



# SPEC® CINT2006 Result

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## Fujitsu

**SPECint®2006 = 34.5**

PRIMERGY BX620 S6, Intel Xeon E5640, 2.67 GHz

**SPECint\_base2006 = 32.0**

CPU2006 license: 19

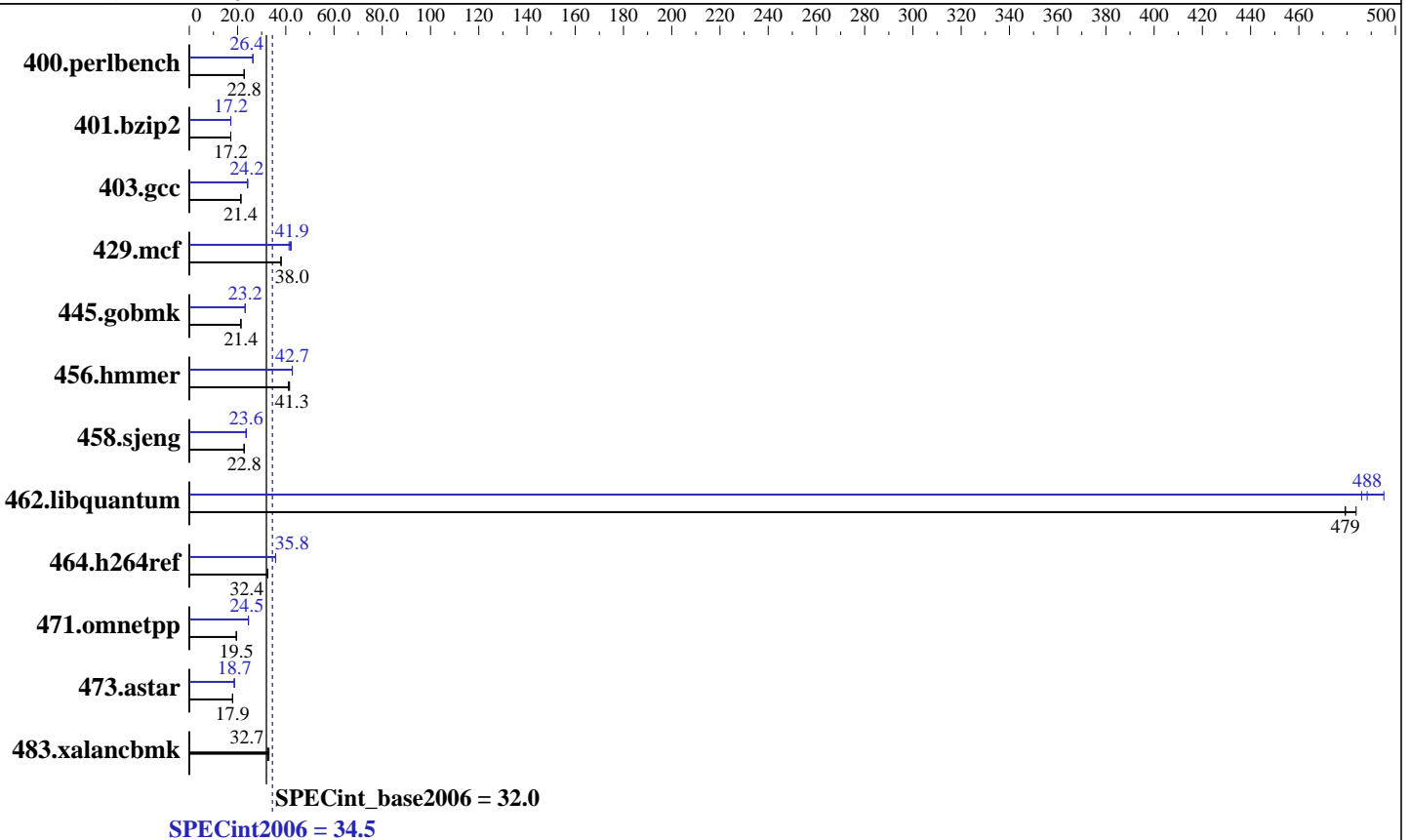
Test date: Sep-2010

Test sponsor: Fujitsu

Hardware Availability: Jul-2010

Tested by: Fujitsu

Software Availability: Jan-2010



### Hardware

CPU Name: Intel Xeon E5640  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz  
 CPU MHz: 2667  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 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: 12 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 48 GB (12x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC, see add'l detail in notes)  
 Disk Subsystem: 1 x SAS, 300 GB, 10000 RPM  
 Other Hardware: --

