SPEC® CINT2006 Result
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Bull SAS

NovaScale T860 F2 (Intel Xeon L5640, 2.26 GHz)

$SPECint^{®}\_rate2006 =$ 293

$SPECint\_rate\_base2006 =$ 277
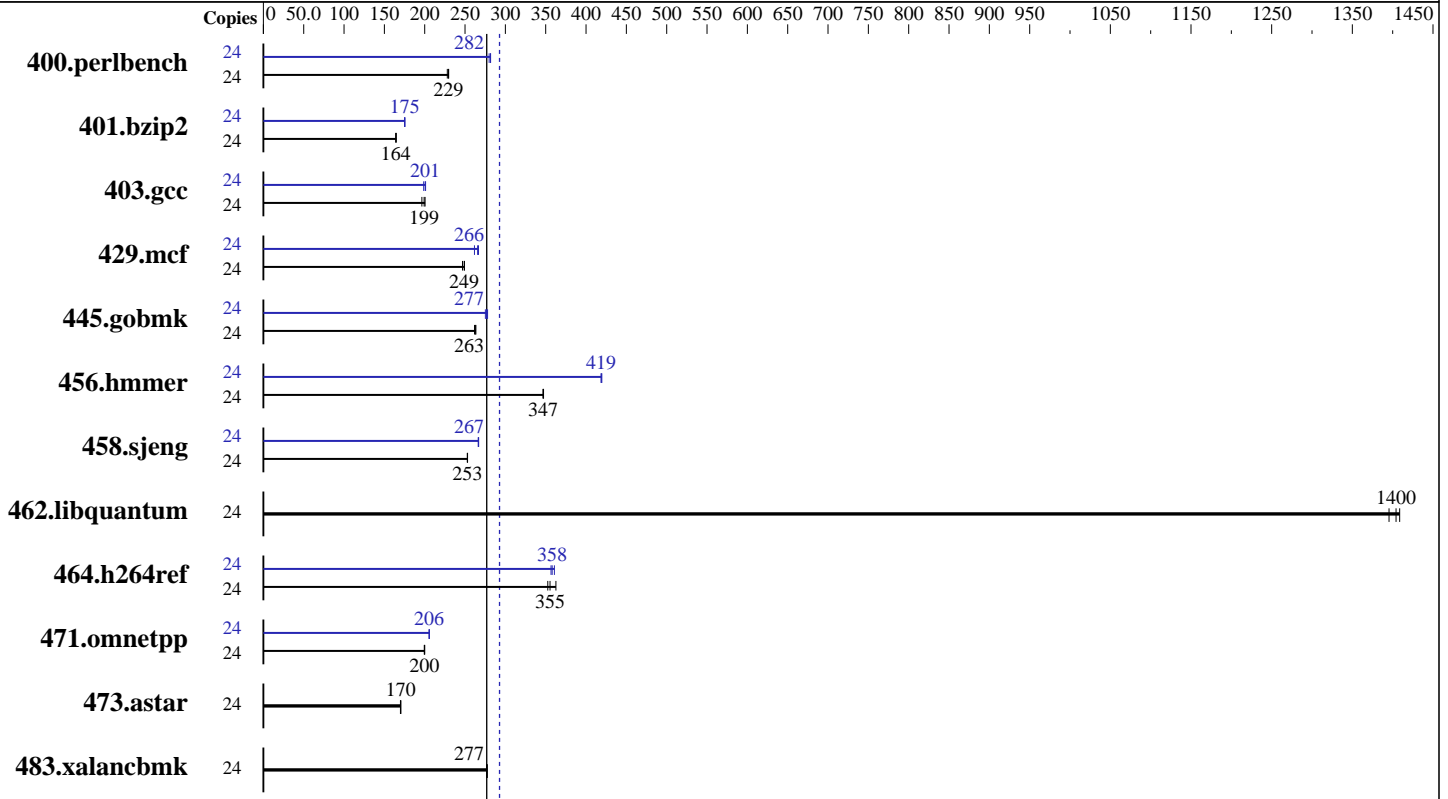
CPU2006 license: 20
Test sponsor: Bull SAS
Tested by: Dell Inc.

Test date: Jul-2011
Hardware Availability: Mar-2010
Software Availability: Jan-2011

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Benchmark	base copies	base result	peak copies	peak result
400.perlbench	24	229	24	282
401.bzip2	24	164	24	175
403.gcc	24	199	24	201
429.mcf	24	249	24	266
445.gobmk	24	263	24	277
456.hmmer	24	347	24	419
458.sjeng	24	253	24	267
462.libquantum	24	1400		
464.h264ref	24	355	24	358
471.omnetpp	24	200	24	206
473.astar	24	170		
483.xalancbmk	24	277		

Hardware

CPU Name: Intel Xeon L5640
CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz: 2267
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
CPU(s) orderable: 1,2 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: 12 MB I+D on chip per chip
Other Cache: None
Memory: 48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem: 1 x 146 GB 15000 RPM SAS
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	24	1028	228	**1022**	**229**	1021	230	24	838	280	**833**	**282**	833	282
401.bzip2	24	**1410**	**164**	1406	165	1411	164	24	1320	175	**1321**	**175**	1324	175
403.gcc	24	983	196	964	200	**970**	**199**	24	**963**	**201**	961	201	972	199
429.mcf	24	887	247	**879**	**249**	878	249	24	**824**	**266**	821	267	836	262
445.gobmk	24	**957**	**263**	962	262	956	263	24	906	278	915	275	**910**	**277**
456.hmmer	24	646	347	**645**	**347**	645	347	24	535	419	534	420	**534**	**419**
458.sjeng	24	**1148**	**253**	1147	253	1149	253	24	**1089**	**267**	1090	266	1088	267
462.libquantum	24	353	1410	**354**	**1400**	356	1400	24	353	1410	**354**	**1400**	356	1400
464.h264ref	24	1465	363	1506	353	**1495**	**355**	24	**1483**	**358**	1472	361	1489	357
471.omnetpp	24	750	200	752	200	**751**	**200**	24	729	206	**730**	**206**	730	206
473.astar	24	989	170	**990**	**170**	992	170	24	989	170	**990**	**170**	992	170
483.xalancbmk	24	**598**	**277**	598	277	597	277	24	**598**	**277**	598	277	597	277

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 10800 > /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)
     Data Reuse = Disabled (Default = Enabled)
```

General Notes

```
     Binaries were compiled on RHEL5.5
     The Dell PowerEdge T710 and
     the Bull NovaScale T860 F2 models are electronically equivalent.
     The results have been measured on a Dell PowerEdge T710 model
```

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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-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

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

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