SPEC® CINT2006 Result

Dell Inc.

PowerEdge M820 (Intel Xeon E5-4617, 2.90 GHz)

$SPECint^®\_rate2006 =$ 855

$SPECint\_rate\_base2006 =$ 824

CPU2006 license: 55	**Test date:**	May-2012
Test sponsor: Dell Inc.	**Hardware Availability:**	Aug-2012
Tested by: Dell Inc.	**Software Availability:**	Feb-2012

SPECint_rate2006 = 855

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Benchmark	Copies	Peak	Base
400.perlbench	24	744	620
401.bzip2	24	448	426
403.gcc	24		653
429.mcf	24		1320
445.gobmk	24	562	553
456.hmmer	24	1190	1100
458.sjeng	24	620	590
462.libquantum	24		5380
464.h264ref	24	1180	1150
471.omnetpp	24	454	434
473.astar	24		472
483.xalancbmk	24		940
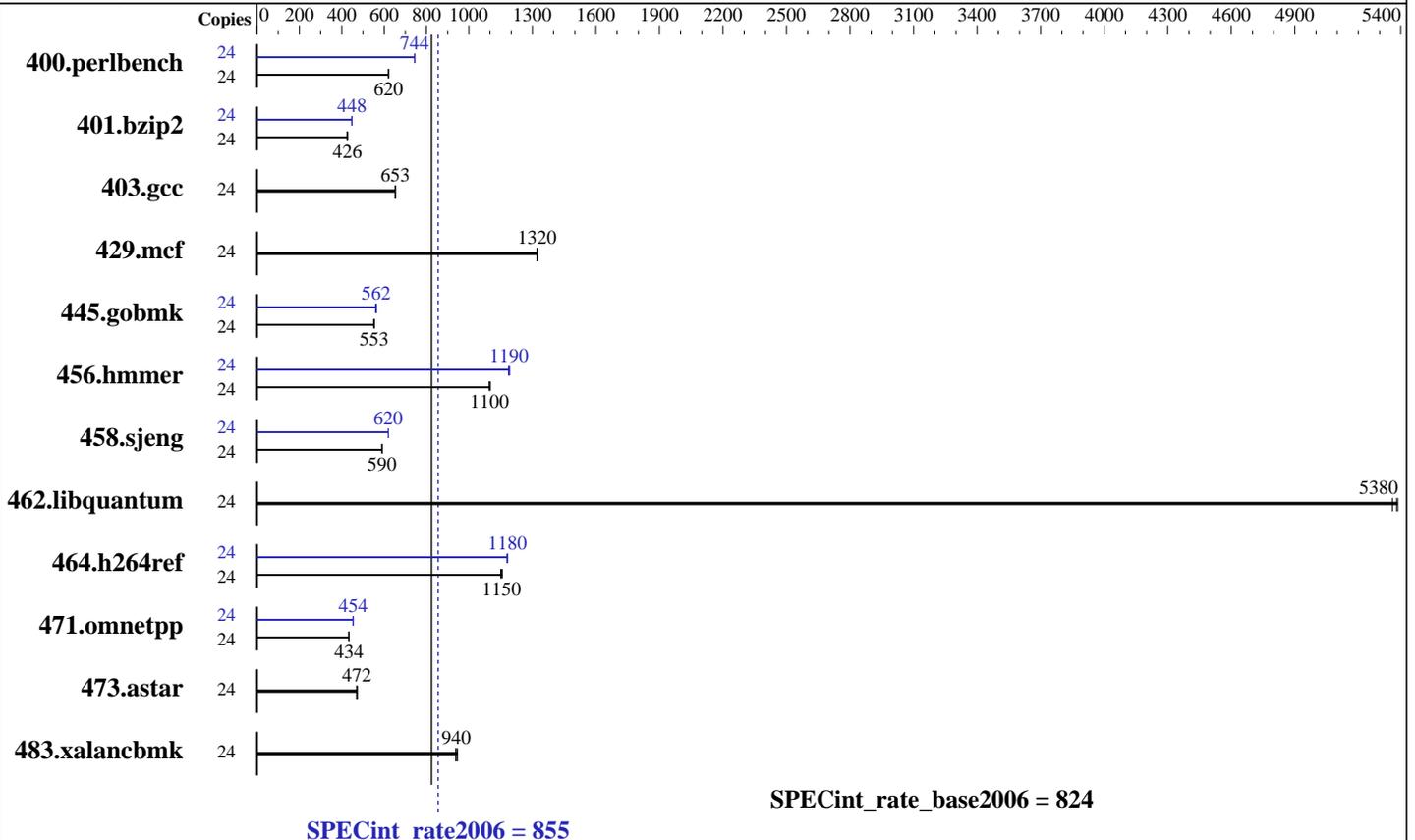
Hardware

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, running at 1333 MHz)
Disk Subsystem:	1 x 900 GB 10000 RPM SAS
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							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	24	378	620	378	621	**378**	**620**	24	**315**	**744**	316	743	315	745
401.bzip2	24	**544**	**426**	542	428	546	424	24	517	448	**517**	**448**	518	447
403.gcc	24	296	653	**296**	**653**	296	652	24	296	653	**296**	**653**	296	652
429.mcf	24	**165**	**1320**	165	1320	166	1320	24	**165**	**1320**	165	1320	166	1320
445.gobmk	24	**455**	**553**	455	553	456	552	24	446	564	**448**	**562**	449	560
456.hmmer	24	**204**	**1100**	204	1100	203	1100	24	**188**	**1190**	189	1190	188	1190
458.sjeng	24	492	590	**492**	**590**	492	590	24	469	620	469	619	**469**	**620**
462.libquantum	24	92.8	5360	92.3	5390	**92.4**	**5380**	24	92.8	5360	92.3	5390	**92.4**	**5380**
464.h264ref	24	**460**	**1150**	459	1160	462	1150	24	**449**	**1180**	449	1180	450	1180
471.omnetpp	24	**346**	**434**	347	433	346	434	24	332	452	330	454	**331**	**454**
473.astar	24	**357**	**472**	359	470	356	473	24	**357**	**472**	359	470	356	473
483.xalancbmk	24	176	938	**176**	**940**	175	946	24	176	938	**176**	**940**	175	946

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

    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 linux-b61l Tue May 22 16:07:57 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"
       cores, siblings (Caution: counting these is hw and system dependent. The

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Platform Notes (Continued)

```
    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:       264468688 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 linux-b61l 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 May 22 16:02 last=S

  SPEC is set to: /root/CPU2006-1.2
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda1       ext3  911G   96G  770G  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.:
 numactl --interleave=all runspec <etc>
```

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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 -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

    456.hmmer: icc -m64

    458.sjeng: icc -m64

C++ benchmarks:
    icpc -m32

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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
```

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
```

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Peak Optimization Flags (Continued)

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

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