SPEC® CINT2006 Result

Dell Inc.

PowerEdge R910 (Intel Xeon E7-4807, 1.87 GHz)

$SPECint^®\_rate2006 =$ 499

$SPECint\_rate\_base2006 =$ 463

CPU2006 license: 55	**Test date:**	Mar-2011
Test sponsor: Dell Inc.	**Hardware Availability:**	Apr-2011
Tested by: Dell Inc.	**Software Availability:**	Apr-2011
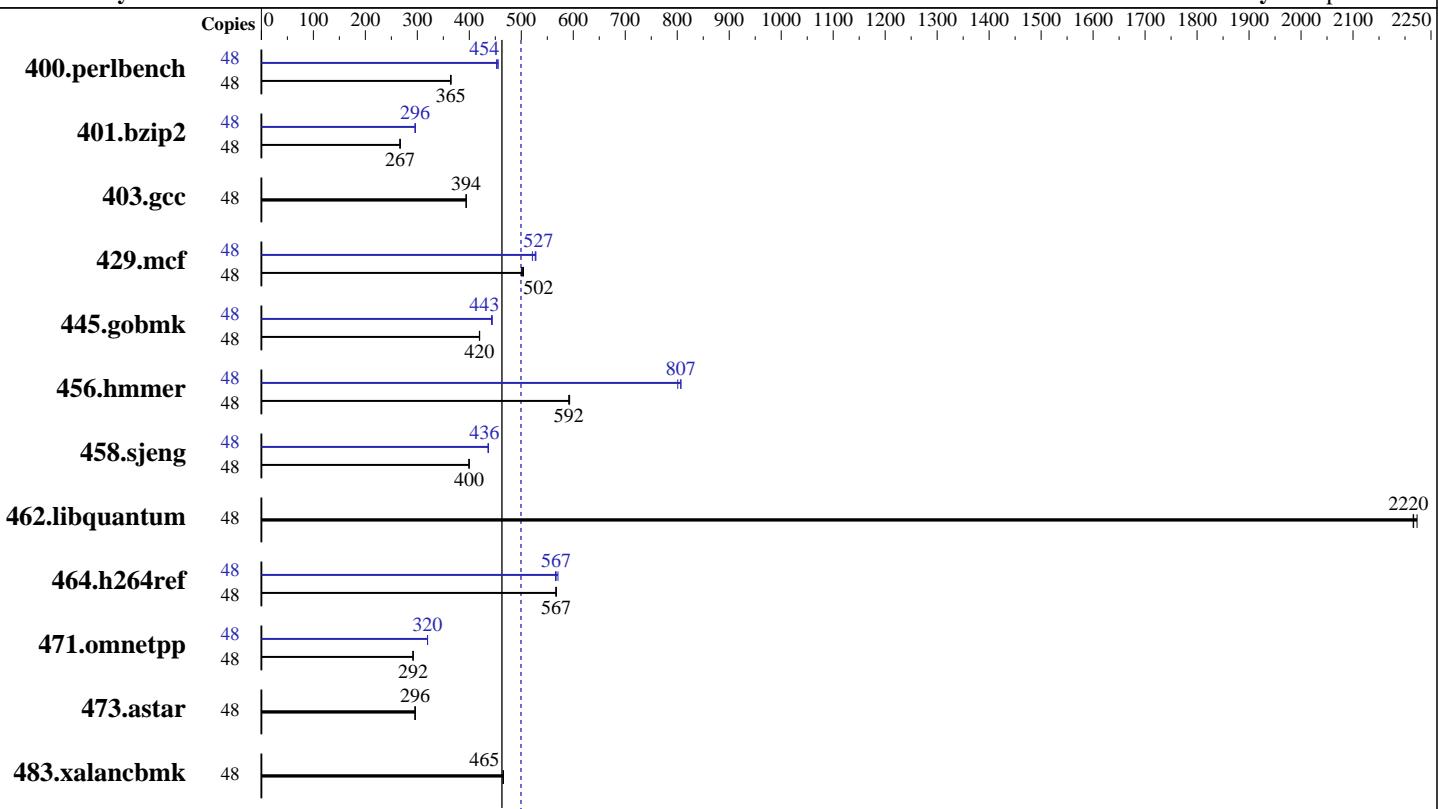
SPECint_rate_base2006 = 463

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Hardware	**Software**
CPU Name: Intel Xeon E7-4807	Operating System: SUSE Linux Enterprise Server 11 SP1 (x86_64), Kernel 2.6.32.12-0.7-default
CPU Characteristics: None	
CPU MHz: 1867	Compiler: Intel C++ Compiler XE for applications running on IA-32
FPU: Integrated	Version 12.0.1.116 Build 20101116
CPU(s) enabled: 24 cores, 4 chips, 6 cores/chip, 2 threads/core	Auto Parallel: No
CPU(s) orderable: 2,4 chips	File System: ext3
Primary Cache: 32 KB I + 32 KB D on chip per core	System State: Run level 3 (multi-user)
Secondary Cache: 256 KB I+D on chip per core	Base Pointers: 32-bit
L3 Cache: 18 MB I+D on chip per chip	Peak Pointers: 32/64-bit
Other Cache: None	Other Software: Microquill SmartHeap V9.01
Memory: 512 GB (64 x 8 GB 4Rx8 PC3-8500R-7, ECC, running at 800 MHz)	
Disk Subsystem: 1 x 500 GB 7200 RPM SAS 6Gb	
Other Hardware: 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	48	**1286**	**365**	1289	364	1285	365	48	1029	456	**1034**	**454**	1036	453
401.bzip2	48	1733	267	1738	266	**1737**	**267**	48	1566	296	**1565**	**296**	1564	296
403.gcc	48	**981**	**394**	980	394	981	394	48	**981**	**394**	980	394	981	394
429.mcf	48	868	504	875	500	**872**	**502**	48	840	521	**831**	**527**	829	528
445.gobmk	48	**1200**	**420**	1199	420	1201	419	48	1137	443	1134	444	**1136**	**443**
456.hmmer	48	**757**	**592**	755	593	757	592	48	**555**	**807**	555	807	559	801
458.sjeng	48	1455	399	**1454**	**400**	1453	400	48	1330	437	**1331**	**436**	1331	436
462.libquantum	48	**449**	**2220**	447	2220	449	2220	48	**449**	**2220**	447	2220	449	2220
464.h264ref	48	1875	566	**1873**	**567**	1872	567	48	1878	566	**1873**	**567**	1862	571
471.omnetpp	48	**1028**	**292**	1029	292	1028	292	48	939	320	938	320	**939**	**320**
473.astar	48	**1139**	**296**	1141	295	1138	296	48	**1139**	**296**	1141	295	1138	296
483.xalancbmk	48	711	466	**712**	**465**	712	465	48	711	466	**712**	**465**	712	465

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 43200 > /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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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

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 19:25:26 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 12 April 2011.