



# SPEC® CINT2006 Result

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**Lenovo Group Limited**

(Test Sponsor: Intel Corporation)

Lenovo R630 G7 (Intel Xeon processor X7350, 2.93 GHz)

**SPECint®2006 = 24.3**

**SPECint\_base2006 = 21.0**

CPU2006 license: 13

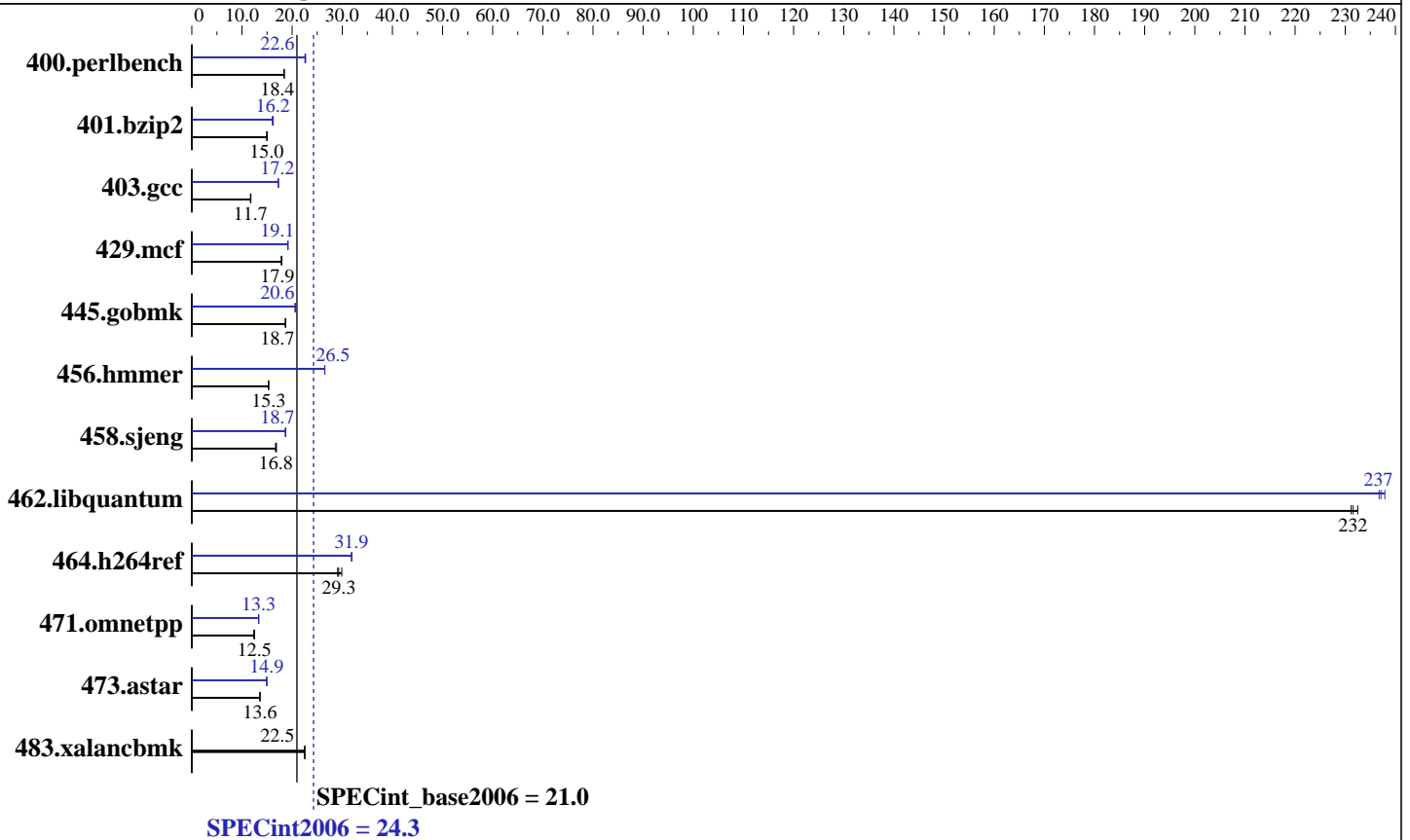
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Aug-2007

