SPEC® CINT2006 Result

Bull SAS

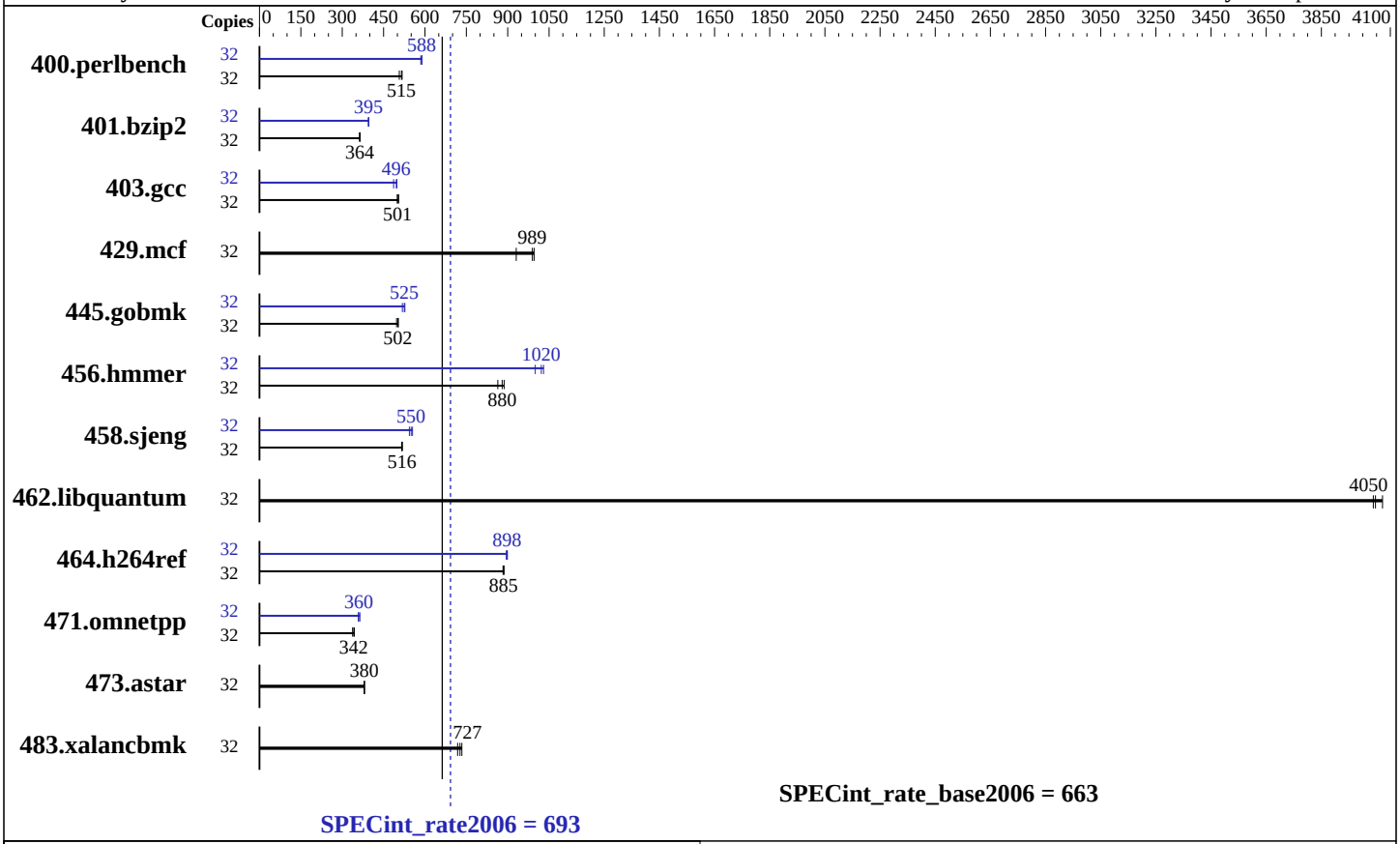
Bullion 1 module Intel X7560 VMware vSphere 5

SPECint®_rate2006 = 693

SPECint_rate_base2006 = 663

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

Test date: Oct-2011
Hardware Availability: Apr-2010
Software Availability: Sep-2011



