



# SPEC<sup>®</sup> CINT2006 Result

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## NEC Corporation

Express5800/140Ba-10  
(Intel Xeon E7340)

SPECint<sup>®</sup>\_rate2006 = 184

SPECint\_rate\_base2006 = 154

CPU2006 license: 9006

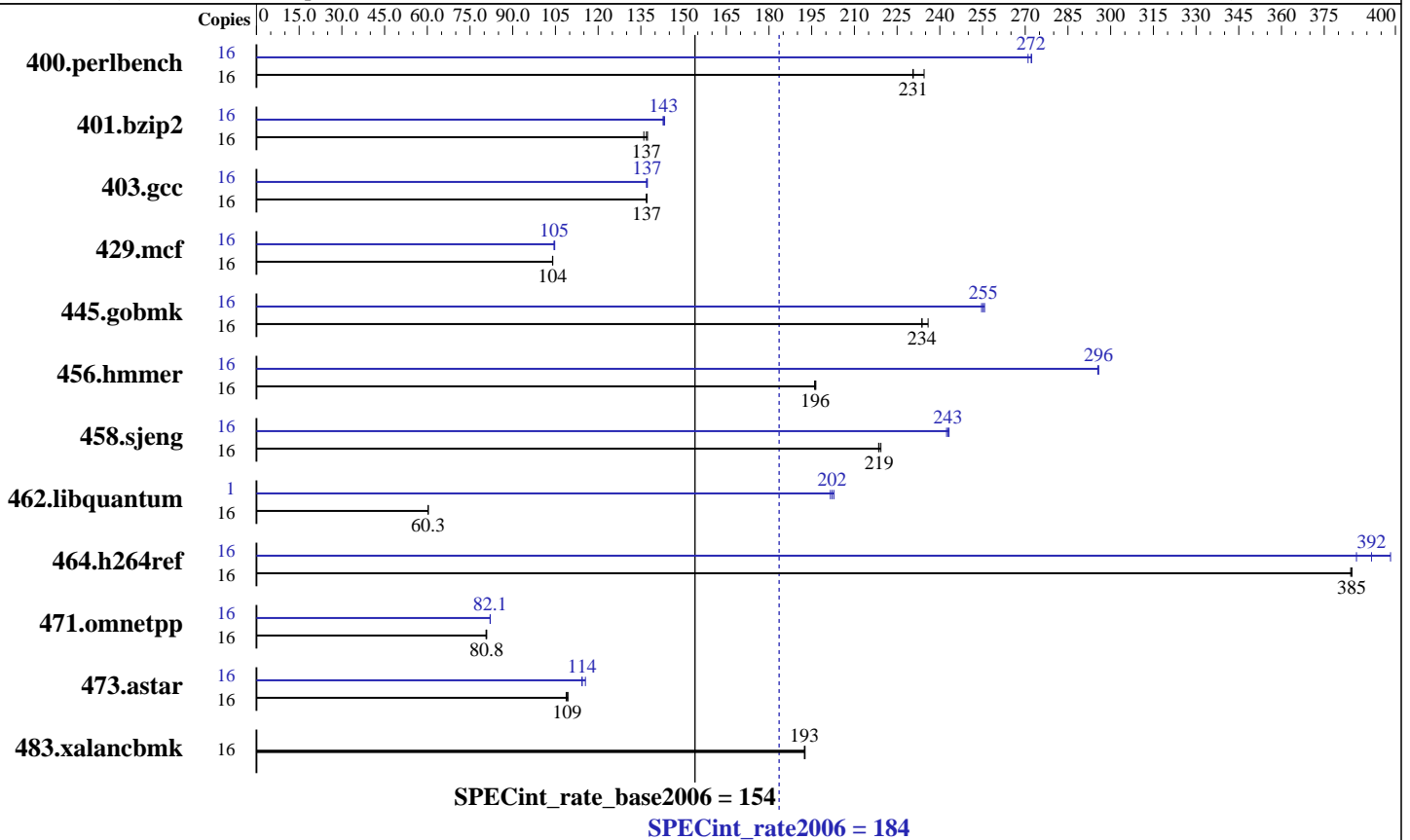
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Mar-2008

Hardware Availability: Sep-2007

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E7340  
 CPU Characteristics: 2.40 GHz, 2x4 MB L2 shared, 1066 MHz bus  
 CPU MHz: 2400  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 4 chips, 4 cores/chip  
 CPU(s) orderable: 1,2,3,4 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 8 MB I+D on chip per chip, 4 MB shared / 2 cores  
 L3 Cache: None  
 Other Cache: None  
 Memory: 16 GB (16x1 GB PC2-5300F, 2 rank, CL5-5-5, ECC)  
 Disk Subsystem: 1x73.2 GB SAS, 10000RPM  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP1, Kernel 2.6.16.46-0.12-smp  
 Compiler: Intel C++ Compiler for Linux32 and Linux64 version 10.1 Build 20070913 Package ID: L\_cc\_p\_10.1.008  
 Auto Parallel: Yes  
 File System: ext2  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: MicroQuill SmartHeap library 8.1 binutils-2.17.tar.gz, Version 2.17



