



# SPEC CPU®2017 Integer Speed Result

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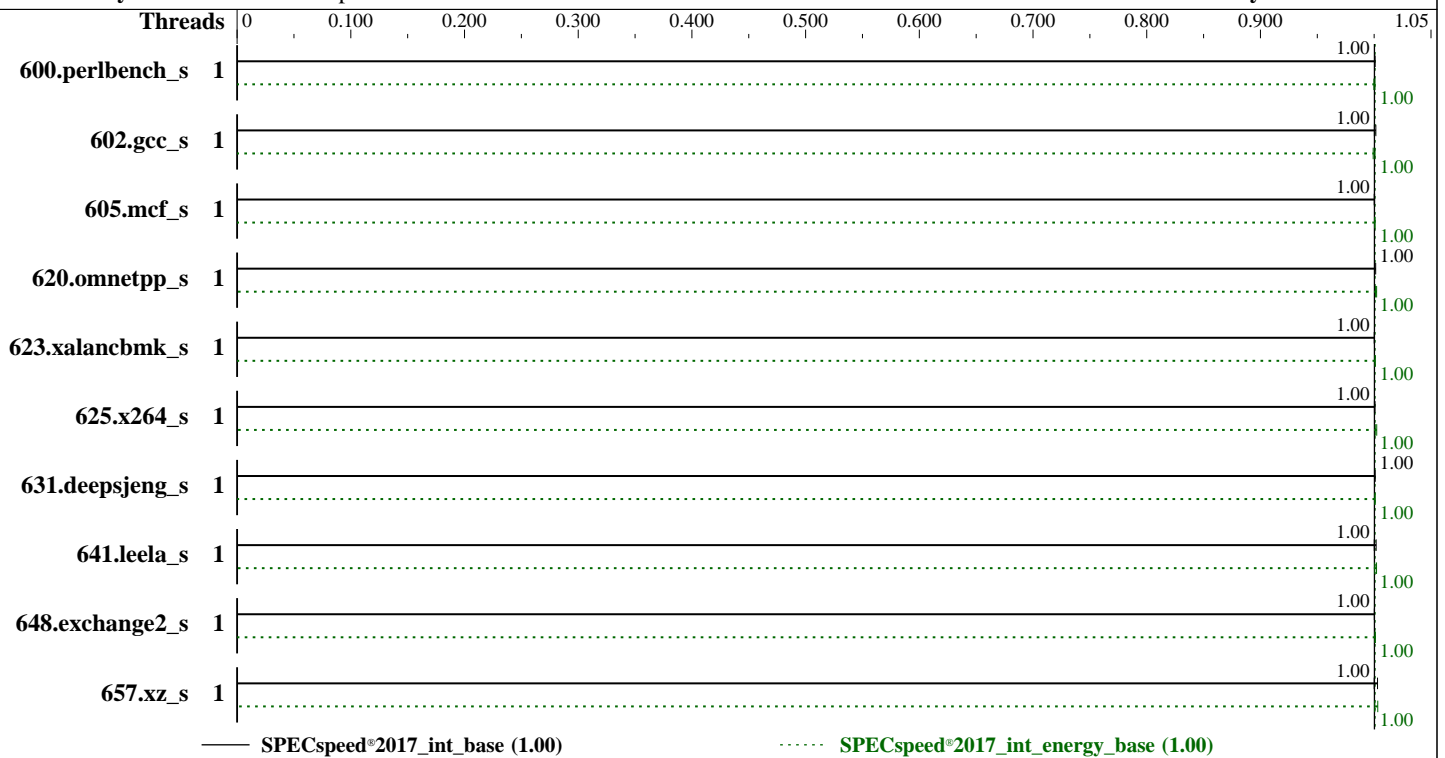
**Sun Microsystems**  
(Test Sponsor: Oracle Corporation)

## Sun Fire V490

SPECspeed®2017_int_base =	1.00
SPECspeed®2017_int_energy_base =	1.00
SPECspeed®2017_int_peak =	Not Run
SPECspeed®2017_int_energy_peak =	--

