



# SPEC® CINT2006 Result

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## Bull SAS

## SPECint®\_rate2006 = 217

### Bull Escala PL1650R+ (2200 MHz, 16 CPU)

## SPECint\_rate\_base2006 = 197

CPU2006 license: 20

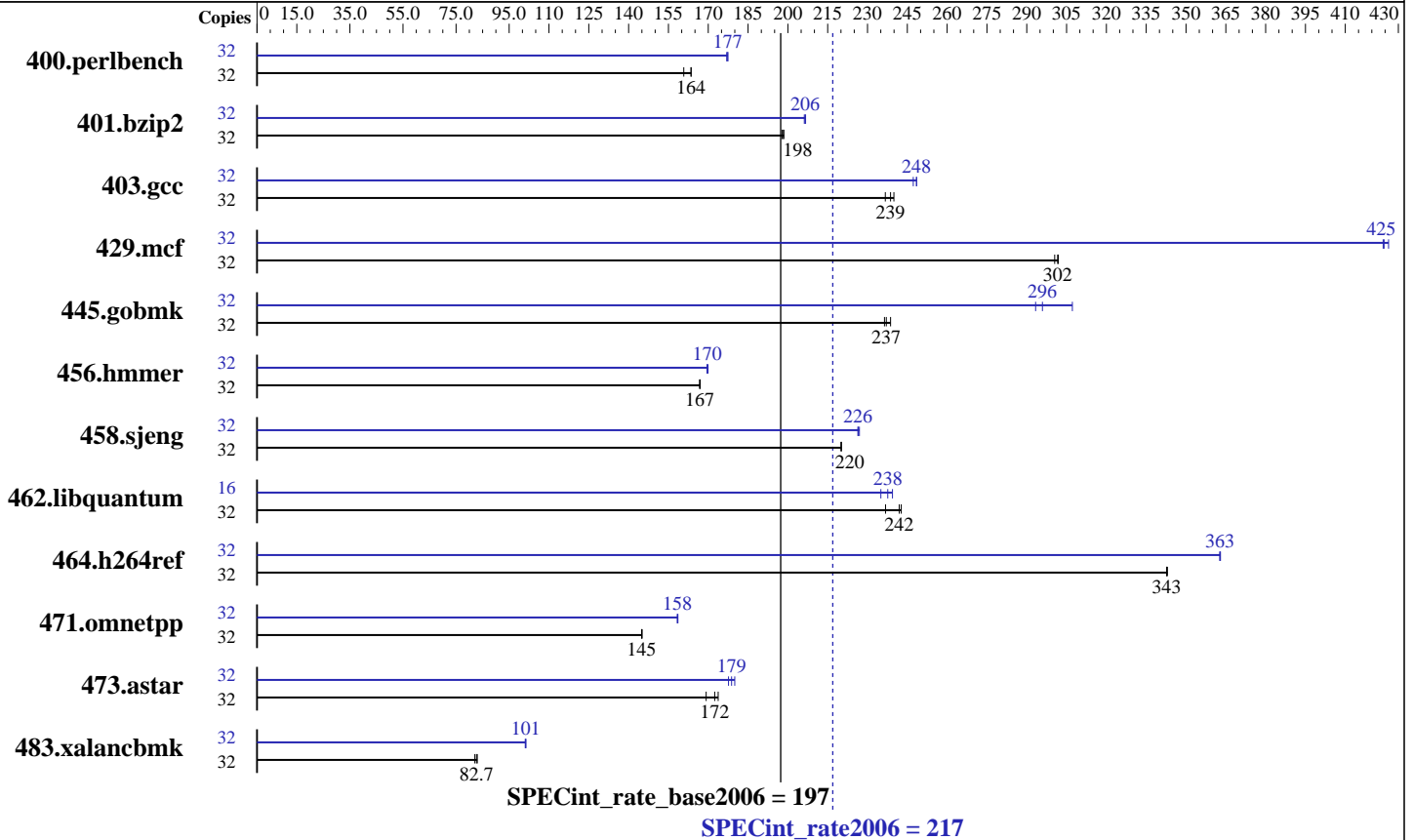
Test date: Feb-2007

Test sponsor: Bull SAS

Hardware Availability: Feb-2006

Tested by: Bull SAS

Software Availability: Dec-2006



### Hardware

CPU Name: POWER5+  
 CPU Characteristics: 2200  
 CPU MHz: 2200  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 8 chips, 2 cores/chip, 2 threads/core  
 CPU(s) orderable: 2, 4, 6, 8 chips  
 Primary Cache: 64 KB I + 32 KB D on chip per core  
 Secondary Cache: 1920 KB I+D on chip per chip  
 L3 Cache: 36 MB I+D off chip per chip  
 Other Cache: None  
 Memory: 128 GB (32x4 GB)  
 Disk Subsystem: 1x73 GB SCSI, 15K RPM  
 Other Hardware: None

### Software

Operating System: AIX 5L V5.3  
 Compiler: XL C/C++ Enterprise Edition Version 8.0 for AIX with the December 2006 PTF  
 XL Fortran Enterprise Edition Version 10.1 for AIX with the November 2006 PTF  
 Auto Parallel: No  
 File System: AIX/JFS2  
 System State: Multi-user  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: ESSL 4.2.0.4



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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	1945	161	<b><u>1912</u></b>	<b><u>164</u></b>	1911	164	32	1763	177	1767	177	<b><u>1763</u></b>	<b><u>177</u></b>
401.bzip2	32	1556	199	1560	198	<b><u>1559</u></b>	<b><u>198</u></b>	32	1494	207	1498	206	<b><u>1495</u></b>	<b><u>206</u></b>
403.gcc	32	<b><u>1079</u></b>	<b><u>239</u></b>	1088	237	1074	240	32	1037	248	<b><u>1037</u></b>	<b><u>248</u></b>	1042	247
429.mcf	32	971	301	<b><u>968</u></b>	<b><u>302</u></b>	967	302	32	<b><u>687</u></b>	<b><u>425</u></b>	685	426	688	424
