```
<table>
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<tr>
<th>Benchmark</th>
<th>SpecRate \textsuperscript{2017\textunderscore int_peak}</th>
<th>SpecRate \textsuperscript{2017\textunderscore int_base}</th>
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<tr>
<td>500.perlbench_r</td>
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<td>502.gcc_r</td>
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<td>520.omnetpp_r</td>
<td>35.0</td>
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<tr>
<td>523.xalancbmk_r</td>
<td>38.8</td>
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<td>548.exchange2_r</td>
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</tr>
<tr>
<td>557.xz_r</td>
<td>93.6</td>
<td>90.8</td>
</tr>
</tbody>
</table>

**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
- **Memory:** 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R, running at 2133)
- **Storage:** 500GB SATA 7200 RPM
- **Software**
  - **OS:** SUSE Linux Enterprise Server 12 SP1
  - **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
  - **Power Management:** --

**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:** --
```
**SPEC CPU®2017 Integer Rate Result**

H3C

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

<table>
<thead>
<tr>
<th>CPU2017 License: 9066</th>
<th>Test Date: Dec-2016</th>
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<tbody>
<tr>
<td>Test Sponsor: H3C</td>
<td>Hardware Availability: Oct-2016</td>
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<tr>
<td>Tested by: H3C</td>
<td>Software Availability: Oct-2016</td>
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</tbody>
</table>

**Results Table**

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<th>Seconds</th>
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</tr>
</tbody>
</table>

**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)
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 Sponsor: H3C
Tested by: H3C

Test Date: Dec-2016
Hardware Availability: Oct-2016
Software Availability: Oct-2016

Platform Notes (Continued)

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

uname -a:
        (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)
## 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 Sponsor:** H3C

**Test Date:** Dec-2016

**Hardware Availability:** Oct-2016

**Tested by:** H3C

**Software Availability:** Oct-2016

### 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.perlb Benchmark_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)
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 Sponsor: H3C
Tested by: H3C

Test Date: Dec-2016
Hardware Availability: Oct-2016
Software Availability: Oct-2016

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

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

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