SPEC® CINT2006 Result
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NEC Corporation

Express5800/R120e-2M (Intel Xeon E5-2660 v2)

SPECint®2006 =   52.1

SPECint_base2006 =   48.2

CPU2006 license: 9006	**Test date:** Nov-2013
Test sponsor: NEC Corporation	**Hardware Availability:** Sep-2013
Tested by: NEC Corporation	**Software Availability:** Sep-2013

Results graph — benchmark scale 0 to 3300:

- 400.perlbench: 34.1 / 28.5
- 401.bzip2: 20.8 / 20.5
- 403.gcc: 30.8 / 30.2
- 429.mcf: 60.3
- 445.gobmk: 23.7 / 20.9
- 456.hmmer: 52.2
- 458.sjeng: 26.1 / 25.3
- 462.libquantum: 3290
- 464.h264ref: 49.2 / 39.7
- 471.omnetpp: 43.6 / 30.4
- 473.astar: 27.5
- 483.xalancbmk: 49.3 / 49.0

SPECint_base2006 = 48.2

SPECint2006 = 52.1
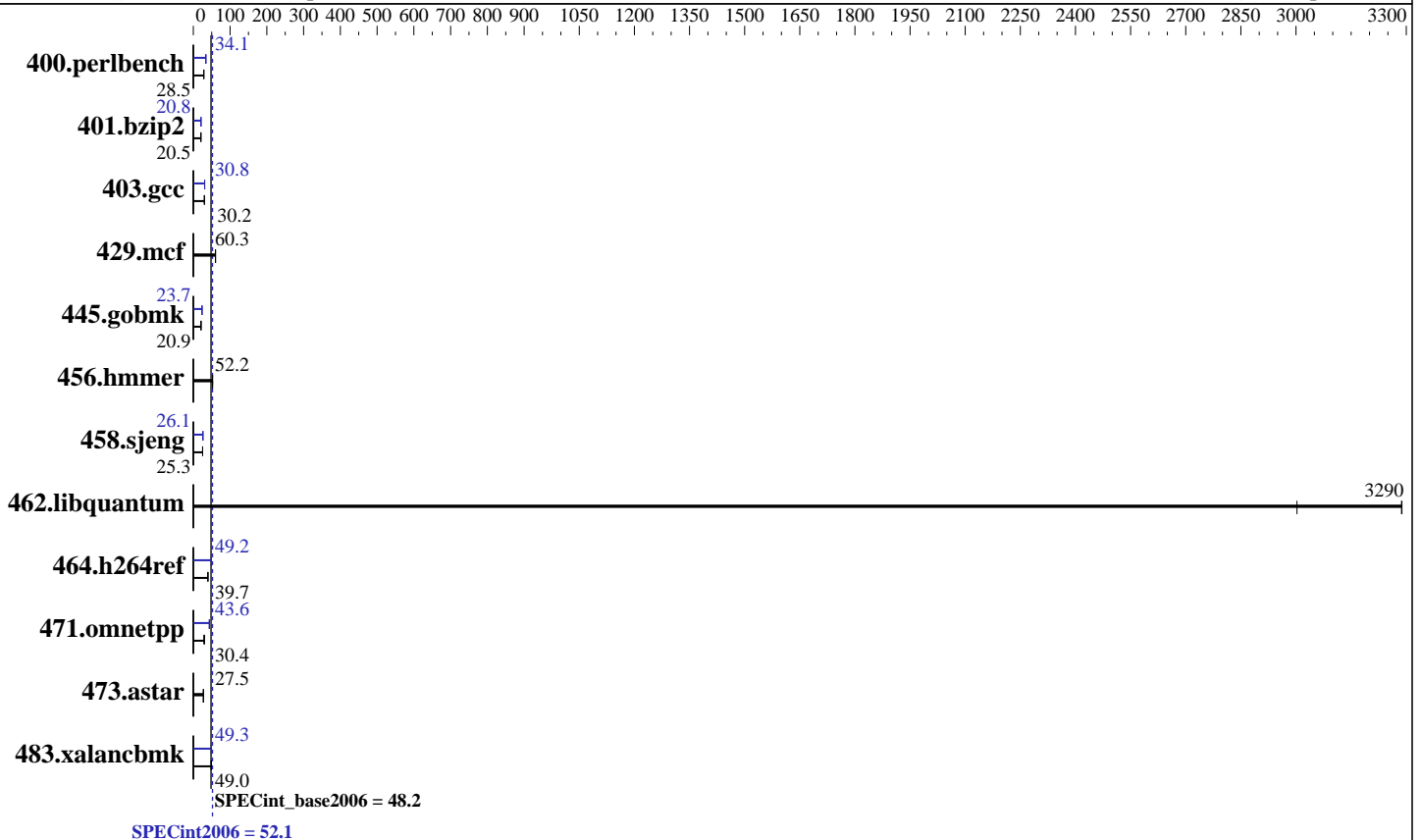
Hardware

CPU Name:	Intel Xeon E5-2660 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.00 GHz
CPU MHz:	2200
FPU:	Integrated
CPU(s) enabled:	20 cores, 2 chips, 10 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:	25 MB I+D on chip per chip
Other Cache:	None
Memory:	128 GB (8 x 16 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem:	1 x 250 GB SATA, 7200 RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.4 (Santiago) Kernel 2.6.32-358.18.1.el6.x86_64
Compiler:	C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4
System State:	Run level 3 (multi-user)
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V8.1

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	343	28.5	**343**	**28.5**	343	28.5	287	34.1	**287**	**34.1**	287	34.1
401.bzip2	**470**	**20.5**	471	20.5	469	20.6	**464**	**20.8**	463	20.8	464	20.8
403.gcc	266	30.2	**267**	**30.2**	267	30.2	261	30.9	261	30.8	**261**	**30.8**
429.mcf	152	60.1	151	60.5	**151**	**60.3**	152	60.1	151	60.5	**151**	**60.3**
445.gobmk	**502**	**20.9**	502	20.9	502	20.9	444	23.6	443	23.7	**444**	**23.7**
456.hmmer	178	52.5	**179**	**52.2**	179	52.1	178	52.5	**179**	**52.2**	179	52.1
458.sjeng	477	25.3	479	25.2	**478**	**25.3**	**464**	**26.1**	465	26.0	464	26.1
462.libquantum	6.30	3290	**6.30**	**3290**	6.90	3000	6.30	3290	**6.30**	**3290**	6.90	3000
464.h264ref	558	39.7	558	39.6	**558**	**39.7**	**450**	**49.2**	450	49.2	449	49.2
471.omnetpp	**206**	**30.4**	219	28.6	205	30.4	143	43.9	**143**	**43.6**	144	43.4
473.astar	256	27.4	254	27.6	**256**	**27.5**	256	27.4	254	27.6	**256**	**27.5**
