`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 -xSSE4.2 -ipo -no-prec-div -unroll-loops0 -openmp`

`FOPTIMIZE : -O3 -xSSE4.2 -ipo -no-prec-div -unroll-loops0 -openmp`

`F77OPTIMIZE : -O3 -xSSE4.2 -ipo -no-prec-div -unroll-loops0 -openmp`

Environment:

`KMP_AFFINITY=disabled`

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.

`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

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Notes/Tuning Information (Continued)

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=16

Sets the maximum number of threads to use for OpenMP* parallel

regions if no other value is specified in the program itself.

Flags for peak level optimization

310.wupwise_m peak flags:

fdo_pre0 = rm -rf ./*.dyn

PASS1_FFLAGS = -prof-gen

PASS2_FFLAGS = -prof-use

PASS1_LDFLAGS = -prof-gen

PASS2_LDFLAGS = -prof-use

312.swim_m peak flags:

fdo_pre0 = rm -rf ./*.dyn

PASS1_FFLAGS = -prof-gen

PASS2_FFLAGS = -prof-use

PASS1_LDFLAGS = -prof-gen

PASS2_LDFLAGS = -prof-use

316.applu_m peak flags:

COPTIMIZE = -O2 -xSSE4.2 -ipo -no-prec-div -openmp

FOPTIMIZE = -O2 -xSSE4.2 -ipo -no-prec-div -openmp

F77OPTIMIZE = -O2 -xSSE4.2 -ipo -no-prec-div -openmp

318.galgel_m peak flags:

ENV_OMP_NUM_THREADS=8

320.quake_m peak flags:

ENV_OMP_NUM_THREADS=8

srcalt:ompl.32

324.apsi_m peak flags:

COPTIMIZE = -O2 -xSSE4.2 -ipo -no-prec-div -openmp

FOPTIMIZE = -O2 -xSSE4.2 -ipo -no-prec-div -openmp

F77OPTIMIZE = -O2 -xSSE4.2 -ipo -no-prec-div -openmp

328.fma3d_m peak flags:

srcalt:ompl.32

fdo_pre0 = rm -rf ./*.dyn

PASS1_FFLAGS = -prof-gen

PASS2_FFLAGS = -prof-use

PASS1_LDFLAGS = -prof-gen

PASS2_LDFLAGS = -prof-use

330.art_m peak flags:

COPTIMIZE = -O2 -xSSE4.2 -ipo -no-prec-div -openmp

FOPTIMIZE = -O2 -xSSE4.2 -ipo -no-prec-div -openmp

F77OPTIMIZE = -O2 -xSSE4.2 -ipo -no-prec-div -openmp

332.ammp_m peak flags:

COPTIMIZE = -O2 -xSSE4.2 -openmp

FOPTIMIZE = -O2 -xSSE4.2 -openmp

F77OPTIMIZE = -O2 -xSSE4.2 -openmp

For a description of the flags used, please see

Intel-ic11.1-intel64-linux-flags-file.html in the flags directory

The benchmark suite was installed and run on a RAM based

filesystem. No physical hard drives were used. The linux

default tmpfs file system type was used.