



# SPEC® CINT2006 Result

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## Bull SAS

## SPECint®\_rate2006 = 349

### BL465 (Intel Xeon E7520, 1.87 GHz)

## SPECint\_rate\_base2006 = 329

CPU2006 license: 20

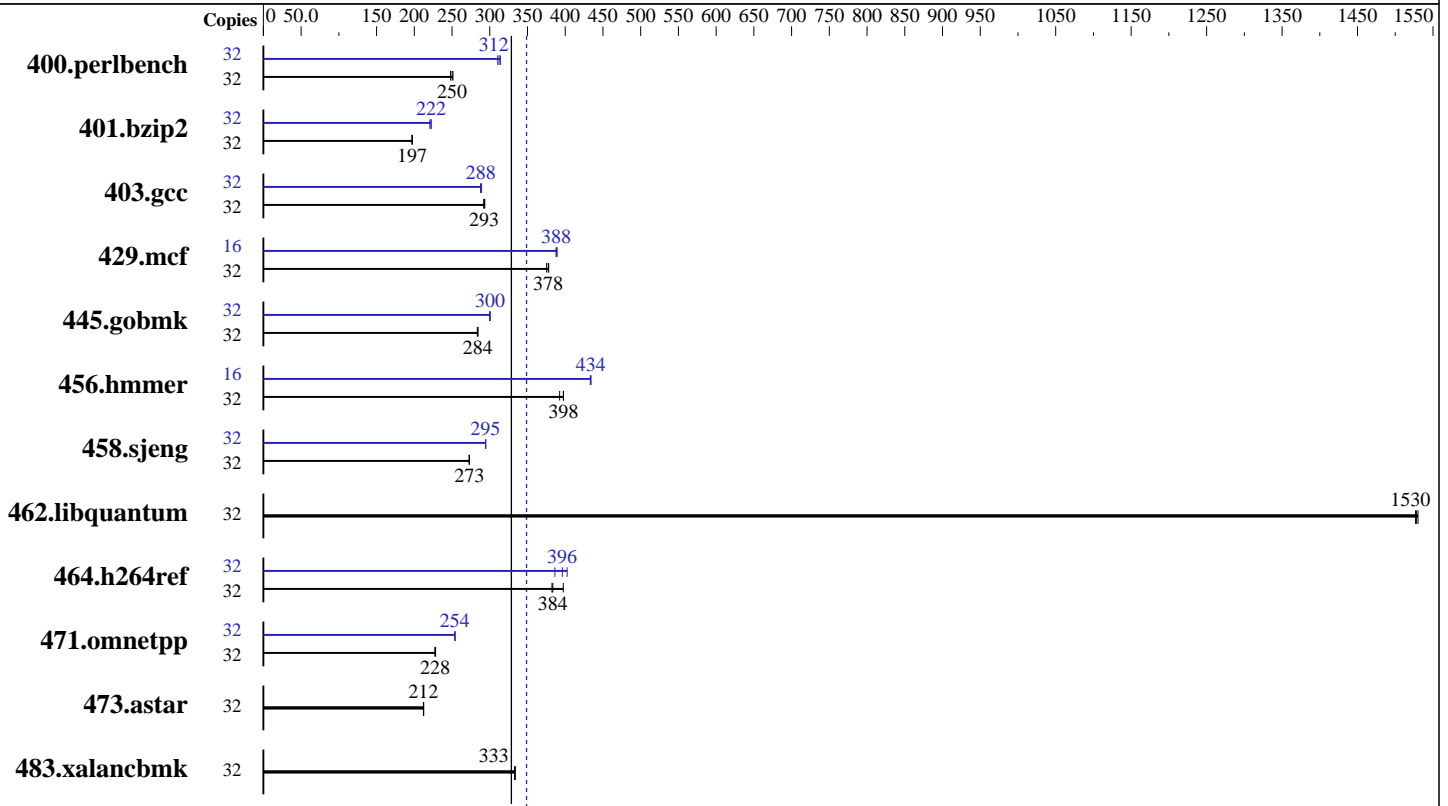
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Apr-2011

Hardware Availability: Jan-2011

Software Availability: Nov-2010



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### Hardware

CPU Name: Intel Xeon E7520  
 CPU Characteristics: 1866  
 CPU MHz: 1866  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 4 chips, 4 cores/chip, 2 threads/core  
 CPU(s) orderable: 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: 18 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (32 x 8 GB 4Rx8 PC3-8500R-7, ECC, running at 800 MHz)  
 Disk Subsystem: 2 x 50 GB SATA, SSD  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 11 (x86\_64) SP1, 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	1261	248	1244	251	<b><u>1250</u></b>	<b><u>250</u></b>	32	995	314	1007	311	<b><u>1001</u></b>	<b><u>312</u></b>
401.bzip2	32	1569	197	1564	197	<b><u>1565</u></b>	<b><u>197</u></b>	32	1400	221	1389	222	<b><u>1390</u></b>	<b><u>222</u></b>
403.gcc	32	878	293	<b><u>881</u></b>	<b><u>293</u></b>	882	292	32	<b><u>894</u></b>	<b><u>288</u></b>	891	289	895	288
429.mcf	32	<b><u>773</u></b>	<b><u>378</u></b>	772	378	778	375	16	<b><u>376</u></b>	<b><u>388</u></b>	376	388	375	389
445.gobmk	32	<b><u>1182</u></b>	<b><u>284</u></b>	1181	284	1184	284	32	1117	301	1120	300	<b><u>1118</u></b>	<b><u>300</u></b>
456.hammer	32	<b><u>751</u></b>	<b><u>398</u></b>	751	398	760	393	16	<b><u>344</u></b>	<b><u>434</u></b>	345	433	344	434
458.sjeng	32	1420	273	<b><u>1418</u></b>	<b><u>273</u></b>	1418	273	32	1315	294	<b><u>1314</u></b>	<b><u>295</u></b>	1314	295
462.libquantum	32	433	1530	<b><u>434</u></b>	<b><u>1530</u></b>	434	1530	32	433	1530	<b><u>434</u></b>	<b><u>1530</u></b>	434	1530
464.h264ref	32	<b><u>1846</u></b>	<b><u>384</u></b>	1782	397	1852	382	32	1759	403	1833	386	<b><u>1787</u></b>	<b><u>396</u></b>
471.omnetpp	32	<b><u>878</u></b>	<b><u>228</u></b>	880	227	876	228	32	<b><u>788</u></b>	<b><u>254</u></b>	789	254	787	254
473.astar	32	1059	212	1057	213	<b><u>1059</u></b>	<b><u>212</u></b>	32	1059	212	1057	213	<b><u>1059</u></b>	<b><u>212</u></b>
483.xalancbmk	32	662	334	663	333	<b><u>662</u></b>	<b><u>333</u></b>	32	662	334	663	333	<b><u>662</u></b>	<b><u>333</u></b>

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  
Hugepages was enabled with the following:  
'nodev /mnt/hugepages hugetlbfs defaults 0 0' added to /etc/fstab  
echo 14400 > /proc/sys/vm/nr\_hugepages  
export HUGETLB\_MORECORE=yes  
export LD\_PRELOAD=/usr/lib64/libhugetlbfs.so

### Platform Notes

Power C-states enabled in BIOS  
Demand Scrub disabled in BIOS

### General Notes

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: -xSSE4.2 -ipo -O3 -no-prec-div  
-B /usr/share/libhugetlbfs/ -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)  
-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

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## Peak Optimization Flags (Continued)

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

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-Linux64-Platform.20110524.html>

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

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

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110524.xml>

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

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

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