



# SPEC® CINT2006 Result

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## Sugon

SPECint®\_rate2006 = 249

I620-G15 (Intel Xeon E5-2609 v2, 2.50 GHz)

SPECint\_rate\_base2006 = 241

CPU2006 license: 9046

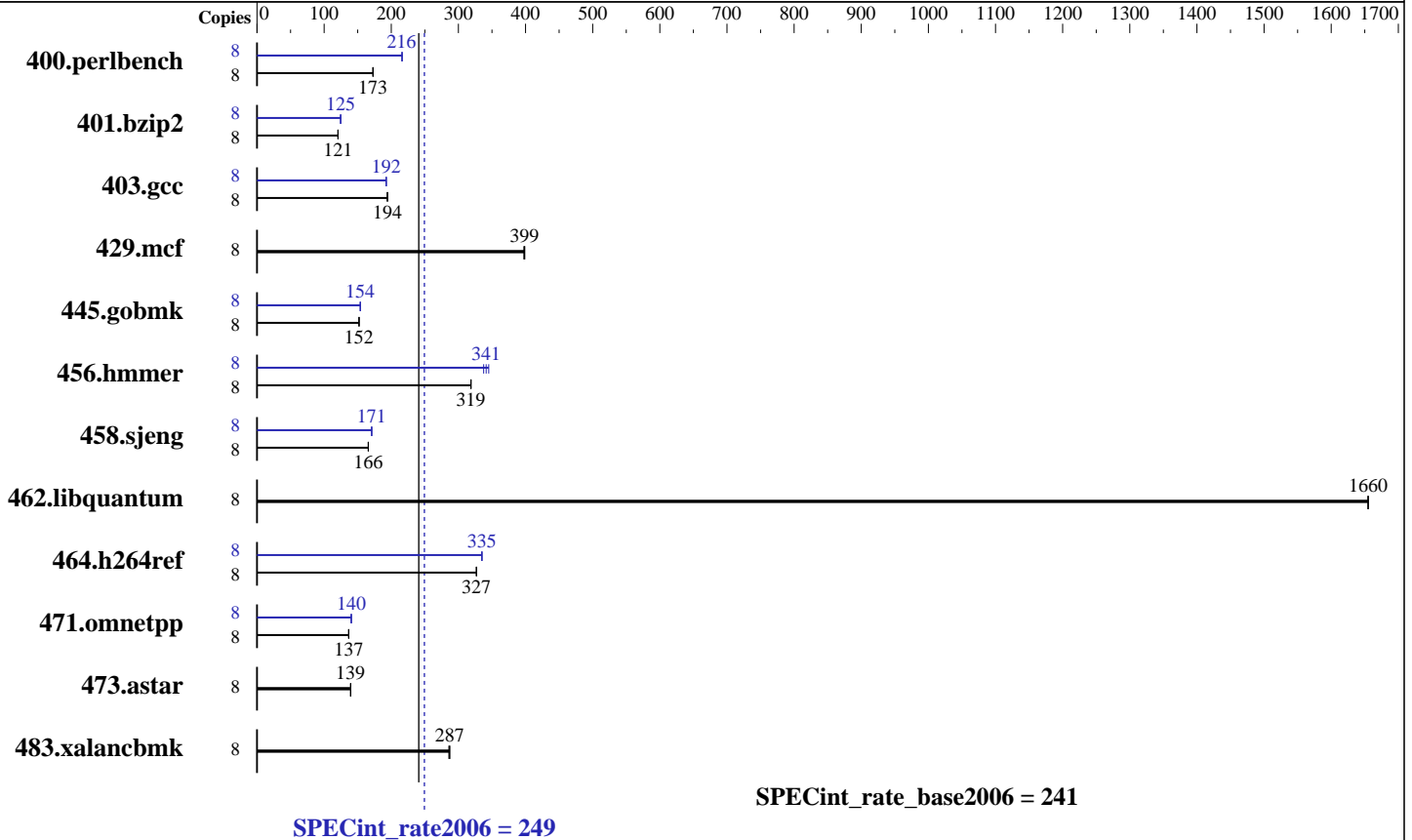
Test date: Dec-2013

Test sponsor: Sugon

Hardware Availability: Jan-2014

Tested by: Sugon

Software Availability: Jan-2014



### Hardware

CPU Name: Intel Xeon E5-2609 v2  
 CPU Characteristics:  
 CPU MHz: 2500  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 1,2 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core  
 L3 Cache: 10 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC, running at 1333 MHz and CL9)  
 Disk Subsystem: 1 X 3 TB SATA 7200 RPM, RAID 0  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 11 SP3 (x86\_64) 3.0.76-0.11-default  
 Compiler: C/C++; Version 14.0.0.080 of Intel C++ Studio XE for Linux  
 Auto Parallel: No  
 File System: ext3  
 System State: Run level 3 (Full multiuser with network)  
 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	8	<u>452</u>	<u>173</u>	452	173	452	173	8	362	216	361	216	<u>362</u>	<u>216</u>
401.bzip2	8	<u>640</u>	<u>121</u>	639	121	641	121	8	<u>619</u>	<u>125</u>	619	125	621	124
403.gcc	8	331	194	<u>331</u>	<u>194</u>	332	194	8	<u>335</u>	<u>192</u>	334	193	335	192
429.mcf	8	<u>183</u>	<u>399</u>	183	399	184	397	8	<u>183</u>	<u>399</u>	183	399	184	397
445.gobmk	8	552	152	553	152	<u>552</u>	<u>152</u>	8	545	154	<u>545</u>	<u>154</u>	546	154
456.hammer	8	<u>234</u>	<u>319</u>	234	319	234	319	8	221	338	216	345	<u>219</u>	<u>341</u>
458.sjeng	8	<u>584</u>	<u>166</u>	584	166	584	166	8	<u>567</u>	<u>171</u>	567	171	567	171
462.libquantum	8	100	1650	<u>100</u>	<u>1660</u>	100	1660	8	100	1650	<u>100</u>	<u>1660</u>	100	1660
464.h264ref	8	<u>542</u>	<u>327</u>	541	327	542	327	8	528	335	<u>529</u>	<u>335</u>	529	335
471.omnetpp	8	366	137	366	136	<u>366</u>	<u>137</u>	8	356	141	356	140	<u>356</u>	<u>140</u>
473.astar	8	403	139	402	140	<u>403</u>	<u>139</u>	8	403	139	402	140	<u>403</u>	<u>139</u>
483.xalancbmk	8	193	286	<u>192</u>	<u>287</u>	192	287	8	193	286	<u>192</u>	<u>287</u>	192	287

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 Configuration:  
Intel Virtualization technology set to disabled  
Power Technology set to performance  
Turbo boost set to disable  
DDR Speed set to Auto  
Sysinfo program /root/cpu2006/config/sysinfo.rev6874  
