SPEC® CINT2006 Result
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Fujitsu

PRIMERGY BX924 S2, Intel Xeon L5640, 2.27 GHz

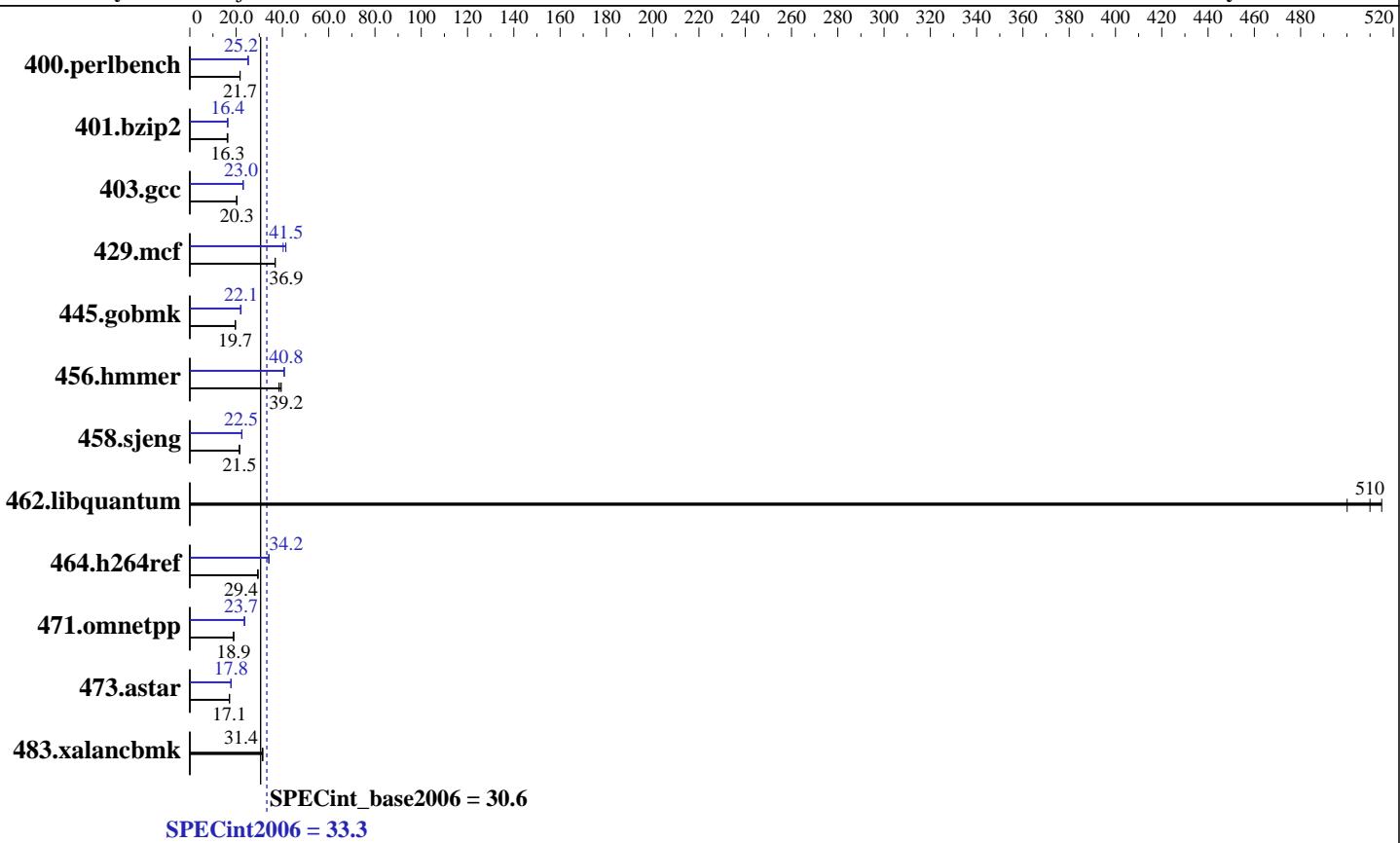$SPECint^®2006 =$ 33.3

$SPECint\_base2006 =$ 30.6

CPU2006 license: 19	**Test date:** May-2010
Test sponsor: Fujitsu	**Hardware Availability:** Jun-2010
Tested by: Fujitsu	**Software Availability:** Jan-2010

400.perlbench 25.2 / 21.7
401.bzip2 16.4 / 16.3
403.gcc 23.0 / 20.3
429.mcf 41.5 / 36.9
445.gobmk 22.1 / 19.7
456.hmmer 40.8 / 39.2
458.sjeng 22.5 / 21.5
462.libquantum 510
464.h264ref 34.2 / 29.4
471.omnetpp 23.7 / 18.9
473.astar 17.8 / 17.1
483.xalancbmk 31.4

SPECint_base2006 = 30.6
SPECint2006 = 33.3

Hardware

CPU Name:	Intel Xeon L5640
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2267
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 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)
Disk Subsystem:	1 x SATA, 160 GB, 5400 RPM
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-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:	Multi-User Run Level 3
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V8.1

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Results Table

Benchmark	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
400.perlbench	451	21.7	**451**	**21.7**	449	21.7	389	25.1	**387**	**25.2**	387	25.2
401.bzip2	**591**	**16.3**	598	16.1	591	16.3	590	16.4	**590**	**16.4**	590	16.4
403.gcc	396	20.3	398	20.2	**397**	**20.3**	349	23.1	350	23.0	**350**	**23.0**
429.mcf	**247**	**36.9**	247	36.9	248	36.8	**220**	**41.5**	220	41.5	226	40.3
445.gobmk	**534**	**19.7**	534	19.6	533	19.7	474	22.1	**475**	**22.1**	480	21.8
456.hmmer	236	39.5	242	38.5	**238**	**39.2**	229	40.8	**229**	**40.8**	229	40.8
458.sjeng	563	21.5	565	21.4	**563**	**21.5**	541	22.4	**537**	**22.5**	537	22.5
462.libquantum	**40.6**	**510**	40.2	515	41.4	500	**40.6**	**510**	40.2	515	41.4	500
464.h264ref	**753**	**29.4**	755	29.3	750	29.5	648	34.2	648	34.2	**648**	**34.2**
471.omnetpp	331	18.9	**331**	**18.9**	330	18.9	**264**	**23.7**	266	23.5	264	23.7
473.astar	412	17.1	**410**	**17.1**	409	17.2	**395**	**17.8**	395	17.8	394	17.8
483.xalancbmk	218	31.6	220	31.3	**220**	**31.4**	218	31.6	220	31.3	**220**	**31.4**

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
    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-calloc`
> `-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: `basepeak = yes`

> 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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