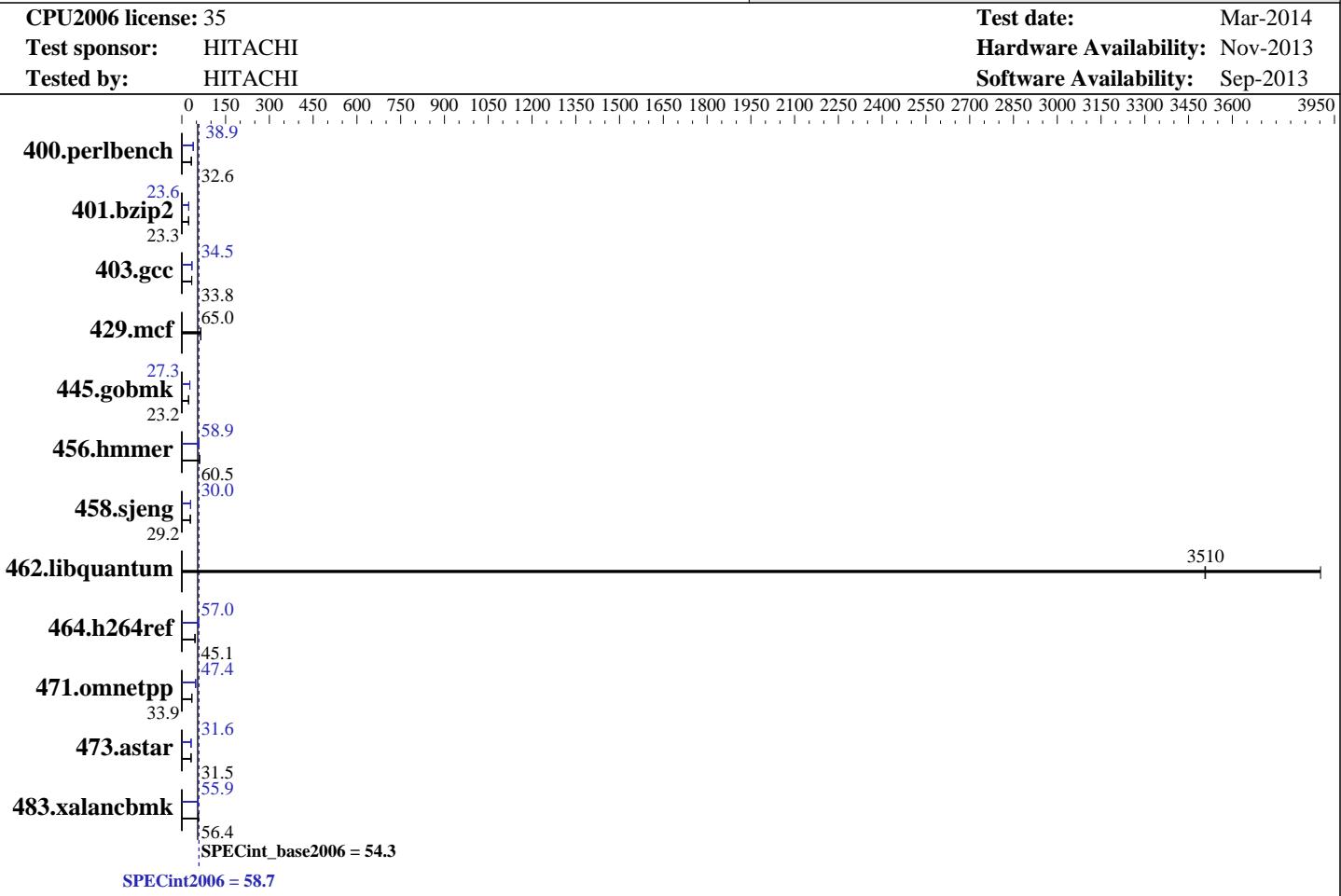# SPEC® CINT2006 Result
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HITACHI

BladeSymphony BS2000 (Intel Xeon E5-2697 v2)

SPECint®2006 = 58.7

SPECint_base2006 = 54.3

CPU2006 license: 35
Test sponsor: HITACHI
Tested by: HITACHI

Test date: Mar-2014
Hardware Availability: Nov-2013
Software Availability: Sep-2013

Scale: 0 150 300 450 600 750 900 1050 1200 1350 1500 1650 1800 1950 2100 2250 2400 2550 2700 2850 3000 3150 3300 3450 3600 3950

Benchmark	Peak	Base
400.perlbench	38.9	32.6
401.bzip2	23.6	23.3
403.gcc	34.5	33.8
429.mcf	65.0	
445.gobmk	27.3	23.2
456.hmmer	58.9	60.5
458.sjeng	30.0	29.2
462.libquantum	3510	
464.h264ref	57.0	45.1
471.omnetpp	47.4	33.9
473.astar	31.6	31.5
483.xalancbmk	55.9	56.4

SPECint_base2006 = 54.3

SPECint2006 = 58.7

Hardware

CPU Name: Intel Xeon E5-2697 v2
CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz: 2700
FPU: Integrated
CPU(s) enabled: 24 cores, 2 chips, 12 cores/chip, 2 threads/core
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: 30 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (8 x 16 GB 2Rx4 PC3-14900R-13, ECC)

