SPEC® CINT2006 Result
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Supermicro

Supermicro motherboard X10DAL-i
(X10DAL-i , Intel Xeon E5-2697 v3)

SPECint®2006 = 65.5

SPECint_base2006 = 62.9
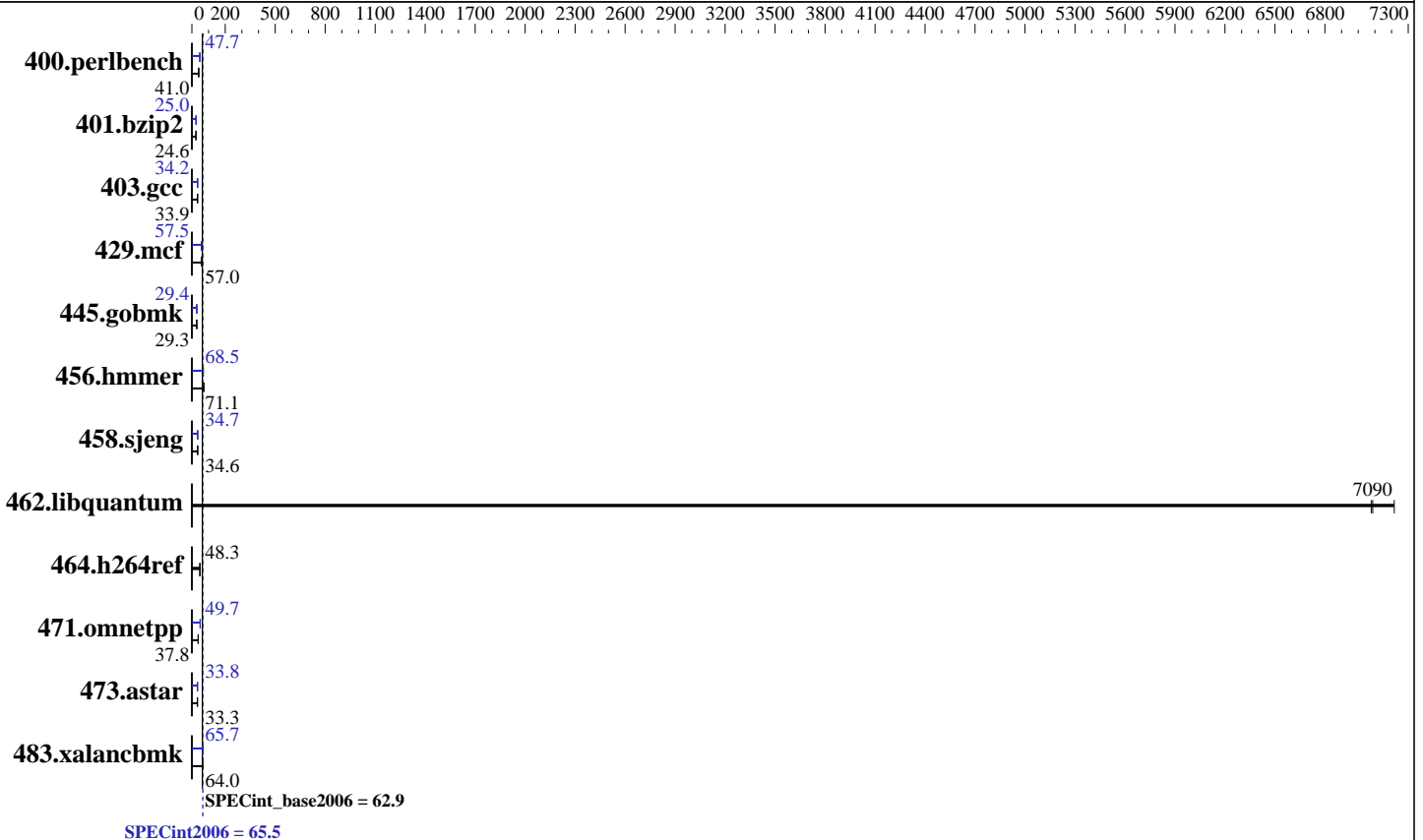
CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Mar-2015

Hardware Availability: Sep-2014

Software Availability: Sep-2014

0 200 500 800 1100 1400 1700 2000 2300 2600 2900 3200 3500 3800 4100 4400 4700 5000 5300 5600 5900 6200 6500 6800 7300

Benchmark	Peak	Base
400.perlbench	47.7	41.0
401.bzip2	25.0	24.6
403.gcc	34.2	33.9
429.mcf	57.5	57.0
445.gobmk	29.4	29.3
456.hmmer	68.5	71.1
458.sjeng	34.7	34.6
462.libquantum		7090
464.h264ref		48.3
471.omnetpp	49.7	37.8
473.astar	33.8	33.3
483.xalancbmk	65.7	64.0

