



# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Bull SAS

SPECint®2006 = 44.9

NovaScale R440 F2 (Intel Xeon X5672, 3.20 GHz)

SPECint\_base2006 = 42.5

CPU2006 license: 20

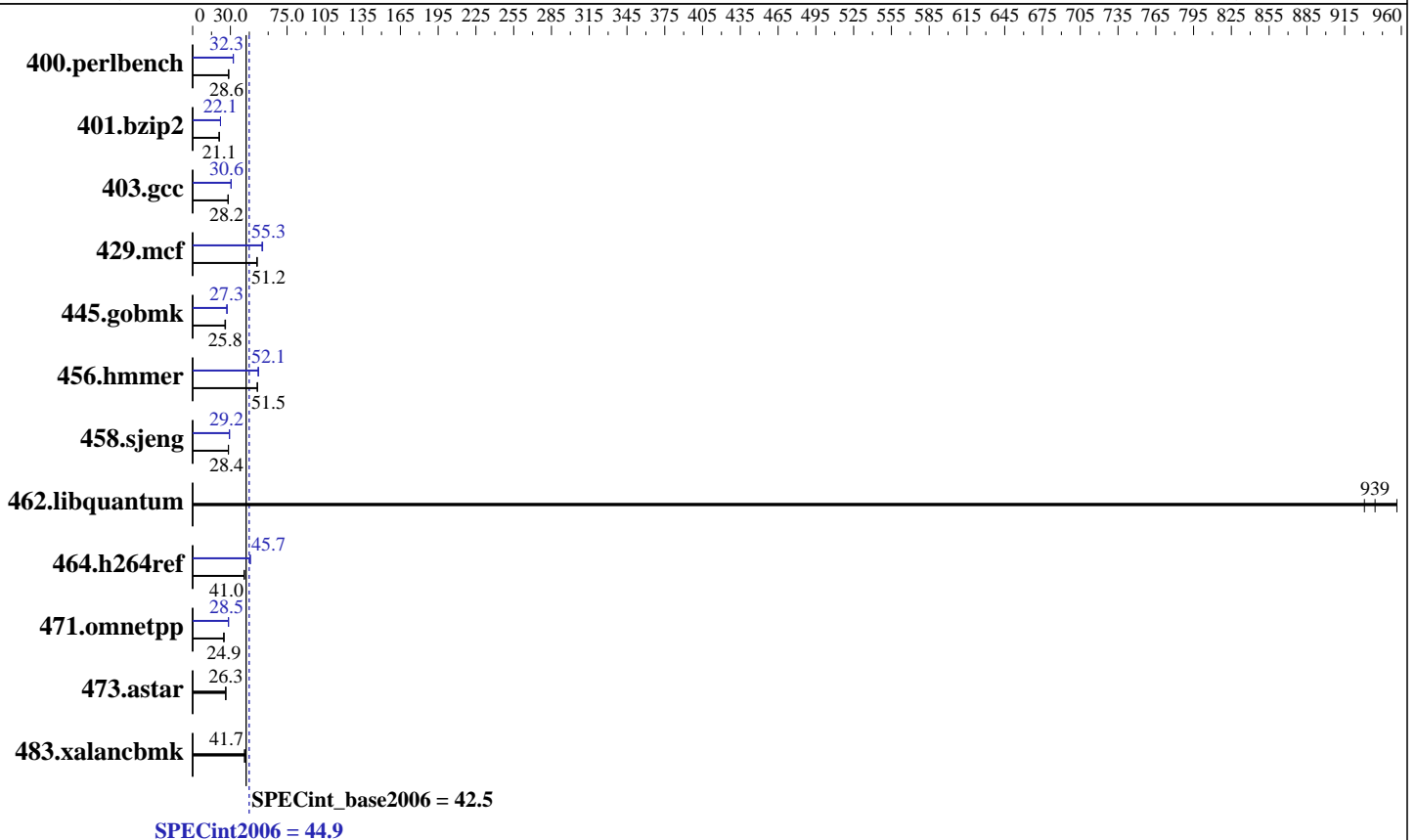
Test date: Feb-2011

Test sponsor: Bull SAS

Hardware Availability: Feb-2011

Tested by: Dell Inc.

Software Availability: Jan-2011



### Hardware

CPU Name: Intel Xeon X5672  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 3200  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 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: 12 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC)  
 Disk Subsystem: 1 x 146 GB 15000 RPM SAS  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 11 SP1 (x86\_64), Kernel 2.6.32.12-0.7-default  
 Compiler: Intel C++ Intel 64 Compiler XE for applications running on Intel 64 Version 12.0.1.116 Build 20101116  
 Auto Parallel: Yes  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V9.01 Binaries compiled on RHEL5.5 with binutils-2.17.50.0.6-14.el5



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Bull SAS

SPECint2006 = 44.9

NovaScale R440 F2 (Intel Xeon X5672, 3.20 GHz)

SPECint\_base2006 = 42.5

CPU2006 license: 20  
Test sponsor: Bull SAS  
Tested by: Dell Inc.

