SPEC® CINT2006 Result

Hypertechnologies Ciara, Inc
Orion HF620-G3

$SPECint^®2006 =$ 68.6

$SPECint\_base2006 =$ 66.1
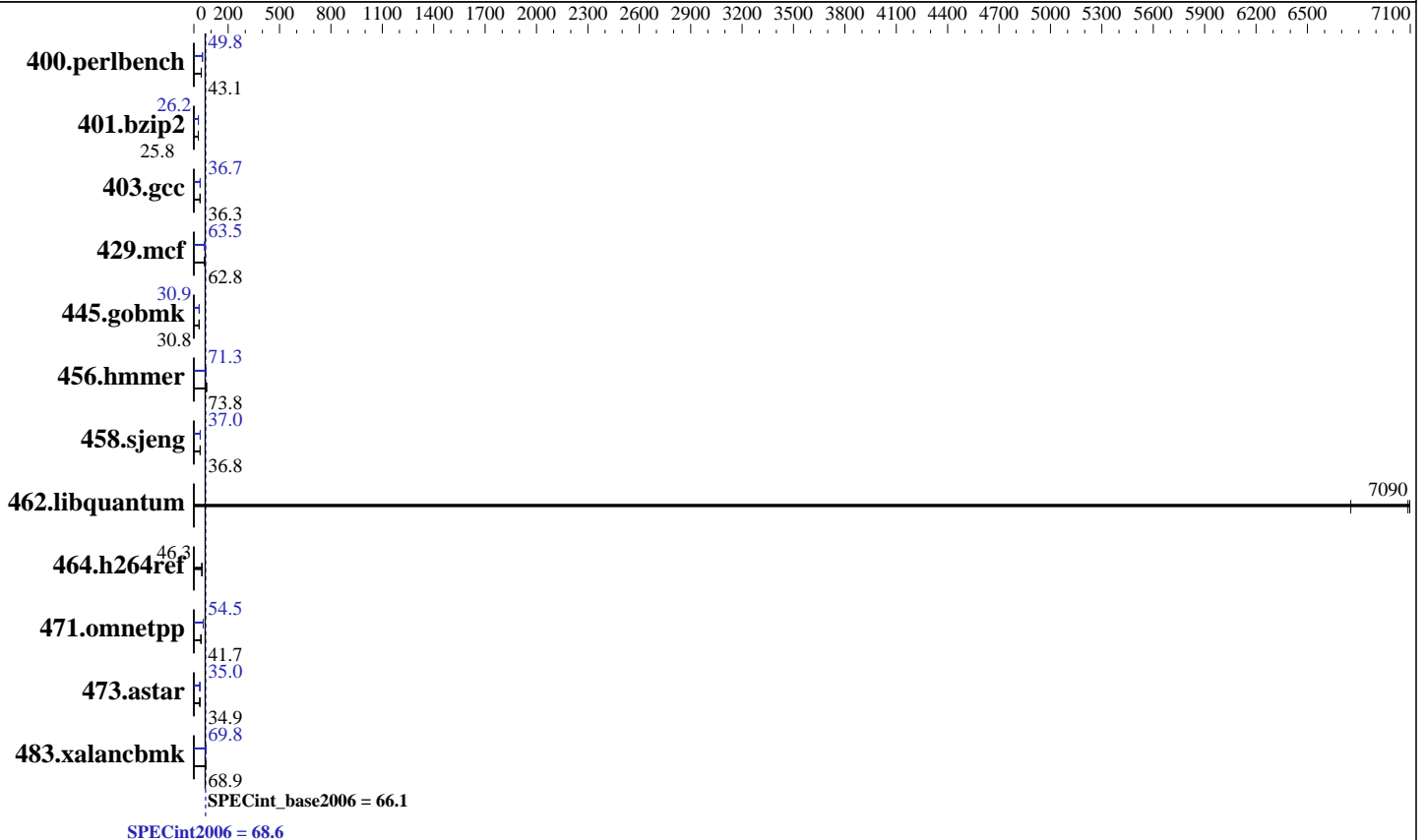
CPU2006 license: 4531
Test sponsor: Hypertechnologies Ciara, Inc
Tested by: Hypertechnologies Ciara, Inc