483.xalancbmk	141	49.1	141	48.8	**141**	**49.0**	140	49.2	140	49.3	**140**	**49.3**

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

Operating System Notes

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

Platform Notes

BIOS Settings:
Energy Performance: Performance

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"
OMP_NUM_THREADS = "20"

Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
The Express5800/R120e-1M and
the Express5800/R120e-2M models are electronically equivalent.
The results have been measured on the Express5800/R120e-2M model.

Base Compiler Invocation

C benchmarks:
icc -m64

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Base Compiler Invocation (Continued)

C++ benchmarks:
    icpc -m64

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
```

C++ benchmarks:
```
    -xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -Wl,-z,muldefs
    -L/sh -lsmartheap64
```

Base Other Flags

C benchmarks:

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

Peak Compiler Invocation

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

    400.perlbench: icc -m32

      445.gobmk: icc -m32

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Software Availability: Sep-2013

Peak Compiler Invocation (Continued)

        464.h264ref: `icc -m32`

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`
        429.mcf: `-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`

        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`

        429.mcf: basepeak = yes

        445.gobmk: `-xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)`
                `-ansi-alias`

        456.hmmer: basepeak = yes

        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

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Peak Optimization Flags (Continued)

```
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
```

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/sh -lsmartheap
```

```
473.astar: basepeak = yes
```

```
483.xalancbmk: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
               -Wl,-z,muldefs -L/sh -lsmartheap
```

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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120d-RevA.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120d-RevA.xml

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

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