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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	16	667	234	<b>678</b>	<b>231</b>	678	231	16	<b>575</b>	<b>272</b>	574	272	577	271
401.bzip2	16	1135	136	<b>1127</b>	<b>137</b>	1124	137	16	<b>1080</b>	<b>143</b>	1077	143	1081	143
403.gcc	16	941	137	939	137	<b>939</b>	<b>137</b>	16	<b>939</b>	<b>137</b>	938	137	940	137
429.mcf	16	1402	104	1403	104	<b>1403</b>	<b>104</b>	16	1393	105	1396	105	<b>1395</b>	<b>105</b>
445.gobmk	16	712	236	<b>718</b>	<b>234</b>	718	234	16	<b>658</b>	<b>255</b>	659	255	656	256
456.hmmer	16	762	196	<b>761</b>	<b>196</b>	760	196	16	<b>505</b>	<b>296</b>	505	296	505	295
458.sjeng	16	883	219	886	219	<b>885</b>	<b>219</b>	16	<b>797</b>	<b>243</b>	799	242	796	243
462.libquantum	16	5502	60.3	<b>5498</b>	<b>60.3</b>	5496	60.3	1	103	202	102	203	<b>102</b>	<b>202</b>
464.h264ref	16	920	385	921	384	<b>921</b>	<b>385</b>	16	<b>904</b>	<b>392</b>	917	386	889	398
471.omnetpp	16	<b>1238</b>	<b>80.8</b>	1237	80.9	1240	80.6	16	1219	82.1	1218	82.1	<b>1218</b>	<b>82.1</b>
473.astar	16	1033	109	<b>1029</b>	<b>109</b>	1027	109	16	982	114	<b>982</b>	<b>114</b>	972	116
483.xalanbmk	16	574	192	573	193	<b>573</b>	<b>193</b>	16	574	192	573	193	<b>573</b>	<b>193</b>

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

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run  
OMP\_NUM\_THREADS set to number of cores

## General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2,  
456.hmmer, for peak, are compiled in 64-bit mode

## Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalanbmk: -DSPEC\_CPU\_LINUX



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## Base Optimization Flags

C benchmarks:

`-fast -inline-calloc -opt-malloc-options=3`

C++ benchmarks:

`-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs  
-L/opt/SmartHeap_8.1/lib -lsmartheap`

## Base Other Flags

C benchmarks:

`403.gcc: -Dalloca=_alloca`

## Peak Compiler Invocation

C benchmarks (except as noted below):

`icc`

`401.bzip2: /opt/intel/cce/10.1.008/bin/icc  
-L/opt/intel/cce/10.1.008/lib  
-I/opt/intel/cce/10.1.008/include`

`456.hmmer: /opt/intel/cce/10.1.008/bin/icc  
-L/opt/intel/cce/10.1.008/lib  
-I/opt/intel/cce/10.1.008/include`

C++ benchmarks:

`icpc`

## Peak Portability Flags

`400.perlbench: -DSPEC_CPU_LINUX_IA32  
401.bzip2: -DSPEC_CPU_LP64  
456.hmmer: -DSPEC_CPU_LP64  
462.libquantum: -DSPEC_CPU_LINUX  
483.xalancbmk: -DSPEC_CPU_LINUX`

## Peak Optimization Flags

C benchmarks:

Continued on next page



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## Peak Optimization Flags (Continued)

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -fast -ansi-alias  
-prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch

403.gcc: -fast -inline-calloc -opt-malloc-options=3

429.mcf: -fast -prefetch

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

456.hmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

462.libquantum: -fast -unroll4 -Ob0 -prefetch  
-opt-streaming-stores always -vec-guard-write  
-opt-malloc-options=3 -parallel -par-runtime-control

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo  
-no-prec-div -ansi-alias -opt-ra-region-strategy=block  
-Wl,-z,muldefs -L/opt/SmartHeap\_8.1/lib -lsmarheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo  
-no-prec-div -ansi-alias -opt-ra-region-strategy=routine  
-Wl,-z,muldefs -L/opt/SmartHeap\_8.1/lib -lsmarheap

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-INT-ia32-linux-flags.20090713.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-INT-ia32-linux-flags.20090713.xml>



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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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