ASUSTeK Computer Inc.

ASUS RS300-E12-RS4
(2.90 GHz, Intel Xeon E-2436)

SPECrater2017_int_base = 76.9
SPECrater2017_int_peak = 80.1

CPU2017 License: 9016
Test Sponsor: ASUSTeK Computer Inc.
Tested by: ASUSTeK Computer Inc.
Hardware Availability: Dec-2023
Software Availability: Dec-2023

Test Date: Apr-2024

Hardware

CPU Name: Intel Xeon E-2436
Max MHz: 5000
Nominal: 2900
Enabled: 6 cores, 1 chip, 2 threads/core
Orderable: 1 chip
Cache L1: 32 KB I + 48 KB D on chip per core
L2: 2 MB I+D on chip per core
L3: 18 MB I+D on chip per core
Other: None
Memory: 64 GB (2 x 32 GB 2Rx8 PC5-4800B-E, running at 4400)
Storage: 1 x 1 TB SATA SSD
Other: CPU Cooling: Air

Software

OS: SUSE Linux Enterprise Server 15 SP5 (x86_64)
Kernel 5.14.21-150500.53-default
Compiler: C/C++: Version 2024.0.2 of Intel oneAPI DPC++/C++ Compiler for Linux;
Fortran: Version 2024.0.2 of Intel Fortran Compiler for Linux;
Parallel: No
Firmware: Version 0502 released Dec-2023
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other: jemalloc memory allocator V5.0.1
Power Management: BIOS and OS set to prefer performance at the cost of additional power usage.
### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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</thead>
<tbody>
<tr>
<td>500.perlbench_r</td>
<td>12</td>
<td>323</td>
<td>59.1</td>
<td>324</td>
<td>59.0</td>
<td>324</td>
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<td>502gcc_r</td>
<td>12</td>
<td>249</td>
<td>68.3</td>
<td>248</td>
<td>68.4</td>
<td>247</td>
<td>68.7</td>
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<tr>
<td>505.mcf_r</td>
<td>12</td>
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<tr>
<td>520.omnetpp_r</td>
<td>12</td>
<td>324</td>
<td>48.6</td>
<td>323</td>
<td>48.7</td>
<td>324</td>
<td>48.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>523.xalancbmk_r</td>
<td>12</td>
<td>111</td>
<td>114</td>
<td>112</td>
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<td>111</td>
<td>114</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>525.x264_r</td>
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<td>134</td>
<td>156</td>
<td>134</td>
<td>157</td>
<td>134</td>
<td>156</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>12</td>
<td>242</td>
<td>56.9</td>
<td>239</td>
<td>57.4</td>
<td>242</td>
<td>56.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>541.leela_r</td>
<td>12</td>
<td>379</td>
<td>52.4</td>
<td>379</td>
<td>52.4</td>
<td>378</td>
<td>52.6</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>12</td>
<td>219</td>
<td>144</td>
<td>218</td>
<td>144</td>
<td>224</td>
<td>140</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>557.xz_r</td>
<td>12</td>
<td>351</td>
<td>36.9</td>
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<td>36.9</td>
<td>355</td>
<td>36.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SPECrate**\(^\text{2017\_int\_base}\) = 76.9

**SPECrate**\(^\text{2017\_int\_peak}\) = 80.1

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

### Submit Notes
The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset commands to bind each copy to a specific processor. For details, please see the config file.

### Operating System Notes
Stack size set to unlimited using "ulimit -s unlimited"

OS set to performance mode via cpupower frequency-set -g performance

### Environment Variables Notes
Environment variables set by runcpu before the start of the run:

- `LD_LIBRARY_PATH = "/ic24u0/lib/intel64:/ic24u0/lib/ia32:/ic24u0/je5.0.1-32"
- `MALLOC_CONF = "retain:true"

### General Notes
Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM

Memory using Red Hat Enterprise Linux 8.4

Transparent Huge Pages enabled by default

Prior to runcpu invocation

Filesystem page cache synced and cleared with:

```
sync; echo 3>/proc/sys/vm/drop_caches
```

NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.

Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.

Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.

jemalloc, a general purpose malloc implementation

(Continued on next page)
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Test Sponsor: ASUSTeK Computer Inc.
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SPECrater®2017_int_base = 76.9
SPECrater®2017_int_peak = 80.1

Test Date: Apr-2024
Hardware Availability: Dec-2023
Software Availability: Dec-2023

General Notes (Continued)
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5

Platform Notes

BIOS Configuration:
VT-d = Disabled
Package C State Limit = C0/C1
AES = Disabled
Engine Boost = Level3 (Max)
SR-IOV Support = Disabled
Energy Efficient Turbo = Enabled
BMC Configuration:
Fan mode = Full speed mode

Sysinfo program /ic24u0/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost Tue Apr 16 06:02:09 2024

SUT (System Under Test) info as seen by some common utilities.

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------------------------------------------------------------
1. uname -a
2. w
3. Username
4. ulimit -a
5. sysinfo process ancestry
6. /proc/cpuinfo
7. lscpu
8. numacl --hardware
9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 249 (249.16+suse.171.gdad0071f15)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. sysctl
16. /sys/kernel/mm/transparent_hugepage
17. /sys/kernel/mm/transparent_hugepage/khugepaged
18. OS release
19. Disk information
20. /sys/devices/virtual/dmi/id
21. dmidecode
22. BIOS

------------------------------------------------------------

1. uname -a
Linux localhost 5.14.21-150500.53-default #1 SMP PREEMPT_DYNAMIC Wed May 10 07:56:26 UTC 2023 (b630043)
x86_64 x86_64 x86_64 GNU/Linux

------------------------------------------------------------

2. w
06:02:09 up 20:15, 1 user, load average: 4.00, 8.17, 10.08
USER    TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
root    tty1     -                Mon09   20:12m  0.63s  0.00s /bin/bash ./rate.sh

(Continued on next page)
SPEC CPU®2017 Integer Rate Result

ASUSTeK Computer Inc.
ASUS RS300-E12-RS4
(2.90 GHz, Intel Xeon E-2436)

Copyright 2017-2024 Standard Performance Evaluation Corporation

SPECrate®2017_int_base = 76.9
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CPU2017 License: 9016
Test Sponsor: ASUSTeK Computer Inc.
Tested by: ASUSTeK Computer Inc.

Test Date: Apr-2024
Hardware Availability: Dec-2023
Software Availability: Dec-2023

Platform Notes (Continued)

3. Username
   From environment variable $USER: root

4. ulimit -a
   core file size          (blocks, -c) unlimited
   data seg size           (kbytes, -d) unlimited
   scheduling priority     (-e) 0
   file size               (blocks, -f) unlimited
   pending signals         (-i) 256581
   max locked memory       (kbytes, -l) 64
   max memory size         (kbytes, -m) unlimited
   open files              (-n) 1024
   pipe size               (512 bytes, -p) 8
   POSIX message queues    (bytes, -q) 819200
   real-time priority      (-r) 0
   stack size              (kbytes, -s) unlimited
   cpu time                (seconds, -t) unlimited
   max user processes      (-u) 256581
   virtual memory          (kbytes, -v) unlimited
   file locks              (-x) unlimited

5. sysinfo process ancestry
   /usr/lib/systemd/systemd --switched-root --system --deserialize 30
   login -- root
   -bash
   /bin/bash ./rate.sh
   /bin/bash ./rate.sh
   runcpu --nobuild --action validate --define default-platform-flags --define numcopies=12 -c
   ic2024.0.2-lin-xeon_e-core-avx2-rate-20231213.cfg --define smt-on --define cores=6 --define
   physicallogical --define no-numa --tunecore --peak --outputformat all --define drop_caches --nopower
   --runmode rate --tune base:peak --size refrate intrate
   $SPEC/tmp/CPU2017.199/templogs/preenv.intrate.199.0.log --lognum 199.0 --from_runcpu 2
   specperl $SPEC/bin/sysinfo
   $SPEC = /ic24u0

