SPEC® CINT2006 Result
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Dell Inc.

PowerEdge R620 (Intel Xeon E5-2643, 3.30 GHz)

$SPECint^{®}\_rate2006 =$ 379

$SPECint\_rate\_base2006 =$ 362

CPU2006 license: 55	**Test date:**	Oct-2012
Test sponsor: Dell Inc.	**Hardware Availability:**	Mar-2012
Tested by: Dell Inc.	**Software Availability:**	Jun-2012

Copies

- 400.perlbench — 16 : 312 ; 16 : 266
- 401.bzip2 — 16 : 199 ; 16 : 193
- 403.gcc — 16 : 295
- 429.mcf — 16 : 577
- 445.gobmk — 16 : 280 ; 16 : 267
- 456.hmmer — 16 : 546 ; 16 : 453
- 458.sjeng — 16 : 276 ; 16 : 263
- 462.libquantum — 16 : 2160
- 464.h264ref — 16 : 458 ; 16 : 457
- 471.omnetpp — 16 : 221 ; 16 : 205
- 473.astar — 16 : 223
- 483.xalancbmk — 16 : 403

SPECint_rate_base2006 = 362

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Hardware

CPU Name:	Intel Xeon E5-2643
CPU Characteristics:	Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz:	3300
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 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:	10 MB I+D on chip per chip
Other Cache:	None
Memory:	128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem:	1 x 300 GB 15000 RPM SAS
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.3 (Santiago) 2.6.32-279.el6.x86_64
Compiler:	C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux
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

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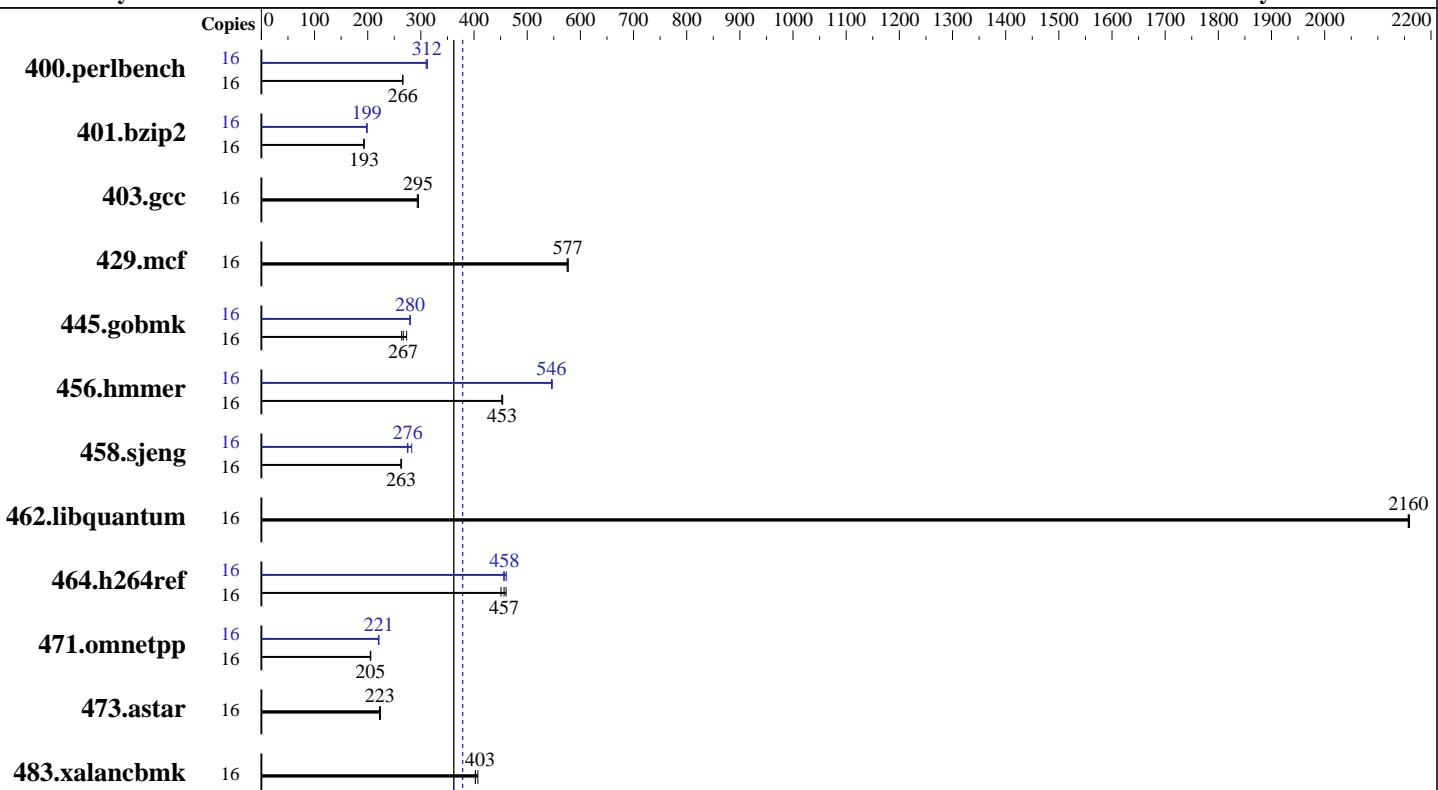**Test sponsor:** Dell Inc.
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Results Table

