SPEC® CINT2006 Result
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NEC Corporation

Express5800/B120f-h (Intel Xeon E5-2667 v3)

SPECint®2006 = 66.6

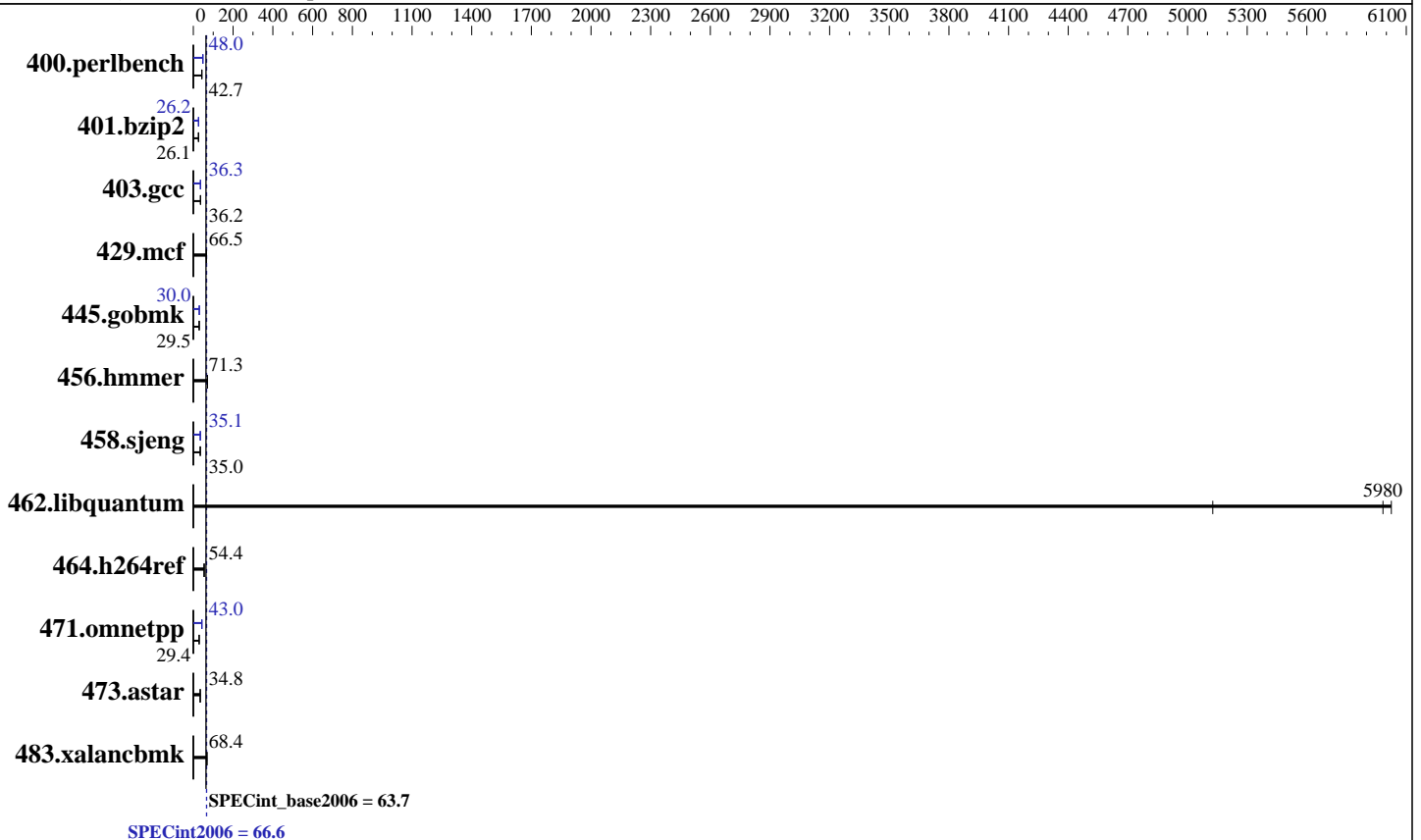SPECint_base2006 = 63.7

CPU2006 license: 9006   **Test date:** Jul-2015
Test sponsor: NEC Corporation   **Hardware Availability:** Aug-2015
Tested by: NEC Corporation   **Software Availability:** Oct-2014

