SPEC® CINT2006 Result
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Fujitsu

PRIMERGY BX920 S3, Intel Xeon E5-2470, 2.30 GHz

SPECint®_rate2006 =   580

SPECint_rate_base2006 = 558

CPU2006 license: 19	**Test date:** May-2012
Test sponsor: Fujitsu	**Hardware Availability:** May-2012
Tested by: Fujitsu	**Software Availability:** Feb-2012

Copies

- 400.perlbench: 32 — 514; 32 — 426
- 401.bzip2: 32 — 328; 32 — 321
- 403.gcc: 32 — 448
- 429.mcf: 32 — 844
- 445.gobmk: 32 — 435; 32 — 435
- 456.hmmer: 32 — 801; 32 — 683
- 458.sjeng: 32 — 450; 32 — 437
- 462.libquantum: 32 — 3360; 32 — 3270
- 464.h264ref: 32 — 726; 32 — 720
- 471.omnetpp: 32 — 336; 32 — 324
- 473.astar: 32 — 323; 32 — 323
- 483.xalancbmk: 32 — 550

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Hardware

CPU Name:	Intel Xeon E5-2470
CPU Characteristics:	Intel Turbo Boost Technology up to 3.10 GHz
CPU MHz:	2300
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:	96 GB (12 x 8 GB 2Rx4 PC3L-12800R-11, ECC)
Disk Subsystem:	1 x SATA, 500 GB, 7200 RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.2 (Santiago) 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 12.1.0.293 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 V10.0

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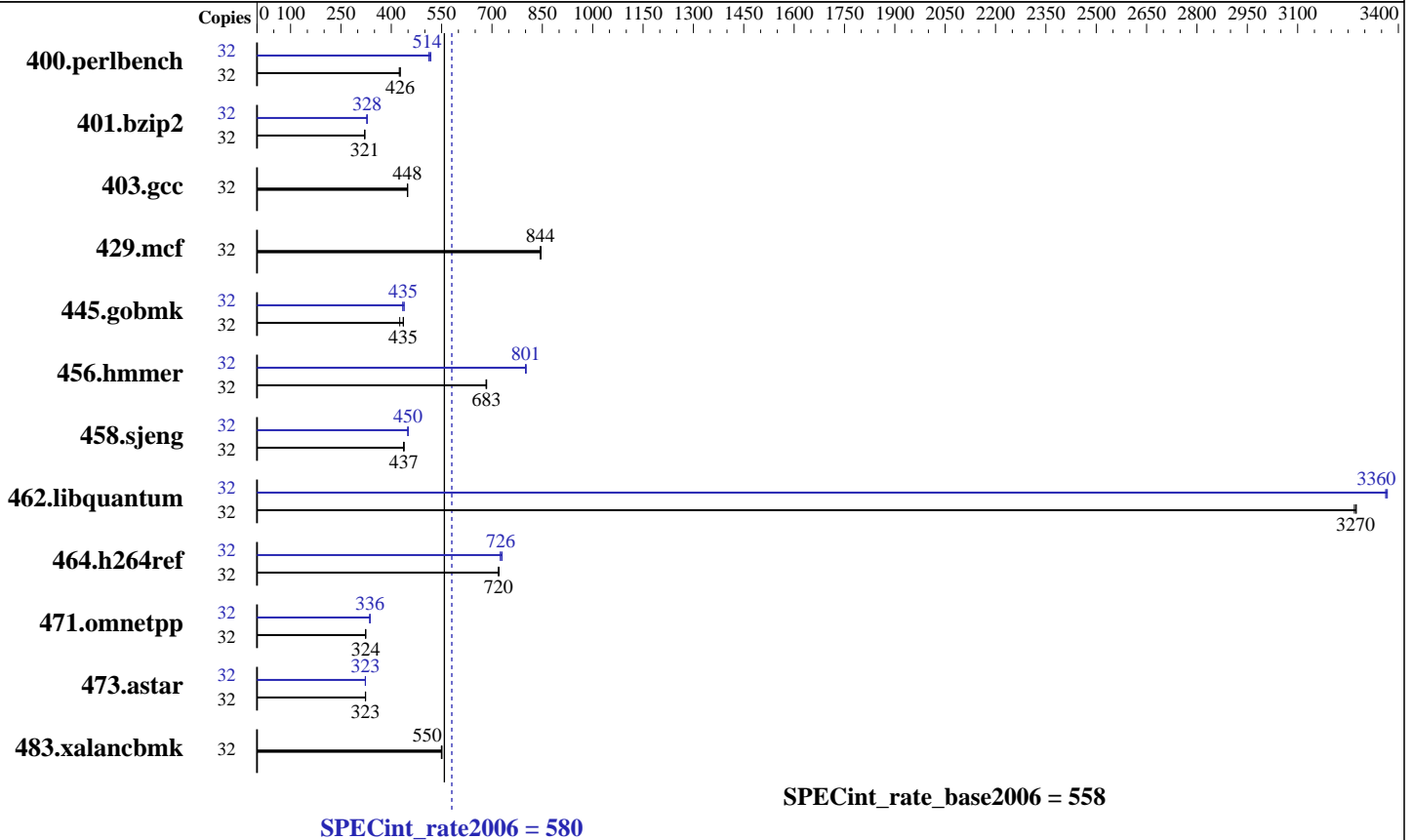
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Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	32	738	424	733	426	**733**	**426**	32	611	512	**608**	**514**	604	518
401.bzip2	32	**962**	**321**	963	321	962	321	32	943	327	941	328	**942**	**328**
403.gcc	32	575	448	**575**	**448**	574	449	32	575	448	**575**	**448**	574	449
429.mcf	32	346	844	345	846	**346**	**844**	32	346	844	345	846	**346**	**844**
445.gobmk	32	789	425	769	436	**771**	**435**	32	**772**	**435**	773	434	765	439
456.hmmer	32	436	684	**437**	**683**	438	682	32	373	800	**373**	**801**	372	802
458.sjeng	32	883	438	886	437	**886**	**437**	32	**861**	**450**	860	450	862	449
462.libquantum	32	203	3270	202	3270	**203**	**3270**	32	**197**	**3360**	197	3360	197	3370
464.h264ref	32	**984**	**720**	982	721	985	719	32	970	730	977	725	**976**	**726**
471.omnetpp	32	**618**	**324**	619	323	618	324	32	595	336	**595**	**336**	594	337
473.astar	32	**695**	**323**	694	324	696	323	32	**696**	**323**	695	323	696	323
483.xalancbmk	32	402	549	**401**	**550**	401	551	32	402	549	**401**	**550**	401	551

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"

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64"

Binaries compiled on a system with 2x E5-2650 CPU + 96 GB memory using RHEL6.2
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
For information about Fujitsu please visit: http://www.fujitsu.com

Base Compiler Invocation

C benchmarks:
        icc -m32

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Base Compiler Invocation (Continued)

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 -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: -xAVX(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

      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
```

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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/Fujitsu-Platform.20120320.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.20120320.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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