SPEC® CINT2006 Result
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Bull SAS

NovaScale R470 F3 (Intel Xeon E5-4617, 2.90 GHz)

$SPECint^{®}_rate2006 = $ 855

$SPECint_rate_base2006 = $ 824
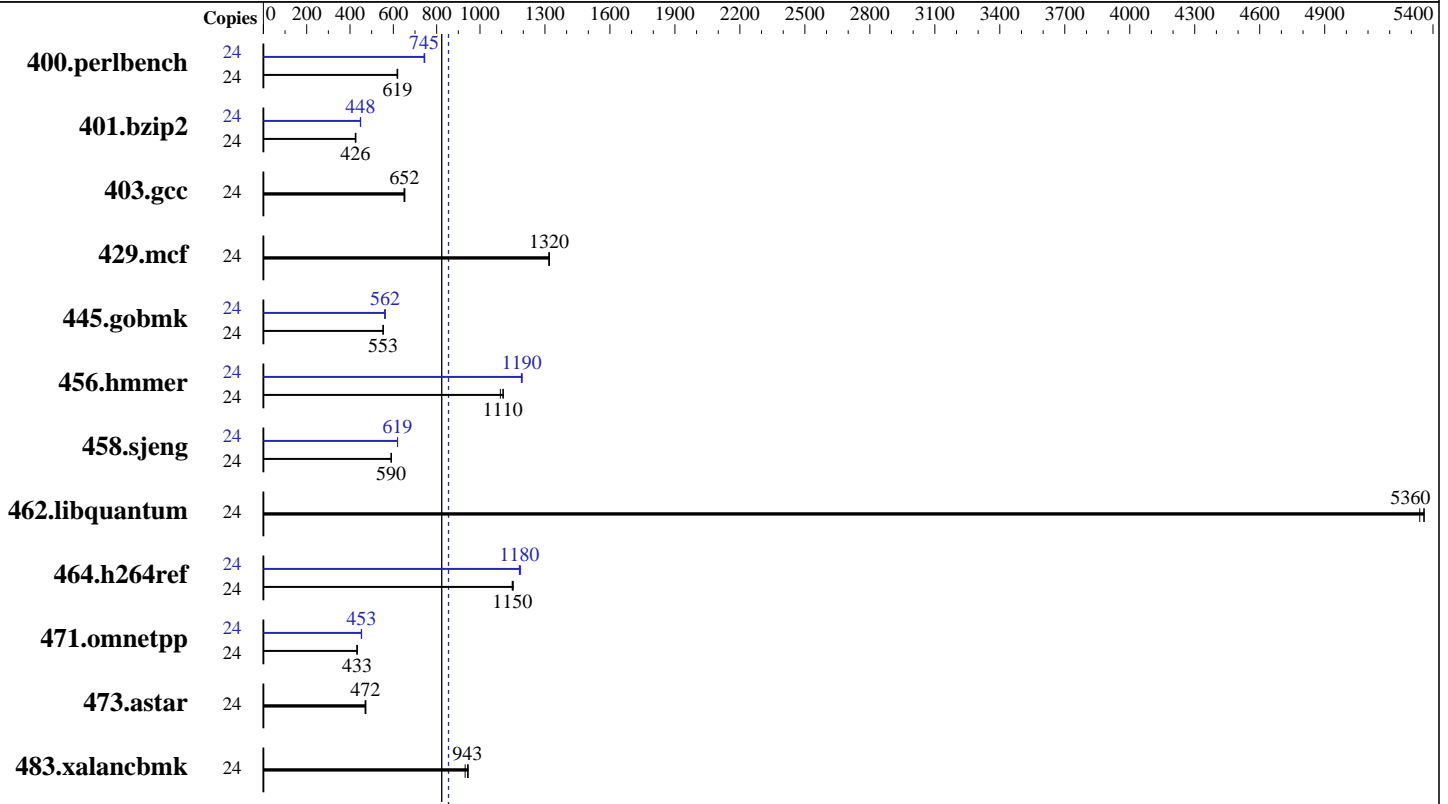
CPU2006 license: 20
Test sponsor: Bull SAS
Tested by: Dell Inc.

