SPEC® CPU2017 Integer Rate Result

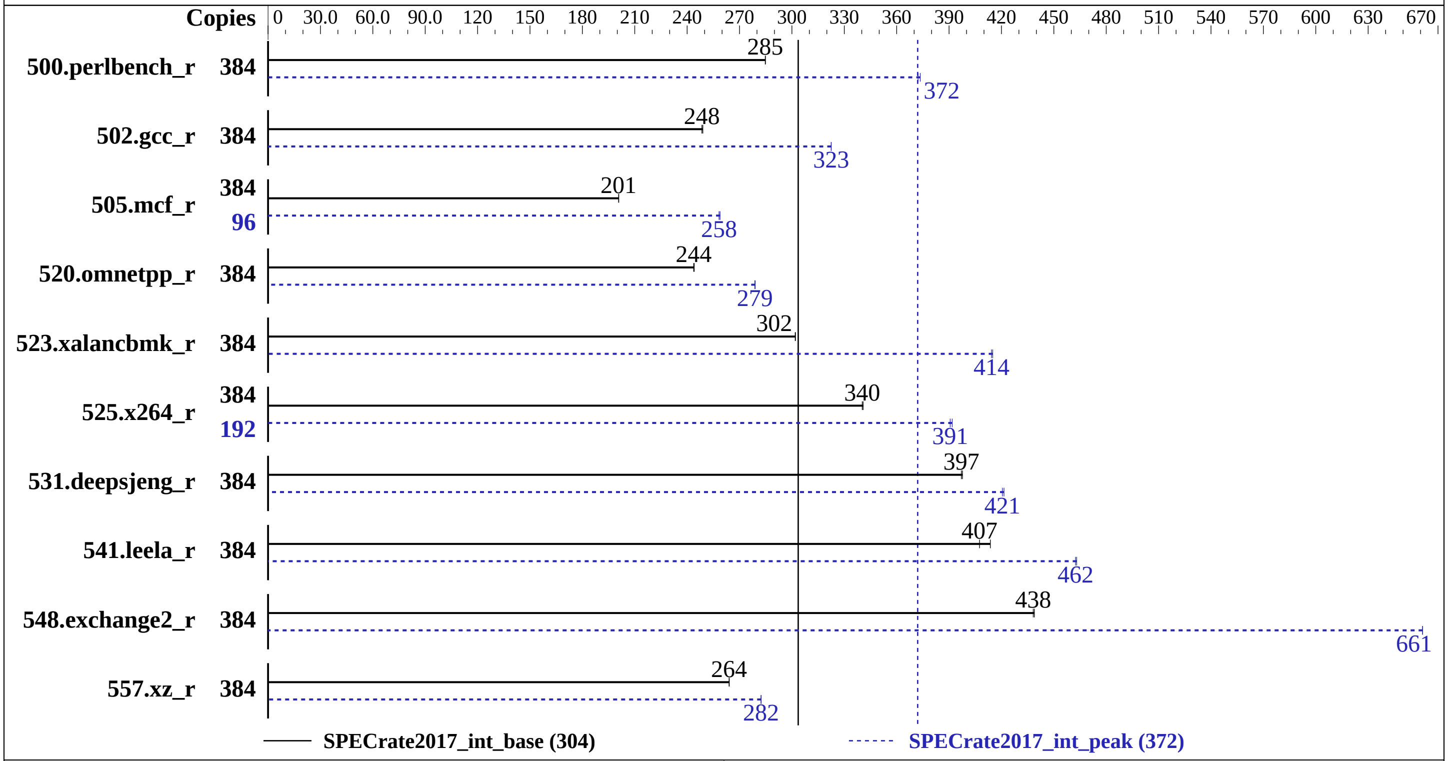
Copyright 2017-2018 Standard Performance Evaluation Corporation

