SPEC® CINT2006 Result
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IBM Corporation
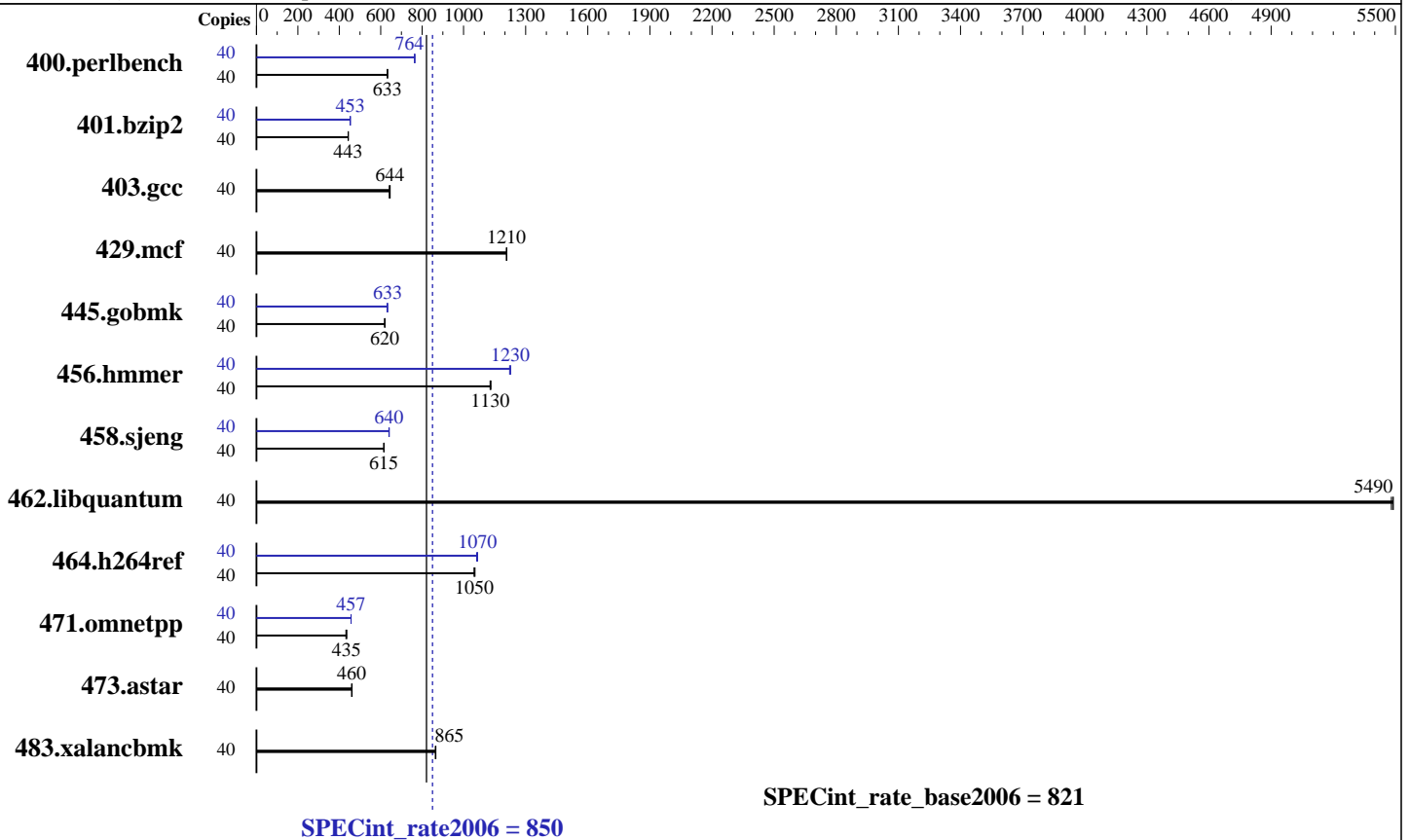
IBM Flex System x240
(Intel Xeon E5-2680 v2, 2.80 GHz)

SPECint®_rate2006 =   850

SPECint_rate_base2006 =   821

		Copies	
400.perlbench	40 / 40	764 / 633	
401.bzip2	40 / 40	453 / 443	
403.gcc	40	644	
429.mcf	40	1210	
445.gobmk	40 / 40	633 / 620	
456.hmmer	40 / 40	1230 / 1130	
458.sjeng	40 / 40	640 / 615	
462.libquantum	40	5490	
464.h264ref	40 / 40	1070 / 1050	
471.omnetpp	40 / 40	457 / 435	
473.astar	40	460	
483.xalancbmk	40	865	

SPECint_rate_base2006 = 821

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Hardware

CPU Name:	Intel Xeon E5-2680 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz:	2800
FPU:	Integrated
CPU(s) enabled:	20 cores, 2 chips, 10 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	25 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem:	1 x 300 GB SAS, 10000 RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.5 (Santiago) 2.6.32-431.el6.x86_64
Compiler:	C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
Auto Parallel:	No
File System:	ext4
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V10.0

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Software Availability: Nov-2013

