



# SPEC<sup>®</sup> CINT2006 Result

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## Sugon

SPECint<sup>®</sup>\_rate2006 = 849

I840r-GP (Intel Xeon E7-4830, 2.13 GHz)

SPECint\_rate\_base2006 = 804

CPU2006 license: 9046

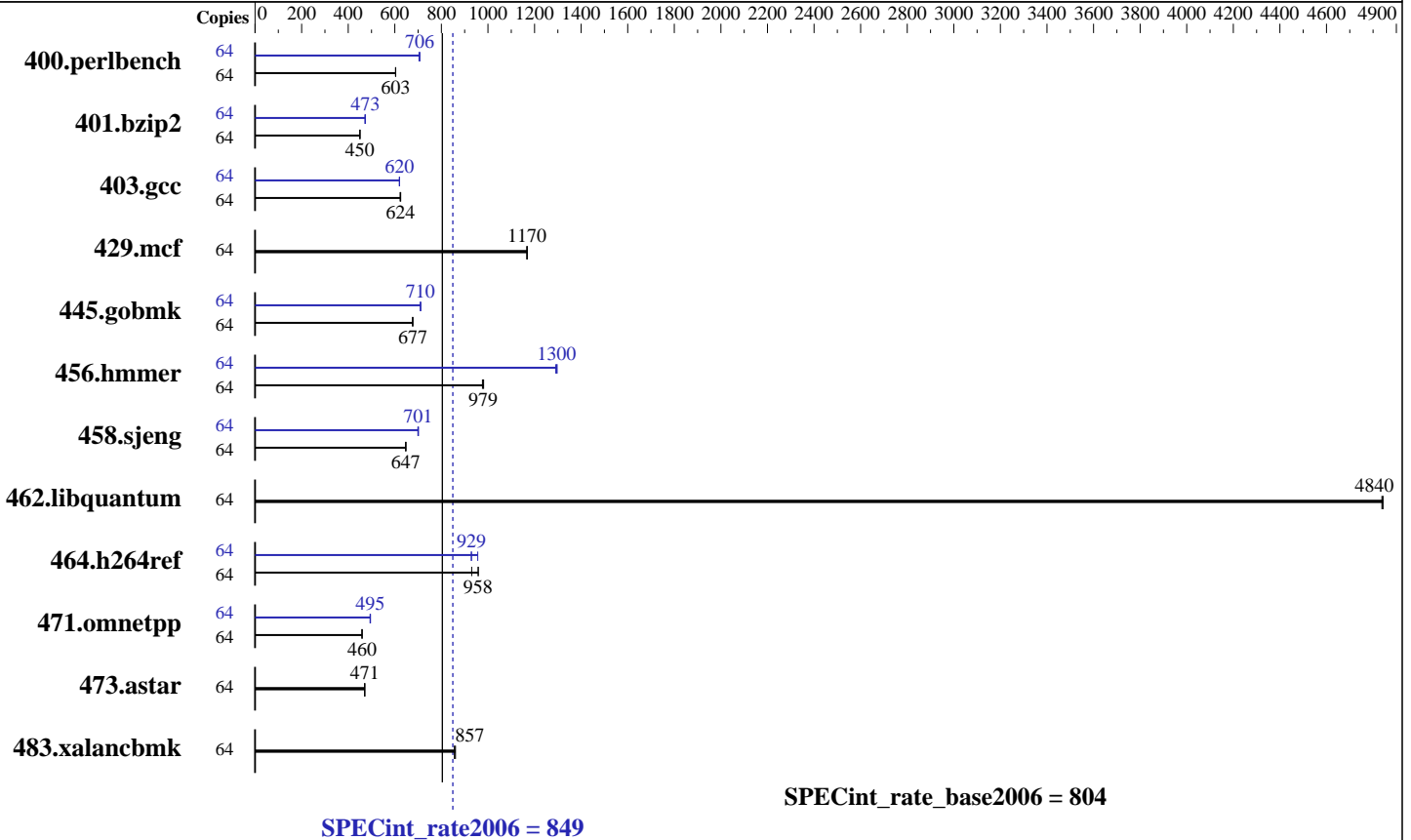
Test sponsor: Sugon

Tested by: Sugon

Test date: May-2013

Hardware Availability: Feb-2013

Software Availability: Feb-2013



### Hardware

CPU Name: Intel Xeon E7-4830  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz  
 CPU MHz: 2133  
 FPU: Integrated  
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip, 2 threads/core  
 CPU(s) orderable: 1,2,3,4 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: 24 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 512 GB (64 x 8 GB 2Rx4 PC3-10600R-9, ECC)  
 Disk Subsystem: 2 x 300 GB SAS, 10000RPM, RAID 1  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)  
 2.6.32-358.el6.x86\_64  
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux  
 Auto Parallel: No  
 File System: ext4  
 System State: Run level 3 (Full multiuser with network)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V9.01



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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	64	1035	604	1036	603	<b><u>1036</u></b>	<b><u>603</u></b>	64	<b><u>885</u></b>	<b><u>706</u></b>	888	704	884	707
401.bzip2	64	1372	450	1371	450	<b><u>1372</u></b>	<b><u>450</u></b>	64	<b><u>1305</u></b>	<b><u>473</u></b>	1305	473	1309	472
403.gcc	64	824	625	827	623	<b><u>825</u></b>	<b><u>624</u></b>	64	<b><u>831</u></b>	<b><u>620</u></b>	831	620	830	620
429.mcf	64	499	1170	<b><u>500</u></b>	<b><u>1170</u></b>	500	1170	64	499	1170	<b><u>500</u></b>	<b><u>1170</u></b>	500	1170
445.gobmk	64	<b><u>992</u></b>	<b><u>677</u></b>	991	677	993	676	64	944	711	946	710	<b><u>945</u></b>	<b><u>710</u></b>
456.hammer	64	612	976	<b><u>610</u></b>	<b><u>979</u></b>	609	981	64	460	1300	<b><u>461</u></b>	<b><u>1300</u></b>	462	1290
458.sjeng	64	1195	648	1198	646	<b><u>1197</u></b>	<b><u>647</u></b>	64	1108	699	<b><u>1105</u></b>	<b><u>701</u></b>	1104	701
462.libquantum	64	274	4840	274	4840	<b><u>274</u></b>	<b><u>4840</u></b>	64	274	4840	274	4840	<b><u>274</u></b>	<b><u>4840</u></b>
