



# OMPL2001 Result

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IBM Corporation  
IBM System p5 595 (2300 MHz, 64 CPU)

SPECompLpeak2001 = 1056459

SPECompLbase2001 = 1005583

SPEC license #HPG0005 | Tested by: IBM Austin | Test site: Austin, TX | Test date: Jul-2006 | Hardware Avail: Aug-2006 | Software Avail: Aug-2006

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
311.wupwise_l	9200	96.4	1526710	96.5	1524700
313.swim_l	12500	226	883307	192	1042300
315.mgrid_l	13500	238	906926	238	906150
317.applu_l	13500	151	1434136	151	1434136
321.quake_l	13000	534	389228	397	523692
325.apsi_l	10500	203	826038	195	862658
327.gafort_l	11000	218	808117	230	763663
329.fma3d_l	23500	583	644540	581	647645
331.art_l	25000	112	3579341	113	3552658

**Hardware**

CPU: POWER5+  
 CPU MHz: 2300  
 FPU: Integrated  
 CPU(s) enabled: 64 cores, 32 chips, 2 cores/chip (SMT on)  
 CPU(s) orderable: 16,32,48,64 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, 32 chips per SUT  
 Other Cache: None  
 Memory: 256 GB (64x4 GB)  
 Disk Subsystem: 2x73GB SCSI, 15K RPM  
 Other Hardware: None

**Software**

OpenMP Threads: 128  
 Parallel: OpenMP  
 Operating System: AIX 5L V5.3  
 Compiler: XL C/C++ Enterprise Edition Version 8.0 for AIX  
 XL Fortran Enterprise Edition Version 10.1 for AIX  
 Other Software: ESSL 4.2.0.4

File System: AIX/JFS2  
 System State: Multi-user

## Notes/Tuning Information

### Portability Flags & Environment Variables

-qfixed used in: 311.wupwise\_l, 313.swim\_l, 315.mgrid\_l, 317.applu\_l, 325.apsi\_l  
-qsuffix=f=f90 used in: 327.gafort\_l, 329.fma3d\_l

### Base Flags

C: -q64 -O5 -qsmp=omp -lmass -btextpsize:64K -bdatapsize:64K -bstacksize:64K -qalign=natural  
FORTRAN: -q64 -O5 -qsmp=omp -lmass -btextpsize:64K -bdatapsize:64K -bstacksize:64K

### Base & Peak User Environment:

MEMORY\_AFFINITY=MCM  
OMP\_DYNAMIC=TRUE  
XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:SCHEDULE=STATIC:STARTPROC=0:STRIDE=1  
OMP\_NUM\_THREADS=128  
XLFRTIOPTS=intrinthds=1  
MALLOCMULTIHEAP=1

### Peak Flags:

-qsmp=omp used in all cases  
311.wupwise\_l: -q64 -O5 -lmass -btextpsize:64K -bdatapsize:64K -bstacksize:64K  
OMP\_DYNAMIC = FALSE  
313.swim\_l: -O5 -qipa=noobject -qmaxmem=-1 -q64 -btextpsize:64K -bdatapsize:64K -bstacksize:64K  
OMP\_DYNAMIC = FALSE  
OMP\_NUM\_THREADS=64  
XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:SCHEDULE=STATIC:STARTPROC=0:STRIDE=2  
315.mgrid\_l: -q64 -O5 -lmass -btextpsize:64K -bdatapsize:64K -bstacksize:64K



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## Notes/Tuning Information (Continued)

```

ENV_OMP_DYNAMIC = FALSE
317.applu_l:      basepeak=1
321.earthquake_l: -q64 -O5 -lmass -btextpsize:64K -bdatapsize:64K -bstacksize:64K
                  OMP_DYNAMIC = FALSE
                  OMP_NUM_THREADS=64
                  XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:SCHEDULE=STATIC:STARTPROC=0:STRIDE=2
324.apsi_l:      -q64 -O5 -lmass -btextpsize:64K -bdatapsize:64K -bstacksize:64K
                  OMP_DYNAMIC = FALSE
327.gafort_l:    -q64 -O5 -lmass
                  OMP_DYNAMIC = FALSE
329.fma3d_l:    -q64 -O5 -lmass -btextpsize:64K -bdatapsize:64K -bstacksize:64K
                  OMP_DYNAMIC = FALSE
330.art_m:      -O5 -qipa=noobject -qmaxmem=-1 -q64 -btextpsize:64K -bdatapsize:64K -bstacksize:64K
                  EXTRA_CFLAGS= -DINTS_PER_CACHELINE=32 -DDBLS_PER_CACHELINE=16
                  OMP_DYNAMIC = FALSE

```

The installed OS level is AIX 5L for POWER version 5.3 with the 5300-04 Recommended Maintenance package. The installed C/C++ compiler is XL C/C++ Enterprise Edition Version 8.0 for AIX with the August 2006 PTF. The installed Fortran compiler is XL Fortran Enterprise Edition Version 10.1 with the August 2006 AIX PTF.

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)

SUT: Acronym for "System Under Test"

ESSL: Engineering and Scientific Subroutine Library

PTF: IBM identifier for "Program Fix 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.

Large page mode and memory affinity were set as follows:

```

vmo -r -o lpgg_regions=8192 -o lpgg_size=16777216
chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
bosboot -aD
shutdown -rF
export MEMORY_AFFINITY=MCM

```