OMPM2001 Result

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IBM Corporation

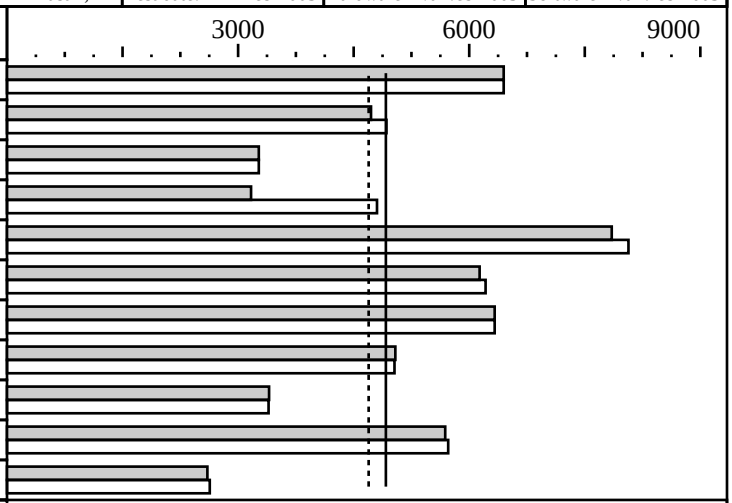
IBM eServer pSeries 630 Model 6E4 (1450 MHz, 4 CPU)

SPECompMpeak2001 = 4918

SPECompMbase2001 = 4695

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	931	6448	931	6448
312.swim_m	6000	1270	4725	1218	4925
314.mgrid_m	7300	2233	3269	2233	3269
316.applu_m	4000	1263	3168	833	4803
318.galgel_m	5100	650	7850	632	8067
320.equake_m	2600	424	6135	419	6212
324.apsi_m	3400	537	6330	537	6330
326.gafort_m	8700	1726	5041	1730	5030
328.fma3d_m	4600	1352	3402	1355	3395
330.art_m	6400	1125	5688	1118	5727
332.ammp_m	7000	2691	2601	2660	2632



Hardware

CPU:	POWER4+
CPU MHz:	1450
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 2 cores/chip, 1 chip/SCM
CPU(s) orderable:	1,2 (order by # SCM)
Primary Cache:	64KBI+32KBD (on chip)/core
Secondary Cache:	1536KB unified (on chip)/chip
L3 Cache:	8MB unified (off chip)/SCM, 2 SCM in SUT
Other Cache:	None
Memory:	2x8x1 = 16GB
Disk Subsystem:	1x36GB SCSI
Other Hardware:	None

Software

OpenMP Threads:	4
Parallel:	OpenMP
Operating System:	AIX 5L V5.2
Compiler:	XL Fortran for AIX, Version 8.1 PTF 2 IBM C for AIX, Version 6.0 PTF 2 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=4
      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
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Notes/Tuning Information (Continued)

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      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
      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: 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,
          332.ammp_m.


    SCM: Acronym for "Single-Chip Module"
    SUT: Acronym for "System Under Test"

    The 4-way pSeries 630 machine contains 2 CPU boards.

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

    APAR IY 38292 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

  IBM eServer pSeries 630 Model 6C4 (deskside/desktop server) and pSeries
  630 Model 6E4 (rack-mount server) are electronically equivalent.
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