Hardware

CPU Name:	Intel Xeon X7560
CPU Characteristics:	Intel Turbo Boost Technology up to 2.67 GHz
CPU MHz:	2267
FPU:	Integrated
CPU(s) enabled:	32 cores, 4 chips, 8 cores/chip
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:	24 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (32 x 16 GB 4Rx8 PC3-8500R-7, ECC, configured by VMware as 256 GB)
Disk Subsystem:	1 x 500 GB 7200RPM SATA
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server Release 6.1, Kernel 2.6.32-131.0.15.el6.x86_64
Compiler:	C/C++: Version 12.1.0.225 of Intel Compiler XE for applications on IA-32 Build 20110803
Auto Parallel:	No
File System:	ext4
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V9.01 VMware vSphere 5

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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	605	517	**607**	**515**	617	507	32	531	589	**531**	**588**	535	585
401.bzip2	32	851	363	847	364	**848**	**364**	32	779	396	782	395	**781**	**395**
403.gcc	32	515	500	510	505	**515**	**501**	32	517	498	**519**	**496**	530	486
429.mcf	32	314	931	293	996	**295**	**989**	32	314	931	293	996	**295**	**989**
445.gobmk	32	667	503	**669**	**502**	675	497	32	**639**	**525**	637	527	648	518
456.hmmer	32	**339**	**880**	337	887	346	864	32	299	1000	290	1030	**292**	**1020**
458.sjeng	32	**750**	**516**	751	515	747	518	32	698	555	713	543	**704**	**550**
462.libquantum	32	164	4040	**164**	**4050**	163	4070	32	164	4040	**164**	**4050**	163	4070
464.h264ref	32	**800**	**885**	799	887	802	883	32	791	895	**789**	**898**	788	899
471.omnetpp	32	582	344	**585**	**342**	592	338	32	**556**	**360**	558	358	549	364
473.astar	32	590	381	591	380	**591**	**380**	32	590	381	591	380	**591**	**380**
483.xalancbmk	32	**304**	**727**	301	734	307	718	32	**304**	**727**	301	734	307	718

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

```
Basic System has 32 cores / 64 threads
VMware vSphere 5 is the hypervisor
Bullion is booted, then configured to create
one virtual machine with 32 virtual CPUs and 256GB of memory
RHEL 6.1 runs in this big Virtual Machine
Each virtual CPU of the Virtual Machine uses 1 of the 2 threads
of a physical core.
So the big Virtual Machine uses the 32 physical cores.
32 threads remain unused (available for VMware use)
They are the second hyperthread of each physical core.
---------------------------------
Extract of VMware configuration file .vmx:
numvcpus = "32"
cpuid.coresPerSocket = "8"
memsize = "262144"
scsi0:0.present = "TRUE"
scsi0:0.deviceType = "scsi-hardDisk"
monitor.virtual_mmu = "hardware"
guestOS = "rhel6-64"
sched.cpu.min = "0"
sched.cpu.shares = "normal"
sched.cpu.affinity = "all"
```

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Operating System Notes (Continued)

```
sched.mem.min = "262144"
sched.mem.shares = "normal"
sched.mem.pin = "TRUE"
--------------------------------
SPEC files placed in /spec2006, with /spec2006
mounted as tmpfs with mpol=interleave, size=256G
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/spec2006/smartheap:/spec2006/ic12.1-libs/ia32/:/spec2006/ic12.1-libs/intel64"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5 with binutils-2.17.50.0.6-14.el5
 Stack size set to unlimited using "ulimit -s unlimited"
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 Filesystem page cache cleared with:
 echo 1> /proc/sys/vm/drop_caches
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>
```

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 -opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
-Wl,-z,muldefs -L/smartheap -lsmartheap
```

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`

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) `-auto-ilp32`

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`

403.gcc: `-xSSE4.2 -ipo -O3 -no-prec-div`

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Peak Optimization Flags (Continued)

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

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

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

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-ic12.1-linux64.20111110.html
http://www.spec.org/cpu2006/flags/Bull-Intel-Platform-linux64-revC.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-linux64.20111110.xml
http://www.spec.org/cpu2006/flags/Bull-Intel-Platform-linux64-revC.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
Report generated on Thu Jul 24 00:35:14 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 9 November 2011.