



# SPEC® CINT2006 Result

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## Supermicro

SuperServer 6028TP-HTR  
(X10DRT-P, Intel Xeon E5-2697 v3)

SPECint®2006 = 65.1

SPECint\_base2006 = 62.6

CPU2006 license: 001176

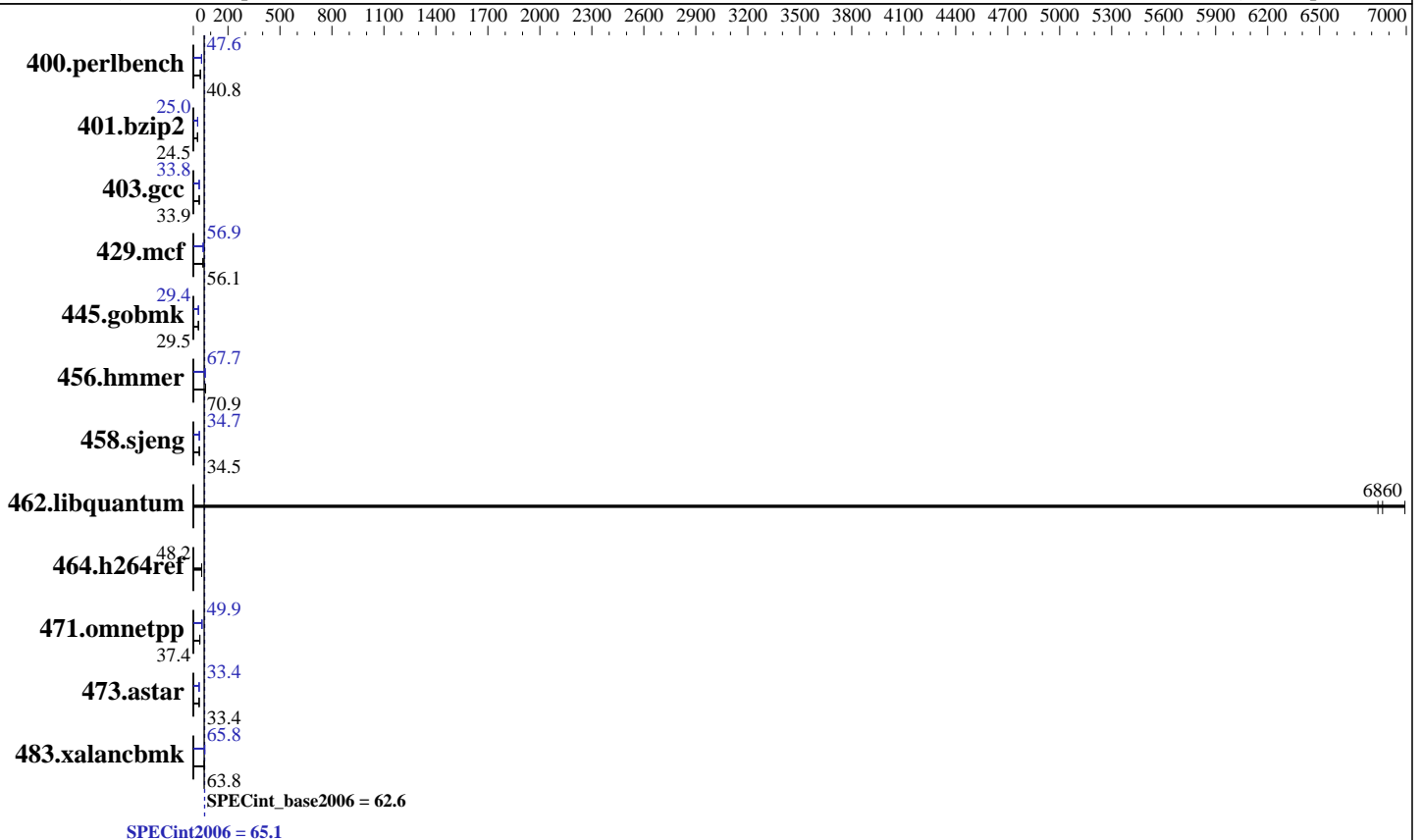
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Sep-2014

Hardware Availability: Sep-2014

Software Availability: Sep-2014



### Hardware

CPU Name: Intel Xeon E5-2697 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 28 cores, 2 chips, 14 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: 35 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)  
 Disk Subsystem: 1 x 2000 GB SATA III, 7200 RPM  
 Other Hardware: None

### Software

Operating System: CentOS Linux release 7.0,  
Kernel 3.10.0-123.8.1.el7.x86\_64  
 Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.0



