# SPEC® CINT2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

## Oracle Corporation

Oracle Server X5-8 (Intel Xeon E7-8895 v3 2.60 GHz)

$SPECint®\_rate2006 = \quad 5640$

$SPECint\_rate\_base2006 = \quad 5400$

**CPU2006 license:** 6  
**Test sponsor:** Oracle Corporation  
**Tested by:** Oracle Corporation  

**Test date:** Oct-2015  
**Hardware Availability:** Jul-2015  
**Software Availability:** Aug-2015  



SPECint_rate_base2006 = 5400

SPECint_rate2006 = 5640

## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E7-8895 v3 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.50 GHz |
| CPU MHz: | 2600 |
| FPU: | Integrated |
| CPU(s) enabled: | 144 cores, 8 chips, 18 cores/chip, 2 threads/core |
| CPU(s) orderable: | 4,8 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: | 45 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 2 TB (64 x 32 GB 4Rx4 PC3-12800R-11, ECC) |
| Disk Subsystem: | 1 x 1600 GB NVMe |
| Other Hardware: | None |

## Software

| | |
|---|---|
| Operating System: | Oracle Linux 7.1 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 |

# SPEC CINT2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

## Oracle Corporation

Oracle Server X5-8 (Intel Xeon E7-8895 v3 2.60 GHz)