6. /proc/cpuinfo
   model name      : Intel(R) Xeon(R) E E-2436
   vendor_id       : GenuineIntel
   cpu family      : 6
   model           : 183
   stepping        : 1
   microcode       : 0x11f
   bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
   cpu cores       : 6
   siblings        : 12
   1 physical ids (chips)
   12 processors (hardware threads)
   physical id 0: core ids 0-5
   physical id 0: apicids 0-11
   Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for virtualized systems. Use the above data carefully.

(Continued on next page)
7. lscpu

From lscpu from util-linux 2.37.4:

```
Architecture:                           x86_64
CPU op-mode(s):                         32-bit, 64-bit
Address sizes:                          46 bits physical, 48 bits virtual
Byte Order:                             Little Endian
CPU(s):                                 12
On-Line CPU(s) list:                   0-11
Vendor ID:                              GenuineIntel
Model name:                             Intel(R) Xeon(R) E E-2436
CPU family:                             6
Model:                                  183
Thread(s) per core:                    2
Core(s) per socket:                     6
Socket(s):                              1
Stepping:                               1
CPU max MHz:                            6400.0000
CPU min MHz:                            800.0000
BogoMIPS:                               5836.80

Flags:                                  
  fpu vme de pse tsc msr pae mca cmov pat pse36
  clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdaepb rdtsscp
  lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology
  nonstop_tsc cpuid aperfmperf tsc_known_freq pni pclmulqdq dtes64 monitor
  dtc pls md mmca cdts dtes64b mcm lmv x2apic movbe popcnt tsc_deadline_timer
  xsave avx f16c rdrand lahf_lm abm
  3dnowprefetch cpuid_fault epb invnpcid_single lsb ibrs ibrr ibp
  ibrs_enhanced tpr_shadow vnmi flexpriority ept vpd ept_ad fsgsbab
  tsc_adjust bmi1 avx2 smep bmi2 erms cmp mcache loadstore f16c
  clflushopt clflush dts acpi mcm lmv x2apic movbe popcnt tsc_deadline_timer
  xsave avx f16c rdrand lahf_lm abm
  3dnowprefetch cpuid_fault epb invnpcid_single lsb ibrs ibrr ibp
  ibrs_enhanced tpr_shadow vnmi flexpriority ept vpd ept_ad fsgsbab
  tsc_adjust bmi1 avx2 smep bmi2 erms cmp mcache loadstore f16c
  clflushopt clflush dts acpi mcm lmv x2apic movbe popcnt tsc_deadline_timer
  xsave avx f16c rdrand lahf_lm abm
  3dnowprefetch cpuid_fault epb invnpcid_single lsb ibrs ibrr ibp
  ibrs_enhanced tpr_shadow vnmi flexpriority ept vpd ept_ad fsgsbab
  tsc_adjust bmi1 avx2 smep bmi2 erms cmp mcache loadstore f16c
  clflushopt clflush dts acpi mcm lmv x2apic movbe popcnt tsc_deadline_timer
  xsave avx f16c rdrand lahf_lm abm

Virtualization:                        VT-x
L1d cache:                             288 KiB (6 instances)
L1i cache:                             192 KiB (6 instances)
L2 cache:                              12 MiB (6 instances)
L3 cache:                              18 MiB (1 instance)
NUMA node(s):                           1
NUMA node0 CPU(s):                     0-11

```

Vulnerability Itlb multihit:           Not affected
Vulnerability Lttf:                    Not affected
Vulnerability Mds:                     Not affected
Vulnerability Meltdown:                Not affected
Vulnerability Mmio stale data:         Not affected
Vulnerability Retbleed:                Not affected