Benchmark	base	peak
400.perlbench	42.7	48.0
401.bzip2	26.1	26.2
403.gcc	36.2	36.3
429.mcf	66.5	
445.gobmk	29.5	30.0
456.hmmer	71.3	
458.sjeng	35.0	35.1
462.libquantum	5980	
464.h264ref	54.4	
471.omnetpp	29.4	43.0
473.astar	34.8	
483.xalancbmk	68.4	

SPECint_base2006 = 63.7

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Hardware

CPU Name: Intel Xeon E5-2667 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz: 3200
FPU: Integrated
CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip
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 (8 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem: NEC Storage M100 via Fibre Channel (See additional details below)
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.6 (Santiago)
Kernel 2.6.32-504.el6.x86_64
Compiler: C/C++: Version 15.0.0.090 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	228	42.9	**229**	**42.7**	229	42.7	203	48.1	204	47.9	**204**	**48.0**
401.bzip2	371	26.0	370	26.1	**370**	**26.1**	368	26.2	**368**	**26.2**	368	26.2
403.gcc	**222**	**36.2**	222	36.2	223	36.1	**222**	**36.3**	228	35.3	221	36.4
429.mcf	139	65.6	137	66.6	**137**	**66.5**	139	65.6	137	66.6	**137**	**66.5**
445.gobmk	356	29.5	355	29.6	**355**	**29.5**	**349**	**30.0**	349	30.0	349	30.0
456.hmmer	131	71.1	**131**	**71.3**	131	71.3	131	71.1	**131**	**71.3**	131	71.3
458.sjeng	**346**	**35.0**	346	35.0	346	34.9	344	35.1	345	35.1	**344**	**35.1**
462.libquantum	4.04	5130	**3.46**	**5980**	3.44	6020	4.04	5130	**3.46**	**5980**	3.44	6020
464.h264ref	406	54.6	408	54.3	**407**	**54.4**	406	54.6	408	54.3	**407**	**54.4**
471.omnetpp	212	29.4	216	29.0	**213**	**29.4**	146	42.7	**145**	**43.0**	145	43.0
473.astar	202	34.8	203	34.5	**202**	**34.8**	202	34.8	203	34.5	**202**	**34.8**
483.xalancbmk	102	67.9	101	68.4	**101**	**68.4**	102	67.9	101	68.4	**101**	**68.4**

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
 Patrol Scrub: Disabled
 Hyper-Threading: Disabled

Storage Configuration for Disk Subsystem:
 NEC Storage M100 has 4 x 600 GB 10000 RPM SAS disks under RAID-10 configuration
 mounted over 8Gbps Fibre Channel interface with these options
 "defaults" in the /etc/fstab.
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"
OMP_NUM_THREADS = "16"

 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

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Base Compiler Invocation

C benchmarks:
```
icc -m64
```

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:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
```

C++ benchmarks:
```
-xCORE-AVX2 -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
```

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Peak Compiler Invocation (Continued)

400.perlbench: `icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

445.gobmk: `icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

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

471.omnetpp: `icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

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`
464.h264ref: `-DSPEC_CPU_LP64`
473.astar: `-DSPEC_CPU_LP64`
483.xalancbmk: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

400.perlbench: `-xCORE-AVX2(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: `-xCORE-AVX2(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: `-xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc`
`-opt-malloc-options=3 -auto-ilp32`

429.mcf: `basepeak = yes`

445.gobmk: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)`
`-ansi-alias`

456.hmmer: `basepeak = yes`

458.sjeng: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`
`-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)`
`-unroll4`

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Peak Optimization Flags (Continued)

```
    462.libquantum: basepeak = yes

      464.h264ref: basepeak = yes
```

C++ benchmarks:

```
    471.omnetpp: -xCORE-AVX2(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: 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-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-B120f-RevB.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-B120f-RevB.xml

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

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