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	243	40.3	<b><u>239</u></b>	<b><u>40.8</u></b>	237	41.3	205	47.6	<b><u>205</u></b>	<b><u>47.6</u></b>	205	47.6
401.bzip2	393	24.6	395	24.4	<b><u>393</u></b>	<b><u>24.5</u></b>	386	25.0	386	25.0	<b><u>386</u></b>	<b><u>25.0</u></b>
403.gcc	<b><u>237</u></b>	<b><u>33.9</u></b>	237	33.9	238	33.9	<b><u>238</u></b>	<b><u>33.8</u></b>	238	33.8	239	33.8
429.mcf	<b><u>163</u></b>	<b><u>56.1</u></b>	164	55.7	161	56.7	<b><u>160</u></b>	<b><u>56.9</u></b>	158	57.9	161	56.7
445.gobmk	356	29.5	356	29.5	<b><u>356</u></b>	<b><u>29.5</u></b>	<b><u>356</u></b>	<b><u>29.4</u></b>	356	29.4	356	29.5
456.hammer	132	70.7	132	70.9	<b><u>132</u></b>	<b><u>70.9</u></b>	<b><u>138</u></b>	<b><u>67.7</u></b>	137	68.2	139	67.3
458.sjeng	350	34.5	<b><u>350</u></b>	<b><u>34.5</u></b>	350	34.6	349	34.7	349	34.7	<b><u>349</u></b>	<b><u>34.7</u></b>
462.libquantum	2.96	6990	<b><u>3.02</u></b>	<b><u>6860</u></b>	3.03	6840	2.96	6990	<b><u>3.02</u></b>	<b><u>6860</u></b>	3.03	6840
464.h264ref	459	48.2	458	48.3	<b><u>459</u></b>	<b><u>48.2</u></b>	459	48.2	458	48.3	<b><u>459</u></b>	<b><u>48.2</u></b>
471.omnetpp	169	37.1	166	37.5	<b><u>167</u></b>	<b><u>37.4</u></b>	125	50.0	127	49.4	<b><u>125</u></b>	<b><u>49.9</u></b>
473.astar	209	33.6	211	33.2	<b><u>210</u></b>	<b><u>33.4</u></b>	210	33.5	<b><u>210</u></b>	<b><u>33.4</u></b>	211	33.3
483.xalancbmk	<b><u>108</u></b>	<b><u>63.8</u></b>	108	63.9	108	63.8	<b><u>105</u></b>	<b><u>65.8</u></b>	105	65.7	105	65.9

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.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## Platform Notes

BIOS Settings:  
Early Snoop = Disable  
Enforce POR = Disable  
Hyper-Threading (ALL) = Disable

## General Notes

Environment variables set by runspec before the start of the run:

KMP\_AFFINITY = "granularity=fine,scatter"

LD\_LIBRARY\_PATH = "/home/Trial/SPEC2006\_v11/libs/32:/home/Trial/SPEC2006\_v11/libs/64:/home/Trial/SPEC2006\_v11/sh"

OMP\_NUM\_THREADS = "28"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/transparent\_hugepage/enabled



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## Base Compiler Invocation

C benchmarks:  
icc -m64

C++ benchmarks:  
icpc -m64

## 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:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
-Wl,-z,muldefs -L/sh -lsmartheap64

## Base Other Flags

C benchmarks:  
403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m64

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**Test sponsor:** Supermicro

**Tested by:** Supermicro

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**Hardware Availability:** Sep-2014

**Software Availability:** Sep-2014

## Peak Compiler Invocation (Continued)

400.perlbench: `icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

445.gobmk: `icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

C++ benchmarks (except as noted below):

`icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

473.astar: `icpc -m64`

## Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`

401.bzip2: `-DSPEC_CPU_LP64`

403.gcc: `-DSPEC_CPU_LP64`

429.mcf: `-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`

473.astar: `-DSPEC_CPU_LP64`

483.xalancbmk: `-DSPEC_CPU_LINUX`

## Peak Optimization Flags

C benchmarks:

400.perlbench: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-opt-prefetch -ansi-alias`

401.bzip2: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32  
-opt-prefetch -ansi-alias`

403.gcc: `-xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc  
-opt-malloc-options=3 -auto-ilp32`

429.mcf: `-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel  
-opt-prefetch -auto-p32`

445.gobmk: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias`

456.hmmer: `-xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32  
-ansi-alias`

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## Peak Optimization Flags (Continued)

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-unroll4

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-opt-ra-region-strategy=block -ansi-alias  
-Wl,-z,muldefs -L/sh -lsmartheap

473.astar: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64

483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap

## 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-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revE.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revE.xml>

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

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Standard Performance Evaluation Corporation

[info@spec.org](mailto:info@spec.org)

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