SPEC CPU®2017 Integer Rate Result

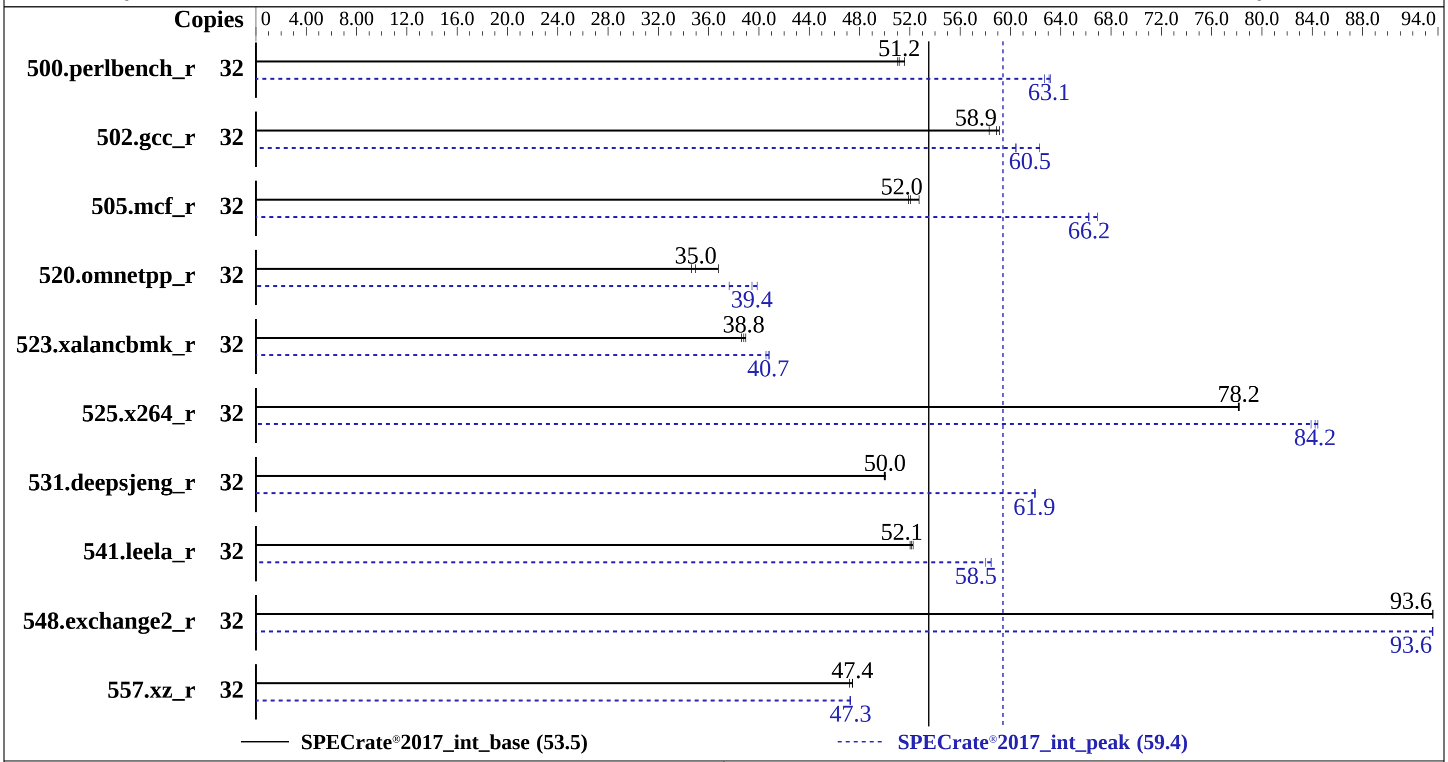
H3C

H3C R4900 G2 (Intel Xeon E5-2620 v4, 2.10 GHz)

SPECrate®2017_int_base = 53.5

SPECrate®2017_int_peak = 59.4

CPU2017 License:	9066	**Test Date:**	Dec-2016
Test Sponsor:	H3C	**Hardware Availability:**	Oct-2016
Tested by:	H3C	**Software Availability:**	Oct-2016