Fujitsu
Fujitsu SPARC M12-2S

SPECrate2017_int_base = 304

SPECrate2017_int_peak = 372

CPU2017 License:	19	**Test Date:**	Dec-2017
Test Sponsor:	Fujitsu	**Hardware Availability:**	Apr-2017
Tested by:	Fujitsu	**Software Availability:**	Jul-2017



Hardware

CPU Name:	SPARC64 XII
Max MHz.:	4350
Nominal:	4250
Enabled:	48 cores, 4 chips, 8 threads/core
Orderable:	1 to 16 BBs; each BB contains 1 or 2 CPU chips; 2, 3, 4, .. 384 cores
Cache L1:	64 KB I + 64 KB D on chip per core
L2:	512 KB I+D on chip per core
L3:	32 MB I+D on chip per chip
Other:	None
Memory:	2 TB (64 x 32 GB 2Rx4 PC4-2400T-R)
Storage:	1 x 600 GB 10K RPM SAS (for system disk)
Other:	None

Software

OS:	Oracle Solaris 11.3 SRU 24.4
Compiler:	C/C++/Fortran: Version 12.6 of Oracle Developer Studio
Parallel:	No
Firmware:	Fujitsu HCP Version 3040 released Oct-2017
File System:	tmpfs
System State:	Default
Base Pointers:	32-bit
Peak Pointers:	32-bit
Other:	None

Fujitsu
Fujitsu SPARC M12-2S

SPECrate2017_int_base = 304
SPECrate2017_int_peak = 372

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu
Test Date: Dec-2017
Hardware Availability: Apr-2017
Software Availability: Jul-2017

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	384	**2147**	**285**	2146	285			384	1637	374	**1642**	**372**		
502.gcc_r	384	**2189**	**248**	2184	249			384	1686	323	**1686**	**323**		
505.mcf_r	384	**3091**	**201**	3089	201			96	**601**	**258**	599	259		
520.omnetpp_r	384	2064	244	**2067**	**244**			384	1806	279	**1807**	**279**		
523.xalancbmk_r	384	**1343**	**302**	1342	302			384	**979**	**414**	977	415		
525.x264_r	384	1973	341	**1976**	**340**			192	858	392	**861**	**391**		
531.deepsjeng_r	384	**1108**	**397**	1107	398			384	**1046**	**421**	1044	421		
541.leela_r	384	**1561**	**407**	1537	414			384	**1375**	**462**	1373	463		
548.exchange2_r	384	2293	439	**2296**	**438**			384	1522	661	**1522**	**661**		
557.xz_r	384	**1571**	**264**	1570	264			384	1469	282	**1469**	**282**		

SPECrate2017_int_base = 304

SPECrate2017_int_peak = 372

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

Submit Notes

```
Processes were assigned to specific processors using 'pbind' commands.
The config file option 'submit' was used, along with a list of
processors in the 'BIND' variable, to generate the pbind commands.
(For details, please see the config file.)
```

Operating System Notes

```
Shell Environments:
    ulimit -s 131072 was used to limit the space consumed by the stack
    (and therefore make more space available to the heap).

   The "Logical Domains Manager" service was turned off using the command "svcadm disable ldmd".

System Tunables:
(/etc/system parameters)
    autoup = 86400
        Causes pages older than the listed number of seconds to be written by fsflush.
    doiflush = 0
       Controls whether file system metadata syncs will be executed during fsflush invocations.
    dopageflush = 0
        Controls whether memory is examined for modified pages during fsflush invocations.
    zfs:zfs_arc_max=1073741824
        Determines the maximum size of the ZFS Adaptive Replacement Cache (ARC).
```

General Notes

```
The Building Block (BB) is just a Fujitsu SPARC M12-2S that is the basic
unit to be expanded as if stacking up children's blocks.

File System:
 tmpfs: output_root was used to put run directories in /tmp/cpu2017
 zfs: operating system

Binaries were compiled on a system with 2x SPARC64 XII CPU + 1TB Memory using Oracle Solaris 11.3 SRU 24.4
```

