



# SPEC® CINT2006 Result

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## Bull SAS

### SPECint®\_rate2006 = 353

NovaScale R480 F2 (Intel Xeon L7555, 1.86 GHz)

### SPECint\_rate\_base2006 = 334

CPU2006 license: 20

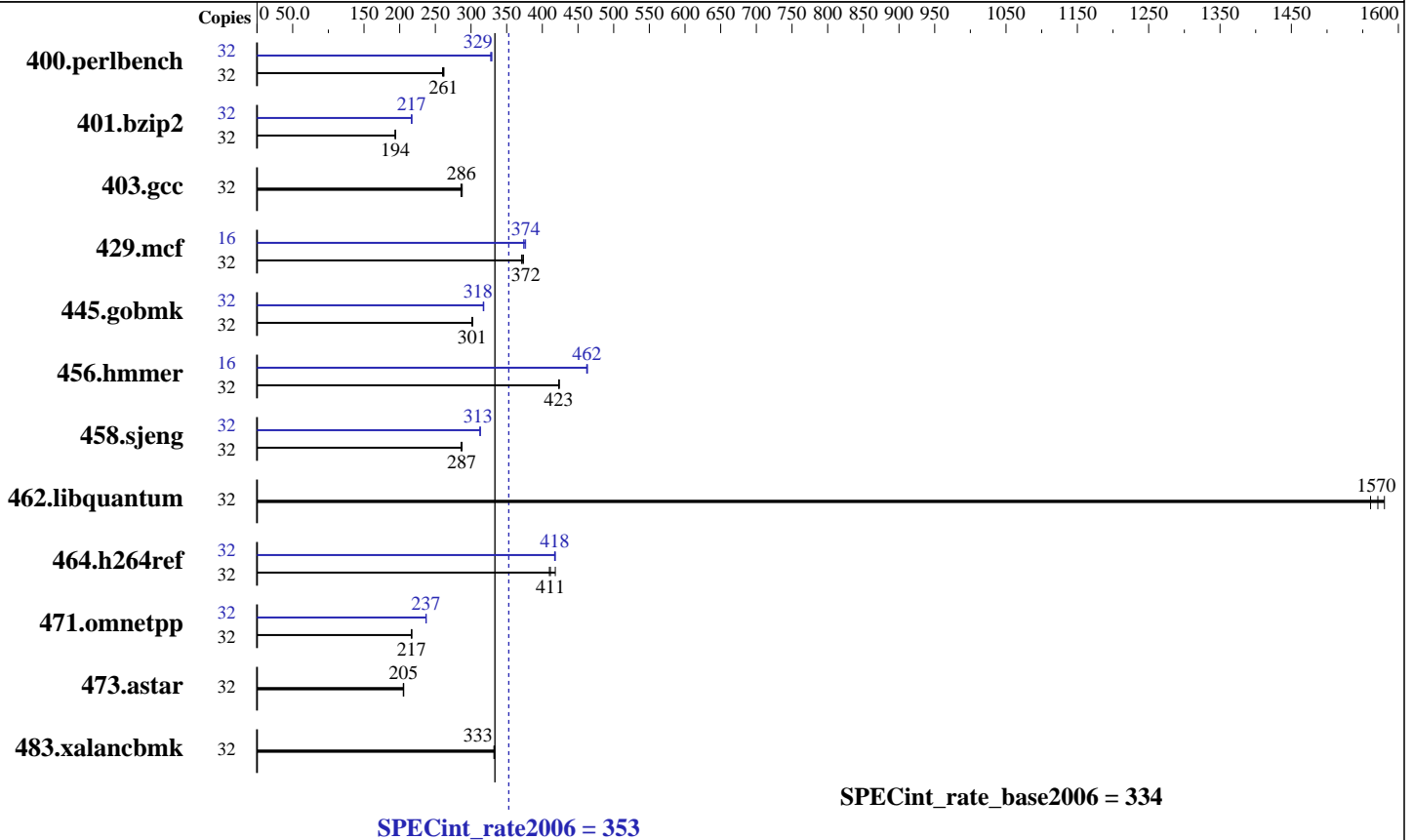
Test date: Apr-2011

Test sponsor: Bull SAS

Hardware Availability: Jul-2011

Tested by: Dell Inc.

