# SPEC® CINT2006 Result
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## Inspur Corporation

$SPECint^®\_rate2006 = \quad 1210$

Inspur NF5180M4 (Intel Xeon E5-2695 v3)

$SPECint\_rate\_base2006 = \quad 1160$
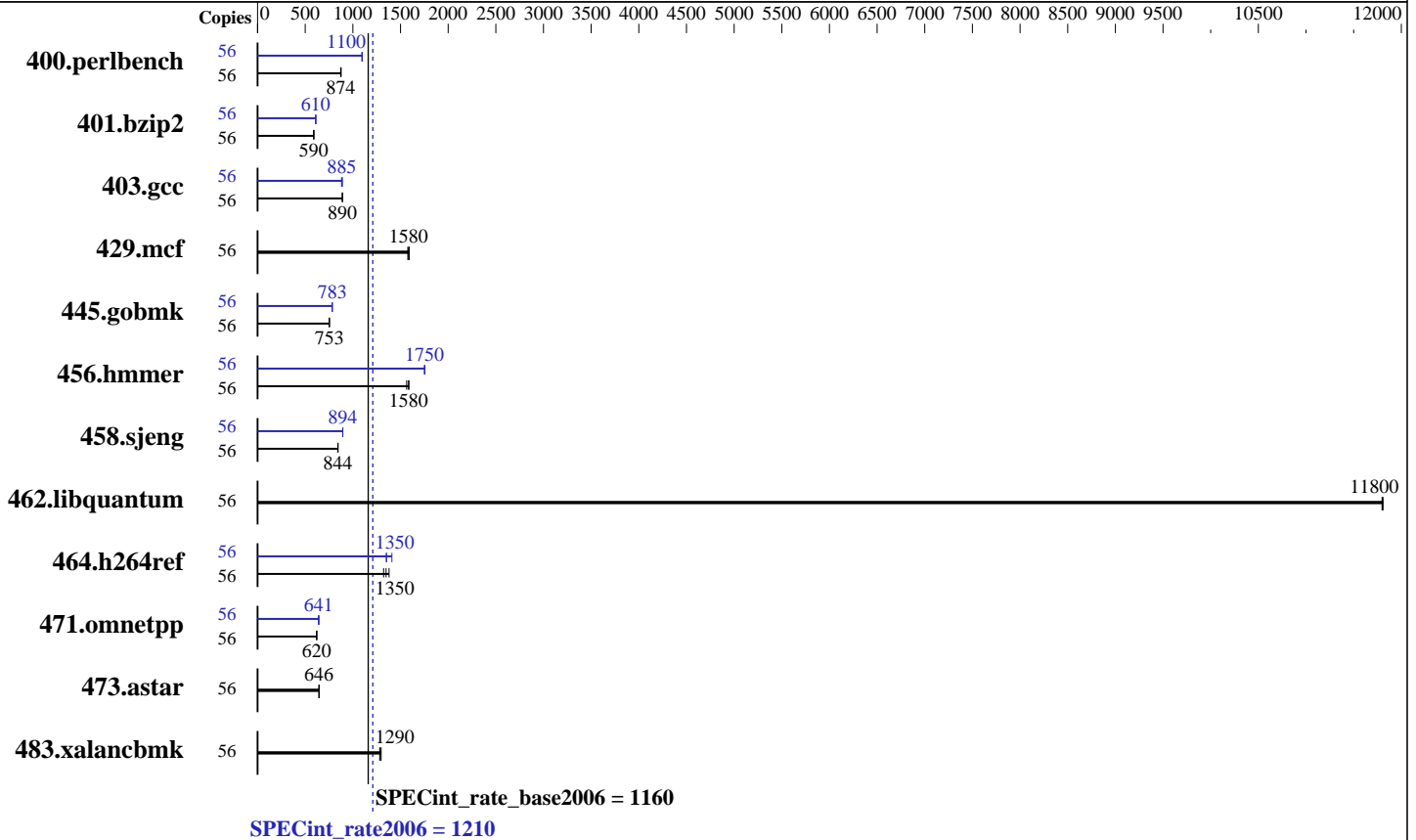
**CPU2006 license:** 3358

