SPEC® CINT2006 Result

IBM Corporation
IBM System x3850 X6
(Intel Xeon E7-4850 v2, 2.30 GHz)

SPECint®_rate2006 = NC
SPECint_rate_base2006 = NC

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

Test date: Apr-2014
Hardware Availability: Mar-2014
Software Availability: Nov-2013

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Copies

| 400.perlbench |
| 401.bzip2 |
| 403.gcc |
| 429.mcf |
| 445.gobmk |
| 456.hmmer |
| 458.sjeng |
| 462.libquantum |
| 464.h264ref |
| 471.omnetpp |
| 473.astar |
| 483.xalancbmk |

Hardware

| CPU Name: | Intel Xeon E7-4850 v2 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.80 GHz 2300 |
| FPU: | Integrated |
| CPU(s) enabled: | 48 cores, 4 chips, 12 cores/chip, 2 threads/core |
| CPU(s) orderable: | 2,4 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |

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 |

Continued on next page
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Secondary Cache: 256 KB I+D on chip per core
L3 Cache: 24 MB I+D on chip per chip
Other Cache: None
Memory: 1 TB (64 x 16 GB 2Rx4 PC3L-12800R-11, ECC, running at 1333 MHz)
Disk Subsystem: 1 x 400 GB SATA, SSD
Other Hardware: None

Results Table

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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.
**SPEC CINT2006 Result**

**IBM Corporation**

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**Operating System Notes**

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

**Platform Notes**

Operating Mode set to Maximum Performance in BIOS
Sysinfo program /cpu2006.1.12_14.0_aug2013/config/sysinfo.rev6818  
$Rev: 6818 $ $Date:: 2012-17-17 #$ e861102572650a6e4d596a3cde98f191  
running on Larry-Andromeda Thu Apr 24 09:18:10 2014

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:  

From /proc/cpuinfo  
model name : Intel(R) Xeon(R) CPU E7-4850 v2 @ 2.30GHz  
4 "physical id"s (chips)  
96 "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 : 12  
siblings : 24  
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13  
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13  
physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13  
physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 13  
cache size : 24576 KB

From /proc/meminfo  
MemTotal: 1058470592 kB  
HugePages_Total: 0  
Hugepagesize: 2048 kB

/user/bin/lsb_release -d  
Red Hat Enterprise Linux Server release 6.5 (Santiago)

From /etc/*release* /etc/*version*  
Continued on next page
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Platform Notes (Continued)

unname -a:
Linux Larry-Andromeda 2.6.32-431.el6_64 #1 SMP Sun Nov 10 22:19:54 EST 2013 x86_64 x86_64 x86_64 GNU/Linux.

run-level 3 Apr 24 09:08

Additional information from dmidecode:
BIOS IBM -[A8E103KUS-1.00]- 11/21/2013
Memory:
32x NO DIMM Unknown
64x Samsung Unknown 16 GB 1333 MHz 2 rank

Memory speed from dmidecode lists the downclocked speed of the run.

General Notes

Environment Variables set by runspec before the start of the run:
 LD_LIBRARY_PATH = */cpu2006.1.2_14.0_aug2013/libs/32:/cpu2006.1.2_14.0_aug2013/libs/64:/cpu2006.1.2_14.0_aug2013/sh

Binarized 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
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,undefined -L/sh -lsmartheap

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Non-Compliant
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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

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)
  -03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
  -auto-ilp32

Continued on next page
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### Peak Optimization Flags (Continued)

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: -xSSE4.2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

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

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

458.sjeng: -xSSE4.2 -ipo(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll14 -ansi-alias

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

483.xalancbmk: basepeak = yes
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**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 all HTML 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