SPEC® CINT2006 Result
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Fujitsu

PRIMERGY BX2560 M2, Intel Xeon E5-2667 v4, 3.20 GHz

SPECint®2006 =　72.7

SPECint_base2006 =　69.3

Benchmark results (bar chart):

Benchmark	Peak	Base
400.perlbench	46.4	42.7
401.bzip2	26.5	26.0
403.gcc	39.3	
429.mcf	70.0	
445.gobmk	31.2	
456.hmmer	88.0	
458.sjeng	36.1	35.7
462.libquantum	6060	
464.h264ref	61.5	
471.omnetpp	52.1	37.0
473.astar	38.2	
483.xalancbmk	87.2	77.9

SPECint_base2006 = 69.3

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Hardware

CPU Name:	Intel Xeon E5-2667 v4
CPU Characteristics:	Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz:	3200
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 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:	128 GB (8 x 16 GB 2Rx4 PC4-2400T-R)
Disk Subsystem:	1 x SATA, 500 GB, 7200 RPM
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 12 SP1 (x86_64) Kernel 3.12.49-11-default
Compiler:	C/C++: Version 16.0.0.101 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 V10.2

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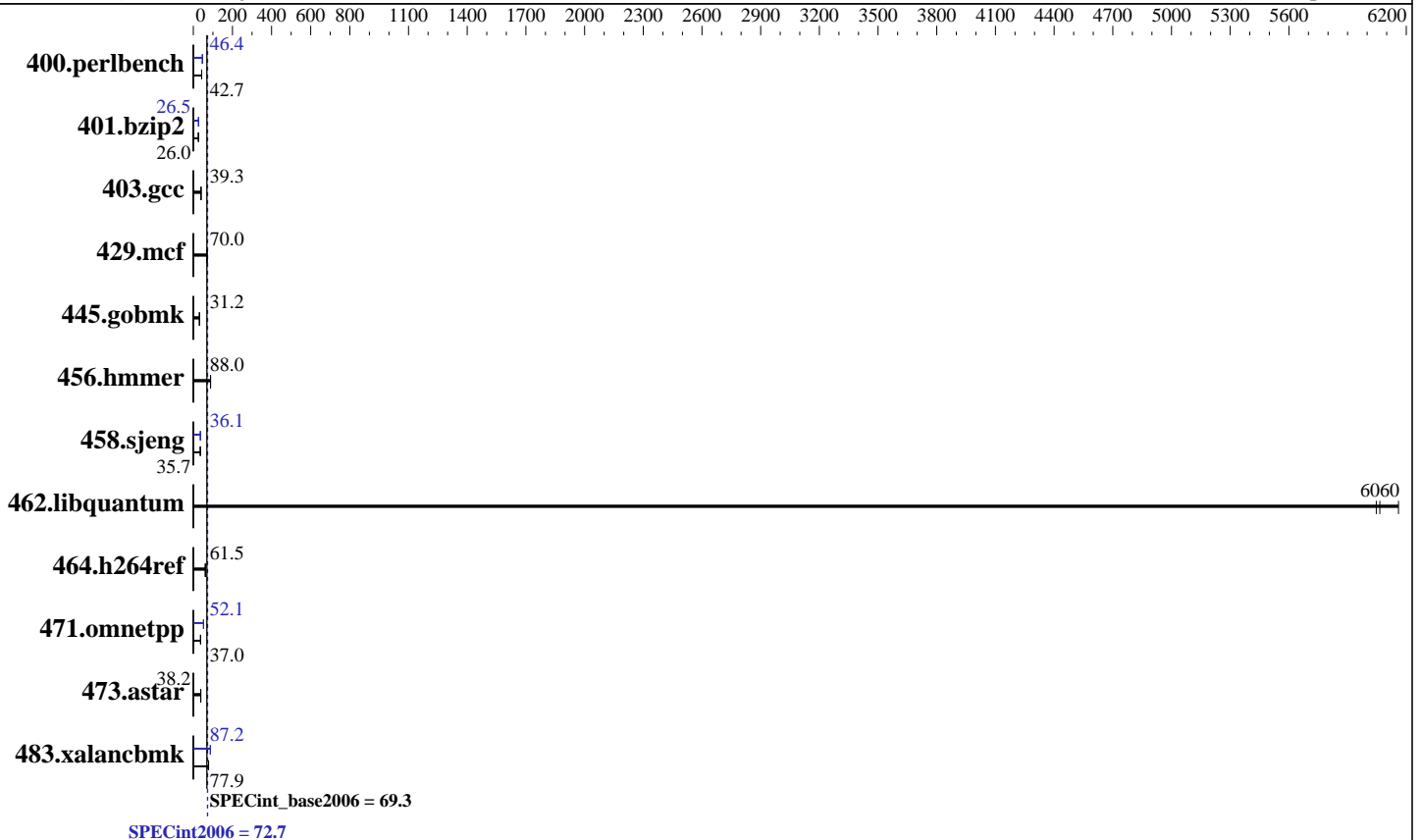
SPECint_base2006 =   69.3

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Jun-2016
Hardware Availability: Apr-2016
Software Availability: Sep-2015