Vulnerability Spec store bypass:       Mitigation; Speculative Store Bypass disabled via prctl and seccomp
Vulnerability Spectre v1:              Mitigation; usercopy/swapsgs barriers and __user pointer sanitization
Vulnerability Spectre v2:              Mitigation; Enhanced IBRS, IBPB conditional, RSB filling, PBRSB-eIBRS SW
Vulnerability Srbds:                   Not affected
Vulnerability Tss async abort:         Not affected

From lscpu --cache:

```
<table>
<thead>
<tr>
<th>NAME</th>
<th>ONE-SIZE</th>
<th>ALL-SIZE</th>
<th>WAYS</th>
<th>TYPE</th>
<th>LEVEL</th>
<th>SETS</th>
<th>PHY-LINE</th>
<th>COHERENCY-SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>48K</td>
<td>288K</td>
<td>12</td>
<td>Data</td>
<td>64</td>
<td>1</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td>L1i</td>
<td>32K</td>
<td>192K</td>
<td>8</td>
<td>Instruction</td>
<td>64</td>
<td>1</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td>L2</td>
<td>2M</td>
<td>12M</td>
<td>16</td>
<td>Unified</td>
<td>2048</td>
<td>1</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td>L3</td>
<td>18M</td>
<td>18M</td>
<td>9</td>
<td>Unified</td>
<td>32768</td>
<td>1</td>
<td>64</td>
<td></td>
</tr>
</tbody>
</table>

(Continued on next page)
ASUSTeK Computer Inc.

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SPECrate®2017_int_base = 76.9
SPECrate®2017_int_peak = 80.1

Test Date: Apr-2024
Hardware Availability: Dec-2023
Software Availability: Dec-2023

---

Platform Notes (Continued)

8. numactl --hardware
   NOTE: a numactl 'node' might or might not correspond to a physical chip.
   available: 1 nodes (0)
   node 0 cpus: 0-11
   node 0 size: 64175 MB
   node 0 free: 61993 MB
   node distances:
   node 0
   0: 10

9. /proc/meminfo
   MemTotal: 65715432 kB

10. who --r
    run-level 3 Apr 15 09:46

11. Systemd service manager version: systemd 249 (249.16+suse.171.gdad0071f15)
    Default Target Status
    multi-user running

12. Services, from systemctl list-unit-files
    STATE UNIT FILES
    enabled YaST2-Firstboot YaST2-Second-Stage apparmor auditd cron getty@ havedeg irqbalance
    enabled-runtime YaST2-ksm klog lvm2-monitor nscd postfix purge-kernels rollback rsyslog
    disabled systemctl-remount-fs
    offline autos systemctl-ntscripts blk-availability boot-sysctl ca-certificates chrony-wait
    chrony console-getty cups cups-browsed debug-shell ebttables exchange-bmc-os-info
    firewall gpm grub2-clone-root ipmi ipmiexecd issue-addr-ssh-key xexec-load
    lvm mask man-db-create multipathd nfs nfs-bkmap rpcbind rpmconfigcheck rsyncd
    serial-getty@ smartd_generate_opts snmpd snmptrapd systemd-boot-check-no-failures
    systemctl network-generator systemd-sysext systemd-time-wait-sync systemd-timesyncd udisks2
    indirect wickedd

13. Linux kernel boot-time arguments, from /proc/cmdline
