OMPM2001 Result

IBM Corporation

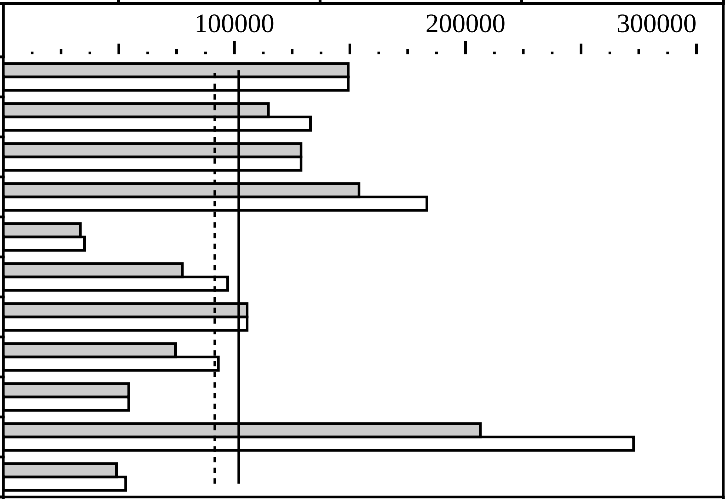
IBM Power 755 (3.3 GHz, 32 core, SLES)

SPECompMpeak2001 = 101911

SPECompMbase2001 = 91551

SPEC license #:	Tested by:	Test site:	Test date:	Hardware Avail:	Software Avail:
HPG0005	IBM Corporation	Austin, TX	Jan-2010	Feb-2010	Dec-2009

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	40.2	149267	40.2	149267
312.swim_m	6000	52.3	114696	45.1	132973
314.mgrid_m	7300	56.7	128848	56.7	128848
316.applu_m	4000	26.0	153933	21.8	183302
318.galgel_m	5100	153	33346	145	35122
320.equake_m	2600	33.6	77477	26.8	97088
324.apsi_m	3400	32.2	105501	32.2	105501
326.gafort_m	8700	117	74503	93.5	93055
328.fma3d_m	4600	84.7	54306	84.7	54306
330.art_m	6400	31.0	206434	23.5	272767
332.ammp_m	7000	143	48986	132	52975



Hardware

CPU:	POWER7
CPU MHz:	3300
FPU:	Integrated
CPU(s) enabled:	32 cores, 4 chips, 8 cores/chip, 4 threads/core
CPU(s) orderable:	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:	8x146.8 GB SAS SFF 15K RPM
Other Hardware:	None

Software

OpenMP Threads:	128
Parallel:	OpenMP
Operating System:	SUSE Linux Enterprise Server 11 (ppc64) Kernel 2.6.27.19-5-ppc64
Compiler:	IBM XL C/C++ for Linux, V10.1 Updated with the Oct2009 PTF IBM XL Fortran for Linux, V12.1 Updated with the Oct2009 PTF
File System:	ext3
System State:	Run level 3 (multi-user)

Notes/Tuning Information

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The "IBM Power 750 Express (3.3 GHz)" and "IBM Power 755 (3.3 GHz)" are electronically equivalent.
The results have been measured on the "IBM Power 755 (3.3 GHz)"

   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
      C:        -O5 -q64 -qsmp=omp
      FORTRAN:  -O5 -q64 -qsmp=omp

   Base & Peak Environment Flags (unless noted differently below):
     ENV_OMP_NUM_THREADS = 32
     ENV_OMP_DYNAMIC=FALSE
     ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=4
     ENV_XLFRTEOPTS=intrinthds=1


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

Notes/Tuning Information (Continued)

```
Peak Flags
  -qsmp=omp used in all cases

  310.wupwise_m: basepeak = 1
  312.swim_m:    -O4 -q64
  314.mgrid_m:   basepeak = 1
  316.applu_m:   -O4 -q32
                 ENV_HUGETLB_MORECORE=yes
                 ENV_LD_PRELOAD=libhugetlbfs.so
  318.galgel_m:  -O4 -q64
                 -B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=BDT
  320.equake_m:  -O5 -q64 -qhot=arraypad -Q
  324.apsi_m:    basepeak = 1
  326.gafort_m:  -O4 -q32 -qhot=arraypad
                 -B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=BDT
                 ENV_OMP_NUM_THREADS = 128
                 ENV_XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=1
  328.fma3d_m:   basepeak = 1
  330.art_m:     -O3 -q32
                 ENV_HUGETLB_MORECORE=yes
                 ENV_LD_PRELOAD=libhugetlbfs.so
  332.ammp_m:    -O5 -q32
                 ENV_HUGETLB_MORECORE=yes
                 ENV_LD_PRELOAD=libhugetlbfs.so

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-20080408-Linux.txt

ulimit -s (stack) set to 1048576.

Large pages reserved as follows by root user:
    echo 480 > /proc/sys/vm/nr_hugepages
System configured with libhugetlbfs library for application access to large pages

 System configured with:
     echo "NO_NEW_FAIR_SLEEPERS" > /sys/kernel/debug/sched_features

 Intelligent Energy Optimization enabled, up to 3.64 GHz
```