



# SPEC® CINT2006 Result

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## NEC Corporation

SPECint®\_rate2006 = 516

Express5800/A1080a-D (Intel Xeon E7-4807)

SPECint\_rate\_base2006 = 484

CPU2006 license: 9006

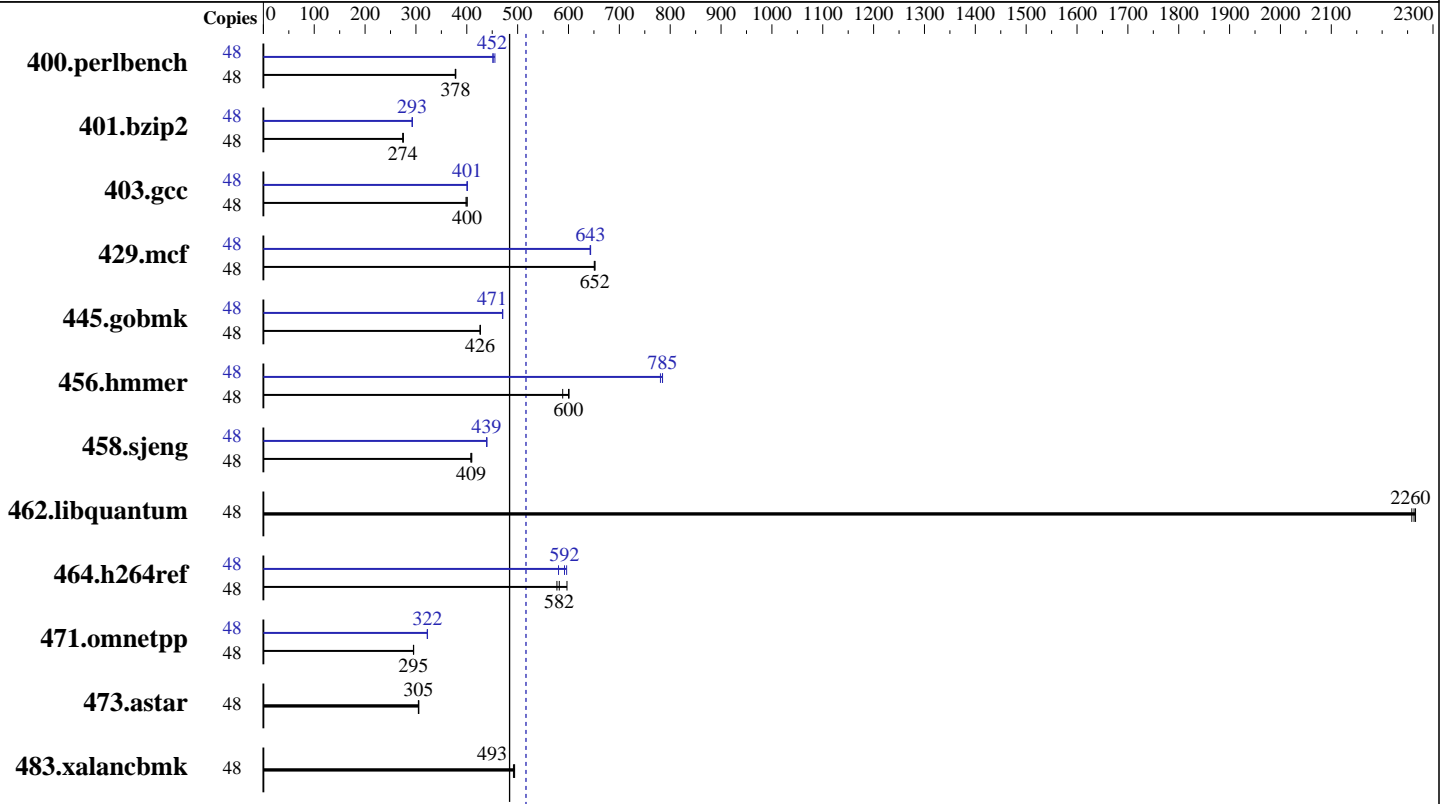
Test date: Aug-2011

Test sponsor: NEC Corporation

Hardware Availability: Nov-2011

Tested by: NEC Corporation

Software Availability: May-2011



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### Hardware

CPU Name: Intel Xeon E7-4807  
 CPU Characteristics:  
 CPU MHz: 1867  
 FPU: Integrated  
 CPU(s) enabled: 24 cores, 4 chips, 6 cores/chip, 2 threads/core  
 CPU(s) orderable: 1,2,3,4 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: 18 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (64 x 4 GB 2Rx4 PC3-8500R-7, ECC)  
 Disk Subsystem: 2x300 GB SAS, 10000 RPM, RAID 0  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.1, Kernel 2.6.32-131.0.15.el6.x86\_64 on an x86\_64  
 Compiler: C/C++: Version 12.0.4.191 of Intel Compiler XE for applications on IA-32 Build 20110427  
 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 V9.01



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## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	48	1240	378	<b>1240</b>	<b>378</b>	1243	377	48	1030	455	<b>1038</b>	<b>452</b>	1039	451
401.bzip2	48	<b>1688</b>	<b>274</b>	1689	274	1683	275	48	<b>1582</b>	<b>293</b>	1581	293	1583	293
403.gcc	48	<b>965</b>	<b>400</b>	965	401	970	398	48	963	401	<b>964</b>	<b>401</b>	965	401
429.mcf	48	671	652	673	651	<b>672</b>	<b>652</b>	48	<b>681</b>	<b>643</b>	680	644	681	643
445.gobmk	48	1181	426	<b>1181</b>	<b>426</b>	1180	427	48	<b>1070</b>	<b>471</b>	1071	470	1070	471
456.hammer	48	745	601	761	589	<b>746</b>	<b>600</b>	48	<b>571</b>	<b>785</b>	571	785	574	781
458.sjeng	48	1417	410	1424	408	<b>1420</b>	<b>409</b>	48	1323	439	1321	440	<b>1323</b>	<b>439</b>
462.libquantum	48	439	2270	<b>440</b>	<b>2260</b>	440	2260	48	439	2270	<b>440</b>	<b>2260</b>	440	2260
464.h264ref	48	<b>1826</b>	<b>582</b>	1840	577	1779	597	48	1830	580	<b>1794</b>	<b>592</b>	1781	596
471.omnetpp	48	<b>1016</b>	<b>295</b>	1017	295	1015	295	48	929	323	<b>930</b>	<b>322</b>	931	322
473.astar	48	1106	305	1103	306	<b>1104</b>	<b>305</b>	48	1106	305	1103	306	<b>1104</b>	<b>305</b>
483.xalancbmk	48	674	492	670	494	<b>672</b>	<b>493</b>	48	674	492	670	494	<b>672</b>	<b>493</b>

