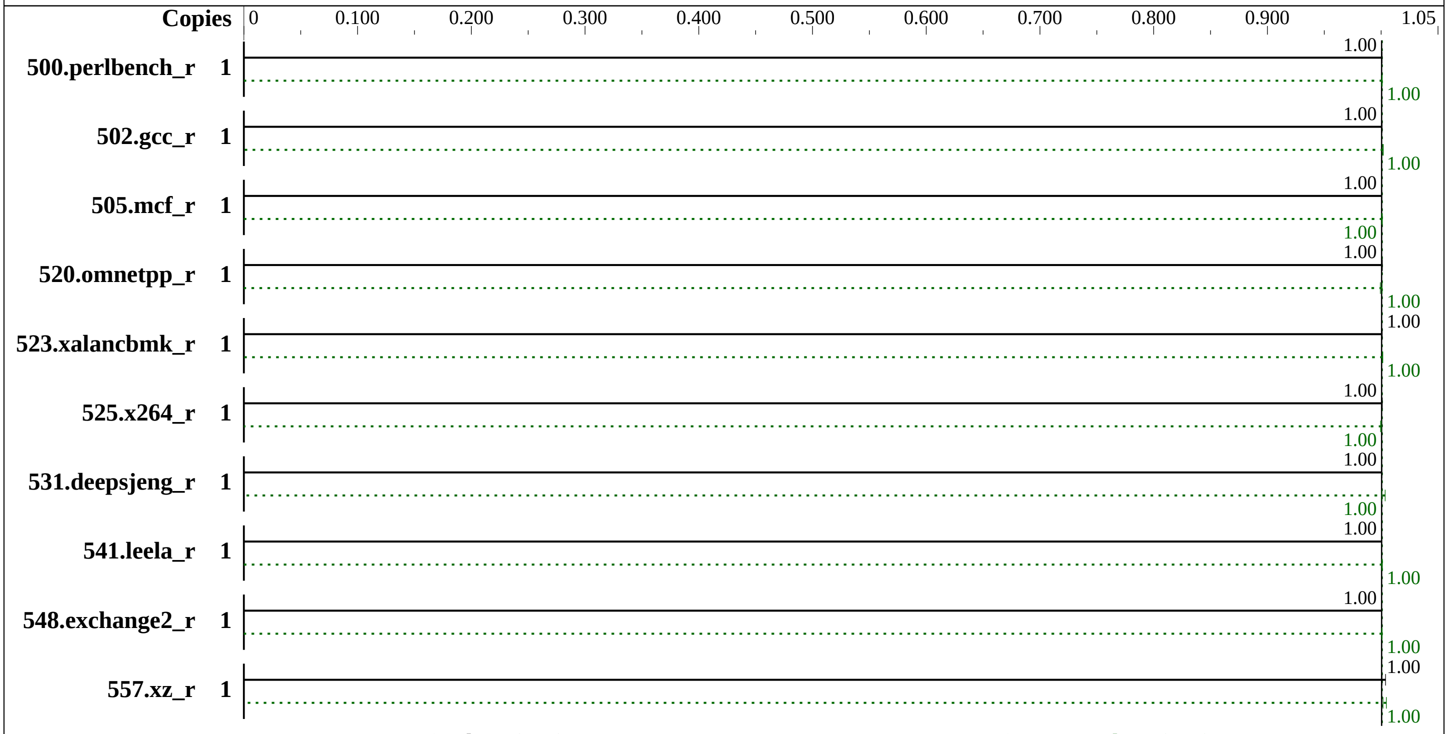
SPEC CPU®2017 Integer Rate Result

Sun Microsystems
(Test Sponsor: Oracle Corporation)

Sun Fire V490

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

CPU2017 License:	6	**Test Date:**	Nov-2016
Test Sponsor:	Oracle Corporation	**Hardware Availability:**	Feb-2007
Tested by:	Oracle Corporation	**Software Availability:**	Jul-2016



SPECrate®2017_int_base (1.00) · · · · · · SPECrate®2017_int_energy_base (1.00)

