



# SPEC® CINT2006 Result

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## Huawei

**SPECint®2006 = 39.0**

Huawei RH2288 V2 (Intel Xeon E5-2630L)

**SPECint\_base2006 = 36.6**

CPU2006 license: 3175

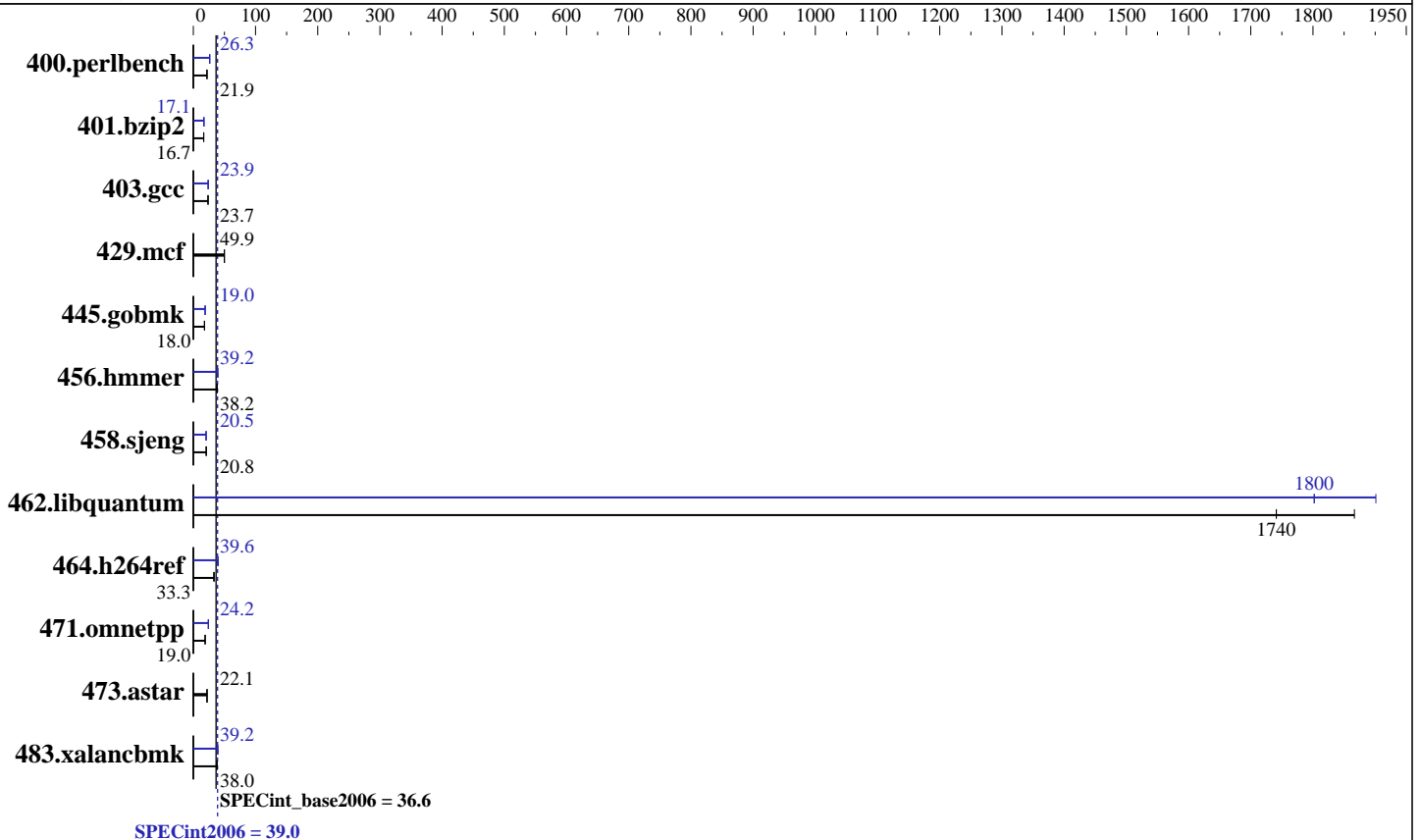
Test sponsor: Huawei

Tested by: Huawei

Test date: May-2012

Hardware Availability: Mar-2012

Software Availability: Dec-2011



### Hardware

CPU Name: Intel Xeon E5-2630L  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.50 GHz  
 CPU MHz: 2000  
 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: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz)  
 Disk Subsystem: 1 x 300 GB SAS, 10K RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago)  
 2.6.32-220.el6.x86\_64  
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V9.01