    BOOT_IMAGE=/boot/vmlinuz-5.14.21-150500.53-default
    root=UUID=c7ea704b-969d-4a21-bb75-dacf025811fc
    splash=silent
    mitigations=auto
    quiet
    security=apparmor

14. cpupower frequency-info
    analyzing CPU 0:
    current policy: frequency should be within 800 MHz and 6.40 GHz.
    The governor "performance" may decide which speed to use
    within this range.
    boost state support:
    Supported: yes
    Active: yes

(Continued on next page)
### Platform Notes (Continued)

15. `sysctl`
   - `kernel.numa_balancing`: 0
   - `kernel.randomize_va_space`: 2
   - `vm.compaction_proactiveness`: 20
   - `vm.dirty_background_bytes`: 0
   - `vm.dirty_background_ratio`: 10
   - `vm.dirty_bytes`: 0
   - `vm.dirty_expire_centisecs`: 3000
   - `vm.dirty_ratio`: 20
   - `vm.dirty_writeback_centisecs`: 500
   - `vm.dirtytime_expire_seconds`: 43200
   - `vm.extrfrag_threshold`: 500
   - `vm.min_unmapped_ratio`: 1
   - `vm.nr_hugepages`: 0
   - `vm.nr_hugepages_mempolicy`: 0
   - `vm.nr_overcommit_hugepages`: 0
   - `vm.swappiness`: 60
   - `vm.watermark_boost_factor`: 15000
   - `vm.watermark_scale_factor`: 10
   - `vm.zone_reclaim_mode`: 0

16. `/sys/kernel/mm/transient_hugepage`
   - `hpase_pmd_size`: 2097152
   - `shmem_enabled`: always within_size advise [never] deny force

17. `/sys/kernel/mm/transient_hugepage/khugepaged`
   - `alloc_sleep_millisecs`: 60000
   - `defrag`: 1
   - `max_ptes_none`: 511
   - `max_ptes_shared`: 256
   - `max_ptes_swap`: 64
   - `pages_to_scan`: 4096
   - `scan_sleep_millisecs`: 10000

18. OS release
   - From `/etc/*-release`:
   - `os-release` SUSE Linux Enterprise Server 15 SP5

19. Disk information
   - SPEC is set to: `/ic24u0`
   - `/dev/sda8` xfs 763G 23G 740G 3% /

20. `/sys/devices/virtual/dmi/id`
   - `Vendor`: ASUSTeK COMPUTER INC.
   - `Product`: RS300-E12-RS4
   - `Product Family`: Server
   - `Serial`: 865236000406

21. dmidecode
   - Additional information from dmidecode 3.4 follows. WARNING: Use caution when you interpret this section.
   - The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately..."
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ASUS RS300-E12-RS4  
(2.90 GHz, Intel Xeon E-2436)

**SPECrate®2017_int_base = 76.9**  
**SPECrate®2017_int_peak = 80.1**

**Platform Notes (Continued)**

determined*, but the intent may not be met, as there are frequent changes to hardware, firmware, and the  
"DMTF SMBIOS" standard.  
Memory:  
1x SK Hynix HMCG88M8BEA081N 32 GB 2 rank 4800, configured at 4400  
1x SK Hynix HMCG88M8BEA084N 32 GB 2 rank 4800, configured at 4400

22. BIOS  
(This section combines info from /sys/devices and dmidecode.)  
BIOS Vendor: American Megatrends Inc.  
BIOS Version: 0502  
BIOS Date: 12/28/2023  
BIOS Revision: 5.2

---

**Compiler Version Notes**

