SPEC® CINT2006 Result

ACTION S.A.

ACTINA SOLAR 222 S6 (Intel Xeon E5-2660 v3, 2.60 GHz)

$SPECint^®\_rate2006 =$ 942

$SPECint\_rate\_base2006 =$ 902

CPU2006 license: 9008
Test sponsor: ACTION S.A.
Tested by: ACTION S.A.

Test date: Oct-2015
Hardware Availability: Sep-2014
Software Availability: Aug-2015

Benchmark	Copies	Base	Peak
400.perlbench	40 / 40	664	822
401.bzip2	40 / 40	437	454
403.gcc	40 / 40	700	699
429.mcf	40	1160	
445.gobmk	40 / 40	599	611
456.hmmer	40 / 40	1260	1420
458.sjeng	40 / 40	629	663
462.libquantum	40	8910	
464.h264ref	40 / 40	1110	1140
471.omnetpp	40 / 40	493	519
473.astar	40	509	
483.xalancbmk	40	1050	

SPECint_rate_base2006 = 902

SPECint_rate2006 = 942

Hardware

CPU Name: Intel Xeon E5-2660 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz: 2600
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 PC4-2400P-R, running at 2133 MHz)
Disk Subsystem: 1 x 240 GB SATA II SSD
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 7.1 (Maipo)
3.10.0-229.11.1.el7.x86_64
Compiler: C/C++: Version 16.0.0.047 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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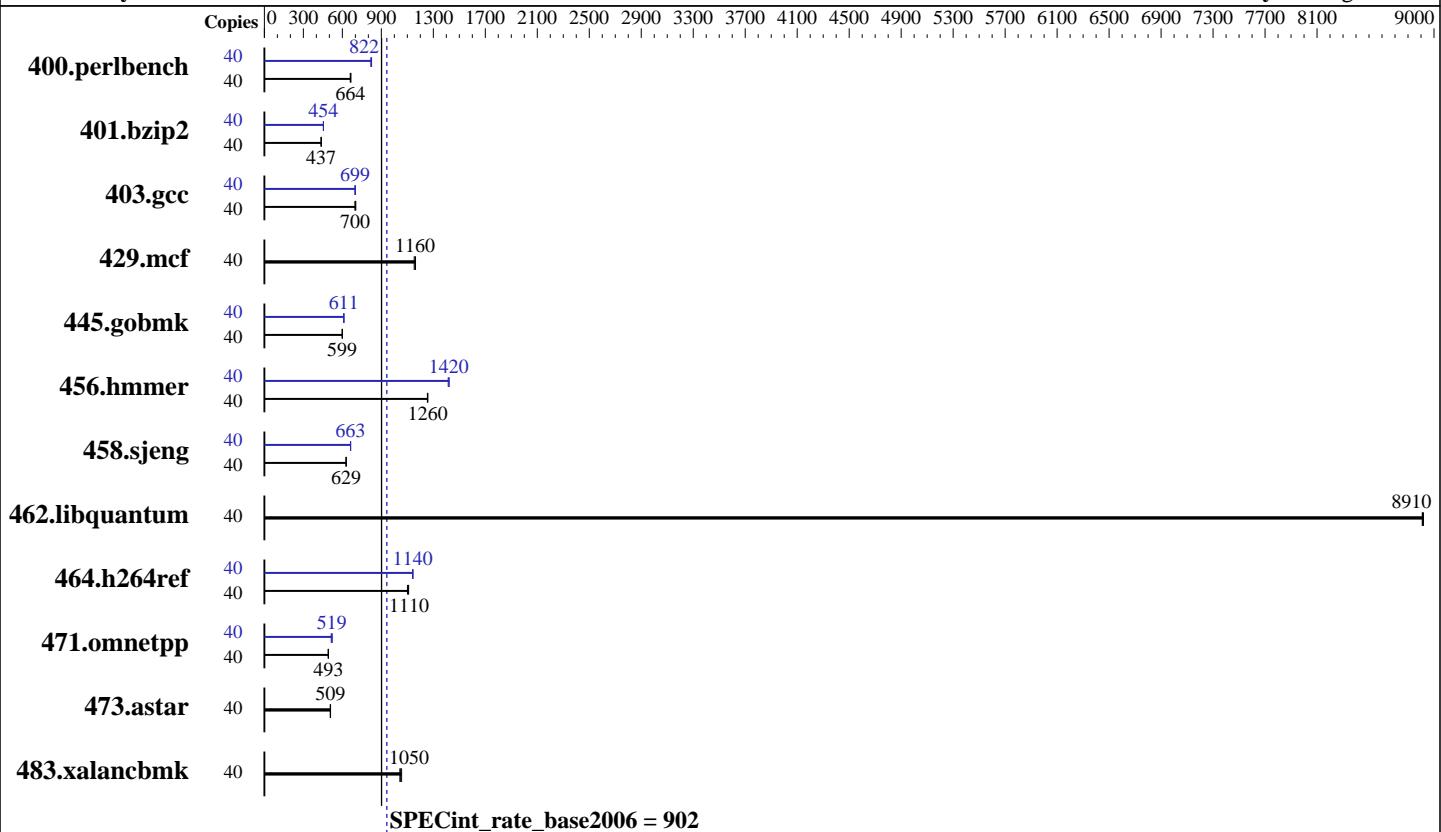
SPECint_rate_base2006 = 902