Test date: Feb-2011  
Hardware Availability: Feb-2011  
Software Availability: Jan-2011

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	343	28.5	<b><u>342</u></b>	<b><u>28.6</u></b>	342	28.6	302	32.4	<b><u>302</u></b>	<b><u>32.3</u></b>	303	32.2
401.bzip2	457	21.1	457	21.1	<b><u>457</u></b>	<b><u>21.1</u></b>	<b><u>436</u></b>	<b><u>22.1</u></b>	436	22.1	436	22.1
403.gcc	285	28.3	<b><u>285</u></b>	<b><u>28.2</u></b>	286	28.1	263	30.6	264	30.5	<b><u>263</u></b>	<b><u>30.6</u></b>
429.mcf	<b><u>178</u></b>	<b><u>51.2</u></b>	179	51.0	178	51.2	165	55.2	164	55.6	<b><u>165</u></b>	<b><u>55.3</u></b>
445.gobmk	<b><u>406</u></b>	<b><u>25.8</u></b>	402	26.1	407	25.8	385	27.3	385	27.3	<b><u>385</u></b>	<b><u>27.3</u></b>
456.hammer	182	51.3	181	51.5	<b><u>181</u></b>	<b><u>51.5</u></b>	179	52.2	<b><u>179</u></b>	<b><u>52.1</u></b>	179	52.1
458.sjeng	426	28.4	426	28.4	<b><u>426</u></b>	<b><u>28.4</u></b>	414	29.2	414	29.2	<b><u>414</u></b>	<b><u>29.2</u></b>
462.libquantum	21.7	956	22.3	931	<b><u>22.1</u></b>	<b><u>939</u></b>	21.7	956	22.3	931	<b><u>22.1</u></b>	<b><u>939</u></b>
464.h264ref	539	41.0	<b><u>540</u></b>	<b><u>41.0</u></b>	541	40.9	<b><u>484</u></b>	<b><u>45.7</u></b>	484	45.7	484	45.7
471.omnetpp	253	24.7	251	24.9	<b><u>251</u></b>	<b><u>24.9</u></b>	219	28.5	<b><u>220</u></b>	<b><u>28.5</u></b>	220	28.4
473.astar	267	26.3	267	26.3	<b><u>267</u></b>	<b><u>26.3</u></b>	267	26.3	267	26.3	<b><u>267</u></b>	<b><u>26.3</u></b>
483.xalancbmk	<b><u>165</u></b>	<b><u>41.7</u></b>	168	41.1	164	42.0	<b><u>165</u></b>	<b><u>41.7</u></b>	168	41.1	164	42.0

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

## Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'mount -t hugetlbfs nodev /mnt/hugepages' was used to enable large pages
echo 900 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

## Platform Notes

BIOS Settings:  
Power Management = Maximum Performance (Default = Active Power Controller)  
Data Reuse = Disabled (Default = Enabled)  
Logical Processor = Disabled (Default = Enabled)

## General Notes

OMP\_NUM\_THREADS set to number of cores  
The Dell PowerEdge R610 and  
the Bull NovaScale R440 F2 models are electronically equivalent.  
The results have been measured on a Dell PowerEdge R610 model.

## Base Compiler Invocation

C benchmarks:  
icc -m64

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Bull SAS**

**SPECint2006 = 44.9**

NovaScale R440 F2 (Intel Xeon X5672, 3.20 GHz)

**SPECint\_base2006 = 42.5**

**CPU2006 license:** 20

**Test date:** Feb-2011

**Test sponsor:** Bull SAS

**Hardware Availability:** Feb-2011

**Tested by:** Dell Inc.

**Software Availability:** Jan-2011

## Base Compiler Invocation (Continued)

C++ benchmarks:  
icpc -m64

## 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  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs  
-L/smartheap -lsmartheap64  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

## Base Other Flags

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

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m64  
400.perlbench: icc -m32

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Bull SAS**

**SPECint2006 = 44.9**

NovaScale R440 F2 (Intel Xeon X5672, 3.20 GHz)

**SPECint\_base2006 = 42.5**

**CPU2006 license:** 20

**Test date:** Feb-2011

**Test sponsor:** Bull SAS

**Hardware Availability:** Feb-2011

**Tested by:** Dell Inc.

**Software Availability:** Jan-2011

## Peak Compiler Invocation (Continued)

429.mcf: `icc -m32`

445.gobmk: `icc -m32`

464.h264ref: `icc -m32`

C++ benchmarks (except as noted below):

`icpc -m64`

471.omnetpp: `icpc -m32`

## Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`

401.bzip2: `-DSPEC_CPU_LP64`

403.gcc: `-DSPEC_CPU_LP64`

456.hammer: `-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_LP64 -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  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT`

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: `-xSSE4.2 -ipo -O3 -no-prec-div -inline-calloc  
-opt-malloc-options=3 -auto-ilp32  
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT`

429.mcf: `-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 -ansi-alias  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT`

445.gobmk: `-xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-auto-ilp32 -ansi-alias  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT`

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Bull SAS**

**SPECint2006 = 44.9**

NovaScale R440 F2 (Intel Xeon X5672, 3.20 GHz)

**SPECint\_base2006 = 42.5**

**CPU2006 license:** 20

**Test date:** Feb-2011

**Test sponsor:** Bull SAS

**Hardware Availability:** Feb-2011

**Tested by:** Dell Inc.

**Software Availability:** Jan-2011

## Peak Optimization Flags (Continued)

456.hmmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32  
-ansi-alias  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

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: 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  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

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 -Wl,-z,muldefs  
-L/smartheap -lsmartheap  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

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-ic12.0-linux64-revB.html>  
<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110308.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml>  
<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110308.xml>



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Bull SAS**

**SPECint2006 = 44.9**

NovaScale R440 F2 (Intel Xeon X5672, 3.20 GHz)

**SPECint\_base2006 = 42.5**

**CPU2006 license:** 20

**Test sponsor:** Bull SAS

**Tested by:** Dell Inc.

**Test date:** Feb-2011

**Hardware Availability:** Feb-2011

**Software Availability:** Jan-2011

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.1.  
Report generated on Wed Jul 23 16:43:04 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 16 March 2011.