445.gobmk	32	1406	239	<b><u>1416</u></b>	<b><u>237</u></b>	1420	236	32	1093	307	1144	293	<b><u>1134</u></b>	<b><u>296</u></b>
456.hammer	32	1788	167	<b><u>1789</u></b>	<b><u>167</u></b>	1791	167	32	1761	170	<b><u>1760</u></b>	<b><u>170</u></b>	1757	170
458.sjeng	32	1759	220	1759	220	<b><u>1759</u></b>	<b><u>220</u></b>	32	<b><u>1710</u></b>	<b><u>226</u></b>	1706	227	1710	226
462.libquantum	32	2732	243	<b><u>2740</u></b>	<b><u>242</u></b>	2800	237	16	1385	239	1410	235	<b><u>1395</u></b>	<b><u>238</u></b>
464.h264ref	32	<b><u>2066</u></b>	<b><u>343</u></b>	2066	343	2065	343	32	<b><u>1952</u></b>	<b><u>363</u></b>	1951	363	1952	363
471.omnetpp	32	1380	145	<b><u>1380</u></b>	<b><u>145</u></b>	1379	145	32	<b><u>1263</u></b>	<b><u>158</u></b>	1261	159	1263	158
473.astar	32	1328	169	<b><u>1303</u></b>	<b><u>172</u></b>	1293	174	32	<b><u>1256</u></b>	<b><u>179</u></b>	1265	178	1248	180
483.xalancbmk	32	<b><u>2671</u></b>	<b><u>82.7</u></b>	2661	83.0	2690	82.1	32	2180	101	<b><u>2181</u></b>	<b><u>101</u></b>	2185	101

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

## Operating System Notes

```
ulimits set to unlimited
```

```
bindprocessor command used on submit to bind each copy to a  
unique processor.
```

```
Large page mode was set as follows:  
vmo -r -o lpgg_regions=3200 -o lpgg_size=16777216  
SMT was enabled using the AIX commands  
smtctl -m on -w boot  
bosboot -aD  
shutdown -rF
```

## Base Compiler Invocation

C benchmarks:  
/usr/vac/bin/xlc

C++ benchmarks:  
/usr/vacpp/bin/xlC



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## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_AIX  
462.libquantum: -DSPEC\_CPU\_AIX  
464.h264ref: -DSPEC\_CPU\_AIX -qchars=signed  
483.xalancbmk: -DSPEC\_CPU\_AIX