**CPU2017 License:** 6  
**Test Sponsor:** Oracle Corporation  
**Tested by:** Oracle Corporation

**Test Date:** Dec-2016  
**Hardware Availability:** Feb-2007  
**Software Availability:** Jul-2016



### Hardware

CPU Name: UltraSPARC-IV+  
 Max MHz: 2100  
 Nominal: 2100  
 Enabled: 8 cores, 4 chips  
 Orderable: 2 or 4 chips  
 Cache L1: 64 KB I + 64 KB D on chip per core  
 L2: 2 MB I+D on chip per chip  
 L3: 32 MB I+D off chip per chip  
 Other: None  
 Memory: 32 GB (32 x 1 GB SDRAM Registered, ECC, 232-pin, Samsung M323S6459ET2-C1LC2)  
 Storage: 300 GB ZFS mirror on 2x 15K RPM 300 GB Fibre Channel drives  
 Other: None

### Software

OS: Solaris 10 1/13  
 Compiler: C/C++/Fortran: Version 12.5 of Oracle Developer Studio  
 Parallel: Yes  
 Firmware: Sun OpenBoot PROM (patch 121689-02) version 4.22.24, released Feb-2010  
 File System: zfs  
 System State: Default  
 Base Pointers: 64-bit  
 Peak Pointers: Not Applicable  
 Other: None  
 Power Management: Set to defaults

### Power

Max. Power (W): 1141.4  
 Idle Power (W): 1082.92  
 Min. Temperature (C): 20.81  
 Elevation (m): 67  
 Line Standard: 208 V / 60 Hz / 1 phase / 2 wire

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## Power (Continued)

Provisioning: Line powered

### Power Settings

Management FW: Version 2.2.2 of Sun Remote System Control (RSC)  
Memory Mode: Normal

### Power-Relevant Hardware

Power Supply: 2 x 1448 W (redundant)  
Details: Type A187 1448 Watt AC Input Power Supply  
Backplane: N/A  
Other Storage: Sun Slimline 8x DVD-ROM (370-4412)  
Storage Model #: 2 x XTC-FC1CF-300G15KZ, connected to on-board FC HBA  
NICs Installed: 2 x on-board @ 1 GbE  
NICs Enabled (FW/OS): 2 / 1  
NICs Connected/Speed: 1 @ 1 Gbps  
Other HW Model #: None

### Power Analyzer

Power Analyzer: bur-x4170m2-002:8888  
Hardware Vendor: Yokogawa  
Model: WT210  
Serial Number: 91GC38245  
Input Connection: Serial over USB  
Metrology Institute: NIST  
Calibration By: Yokogawa USA  
Calibration Label: 110316-91GC38245  
Calibration Date: 3-Nov-2016  
PTDaemon™ Version: 1.8.1 (f3ad5467; 2016-09-07)  
Setup Description: Directly connected  
Current Ranges Used: 10A  
Voltage Range Used: 300V

### Temperature Meter

Temperature Meter: bur-x4170m2-002:8889  
Hardware Vendor: Digi  
Model: WATCHPORT/H  
Serial Number: --  
Input Connection: USB  
PTDaemon Version: 1.8.1 (f3ad5467; 2016-09-07)  
Setup Description: In front of SUT front panel primary air inlet