Benchmark	Copies	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	16	588	266	588	266	**588**	**266**	16	504	310	501	312	**502**	**312**
401.bzip2	16	801	193	**799**	**193**	798	193	16	777	199	**778**	**199**	778	198
403.gcc	16	**436**	**295**	439	293	436	295	16	**436**	**295**	439	293	436	295
429.mcf	16	254	575	**253**	**577**	253	577	16	254	575	**253**	**577**	253	577
445.gobmk	16	636	264	**629**	**267**	614	273	16	600	280	**600**	**280**	600	280
456.hmmer	16	**329**	**453**	330	452	329	454	16	**273**	**546**	273	547	273	546
458.sjeng	16	738	262	**736**	**263**	734	264	16	704	275	685	283	**703**	**276**
462.libquantum	16	**154**	**2160**	154	2160	154	2160	16	**154**	**2160**	154	2160	154	2160
464.h264ref	16	786	451	**776**	**457**	769	460	16	777	456	**774**	**458**	769	461
471.omnetpp	16	488	205	486	206	**487**	**205**	16	453	221	**453**	**221**	454	220
473.astar	16	505	222	**504**	**223**	502	224	16	505	222	**504**	**223**	502	224
483.xalancbmk	16	274	403	271	407	**274**	**403**	16	274	403	271	407	**274**	**403**

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 localhost.localdomain Fri Oct 19 17:06:37 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 E5-2643 0 @ 3.30GHz
        2 "physical id"s (chips)
        16 "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 : 4
       siblings  : 8
       physical 0: cores 0 1 2 3
       physical 1: cores 0 1 2 3
    cache size : 10240 KB

  From /proc/meminfo
     MemTotal:       132079600 kB
     HugePages_Total:        0
     Hugepagesize:        2048 kB

  /usr/bin/lsb_release -d
     Red Hat Enterprise Linux Server release 6.3 (Santiago)

  From /etc/*release* /etc/*version*
     redhat-release: Red Hat Enterprise Linux Server release 6.3 (Santiago)
     system-release: Red Hat Enterprise Linux Server release 6.3 (Santiago)
     system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

  uname -a:
     Linux localhost.localdomain 2.6.32-279.el6.x86_64 #1 SMP Wed Jun 13 18:24:36
     EDT 2012 x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Oct 19 17:06 last=5

  SPEC is set to: /root/cpu2006-1.2
     Filesystem     Type      Size  Used Avail Use% Mounted on
     /dev/sda1      ext4      241G  8.1G  221G   4% /

  Additional information from dmidecode:
    Memory:
     7x 00AD00B300AD HMT31GR7BFR4C-PB 8 GB 1600 MHz 2 rank
     4x 00AD04B300AD HMT31GR7BFR4C-PB 8 GB 1600 MHz 2 rank
     5x 00CE00B300CE M393B1K70DH0-CK0 8 GB 1600 MHz 2 rank

  (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/redhat_transparent_hugepage/enabled
  Filesystem page cache cleared with:
  echo 1>        /proc/sys/vm/drop_caches
```

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General Notes (Continued)

```
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

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Peak Compiler Invocation (Continued)

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`

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-ic12.1-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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