**Test sponsor:** Inspur Corporation

**Tested by:** Inspur Corporation

**Test date:** Oct-2015

**Hardware Availability:** Sep-2014

**Software Availability:** Aug-2015



SPECint_rate_base2006 = 1160

SPECint_rate2006 = 1210

| | | |
|---|---|---|
| **Copies** | | |
| 400.perlbench | 56 | 1100 |
| | 56 | 874 |
| 401.bzip2 | 56 | 610 |
| | 56 | 590 |
| 403.gcc | 56 | 885 |
| | 56 | 890 |
| 429.mcf | 56 | 1580 |
| 445.gobmk | 56 | 783 |
| | 56 | 753 |
| 456.hmmer | 56 | 1750 |
| | 56 | 1580 |
| 458.sjeng | 56 | 894 |
| | 56 | 844 |
| 462.libquantum | 56 | 11800 |
| 464.h264ref | 56 | 1350 |
| | 56 | 1350 |
| 471.omnetpp | 56 | 641 |
| | 56 | 620 |
| 473.astar | 56 | 646 |
| 483.xalancbmk | 56 | 1290 |

## Hardware

CPU Name: Intel Xeon E5-2695 v3

CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz

CPU MHz: 2300

FPU: Integrated

CPU(s) enabled: 28 cores, 2 chips, 14 cores/chip, 2 threads/core

CPU(s) orderable: 1,2 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: 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 SATA, 450 GB, SSD

Other Hardware: None

## Software

Operating System: Red Hat Enterprise Linux Server release 7.1 (Maipo)
3.10.0-229.el7.x86_64

Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux

Auto Parallel: No

File System: xfs

System State: Run level 3 (multi-user)

Base Pointers: 32-bit

Peak Pointers: 32/64-bit

Other Software: Microquill SmartHeap V10.2

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## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 56 | 624 | 877 | **626** | **874** | 627 | 872 | 56 | **499** | **1100** | 498 | 1100 | 499 | 1100 |
| 401.bzip2 | 56 | 917 | 589 | 915 | 591 | **916** | **590** | 56 | 886 | 610 | 884 | 611 | **886** | **610** |
| 403.gcc | 56 | 507 | 890 | 506 | 891 | **506** | **890** | 56 | 511 | 881 | **510** | **885** | 507 | 890 |
| 429.mcf | 56 | 324 | 1580 | 321 | 1590 | **322** | **1580** | 56 | 324 | 1580 | 321 | 1590 | **322** | **1580** |
| 445.gobmk | 56 | **780** | **753** | 780 | 753 | 780 | 753 | 56 | 751 | 783 | 749 | 784 | **750** | **783** |
| 456.hmmer | 56 | 329 | 1590 | 334 | 1560 | **330** | **1580** | 56 | 298 | 1750 | 297 | 1760 | **298** | **1750** |
| 458.sjeng | 56 | 803 | 843 | **803** | **844** | 803 | 844 | 56 | 758 | 893 | 757 | 895 | **758** | **894** |
| 462.libquantum | 56 | 98.3 | 11800 | 98.4 | 11800 | **98.3** | **11800** | 56 | 98.3 | 11800 | 98.4 | 11800 | **98.3** | **11800** |
| 464.h264ref | 56 | **919** | **1350** | 937 | 1320 | 898 | 1380 | 56 | **916** | **1350** | 879 | 1410 | 917 | 1350 |
| 471.omnetpp | 56 | 564 | 621 | 564 | 620 | **564** | **620** | 56 | 546 | 640 | **546** | **641** | 544 | 643 |
| 473.astar | 56 | 609 | 646 | **609** | **646** | 610 | 644 | 56 | 609 | 646 | **609** | **646** | 610 | 644 |
| 483.xalancbmk | 56 | 302 | 1280 | **300** | **1290** | 298 | 1300 | 56 | 302 | 1280 | **300** | **1290** | 298 | 1300 |

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

## Submit Notes

    The numactl mechanism was used to bind copies to processors. The config file option 'submit'
    was used to generate numactl commands to bind each copy to a specific processor.
    For details, please see the config file.

