SPEC® CINT2006 Result
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IBM Corporation
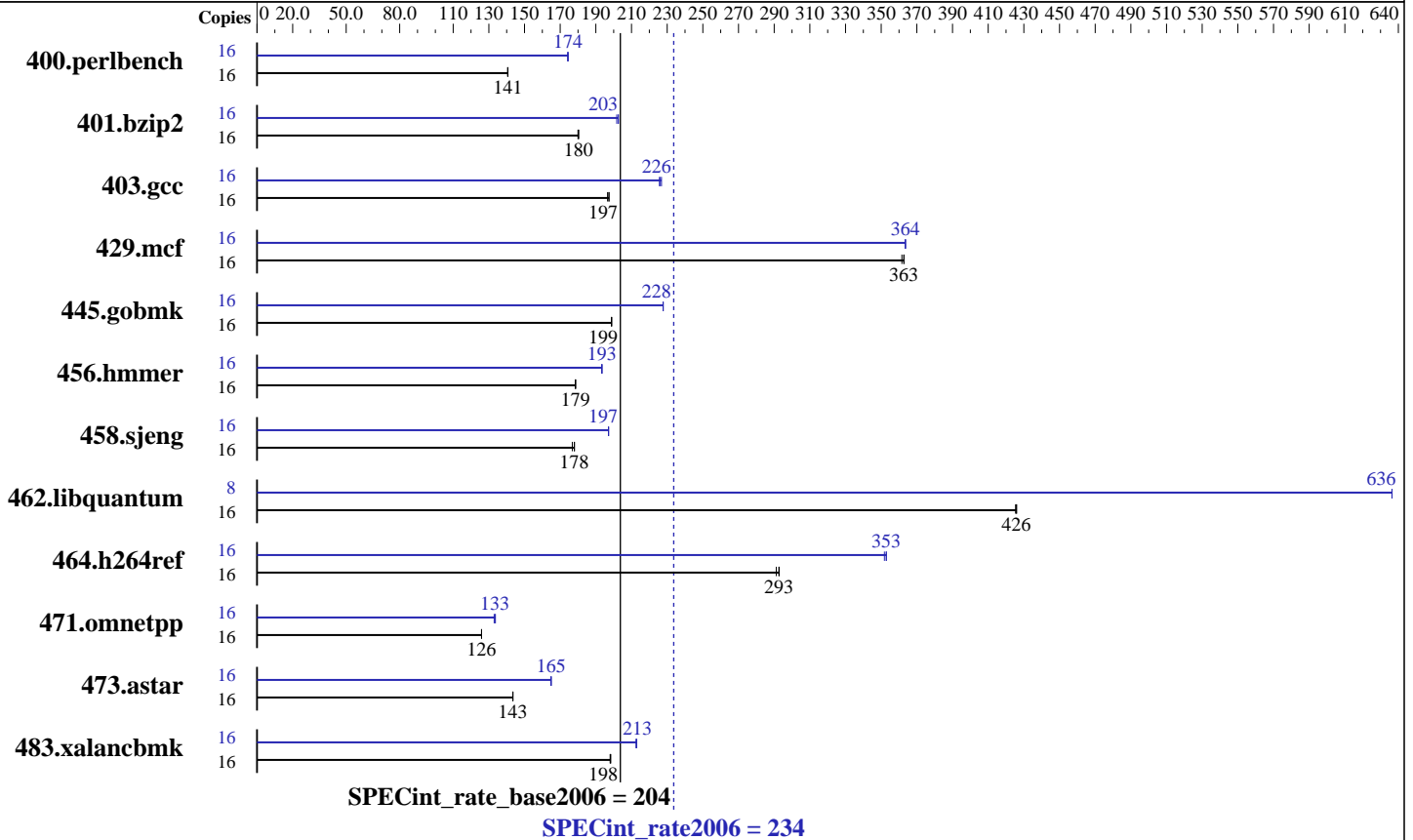
IBM System p 570 (4.7 GHz, 8 core, SLES)

$SPECint®\_rate2006 =$ 234

$SPECint\_rate\_base2006 =$ 204

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

Test date: Jun-2007
Hardware Availability: Jun-2007
Software Availability: Sep-2007

Copies 0 20.0 50.0 80.0 110 130 150 170 190 210 230 250 270 290 310 330 350 370 390 410 430 450 470 490 510 530 550 570 590 610 640

Benchmark	Copies	base	peak
400.perlbench	16 / 16	141	174
401.bzip2	16 / 16	180	203
403.gcc	16 / 16	197	226
429.mcf	16 / 16	363	364
445.gobmk	16 / 16	199	228
456.hmmer	16 / 16	179	193
458.sjeng	16 / 16	178	197
462.libquantum	8 / 16	426	636
464.h264ref	16 / 16	293	353
471.omnetpp	16 / 16	126	133
473.astar	16 / 16	143	165
483.xalancbmk	16 / 16	198	213

