OMPM2001 Result

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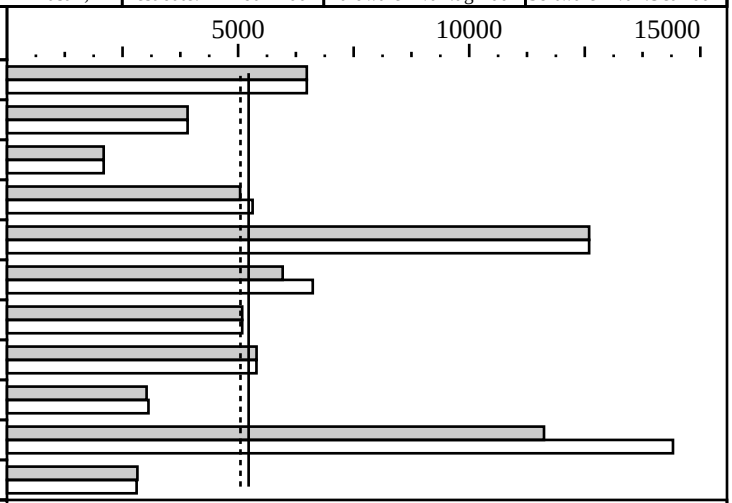
IBM Corporation
IBM eServer p5 520 (1650 MHz, 2 CPU)

SPECompMpeak2001 = 5228

SPECompMbase2001 = 5051

SPEC license #:	HPG0005	Tested by:	IBM	Test site:	Austin, TX	Test date:	Jun-2004	Hardware Avail:	Aug-2004	Software Avail:	Oct-2004

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	925	6486	925	6486
312.swim_m	6000	1536	3907	1536	3907
314.mgrid_m	7300	3490	2092	3490	2092
316.applu_m	4000	793	5044	753	5314
318.galgel_m	5100	405	12594	405	12594
320.equake_m	2600	436	5964	393	6615
324.apsi_m	3400	668	5089	668	5089
326.gafort_m	8700	1611	5399	1612	5397
328.fma3d_m	4600	1523	3020	1503	3061
330.art_m	6400	551	11618	444	14408
332.ammp_m	7000	2481	2821	2496	2804



Hardware

CPU:	POWER5
CPU MHz:	1650
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 cores/chip (SMT on)
CPU(s) orderable:	2
Primary Cache:	64KBI+32KBD (on chip)/core
Secondary Cache:	1920KB unified (on chip)/chip
L3 Cache:	36MB unified (off chip)/DCM, 1 DCM/SUT
Other Cache:	none
Memory:	8x4 GB
Disk Subsystem:	1x36GB SCSI, 15K RPM
Other Hardware:	

Software

OpenMP Threads:	4
Parallel:	OpenMP
Operating System:	AIX 5L V5.3
Compiler:	XL C/C++ Enterprise Edition Version 7.0 for AIX XL Fortran Enterprise Edition V9.1 for AIX Other Software: IBM Engineering and Scientific Subroutine Library for AIX, Version 4 Release 2
File System:	AIX/JFS2
System State:	Multi-user

Notes/Tuning Information

```
Tested by IBM
 Portability Flags & Environment Variables

   Linker flag: -bmaxdata:0x80000000 used in all ca
   -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
   Linker flag: -bmaxdata:0xD0000000 used in 330.art_m (for base and peak)

 Base Flags
   C: -q64 -O5 -qalign=natural -qipa=partition=large -qmaxmem=-1 -qsmp=omp
   FORTRAN:-O5 -qipa=partition=large -qmaxmem=-1 -qsmp=omp

 Base & Peak User Environment:
   OMP_NUM_THREADS=4
   OMP_DYNAMIC=FALSE
   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:SCHEDULE=STATIC
   MALLOCMULTIHEAP=1

 Peak Flags
   -qsmp=omp used in all cases
   310.wupwise_m: basepeak=1
   312.swim_m:    -O5 -qtune=pwr5 -qarch=pwr5
```

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Notes/Tuning Information (Continued)

```
    314.mgrid_m:   basepeak=1
    316.applu_m:   -O5 -qtune=pwr5 -qarch=pwr5
    318.galgel_m:  basepeak = 1
    320.equake_m:  -q64 -O5 -qalign=natural -qhot=arraypad -Q
    324.apsi_m:    basepeak=1
    326.gafort_m:  -O5 -qhot=arraypad -qipa=partition=large -qmaxmem=-1
    328.fma3d_m:   -O5 -qhot=arraypad -qipa=noobject
                   -qipa=partition=large -qmaxmem=-1
    330.art_m:     -qpdf1/pdf2
                   -q64 -O5 -blpdata -qalign=natural -qhot=arraypad -Q
    332.ammp_m:    -q64 -O5 -qalign=natural -qhot=arraypad -Q

  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.

  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"

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

  ulimits set to unlimited.
  Large page mode and memory affinity were set as follows:
    vmo -r -o lgpg_regions=400 -o lgpg_size=16777216 -o memory_affinity=1
    chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
    reboot -q
    export MEMORY_AFFINITY=MCM
```