464.h264ref	64	<b><u>1479</u></b>	<b><u>958</u></b>	1523	930	1478	959	64	<b><u>1524</u></b>	<b><u>929</u></b>	1526	928	1481	956
471.omnetpp	64	<b><u>870</u></b>	<b><u>460</u></b>	871	459	870	460	64	808	495	810	494	<b><u>808</u></b>	<b><u>495</u></b>
473.astar	64	<b><u>954</u></b>	<b><u>471</u></b>	953	471	955	470	64	<b><u>954</u></b>	<b><u>471</u></b>	953	471	955	470
483.xalancbmk	64	516	856	513	861	<b><u>515</u></b>	<b><u>857</u></b>	64	516	856	513	861	<b><u>515</u></b>	<b><u>857</u></b>

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

Sysinfo program /home/cpu2006/config/sysinfo.rev6800  
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
running on I840r-GP.sugon.com Sat Apr 27 20:52:33 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 E7- 4830 @ 2.13GHz  
4 "physical id"s (chips)  
64 "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 : 8  
siblings : 16

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### Platform Notes (Continued)

```
physical 0: cores 0 1 2 8 17 18 24 25
physical 1: cores 0 1 2 8 17 18 24 25
physical 2: cores 0 1 2 8 17 18 24 25
physical 3: cores 0 1 2 8 17 18 24 25
cache size : 24576 KB
```

```
From /proc/meminfo
MemTotal:      529197552 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 I840r-GP.sugon.com 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 Apr 27 17:38
```

```
SPEC is set to: /home/cpu2006
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/vg_i840rgp-lv_home
                ext4      221G  143G   67G   69% /home
```

Additional information from dmidecode:

(End of data from sysinfo program)

### General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5  
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/smartheap -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: -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

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/smartheap -lsmartheap

473.astar: basepeak = yes

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## Peak Optimization Flags (Continued)

483.xalanbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

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