SPEC® CINT2006 Result
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Dell Inc.

PowerEdge R910 (Intel Xeon E7-4870, 2.40 GHz)

$SPECint®_rate2006 = $ 1090

$SPECint_rate_base2006 = $ 1010
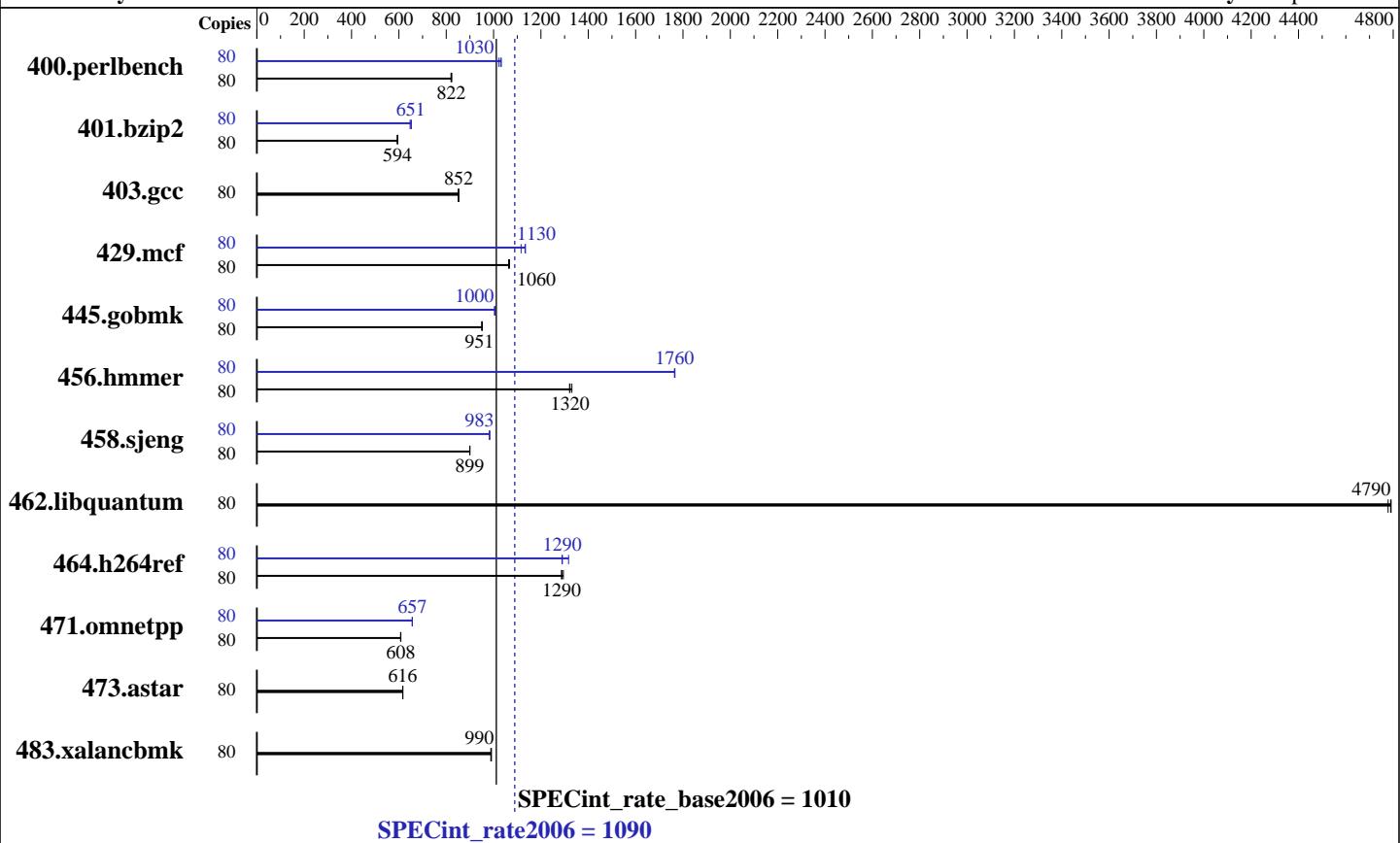
CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.

Test date: Mar-2011
Hardware Availability: Apr-2011
Software Availability: Apr-2011

Benchmark	Copies	Result
400.perlbench	80	1030 / 822
401.bzip2	80	651 / 594
403.gcc	80	852
429.mcf	80	1130 / 1060
445.gobmk	80	1000 / 951
456.hmmer	80	1760 / 1320
458.sjeng	80	983 / 899
462.libquantum	80	4790
464.h264ref	80	1290 / 1290
471.omnetpp	80	657 / 608
473.astar	80	616
483.xalancbmk	80	990

SPECint_rate_base2006 = 1010

SPECint_rate2006 = 1090

Hardware

CPU Name: Intel Xeon E7-4870
CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz: 2400
FPU: Integrated
CPU(s) enabled: 40 cores, 4 chips, 10 cores/chip, 2 threads/core
CPU(s) orderable: 2,4 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: 30 MB I+D on chip per chip
Other Cache: None
Memory: 512 GB (64 x 8 GB 4Rx8 PC3-8500R-7, ECC)
Disk Subsystem: 1 x 500 GB 7200 RPM SAS 6Gb
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	80	949	823	**951**	**822**	953	820	80	**759**	**1030**	757	1030	765	1020
401.bzip2	80	1299	594	**1299**	**594**	1301	593	80	**1186**	**651**	1183	653	1193	647
403.gcc	80	755	853	757	851	**755**	**852**	80	755	853	757	851	**755**	**852**
429.mcf	80	684	1070	**686**	**1060**	686	1060	80	654	1120	643	1130	**644**	**1130**
445.gobmk	80	**882**	**951**	881	953	884	950	80	834	1010	**835**	**1000**	836	1000
456.hmmer	80	**564**	**1320**	565	1320	561	1330	80	**423**	**1760**	423	1760	423	1770
458.sjeng	80	**1076**	**899**	1076	899	1075	900	80	985	982	984	983	**985**	**983**
462.libquantum	80	**346**	**4790**	346	4790	347	4780	80	**346**	**4790**	346	4790	347	4780
464.h264ref	80	**1374**	**1290**	1376	1290	1367	1290	80	1345	1320	**1372**	**1290**	1373	1290
471.omnetpp	80	**822**	**608**	824	607	822	608	80	762	656	**762**	**657**	761	657
473.astar	80	910	617	**911**	**616**	912	616	80	910	617	**911**	**616**	912	616
483.xalancbmk	80	**558**	**990**	557	991	559	988	80	**558**	**990**	557	991	559	988

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.

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 72000 > /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)

General Notes

The Dell PowerEdge R910 and
the Bull NovaScale R480 F2 models are electronically equivalent.
The results have been measured on a Dell PowerEdge R910 model.
Binaries were compiled on RHEL5.5

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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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Test sponsor: Dell Inc.		**Hardware Availability:**	Apr-2011
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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: basepeak = yes

            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

         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

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Peak Optimization Flags (Continued)

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.20110308.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.20110308.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 Wed Jul 23 17:16:30 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 13 April 2011.