



OMPM2001 Result

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IBM Corporation
IBM System p 570 (4.7 GHz, 16 core)

SPECompMpeak2001 = 86524

SPECompMbase2001 = 80769

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio	
310.wupwise_m	6000	44.5	134916	44.5	134916	
312.swim_m	6000	63.2	94979	58.8	102009	
314.mgrid_m	7300	59.3	123136	55.1	132417	
316.applu_m	4000	27.8	143979	22.8	175722	
318.galgel_m	5100	117	43733	113	45239	
320.earthquake_m	2600	52.6	49432	45.6	57003	
324.apsi_m	3400	38.9	87484	38.9	87398	
326.gafort_m	8700	126	68781	115	75390	
328.fma3d_m	4600	91.9	50074	91.9	50074	
330.art_m	6400	43.1	148610	37.2	172090	
332.ammp_m	7000	161	43394	161	43394	

Hardware

CPU: POWER6
 CPU MHz: 4700
 FPU: Integrated
 CPU(s) enabled: 16 cores, 8 chips, 2 cores/chip, 2 threads/core
 CPU(s) orderable: 2,4,8,12,16 cores
 Primary Cache: 64 KB I + 64 KB D on chip per core
 Secondary Cache: 4 MB I+D on chip per core
 L3 Cache: 32 MB I+D off chip per chip
 Other Cache: None
 Memory: 128 GB (64x2 GB) DDR2 667 MHz
 Disk Subsystem: 2x73 GB 2x146 GB SAS 15K RPM
 Other Hardware: None

Software

OpenMP Threads: 32
 Parallel: OpenMP
 Operating System: IBM AIX 5L V5.3
 Compiler: XL C/C++ Enterprise Edition Version 9.0 for AIX
 XL Fortran Enterprise Edition Version 11.1 for AIX
 File System: AIX/JFS2
 System State: Multi-user

Notes/Tuning Information

Portability Flags 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

FORTTRAN: -O5 -qsmp=omp -qsuppress=cmpmsg -qipa=partition=large -qmaxmem=-1
 -bmaxdata:0x80000000 -btextpsize:64K -bdatapsize:64K

C: -O5 -q64 -qsmp=omp -qipa=partition=large -qmaxmem=-1
 -btextpsize:64K -bdatapsize:64K

ALL: ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:SCHEDULE=STATIC:STARTPROC=0:STRIDE=1
 ENV_OMP_NUM_THREADS=32

Base & Peak User Environment:

OMP_DYNAMIC=FALSE
 MALLOCOPTIONS=multiheap
 MEMORY_AFFINITY=MCM
 XLFRTEOPTS=intrinthds=1

Peak sources:

SPEC OMPL2001 source for 32bit systems modified for SPEC OMPM2001 used
 with 312.swim_m, 316.applu_m, 320.earthquake_m, 326.gafort_m.



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Notes/Tuning Information (Continued)

Peak Flags:

```

310.wupwise_m:      basepeak=1
312.swim_m:         -O4 -q64 -bdatapsize:64K
                   -qsmp=omp -qsuppress=cmpmsg -qipa=partition=large -qmaxmem=-1
                   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:SCHEDULE=STATIC:STARTPROC=0:STRIDE=1
                   ENV_OMP_NUM_THREADS=32
314.mgrid_m:       -O4 -q64 -btextpsize:64K
                   -bdatapsize:64K -bstackpsize:64K
                   -qsmp=omp -qsuppress=cmpmsg -qipa=partition=large -qmaxmem=-1
                   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:SCHEDULE=STATIC:STARTPROC=0:STRIDE=1
                   ENV_OMP_NUM_THREADS=32
316.applu_m:       -O4 -q64 -bdatapsize:64K -qpdf1/pdf2
                   -qsmp=omp -qsuppress=cmpmsg
                   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:SCHEDULE=STATIC:STARTPROC=1:STRIDE=1
                   ENV_OMP_NUM_THREADS=31
318.galgel_m:      -O5 -bmaxdata:0x20000000 -btextpsize:64K
                   -bdatapsize:64K -bstackpsize:64K
                   -qsmp=omp -qsuppress=cmpmsg
                   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:SCHEDULE=STATIC:STARTPROC=0:STRIDE=1
                   ENV_OMP_NUM_THREADS=32
320.earthquake_m: -O5 -q64 -qhot=arraypad -Q -qpdf1/pdf2
                   -btextpsize:64K -bdatapsize:64K
                   -qsmp=omp -qipa=partition=large -qmaxmem=-1
                   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:SCHEDULE=STATIC:STARTPROC=1:STRIDE=1
                   ENV_OMP_NUM_THREADS=31
324.apsi_m:        -O5 -bmaxdata:0x80000000
                   -btextpsize:64K -bdatapsize:64K
                   -qsmp=omp -qsuppress=cmpmsg -qipa=partition=large -qmaxmem=-1
                   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:SCHEDULE=STATIC:STARTPROC=1:STRIDE=1
                   ENV_OMP_NUM_THREADS=31
326.gafort_m:      -O4 -qpdf1/pdf2
                   -bmaxdata:0x80000000
                   -qsmp=omp -qsuppress=cmpmsg -qipa=partition=large -qmaxmem=-1
                   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:SCHEDULE=STATIC:STARTPROC=0:STRIDE=1
                   ENV_OMP_NUM_THREADS=32
328.fma3d_m:       basepeak=1
330.art_m:         -O5 -q64 -qpdf1/pdf2
                   -DINTS_PER_CACHELINE=2 -DDBLS_PER_CACHELINE=2
                   -btextpsize:64K -bdatapsize:64K
                   -qsmp=omp -qipa=partition=large -qmaxmem=-1
                   ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:SCHEDULE=STATIC:STARTPROC=0:STRIDE=1
                   ENV_OMP_NUM_THREADS=32
332.ammp_m:        basepeak=1

```

The installed OS level is AIX 5L for POWER version 5.3
with the 5300-06 Technology Level

C: IBM XL C for AIX invoked as xlc_r
Fortran: IBM XL Fortran for AIX invoked as xlf_r

ulimits set to unlimited.

User system privileges (capabilities) are set as follows:
chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE \$USER

The following config-file entry was used to assign each benchmark process to a core:



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Notes/Tuning Information (Continued)

```
submit = bindprocessor \${$} \${SPECUSERNUM}; $command
```

The "bindprocessor" AIX command binds a process to a CPU core.

Use flags-description file IBM-20070606-AIX.txt