# SPEC® CINT2006 Result



## IBM Corporation

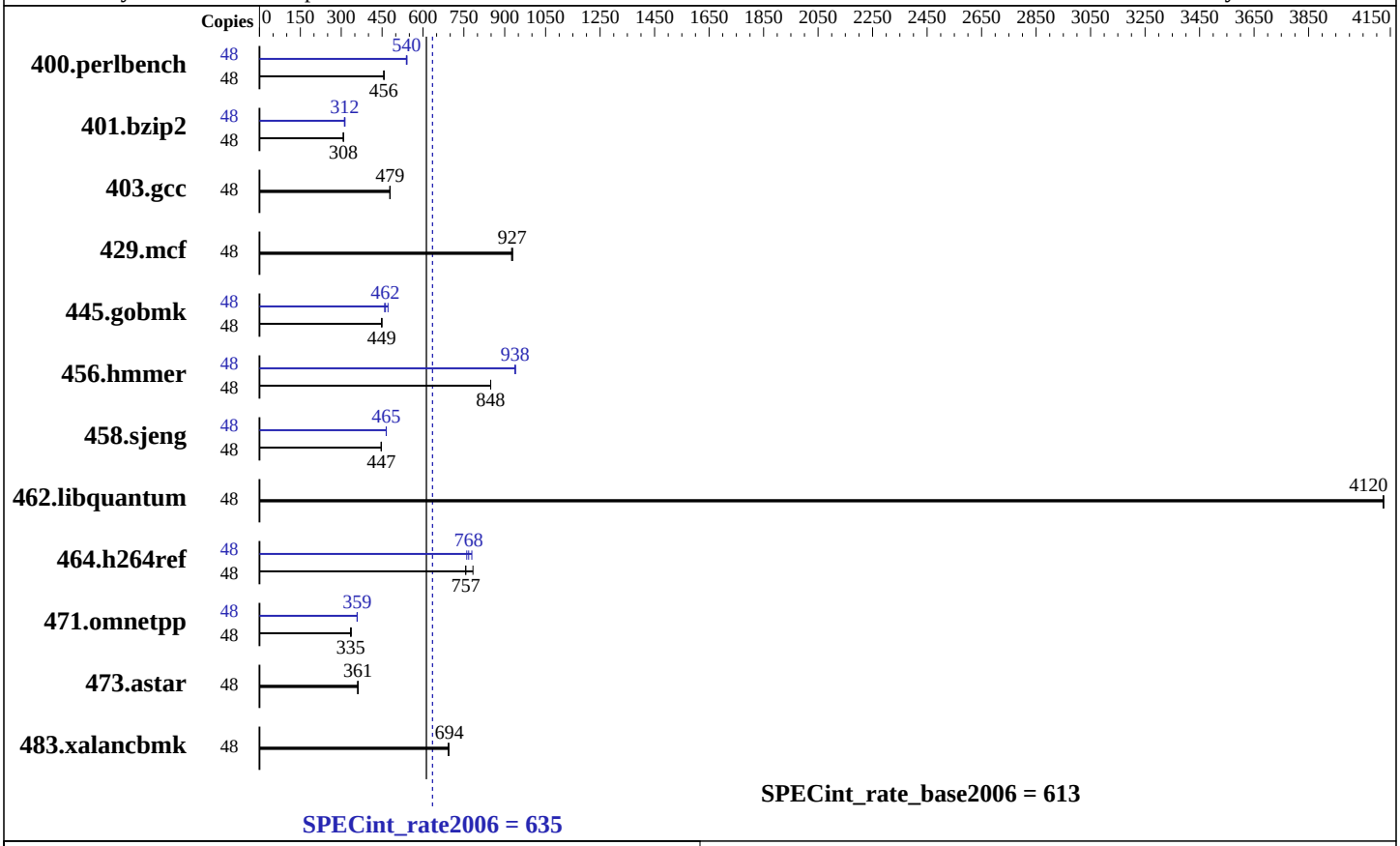
IBM System x3850 X6
(Intel Xeon E7-4809 v2, 1.90 GHz)

SPECint®_rate2006 = 635

SPECint_rate_base2006 = 613

**CPU2006 license:** 11
**Test sponsor:** IBM Corporation
**Tested by:** IBM Corporation

**Test date:** Jul-2014
**Hardware Availability:** Mar-2014
**Software Availability:** Nov-2013




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E7-4809 v2 |
| CPU Characteristics: | |
| CPU MHz: | 1900 |
| FPU: | Integrated |
| CPU(s) enabled: | 24 cores, 4 chips, 6 cores/chip, 2 threads/core |
| CPU(s) orderable: | 2,4 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: | 12 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 1 TB (64 x 16 GB 2Rx4 PC3L-12800R-11, ECC, running at 1067 MHz) |
| Disk Subsystem: | 1 x 400 GB SATA, SSD |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | Red Hat Enterprise Linux Server release 6.5 (Santiago) 2.6.32-431.el6.x86_64 |
| Compiler: | C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux |
| Auto Parallel: | No |
| File System: | ext4 |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | Microquill SmartHeap V10.0 |