### Software

Operating System: SUSE Linux Enterprise Server 11 (x86\_64) with SP1, Kernel 2.6.32.12-0.7-default  
 Compiler: Intel C++ Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l\_cproc\_p\_11.1.064  
 Auto Parallel: Yes  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 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	<b><u>429</u></b>	<b><u>22.8</u></b>	429	22.8	429	22.8	370	26.4	371	26.3	<b><u>370</u></b>	<b><u>26.4</u></b>
401.bzip2	561	17.2	<b><u>561</u></b>	<b><u>17.2</u></b>	561	17.2	561	17.2	561	17.2	<b><u>561</u></b>	<b><u>17.2</u></b>
403.gcc	<b><u>377</u></b>	<b><u>21.4</u></b>	377	21.4	377	21.4	333	24.2	<b><u>333</u></b>	<b><u>24.2</u></b>	333	24.2
429.mcf	240	38.0	<b><u>240</u></b>	<b><u>38.0</u></b>	240	38.0	<b><u>218</u></b>	<b><u>41.9</u></b>	221	41.3	216	42.2
445.gobmk	<b><u>490</u></b>	<b><u>21.4</u></b>	490	21.4	490	21.4	453	23.2	452	23.2	<b><u>453</u></b>	<b><u>23.2</u></b>
456.hammer	227	41.1	224	41.6	<b><u>226</u></b>	<b><u>41.3</u></b>	218	42.7	<b><u>218</u></b>	<b><u>42.7</u></b>	219	42.7
458.sjeng	532	22.8	532	22.7	<b><u>532</u></b>	<b><u>22.8</u></b>	514	23.6	513	23.6	<b><u>513</u></b>	<b><u>23.6</u></b>
462.libquantum	43.2	479	42.8	484	<b><u>43.2</u></b>	<b><u>479</u></b>	41.8	495	<b><u>42.4</u></b>	<b><u>488</u></b>	42.6	486
464.h264ref	679	32.6	<b><u>682</u></b>	<b><u>32.4</u></b>	684	32.4	619	35.8	618	35.8	<b><u>619</u></b>	<b><u>35.8</u></b>
471.omnetpp	320	19.5	<b><u>320</u></b>	<b><u>19.5</u></b>	320	19.5	255	24.5	<b><u>255</u></b>	<b><u>24.5</u></b>	255	24.5
473.astar	390	18.0	<b><u>391</u></b>	<b><u>17.9</u></b>	392	17.9	<b><u>375</u></b>	<b><u>18.7</u></b>	377	18.6	375	18.7
483.xalancbmk	209	33.0	<b><u>211</u></b>	<b><u>32.7</u></b>	213	32.4	209	33.0	<b><u>211</u></b>	<b><u>32.7</u></b>	213	32.4

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

## Platform Notes

The system automatically configures the memory to run at 1067 MHz.  
BIOS configuration:  
Data Reuse Optimization = Disable  
Intel HT Technology = Disable  
Performance/Power Setting = Traditional

## General Notes

OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to granularity=fine,scatter  
For information about Fujitsu please visit: <http://www.fujitsu.com>  
Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502

## Base Compiler Invocation

C benchmarks:  
icc -m64  
  
C++ benchmarks:  
icpc -m64



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## 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:

`-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

C++ benchmarks:

`-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs  
-L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-64bit -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`

`429.mcf: icc -m32`

`445.gobmk: icc -m32`

`464.h264ref: icc -m32`

C++ benchmarks (except as noted below):

`icpc -m64`

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## Peak Compiler Invocation (Continued)

471.omnetpp: icpc -m32

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
 401.bzip2: -DSPEC\_CPU\_LP64  
 403.gcc: -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\_LP64 -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 -opt-prefetch

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

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static -inline-alloc  
 -opt-malloc-options=3 -auto-ilp32

429.mcf: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

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 -static -unroll2  
 -ansi-alias -auto-ilp32

458.sjeng: -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) -unroll4

462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel  
 -opt-prefetch -par-schedule-static=32768 -ansi-alias

464.h264ref: -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) -unroll2 -ansi-alias

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## Peak Optimization Flags (Continued)

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/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-32bit -lsmartheap

473.astar: -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=routine -Wl,-z,muldefs  
-L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-64bit -lsmartheap64

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/Intel-ic11.1-linux64-revE.20100708.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100708.xml>

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

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