SPECint_rate2006 =     5640

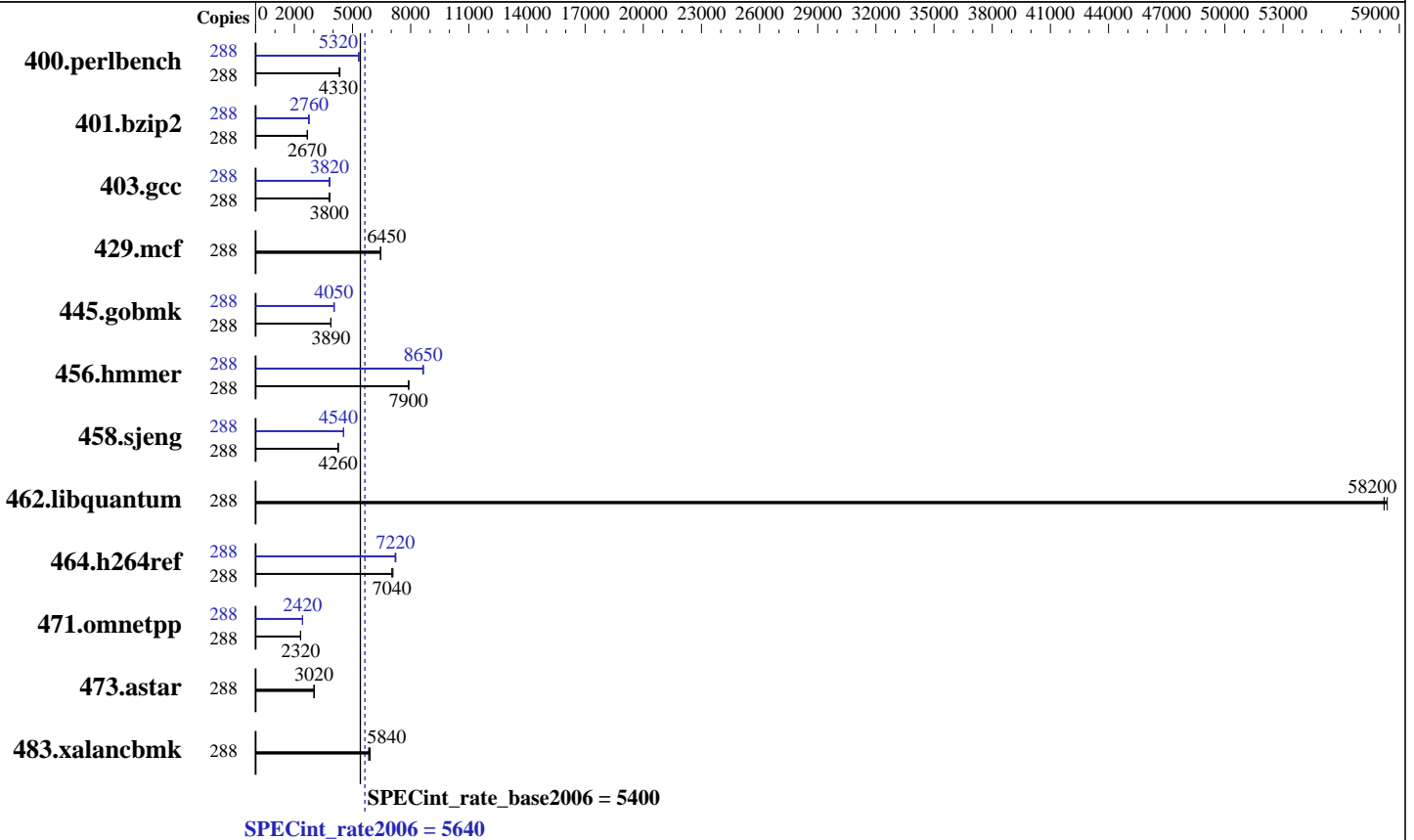SPECint_rate_base2006 =  5400

**CPU2006 license:** 6
**Test sponsor:** Oracle Corporation
**Tested by:** Oracle Corporation

**Test date:** Oct-2015
**Hardware Availability:** Jul-2015
**Software Availability:** Aug-2015

## Results Table

| Benchmark | Base Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Peak Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400.perlbench | 288 | **650** | **4330** | 647 | 4350 | 652 | 4320 | 288 | 528 | 5330 | 529 | 5320 | **528** | **5320** |
| 401.bzip2 | 288 | **1042** | **2670** | 1043 | 2670 | 1038 | 2680 | 288 | 1006 | 2760 | **1009** | **2760** | 1018 | 2730 |
| 403.gcc | 288 | 610 | 3800 | 605 | 3830 | **610** | **3800** | 288 | 606 | 3830 | 611 | 3790 | **607** | **3820** |
| 429.mcf | 288 | 408 | 6440 | 407 | 6460 | **407** | **6450** | 288 | 408 | 6440 | 407 | 6460 | **407** | **6450** |
| 445.gobmk | 288 | 779 | 3880 | **778** | **3890** | 777 | 3890 | 288 | 744 | 4060 | **746** | **4050** | 747 | 4050 |
| 456.hmmer | 288 | **340** | **7900** | 341 | 7890 | 340 | 7900 | 288 | **311** | **8650** | 312 | 8620 | 310 | 8660 |
| 458.sjeng | 288 | 818 | 4260 | **818** | **4260** | 819 | 4260 | 288 | 769 | 4530 | 767 | 4540 | **768** | **4540** |
| 462.libquantum | 288 | 102 | 58400 | **102** | **58200** | 103 | 58200 | 288 | 102 | 58400 | **102** | **58200** | 103 | 58200 |
| 464.h264ref | 288 | 906 | 7040 | **906** | **7040** | 899 | 7090 | 288 | 881 | 7230 | **883** | **7220** | 886 | 7200 |
| 471.omnetpp | 288 | 775 | 2320 | **775** | **2320** | 776 | 2320 | 288 | 743 | 2420 | 744 | 2420 | **743** | **2420** |
| 473.astar | 288 | 670 | 3020 | 669 | 3020 | **670** | **3020** | 288 | 670 | 3020 | 669 | 3020 | **670** | **3020** |
| 483.xalancbmk | 288 | **340** | **5840** | 336 | 5910 | 340 | 5840 | 288 | **340** | **5840** | 336 | 5910 | 340 | 5840 |

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

```
Default BIOS settings were used
Sysinfo program /nvmdata1/cpu2006v.12-ic16/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on sca05-0a81e7a0.us.oracle.com Sun Oct 18 15:50:52 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 E7-8895 v3 @ 2.60GHz
      8 "physical id"s (chips)
      288 "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 : 18
```

## Oracle Corporation

Oracle Server X5-8 (Intel Xeon E7-8895 v3 2.60 GHz)

