SPEC® CINT2006 Result

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Bull SAS

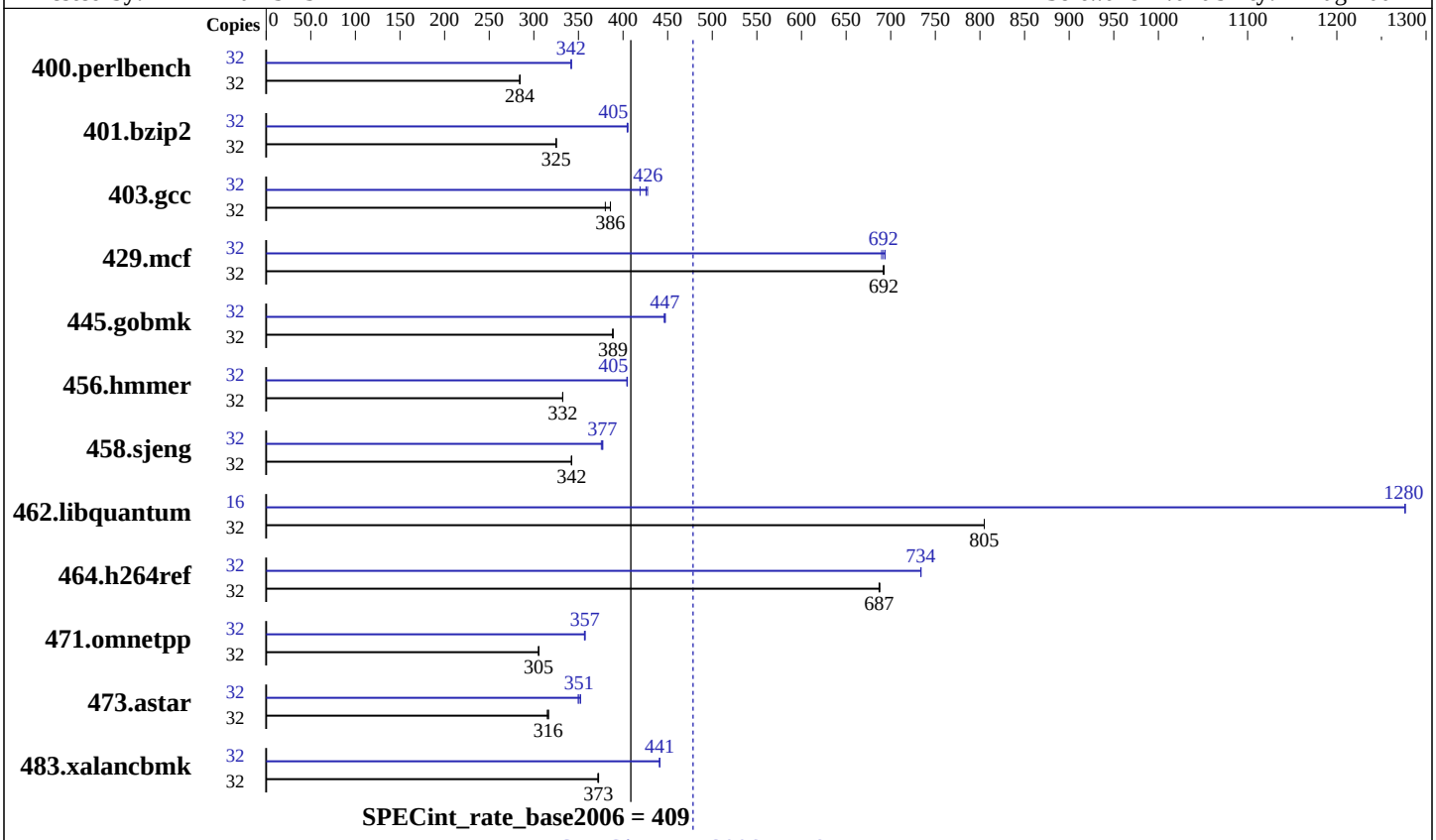
Bull Escala PL1660 (4700 MHz, 16 Cores)

SPECint®_rate2006 = 478

SPECint_rate_base2006 = 409

CPU2006 license: 20
Test sponsor: Bull SAS
Tested by: Bull SAS

Test date: Nov-2007
Hardware Availability: Oct-2007
Software Availability: Aug-2007



Hardware

CPU Name:	POWER6
CPU Characteristics:	
CPU MHz:	4700
FPU:	Integrated
CPU(s) enabled:	16 cores, 8 chips, 2 cores/chip, 2 threads/core
CPU(s) orderable:	2,4,8,12,16 cores
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	4 MB I+D on chip per core
L3 Cache:	32 MB I+D off chip per chip
Other Cache:	None
Memory:	128 GB (16x8GB) DDR2 667 MHZ
Disk Subsystem:	2x73 GB SAS, 15K RPM
Other Hardware:	None

Software

Operating System:	AIX 5L V5.3
Compiler:	XL C/C++ Enterprise Edition Version 9.0 for AIX + Aug07 PTF
Auto Parallel:	No
File System:	AIX/JFS2
System State:	Multi-user
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	None