# SPEC CINT2006 Result



## IBM Corporation

IBM System x3850 X6
(Intel Xeon E7-4809 v2, 1.90 GHz)

SPECint_rate2006 = 635

SPECint_rate_base2006 = 613

**CPU2006 license:** 11
**Test sponsor:** IBM Corporation
**Tested by:** IBM Corporation

**Test date:** Jul-2014
**Hardware Availability:** Mar-2014
**Software Availability:** Nov-2013

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 48 | 1028 | 456 | **1028** | **456** | 1025 | 458 | 48 | 870 | 539 | 866 | 541 | **868** | **540** |
| 401.bzip2 | 48 | 1507 | 307 | **1502** | **308** | 1502 | 308 | 48 | **1483** | **312** | 1475 | 314 | 1485 | 312 |
| 403.gcc | 48 | **806** | **479** | 808 | 478 | 805 | 480 | 48 | **806** | **479** | 808 | 478 | 805 | 480 |
| 429.mcf | 48 | **472** | **927** | 471 | 929 | 473 | 925 | 48 | **472** | **927** | 471 | 929 | 473 | 925 |
| 445.gobmk | 48 | 1124 | 448 | 1121 | 449 | **1121** | **449** | 48 | 1067 | 472 | **1089** | **462** | 1096 | 459 |
| 456.hmmer | 48 | 528 | 849 | **528** | **848** | 528 | 848 | 48 | 477 | 940 | **477** | **938** | 478 | 937 |
| 458.sjeng | 48 | 1299 | 447 | **1300** | **447** | 1300 | 447 | 48 | 1248 | 465 | 1249 | 465 | **1248** | **465** |
| 462.libquantum | 48 | 241 | 4130 | **241** | **4120** | 241 | 4120 | 48 | 241 | 4130 | **241** | **4120** | 241 | 4120 |
| 464.h264ref | 48 | 1404 | 757 | 1356 | 783 | **1403** | **757** | 48 | 1396 | 761 | 1363 | 779 | **1384** | **768** |
| 471.omnetpp | 48 | **896** | **335** | 891 | 337 | 897 | 334 | 48 | 836 | 359 | **836** | **359** | 838 | 358 |
| 473.astar | 48 | **934** | **361** | 930 | 362 | 935 | 360 | 48 | **934** | **361** | 930 | 362 | 935 | 360 |
| 483.xalancbmk | 48 | 477 | 695 | **477** | **694** | 478 | 693 | 48 | 477 | 695 | **477** | **694** | 478 | 693 |

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

```
Operating Mode set to Maximum Perfomance in BIOS
Sysinfo program /cpu2006.1.2_14.0_aug2013/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on Larry-Andromeda Mon Jul 14 12:07:10 2014

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 E7-4809 v2 @ 1.90GHz
      4 "physical id"s (chips)
      48 "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 : 6
```

Continued on next page

## Platform Notes (Continued)

```
        siblings  : 12
        physical 0: cores 0 1 2 3 4 5
        physical 1: cores 0 1 2 3 4 5
        physical 2: cores 0 1 2 3 4 5
        physical 3: cores 0 1 2 3 4 5
     cache size : 12288 KB

  From /proc/meminfo
     MemTotal:       1058476544 kB
     HugePages_Total:       0
     Hugepagesize:       2048 kB

  /usr/bin/lsb_release -d
     Red Hat Enterprise Linux Server release 6.5 (Santiago)

  From /etc/*release* /etc/*version*
     redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
     system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
     system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

  uname -a:
     Linux Larry-Andromeda 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54 EST
     2013 x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Jul 14 12:03

  SPEC is set to: /cpu2006.1.2_14.0_aug2013
     Filesystem                          Type  Size  Used Avail Use% Mounted on
     /dev/mapper/vg_larryandromed-lv_root ext4  357G  233G  106G  69% /

  Additional information from dmidecode:
    BIOS IBM -[A8E107JUS-1.00]- 05/02/2014
    Memory:
     32x NO DIMM Unknown
     64x Samsung M393B2G70QH0-YK0 16 GB 1067 MHz 2 rank

  (End of data from sysinfo program)
```

## General Notes

```
 Environment variables set by runspec before the start of the run:
 LD_LIBRARY_PATH = "/cpu2006.1.2_14.0_aug2013/libs/32:/cpu2006.1.2_14.0_aug2013/libs/64:/cpu2006.1.2_14.0_aug2013/sh"

  Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
  memory using RedHat EL 6.4
  Transparent Huge Pages enabled with:
  echo always > /sys/kernel/mm/redhat_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

C++ benchmarks:
icpc -m32

## Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

## Base Optimization Flags

C benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:
-xSSE4.2 -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

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:
icpc -m32

## Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch -auto-ilp32 -ansi-alias

403.gcc: basepeak = yes

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/sh -lsmartheap

473.astar: basepeak = yes

Continued on next page

## Peak Optimization Flags (Continued)

483.xalancbmk: `basepeak = yes`

## 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-ic14.0-official-linux64.20140128.html`
`http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-IVB-A.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml`
`http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-IVB-A.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 Aug 12 13:15:44 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 12 August 2014.