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	40	619	632	**617**	**633**	617	633	40	511	765	512	763	**512**	**764**
401.bzip2	40	871	443	**871**	**443**	871	443	40	853	452	851	454	**852**	**453**
403.gcc	40	499	646	**500**	**644**	502	641	40	499	646	**500**	**644**	502	641
429.mcf	40	**302**	**1210**	302	1210	302	1210	40	**302**	**1210**	302	1210	302	1210
445.gobmk	40	676	621	678	619	**677**	**620**	40	663	633	666	630	**663**	**633**
456.hmmer	40	330	1130	331	1130	**330**	**1130**	40	304	1230	305	1220	**304**	**1230**
458.sjeng	40	787	615	**787**	**615**	785	617	40	**756**	**640**	757	640	755	641
462.libquantum	40	151	5480	**151**	**5490**	151	5490	40	151	5480	**151**	**5490**	151	5490
464.h264ref	40	839	1060	**841**	**1050**	842	1050	40	833	1060	829	1070	**829**	**1070**
471.omnetpp	40	**575**	**435**	579	432	573	436	40	547	457	**547**	**457**	547	457
473.astar	40	**610**	**460**	610	460	608	462	40	**610**	**460**	610	460	608	462
483.xalancbmk	40	**319**	**865**	319	864	319	866	40	**319**	**865**	319	864	319	866

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

Submit Notes

    The numactl mechanism was used to bind copies to processors. The config file option 'submit'
    was used to generate numactl commands to bind each copy to a specific processor.
    For details, please see the config file.

Operating System Notes

    Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

    Operating Mode set to Maximum Perfomance in BIOS
    Sysinfo program /cpu2006.1.2_14.0_updates/config/sysinfo.rev6818
    $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
    running on BT2-IVB Sun Jun 15 21:53:37 2014

    This section contains SUT (System Under Test) info as seen by
    some common utilities. To remove or add to this section, see:
      http://www.spec.org/cpu2006/Docs/config.html#sysinfo

    From /proc/cpuinfo
       model name : Intel(R) Xeon(R) CPU E5-2680 v2 @ 2.80GHz
          2 "physical id"s (chips)
          40 "processors"
       cores, siblings (Caution: counting these is hw and system dependent. The
       following excerpts from /proc/cpuinfo might not be reliable. Use with
       caution.)
          cpu cores : 10

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Platform Notes (Continued)

```
      siblings  : 20
      physical 0: cores 0 1 2 3 4 8 9 10 11 12
      physical 1: cores 0 1 2 3 4 8 9 10 11 12
   cache size : 25600 KB

 From /proc/meminfo
    MemTotal:        264502276 kB
    HugePages_Total:         0
    Hugepagesize:         2048 kB

 /usr/bin/lsb_release -d
    Red Hat Enterprise Linux Server release 6.4 (Santiago)

 From /etc/*release* /etc/*version*
    redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
    system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

 uname -a:
    Linux BT2-IVB 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013
    x86_64 x86_64 x86_64 GNU/Linux

 run-level 3 Jun 15 21:48

 SPEC is set to: /cpu2006.1.2_14.0_updates
    Filesystem      Type    Size  Used Avail Use% Mounted on
    /dev/mapper/vg_bt2ivb-lv_root
                    ext4    265G   69G  183G  28% /

 Additional information from dmidecode:
   BIOS IBM -[B2E141AUS-1.50]- 05/08/2014
   Memory:
    16x Micron 36JSF2G72PZ-1G9E1 16 GB 1867 MHz 2 rank
    8x Not Specified Not Specified

 (End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/cpu2006.1.2_14.0_updates/libs/32:/cpu2006.1.2_14.0_updates/libs/64:/cpu2006.1.2_14.0_updates/sh"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RedHat EL 6.4
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 Filesystem page cache cleared with:
 echo 1>        /proc/sys/vm/drop_caches
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>
```

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Base Compiler Invocation

C benchmarks:
    icc -m32

C++ benchmarks:
    icpc -m32

Base Portability Flags

    400.perlbench: -DSPEC_CPU_LINUX_IA32
    462.libquantum: -DSPEC_CPU_LINUX
    483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
    -Wl,-z,muldefs -L/sh -lsmartheap

Base Other Flags

C benchmarks:

    403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
    icc -m32

    400.perlbench: icc -m64

    401.bzip2: icc -m64

    456.hmmer: icc -m64

    458.sjeng: icc -m64

C++ benchmarks:
    icpc -m32

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Peak Portability Flags

```
 400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
     401.bzip2: -DSPEC_CPU_LP64
    456.hmmer: -DSPEC_CPU_LP64
     458.sjeng: -DSPEC_CPU_LP64
 462.libquantum: -DSPEC_CPU_LINUX
 483.xalancbmk: -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
 400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                -auto-ilp32

     401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                -opt-prefetch -auto-ilp32 -ansi-alias

       403.gcc: basepeak = yes

       429.mcf: basepeak = yes

     445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
                -ansi-alias -opt-mem-layout-trans=3

    456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

     458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                -unroll4 -auto-ilp32

 462.libquantum: basepeak = yes

    464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                -unroll2 -ansi-alias
```

C++ benchmarks:

```
    471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
                -L/sh -lsmartheap

      473.astar: basepeak = yes
```

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Peak Optimization Flags (Continued)

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-IVB-A.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-IVB-A.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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