SPEC® CINT2006 Result

Fujitsu

CELSIUS R920 (Intel Xeon E5-2665)

$SPECint®\_rate2006 = 613$

$SPECint\_rate\_base2006 = 587$

Copies

Benchmark	Peak	Base
400.perlbench	510	434
401.bzip2	333	321
403.gcc	474	474
429.mcf	—	916
445.gobmk	451	438
456.hmmer	881	740
458.sjeng	454	436
462.libquantum	3590	3530
464.h264ref	750	741
471.omnetpp	365	345
473.astar	345	345
483.xalancbmk	624	630

All benchmarks run with 32 copies.

SPECint_rate_base2006 = 587

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Hardware

CPU Name:	Intel Xeon E5-2665
CPU Characteristics:	Intel Turbo Boost Technology up to 3.10 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 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:	20 MB I+D on chip per chip
Other Cache:	None
Memory:	128 GB (16 x 8 GB 2Rx8 PC3-12800R-11, ECC)
Disk Subsystem:	1 x SATA III, 500 GB, 7200 rpm
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.1, 2.6.32-131.0.15.el6.x86_64
Compiler:	C/C++: Version 12.1.2.273 of Intel C++ Studio XE for Linux
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 10 (Multi-Core)

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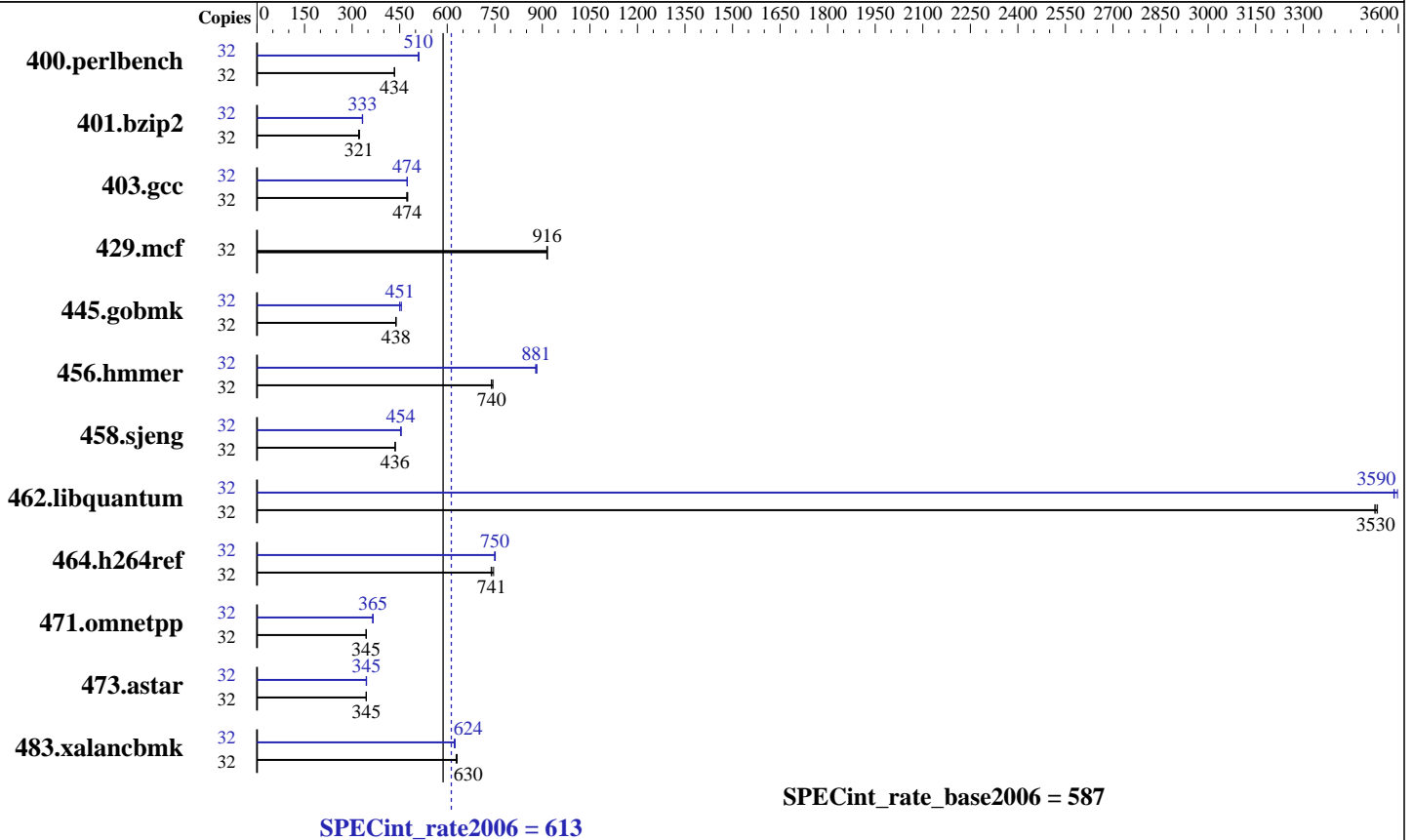
CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Mar-2012
Hardware Availability: Mar-2012
Software Availability: Dec-2011

