OMPM2001 Result

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IBM Corporation

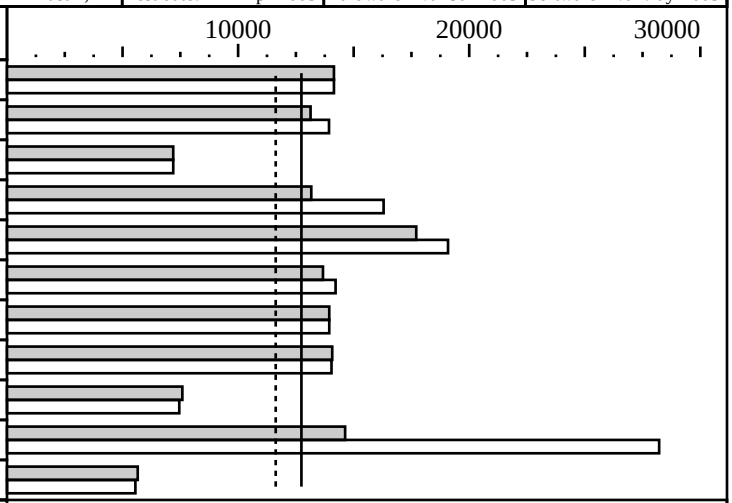
IBM eServer pSeries 655 (1500 MHz, 8 CPU)

SPECompMpeak2001 = 12739

SPECompMbase2001 = 11627

SPEC license #: HPG0005 | Tested by: IBM | Test site: Austin, TX | Test date: Apr-2003 | Hardware Avail: Jul-2003 | Software Avail: May-2003

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	424	14147	424	14147
312.swim_m	6000	457	13135	431	13933
314.mgrid_m	7300	1015	7193	1015	7193
316.applu_m	4000	304	13166	245	16296
318.galgel_m	5100	288	17708	267	19083
320.equake_m	2600	190	13672	183	14218
324.apsi_m	3400	244	13944	244	13944
326.gafort_m	8700	618	14072	620	14041
328.fma3d_m	4600	606	7587	617	7454
330.art_m	6400	437	14630	227	28218
332.ammp_m	7000	1237	5657	1260	5555



Hardware

CPU:	POWER4+
CPU MHz:	1500
FPU:	Integrated
CPU(s) enabled:	8 cores, 4 chips, 2 cores/chip, 4 chip/MCM
CPU(s) orderable:	1 (order by # MCM)
Primary Cache:	64KBI+32KBD (on chip)/core
Secondary Cache:	1536KB unified (on chip)/chip
L3 Cache:	128MB unified (off chip)/MCM, 1 MCM in SUT
Other Cache:	None
Memory:	32GB
Disk Subsystem:	1x36GB SCSI, 10K RPM
Other Hardware:	None

Software

OpenMP Threads:	8
Parallel:	OpenMP
Operating System:	AIX 5L V5.2
Compiler:	IBM C for AIX, Version 6.0 IBM XL FORTRAN for AIX, Version 8.1.0.3 Other Software: ESSL 3.3, MASS 3.0
File System:	AIX/JFS
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
    ENV_XLFRTEOPTS=NAMELIST=OLD used in: 326.gafort_m
 Base Flags
    C:        -O5 -qalign=natural -qipa=partition=large -qmaxmem=-1
              -bmaxdata:0x80000000 -qsmp=omp
    FORTRAN:  -O5 -qalign=natural -qipa=partition=large -qmaxmem=-1
              -bmaxdata:0x80000000 -qsmp=omp
 Base & Peak User Environment:
    OMP_NUM_THREADS=8
    OMP_DYNAMIC=FALSE
    XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:SCHEDULE=STATIC
    MALLOCMULTIHEAP=1
 Peak Flags
   -bmaxdata:0x80000000 used in all cases
   -qsmp=omp used in all cases
   310.wupwise_m:   basepeak=true
   312.swim_m:      -O3 -qalign=natural -qtune=pwr4 -qarch=pwr4
   314.mgrid_m:     basepeak=true
   316.applu_m:    -O3 -qalign=natural -qtune=pwr4 -qarch=pwr4
```

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Notes/Tuning Information (Continued)

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    318.galgel_m:   -O5 -qalign=natural -qhot=arraypad -qessl -qlibessl -lesslsmp
                    -lpesslsmp -lblacssmp -lmass -qipa=partition=large -qmaxmem=-1
    320.equake_m:   -O5 -qalign=natural -qhot=arraypad -Q
    324.apsi_m:     basepeak=true
    326.gafort_m:   -O5 -qalign=natural -qhot=arraypad -qipa=partition=large
                    -qmaxmem=-1
    328.fma3d_m:    -O5 -qalign=natural -qhot=arraypad -qipa=noobject
                    -qipa=partition=large -qmaxmem=-1
    330.art_m:      -O5 -qalign=natural -qhot=arraypad -Q
    332.ammp_m:     -O5 -qalign=natural -qhot=arraypad -Q


  Peak Sources:
    318.galgel_m: eigQR.f90 (for portability to lapack version 3).
    Available as SPEC OMP2001 Source: omp2001-galgel-20020117.tar.gz.

    SPEC OMPL2001 source for 32bit systems modified for SPEC OMPM2001.
    Available as SPEC OMPM2001 Source: ompm2001-srcl32bit-20020925.tar.gz.
    For 312.swim_m, 316.applu_m, 320.equake_m, 326.gafort_m.
    330.art_m's src.alt is ompm2001-fabs-20030418.tar.gz.


  MCM: Acronym for "Multi-Chip Module"
  SUT: Acronym for "System Under Test"
  C:          IBM VAC++ invoked as xlc_r
  Fortran 90: IBM XL Fortran for AIX invoked as xlf90_r
  APAR IY 43549 was applied to AIX to enable new hardware support.
  ulimits set to unlimited.
  Memory affinity was set as follows:
    vmo -r -o memory_affinity=1
    shutdown -r
    export MEMORY_AFFINITY=MCM
```