Platform Notes

```
Firmware Settings:
(XSCF operations)
   Set High Speed Mode via XSCF command "sethsmode -s on".

Sysinfo program /export/cpu2017/bin/sysinfo
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f
running on H2S-230-D0 Sat Dec  2 11:29:31 2017

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

From /usr/sbin/psrinfo
   SPARC64-XII (chipid 0, clock 4250 MHz)
   SPARC64-XII (chipid 1, clock 4250 MHz)
   SPARC64-XII (chipid 2, clock 4250 MHz)
   SPARC64-XII (chipid 3, clock 4250 MHz)
   4 chips
   384 threads
   4250 MHz

From kstat:       48 cores

From prtconf: 2093056 Megabytes

/etc/release:
     Oracle Solaris 11.3 SPARC
uname -a:
   SunOS H2S-230-D0 5.11 11.3 sun4v sparc sun4v

disk: df -h /export/cpu2017
Filesystem              Size    Used   Available Capacity  Mounted on
rpool/export            547G    136G         87G     61%    /export
```

(Continued on next page)

Platform Notes (Continued)

```
 (End of data from sysinfo program)
```

Compiler Version Notes

```
==============================================================================
 CXXC 520.omnetpp_r(base) 523.xalancbmk_r(base, peak) 531.deepsjeng_r(base)
      541.leela_r(base)
------------------------------------------------------------------------------
CC: Studio 12.6 Sun C++ 5.15 SunOS_sparc 2017/05/30
------------------------------------------------------------------------------

==============================================================================
CXXC 520.omnetpp_r(peak) 531.deepsjeng_r(peak) 541.leela_r(peak)
------------------------------------------------------------------------------
CC: Studio 12.6 Sun C++ 5.15 SunOS_sparc 2017/05/30
------------------------------------------------------------------------------

==============================================================================
 CC  500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base) 525.x264_r(base)
      557.xz_r(base)
------------------------------------------------------------------------------
cc: Studio 12.6 Sun C 5.15 SunOS_sparc 2017/05/30
------------------------------------------------------------------------------

==============================================================================
CC   500.perlbench_r(peak) 502.gcc_r(peak) 505.mcf_r(peak) 525.x264_r(peak)
     557.xz_r(peak)
------------------------------------------------------------------------------
cc: Studio 12.6 Sun C 5.15 SunOS_sparc 2017/05/30
------------------------------------------------------------------------------

==============================================================================
 FC  548.exchange2_r(base)
------------------------------------------------------------------------------
f90: Studio 12.6 Fortran 95 8.8 SunOS_sparc 2017/05/30
------------------------------------------------------------------------------

==============================================================================
FC   548.exchange2_r(peak)
------------------------------------------------------------------------------
f90: Studio 12.6 Fortran 95 8.8 SunOS_sparc 2017/05/30
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
cc

C++ benchmarks:
CC

Fortran benchmarks:
f90

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:
-m32 -fast -xtarget=sparc64xii -xipo=2 -xpagesize=4M
-xsegment_align=4M -xthroughput -xalias_level=weak

C++ benchmarks:
-m32 -fast -xtarget=sparc64xii -xipo=2 -xpagesize=4M
-xsegment_align=4M -xthroughput -std=c++03 -lfast

Fortran benchmarks:
-m32 -fast -xtarget=sparc64xii -xipo=2 -xpagesize=4M
-xsegment_align=4M -xthroughput

Base Other Flags

C benchmarks:
-xjobs=8

