OMPM2001 Result

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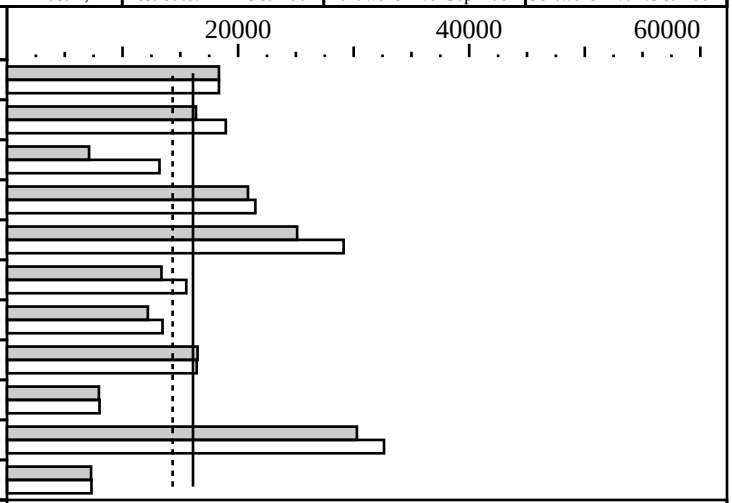
IBM Corporation
IBM eServer p5 570 (1900 MHz, 4 CPU)

SPECompMpeak2001 = 16096

SPECompMbase2001 = 14335

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	327	18343	327	18343
312.swim_m	6000	367	16353	317	18934
314.mgrid_m	7300	1028	7102	553	13196
316.applu_m	4000	192	20854	186	21492
318.galgel_m	5100	203	25110	175	29130
320.equake_m	2600	194	13369	168	15514
324.apsi_m	3400	279	12189	253	13460
326.gafort_m	8700	527	16493	530	16416
328.fma3d_m	4600	578	7954	574	8009
330.art_m	6400	211	30280	196	32627
332.ammp_m	7000	962	7274	958	7309



Hardware

CPU:	POWER5
CPU MHz:	1900
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 2 cores/chip (SMT on)
CPU(s) orderable:	2,4,8,12,16
Primary Cache:	64KBI+32KBD (on chip)/core
Secondary Cache:	1920KB unified (on chip)/chip
L3 Cache:	36MB unified (off-chip)/DCM, 2 DCM/SUT
Other Cache:	None
Memory:	16x1 GB DDR2
Disk Subsystem:	1x36GB SCSI, 15K RPM
Other Hardware:	None

Software

OpenMP Threads:	8
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: ESSL for AIX V4.2
File System:	AIX/JFS2
System State:	Multi-user

Notes/Tuning Information

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Tested by IBM

 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 -blpdata -qalign=natural -qhot=arraypad -Q -qsmp=omp
            EXTRA_LDFLAGS=-bmaxdata:0x80000000
   FORTRAN: -O5 -qhot=arraypad -qipa=noobject -qipa=partition=large -qmaxmem=-1 -qsmp=omp
            EXTRA_LDFLAGS=-bmaxdata:0x80000000

 Base & Peak User Environment:
   OMP_NUM_THREADS=$ENV_OMP_NUM_THREADS
   OMP_DYNAMIC=FALSE
   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:SCHEDULE=STATIC:STARTPROC=0:STRIDE=2
   MALLOCMULTIHEAP=1

 Peak Flags:
   -qsmp=omp used in all cases
   310.wupwise_m:    basepeak=1
```

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Notes/Tuning Information (Continued)

```
                ENV_OMP_NUM_THREADS=7
 312.swim_m:    -q64 -O5 -qarch=pwr3 -qtune=pwr3
                EXTRA_LDFLAGS=-q64
 314.mgrid_m:   -qpdf1/pdf2
                -q64 -O5 -blpdata -qalign=natural -qhot=arraypad -Q
                ENV_OMP_NUM_THREADS=4
 316.applu_m:   -q64 -O4 -qhot -qmaxmem=-1
                EXTRA_LDFLAGS=-q64
 318.galgel_m:  -q64 -O5 -qessl -lesslsmp
                EXTRA_LDFLAGS=-q64
 320.equake_m:  -qpdf1/pdf2
                -q64 -O5 -qessl -lesslsmp
                EXTRA_LDFLAGS=-bmaxdata:0x80000000
 325.apsi_m:    -qpdf1/pdf2
                -q64 -O5 -blpdata -qalign=natural -qhot=arraypad -Q
 326.gafort_m:  -O5 -qipa=partition=large
                EXTRA_LDFLAGS=-bmaxdata:0x80000000
 328.fma3d_m:   -O5 -qhot=arraypad -qipa=noobject -qipa=partition=large -qmaxmem=-1
                EXTRA_LDFLAGS=-bmaxdata:0x80000000
 330.art_m:     -qpdf1/pdf2
                -q64 -O5 -blpdata -qalign=natural -qhot=arraypad -Q
 332.ammp_m:    -qpdf1/pdf2
                -q64 -O5 -blpdata -qalign=natural -qhot=arraypad -Q


Alternate sources:
   Required srcalt=purdue1 is applied to 330.art_m (base & peak) for correctness.

Peak sources:
   Optional SPEC OMPL2001 source for 32bit systems (modified for SPEC OMPM2001) was

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 Acronym for "Dual-Chip Module" (one dual-core processor chip + one L3-cache chip)
ESSL: Engineering and Scientific Subroutine Library
SUT: Acronym for "System Under Test"

C:       IBM XL C for AIX invoked as xlc_r
Fortran: 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=500 -o lgpg_size=16777216 -o memory_affinity=1
   chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
   shutdown -r
   export MEMORY_AFFINITY=MCM

For a description of IBM's compiler flags, portability flags, and system parameters
used to generate this result, please refer to the IBM-20041019-AIX.txt file in the
flags directory.
```