



# OMPL2001 Result

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IBM Corporation  
IBM Power 770 (3.8 GHz, 64 core, RHEL)

SPECompLpeak2001 = 1964055  
SPECompLbase2001 = 1876580

SPEC license #HPG0005 | Tested by: IBM Corporation | Test site: Austin, TX | Test date: Sep-2012 | Hardware Avail: Oct-2012 | Software Avail: Dec-2012

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
311.wupwise_l	9200	77.4	1901706	77.4	1901706
313.swim_l	12500	104	1915718	96.9	2063758
315.mgrid_l	13500	166	1297618	128	1683742
317.applu_l	13500	114	1897718	112	1933663
321.quake_l	13000	173	1201853	168	1234538
325.apsi_l	10500	95.6	1757488	95.6	1757488
327.gafort_l	11000	140	1261308	140	1261308
329.fma3d_l	23500	379	992686	382	985401
331.art_l	25000	32.91	2163904	31.71	2620999

**Hardware**

CPU: POWER7+  
 CPU MHz: 3808  
 FPU: Integrated  
 CPU(s) enabled: 64 cores, 16 chips, 4 cores/chip, 4 threads/core  
 CPU(s) orderable: 16,32,48,64 cores  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core  
 L3 Cache: 10 MB I+D on chip per core  
 Other Cache: None  
 Memory: 1 TB (64 x 16 GB) DDR3 1066 MHz  
 Disk Subsystem: 12x146.8 GB SAS SFF 15K RPM  
 Other Hardware: None

**Software**

OpenMP Threads: 128  
 Parallel: OpenMP  
 Operating System: Red Hat Enterprise Linux Server 6.3 (2.6.32-279.el6.ppc64)  
 Compiler: IBM XL C/C++ for Linux, V12.1  
 Version: 12.01.0000.0002  
 IBM XL Fortran for Linux, V14.1  
 Version: 14.01.0000.0002  
 File System: ext4  
 System State: Run level 3 (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 -qhot=arraypad -qsmp=omp  
FORTRAN: -q64 -O5 -qhot=arraypad -qsmp=omp

### Base & Peak User Environment:

OMP\_NUM\_THREADS = 128  
OMP\_DYNAMIC=FALSE  
XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:PROCS=0,1,4,5,8,9,12,13,16,17,20,21,24,25,28,29,32,33,36,37,40,41,44,45,48,49,52,53,56,57,60,61,64,65,68,69,72,73,76,77,80,81,84,85,88,89,92,93,96,97,100,101,104,105,108,109,112,113,116,117,120,121,124,125,128,129,132,133,136,137,140,141,144,145,148,149,152,153,156,157,160,161,164,165,168,169,172,173,176,177,180,181,184,185,188,189,192,193,196,197,200,201,204,205,208,209,212,213,216,217,220,221,224,225,228,229,232,233,236,237,240,241,244,245,248,249,252,253

### Peak Flags

-q64 used in all cases



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## Notes/Tuning Information (Continued)

-qsmp=omp used in all cases

```
311.wupwise_l: basepeak = 1
313.swim_l:    -O3 -qhot=arraypad
315.mgrid_l:  -O5 -qpdf1/pdf2
              XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=4
              OMP_NUM_THREADS = 64
317.applu_l:  -O3 -qpdf1/pdf2
321.equake_l: -O5 -qhot=arraypad -qpdf1/pdf2
              XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=4
              OMP_NUM_THREADS = 64
325.apsi_l:   basepeak = 1
327.gafort_l: basepeak = 1
329.fma3d_l:  -O4 -qhot=arraypad
331.art_l:    -O5 -Q -qpdf1/pdf2
```

```
C:          IBM XL C for Linux invoked as xlc_r
Fortran 90: IBM XL Fortran for Linux invoked as xlf90_r
kernel release 2.6.32-279.el6.ppc64.
```

Use flags-description file IBM-20121004-Linux.txt  
ulimit -s (stack) set to 1048576.

Large pages reserved as follows by root user:  
echo 12000 > /proc/sys/vm/nr\_hugepages

System configured with libhugetlbfs library for application access to large pages  
Intelligent Energy Optimization enabled, up to 4312 MHz  
Service processor memory mirroring property disabled.  
The following environment variables were set before the runspec command:  
export HUGETLB\_MORECORE=yes  
export HUGETLB\_VERBOSE=0  
export HUGETLB\_ELFMAP=RW  
export HUGETLB\_SHM=yes