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.  
numactl was used to bind copies to the cores

## Operating System Notes

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run  
echo 1 > /proc/sys/vm/zone\_reclaim\_mode  
Huge pages were not configured for this run

## Platform Notes

Patrol Scrubbing set to disabled in Maintenance Console

## General Notes

The Express5800/A1080a-S and the Express5800/A1080a-D models are electronically equivalent.  
The results have been measured on the Express5800/A1080a-S model.  
Binaries were compiled on RHEL 5.6

## 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  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs  
-L/opt/SmartHeap\_9/lib -lsmartheap  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

## Base Other Flags

C benchmarks:  
403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m32

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\_LINUX\_IA32  
 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) -static(pass 2)  
 -prof-use(pass 2) -ansi-alias

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
 -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)  
 -prof-use(pass 2) -opt-prefetch -ansi-alias -auto-ilp32

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div  
 -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

429.mcf: -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 -auto-ilp32

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2  
 -ipo -no-prec-div -ansi-alias

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32  
 -B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

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  
 -B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

462.libquantum: basepeak = yes

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\_9/lib -lsmarheap

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## Peak Optimization Flags (Continued)

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-ic12.0-linux64-revB.20110705.html>

<http://www.spec.org/cpu2006/flags/NEC-platform-linux64-revB.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.20110705.xml>

<http://www.spec.org/cpu2006/flags/NEC-platform-linux64-revB.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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