OMPM2001 Result

IBM Corporation

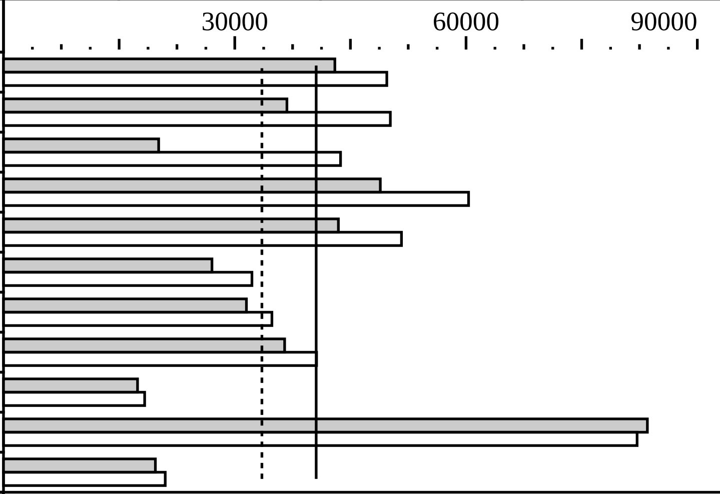
IBM System p5 575 (2200 MHz, 8 CPU)

SPECompMpeak2001 = 40560

SPECompMbase2001 = 33521

SPEC license #: HPG0005	Tested by: IBM	Test site: Austin, TX	Test date: Dec-2005	Hardware Avail: Feb-2006	Software Avail: Feb-2006

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	140	42983	121	49722
312.swim_m	6000	163	36765	120	50178
314.mgrid_m	7300	363	20127	167	43720
316.applu_m	4000	81.8	48878	66.3	60328
318.galgel_m	5100	117	43440	98.8	51625
320.equake_m	2600	96.1	27041	80.7	32227
324.apsi_m	3400	108	31511	97.7	34818
326.gafort_m	8700	239	36468	214	40611
328.fma3d_m	4600	265	17387	251	18310
330.art_m	6400	76.6	83521	77.9	82188
332.ammp_m	7000	355	19702	334	20979



Hardware

CPU:	POWER5+
CPU MHz:	2200
FPU:	Integrated
CPU(s) enabled:	8 cores, 8 chips, 1 core/chip (SMT on)
CPU(s) orderable:	8,16
Primary Cache:	64KBI+32KBD (on chip)/core
Secondary Cache:	1920KB unified, shared (on chip)/chip
L3 Cache:	36MB unified (off-chip)/DCM, 8 DCMs/SUT
Other Cache:	None
Memory:	64x512MB
Disk Subsystem:	2x73GB SCSI, 15K RPM
Other Hardware:	None

Software

OpenMP Threads:	16
Parallel:	OpenMP
Operating System:	AIX 5L V5.3
Compiler:	XL C/C++ Enterprise Edition Version 8.0 for AIX XL Fortran Enterprise Edition Version 10.1 for AIX Other Software: ESSL 4.2.0.3
File System:	AIX/JFS2
System State:	Multi-user

Notes/Tuning Information

```
 Portability Flags & Environment 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:        -qpdf1/pdf2
            -q64 -O5 -qalign=natural -qhot=arraypad -Q -bdatapsize:64K -qsmp=omp
  FORTRAN: -O5 -qipa=noobject -qipa=partition=large -qmaxmem=-1 -qsmp=omp
            EXTRA_LDFLAGS=-bmaxdata:0x80000000

Base & Peak User Environment:
  OMP_NUM_THREADS=16
  OMP_DYNAMIC=FALSE
  XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:SCHEDULE=STATIC:STARTPROC=0:STRIDE=1
  MALLOCMULTIHEAP=1

Peak Flags:
  -qsmp=omp used in all cases
 310.wupwise_m:    -O5 -qhot=arraypad -qipa=noobject -qipa=partition=large -qmaxmem=-1 -q64 -btextpsize:64K -bdatapsize:64K
                        fdpr -q -O3
 312.swim_m:       -O5 -qarch=pwr3 -qtune=pwr3 -q64 -btextpsize:64K -bdatapsize:64K -bstackpsize:64K
 314.mgrid_m:      -O5 -qipa=partition=large -qalign=struct=natural  -q64 -btextpsize:64K -bdatapsize:64K
```

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Notes/Tuning Information (Continued)

```
 316.applu_m:      -O3 -qarch=pwr4 -qtune=pwr4 -q64 -btextpsize:64K -bdatapsize:64K
 318.galgel_m:     -O5 -qarch=pwr3 -qtune=pwr3 -btextpsize:64K -bdatapsize:64K -bstackpsize:64K -lmass -qessl -lesslsmp
                   EXTRA_LDFLAGS=-bmaxdata:0x80000000
 320.equake_m:     -qpdf1/pdf2
                   -O5 -qfdpr -q64 -bdatapsize:64K
                   fdpr -q -O3
 325.apsi_m:       -O5 -qalign=struct=natural -bdatapsize:64K -bstackpsize:64K
                   EXTRA_LDFLAGS=-bmaxdata:0x80000000
               XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:SCHEDULE=STATIC:STARTPROC=0:STRIDE=2
 326.gafort_m:     -O5 -qhot=arraypad -qipa=noobject -qipa=partition=large -qmaxmem=-1 -qalign=struct=natural
               -btextpsize:64K -bdatapsize:64K -bstackpsize:64K -lhmu -lmass -qessl -lesslsmp
                   EXTRA_LDFLAGS=-bmaxdata:0x80000000
 328.fma3d_m:      -O5 -qhot=arraypad -qipa=noobject -qipa=partition=large -qmaxmem=-1 -btextpsize:64K -bdatapsize:64K
                   -bstackpsize:64K -lmass -qessl -lesslsmp
                   EXTRA_LDFLAGS=-bmaxdata:0x80000000
 330.art_m:        -qpdf1/pdf2
                   -O5 -qfdpr -q64 -btextpsize:64K -bdatapsize:64K -lesslsmp
                   fdpr -q -O3
                   EXTRA_CFLAGS= -DINTS_PER_CACHELINE=32 -DDBLS_PER_CACHELINE=16
 332.ammp_m:       -qpdf1/pdf2
               -O5 -qipa=partition=large -qmaxmem=-1 -q64 -btextpsize:64K -bdatapsize:64K

Alternate sources:
   Add critical region around update of linked list in parallel loop.
   Approved src.alt available as ompm-purdue1-20040324.tar.gz
   Used for 330.art_m, base and peak.

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.


The installed OS level is AIX 5L for POWER version 5.3 with the 5300-04 Recommended Technology Level.

SMT:  Acronym for "Simultaneous Multi-Threading". A processor technology that allows
      the simultaneous execution of multiple thread contexts within a single processor
      core. (Enabled by default)
DCM:  Acronym for "Dual-Chip Module" (one dual-core processor chip + one L3-cache chip)
SUT:  Acronym for "System Under Test"
ESSL: Engineering and Scientific Subroutine Library

ANSI C89:      IBM XL C for AIX invoked as xlc_r
Fortran 90:    IBM XL Fortran for AIX invoked as xlf_r

ulimits set to unlimited.
Large page mode and memory affinity were set as follows:
    vmo -r -o lgpg_regions=1024 -o lgpg_size=16777216
    chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
    shutdown -rF
    export MEMORY_AFFINITY=MCM

The following config-file entry was used to assign each benchmark process to a core:
     submit = bindprocessor $$ $SPECUSERNUM; $command
The "bindprocessor" AIX command binds a process to a CPU core.
```