SPEC® CINT2006 Result
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Fujitsu

CELSIUS W410, Intel Core i7-2600

$SPECint®2006 =$ 46.4

$SPECint\_base2006 =$ 44.6

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Jun-2011
Hardware Availability: Mar-2011
Software Availability: Jan-2011

SPECint_base2006 = 44.6

SPECint2006 = 46.4

Benchmark	Peak	Base
400.perlbench	35.5	31.6
401.bzip2	25.1	24.4
403.gcc	34.9	32.2
429.mcf	60.7	56.9
445.gobmk	26.4	27.0
456.hmmer	52.5	53.1
458.sjeng	28.6	28.7
462.libquantum		588
464.h264ref	55.4	49.9
471.omnetpp	31.1	28.2
473.astar		28.9
483.xalancbmk	45.1	44.2

Hardware

CPU Name:	Intel Core i7-2600
CPU Characteristics:	Intel Turbo Boost Technology up to 3.8 GHz
CPU MHz:	3400
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
CPU(s) orderable:	1 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:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	8 GB (2 x 4 GB 2Rx8 PC3-10600U-9)
Disk Subsystem:	1 x SATA II, 400 GB, 7200 rpm
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 11 (x86_64) SP1, kernel 2.6.32.12-0.6-default
Compiler:	Intel C++ Intel 64 Compiler XE for applications running on Intel 64 Version 12.0.2.137 Build 20110112
Auto Parallel:	Yes
File System:	ext3
System State:	Run Level 3 (multi-user)
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V9.01

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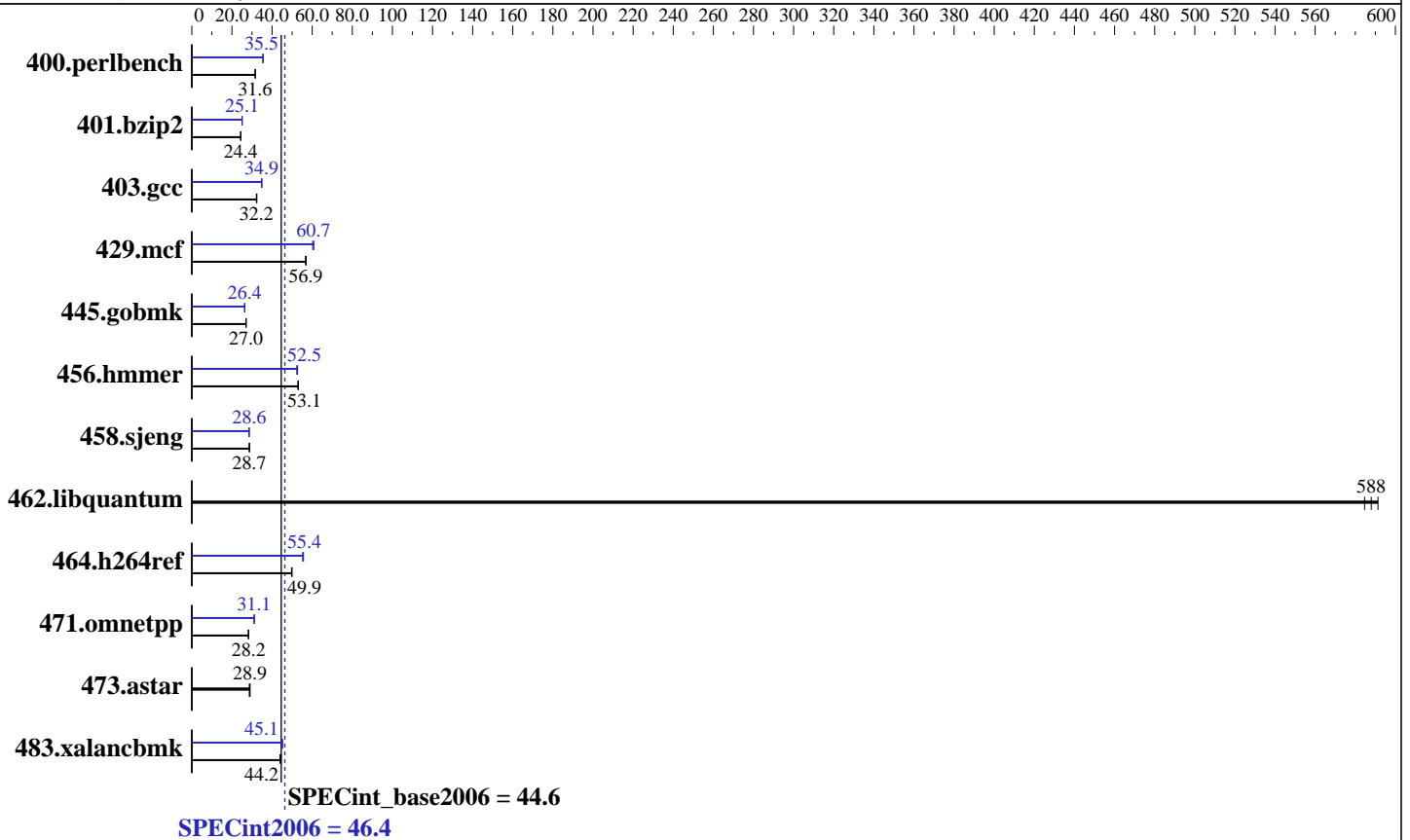
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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**309**	**31.6**	309	31.7	310	31.5	276	35.4	**275**	**35.5**	275	35.5
401.bzip2	396	24.3	395	24.4	**396**	**24.4**	386	25.0	**384**	**25.1**	384	25.1
403.gcc	250	32.2	**250**	**32.2**	248	32.4	231	34.8	231	34.9	**231**	**34.9**
429.mcf	160	57.0	**160**	**56.9**	161	56.7	150	60.8	151	60.2	**150**	**60.7**
445.gobmk	**388**	**27.0**	388	27.0	388	27.0	**398**	**26.4**	398	26.4	398	26.4
456.hmmer	**176**	**53.1**	176	53.1	176	52.9	177	52.7	**178**	**52.5**	178	52.4
458.sjeng	**422**	**28.7**	422	28.7	420	28.8	424	28.6	**424**	**28.6**	423	28.6
462.libquantum	35.4	585	35.0	591	**35.2**	**588**	35.4	585	35.0	591	**35.2**	**588**
464.h264ref	**444**	**49.9**	445	49.7	443	49.9	400	55.3	397	55.7	**400**	**55.4**
471.omnetpp	**221**	**28.2**	221	28.3	222	28.2	200	31.2	201	31.0	**201**	**31.1**
473.astar	**243**	**28.9**	245	28.6	242	29.0	**243**	**28.9**	245	28.6	242	29.0
483.xalancbmk	157	43.9	155	44.5	**156**	**44.2**	153	45.2	153	45.1	**153**	**45.1**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

```
'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
Hugepages were enabled by:
mount -t hugetlbfs nodev /mnt/hugepages
echo 900 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

Platform Notes