(Continued on next page)

Base Other Flags (Continued)

C++ benchmarks:
-xjobs=8

Fortran benchmarks:
-xjobs=8

Peak Compiler Invocation

C benchmarks:
cc

C++ benchmarks:
CC

Fortran benchmarks:
f90

Peak 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: -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

Peak Optimization Flags

C benchmarks:

500.perlbench_r: -xprofile=collect:./feedback -xprofile=use:./feedback -m32 -fast -xtarget=sparc64xii -xipo=2 -xpagesize=256M -xsegment_align=256M -xthroughput -xO4 -xalias_level=layout -xinline_param=level:3 -lfast

(Continued on next page)

Fujitsu
Fujitsu SPARC M12-2S

SPECrate2017_int_base = 304
SPECrate2017_int_peak = 372

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu
Test Date: Dec-2017
Hardware Availability: Apr-2017
Software Availability: Jul-2017

Peak Optimization Flags (Continued)

502.gcc_r: -xprofile=collect:./feedback -xprofile=use:./feedback -m32 -fast -xtarget=sparc64xii -xipo=2 -xpagesize=256M -xsegment_align=256M -xthroughput -xtarget=sparc64xplus -xipo=1 -xinline_param=level:3 -xprefetch=no%auto -xthroughput=no -lfast

505.mcf_r: -xprofile=collect:./feedback -xprofile=use:./feedback -m32 -fast -xtarget=sparc64xii -xipo=2 -xpagesize=256M -xsegment_align=256M -xthroughput -xalias_level=strong -xprefetch=no%auto -xthroughput=no

525.x264_r: -xprofile=collect:./feedback -xprofile=use:./feedback -m32 -fast -xtarget=sparc64xii -xipo=2 -xpagesize=256M -xsegment_align=256M -xthroughput -xunroll=3 -xprefetch=no%auto -W2,-Afully_unroll:always=on

557.xz_r: -xprofile=collect:./feedback -xprofile=use:./feedback -m32 -fast -xtarget=sparc64xii -xipo=2 -xpagesize=256M -xsegment_align=256M -xthroughput -xalias_level=std -xprefetch=latx:0.4

C++ benchmarks:

520.omnetpp_r: -xprofile=collect:./feedback -xprofile=use:./feedback -m32 -fast -xtarget=sparc64xii -xipo=2 -xpagesize=256M -xsegment_align=256M -xthroughput -xalias_level=compatible -xprefetch=latx:0.4 -library=stdcxx4 -template=extdef -lfast

523.xalancbmk_r: -m32 -fast -xtarget=sparc64xii -xipo=2 -xpagesize=256M -xsegment_align=256M -xthroughput -xprefetch=no%auto -library=stlport4 -lfast

531.deepsjeng_r: -xprofile=collect:./feedback -xprofile=use:./feedback -m32 -fast -xtarget=sparc64xii -xipo=2 -xpagesize=256M -xsegment_align=256M -xthroughput -xalias_level=compatible -xinline_param=level:1 -xunroll=2 -xprefetch=no%auto -std=c++03

541.leela_r: -xprofile=collect:./feedback -xprofile=use:./feedback -m32 -fast -xtarget=sparc64xii -xipo=2 -xpagesize=256M -xsegment_align=256M -xthroughput -xinline_param=max_growth:500 -xprefetch=no%auto -xthroughput=no -Wc,-Qiselect-funcalign=4

(Continued on next page)

Peak Optimization Flags (Continued)

541.leela_r (continued):
-Qoption iropt -Afully_unroll:always=on -std=c++03

Fortran benchmarks:
-xprofile=collect:./feedback -xprofile=use:./feedback -m32 -fast
-xtarget=sparc64xii -xipo=2 -xpagesize=256M -xsegment_align=256M
-xthroughput -xtarget=sparc64xplus -xprefetch=no%auto
-Qoption iropt -Afully_unroll:always=on

Peak Other Flags

C benchmarks:
-xjobs=8

C++ benchmarks:
-xjobs=8

Fortran benchmarks:
-xjobs=8

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/Oracle-Developer-Studio12.6.html
http://www.spec.org/cpu2017/flags/Fujitsu-M12-2S.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Oracle-Developer-Studio12.6.xml
http://www.spec.org/cpu2017/flags/Fujitsu-M12-2S.xml

SPEC is a registered trademark of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2017 v1.0.2 on 2017-12-01 21:29:30-0500.
Report generated on 2018-10-31 13:14:04 by CPU2017 PS formatter v6067.
Originally published on 2017-12-26.