Test date: Nov-2014
Hardware Availability: Dec-2014
Software Availability: Aug-2015

Benchmark results graph (scale 0 to 7100):

- **400.perlbench**: 49.8 / 43.1
- **401.bzip2**: 26.2 / 25.8
- **403.gcc**: 36.7 / 36.3
- **429.mcf**: 63.5 / 62.8
- **445.gobmk**: 30.9 / 30.8
- **456.hmmer**: 71.3 / 73.8
- **458.sjeng**: 37.0 / 36.8
- **462.libquantum**: 7090
- **464.h264ref**: 46.3
- **471.omnetpp**: 54.5 / 41.7
- **473.astar**: 35.0 / 34.9
- **483.xalancbmk**: 69.8 / 68.9

SPECint_base2006 = 66.1

SPECint2006 = 68.6

Hardware

CPU Name: Intel Xeon E5-2697 v3
CPU Characteristics: Intel Turbo Boost Technology disabled
CPU MHz: 3224
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: 128 GB (8 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem: 1x 240 GB SATA SSD
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo)
3.10.0-123.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	**227**	**43.1**	225	43.3	228	42.8	196	49.8	196	50.0	**196**	**49.8**
401.bzip2	**374**	**25.8**	374	25.8	373	25.9	**369**	**26.2**	369	26.2	368	26.2
403.gcc	222	36.3	221	36.4	**222**	**36.3**	**219**	**36.7**	219	36.7	218	36.9
429.mcf	**145**	**62.8**	145	63.0	146	62.3	145	63.1	143	63.6	**144**	**63.5**
445.gobmk	**341**	**30.8**	340	30.8	342	30.7	340	30.9	**340**	**30.9**	339	30.9
456.hmmer	126	73.8	**126**	**73.8**	127	73.7	131	71.3	131	71.2	**131**	**71.3**
458.sjeng	329	36.8	329	36.8	**329**	**36.8**	327	37.0	327	37.1	**327**	**37.0**
462.libquantum	**2.92**	**7090**	3.07	6750	2.92	7100	**2.92**	**7090**	3.07	6750	2.92	7100
464.h264ref	**478**	**46.3**	447	49.5	480	46.1	**478**	**46.3**	447	49.5	480	46.1
471.omnetpp	154	40.7	**150**	**41.7**	148	42.3	114	54.9	**115**	**54.5**	115	54.4
473.astar	**201**	**34.9**	200	35.1	202	34.8	200	35.1	**201**	**35.0**	201	34.9
483.xalancbmk	100	69.0	**100**	**68.9**	101	68.3	99.1	69.6	**98.9**	**69.8**	98.6	69.9

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 /usr/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Fri Nov 28 09:52:27 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 v3 @ 2.60GHz
      2 "physical id"s (chips)
      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
```

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Platform Notes (Continued)

```
    cache size : 35840 KB

  From /proc/meminfo
    MemTotal:        131889276 kB
    HugePages_Total:         0
    Hugepagesize:         2048 kB

  From /etc/*release* /etc/*version*
    os-release:
        NAME="Red Hat Enterprise Linux Server"
        VERSION="7.0 (Maipo)"
        ID="rhel"
        ID_LIKE="fedora"
        VERSION_ID="7.0"
        PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
        ANSI_COLOR="0;31"
        CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
    redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
    system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server

  uname -a:
    Linux localhost.localdomain 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57
    EDT 2014 x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Nov 28 09:51 last=5

  SPEC is set to: /usr/cpu2006
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda3       xfs   234G  173G   62G  74% /
  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. 0402 09/09/2014
    Memory:
    8x Micron 36ASF2G72PZ-2G1A2 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 = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"
  OMP_NUM_THREADS = "28"

    Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB
```

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General Notes (Continued)

```
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 file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-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.
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