SPEC® CINT2006 Result

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IBM Corporation

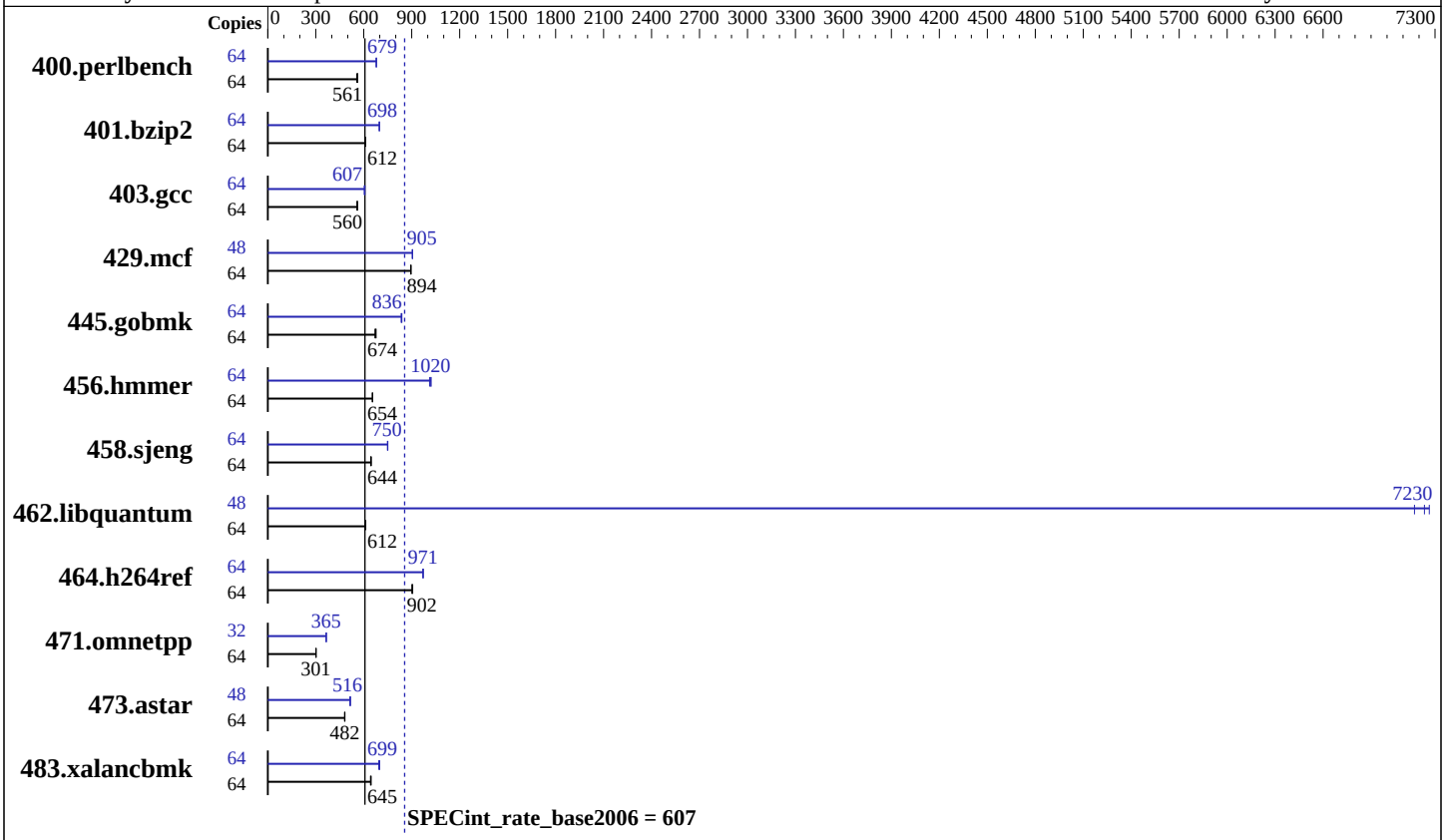
IBM Flex System p260 (4.1 GHz, 16 core)

