



# SPEC® CINT2006 Result

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## Huawei

SPECint®2006 = **51.4**

Huawei DH310 V2 (Intel Xeon E3-1220 v2)

SPECint\_base2006 = **48.6**

CPU2006 license: 3175

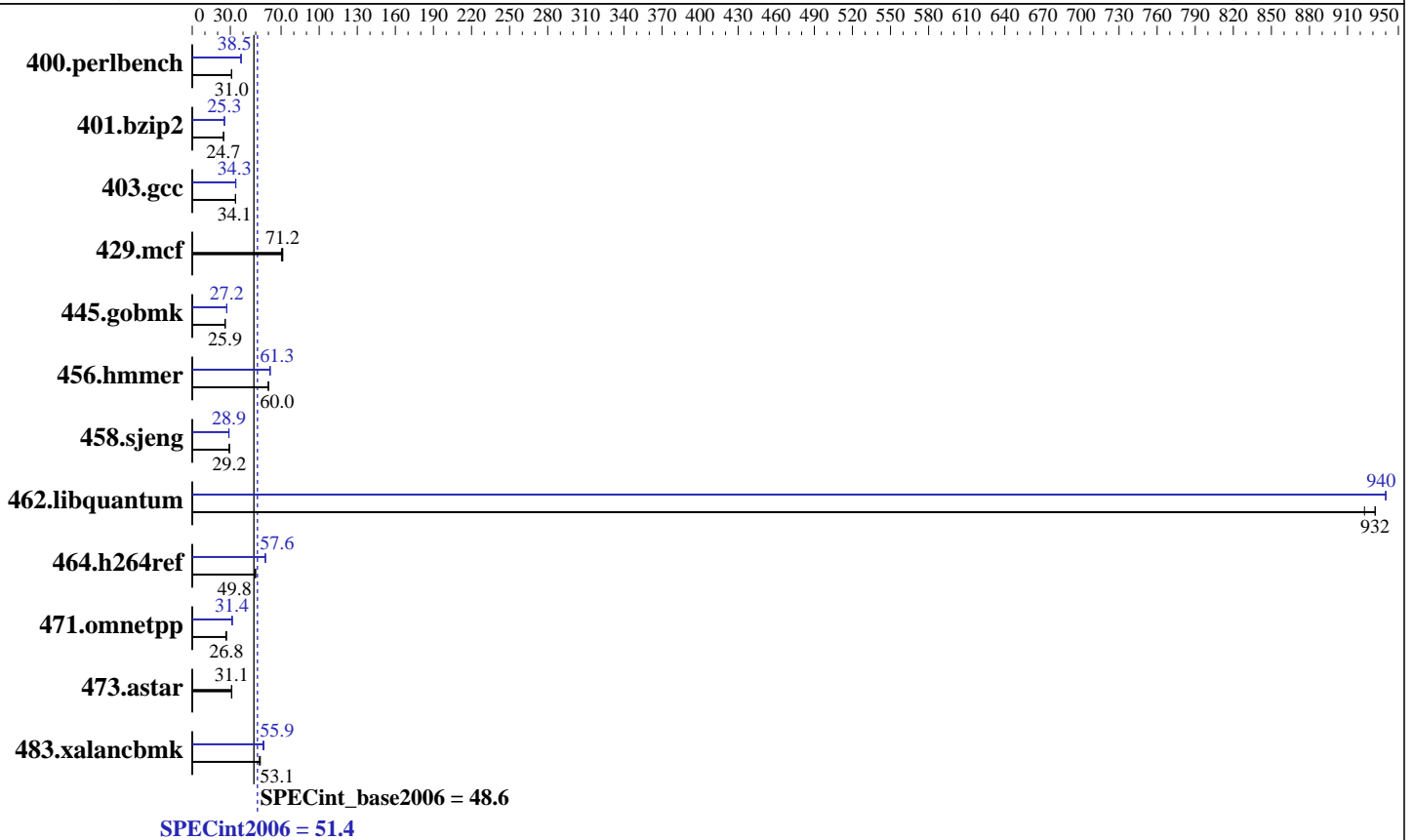
Test date: Jul-2012

Test sponsor: Huawei

Hardware Availability: May-2012

Tested by: Huawei

Software Availability: Dec-2011



### Hardware

CPU Name: Intel Xeon E3-1220 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz  
 CPU MHz: 3100  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1 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: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 16 GB (8 x 8 GB 2Rx4 PC3-12800R-11, ECC)  
 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	316	31.0	314	31.1	<b>316</b>	<b>31.0</b>	<u>254</u>	<u>38.5</u>	254	38.5	255	38.4
401.bzip2	391	24.7	<b>391</b>	<b>24.7</b>	391	24.7	381	25.3	<b>381</b>	<b>25.3</b>	380	25.4
403.gcc	236	34.1	236	34.1	<b>236</b>	<b>34.1</b>	235	34.3	<b>235</b>	<b>34.3</b>	235	34.3
429.mcf	128	71.3	130	70.3	<b>128</b>	<b>71.2</b>	128	71.3	130	70.3	<b>128</b>	<b>71.2</b>
445.gobmk	404	25.9	405	25.9	<b>405</b>	<b>25.9</b>	386	27.2	<b>386</b>	<b>27.2</b>	386	27.2
456.hmmer	<b>156</b>	<b>60.0</b>	155	60.0	156	60.0	152	61.3	152	61.3	<b>152</b>	<b>61.3</b>
458.sjeng	414	29.2	414	29.3	<b>414</b>	<b>29.2</b>	419	28.9	<b>419</b>	<b>28.9</b>	419	28.9
462.libquantum	22.2	932	<b>22.2</b>	<b>932</b>	22.4	923	22.0	940	<b>22.0</b>	<b>940</b>	22.0	940
464.h264ref	445	49.8	<b>445</b>	<b>49.8</b>	444	49.8	384	57.7	<b>384</b>	<b>57.6</b>	385	57.5
471.omnetpp	<b>233</b>	<b>26.8</b>	235	26.6	232	26.9	<b>199</b>	<b>31.4</b>	198	31.6	200	31.2
473.astar	227	30.9	225	31.2	<b>226</b>	<b>31.1</b>	227	30.9	225	31.2	<b>226</b>	<b>31.1</b>
483.xalancbmk	<b>130</b>	<b>53.1</b>	129	53.6	130	53.0	<b>124</b>	<b>55.9</b>	122	56.4	124	55.8

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:  
Set Power Efficiency Mode to Performance  
Sysinfo program /spec/config/sysinfo.rev6800  
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
running on RH62-com Wed Jul 11 13:10:46 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 E3-1220 V2 @ 3.10GHz  
1 "physical id"s (chips)  
4 "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 : 4  
siblings : 4  
physical 0: cores 0 1 2 3

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## Platform Notes (Continued)

cache size : 8192 KB

From /proc/meminfo

MemTotal: 16302876 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 RH62-com 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 Jul 10 20:05

SPEC is set to: /spec

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sdal	ext4	289G	49G	226G	18%	/

Additional information from dmidecode:

Memory:  
2x Samsung M391B1G73BH0-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 = "4"

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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## 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.20120703.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.20120703.xml>

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

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