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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: 128 GB (8 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem: 1 x 200 GB SATA III SSD
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 7.0,
Kernel 3.10.0-123.9.3.el7.x86_64
Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE
for Linux
Auto Parallel: Yes
File System: xfs
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 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	237	41.2	239	40.9	**238**	**41.0**	205	47.7	205	47.7	**205**	**47.7**
401.bzip2	**392**	**24.6**	390	24.7	393	24.6	386	25.0	385	25.1	**386**	**25.0**
403.gcc	237	34.0	238	33.8	**237**	**33.9**	**235**	**34.2**	236	34.1	235	34.2
429.mcf	160	56.9	160	57.0	**160**	**57.0**	**159**	**57.5**	158	57.9	160	57.1
445.gobmk	357	29.4	358	29.3	**358**	**29.3**	356	29.4	356	29.5	**356**	**29.4**
456.hmmer	131	71.2	**131**	**71.1**	131	71.0	**136**	**68.5**	136	68.6	136	68.5
458.sjeng	350	34.6	**350**	**34.6**	350	34.5	349	34.7	348	34.7	**348**	**34.7**
462.libquantum	2.93	7080	2.87	7220	**2.92**	**7090**	2.93	7080	2.87	7220	**2.92**	**7090**
464.h264ref	458	48.3	**458**	**48.3**	461	48.0	458	48.3	**458**	**48.3**	461	48.0
471.omnetpp	164	38.2	167	37.5	**165**	**37.8**	125	49.9	**126**	**49.7**	127	49.3
473.astar	**211**	**33.3**	211	33.3	211	33.2	211	33.3	208	33.8	**208**	**33.8**
483.xalancbmk	108	64.1	108	63.9	**108**	**64.0**	105	66.0	**105**	**65.7**	105	65.6

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:
    Enforce POR = Disabled
    Memory Frequency = 2133
    Early Snoop = Disable
    Hyper-Threading (ALL) = Disable
    As tested, the system used a Supermicro SuperChassis 743TQ-865B-SQ chassis.
    The chassis is configured with a PWS-865-PQ power supply, 2 SNK-P0050AP4 heatsink,
    as well as 2 FAN-0104L4 chassis fan & 1 FAN-0103L4 rear cooling fan.
    Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
    $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
    running on X10DAL-01 Mon Mar 23 09:46:18 2015

    This section contains SUT (System Under Test) info as seen by
    some common utilities.  To remove or add to this section, see:
      http://www.spec.org/cpu2006/Docs/config.html#sysinfo

    From /proc/cpuinfo
      model name : Intel(R) Xeon(R) CPU E5-2697 v3 @ 2.60GHz
         2 "physical id"s (chips)
```

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Platform Notes (Continued)

```
      28 "processors"
   cores, siblings (Caution: counting these is hw and system dependent.  The
   following excerpts from /proc/cpuinfo might not be reliable.  Use with
   caution.)
      cpu cores : 14
      siblings  : 14
      physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
      physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
   cache size : 35840 KB

From /proc/meminfo
   MemTotal:       131742308 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

From /etc/*release* /etc/*version*
   os-release:
      NAME="Red Hat Enterprise Linux Server"
      VERSION="7.0 (Maipo)"
      ID="rhel"
      ID_LIKE="fedora"
      VERSION_ID="7.0"
      PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
      ANSI_COLOR="0;31"
      CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
   redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
   system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server

uname -a:
   Linux X10DAL-01 3.10.0-123.9.3.el7.x86_64 #1 SMP Thu Oct 30 00:16:40 EDT 2014
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Mar 23 09:28

SPEC is set to: /usr/cpu2006
   Filesystem      Type  Size  Used Avail Use% Mounted on
   /dev/sda2       xfs   183G  104G   80G  57% /
Additional information from dmidecode:

   Warning: Use caution when you interpret this section. The 'dmidecode' program
   reads system data which is "intended to allow hardware to be accurately
   determined", but the intent may not be met, as there are frequent changes to
   hardware, firmware, and the "DMTF SMBIOS" standard.

  BIOS American Megatrends Inc. 1.0 03/06/2015
  Memory:
  8x Samsung (date:14/5q) M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz

(End of data from sysinfo program)
```

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General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/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
```

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

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Base Other Flags

C benchmarks:

> 403.gcc: `-Dalloca=_alloca`

Peak Compiler Invocation

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

   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`

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Peak Optimization Flags (Continued)

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`

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-revG.20141230.00.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-revG.20141230.00.xml

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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