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:	No
Firmware:	Sun OpenBoot PROM (patch 121689-02) version 4.22.24, released Feb-2010
File System:	zfs
System State:	Default
Base Pointers:	32-bit
Peak Pointers:	Not Applicable
Other:	None
Power Management:	Set to defaults

Power

Max. Power (W):	1120.2
Idle Power (W):	1081.88
Min. Temperature (C):	20.56
Elevation (m):	67
Line Standard:	208 V / 60 Hz / 1 phase / 2 wire

(Continued on next page)

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 #s: 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 #s: 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	Copies	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
500.perlbench_r	1	**1591**	**1.00**	**1730**	**1.00**	**1080**	**1100**	1591	1.00	1730	1.00	1090	1090						
502.gcc_r	1	1415	1.00	1530	1.00	1080	1100	**1415**	**1.00**	**1540**	**1.00**	**1090**	**1100**						
505.mcf_r	1	1615	1.00	1770	1.00	1090	1120	**1615**	**1.00**	**1770**	**1.00**	**1090**	**1120**						
520.omnetpp_r	1	1311	1.00	1420	0.999	1080	1090	**1312**	**1.00**	**1420**	**1.00**	**1080**	**1090**						
523.xalancbmk_r	1	1055	1.00	1140	1.00	1080	1090	**1055**	**1.00**	**1140**	**1.00**	**1080**	**1090**						
525.x264_r	1	**1751**	**1.00**	**1900**	**1.00**	**1080**	**1100**	1749	1.00	1900	0.999	1090	1100						
531.deepsjeng_r	1	1145	1.00	1240	1.00	1080	1110	**1145**	**1.00**	**1240**	**1.00**	**1090**	**1120**						
541.leela_r	1	**1655**	**1.00**	**1790**	**1.00**	**1080**	**1090**	1655	1.00	1790	1.00	1080	1090						
548.exchange2_r	1	**2619**	**1.00**	**2840**	**1.00**	**1080**	**1090**	2619	1.00	2840	1.00	1080	1090						
557.xz_r	1	1076	1.00	1170	1.00	1090	1110	**1079**	**1.00**	**1170**	**1.00**	**1090**	**1110**						

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

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/rc3/Docs/sysinfo
 Rev: r4961 of 2016-10-02 93f3ce875d5c7794a1fec4785739b79b
 running on bur408-84 Wed Nov 16 15:48:49 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/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/rc3
 Filesystem             size   used  avail capacity  Mounted on
 rpool/cpu2017/rc3      213G   1.2G   113G     2%    /cpu2017/rc3

 (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       | 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base)
        | 525.x264_r(base) 557.xz_r(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++     | 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base)
        | 541.leela_r(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 | 548.exchange2_r(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

500.perlbench_r: -DSPEC_SOLARIS_SPARC
502.gcc_r: -D_FILE_OFFSET_BITS=64
505.mcf_r: -D_FILE_OFFSET_BITS=64
520.omnetpp_r: -DSPEC_GCC_MANGLE -D_FILE_OFFSET_BITS=64
523.xalancbmk_r: -DSPEC_SOLARIS -D_FILE_OFFSET_BITS=64
525.x264_r: -D_FILE_OFFSET_BITS=64
531.deepsjeng_r: -D_FILE_OFFSET_BITS=64
541.leela_r: -D_FILE_OFFSET_BITS=64
548.exchange2_r: -D_FILE_OFFSET_BITS=64
557.xz_r: -D_FILE_OFFSET_BITS=64

Base Optimization Flags

C benchmarks:
-DSPEC_SUPPRESS_OPENMP -fast -xpagesize=4M -xprefetch_level=3
-xarch=sparcvis2 -xcache=64/32/4/1:2048/64/4/2:32768/64/4/2 -g1 -m32

C++ benchmarks:
-std=c++03 -DSPEC_SUPPRESS_OPENMP -fast -xpagesize=4M
-xprefetch_level=3 -xarch=sparcvis2
-xcache=64/32/4/1:2048/64/4/2:32768/64/4/2 -g -m32

Fortran benchmarks:
-DSPEC_SUPPRESS_OPENMP -fast -xpagesize=4M -xprefetch_level=3
-xarch=sparcvis2 -xcache=64/32/4/1:2048/64/4/2:32768/64/4/2 -g1 -m32

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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