



SPEC® CINT2006 Result

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IBM Corporation

SPECint®_rate2006 = 1650

IBM Power 595 (4.2 GHz, 64 core)

SPECint_rate_base2006 = 1420

CPU2006 license: 11

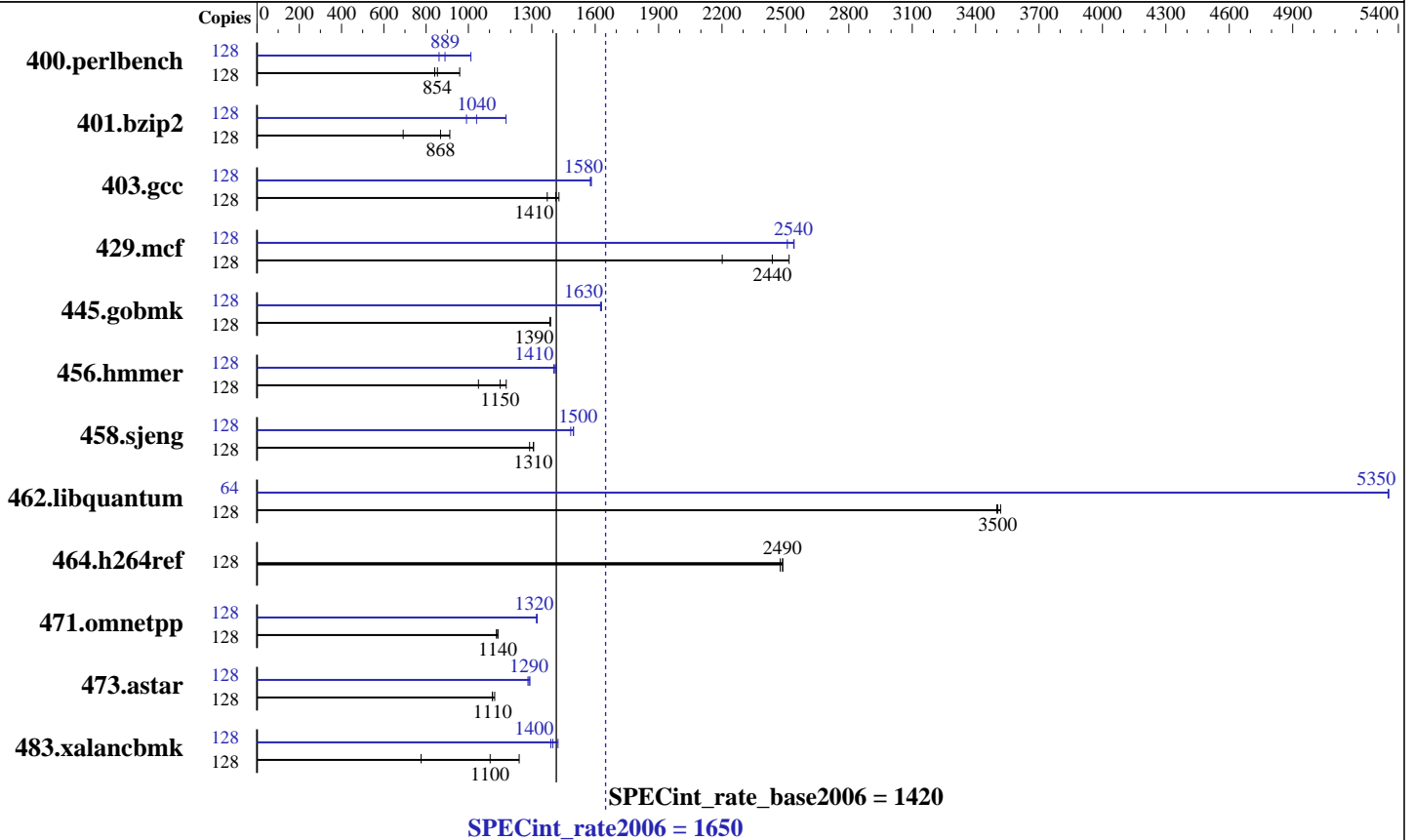
Test date: Mar-2008

Test sponsor: IBM Corporation

Hardware Availability: Jun-2008

Tested by: IBM Corporation

Software Availability: May-2008



Hardware

CPU Name: POWER6
 CPU Characteristics:
 CPU MHz: 4200
 FPU: Integrated
 CPU(s) enabled: 64 cores, 32 chips, 2 cores/chip, 2 threads/core
 CPU(s) orderable: 8,16,24,32,40,48,56,64 cores
 Primary Cache: 64 KB I + 64 KB D on chip per core
 Secondary Cache: 4 MB I+D on chip per core
 L3 Cache: 32 MB I+D off chip per chip
 Other Cache: None
 Memory: 512 GB (256x2 GB - 256 GB) DDR2 667 MHz
 Disk Subsystem: 4x146 GB SCSI 15K RPM
 Other Hardware: None

Software

Operating System: IBM AIX V6.1
 with the 6100-01 Technology Level
 XL C/C++ Enterprise Edition V9 for AIX
 Updated with the Oct2007 PTF.
 Compiler:
 Auto Parallel: No
 File System: AIX/JFS2
 System State: Multi-user
 Base Pointers: 32-bit
 Peak Pointers: 32/64-bit
 Other Software: --



