SPEC® CINT2006 Result

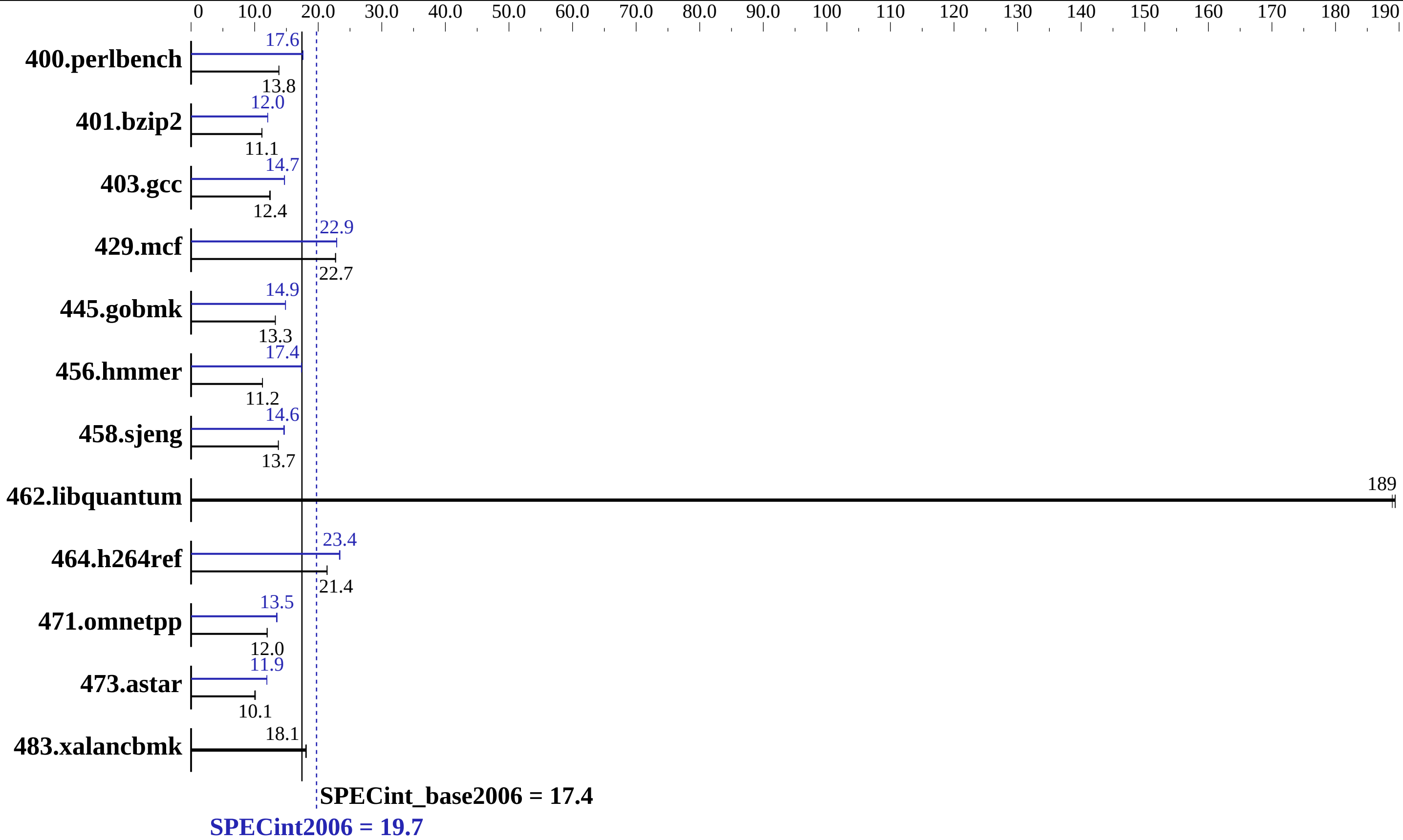
NEC Corporation

Express5800/320Fd-LR
(Intel Xeon E5405)

SPECint®2006 = 19.7

SPECint_base2006 = 17.4

CPU2006 license:	9006	**Test date:**	Dec-2008
Test sponsor:	NEC Corporation	**Hardware Availability:**	Oct-2008
Tested by:	NEC Corporation	**Software Availability:**	Nov-2008