## Base Optimization Flags

**C benchmarks:**  
-qlanglvl=extc99 -O4 -qlargepage -D\_ILS\_MACROS -qalloca  
-qipa=noobject -blpdata -qipa=threads

**C++ benchmarks:**  
-O4 -qlargepage -D\_ILS\_MACROS -qrtti=all -qipa=noobject -blpdata  
-qipa=threads

## Base Other Flags

**C benchmarks:**  
-bmaxdata:0x50000000 -qalias=noansi -qsuppress=1500-036

**C++ benchmarks:**  
-bmaxdata:0x20000000 -qsuppress=1500-036

## Peak Compiler Invocation

**C benchmarks:**  
/usr/vac/bin/xlc

**C++ benchmarks:**  
/usr/vacpp/bin/xlc

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_AIX  
462.libquantum: -DSPEC\_CPU\_AIX  
464.h264ref: -DSPEC\_CPU\_AIX -qchars=signed  
483.xalancbmk: -DSPEC\_CPU\_AIX



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## Peak Optimization Flags

C benchmarks:

400.perlbench: -qlanglvl=extc99 -qpdf1(pass 1) -qpdf2(pass 2) -O5  
-qlargepage -D\_ILS\_MACROS -qipa=noobject -blpdata  
-qipa=threads

401.bzip2: Same as 400.perlbench

403.gcc: -qlanglvl=extc99 -qpdf1(pass 1) -qpdf2(pass 2) -O5  
-qlargepage -D\_ILS\_MACROS -qalloca -qipa=noobject  
-blpdata -qipa=threads

429.mcf: -qlanglvl=extc99 -O5 -qlargepage -D\_ILS\_MACROS  
-qarch=pwr4 -qipa=noobject -blpdata -qipa=threads

445.gobmk: -qlanglvl=extc99 -qpdf1(pass 1) -qpdf2(pass 2) -O4  
-qlargepage -D\_ILS\_MACROS -qipa=noobject -blpdata  
-qipa=threads

456.hmmer: -qlanglvl=extc99 -O4 -qlargepage -D\_ILS\_MACROS  
-qipa=noobject -blpdata -qipa=threads

458.sjeng: Same as 445.gobmk

462.libquantum: -qlanglvl=extc99 -qpdf1(pass 1) -qpdf2(pass 2) -O4  
-qlargepage -D\_ILS\_MACROS -q64 -qipa=noobject -blpdata  
-qipa=threads

464.h264ref: Same as 400.perlbench

C++ benchmarks:

471.omnetpp: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage  
-D\_ILS\_MACROS -qalign=natural -qrtti=all  
-D\_\_IBM\_FAST\_VECTOR -qipa=noobject -blpdata -qipa=threads

473.astar: -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage  
-D\_ILS\_MACROS -D\_\_IBM\_ENABLE\_POOLED\_ALLOCATORS\_\_  
-qipa=noobject -blpdata -qipa=threads

483.xalancbmk: Same as 473.astar

## Peak Other Flags

C benchmarks (except as noted below):  
-qfdpr -qsuppress=1500-036

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## Peak Other Flags (Continued)

400.perlbench: -bmaxdata:0x50000000 -qalias=noansi -qsuppress=1500-036

401.bzip2: -bmaxdata:0x50000000 -qsuppress=1500-036

403.gcc: -bmaxdata:0x50000000 -qsuppress=1500-036

429.mcf: -bmaxdata:0x50000000 -qfdpr -qsuppress=1500-036

458.sjeng: -qsuppress=1500-036

464.h264ref: -qsuppress=1500-036

C++ benchmarks:  
-bmaxdata:0x20000000 -qsuppress=1500-036

The flags file that was used to format this result can be browsed at

[http://www.spec.org/cpu2006/flags/CPU2006\\_flags.20090715.15.html](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.15.html)

You can also download the XML flags source by saving the following link:

[http://www.spec.org/cpu2006/flags/CPU2006\\_flags.20090715.15.xml](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.15.xml)

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

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