Software Availability: Jan-2011



### Hardware

CPU Name: Intel Xeon L7555  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.53 GHz  
 CPU MHz: 1866  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip, 2 threads/core  
 CPU(s) orderable: 2,4 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: 24 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (32 x 8 GB 4Rx8 PC3-8500R-7, ECC, running at 978 MHz)  
 Disk Subsystem: 1 x 500 GB 7200 RPM SAS 6Gb  
 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++ Compiler XE for applications running on IA-32 Version 12.0.1.116 Build 20101116  
 Auto Parallel: No  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 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	32	<b><u>1196</u></b>	<b><u>261</u></b>	1202	260	1193	262	32	954	328	<b><u>951</u></b>	<b><u>329</u></b>	950	329
401.bzip2	32	<b><u>1592</u></b>	<b><u>194</u></b>	1595	194	1590	194	32	1423	217	1426	217	<b><u>1425</u></b>	<b><u>217</u></b>
403.gcc	32	895	288	901	286	<b><u>899</u></b>	<b><u>286</u></b>	32	895	288	901	286	<b><u>899</u></b>	<b><u>286</u></b>
429.mcf	32	781	374	787	371	<b><u>785</u></b>	<b><u>372</u></b>	16	390	374	<b><u>390</u></b>	<b><u>374</u></b>	388	377
445.gobmk	32	<b><u>1114</u></b>	<b><u>301</u></b>	1114	301	1110	302	32	1056	318	<b><u>1057</u></b>	<b><u>318</u></b>	1058	317
456.hammer	32	704	424	706	423	<b><u>706</u></b>	<b><u>423</u></b>	16	322	463	323	462	<b><u>323</u></b>	<b><u>462</u></b>
458.sjeng	32	<b><u>1350</u></b>	<b><u>287</u></b>	1347	287	1354	286	32	<b><u>1237</u></b>	<b><u>313</u></b>	1239	313	1237	313
462.libquantum	32	425	1560	420	1580	<b><u>422</u></b>	<b><u>1570</u></b>	32	425	1560	420	1580	<b><u>422</u></b>	<b><u>1570</u></b>
464.h264ref	32	1728	410	<b><u>1722</u></b>	<b><u>411</u></b>	1694	418	32	1698	417	<b><u>1696</u></b>	<b><u>418</u></b>	1693	418
471.omnetpp	32	923	217	<b><u>923</u></b>	<b><u>217</u></b>	923	217	32	843	237	<b><u>844</u></b>	<b><u>237</u></b>	844	237
473.astar	32	1096	205	1092	206	<b><u>1093</u></b>	<b><u>205</u></b>	32	1096	205	1092	206	<b><u>1093</u></b>	<b><u>205</u></b>
483.xalancbmk	32	665	332	<b><u>663</u></b>	<b><u>333</u></b>	663	333	32	665	332	<b><u>663</u></b>	<b><u>333</u></b>	663	333

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

## Submit Notes

The config file option 'submit' was used.  
numactl was used to bind copies to the cores

## 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 28800 > /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)

## General Notes

The Dell PowerEdge R910 and the Bull NovaScale R480 F2 models are electronically equivalent. The results have been measured on a Dell PowerEdge R910 model. Binaries were compiled on RHEL5.5



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

## 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

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## Peak Compiler Invocation (Continued)

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

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

403.gcc: basepeak = yes

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)  
-ansi-alias -auto-ilp32

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias -auto-ilp32

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

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

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## Peak Optimization Flags (Continued)

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

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.20110524.00.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.20110524.00.xml>

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

Tested with SPEC CPU2006 v1.1.

Report generated on Wed Jul 23 20:32:48 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 24 May 2011.