SPEC® CINT2006 Result

Hypertechnologies Ciara, Inc
Orion HF620-G3

SPECint®2006 = 65.3

SPECint_base2006 = 62.7

CPU2006 license: 4531　　　　　　　　　　　　　　　　　　　　**Test date:** Apr-2015
Test sponsor: Hypertechnologies Ciara, Inc　　　　　　　　**Hardware Availability:** Feb-2015
Tested by: Hypertechnologies Ciara, Inc　　　　　　　　　　**Software Availability:** Aug-2015

Benchmark results:

Benchmark	Peak	Base
400.perlbench	47.6	41.7
401.bzip2	25.4	25.4
403.gcc	35.7	34.8
429.mcf	62.0	61.8
445.gobmk	29.8	30.1
456.hmmer	68.0	71.0
458.sjeng	34.8	34.9
462.libquantum		6020
464.h264ref		51.9
471.omnetpp	45.6	31.0
473.astar	33.9	34.1
483.xalancbmk	66.1	66.0

SPECint_base2006 = 62.7

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Hardware

CPU Name:	Intel Xeon E5-2687W v3
CPU Characteristics:	Intel Turbo Boost Technology disabled
CPU MHz:	3324
FPU:	Integrated
CPU(s) enabled:	20 cores, 2 chips, 10 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:	25 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem:	1x 400 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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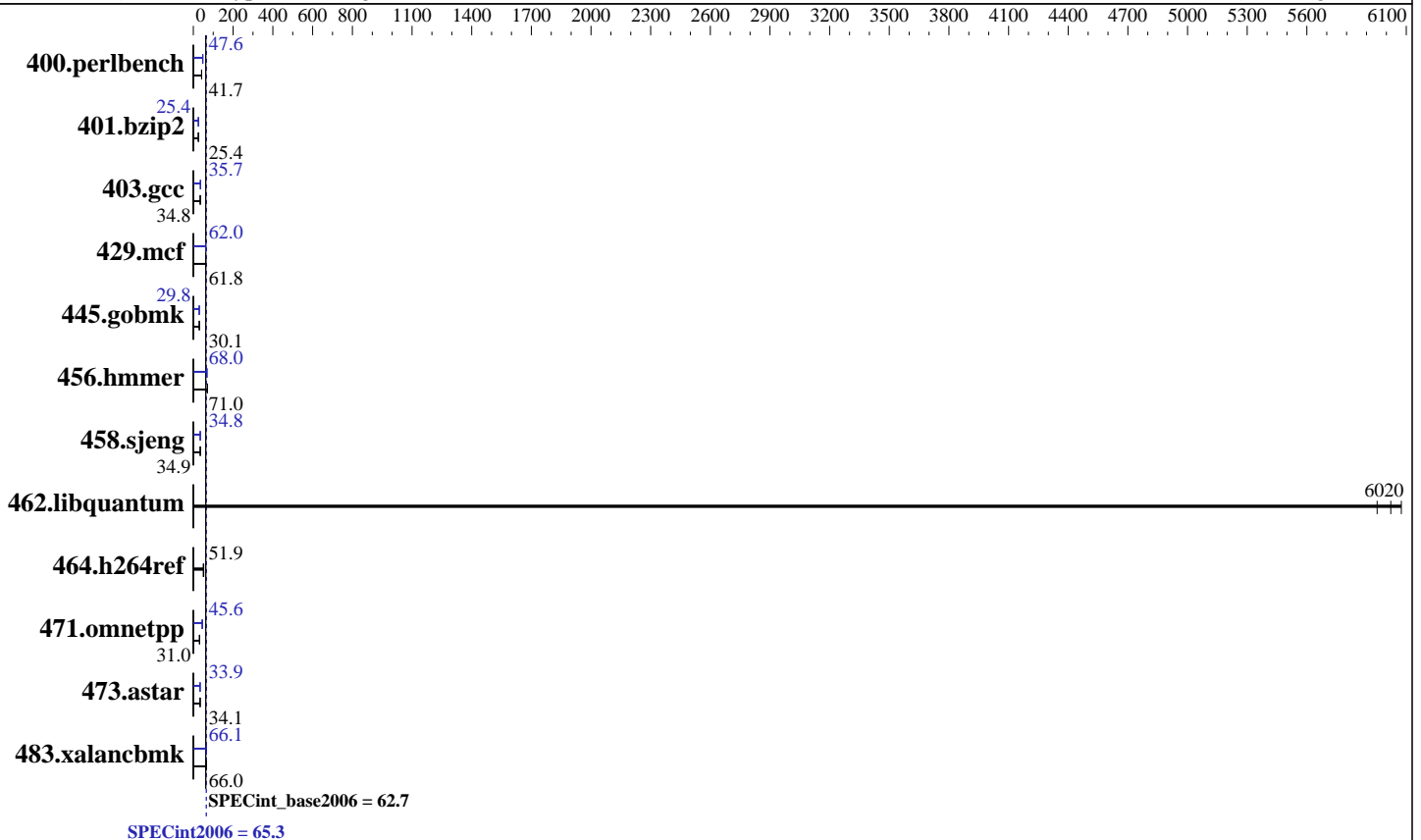
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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	234	41.8	235	41.6	**234**	**41.7**	**205**	**47.6**	205	47.7	206	47.4
401.bzip2	**380**	**25.4**	379	25.5	380	25.4	381	25.3	379	25.5	**380**	**25.4**
403.gcc	231	34.9	**231**	**34.8**	233	34.6	**226**	**35.7**	227	35.5	224	36.0
429.mcf	145	62.9	148	61.6	**148**	**61.8**	147	62.0	**147**	**62.0**	147	62.0
445.gobmk	348	30.1	**349**	**30.1**	349	30.1	**352**	**29.8**	352	29.8	353	29.8
456.hmmer	**131**	**71.0**	132	70.8	131	71.3	**137**	**68.0**	136	68.7	137	68.0
458.sjeng	347	34.9	347	34.9	**347**	**34.9**	348	34.7	347	34.8	**348**	**34.8**
462.libquantum	3.48	5950	3.41	6080	**3.44**	**6020**	3.48	5950	3.41	6080	**3.44**	**6020**
464.h264ref	445	49.8	**427**	**51.9**	422	52.4	445	49.8	**427**	**51.9**	422	52.4
471.omnetpp	**201**	**31.0**	205	30.5	195	32.1	143	43.7	**137**	**45.6**	137	45.6
473.astar	207	33.9	**206**	**34.1**	204	34.4	**207**	**33.9**	208	33.8	206	34.0
483.xalancbmk	**105**	**66.0**	104	66.5	105	65.5	104	66.1	105	65.8	**104**	**66.1**

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 Tue Apr 14 10:00:46 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 E5-2687W v3 @ 3.10GHz
      2 "physical id"s (chips)
      40 "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 : 10
      siblings  : 20
      physical 0: cores 0 1 2 3 4 8 9 10 11 12
      physical 1: cores 0 1 2 3 4 8 9 10 11 12
```
Continued on next page

Hypertechnologies Ciara, Inc $SPECint2006 =$ 65.3

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Platform Notes (Continued)

```
        cache size : 25600 KB

  From /proc/meminfo
     MemTotal:        263864748 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 Apr 14 10:00 last=5

  SPEC is set to: /usr/cpu2006
     Filesystem          Type  Size  Used Avail Use% Mounted on
     /dev/mapper/rhel-root xfs   368G  121G  247G  33% /
  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. 0902 01/28/2015
   Memory:
     16x 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 = "20"

   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

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