



# SPEC<sup>®</sup> CINT2006 Result

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## Fujitsu

SPECint<sup>®</sup>\_rate2006 = 542

PRIMERGY RX600 S6, Intel Xeon E7-4870, 2.40 GHz

SPECint\_rate\_base2006 = 518

CPU2006 license: 19

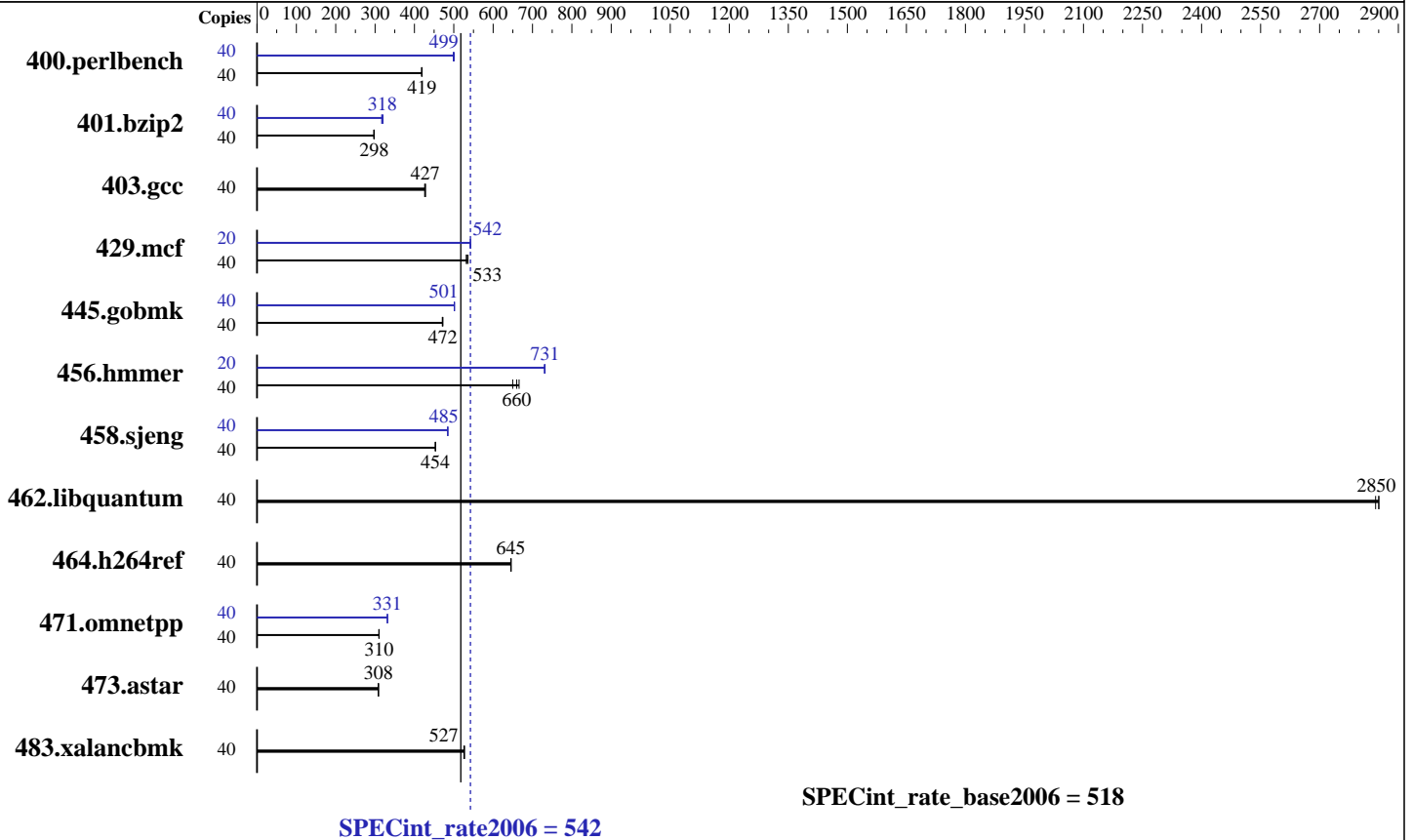
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jul-2011

