OMPM2001 Result

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IBM Corporation

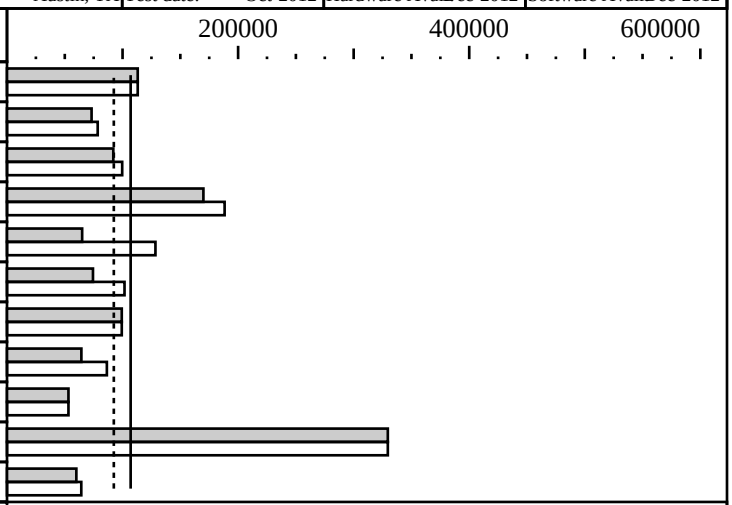
IBM Flex System p260 (4.1 GHz, 16 core, SLES)

SPECompMpeak2001 = 107007

SPECompMbase2001 = 92441

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	53.0	113125	53.0	113125
312.swim_m	6000	82.0	73189	76.4	78495
314.mgrid_m	7300	79.4	91991	73.2	99685
316.applu_m	4000	23.5	169966	21.2	188326
318.galgel_m	5100	78.4	65036	39.7	128463
320.equake_m	2600	34.9	74403	25.6	101702
324.apsi_m	3400	34.2	99317	34.2	99317
326.gafort_m	8700	135	64365	101	86422
328.fma3d_m	4600	86.5	53187	86.5	53187
330.art_m	6400	19.4	329558	19.4	329558
332.ammp_m	7000	117	60015	109	64284



Hardware

CPU:	POWER7+
CPU MHz:	4116
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip, 4 threads/core
CPU(s) orderable:	16 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:	128 GB (16 x 8 GB) DDR3 1066 MHz
Disk Subsystem:	1 x 600 GB SAS SFF 10K RPM
Other Hardware:	None

Software

OpenMP Threads:	64
Parallel:	OpenMP
Operating System:	SUSE Linux Enterprise Server 11 SP2 (3.0.13-0.27-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 Other Software: IBM Engineering and Scientific Subroutine Library for Linux on POWER, Version 5.1.0-2
File System:	ext3
System State:	Run level 3 (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
   C:        -O5 -q64 -qhot=arraypad -Q -qsmp=omp
   FORTRAN:  -O5 -q64 -qhot=arraypad -Q -qsmp=omp

Base & Peak Environment Flags:
  OMP_NUM_THREADS = 32
  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
  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


Peak Flags
```

Notes/Tuning Information (Continued)

```
  -qsmp=omp used in all cases

  310.wupwise_m   basepeak = 1
  312.swim_m:     -O3 -q32 -qpdf1/pdf2
                  XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=4
                  OMP_NUM_THREADS = 16
  314.mgrid_m:    -O5 -q64 -qhot=arraypad
                  XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=4
                  OMP_NUM_THREADS = 16
  316.applu_m:    -O3 -q64 -qpdf1/pdf2
                  -B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=BDT
                  XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=1
                  OMP_NUM_THREADS = 64
  318.galgel_m:   -O5 -q64 -qessl
                XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:PROCS=0,4,8,12,16,20,24,28
                  OMP_NUM_THREADS = 8
                  EXTRA_LIBS=-lesslsmp
  320.equake_m:   -O5 -q64 -qpdf1/pdf
                  XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=4
                  OMP_NUM_THREADS = 16
  324.aspi_m:     basepeak = 1
  326.gafort_m:   -O5 -q32 -qhot=arraypad
                  XLSMPOPTS=SPINS=0:YIELDS=0:STACK=8000000:STARTPROC=0:STRIDE=1
                  OMP_NUM_THREADS = 64
  328.fma3d_m:    basepeak = 1
  330.art_m:      basepeak = 1
  332.ammp_m:     -O5 -q32 -qhot=arraypad -Q

kernel release 3.0.13-0.27-ppc64

Use flags-description file IBM-20121004-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

Intelligent Energy Optimization enabled, up to 4.340 GHz
This Compute Node is housed in an "IBM Flex System Enterprise Chassis"

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
```