Hardware

CPU Name:	Intel Xeon E5405
CPU Characteristics:	1333 MHz system bus
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1,2 chips (fault tolerant, see Platform Notes)
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	12 MB I+D on chip per chip, 6 MB shared / 2 cores
L3 Cache:	None
Other Cache:	None
Memory:	12 GB (6x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem:	2x146.5 GB SAS, 15000 RPM, Software RAID Level1
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 5.2 Advanced Platform, Kernel 2.6.18-92.1.13.el5 on an x86_64
Compiler:	Intel C++ Compiler 11.0 for Linux Build 20081105 Package ID: l_cproc_p_11.0.074
Auto Parallel:	Yes
File System:	ext3
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	MicroQuill SmartHeap Library 8.1 ft Server Control Software 6.0.2-198

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Results Table

	Base						Peak					
Benchmark	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
400.perlbench	**708**	**13.8**	707	13.8	708	13.8	555	17.6	556	17.6	**555**	**17.6**
401.bzip2	868	11.1	864	11.2	**866**	**11.1**	**801**	**12.0**	802	12.0	801	12.0
403.gcc	652	12.3	646	12.5	**647**	**12.4**	549	14.7	547	14.7	**548**	**14.7**
429.mcf	402	22.7	401	22.7	**401**	**22.7**	**398**	**22.9**	398	22.9	398	22.9
445.gobmk	792	13.3	**791**	**13.3**	791	13.3	706	14.9	707	14.8	**706**	**14.9**
456.hmmer	**830**	**11.2**	830	11.2	829	11.3	537	17.4	538	17.4	**537**	**17.4**
458.sjeng	883	13.7	881	13.7	**881**	**13.7**	830	14.6	824	14.7	**827**	**14.6**
462.libquantum	109	189	**109**	**189**	110	189	109	189	**109**	**189**	110	189
464.h264ref	1033	21.4	**1035**	**21.4**	1035	21.4	949	23.3	945	23.4	**946**	**23.4**
471.omnetpp	524	11.9	522	12.0	**522**	**12.0**	466	13.4	462	13.5	**463**	**13.5**
473.astar	694	10.1	703	9.98	**695**	**10.1**	588	11.9	588	11.9	**588**	**11.9**
483.xalancbmk	381	18.1	**381**	**18.1**	383	18.0	381	18.1	**381**	**18.1**	383	18.0

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
KMP_AFFINITY set to "physical,0"
```

Platform Notes

```
This Express5800/320Fd-LR is a fault-tolerant server.
Two modules are installed in this server.
Each module physically has "2CPU chips,12GB memory", The total physical configuration
is "4CPU chips,24GB memory".
Using fault-tolerant lockstep technology, these two modules communicate with each other
and execute the same instructions at the same time, The operating system only sees
"2CPU chips,12GB memory" as the other components add only redundancy and do not
contribute to any performance benefit.
```

General Notes

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The NEC Express5800/320Fd-LR(Intel Xeon E5405) and
the Bull NovaScale R630 E1 LR(Intel Xeon E5405, 2.00 GHz) models are electronically equivalent.
The results have been measured on a NEC Express5800/320Fd-LR(Intel Xeon E5405) model.
```

Base Compiler Invocation

C benchmarks:
```
icc
```

Continued on next page

Base Compiler Invocation (Continued)

C++ benchmarks:
icpc

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel
-par-runtime-control -opt-prefetch

C++ benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -opt-prefetch -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/Compiler/11.0/074/bin/intel64/icc
-L/opt/intel/Compiler/11.0/074/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/074/ipp/em64t/include

456.hmmer: /opt/intel/Compiler/11.0/074/bin/intel64/icc
-L/opt/intel/Compiler/11.0/074/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/074/ipp/em64t/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:

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -ansi-alias -opt-prefetch

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

403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc -opt-malloc-options=3

429.mcf: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

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

456.hmmer: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias -auto-ilp32

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll4

462.libquantum: basepeak = yes

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap

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-ic11.0-int-linux64-revE.html
http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revB.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revE.xml
http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revB.xml

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

Tested with SPEC CPU2006 v1.1.
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