



# OMPL2001 Result

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IBM Corporation  
IBM Power 750 Express (3.55 GHz, 32 core, RedHat)

SPECompLpeak2001 = 773674  
SPECompLbase2001 = 714360

SPEC license #HPG0005 | Tested by: IBM | Test site: Austin, TX | Test date: Oct-2010 | Hardware Avail: Feb-2010 | Software Avail: Nov-2010

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
311.wupwise_l	9200	156	941084	156	941084
313.swim_l	12500	342	584451	315	634217
315.mgrid_l	13500	365	591881	296	729320
317.applu_l	13500	433	499281	388	556083
321.quake_l	13000	392	530148	300	693952
325.apsi_l	10500	360	467152	360	467152
327.gafort_l	11000	327	538740	327	538740
329.fma3d_l	23500	607	619194	602	624675
331.art_l	25000	111	3607724	106	3760743

Hardware	Software
CPU: POWER7 CPU MHz: 3556 FPU: Integrated CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip. 4 threads/core CPU(s) orderable: 8,16,24,32 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: 4 MB I+D on chip per core Other Cache: None Memory: 256 GB (32x8 GB) DDR3 1066 MHz Disk Subsystem: 2 x 146.8 GB SAS SFF 15K RPM Other Hardware: None	OpenMP Threads: 128 Parallel: OpenMP Operating System: Red Hat Enterprise Linux Server release 6.0 (ppc64) Kernel 2.6.32-71.el6.ppc64 Compiler: IBM XL C/C++ for Linux, V11.1 Updated with the Nov2010 PTF IBM XL Fortran for Linux, V13.1 Updated with the Nov2010 PTF File System: ext3 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:STRIDE=1  
XLFRTEOPTS=intrinths=1

### Peak Flags

-q64 used in all cases  
-qsmp=omp used in all cases

311.wupwise\_l: basepeak = 1

313.swim\_l: -O3 -qhot=arraypad

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  
OMP\_NUM\_THREADS = 64



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## Notes/Tuning Information (Continued)

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315.mgrid_l: -O5 -qpdf1/pdf2
              XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=4
              OMP_NUM_THREADS = 32
317.applu_l:  -O3
              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
321.equake_l: -O5 -qhot=arraypad -qpdf1/pdf2
              XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=4
              OMP_NUM_THREADS = 32
325.apsi_l:   basepeak = 1
327.gafort_l: basepeak = 1
329.fma3d_l:  -O4 -qhot=arraypad
331.art_l:    -O5 -Q -qpdf1/pdf2

```

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C:           IBM XL C for Linux invoked as xlc_r
Fortran 90:  IBM XL Fortran for Linux invoked as xlf90_r

```

Use flags-description file IBM-20100816-Linux.txt

ulimit -s (stack) set to 1048576.

Intelligent Energy Optimization enabled, up to 3.86 GHz