OMPM2001 Result

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IBM Corporation

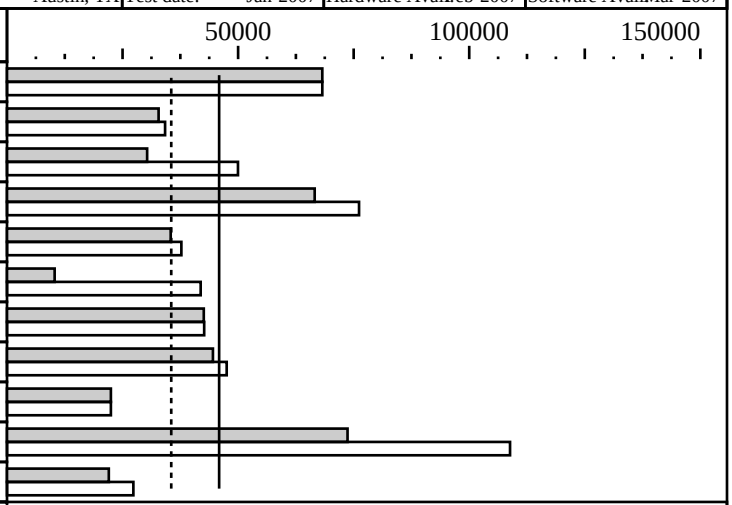
IBM System p5 560Q (1800 Mhz, 16 core, RHEL)

SPECompMpeak2001 = 45895

SPECompMbase2001 = 35534

SPEC license #: HPG0005 | Tested by: IBM | Test site: Austin, TX | Test date: Jan-2007 | Hardware Avail: Feb-2007 | Software Avail: Mar-2007

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	88.0	68215	88.0	68215
312.swim_m	6000	183	32799	175	34201
314.mgrid_m	7300	241	30318	146	49972
316.applu_m	4000	60.1	66566	52.5	76164
318.galgel_m	5100	144	35417	135	37725
320.equake_m	2600	252	10308	62.1	41900
324.apsi_m	3400	79.9	42573	79.7	42659
326.gafort_m	8700	195	44553	183	47529
328.fma3d_m	4600	205	22475	205	22475
330.art_m	6400	86.9	73675	58.8	108831
332.ammp_m	7000	318	22026	256	27340



Hardware

CPU:	POWER5+
CPU MHz:	1800
FPU:	Integrated
CPU(s) enabled:	16 cores, 8 chips, 2 cores/chip (SMT on)
CPU(s) orderable:	4, 8, 16 cores
Primary Cache:	64 KB I + 32 KB D on chip per core
Secondary Cache:	1920 KB I+D on chip per chip
L3 Cache:	36 MB I+D off chip per chip
Other Cache:	None
Memory:	64 GB (32x2 GB)
Disk Subsystem:	1x73GB SCSI, 15K RPM
Other Hardware:	None

Software

OpenMP Threads:	32
Parallel:	OpenMP
Operating System:	Red Hat Enterprise Linux Server release 5
Compiler:	IBM XL C/C++ Advanced Edition V8.0 for Linux IBM XL Fortran Advanced Edition V10.1 for Linux
File System:	ext3
System State:	Multi-User

Notes/Tuning Information

```
Portability Flags & Environment Variables
  -qsmp=omp used in all cases
  -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:  326.gafort_m, 328.fma3d_m

Base Flags
   C:        -O5 -q64 -qhot=arraypad -Q
   FORTRAN:  -O5 -qipa=noobject -qipa=partition=large -qmaxmem=-1 -qipa=threads=4

Base & Peak User Environment:
  OMP_NUM_THREADS=32 (defaulted to number of processes)
  XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:SCHEDULE=STATIC:STARTPROC=0:STRIDE=1
  OMP_DYNAMIC=FALSE
  MALLOCMULTIHEAP=1
  XLFRTEOPTS=intrinthds=1

Peak Flags:
  -qsmp=omp used in all cases
  310.wupwise_m:  basepeak=1
  312.swim_m:     -qpdf1/pdf2
                  -O4 -q64
                  ENV_HUGETLB_MORECORE=yes
```

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Notes/Tuning Information (Continued)

```
                    ENV_LD_PRELOAD=libhugetlbfs.so
   314.mgrid_m:     -O5 -q64 -qipa=partition=large -qmaxmem=-1
   316.applu_m:     -qpdf1/pdf2
                    -O4 -q64
                    ENV_HUGETLB_MORECORE=yes
                    ENV_LD_PRELOAD=libhugetlbfs.so
   318.galgel_m:    -q64 -O5 -qmaxmem=-1 -qarch=pwr3 -qtune=pwr3 -qipa=partition=large
   320.equake_m:    -qpdf1/pdf2
                    -O5 -q64 -qarch=pwr5 -qtune=pwr5 -qhot=arraypad -Q
   324.apsi_m:      -O5 -qipa=partition=large -qmaxmem=-1
   326.gafort_m:    -O5 -qhot=arraypad -qipa=partition=large -qmaxmem=-1
                    ENV_HUGETLB_MORECORE=yes
                    ENV_LD_PRELOAD=libhugetlbfs.so
   328.fma3d_m:     basepeak = 1
   330.art_m:       -qpdf1/pdf2
                    -O5 -q64 -qhot=arraypad -Q
   332.ammp_m:      -O3 -q32 -qipa=partition=large -qmaxmem=-1 -qhot=arraypad -Q
                    ENV_HUGETLB_MORECORE=yes
                    ENV_LD_PRELOAD=libhugetlbfs.so

Peak sources:
   SPEC OMPL2001 source for 32bit systems modified for SPEC OMPM2001 used
   with 312.swim_m (srcalt=ompl.32), 316.applu_m (srcalt=ompl.32),
   320.equake_m (srcalt=ompl.32), 326.gafort_m (srcalt=ompl.32)

Executables built on RHEL4 u3 with IBM compilers as specified above
on a similar POWER5+ 2200 MHz processor with 32GB of memory.
Executables ran on RHEL5 with associated IBM compiler run-time libraries.
   IBM XL C/C++ Advanced Edition V8.0 for Linux Runtime Environment Component
   IBM XL Fortran Advanced Edition V10.1 for Linux Runtime Environment Component

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.

 C:              IBM XL C for Linux invoked as xlc_r
 Fortran:        IBM XL Fortran for Linux invoked as xlf90_r

ulimits set to unlimited.
Large pages reserved as follows by root user:
    echo 200 > /proc/sys/vm/nr_hugepages
System configured with libhugetlbfs library for application access to large pages
(16 MB)

Use flags-description file IBM-20070212-Linux.txt
```