OMPM2001 Result

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IBM Corporation

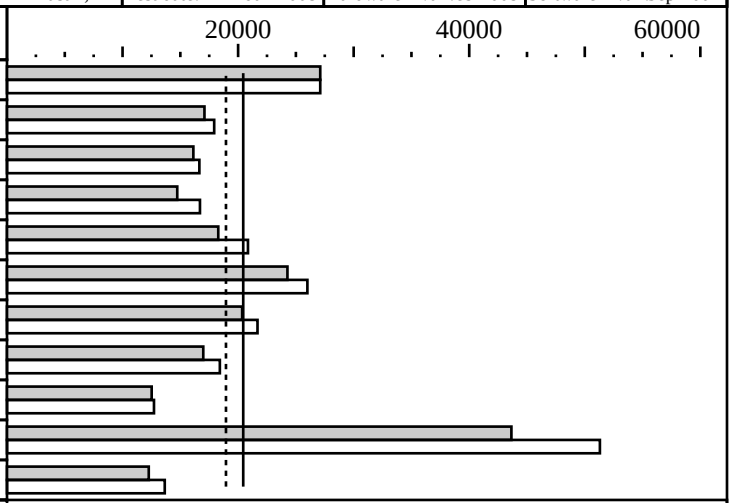
IBM System p 520 (4.2 GHz, 4 core, SLES)

SPECompMpeak2001 = 20443

SPECompMbase2001 = 18950

SPEC license #: HPG0005 | Tested by: IBM | Test site: Austin, TX | Test date: Jan-2008 | Hardware Avail: Feb-2008 | Software Avail: Sep-2007

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	221	27108	221	27108
312.swim_m	6000	351	17088	335	17930
314.mgrid_m	7300	453	16127	439	16647
316.applu_m	4000	271	14733	240	16699
318.galgel_m	5100	279	18283	245	20853
320.equake_m	2600	107	24269	100	25995
324.apsi_m	3400	167	20352	157	21678
326.gafort_m	8700	512	16985	472	18420
328.fma3d_m	4600	367	12519	362	12720
330.art_m	6400	147	43650	125	51308
332.ammp_m	7000	571	12267	513	13651



Hardware

CPU:	POWER6
CPU MHz:	4200
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 2 cores/chip. 2 threads/core
CPU(s) orderable:	1,2,4 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 (8x2 GB) DDR2 667 MHz
Disk Subsystem:	1x146 GB SAS 15K RPM
Other Hardware:	None

Software

OpenMP Threads:	8
Parallel:	OpenMP
Operating System:	SUSE Linux Enterprise Server 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:	ext3
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 -qarch=pwr6
   FORTRAN:  -O5 -q32 -qsmp=omp -qarch=pwr6

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.equake_m, 326.gafort_m


Peak Flags
  -qsmp=omp -qarch=pwr6 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=1
    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=-lesslsmp
                    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
                    ENV_LD_PRELOAD=libhugetlbfs.so
    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.ammp_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

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

kernel release 2.6.16.46-0.12-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
```