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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	**1099**	**284**	1101	284	1098	285	32	914	342	**914**	**342**	915	342
401.bzip2	32	**950**	**325**	950	325	950	325	32	763	405	**763**	**405**	761	406
403.gcc	32	678	380	668	386	**668**	**386**	32	603	427	615	419	**605**	**426**
429.mcf	32	422	692	421	692	**422**	**692**	32	**422**	**692**	421	694	423	690
445.gobmk	32	863	389	864	388	**864**	**389**	32	752	446	750	447	**751**	**447**
456.hmmer	32	898	332	**898**	**332**	899	332	32	737	405	738	404	**738**	**405**
458.sjeng	32	**1131**	**342**	1131	342	1132	342	32	1031	376	1026	377	**1028**	**377**
462.libquantum	32	824	805	824	805	**824**	**805**	16	260	1280	260	1280	**260**	**1280**
464.h264ref	32	**1031**	**687**	1030	688	1031	687	32	965	734	965	734	**965**	**734**
471.omnetpp	32	655	305	655	305	**655**	**305**	32	561	357	**560**	**357**	560	357
473.astar	32	710	316	713	315	**711**	**316**	32	**640**	**351**	637	352	642	350
483.xalancbmk	32	593	373	**593**	**373**	594	372	32	501	441	500	441	**501**	**441**

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

Operating System Notes

```
AIX 5.3 Updated with the 5300-06 Technology Level
 ulimits set to unlimited

 Envionment variables set before executing benchmarks:
   MALLOCOPTIONS=pool
   MEMORY_AFFINITY=MCM
   XLFRTEOPTS=intrinthds=1
 System set to "Enhanced" mode when defining partition on HMC
 bindprocessor command used on submit to bind each copy to a
 unique processor.

 Large page mode was set as follows:
 vmo -r -o lgpg_regions=6144 -o lgpg_size=16777216
```

General Notes

```
 fdpr binary optimization tool used for
   401.bzip2 403.gcc 429.mcf 456.hmmer 462.libquantum 473.astar
```

Base Compiler Invocation

C benchmarks:

```
/usr/vac/bin/xlc
```

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Base Compiler Invocation (Continued)

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

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 -bmaxdata:0x50000000 -O5 -qlargepage -D_ILS_MACROS
-qalias=noansi -qalloca -blpdata

C++ benchmarks:
-bmaxdata:0x20000000 -O5 -qlargepage -D_ILS_MACROS -qrtti=all
-blpdata

Base Other Flags

C benchmarks:
-qipa=noobject -qipa=threads -qsuppress=1500-036

C++ benchmarks:
-qipa=noobject -qipa=threads -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

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Peak Portability Flags (Continued)

403.gcc: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_AIX
464.h264ref: -DSPEC_CPU_AIX -qchars=signed
483.xalancbmk: -DSPEC_CPU_AIX

Peak Optimization Flags

C benchmarks:

400.perlbench: -qlanglvl=extc99 -bmaxdata:0x50000000 -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -qenablevmx -qvecnvol -D_ILS_MACROS -qalias=noansi -blpdata

401.bzip2: -qlanglvl=extc99 -bmaxdata:0x4ffffffc -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -qenablevmx -qvecnvol -D_ILS_MACROS -blpdata

403.gcc: -qlanglvl=extc99 -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -D_ILS_MACROS -qalloca -q64 -blpdata

429.mcf: -qlanglvl=extc99 -bmaxdata:0x50000000 -O5 -qlargepage -qenablevmx -qvecnvol -D_ILS_MACROS -blpdata

445.gobmk: -qlanglvl=extc99 -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -qenablevmx -qvecnvol -D_ILS_MACROS -blpdata

456.hmmer: -qlanglvl=extc99 -O5 -qlargepage -D_ILS_MACROS -blpdata

458.sjeng: -qlanglvl=extc99 -qpdf1(pass 1) -qpdf2(pass 2) -O4 -qlargepage -qenablevmx -qvecnvol -D_ILS_MACROS -blpdata

462.libquantum: -qlanglvl=extc99 -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -qenablevmx -qvecnvol -D_ILS_MACROS -q64 -blpdata

464.h264ref: -qlanglvl=extc99 -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -D_ILS_MACROS -blpdata

C++ benchmarks:

471.omnetpp: -bmaxdata:0x20000000 -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -qenablevmx -qvecnvol -D_ILS_MACROS -qalign=natural -qrtti=all -qinlglue -blpdata

473.astar: -bmaxdata:0x20000000 -qpdf1(pass 1) -qpdf2(pass 2) -O5 -qlargepage -qenablevmx -qvecnvol -D_ILS_MACROS -blpdata

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Peak Optimization Flags (Continued)

483.xalancbmk: `-bmaxdata:0x20000000 -qpdf1`(pass 1) `-qpdf2`(pass 2) `-O5 -qlargepage -D_ILS_MACROS -qinlglue -D__IBM_FAST_VECTOR -blpdata`

Peak Other Flags

C benchmarks:
`-qipa=noobject -qipa=threads -qsuppress=1500-036`

C++ benchmarks:
`-qipa=noobject -qipa=threads -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.20090714.08.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.08.xml`

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