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Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	40	**589**	**664**	587	665	591	661	40	474	825	477	820	**475**	**822**
401.bzip2	40	885	436	882	438	**883**	**437**	40	848	455	850	454	**850**	**454**
403.gcc	40	462	697	**460**	**700**	458	703	40	460	700	462	697	**461**	**699**
429.mcf	40	**315**	**1160**	316	1150	314	1160	40	**315**	**1160**	316	1150	314	1160
445.gobmk	40	700	599	**700**	**599**	700	600	40	**686**	**611**	686	611	687	611
456.hmmer	40	298	1250	297	1260	**297**	**1260**	40	**263**	**1420**	263	1420	264	1410
458.sjeng	40	770	629	769	630	**769**	**629**	40	730	663	730	663	**730**	**663**
462.libquantum	40	**93.0**	**8910**	92.9	8920	93.0	8910	40	**93.0**	**8910**	92.9	8920	93.0	8910
464.h264ref	40	**800**	**1110**	797	1110	804	1100	40	**776**	**1140**	776	1140	774	1140
471.omnetpp	40	507	493	**507**	**493**	510	490	40	**482**	**519**	479	522	486	514
473.astar	40	**552**	**509**	554	507	552	509	40	**552**	**509**	554	507	552	509
483.xalancbmk	40	**264**	**1050**	261	1060	265	1040	40	**264**	**1050**	261	1060	265	1040

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

```
        Bios Settings
        Hyper-Threading (All) = Enable
        Power Technology = Energy Efficient
        Enforce POR = Disabled
        Memory Frequency = 2133
        COD Enable = Enable

        BMC Setting
        Fan Mode = Full Speed

        Sysinfo program /cpu2006.1.2/config/sysinfo.rev6818
        $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
        running on SUT Thu Oct 22 13:41:34 2015

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

Continued on next page

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CPU2006 license: 9008		**Test date:**	Oct-2015
Test sponsor: ACTION S.A.		**Hardware Availability:**	Sep-2014
Tested by: ACTION S.A.		**Software Availability:**	Aug-2015

Platform Notes (Continued)

```
    http://www.spec.org/cpu2006/Docs/config.html#sysinfo

  From /proc/cpuinfo
     model name : Intel(R) Xeon(R) CPU E5-2660 v3 @ 2.60GHz
        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
        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 : 12800 KB

  From /proc/meminfo
     MemTotal:       263865580 kB
     HugePages_Total:        1
     Hugepagesize:        2048 kB

  From /etc/*release* /etc/*version*
     os-release:
        NAME="Red Hat Enterprise Linux Server"
        VERSION="7.0 (Maipo)"
        ID="rhel"
        ID_LIKE="fedora"
        VERSION_ID="7.0"
        PRETTY_NAME="Red Hat Enterprise Linux"
        ANSI_COLOR="0;31"
        CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
     os-release.rpmnew:
        NAME="Red Hat Enterprise Linux Server"
        VERSION="7.1 (Maipo)"
        ID="rhel"
        ID_LIKE="fedora"
        VERSION_ID="7.1"
        PRETTY_NAME="Red Hat Enterprise Linux Server 7.1 (Maipo)"
        ANSI_COLOR="0;31"
        CPE_NAME="cpe:/o:redhat:enterprise_linux:7.1:GA:server"
     redhat-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
     system-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
     system-release-cpe: cpe:/o:redhat:enterprise_linux:7.1:ga:server

  uname -a:
     Linux SUT 3.10.0-229.11.1.el7.x86_64 #5 SMP Mon Sep 14 17:11:19 CEST 2015
     x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Oct 22 13:38

  SPEC is set to: /cpu2006.1.2
     Filesystem      Type  Size  Used Avail Use% Mounted on
     /dev/sda1       ext4  212G   37G  165G  19% /
```

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CPU2006 license: 9008

Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: Oct-2015

Hardware Availability: Sep-2014

Software Availability: Aug-2015

Platform Notes (Continued)

```
  Additional information from dmidecode:
    BIOS American Megatrends Inc. 1.0c 01/07/2015
    Memory:
     16x   16 GB
     16x Hynix Semiconductor (date:15/28) HMA42GR7AFR4N-UH 16 GB 2133 MHz 2 rank

  (End of data from sysinfo program)
  dmidecode does not properly detect memory modules
  16 modules of 16 GB were used to run the test (256 GB total)
```

General Notes

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

  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>
  Binaries compiled on a system with 2x Xeon E5-2650 v3 chips + 256 GB memory
  using RedHat EL 7.1
```

Base Compiler Invocation

C benchmarks:
```
    icc -m32 -L/opt/intel/lib/ia32
```

C++ benchmarks:
```
    icpc -m32 -L/opt/intel/lib/ia32
```

Base Portability Flags

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

Base Optimization Flags

C benchmarks:
```
    -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
    -opt-mem-layout-trans=3
```

Continued on next page

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Base Optimization Flags (Continued)

C++ benchmarks:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/cpu2006.1.2/sh -lsmartheap
```

Base Other Flags

C benchmarks:

```
403.gcc: -Dalloca=_alloca
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc -m32 -L/opt/intel/lib/ia32
```

400.perlbench: `icc -m64`

401.bzip2: `icc -m64`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

C++ benchmarks:
```
icpc -m32 -L/opt/intel/lib/ia32
```

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: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`
`-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)`
`-auto-ilp32`

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Peak Optimization Flags (Continued)

401.bzip2: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2(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/cpu2006.1.2/sh -lsmartheap

473.astar: basepeak = yes

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-ic16.0-official-linux64.html
http://www.spec.org/cpu2006/flags/ACTION.SA-Platform-Flags-RevD-aug-2015-For-Supermicro-Platform.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/ACTION.SA-Platform-Flags-RevD-aug-2015-For-Supermicro-Platform.xml

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

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