SPECint®_rate2006 = 856

SPECint_rate_base2006 = 607

CPU2006 license: 11
Test sponsor: IBM Corporation
Tested by: IBM Corporation

Test date: Oct-2012
Hardware Availability: Dec-2012
Software Availability: Nov-2012



Hardware

CPU Name:	POWER7+
CPU Characteristics:	Intelligent Energy Optimization enabled, up to 4.340 GHz
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 177 GB Raid0 SFF-1 SSD
Other Hardware:	None

Software

Operating System:	IBM AIX V7.1
Compiler:	C/C++: Version 12.1 of IBM XL C/C++ for AIX
Auto Parallel:	No
File System:	AIX/JFS2
System State:	Multi-user
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	None

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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	64	**1115**	**561**	1125	556	1112	562	64	921	679	**921**	**679**	922	678
401.bzip2	64	1010	611	1010	612	**1010**	**612**	64	**885**	**698**	886	697	885	698
403.gcc	64	924	557	**920**	**560**	919	561	64	848	607	855	603	**849**	**607**
429.mcf	64	653	894	651	896	**653**	**894**	48	485	903	483	906	**484**	**905**
445.gobmk	64	**995**	**674**	1002	670	991	677	64	805	834	801	838	**803**	**836**
456.hmmer	64	912	655	913	654	**913**	**654**	64	585	1020	**586**	**1020**	590	1010
458.sjeng	64	1195	648	1204	643	**1203**	**644**	64	1035	748	**1033**	**750**	1032	750
462.libquantum	64	2165	613	2167	612	**2165**	**612**	48	137	7260	139	7170	**137**	**7230**
464.h264ref	64	1571	902	**1569**	**902**	1563	906	64	1460	970	1457	972	**1459**	**971**
471.omnetpp	64	1324	302	**1328**	**301**	1329	301	32	547	366	**547**	**365**	549	365
473.astar	64	**933**	**482**	932	482	937	480	48	**653**	**516**	656	513	653	516
483.xalancbmk	64	688	642	684	646	**685**	**645**	64	632	699	**632**	**699**	636	694

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Compiler Invocation Notes

```
C/C++ compiler updated to November 2012 PTF
      Version: 12.01.0000.0002
```

Peak Tuning Notes

```
400.perlbench fdpr options: -O4 -cbpth -1 -sdp -1
401.bzip2 fdpr options: -O4 -vrox -nobldcg -sdp -1
403.gcc fdpr options: -O4 -cbpth -1 -sdp -1
429.mcf fdpr options: -O2
445.gobmk fdpr options: -O3
456.hmmer fdpr options: -O3 -bldcg -ccc 10
458.sjeng fdpr options: -O3
464.h264ref fdpr options: -O4 -sdp -1 -vrox -lu -1
473.astar fdpr options: -O3 -vrox -bldcg
483.xalancbmk fdpr options: -O3 -bldcg -lu -1 -lux 1
```

Submit Notes

```
The config file option 'submit' was used
to assign benchmark copy to specific kernel thread using
the "bindprocessor" command (see flags file for details).
```

Operating System Notes

```
AIX updated to V7.1 TL 2 SP1

All ulimits set to unlimited.

6400 16M large pages defined with vmo command
```

Platform Notes

```
This Compute Node is housed in an
 "IBM Flex System Enterprise Chassis"
```

General Notes

```
Environment variables set by runspec before the start of the run:
MALLOCOPTIONS = "pool"
MEMORY_AFFINITY = "MCM"
XLFRTEOPTS = "intrinthds=1"
```

Base Compiler Invocation

C benchmarks:
```
/usr/vac/bin/xlc -qlanglvl=extc99
```

C++ benchmarks:
```
/usr/vacpp/bin/xlC
```

Base Portability Flags

400.perlbench: `-DSPEC_CPU_AIX`
462.libquantum: `-DSPEC_CPU_AIX`
464.h264ref: `-DSPEC_CPU_AIX -qchars=signed`
483.xalancbmk: `-DSPEC_CPU_AIX`