```
C       | 502.gcc_r(peak)
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2024.0.2 Build 20231213
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.

C       | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak) 557.xz_r(base, peak)
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.

C       | 502.gcc_r(peak)
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2024.0.2 Build 20231213
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.

C       | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak) 557.xz_r(base, peak)
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.

C++      | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base, peak) 531.deepsjeng_r(base, peak) 541.leela_r(base, peak)
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.

Fortran | 548.exchange2_r(base, peak)
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213
```

(Continued on next page)
## SPEC CPU®2017 Integer Rate Result

**ASUSTeK Computer Inc.**

ASUS RS300-E12-RS4  
(2.90 GHz, Intel Xeon E-2436)

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### Compiler Version Notes (Continued)

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---

### Base Compiler Invocation

**C** benchmarks:
- icx

**C++** benchmarks:
- icpx

**Fortran** benchmarks:
- ifx

---

### Base Portability Flags

<table>
<thead>
<tr>
<th>Flag</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>500.perlbench_r</td>
<td>-DSPEC_LP64 -DSPEC_LINUX_X64</td>
</tr>
<tr>
<td>502.gcc_r</td>
<td>-DSPEC_LP64</td>
</tr>
<tr>
<td>505.mcf_r</td>
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<tr>
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<tr>
<td>548.exchange2_r</td>
<td>-DSPEC_LP64</td>
</tr>
<tr>
<td>557.xz_r</td>
<td>-DSPEC_LP64</td>
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</tbody>
</table>

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### Base Optimization Flags

**C** benchmarks:
- `-w` `-std=c11` `-m64` `-Wl,-z,muldefs` `-xcORE-AVX2` `-O3` `-ffast-math` `-flto`  
- `mfpmath=sse` `-funroll-loops` `-qopt-mem-layout-trans=4`  
- `-L/opt/intel/oneapi/compiler/2024.0/lib` `-lqkmalloc`

**C++** benchmarks:
- `-w` `-std=c++14` `-m64` `-Wl,-z,muldefs` `-xcORE-AVX2` `-O3` `-ffast-math` `-flto`  
- `mfpmath=sse` `-funroll-loops` `-qopt-mem-layout-trans=4`  
- `-L/opt/intel/oneapi/compiler/2024.0/lib` `-lqkmalloc`

**Fortran** benchmarks:
- `-w` `-m64` `-Wl,-z,muldefs` `-xcORE-AVX2` `-O3` `-ffast-math` `-flto`  
- `mfpmath=sse` `-funroll-loops` `-qopt-mem-layout-trans=4`  

(Continued on next page)
ASUSTeK Computer Inc.
ASUS RS300-E12-RS4
(2.90 GHz, Intel Xeon E-2436)

SPECrate®2017_int_base = 76.9
SPECrate®2017_int_peak = 80.1

CPU2017 License: 9016
Test Sponsor: ASUSTeK Computer Inc.
Tested by: ASUSTeK Computer Inc.

Test Date: Apr-2024
Hardware Availability: Dec-2023
Software Availability: Dec-2023

Base Optimization Flags (Continued)

Fortran benchmarks (continued):
- nostandard-realloc-lhs -align array32byte -auto
- L/opt/intel/oneapi/compiler/2024.0/lib -lqkmalloc

Peak Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifx

Peak Portability Flags

500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -D_FILE_OFFSET_BITS=64
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 Optimization Flags

C benchmarks:
500.perlbench_r: -w -std=c11 -m64 -Wl,-z,muldefs
-fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2 -flto
-Ofast -ffast-math -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fno-strict-overflow
-L/opt/intel/oneapi/compiler/2024.0/lib -lqkmalloc

(Continued on next page)
## SPEC CPU®2017 Integer Rate Result

ASUSTeK Computer Inc.

ASUS RS300-E12-RS4
(2.90 GHz, Intel Xeon E-2436)

### SPECrate®2017_int_base = 76.9

### SPECrate®2017_int_peak = 80.1

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<td>Software Availability:</td>
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</table>

### Peak Optimization Flags (Continued)

- **502.gcc_r**: `-m32 -L/opt/intel/oneapi/compiler/2024.0/lib32 -std=gnu89 -Wl,-z,muldefs -fprofile-generate(pass 1) -fprofile-use=default.profdata(pass 2) -xCORE-AVX2 -flto -Ofast -ffast-math -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -L/usr/local/jemalloc32-5.0.1/lib -ljemalloc

- **505.mcf_r**: `basepeak = yes`

- **525.x264_r**: `-w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX2 -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fno-alias -L/opt/intel/oneapi/compiler/2024.0/lib -ljemalloc

- **557.xz_r**: `basepeak = yes`

### C++ benchmarks:

- **520.omnetpp_r**: `basepeak = yes`

- **523.xalancbmk_r**: `basepeak = yes`

- **531.deepsjeng_r**: `basepeak = yes`

- **541.leela_r**: `basepeak = yes`

### Fortran benchmarks:

- **548.exchange2_r**: `basepeak = yes`

The flags files that were used to format this result can be browsed at:


You can also download the XML flags sources by saving the following links:


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