# SPEC® CINT2006 Result
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## Supermicro

Supermicro X11SSL-nF motherboard
(X11SSL-nF , Intel Xeon E3-1220 v5)

$SPECint^{®}2006 =$  64.9

$SPECint\_base2006 =$  63.5

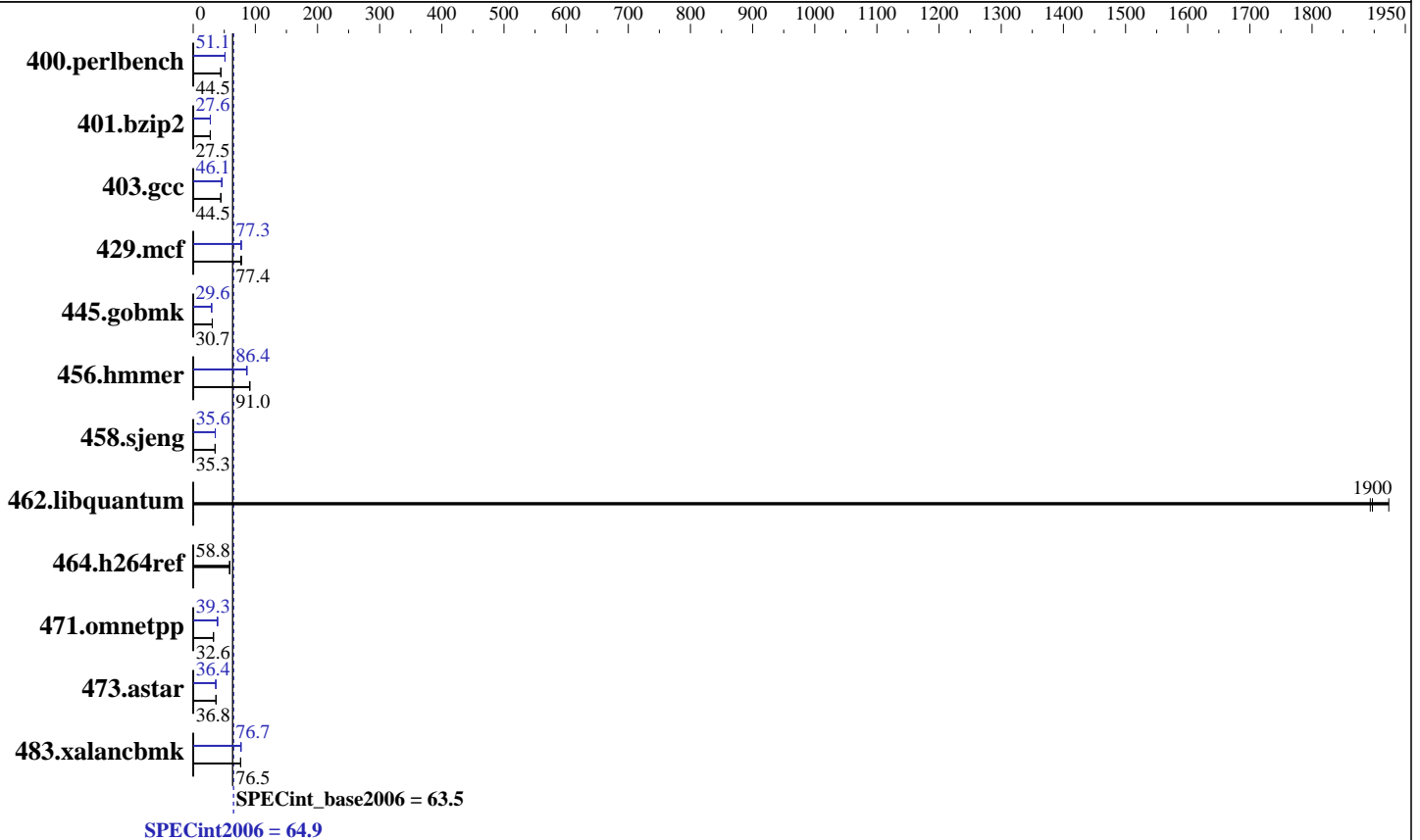| | | | |
|---|---|---|---|
| **CPU2006 license:** 001176 | | **Test date:** | Jan-2016 |
| **Test sponsor:** | Supermicro | **Hardware Availability:** | Oct-2015 |
| **Tested by:** | Supermicro | **Software Availability:** | Mar-2015 |



Benchmark results:

- 400.perlbench: 51.1 / 44.5
- 401.bzip2: 27.6 / 27.5
- 403.gcc: 46.1 / 44.5
- 429.mcf: 77.3 / 77.4
- 445.gobmk: 29.6 / 30.7
- 456.hmmer: 86.4 / 91.0
- 458.sjeng: 35.6 / 35.3
- 462.libquantum: 1900
- 464.h264ref: 58.8
- 471.omnetpp: 39.3 / 32.6
- 473.astar: 36.4 / 36.8
- 483.xalancbmk: 76.7 / 76.5