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Hardware

CPU Name:	POWER6
CPU Characteristics:	
CPU MHz:	4700
FPU:	Integrated
CPU(s) enabled:	8 cores, 4 chips, 2 cores/chip, 2 threads/core
CPU(s) orderable:	2,4,8,12,16 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:	64 GB (32x2 GB) DDR2 667 MHz
Disk Subsystem:	2x73 GB SAS 15K RPM
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise 10 SP1
Compiler:	IBM XL C/C++ Advanced Edition for Linux, V9.0
Auto Parallel:	No
File System:	ReiserFS
System State:	Multi-User
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	-Post-Link Optimization for Linux on POWER, Version 5.4.0 -MicroQuill SmartHeap 7.3

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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	16	1112	141	**1112**	**141**	1111	141	16	897	174	**896**	**174**	896	174
401.bzip2	16	856	180	**856**	**180**	858	180	16	762	203	766	202	**762**	**203**
403.gcc	16	**653**	**197**	653	197	655	197	16	568	227	571	226	**569**	**226**
429.mcf	16	402	363	404	362	**402**	**363**	16	**401**	**364**	401	364	401	363
445.gobmk	16	844	199	844	199	**844**	**199**	16	**737**	**228**	737	228	737	228
456.hmmer	16	836	179	836	178	**836**	**179**	16	**772**	**193**	772	193	772	193
458.sjeng	16	**1088**	**178**	1088	178	1095	177	16	982	197	982	197	**982**	**197**
462.libquantum	16	779	425	**778**	**426**	778	426	8	260	636	260	636	**260**	**636**
464.h264ref	16	1209	293	**1210**	**293**	1216	291	16	1006	352	1003	353	**1004**	**353**
471.omnetpp	16	794	126	**794**	**126**	794	126	16	748	134	752	133	**750**	**133**
473.astar	16	**783**	**143**	783	144	783	143	16	681	165	**681**	**165**	682	165
483.xalancbmk	16	557	198	558	198	**557**	**198**	16	518	213	519	213	**519**	**213**

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

General Notes

```
kernel release 2.6.16.46-0.12-ppc64.

See flags file for details on following settings.

ulimit -s (stack) set to unlimited.


System set to Enhanced mode when defining partition on HMC

Large pages reserved as follows by root user:
    echo 1600 > /proc/sys/vm/nr_hugepages
System configured with libhugetlbfs library for application access to large pages
Environment variables set before executing benchmarks.
    export HUGETLB_VERBOSE=0
    export HUGETLB_MORECORE=yes
    export HUGETLB_MORECORE_HEAPBASE=0x50000000
    export XLFRTEOPTS=intrinthds=1

fdpr binary optimization tool used for
    400.perlbench 401.bzip2 403.gcc 429.mcf 456.hmmer 458.sjeng
    462.libquantum 464.h264ref 473.astar 483.xalancbmk

Benchmarks bound to a processor using taskset on the submit command.
```

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Base Compiler Invocation

C benchmarks:
```
xlc -qlanglvl=extc99
```

C++ benchmarks:
```
xlC
```

Base Portability Flags

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

Base Optimization Flags

C benchmarks:
```
-O5 -qalias=noansi -qalloca -lhugetlbfs
```

C++ benchmarks:
```
-O5 -qrtti -lsmartheap
```

Base Other Flags

C benchmarks:
```
-qipa=noobject -qipa=threads
```

C++ benchmarks:
```
-qipa=noobject -qipa=threads
```

Peak Compiler Invocation

C benchmarks:
```
xlc -qlanglvl=extc99
```

C++ benchmarks:
```
xlC
```

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Peak Portability Flags

```
      400.perlbench: -DSPEC_CPU_LINUX_PPC
            403.gcc: -DSPEC_CPU_LP64
      462.libquantum: -DSPEC_CPU_LINUX
          464.h264ref: -qchars=signed
        483.xalancbmk: -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
    400.perlbench: -Wl,-q -qpdf1(pass 1) -qpdf2(pass 2) -O4 -qalias=noansi
                   -lsmartheap

        401.bzip2: -Wl,-q -qpdf1(pass 1) -qpdf2(pass 2) -O4 -lhugetlbfs

          403.gcc: -Wl,-q -qpdf1(pass 1) -qpdf2(pass 2) -O4 -qalloca -q64
                   -lhugetlbfs

          429.mcf: -Wl,-q -O5 -qnoenablevmx -lhugetlbfs

        445.gobmk: -qpdf1(pass 1) -qpdf2(pass 2) -O4 -qnoenablevmx
                   -lhugetlbfs

       456.hmmer: Same as 401.bzip2

        458.sjeng: Same as 401.bzip2

    462.libquantum: -Wl,-q -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qnoenablevmx
                   -q64 -lhugetlbfs

       464.h264ref: -Wl,-q -qpdf1(pass 1) -qpdf2(pass 2) -O5 -q64
                   -lhugetlbfs
```

C++ benchmarks:

```
      471.omnetpp: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qrtti -lsmartheap

        473.astar: -Wl,-q -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qnoenablevmx
                   -lhugetlbfs

     483.xalancbmk: -Wl,-q -O4 -lsmartheap
```

Peak Other Flags

C benchmarks:
```
      -qipa=noobject -qipa=threads
```

Continued on next page

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Peak Other Flags (Continued)

C++ benchmarks:
```
     -qipa=noobject -qipa=threads
```

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/lop-xl-flags.20090714.01.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/lop-xl-flags.20090714.01.xml

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