## Operating System Notes

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

## Platform Notes

    BIOS and OS configuration:
    SCALING_GOVERNOR set to Performance
    Hardware Prefetch set to Disable
    Memory Frequency set to 2133 MHz
    VT Support set to Disable
    C1E Support set to Disable
    Sysinfo program /home/CPU2006/config/sysinfo.rev6914
    $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
    running on localhost.localdomain Mon Oct 19 20:47:27 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 E5-2695 v3 @ 2.30GHz
          2 "physical id"s (chips)

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| | | | |
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## Platform Notes (Continued)

```
      56 "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  : 28
      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 : 17920 KB

From /proc/meminfo
   MemTotal:       263855892 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 Oct 19 08:43

SPEC is set to: /home/CPU2006
   Filesystem             Type  Size  Used Avail Use% Mounted on
   /dev/mapper/rhel-home xfs   393G   69G  325G  18% /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. 4.0.1 10/30/2014
  Memory:
  8x NO DIMM NO DIMM
  16x Samsung 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:
LD_LIBRARY_PATH = "/home/CPU2006/libs/32:/home/CPU2006/libs/64:/home/CPU2006/sh"

 Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB
 memory using RedHat EL 7.1
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/transparent_hugepage/enabled
 Filesystem page cache cleared with:
 echo 1>        /proc/sys/vm/drop_caches
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>
```

## Base Compiler Invocation

C benchmarks:
```
icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
```

C++ benchmarks:
```
icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
```

## Base Portability Flags

```
  400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
      401.bzip2: -D_FILE_OFFSET_BITS=64
        403.gcc: -D_FILE_OFFSET_BITS=64
        429.mcf: -D_FILE_OFFSET_BITS=64
      445.gobmk: -D_FILE_OFFSET_BITS=64
      456.hmmer: -D_FILE_OFFSET_BITS=64
      458.sjeng: -D_FILE_OFFSET_BITS=64
  462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
     464.h264ref: -D_FILE_OFFSET_BITS=64
     471.omnetpp: -D_FILE_OFFSET_BITS=64
       473.astar: -D_FILE_OFFSET_BITS=64
  483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
```

## Base Optimization Flags

C benchmarks:
```
   -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
   -opt-mem-layout-trans=3
```

C++ benchmarks:
```
   -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
   -opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap
```

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## Base Other Flags

C benchmarks:

> 403.gcc: -Dalloca=_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):
    icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

    400.perlbench: icc -m64

    401.bzip2: icc -m64

    456.hmmer: icc -m64

    458.sjeng: icc -m64

C++ benchmarks:
    icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

## Peak Portability Flags

    400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
        401.bzip2: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
          403.gcc: -D_FILE_OFFSET_BITS=64
          429.mcf: -D_FILE_OFFSET_BITS=64
        445.gobmk: -D_FILE_OFFSET_BITS=64
        456.hmmer: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
        458.sjeng: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
     462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
      464.h264ref: -D_FILE_OFFSET_BITS=64
      471.omnetpp: -D_FILE_OFFSET_BITS=64
         473.astar: -D_FILE_OFFSET_BITS=64
    483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

## Peak Optimization Flags

C benchmarks:

    400.perlbench: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
                 -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
                 -par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32

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# Peak Optimization Flags (Continued)

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

403.gcc: `-xCORE-AVX2 -ipo -O3 -no-prec-div`

429.mcf: basepeak = yes

445.gobmk: `-xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)`
`-prof-use(pass 2) -par-num-threads=1(pass 1) -ansi-alias`
`-opt-mem-layout-trans=3`

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

458.sjeng: `-xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)`
`-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)`
`-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4`
`-auto-ilp32`

462.libquantum: basepeak = yes

464.h264ref: `-xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)`
`-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)`
`-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2`
`-ansi-alias`

C++ benchmarks:

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

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

# Peak Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

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The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Inspur-Platform-Settings-V1.0-HSW.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Inspur-Platform-Settings-V1.0-HSW.xml

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

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