Disk Subsystem: 1 x 146 GB SAS, 15000 RPM
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)
2.6.32-358.23.2.el6.x86_64
Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
Auto Parallel: Yes
File System: ext4
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	299	32.7	**299**	**32.6**	300	32.6	251	38.9	**251**	**38.9**	251	39.0
401.bzip2	**415**	**23.3**	415	23.2	415	23.3	**409**	**23.6**	408	23.6	409	23.6
403.gcc	238	33.8	238	33.8	**238**	**33.8**	233	34.5	233	34.5	**233**	**34.5**
429.mcf	140	65.1	141	64.6	**140**	**65.0**	140	65.1	141	64.6	**140**	**65.0**
445.gobmk	**453**	**23.2**	453	23.1	452	23.2	383	27.4	384	27.3	**384**	**27.3**
456.hmmer	154	60.7	**154**	**60.5**	155	60.2	158	59.0	**158**	**58.9**	161	57.9
458.sjeng	415	29.2	415	29.2	**415**	**29.2**	403	30.0	404	30.0	**404**	**30.0**
462.libquantum	**5.91**	**3510**	5.91	3510	5.31	3900	**5.91**	**3510**	5.91	3510	5.31	3900
464.h264ref	**490**	**45.1**	490	45.1	492	45.0	388	57.1	**388**	**57.0**	389	56.9
471.omnetpp	180	34.6	**184**	**33.9**	185	33.8	**132**	**47.4**	133	46.9	132	47.4
473.astar	223	31.5	222	31.6	**223**	**31.5**	223	31.4	220	31.8	**222**	**31.6**
483.xalancbmk	122	56.4	**122**	**56.4**	122	56.5	124	55.8	**123**	**55.9**	123	56.2

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

```
Sysinfo program /home/cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on DPx4-SPECCPU Tue Mar 18 11:14:29 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 E5-2697 v2 @ 2.70GHz
      2 "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 : 12
      siblings  : 24
      physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
```

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BladeSymphony BS2000 (Intel Xeon E5-2697 v2)

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CPU2006 license: 35	**Test date:** Mar-2014
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Tested by: HITACHI	**Software Availability:** Sep-2013

Platform Notes (Continued)

```
    cache size : 30720 KB

From /proc/meminfo
   MemTotal:       132192304 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.4 (Santiago)

From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
   Linux DPx4-SPECCPU 2.6.32-358.23.2.el6.x86_64 #1 SMP Sat Sep 14 05:32:37 EDT
   2013 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Mar 18 11:07

SPEC is set to: /home/cpu2006
   Filesystem     Type     Size  Used Avail Use% Mounted on
   /dev/mapper/vg_dpx4speccpu-lv_home
                  ext4      81G  5.3G   72G   7% /home

Additional information from dmidecode:
  BIOS American Megatrends Inc. 4.6.5 11/28/2013
  Memory:
   16x None None
   8x Sams M393 16 GB 1866 MHz 1 rank

(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 = "24"

 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
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>
 BladeSymphony BS2000 and Hitachi Compute Blade 2000 are electronically equivalent.
 The results have been measured on a BladeSymphony BS2000
```

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Tested by:	HITACHI	**Software Availability:**	Sep-2013

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:
```
    -xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
```

C++ benchmarks:
```
    -xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -Wl,-z,muldefs
    -L/sh -lsmartheap64
```

Base Other Flags

C benchmarks:
```
        403.gcc: -Dalloca=_alloca
```

Peak Compiler Invocation

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

SPEC CINT2006 Result
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BladeSymphony BS2000 (Intel Xeon E5-2697 v2)

$SPECint2006 =$ 58.7

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CPU2006 license: 35	**Test date:** Mar-2014
Test sponsor: HITACHI	**Hardware Availability:** Nov-2013
Tested by: HITACHI	**Software Availability:** Sep-2013

Peak Compiler Invocation (Continued)

400.perlbench: `icc -m32`

445.gobmk: `icc -m32`

464.h264ref: `icc -m32`

C++ benchmarks (except as noted below):
`icpc -m32`

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`
473.astar: `-DSPEC_CPU_LP64`
483.xalancbmk: `-DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

400.perlbench: `-xAVX(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: `-xAVX(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: `-xAVX -ipo -O3 -no-prec-div -inline-calloc`
`-opt-malloc-options=3 -auto-ilp32`

429.mcf: `basepeak = yes`

445.gobmk: `-xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)`
`-ansi-alias`

456.hmmer: `-xAVX -ipo -O3 -no-prec-div -unroll2 -auto-ilp32`
`-ansi-alias`

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BladeSymphony BS2000 (Intel Xeon E5-2697 v2)

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$SPECint\_base2006 =$ 54.3

CPU2006 license: 35
Test sponsor: HITACHI
Tested by: HITACHI

Test date: Mar-2014
Hardware Availability: Nov-2013
Software Availability: Sep-2013

Peak Optimization Flags (Continued)

```
     458.sjeng: -xAVX(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: -xAVX(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: -xAVX(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: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
                -Wl,-z,muldefs -L/sh -lsmartheap64

   483.xalancbmk: -xAVX -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-ic14.0-official-linux64-revC.html
http://www.spec.org/cpu2006/flags/PlatformHitachi-V1.2.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-revC.xml
http://www.spec.org/cpu2006/flags/PlatformHitachi-V1.2.xml

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

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