Base Optimization Flags

C benchmarks:
```
-qipa=threads -bmaxdata:0x50000000 -qlargepage -O5 -qsimd -qvecnvol
-D_ILS_MACROS -qalias=noansi -qalloca -blpdata
```

C++ benchmarks:
```
-qipa=threads -bmaxdata:0x20000000 -qlargepage -O4 -D_ILS_MACROS
-qrtti=all -D__IBM_FAST_SET_MAP_ITERATOR -blpdata
```

Base Other Flags

C benchmarks:
```
-qipa=noobject -qsuppress=1500-036
```

C++ benchmarks:
```
-qipa=noobject -qsuppress=1500-036
```

Peak Compiler Invocation

C benchmarks:
```
/usr/vac/bin/xlc -qlanglvl=extc99
```

C++ benchmarks:
```
/usr/vacpp/bin/xlC
```

Peak Portability Flags

400.perlbench: -DSPEC_CPU_AIX
462.libquantum: -DSPEC_CPU_AIX
464.h264ref: -DSPEC_CPU_AIX -qchars=signed
483.xalancbmk: -DSPEC_CPU_AIX

Peak Optimization Flags

C benchmarks:

400.perlbench: -bmaxdata:0x50000000 -qpdf1(pass 1) -qpdf2(pass 2) -O2 -qarch=auto -qtune=auto -D_ILS_MACROS -qalias=noansi -blpdata -btextpsize:64K

401.bzip2: -qipa=threads -bmaxdata:0x50000000 -qpdf1(pass 1) -qpdf2(pass 2) -O3 -qarch=auto -qtune=auto -qlargepage -D_ILS_MACROS -blpdata -btextpsize:64K

403.gcc: -qipa=threads -bmaxdata:0x50000000 -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -D_ILS_MACROS -qalloca -blpdata -btextpsize:64K

429.mcf: -qipa=threads -bmaxdata:0x50000000 -O5 -qsimd -qvecnvol -qlargepage -D_ILS_MACROS -blpdata -btextpsize:64K

445.gobmk: -qipa=threads -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -D_ILS_MACROS -blpdata -btextpsize:64K

Continued on next page

Peak Optimization Flags (Continued)

456.hmmer: -qipa=threads -O5 -qsimd -qvecnvol -qassert=refalign -D_ILS_MACROS -blpdata -btextpsize:64K

458.sjeng: -qipa=threads -qpdf1(pass 1) -qpdf2(pass 2) -O4 -D_ILS_MACROS -blpdata -btextpsize:64K

462.libquantum: -qipa=threads -qpdf1(pass 1) -qpdf2(pass 2) -O5 -q64 -qlargepage -D_ILS_MACROS -blpdata -btextpsize:64K

464.h264ref: -qipa=threads -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qsimd -qvecnvol -D_ILS_MACROS -blpdata -btextpsize:64K

C++ benchmarks:

471.omnetpp: -qipa=threads -bmaxdata:0x20000000 -qpdf1(pass 1) -qpdf2(pass 2) -O4 -qsimd -qvecnvol -D_ILS_MACROS -qalign=natural -qrtti=all -qinlglue -D__IBM_FAST_SET_MAP_ITERATOR -blpdata -btextpsize:64K

473.astar: -qipa=threads -bmaxdata:0x20000000 -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -D_ILS_MACROS -qinlglue -qalign=natural -blpdata -btextpsize:64K

483.xalancbmk: -qipa=threads -bmaxdata:0x20000000 -qpdf1(pass 1) -qpdf2(pass 2) -O3 -qarch=auto -qtune=auto -qlargepage -D_ILS_MACROS -qinlglue -D__IBM_FAST_VECTOR -blpdata -btextpsize:64K

Peak Other Flags

C benchmarks (except as noted below):
-qipa=noobject -qsuppress=1500-036

400.perlbench: -qsuppress=1500-036

C++ benchmarks:
-qipa=noobject -qsuppress=1500-036

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/IBM-XL.20110613.html
http://www.spec.org/cpu2006/flags/IBM-AIX.20110613.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/IBM-XL.20110613.xml
http://www.spec.org/cpu2006/flags/IBM-AIX.20110613.xml

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