SPEC® CINT2006 Result
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Dell Inc.

PowerEdge M710 (Intel Xeon X5647, 2.93 GHz)

$SPECint®\_rate2006 =$ 269

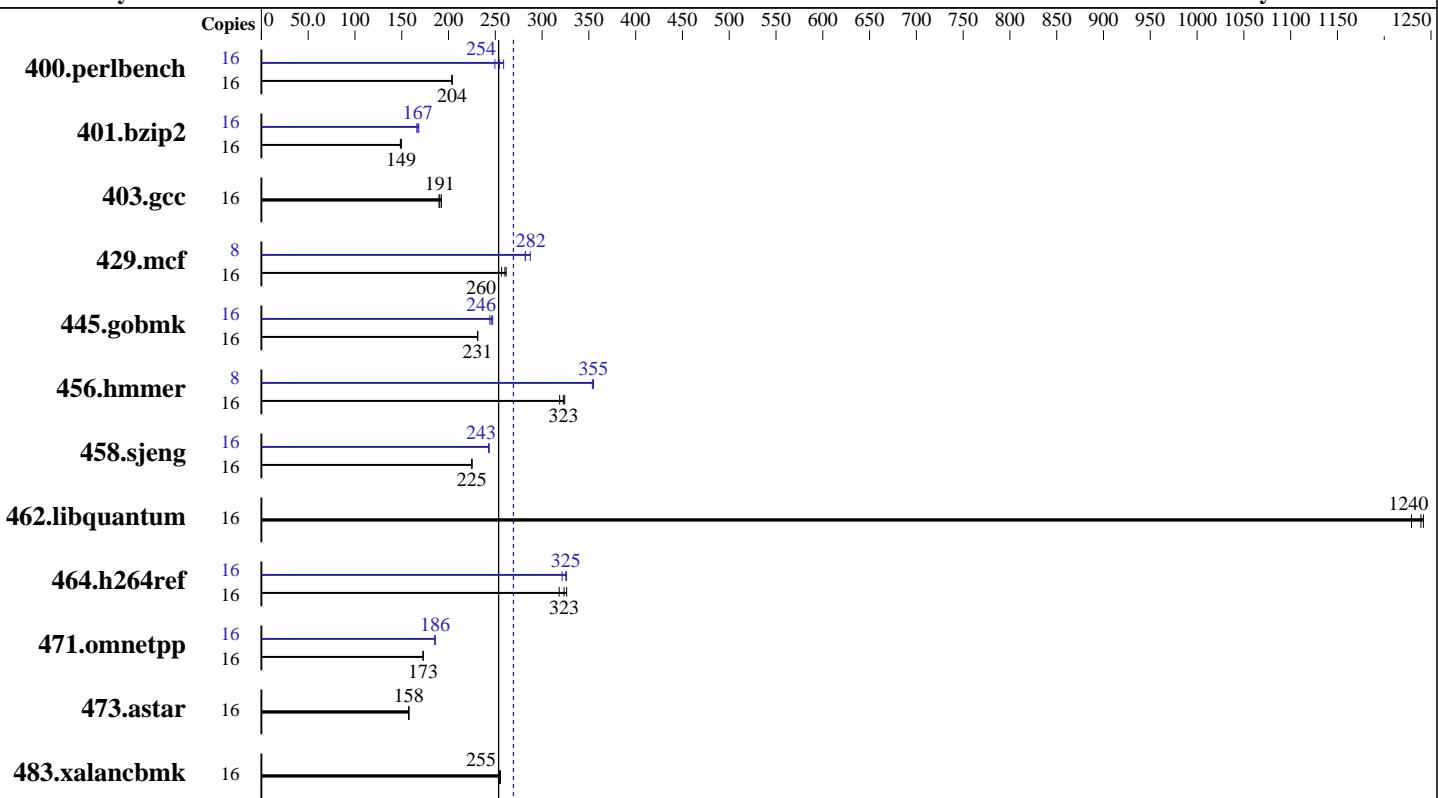$SPECint\_rate\_base2006 =$ 254

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.

Test date: Feb-2011
Hardware Availability: Feb-2011
Software Availability: Jan-2011

Benchmark	Copies	Result
400.perlbench	16	254
	16	204
401.bzip2	16	167
	16	149
403.gcc	16	191
429.mcf	8	282
	16	260
445.gobmk	16	246
	16	231
456.hmmer	8	355
	16	323
458.sjeng	16	243
	16	225
462.libquantum	16	1240
464.h264ref	16	325
	16	323
471.omnetpp	16	186
	16	173
473.astar	16	158
483.xalancbmk	16	255

SPECint_rate_base2006 = 254

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Hardware

CPU Name: Intel Xeon X5647
CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz
CPU MHz: 2933
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable: 1,2 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: 12 MB I+D on chip per chip
Other Cache: None
Memory: 48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC, running at 1066 MHz)
Disk Subsystem: 1 x 146 GB 15000 RPM SAS
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: ReiserFS
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	16	**767**	**204**	768	204	766	204	16	**615**	**254**	626	250	604	259
401.bzip2	16	1033	149	1039	149	**1033**	**149**	16	**923**	**167**	930	166	918	168
403.gcc	16	670	192	678	190	**675**	**191**	16	670	192	678	190	**675**	**191**
429.mcf	16	568	257	**561**	**260**	558	262	8	**259**	**282**	259	282	254	287
445.gobmk	16	727	231	726	231	**726**	**231**	16	679	247	**683**	**246**	688	244
456.hmmer	16	460	324	468	319	**463**	**323**	8	211	354	**210**	**355**	210	355
458.sjeng	16	860	225	**860**	**225**	861	225	16	797	243	**796**	**243**	796	243
462.libquantum	16	**268**	**1240**	270	1230	267	1240	16	**268**	**1240**	270	1230	267	1240
464.h264ref	16	**1095**	**323**	1113	318	1085	326	16	1086	326	1101	321	**1088**	**325**
471.omnetpp	16	579	173	578	173	**579**	**173**	16	539	185	**539**	**186**	538	186
473.astar	16	713	157	713	158	**713**	**158**	16	713	157	713	158	**713**	**158**
483.xalancbmk	16	433	255	432	255	**433**	**255**	16	433	255	432	255	**433**	**255**

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.
     numactl was used to bind copies to the cores
```

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 7200 > /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)
    Data Reuse = Disabled (Default = Enabled)
```

General Notes

```
    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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