SPECint_rate2006 =      5640

SPECint_rate_base2006 =  5400

**CPU2006 license:** 6

**Test sponsor:** Oracle Corporation

**Tested by:** Oracle Corporation

**Test date:** Oct-2015

**Hardware Availability:** Jul-2015

**Software Availability:** Aug-2015

## Platform Notes (Continued)

```
      siblings  : 36
      physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 2: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 3: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 4: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 5: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 6: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
      physical 7: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
   cache size : 46080 KB

From /proc/meminfo
   MemTotal:       2113379672 kB
   HugePages_Total:        0
   Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
   oracle-release: Oracle Linux Server release 7.1
   os-release:
      NAME="Oracle Linux Server"
      VERSION="7.1"
      ID="ol"
      VERSION_ID="7.1"
      PRETTY_NAME="Oracle Linux Server 7.1"
      ANSI_COLOR="0;31"
      CPE_NAME="cpe:/o:oracle:linux:7:1"
      HOME_URL="https://linux.oracle.com/"
   redhat-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
   system-release: Oracle Linux Server release 7.1
   system-release-cpe: cpe:/o:oracle:linux:7:1

uname -a:
   Linux sca05-0a81e7a0.us.oracle.com 3.10.0-229.el7.x86_64 #1 SMP Fri Mar 6
   04:05:24 PST 2015 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Oct 6 05:52

SPEC is set to: /nvmdata1/cpu2006v.12-ic16
   Filesystem      Type   Size   Used Avail Use% Mounted on
   /dev/nvme0n1p1 xfs   1000G   510G   491G   51% /nvmdata1
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. 37020301 09/17/2015
   Memory:
   128x NO DIMM NO DIMM
   64x Samsung M386B4G70DM0-YK04 32 GB 4 rank 1600 MHz
```

Continued on next page

# SPEC CINT2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

## Oracle Corporation

Oracle Server X5-8 (Intel Xeon E7-8895 v3 2.60 GHz)

SPECint_rate2006 =     5640

SPECint_rate_base2006 =  5400

**CPU2006 license:** 6
**Test sponsor:** Oracle Corporation
**Tested by:** Oracle Corporation

**Test date:** Oct-2015
**Hardware Availability:** Jul-2015
**Software Availability:** Aug-2015

## Platform Notes (Continued)

      (End of data from sysinfo program)

## General Notes

    Environment variables set by runspec before the start of the run:
    LD_LIBRARY_PATH = "/nvmdata1/cpu2006v.12-ic16/libs/32:/nvmdata1/cpu2006v.12-ic16/libs/64:/nvmdata1/cpu2006v.12-ic16/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

Continued on next page

## Oracle Corporation

Oracle Server X5-8 (Intel Xeon E7-8895 v3 2.60 GHz)

SPECint_rate2006 =      5640

SPECint_rate_base2006 =  5400

**CPU2006 license:** 6
**Test sponsor:** Oracle Corporation
**Tested by:** Oracle Corporation

**Test date:**           Oct-2015
**Hardware Availability:** Jul-2015
**Software Availability:** Aug-2015

## Base Optimization Flags (Continued)

C++ benchmarks:

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

## 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
```

## Oracle Corporation

Oracle Server X5-8 (Intel Xeon E7-8895 v3 2.60 GHz)

SPECint_rate2006 =      5640

SPECint_rate_base2006 =  5400

**CPU2006 license:** 6                                    **Test date:**               Oct-2015
**Test sponsor:**  Oracle Corporation              **Hardware Availability:** Jul-2015
**Tested by:**     Oracle Corporation              **Software Availability:**  Aug-2015

# 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`

       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`

## Oracle Corporation

Oracle Server X5-8 (Intel Xeon E7-8895 v3 2.60 GHz)

SPECint_rate2006 =      5640

SPECint_rate_base2006 = 5400

**CPU2006 license:** 6

**Test sponsor:** Oracle Corporation

**Tested by:** Oracle Corporation

**Test date:** Oct-2015

**Hardware Availability:** Jul-2015

**Software Availability:** Aug-2015

# Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml

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

Tested with SPEC CPU2006 v1.2.
Report generated on Tue Feb  9 17:22:05 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on  9 February 2016.