Hardware

CPU Name:	Intel Xeon E5-2620 v4
Max MHz:	3000
Nominal:	2100
Enabled:	16 cores, 2 chips, 2 threads/core
Orderable:	1,2 chip
Cache L1:	32 KB I + 32 KB D on chip per core
L2:	256 KB I+D on chip per core
L3:	20 MB I+D on chip per chip
Other:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2400T-R, running at 2133)
Storage:	500GB SATA 7200 RPM
Other:	None

Software

OS:	SUSE Linux Enterprise Server 12 SP1 3.12.49-11-default
Compiler:	C/C++: Version 17.0.0.098 of Intel C++ Compiler Professional Build 20160721; Fortran: Version 17.0.0.098 of Intel Fortran Compiler Professional Build 20160721;
Parallel:	No
Firmware:	BIOS American Megatrends Inc. 1.00.15 10/17/2016
File System:	xfs
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	Not Applicable
Other:	None
Power Management:	--

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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	32	988	51.6	**996**	**51.2**	998	51.0	32	806	63.2	**808**	**63.1**	812	62.7
502.gcc_r	32	777	58.3	766	59.1	**770**	**58.9**	32	**750**	**60.5**	750	60.4	727	62.3
505.mcf_r	32	997	51.9	**994**	**52.0**	981	52.7	32	781	66.2	773	66.9	**781**	**66.2**
520.omnetpp_r	32	**1201**	**35.0**	1212	34.6	1142	36.8	32	**1064**	**39.4**	1116	37.6	1053	39.9
523.xalancbmk_r	32	**871**	**38.8**	867	39.0	875	38.6	32	**830**	**40.7**	833	40.6	828	40.8
525.x264_r	32	716	78.2	**717**	**78.2**	717	78.1	32	**665**	**84.2**	668	83.9	664	84.4
531.deepsjeng_r	32	734	50.0	**733**	**50.0**	732	50.1	32	592	62.0	**592**	**61.9**	592	61.9
541.leela_r	32	**1017**	**52.1**	1019	52.0	1014	52.3	32	**906**	**58.5**	913	58.0	906	58.5
548.exchange2_r	32	**896**	**93.6**	896	93.6	896	93.6	32	896	93.5	896	93.6	**896**	**93.6**
557.xz_r	32	728	47.4	732	47.2	**729**	**47.4**	32	732	47.2	**731**	**47.3**	731	47.3

SPECrate®2017_int_base = 53.5

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Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Compiler Notes

```
SPEC has learned that this result, which used an evaluation compiler, was submitted
contrary to the compiler license terms.
Intel has granted a one-time waiver for this result.
```

Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
```

Platform Notes

```
BIOS Configuration:
Operation Mode set to Maximum Performance
COD set to Enable
Enable CPU HWPM set to HWPM OOB
Energy Performance BIAS Setting set to Performance
Sysinfo program /home/speccpu/Docs/sysinfo
Rev: r5007 of 2016-11-15 fc8dc82f217779bedfed4d694d580ba9
running on linux-9ue6 Sat Dec 10 20:53:08 2016

This section contains SUT (System Under Test) info as seen by some common
utilities.
For more information on this section, see
http://www.spec.org/cpu2017/Docs/config.html#sysinfo

From /proc/cpuinfo
   model name : Intel(R) Xeon(R) CPU E5-2620 v4 @ 2.10GHz
```

(Continued on next page)

Platform Notes (Continued)

```
      2 "physical id"s (chips)
      32 "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 : 8
      siblings  : 16
      physical 0: cores 0 1 2 3 4 5 6 7
      physical 1: cores 0 1 2 3 4 5 6 7
   cache size : 20480 KB