Test date: Mar-2012
Hardware Availability: May-2012
Software Availability: Feb-2012

SPECint_rate_base2006 = 824

SPECint_rate2006 = 855

Benchmark	Copies	Score (blue)	Score (base)
400.perlbench	24	745	619
401.bzip2	24	448	426
403.gcc	24		652
429.mcf	24		1320
445.gobmk	24	562	553
456.hmmer	24	1190	1110
458.sjeng	24	619	590
462.libquantum	24		5360
464.h264ref	24	1180	1150
471.omnetpp	24	453	433
473.astar	24		472
483.xalancbmk	24		943

Hardware

CPU Name: Intel Xeon E5-4617
CPU Characteristics: Intel Turbo Boost Technology up to 3.40 GHz
CPU MHz: 2900
FPU: Integrated
CPU(s) enabled: 24 cores, 4 chips, 6 cores/chip
CPU(s) orderable: 2,4 chip
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core
L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (32 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem: 4 x 300 GB 10000 RPM SAS, RAID 0
Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 11 SP2 (x86_64) 3.0.13-0.27-default
Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux
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 Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	24	378	620	380	617	**379**	**619**	24	316	742	315	745	**315**	**745**
401.bzip2	24	**544**	**426**	543	427	546	424	24	517	448	516	449	**517**	**448**
403.gcc	24	296	653	298	649	**296**	**652**	24	296	653	298	649	**296**	**652**
429.mcf	24	**166**	**1320**	166	1320	166	1320	24	**166**	**1320**	166	1320	166	1320
445.gobmk	24	455	553	456	553	**455**	**553**	24	447	563	**448**	**562**	450	560
456.hmmer	24	**203**	**1110**	202	1110	205	1090	24	**188**	**1190**	187	1190	188	1190
458.sjeng	24	492	590	**492**	**590**	492	590	24	469	620	469	619	**469**	**619**
462.libquantum	24	**92.8**	**5360**	93.1	5340	92.8	5360	24	**92.8**	**5360**	93.1	5340	92.8	5360
464.h264ref	24	462	1150	460	1150	**462**	**1150**	24	449	1180	**449**	**1180**	447	1190
471.omnetpp	24	346	433	347	432	**347**	**433**	24	332	452	**331**	**453**	331	454
473.astar	24	359	470	356	473	**357**	**472**	24	359	470	356	473	**357**	**472**
483.xalancbmk	24	**176**	**943**	175	946	178	932	24	**176**	**943**	175	946	178	932

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

Submit Notes

   The numactl mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate numactl commands to bind each copy to a specific processor.
For details, please see the config file.

Operating System Notes

   Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

```
    System Profile set to Custom
    CPU Power Management set to Maximum Performance
    Memory Frequency set to Maximum Performance
    Turbo Boost set to Enabled
    C States/C1E set to Enabled
    Sysinfo program /root/CPU2006-1.2/config/sysinfo.rev6800
    $Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
    running on icon4p Tue Mar 20 09:58:41 2012

    This section contains SUT (System Under Test) info as seen by
    some common utilities.  To remove or add to this section, see:
      http://www.spec.org/cpu2006/Docs/config.html#sysinfo

    From /proc/cpuinfo
       model name : Intel(R) Xeon(R) CPU E5-4617 0 @ 2.90GHz
          4 "physical id"s (chips)
          24 "processors"
```

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Platform Notes (Continued)

```
    cores, siblings (Caution: counting these is hw and system dependent.  The
    following excerpts from /proc/cpuinfo might not be reliable.  Use with
    caution.)
       cpu cores : 6
       siblings  : 6
       physical 0: cores 0 1 2 3 4 5
       physical 1: cores 0 1 2 3 4 5
       physical 2: cores 0 1 2 3 4 5
       physical 3: cores 0 1 2 3 4 5
    cache size : 15360 KB

 From /proc/meminfo
    MemTotal:       264501512 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

 /usr/bin/lsb_release -d
    SUSE Linux Enterprise Server 11 (x86_64)

 From /etc/*release* /etc/*version*
    SuSE-release:
       SUSE Linux Enterprise Server 11 (x86_64)
       VERSION = 11
       PATCHLEVEL = 2

 uname -a:
    Linux icon4p 3.0.13-0.27-default #1 SMP Wed Feb 15 13:33:49 UTC 2012
    (d73692b) x86_64 x86_64 x86_64 GNU/Linux

 run-level 3 Mar 20 09:51 last=S

 SPEC is set to: /root/CPU2006-1.2
    Filesystem     Type  Size  Used Avail Use% Mounted on
    /dev/sda2      ext3  1.1T  123G  917G  12% /

 Additional information from dmidecode:

 (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 LD_LIBRARY_PATH = "/root/CPU2006-1.2/libs/32:/root/CPU2006-1.2/libs/64"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/transparent_hugepage/enabled
 Filesystem page cache cleared with:
 echo 1>       /proc/sys/vm/drop_caches
 runspec command invoked through numactl i.e.:
```

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General Notes (Continued)

```
numactl --interleave=all runspec <etc>
The Dell PowerEdge R820 and
the Bull NovaScale R470 F3 Models are electronically equivalent.
The results have been measured on a Dell PowerEdge R820 model.
```

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`

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Test sponsor:　Bull SAS　　　　　　　　　**Hardware Availability:**　May-2012
Tested by:　Dell Inc.　　　　　　　　　　**Software Availability:**　Feb-2012

Peak Compiler Invocation (Continued)

　　　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: `basepeak = yes`

　　　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`

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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-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120410.00.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120410.00.xml

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

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