\$Rev: 6874 \$ \$Date:: 2013-11-20 #\$ 654bd3fcf53b06faef0efe54ed011998  
running on linux-e494 Tue Dec 17 19:53:48 2013

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 E5-2609 v2 @ 2.50GHz  
2 "physical id"s (chips)  
8 "processors"

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## Platform Notes (Continued)

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 : 4
siblings  : 4
physical 0: cores 0 1 2 3
physical 1: cores 0 1 2 3
cache size : 10240 KB
```

From /proc/meminfo

```
MemTotal:      264524132 kB
HugePages_Total:    0
Hugepagesize:     2048 kB
```

From /etc/\*release\* /etc/\*version\*

```
SuSE-release:
SUSE Linux Enterprise Server 11 (x86_64)
VERSION = 11
PATCHLEVEL = 3
```

uname -a:

```
Linux linux-e494 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013
(ccab990) x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Dec 17 18:59 last=S

SPEC is set to: /root/cpu2006

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3        ext3  2.7T  633G  2.1T  24% /
```

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS American Megatrends Inc. V8.100A 10/31/2013

Memory:

16x Samsung M393B2G70QH0-CMA 16 GB 1333 MHz

(End of data from sysinfo program)

## General Notes

Environment variables set by runspec before the start of the run:

LD\_LIBRARY\_PATH = "/root/cpu2006/libs/32:/root/cpu2006/libs/64:/root/cpu2006/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

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## General Notes (Continued)

Filesystem page cache cleared with:  
echo 1> /proc/sys/vm/drop\_caches  
runspec command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>

## 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

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## Peak Compiler Invocation (Continued)

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)  
-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: `-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-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`

Continued on next page



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## Peak Optimization Flags (Continued)

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

## 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/Sugon-Platform-Settings-V1.2-IVB.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/Sugon-Platform-Settings-V1.2-IVB.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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