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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	128	1487	841	1304	959	<u>1465</u>	<u>854</u>	128	1236	1010	<u>1406</u>	<u>889</u>	1452	861
401.bzip2	128	1354	912	1786	692	<u>1423</u>	<u>868</u>	128	1048	1180	1246	991	<u>1189</u>	<u>1040</u>
403.gcc	128	721	1430	750	1370	<u>729</u>	<u>1410</u>	128	652	1580	653	1580	<u>652</u>	<u>1580</u>
429.mcf	128	464	2520	530	2200	<u>479</u>	<u>2440</u>	128	459	2540	465	2510	<u>460</u>	<u>2540</u>
445.gobmk	128	968	1390	<u>968</u>	<u>1390</u>	967	1390	128	<u>824</u>	<u>1630</u>	824	1630	826	1630
456.hammer	128	1013	1180	1140	1050	<u>1038</u>	<u>1150</u>	128	<u>847</u>	<u>1410</u>	851	1400	844	1410
458.sjeng	128	1183	1310	<u>1185</u>	<u>1310</u>	1201	1290	128	1034	1500	<u>1035</u>	<u>1500</u>	1043	1480
462.libquantum	128	<u>757</u>	<u>3500</u>	758	3500	754	3520	64	<u>248</u>	<u>5350</u>	248	5350	248	5350
464.h264ref	128	1144	2480	<u>1139</u>	<u>2490</u>	1139	2490	128	1144	2480	<u>1139</u>	<u>2490</u>	1139	2490
471.omnetpp	128	706	1130	702	1140	<u>702</u>	<u>1140</u>	128	605	1320	<u>604</u>	<u>1320</u>	603	1330
473.astar	128	799	1120	807	1110	<u>807</u>	<u>1110</u>	128	696	1290	<u>698</u>	<u>1290</u>	701	1280
483.xalancbmk	128	712	1240	<u>801</u>	<u>1100</u>	1138	776	128	620	1420	<u>631</u>	<u>1400</u>	635	1390

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

General Notes

See flags file of details on following settings.
all ulimits set to unlimited.

Environment variables set before executing benchmarks:

```
MALLOCOPTIONS=pool
MEMORY_AFFINITY=MCM
XLFRTEOPTS=intrinths=1
```

System set to "Enhanced" mode when defining partition on HMC.
bindprocessor command used on submit to bind each copy to a unique processor.

12000 16M large pages defined with vmo command

Remote console disabled in /etc/inittab.

fdpr binary optimization tool used for:

```
400.perlbench 401.bzip2 403.gcc 429.mcf 456.hammer
458.sjent 462.libquantum 464.h264ref 473.astar
```

Base Compiler Invocation

C benchmarks:

```
/usr/vac/bin/xlc -qlanglvl=extc99
```

C++ benchmarks:

```
/usr/vacpp/bin/xlC
```



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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:
-bmaxdata:0x50000000 -O5 -qlargepage -D_ILS_MACROS -qalias=noansi
-qalloca -blpdata
C++ benchmarks:
-bmaxdata:0x20000000 -O5 -qlargepage -D_ILS_MACROS -qrtti=all
-blpdata

Base Other Flags

C benchmarks:
-qipa=noobject -qipa=threads -qsuppress=1500-036
C++ benchmarks:
-qipa=noobject -qipa=threads -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
403.gcc: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_AIX
464.h264ref: -DSPEC_CPU_AIX -qchars=signed
483.xalancbmk: -DSPEC_CPU_AIX



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Peak Optimization Flags

C benchmarks:

400.perlbench: -bmaxdata:0x50000000 -qpdf1(pass 1) -qpdf2(pass 2) -O4
-qlargepage -qenablevmx -qvecnvml -D_ILS_MACROS
-qalias=noansi -qfdpr -blpdata

401.bzip2: -bmaxdata:0x4ffffffc -qpdf1(pass 1) -qpdf2(pass 2) -O5
-qlargepage -qenablevmx -qvecnvml -D_ILS_MACROS -qfdpr
-blpdata

403.gcc: -qpdf1(pass 1) -qpdf2(pass 2) -O4 -qlargepage
-D_ILS_MACROS -qalloca -qfdpr -q64 -blpdata

429.mcf: -bmaxdata:0x50000000 -O5 -qlargepage -qenablevmx
-qvecnvml -D_ILS_MACROS -qfdpr -blpdata

445.gobmk: -qpdf1(pass 1) -qpdf2(pass 2) -O4 -qlargepage -qenablevmx
-qvecnvml -D_ILS_MACROS -blpdata

456.hmmer: -O5 -qlargepage -D_ILS_MACROS -qfdpr -blpdata

458.sjeng: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -qenablevmx
-qvecnvml -D_ILS_MACROS -qfdpr -blpdata

462.libquantum: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -qenablevmx
-qvecnvml -D_ILS_MACROS -q64 -qfdpr -blpdata

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -bmaxdata:0x20000000 -qpdf1(pass 1) -qpdf2(pass 2) -O5
-qlargepage -qenablevmx -qvecnvml -D_ILS_MACROS
-qalign=natural -qrtti=all -qinlglue -blpdata

473.astar: -bmaxdata:0x20000000 -qpdf1(pass 1) -qpdf2(pass 2) -O5
-qlargepage -D_ILS_MACROS -qfdpr -qinlglue
-qalign=natural -blpdata

483.xalancbmk: -bmaxdata:0x20000000 -qpdf1(pass 1) -qpdf2(pass 2) -O5
-qlargepage -D_ILS_MACROS -qinlglue -D__IBM_FAST_VECTOR
-blpdata

Peak Other Flags

C benchmarks:

-qipa=noobject -qipa=threads -qsuppress=1500-036

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Peak Other Flags (Continued)

C++ benchmarks:

-qipa=noobject -qipa=threads -qsuppress=1500-036

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/IBM-AIX-XL.20090714.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/IBM-AIX-XL.20090714.xml>

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For other inquiries, please contact webmaster@spec.org.

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