SPECint_base2006 = 63.5

SPECint2006 = 64.9

## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E3-1220 v5 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.50 GHz |
| CPU MHz: | 3000 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 1 chip, 4 cores/chip |
| CPU(s) orderable: | 1 chip |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 256 KB I+D on chip per core |
| L3 Cache: | 8 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 64 GB (4 x 16 GB 2Rx8 PC4-2133P-E) |
| Disk Subsystem: | 1 x 1000 GB SATA III, 7200 RPM |
| Other Hardware: | None |

## Software

| | |
|---|---|
| Operating System: | Red Hat Enterprise Linux Server release 7.1, Kernel 3.10.0-229.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 | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 218 | 44.7 | **220** | **44.5** | 220 | 44.5 | 191 | 51.1 | **191** | **51.1** | 190 | 51.3 |
| 401.bzip2 | 351 | 27.5 | 351 | 27.5 | **351** | **27.5** | 350 | 27.6 | **350** | **27.6** | 350 | 27.6 |
| 403.gcc | 181 | 44.6 | **181** | **44.5** | 181 | 44.5 | **174** | **46.1** | 175 | 45.9 | 174 | 46.2 |
| 429.mcf | **118** | **77.4** | 119 | 76.4 | 117 | 77.8 | 119 | 76.9 | 118 | 77.4 | **118** | **77.3** |
| 445.gobmk | 341 | 30.7 | 342 | 30.7 | **342** | **30.7** | **354** | **29.6** | 354 | 29.7 | 354 | 29.6 |
| 456.hmmer | 102 | 91.1 | **103** | **91.0** | 103 | 91.0 | **108** | **86.4** | 108 | 86.4 | 108 | 86.2 |
| 458.sjeng | 343 | 35.3 | **343** | **35.3** | 343 | 35.3 | 341 | 35.5 | 340 | 35.6 | **340** | **35.6** |
| 462.libquantum | 10.8 | 1920 | 10.9 | 1890 | **10.9** | **1900** | 10.8 | 1920 | 10.9 | 1890 | **10.9** | **1900** |
| 464.h264ref | 378 | 58.6 | 376 | 58.8 | **377** | **58.8** | 378 | 58.6 | 376 | 58.8 | **377** | **58.8** |
| 471.omnetpp | 192 | 32.6 | 192 | 32.5 | **192** | **32.6** | **159** | **39.3** | 162 | 38.6 | 159 | 39.4 |
| 473.astar | 190 | 37.0 | **191** | **36.8** | 192 | 36.5 | 193 | 36.4 | **193** | **36.4** | 193 | 36.4 |
| 483.xalancbmk | 90.7 | 76.1 | **90.2** | **76.5** | 90.2 | 76.5 | 89.4 | 77.2 | **90.0** | **76.7** | 90.0 | 76.7 |

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

As tested, the system used a Supermicro CSE-113MFAC2-R606CB chassis.
The chassis is configured with 2 PWS-606P-1R redundant power supply, 1 SNK-P0046P heatsink,
as well as 4 FAN-0154L4 middle cooling fan.
 Sysinfo program /home/cpu2006/config/sysinfo.rev6914
 $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
 running on localhost.localdomain Tue Jan 12 23:39:57 2016

 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 E3-1220 v5 @ 3.00GHz
       1 "physical id"s (chips)
       4 "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 : 4

Continued on next page

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## Platform Notes (Continued)

```
      siblings  : 4
      physical 0: cores 0 1 2 3
   cache size : 8192 KB

 From /proc/meminfo
    MemTotal:       65631332 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

 From /etc/*release* /etc/*version*
    os-release:
       NAME="Red Hat Enterprise Linux Server"
       VERSION="7.1 (Maipo)"
       ID="rhel"
       ID_LIKE="fedora"
       VERSION_ID="7.1"
       PRETTY_NAME="Red Hat Enterprise Linux Server 7.1 (Maipo)"
       ANSI_COLOR="0;31"
       CPE_NAME="cpe:/o:redhat:enterprise_linux:7.1:GA:server"
    redhat-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
    system-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:7.1:ga:server

 uname -a:
    Linux localhost.localdomain 3.10.0-229.el7.x86_64 #1 SMP Thu Jan 29 18:37:38
    EST 2015 x86_64 x86_64 x86_64 GNU/Linux

 run-level 3 Jan 12 23:36

 SPEC is set to: /home/cpu2006
    Filesystem              Type  Size  Used Avail Use% Mounted on
    /dev/mapper/rhel-home xfs   865G  170G  696G  20% /home
 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. 1.0a 12/25/2015
  Memory:
  4x Samsung M391A2K43BB1-CPB 16 GB 2 rank 2133 MHz

 (End of data from sysinfo program)
```

## General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"
OMP_NUM_THREADS = "4"
```

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## General Notes (Continued)

```
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

## Base Other Flags

C benchmarks:

        403.gcc: -Dalloca=_alloca

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## 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`

         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`

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# Peak Optimization Flags (Continued)

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 other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Tue Feb  9 17:20:28 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on  9 February 2016.