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	228	42.8	229	42.6	**229**	**42.7**	211	46.3	210	46.4	**211**	**46.4**
401.bzip2	**371**	**26.0**	372	26.0	371	26.0	364	26.5	**364**	**26.5**	364	26.5
403.gcc	204	39.4	**205**	**39.3**	205	39.3	204	39.4	**205**	**39.3**	205	39.3
429.mcf	**130**	**70.0**	130	70.0	131	69.4	**130**	**70.0**	130	70.0	131	69.4
445.gobmk	336	31.2	335	31.3	**336**	**31.2**	336	31.2	335	31.3	**336**	**31.2**
456.hmmer	106	88.0	106	88.1	**106**	**88.0**	106	88.0	106	88.1	**106**	**88.0**
458.sjeng	339	35.7	338	35.7	**339**	**35.7**	335	36.1	335	36.1	**335**	**36.1**
462.libquantum	3.36	6160	**3.42**	**6060**	3.43	6050	3.36	6160	**3.42**	**6060**	3.43	6050
464.h264ref	359	61.7	362	61.2	**360**	**61.5**	359	61.7	362	61.2	**360**	**61.5**
471.omnetpp	168	37.1	169	36.9	**169**	**37.0**	120	52.1	120	52.1	**120**	**52.1**
473.astar	184	38.2	**184**	**38.2**	187	37.6	184	38.2	**184**	**38.2**	187	37.6
483.xalancbmk	**88.6**	**77.9**	89.0	77.5	88.5	78.0	79.0	87.4	**79.1**	**87.2**	79.3	87.0

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

```
    BIOS configuration:
    Energy Performance = Performance
    Utilization Profile = Unbalanced
    QPI snoop mode: Home Directory Snoop with OSB
        COD Enable = Disabled, Early Snoop = Disabled, Home Snoop Dir OSB = Enabled
    CPU C1E Support = Disabled
    Sysinfo program /home/SPECcpu2006/config/sysinfo.rev6914
    $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
    running on linux-w3cw Thu Jun  9 17:11:20 2016

    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 E5-2667 v4 @ 3.20GHz
          2 "physical id"s (chips)
          32 "processors"
       cores, siblings (Caution: counting these is hw and system dependent.  The
```

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Platform Notes (Continued)

```
    following excerpts from /proc/cpuinfo might not be reliable.  Use with
    caution.)
       cpu cores : 8
       siblings  : 16
       physical 0: cores 0 2 3 4 8 10 11 12
       physical 1: cores 0 2 3 4 8 10 11 12
    cache size : 25600 KB

From /proc/meminfo
    MemTotal:       132134952 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

/usr/bin/lsb_release -d
    SUSE Linux Enterprise Server 12 SP1

From /etc/*release* /etc/*version*
    SuSE-release:
       SUSE Linux Enterprise Server 12 (x86_64)
       VERSION = 12
       PATCHLEVEL = 1
       # This file is deprecated and will be removed in a future service pack or
       release.
       # Please check /etc/os-release for details about this release.
    os-release:
       NAME="SLES"
       VERSION="12-SP1"
       VERSION_ID="12.1"
       PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
       ID="sles"
       ANSI_COLOR="0;32"
       CPE_NAME="cpe:/o:suse:sles:12:sp1"

uname -a:
    Linux linux-w3cw 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
    (8d714a0) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jun 9 17:04 last=5

SPEC is set to: /home/SPECcpu2006
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/md126p3    xfs   424G   60G  364G  15% /home
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 FUJITSU // American Megatrends Inc. V5.0.0.11 R1.4.0 for D3320-B1x
    03/17/2016
    Memory:
```

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Platform Notes (Continued)

```
    8x Samsung M393A2G40EB1-CRC 16 GB 2 rank 2400 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 = "/home/SPECcpu2006/libs/32:/home/SPECcpu2006/libs/64:/home/SPECcpu2006/sh"
OMP_NUM_THREADS = "16"

 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
 For information about Fujitsu please visit: http://www.fujitsu.com
```

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
```

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Base Optimization Flags (Continued)

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
```

Peak Compiler Invocation

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

```
400.perlbench: icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
```

C++ benchmarks (except as noted below):
```
icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
```

```
473.astar: icpc -m64
```

Peak Portability Flags

```
400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
    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: -D_FILE_OFFSET_BITS=64
     473.astar: -DSPEC_CPU_LP64
 483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

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Peak Optimization Flags (Continued)

```
 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) -opt-prefetch
                -ansi-alias

     401.bzip2: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
                -ipo(pass 2) -O3(pass 2) -no-prec-div
                -par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32
                -opt-prefetch -ansi-alias

       403.gcc: basepeak = yes

       429.mcf: basepeak = yes

     445.gobmk: basepeak = yes

     456.hmmer: basepeak = yes

     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

 462.libquantum: basepeak = yes

    464.h264ref: basepeak = yes

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)
                -opt-ra-region-strategy=block           -ansi-alias
                -Wl,-z,muldefs -L/sh -lsmartheap

      473.astar: basepeak = yes

  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
```

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The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-BDW-RevB.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-BDW-RevB.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 Sep 6 16:56:54 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 6 September 2016.