The view from numactl --hardware follows.  WARNING: a numactl 'node' might or
might not correspond to a physical chip.
  available: 2 nodes (0-1)
  node 0 cpus: 0 1 2 3 4 5 6 7 16 17 18 19 20 21 22 23
  node 0 size: 129009 MB
  node 0 free: 128267 MB
  node 1 cpus: 8 9 10 11 12 13 14 15 24 25 26 27 28 29 30 31
  node 1 size: 129154 MB
  node 1 free: 128466 MB
  node distances:
  node   0   1
    0:  10  21
    1:  21  10

From /proc/meminfo
   MemTotal:       264360092 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"
```

(Continued on next page)

Platform Notes (Continued)

```
      ANSI_COLOR="0;32"
      CPE_NAME="cpe:/o:suse:sles:12:sp1"

uname -a:
   Linux linux-9ue6 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 Dec 10 20:46

SPEC is set to: /home/speccpu
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda4      xfs   416G  2.4G  414G   1% /home

Additional information from dmidecode follows.  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. 1.00.15 10/20/2016
  Memory:
   16x Hynix Semiconductor HMA42GR7AFR4N-UH 16 GB 2 rank 2400 MHz, configured at
   2133 MHz
   8x NO DIMM NO DIMM

(End of data from sysinfo program)
```

Compiler Version Notes

```
==============================================================================
C       | 500.perlbench_r(base, peak) 502.gcc_r(base, peak) 505.mcf_r(base,
        | peak) 525.x264_r(base, peak) 557.xz_r(base, peak)
------------------------------------------------------------------------------
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 17.0.0.098 Build 20160721
Copyright (C) 1985-2016 Intel Corporation.  All rights reserved.
icc: NOTE: The evaluation period for this product ends on 9-jan-2017 UTC.
------------------------------------------------------------------------------

==============================================================================
C++     | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base, peak)
        | 531.deepsjeng_r(base, peak) 541.leela_r(base, peak)
------------------------------------------------------------------------------
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 17.0.0.098 Build 20160721
Copyright (C) 1985-2016 Intel Corporation.  All rights reserved.
icpc: NOTE: The evaluation period for this product ends on 9-jan-2017 UTC.
```

(Continued on next page)

Compiler Version Notes (Continued)

```
------------------------------------------------------------------------------

==============================================================================
Fortran | 548.exchange2_r(base, peak)
------------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
  64, Version 17.0.0.098 Build 20160721
Copyright (C) 1985-2016 Intel Corporation.  All rights reserved.
ifort: NOTE: The evaluation period for this product ends on 9-jan-2017 UTC.
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`icc  -std=gnu99 -m64`

C++ benchmarks:
`icpc -std=gnu++0x -m64`

Fortran benchmarks:
`ifort   -m64`

Base Portability Flags

500.perlbench_r: `-DSPEC_LP64 -DSPEC_LINUX_X64`
502.gcc_r: `-DSPEC_LP64`
505.mcf_r: `-DSPEC_LP64`
520.omnetpp_r: `-DSPEC_LP64`
523.xalancbmk_r: `-DSPEC_LP64 -DSPEC_LINUX`
525.x264_r: `-DSPEC_LP64`
531.deepsjeng_r: `-DSPEC_LP64`
541.leela_r: `-DSPEC_LP64`
548.exchange2_r: `-DSPEC_LP64`
557.xz_r: `-DSPEC_LP64`

Peak Compiler Invocation

C benchmarks:
`icc  -std=gnu99 -m64`

(Continued on next page)

Peak Compiler Invocation (Continued)

C++ benchmarks:
`icpc -std=gnu++0x -m64`

Fortran benchmarks:
`ifort -m64`

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
`-xCORE-AVX2`(pass 2) `-prof-genthreadsafe`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-par-num-threads=1`(pass 1) `-no-prec-div`(pass 2) `-prof-use`(pass 2) `-auto-ilp32` `-ansi-alias`

C++ benchmarks:
`-xCORE-AVX2`(pass 2) `-prof-genthreadsafe`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-par-num-threads=1`(pass 1) `-no-prec-div`(pass 2) `-prof-use`(pass 2) `-ansi-alias`

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/IC17.0-official-linux64.2017-06-20.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2017/flags/IC17.0-official-linux64.2017-06-20.xml

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

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