SPEC® CINT2006 Result

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ACTION S.A.

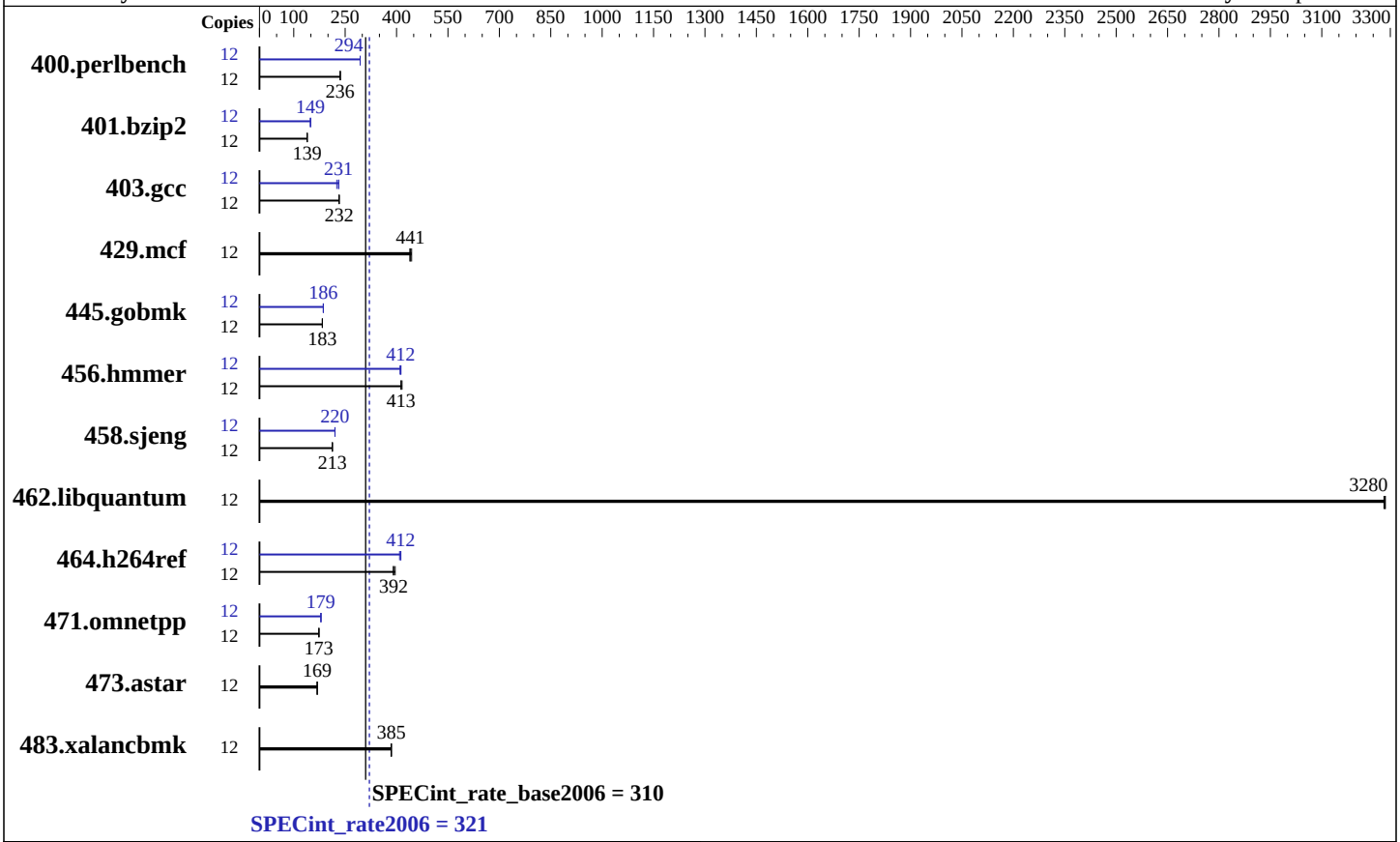
ACTINA SOLAR 210 S6 (Intel Xeon E5-2609 v3, 1.90 GHz)

SPECint®_rate2006 = 321

SPECint_rate_base2006 = 310

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

Test date: Jan-2015
Hardware Availability: Sep-2014
Software Availability: Sep-2014



Hardware

CPU Name:	Intel Xeon E5-2609 v3
CPU Characteristics:	
CPU MHz:	1900
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 cores/chip
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:	15 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
Disk Subsystem:	1 x 240 GB SATA II SSD
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.4 (Santiago) 2.6.32-358.11.1.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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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	12	**497**	**236**	498	235	497	236	12	399	294	**399**	**294**	399	294
401.bzip2	12	832	139	831	139	**832**	**139**	12	778	149	**778**	**149**	777	149
403.gcc	12	415	233	**416**	**232**	417	232	12	**419**	**231**	428	226	418	231
429.mcf	12	249	439	246	444	**248**	**441**	12	249	439	246	444	**248**	**441**
445.gobmk	12	686	183	**686**	**183**	686	184	12	675	186	676	186	**675**	**186**
456.hmmer	12	271	413	269	416	**271**	**413**	12	273	410	271	413	**272**	**412**
458.sjeng	12	**683**	**213**	682	213	683	213	12	**659**	**220**	659	220	659	220
462.libquantum	12	75.7	3290	75.8	3280	**75.7**	**3280**	12	75.7	3290	75.8	3280	**75.7**	**3280**
464.h264ref	12	680	390	670	396	**678**	**392**	12	644	413	650	409	**645**	**412**
471.omnetpp	12	431	174	433	173	**433**	**173**	12	**418**	**179**	418	180	419	179
473.astar	12	**500**	**169**	501	168	499	169	12	**500**	**169**	501	168	499	169
483.xalancbmk	12	**215**	**385**	216	384	215	385	12	**215**	**385**	216	384	215	385

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
Power Technology = Energy Efficient
Enforce POR = Disabled

BMC Setting
Fan Mode = Full Speed

Sysinfo program /cpu2006.1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Thu Jan 22 21:13:26 2015

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
```

Continued on next page

Platform Notes (Continued)

```
      model name : Intel(R) Xeon(R) CPU E5-2609 v3 @ 1.90GHz
         2 "physical id"s (chips)
         12 "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 : 6
         siblings  : 6
         physical 0: cores 0 1 2 3 4 5
         physical 1: cores 0 1 2 3 4 5
      cache size : 15360 KB

   From /proc/meminfo
      MemTotal:       264426792 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 localhost.localdomain 2.6.32-358.11.1.el6.x86_64 #1 SMP Tue Nov 19
      17:43:04 CET 2013 x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Jan 22 08:40

   SPEC is set to: /cpu2006.1.2
      Filesystem     Type    Size  Used Avail Use% Mounted on
      /dev/sda1      ext4    193G   54G  130G  30% /

   Additional information from dmidecode:
     BIOS American Megatrends Inc. 1.0b 10/29/2014
     Memory:
      16x   16 GB
      2x Samsung (date:14/33) M393A2G40DB0-CPB 16 GB 1600 MHz 2 rank
      14x Samsung (date:14/4p) M393A2G40DB0-CPB 16 GB 1600 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"
```

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General Notes (Continued)

```
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 E5-2670 v3 chips + 128 GB memory
using RedHat EL 6.4
```

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

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`

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: `-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`

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`

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Peak Optimization Flags (Continued)

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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/ACTION.SA-Platform-Flags-RevC-jan-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-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/ACTION.SA-Platform-Flags-RevC-jan-2015-For-Supermicro-Platform.xml

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