Hardware Availability: Jul-2011

Software Availability: Jul-2011



### Hardware

CPU Name: Intel Xeon E7-4870  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz  
 CPU MHz: 2400  
 FPU: Integrated  
 CPU(s) enabled: 20 cores, 2 chips, 10 cores/chip, 2 threads/core  
 CPU(s) orderable: 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: 30 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (32 x 8 GB 4Rx8 PC3L-8500R-7, ECC)  
 Disk Subsystem: 1 x SAS, 600 GB, 10000 RPM  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 11 (x86\_64) SP1, Kernel 2.6.32.12-0.7-default  
 Compiler: Intel C++ Compiler XE for applications running on IA-32 Version 12.0.4.191 Build 20110427  
 Auto Parallel: No  
 File System: ext3  
 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	40	932	419	935	418	<u>932</u>	<u>419</u>	40	780	501	784	499	<u>783</u>	<u>499</u>
401.bzip2	40	<u>1296</u>	<u>298</u>	1302	296	1295	298	40	1206	320	<u>1213</u>	<u>318</u>	1219	317
403.gcc	40	756	426	<u>753</u>	<u>427</u>	752	428	40	756	426	<u>753</u>	<u>427</u>	752	428
429.mcf	40	680	536	<u>685</u>	<u>533</u>	686	532	20	336	542	336	542	<u>336</u>	<u>542</u>
445.gobmk	40	889	472	<u>889</u>	<u>472</u>	891	471	40	836	502	<u>837</u>	<u>501</u>	837	501
456.hammer	40	560	666	<u>566</u>	<u>660</u>	574	650	20	255	732	<u>255</u>	<u>731</u>	256	730
458.sjeng	40	<u>1067</u>	<u>454</u>	1069	453	1067	454	40	998	485	<u>999</u>	<u>485</u>	999	485
462.libquantum	40	292	2840	<u>291</u>	<u>2850</u>	291	2850	40	292	2840	<u>291</u>	<u>2850</u>	291	2850
464.h264ref	40	<u>1372</u>	<u>645</u>	1371	646	1373	645	40	<u>1372</u>	<u>645</u>	1371	646	1373	645
471.omnetpp	40	806	310	<u>807</u>	<u>310</u>	807	310	40	<u>755</u>	<u>331</u>	754	331	755	331
473.astar	40	911	308	<u>910</u>	<u>308</u>	910	309	40	911	308	<u>910</u>	<u>308</u>	910	309
483.xalancbmk	40	523	527	525	526	<u>524</u>	<u>527</u>	40	523	527	525	526	<u>524</u>	<u>527</u>

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 stacksize to unlimited prior to run
'nodev /mnt/hugepages hugetlbfs defaults 0 0' added to /etc/fstab
echo 36000 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

### Platform Notes

BIOS configuration:  
Data Reuse Optimization = Disable  
Performance/Power Setting = Traditional

### General Notes

Binaries were compiled on RHEL5.5  
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## Base Compiler Invocation

C benchmarks:  
icc -m32  
  
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/ia32 -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  
  
400.perlbench: icc -m64  
  
401.bzip2: icc -m64  
  
456.hmmer: icc -m64  
  
458.sjeng: icc -m64

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## Peak Compiler Invocation (Continued)

C++ benchmarks:  
icpc -m32

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
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) -prof-use(pass 2)  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-opt-prefetch -auto-ilp32 -ansi-alias  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

403.gcc: basepeak = yes

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)  
-ansi-alias -auto-ilp32

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: basepeak = yes

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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/opt/smartheap/ia32 -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-ic12.0-linux64-revB.20110316.html>

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform.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.20110316.xml>

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform.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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