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	444	22.0	446	21.9	<b>446</b>	<b>21.9</b>	370	26.4	371	26.3	<b>371</b>	<b>26.3</b>
401.bzip2	<b>578</b>	<b>16.7</b>	579	16.7	578	16.7	<b>566</b>	<b>17.1</b>	567	17.0	566	17.1
403.gcc	340	23.7	341	23.6	<b>340</b>	<b>23.7</b>	337	23.9	<b>337</b>	<b>23.9</b>	337	23.9
429.mcf	183	49.8	<b>183</b>	<b>49.9</b>	182	50.0	183	49.8	<b>183</b>	<b>49.9</b>	182	50.0
445.gobmk	585	17.9	<b>584</b>	<b>18.0</b>	584	18.0	<b>553</b>	<b>19.0</b>	553	19.0	552	19.0
456.hammer	245	38.1	<b>244</b>	<b>38.2</b>	244	38.3	238	39.3	<b>238</b>	<b>39.2</b>	238	39.2
458.sjeng	583	20.7	<b>583</b>	<b>20.8</b>	582	20.8	589	20.5	590	20.5	<b>589</b>	<b>20.5</b>
462.libquantum	11.9	1740	<b>11.9</b>	<b>1740</b>	11.1	1870	10.9	1900	11.5	1800	<b>11.5</b>	<b>1800</b>
464.h264ref	<b>665</b>	<b>33.3</b>	663	33.4	670	33.0	560	39.5	<b>559</b>	<b>39.6</b>	557	39.7
471.omnetpp	<b>329</b>	<b>19.0</b>	328	19.0	329	19.0	258	24.2	259	24.1	<b>259</b>	<b>24.2</b>
473.astar	<b>318</b>	<b>22.1</b>	321	21.9	317	22.1	<b>318</b>	<b>22.1</b>	321	21.9	317	22.1
483.xalancbmk	<b>181</b>	<b>38.0</b>	182	37.9	181	38.1	176	39.2	175	39.3	<b>176</b>	<b>39.2</b>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"  
Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled  
Select only test related files when installing the operating system

## Platform Notes

BIOS configuration:  
Intel Hyper-Threading set to Disabled  
Set Power Efficiency Mode to Performance  
Sysinfo program /spec/config/sysinfo.rev6800  
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
running on RH2288-RH6.2 Fri May 18 18:17:31 2012

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 E5-2630L 0 @ 2.00GHz  
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

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## Platform Notes (Continued)

```
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:      132124016 kB
HugePages_Total: 0
Hugepagesize:  2048 kB
```

```
From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

```
uname -a:
Linux RH2288-RH6.2 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011
x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 May 18 18:10
```

```
SPEC is set to: /spec
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sdal        ext4      197G   21G  167G  12% /
```

```
Additional information from dmidecode:
Memory:
16x Samsung M393B1K70DH0-CK0 8 GB 1600 MHz 2 rank
```

## General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,0,1"
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64"
OMP_NUM_THREADS = "12"
```

```
Binaries compiled on a system with 2 x Xeon X5645 CPU + 16GB memory
using RHEL 6.1
```

## Base Compiler Invocation

```
C benchmarks:
icc -m64
```

```
C++ benchmarks:
icpc -m64
```



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## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
 401.bzip2: -DSPEC\_CPU\_LP64  
 403.gcc: -DSPEC\_CPU\_LP64  
 429.mcf: -DSPEC\_CPU\_LP64  
 445.gobmk: -DSPEC\_CPU\_LP64  
 456.hmmer: -DSPEC\_CPU\_LP64  
 458.sjeng: -DSPEC\_CPU\_LP64  
 462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
 464.h264ref: -DSPEC\_CPU\_LP64  
 471.omnetpp: -DSPEC\_CPU\_LP64  
 473.astar: -DSPEC\_CPU\_LP64  
 483.xalancbmk: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:  
 -xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:  
 -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
 -Wl,-z,muldefs -L/smartheap -lsmartheap64

## Base Other Flags

C benchmarks:  
 403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):  
 icc -m64

400.perlbench: icc -m32

445.gobmk: icc -m32

464.h264ref: icc -m32

C++ benchmarks (except as noted below):  
 icpc -m32

473.astar: icpc -m64



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Tested by: Huawei

Software Availability: Dec-2011

## Peak Portability Flags

```

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
473.astar: -DSPEC_CPU_LP64
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)
               -opt-prefetch -ansi-alias

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
            -O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32
            -opt-prefetch -ansi-alias

403.gcc: -xAVX -ipo -O3 -no-prec-div -inline-calloc
          -opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
            -ansi-alias

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

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

462.libquantum: -xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch
                -auto-p32

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)
              -opt-ra-region-strategy=block -ansi-alias

```

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## Peak Optimization Flags (Continued)

471.omnetpp (continued):

-Wl,-z,muldefs -L/smartheap -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

-Wl,-z,muldefs -L/smartheap -lsmartheap

## 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-ic12.1-official-linux64.20120425.html>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-revE.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-revE.xml>

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