## Base Results Table

Benchmark	Threads	Seconds	Ratio	Energy (kJ)	Energy Ratio	Average Power	Maximum Power	Seconds	Ratio	Energy (kJ)	Energy Ratio	Average Power	Maximum Power	Seconds	Ratio	Energy (kJ)	Energy Ratio	Average Power	Maximum Power
600.perlbench_s	1	1774	1.00	1930	1.00	1090	1100	<b><u>1774</u></b>	<b><u>1.00</u></b>	<b><u>1920</u></b>	<b><u>1.00</u></b>	<b><u>1080</u></b>	<b><u>1090</u></b>						
602.gcc_s	1	3976	1.00	4330	0.999	1090	1110	<b><u>3981</u></b>	<b><u>1.00</u></b>	<b><u>4330</u></b>	<b><u>1.00</u></b>	<b><u>1090</u></b>	<b><u>1110</u></b>						
605.mcf_s	1	<b><u>4721</u></b>	<b><u>1.00</u></b>	<b><u>5150</u></b>	<b><u>1.00</u></b>	<b><u>1090</u></b>	<b><u>1120</u></b>	4719	1.00	5150	1.00	1090	1120						
620.omnetpp_s	1	<b><u>1630</u></b>	<b><u>1.00</u></b>	<b><u>1770</u></b>	<b><u>1.00</u></b>	<b><u>1090</u></b>	<b><u>1090</u></b>	1629	1.00	1770	1.00	1090	1090						
623.xalancbmk_s	1	<b><u>1417</u></b>	<b><u>1.00</u></b>	<b><u>1540</u></b>	<b><u>1.00</u></b>	<b><u>1090</u></b>	<b><u>1090</u></b>	1417	1.00	1540	1.00	1090	1090						
625.x264_s	1	1763	1.00	1910	1.00	1090	1100	<b><u>1764</u></b>	<b><u>1.00</u></b>	<b><u>1920</u></b>	<b><u>1.00</u></b>	<b><u>1090</u></b>	<b><u>1100</u></b>						
631.deepsjeng_s	1	<b><u>1432</u></b>	<b><u>1.00</u></b>	<b><u>1560</u></b>	<b><u>1.00</u></b>	<b><u>1090</u></b>	<b><u>1130</u></b>	1432	1.00	1560	1.00	1090	1130						
641.leela_s	1	1703	1.00	1840	1.00	1080	1090	<b><u>1706</u></b>	<b><u>1.00</u></b>	<b><u>1850</u></b>	<b><u>1.00</u></b>	<b><u>1080</u></b>	<b><u>1090</u></b>						
648.exchange2_s	1	2939	1.00	3200	1.00	1090	1090	<b><u>2939</u></b>	<b><u>1.00</u></b>	<b><u>3200</u></b>	<b><u>1.00</u></b>	<b><u>1090</u></b>	<b><u>1090</u></b>						
657.xz_s	1	<b><u>6182</u></b>	<b><u>1.00</u></b>	<b><u>6730</u></b>	<b><u>1.00</u></b>	<b><u>1090</u></b>	<b><u>1140</u></b>	6164	1.00	6710	1.00	1090	1140						

SPECspeed®2017\_int\_base = 1.00

SPECspeed®2017\_int\_energy\_base = 1.00

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



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SPECspeed®2017\_int\_peak = Not Run

SPECspeed®2017\_int\_energy\_peak = --

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## Operating System Notes

```
/etc/system settings
The ZFS cache may use 1 to 2 GB:
  zfs:zfs_arc_min=0x40000000
  zfs:zfs_arc_max=0x80000000
Once every 10 seconds, the page flusher
may write pages older than 600 seconds:
  autoup=600
  tune_t_fsflushr=10
Prefer local pages, and allow extra
memory to manage page metadata:
  lpg_alloc_prefer=1
  tsb_rss_factor=128
```

## General Notes

Environment variables set by runcpu before the start of the run:  
OMP\_STACKSIZE = "120M"

## Platform Notes

```
Sysinfo program /cpu2017/rc4/Docs/sysinfo
Rev: r5007 of 2016-11-15 fc8dc82f217779bedfed4d694d580ba9
running on bur408-84 Fri Dec 2 16:27:34 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 /usr/sbin/psrinfo
UltraSPARC-IV+ (portid 0 impl 0x19 ver 0x22 clock 2100 MHz)
UltraSPARC-IV+ (portid 1 impl 0x19 ver 0x22 clock 2100 MHz)
UltraSPARC-IV+ (portid 2 impl 0x19 ver 0x22 clock 2100 MHz)
UltraSPARC-IV+ (portid 3 impl 0x19 ver 0x22 clock 2100 MHz)
4 chips
8 threads
2100 MHz
```

From kstat: 8 cores

From prtconf: 32768 Megabytes

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## Platform Notes (Continued)

```
/etc/release:
  Oracle Solaris 10 1/13 s10s_u11wos_24a SPARC
uname -a:
  SunOS bur408-84 5.10 Generic_147147-26 sun4u sparc SUNW,Sun-Fire-V490

disk: df -h /cpu2017/rc4
Filesystem      size  used  avail capacity  Mounted on
rpool/cpu2017/rc4  213G  1.2G  137G      1%    /cpu2017/rc4

(End of data from sysinfo program)
```

## Power Settings Notes

Device power management is disabled by default for server systems.  
The UltraSPARC IV+ CPU does not support power management.