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	32	721	434	721	434	**721**	**434**	32	615	509	**613**	**510**	612	511
401.bzip2	32	955	323	963	321	**961**	**321**	32	930	332	**928**	**333**	926	333
403.gcc	32	**543**	**474**	542	476	545	472	32	**544**	**474**	543	474	544	473
429.mcf	32	**319**	**916**	319	916	319	914	32	**319**	**916**	319	916	319	914
445.gobmk	32	766	438	766	438	**766**	**438**	32	746	450	737	456	**745**	**451**
456.hmmer	32	401	744	404	739	**403**	**740**	32	338	883	340	879	**339**	**881**
458.sjeng	32	888	436	889	436	**889**	**436**	32	**852**	**454**	851	455	855	453
462.libquantum	32	**188**	**3530**	188	3530	188	3530	32	185	3590	184	3600	**185**	**3590**
464.h264ref	32	949	746	959	739	**956**	**741**	32	942	752	945	749	**944**	**750**
471.omnetpp	32	**581**	**345**	580	345	582	344	32	**547**	**365**	547	365	547	366
473.astar	32	**651**	**345**	653	344	651	345	32	**652**	**345**	652	345	650	346
483.xalancbmk	32	350	631	**351**	**630**	352	628	32	**354**	**624**	353	625	355	622

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 to generate numactl commands to bind each copy to a specific processor.
    For details, please see the config file.
    For full details on using numactl, please refer to your Linux documentation, 'man numactl'
```

Operating System Notes

```
    Stack size set to unlimited using "ulimit -s unlimited"
```

Platform Notes

```
    BIOS settings:
    Frequency Floor Override = Enabled
```

General Notes

```
    Environment variables set by runspec before the start of the run:
    LD_LIBRARY_PATH = "/work/cpu2006/libs/32:/work/cpu2006/libs/64"

    Binaries compiled on a system with
    2x Xeon E5-2690 CPU + 64 GB memory using
    Red Hat Enterprise Linux Server release 6.1 (Santiago)

    Transparent Huge Pages enabled with:
    echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
    Filesystem page cache cleared with:
```

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General Notes (Continued)

```
echo 1>        /proc/sys/vm/drop_caches
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/opt/SmartHeap/lib -lsmartheap
```

Base Other Flags

C benchmarks:

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

Peak Compiler Invocation

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

```
        403.gcc: icc  -m32
```

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

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Peak Compiler Invocation (Continued)

```
    445.gobmk: icc  -m32

 462.libquantum: icc -m32

    464.h264ref: icc  -m32

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: -xSSE4.2 -ipo -O3 -no-prec-div

        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: -xAVX -ipo -O3 -no-prec-div -opt-prefetch
                 -opt-mem-layout-trans=3
```

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Peak Optimization Flags (Continued)

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/opt/SmartHeap/lib -lsmartheap`

473.astar: `-xAVX -ipo -O3 -no-prec-div -opt-prefetch`
`-opt-mem-layout-trans=3 -Wl,-z,muldefs`
`-L/opt/SmartHeap/lib -lsmartheap`

483.xalancbmk: `Same as 473.astar`

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/Fujitsu-Platform.20120313.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/Fujitsu-Platform.20120313.xml

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