Hardware Availability: Oct-2007

Software Availability: Nov-2007



## Hardware

CPU Name: Intel Xeon X7350  
 CPU Characteristics: Quad Core, 2.93 GHz  
 CPU MHz: 2933  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 4 chips, 4 cores/chip  
 CPU(s) orderable: 1,2,4 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 (16 \* 1GB Samsung DDR2 5300F, 2 rank, CL5-5-5, ECC)  
 Disk Subsystem: Seagate, SAS, 73GB, 10Krpm, 1 disk only  
 Other Hardware: None

## Software

Operating System: 64-Bit SUSE LINUX Enterprise Server 10 SP1 RC1, Kernel  
 linux-cbgn 2.6.16.43-0.5-smp for x86\_64  
 Compiler: Intel C++ Compiler for Linux32 and Linux64 Version 10.1 Build 20070725  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Multi-user, run level 3  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: SmartHeap library V8.1  
 Binutils 2.17.50.0.15



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	531	18.4	<u>531</u>	<u>18.4</u>	530	18.4	430	22.7	<u>433</u>	<u>22.6</u>	433	22.6
401.bzip2	643	15.0	<u>644</u>	<u>15.0</u>	646	14.9	<u>597</u>	<u>16.2</u>	601	16.1	594	16.2
403.gcc	683	11.8	687	11.7	<u>687</u>	<u>11.7</u>	466	17.3	<u>467</u>	<u>17.2</u>	467	17.2
429.mcf	511	17.9	508	17.9	<u>510</u>	<u>17.9</u>	477	19.1	475	19.2	<u>476</u>	<u>19.1</u>
445.gobmk	561	18.7	<u>562</u>	<u>18.7</u>	562	18.7	<u>509</u>	<u>20.6</u>	509	20.6	508	20.6
456.hmmer	610	15.3	<u>609</u>	<u>15.3</u>	609	15.3	352	26.5	352	26.5	<u>352</u>	<u>26.5</u>
458.sjeng	<u>722</u>	<u>16.8</u>	717	16.9	724	16.7	<u>648</u>	<u>18.7</u>	646	18.7	649	18.6
462.libquantum	89.1	232	<u>89.5</u>	<u>232</u>	89.6	231	<u>87.4</u>	<u>237</u>	87.1	238	87.5	237
464.h264ref	761	29.1	740	29.9	<u>756</u>	<u>29.3</u>	<u>694</u>	<u>31.9</u>	694	31.9	695	31.9
471.omnetpp	506	12.4	500	12.5	<u>500</u>	<u>12.5</u>	469	13.3	<u>469</u>	<u>13.3</u>	468	13.3
473.astar	<u>516</u>	<u>13.6</u>	517	13.6	516	13.6	470	14.9	<u>470</u>	<u>14.9</u>	469	15.0
483.xalancbmk	306	22.5	307	22.5	<u>306</u>	<u>22.5</u>	306	22.5	307	22.5	<u>306</u>	<u>22.5</u>

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

## General Notes

Bios settings:

Hardware Prefetcher: Disabled

Adjacent Sector Prefetch: Disabled

High Bandwidth Option: Disabled

All benchmarks compiled in 32-bit mode except 401.bzip2 and 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.xalancbmk: -DSPEC\_CPU\_LINUX



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## Base Optimization Flags

C benchmarks:

`-fast -vec-guard-write -parallel -par-runtime-control`

C++ benchmarks:

`-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs  
-L/home/cmplr/usr3/alrahate/cpu2006.1.0/lib -lsmartheap`

## Base Other Flags

C benchmarks:

`403.gcc: -Dalloca=_alloca`

## Peak Compiler Invocation

C benchmarks (except as noted below):

`icc`

`401.bzip2: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux64/bin/icc  
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux64/lib  
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux64/include`

`456.hmmer: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux64/bin/icc  
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux64/lib  
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux64/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  
-auto-ilp32

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  
-auto-ilp32

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/home/cmplr/usr3/alrahate/cpu2006.1.0/lib -lsmartheap

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/home/cmplr/usr3/alrahate/cpu2006.1.0/lib -lsmartheap

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca



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

<http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090714.28.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090714.28.xml>

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

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