## Compiler Version Notes

```
=====
C      | 600.perlbench_s(base) 602.gcc_s(base) 605.mcf_s(base)
      | 625.x264_s(base) 657.xz_s(base)
-----
cc: Studio 12.5 Sun C 5.14 SunOS_sparc 2016/05/31
cc: Warning: -xchip=native detection failed, falling back to -xchip=generic
-----

=====
C++   | 620.omnetpp_s(base) 623.xalancbmk_s(base) 631.deepsjeng_s(base)
      | 641.leela_s(base)
-----
CC: Studio 12.5 Sun C++ 5.14 SunOS_sparc 2016/05/31
CC: Warning: -xchip=native detection failed, falling back to -xchip=generic
-----

=====
Fortran | 648.exchange2_s(base)
-----
f90: Studio 12.5 Fortran 95 8.8 SunOS_sparc 2016/05/31
f90: Warning: -xchip=native detection failed, falling back to -xchip=generic
-----
```



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## Base Compiler Invocation

C benchmarks:

cc

C++ benchmarks:

CC

Fortran benchmarks:

f95

## Base Portability Flags

600.perlbench\_s: -DSPEC\_SOLARIS\_SPARC -DSPEC\_LP64  
602.gcc\_s: -DSPEC\_LP64  
605.mcf\_s: -DSPEC\_LP64  
620.omnetpp\_s: -DSPEC\_GCC\_MANGLE -DSPEC\_LP64  
623.xalancbmk\_s: -DSPEC\_SOLARIS -DSPEC\_LP64  
625.x264\_s: -DSPEC\_LP64  
631.deepsjeng\_s: -DSPEC\_LP64  
641.leela\_s: -DSPEC\_LP64  
648.exchange2\_s: -DSPEC\_LP64  
657.xz\_s: -DSPEC\_LP64

## Base Optimization Flags

C benchmarks:

-fast -xpagesize=4M -xprefetch\_level=3 -xarch=sparcvis2  
-xcache=64/32/4/1:2048/64/4/2:32768/64/4/2 -g1 -m64 -DSPEC\_OPENMP  
-xopenmp

C++ benchmarks:

-std=c++03 -fast -xpagesize=4M -xprefetch\_level=3 -xarch=sparcvis2  
-xcache=64/32/4/1:2048/64/4/2:32768/64/4/2 -g -m64 -DSPEC\_OPENMP  
-xopenmp

Fortran benchmarks:

-fast -xpagesize=4M -xprefetch\_level=3 -xarch=sparcvis2  
-xcache=64/32/4/1:2048/64/4/2:32768/64/4/2 -g1 -DSPEC\_OPENMP -m64  
-xopenmp



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## Base Other Flags

C benchmarks:

-xjobs=6 -errfmt

C++ benchmarks:

-xjobs=6

Fortran benchmarks:

-xjobs=6

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

<http://www.spec.org/cpu2017/flags/Oracle-Solaris-Studio12.5.html>  
<http://www.spec.org/cpu2017/flags/Oracle-SPARC.html>

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

<http://www.spec.org/cpu2017/flags/Oracle-Solaris-Studio12.5.xml>  
<http://www.spec.org/cpu2017/flags/Oracle-SPARC.xml>

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For questions about this result, please contact the tester. For other inquiries, please contact [info@spec.org](mailto:info@spec.org).

Tested with SPEC CPU®2017 v0.904.0 on 2016-12-02 16:27:31-0500.  
Report generated on 2019-09-11 09:48:52 by CPU2017 PDF formatter v6255.  
Originally published on 2017-06-19.