```
BIOS settings:
Hyper-Threading Technology = Disabled
```

General Notes

```
OMP_NUM_THREADS set to number of cores
```

Base Compiler Invocation

```
C benchmarks:
     icc -m64

C++ benchmarks:
     icpc -m64
```

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Base Portability Flags

```
  400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
      401.bzip2: -DSPEC_CPU_LP64
        403.gcc: -DSPEC_CPU_LP64
        429.mcf: -DSPEC_CPU_LP64
     445.gobmk: -DSPEC_CPU_LP64
     456.hmmer: -DSPEC_CPU_LP64
      458.sjeng: -DSPEC_CPU_LP64
  462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
    464.h264ref: -DSPEC_CPU_LP64
    471.omnetpp: -DSPEC_CPU_LP64
      473.astar: -DSPEC_CPU_LP64
  483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
```

Base Optimization Flags

C benchmarks:
```
    -xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
    -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT
```

C++ benchmarks:
```
    -xAVX -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
    -L/opt/smartheap/intel64 -lsmartheap64
    -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT
```

Base Other Flags

C benchmarks:

```
    403.gcc: -Dalloca=_alloca
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
    icc  -m64
```

```
  400.perlbench: icc -m32
```

```
       429.mcf: icc -m32
```

```
     445.gobmk: icc -m32
```

```
    464.h264ref: icc -m32
```

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Peak Compiler Invocation (Continued)

C++ benchmarks (except as noted below):
        icpc -m32

        473.astar: icpc -m64

Peak Portability Flags

        400.perlbench: -DSPEC_CPU_LINUX_IA32
        401.bzip2: -DSPEC_CPU_LP64
        403.gcc: -DSPEC_CPU_LP64
        456.hmmer: -DSPEC_CPU_LP64
        458.sjeng: -DSPEC_CPU_LP64
        462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
        473.astar: -DSPEC_CPU_LP64
        483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

        400.perlbench: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                -no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch
                -ansi-alias
                -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

        401.bzip2: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                -no-prec-div -prof-use(pass 2) -auto-ilp32 -opt-prefetch
                -ansi-alias

        403.gcc: -xAVX -ipo -O3 -no-prec-div -inline-calloc
                -opt-malloc-options=3 -auto-ilp32
                -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

        429.mcf: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                -no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32
                -ansi-alias
                -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

        445.gobmk: -xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
                -auto-ilp32 -ansi-alias
                -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

        456.hmmer: -xAVX -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
                -ansi-alias
                -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

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Peak Optimization Flags (Continued)

```
   458.sjeng: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
              -no-prec-div(pass 2) -prof-use(pass 2) -unroll4

462.libquantum: basepeak = yes

  464.h264ref: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
              -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
              -ansi-alias
              -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT
```

C++ benchmarks:

```
  471.omnetpp: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
              -no-prec-div(pass 2) -prof-use(pass 2)
              -opt-ra-region-strategy=block -ansi-alias -Wl,-z,muldefs
              -L/opt/smartheap/ia32 -lsmartheap
              -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

    473.astar: basepeak = yes

 483.xalancbmk: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
              -Wl,-z,muldefs -L/opt/smartheap/ia32 -lsmartheap
              -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT
```

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/Fujitsu_CELSIUS_Platform.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/Fujitsu_CELSIUS_Platform.xml

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