



OMPM2001 Result

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IBM Corporation

IBM BladeCenter JS22 (4.0 GHz, 4 core, SLES)

SPECompMpeak2001 = 19688

SPECompMbase2001 = 17980

SPEC license #HPG0005 | Tested by: IBM | Test site: Austin, TX | Test date: Oct-2007 | Hardware Avail: Nov-2007 | Software Avail: Sep-2007

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio	
310.wupwise_m	6000	232	25835	232	25835	
312.swim_m	6000	373	16083	355	16881	
314.mgrid_m	7300	476	15320	431	16922	
316.applu_m	4000	287	13933	253	15839	
318.galgel_m	5100	294	17327	252	20274	
320.earthquake_m	2600	112	23156	105	24863	
324.apsi_m	3400	176	19363	165	20652	
326.gafort_m	8700	544	15997	501	17350	
328.fma3d_m	4600	387	11888	385	11945	
330.art_m	6400	154	41673	122	52537	
332.ammp_m	7000	602	11627	538	13007	

Hardware

CPU: POWER6
 CPU MHz: 4000
 FPU: Integrated
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip, 2 threads/core
 CPU(s) orderable: 4 cores
 Primary Cache: 64 KB I + 64 KB D on chip per core
 Secondary Cache: 4 MB I+D on chip per core
 L3 Cache: None
 Other Cache: None
 Memory: 16 GB (4x4 GB) DDR2 667 MHz
 Disk Subsystem: 1x73 GB SAS 15K RPM
 Other Hardware: None

Software

OpenMP Threads: 8
 Parallel: OpenMP
 Operating System: SUSE Linux Enterprise 10 SP1
 Compiler: IBM XL C/C++ Advanced Edition for Linux, V9.0
 IBM XL Fortran Advanced Edition for Linux, V11.1
 Other Software: IBM Engineering and Scientific Subroutine Library for Linux on POWER, Version 4.3
 File System: reiserfs
 System State: Multi-User

Notes/Tuning Information

Portability Flags Variables

-qfixed used in: 310.wupwise_m, 312.swim_m, 314.mgrid_m, 316.applu_m, 324.apsi_m
 -qfixed=80 used in: 318.galgel_m
 -qsuffix=f=f90 used in: 318.galgel_m 326.gafort_m, 328.fma3d_m

Base Flags

C: -O5 -q32 -qsmp=omp
 FORTRAN: -O5 -q32 -qsmp=omp

Base & Peak Environment Flags:

ENV_OMP_NUM_THREADS = 8
 ENV_OMP_DYNAMIC=FALSE
 ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=1
 ENV_XLFRTEOPTS=intrinthds=1

Peak sources:

SPEC OMPL2001 source for 32bit systems modified for SPEC OMPM2001 used with 312.swim_m, 316.applu_m, 320.earthquake_m, 326.gafort_m

Peak Flags

-qsmp=omp used in all cases



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Notes/Tuning Information (Continued)

```

310.wupwise_m      basepeak = 1
312.swim_m:        -O4 -q32 -qpdf1/pdf2
                   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=1
314.mgrid_m:       -O4 -q64
                   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=2
                   ENV_OMP_NUM_THREADS = 4
316.applu_m:       -O4 -q64 -qpdf1/pdf2
                   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=1
318.galgel_m:      -O4 -q64 -qessl
                   -B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=BDT
                   EXTRA_LIBS=-lesslsm
                   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=1
                   ENV_HUGETLB_MORECORE=yes
320.equake_m:      -O5 -q64 -qpdf1/pdf2 -qhot=arraypad -Q
                   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=1
324.apsi_m:        -O5 -q64
                   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=1
                   ENV_HUGETLB_MORECORE=yes
                   ENV_LD_PRELOAD=libhugetlbfs.so
326.gafort_m:      -O4 -q32 -qhot=arraypad
                   -B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=B
                   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=1
328.fma3d_m:       -O5 -q64 -qhot=arraypad
                   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=1
                   ENV_HUGETLB_MORECORE=yes
330.art_m:         -O3 -q32 -qhot=arraypad -Q
                   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=1
                   ENV_HUGETLB_MORECORE=yes
                   ENV_LD_PRELOAD=libhugetlbfs.so
332.amp_m:         -O3 -q32 -qarch=pwr6e -qtune=pwr6 -qhot=arraypad -Q
                   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=1
                   ENV_HUGETLB_MORECORE=yes
                   ENV_LD_PRELOAD=libhugetlbfs.so

```

```

C:                IBM XL C for Linux invoked as xlc_r
Fortran 90:       IBM XL Fortran for Linux invoked as xlf90_r

```

kernel release 2.6.16.53-0.8-ppc64.

ulimit -s (stack) set to unlimited.

Large pages reserved as follows by root user:

```
echo 240 > /proc/sys/vm/nr_hugepages
```

System configured with libhugetlbfs library for application access to large pages

Use flags-description file IBM-20070718-Linux.txt