KLMP – KSEFLTESTS TASK- Sergio González Collado

For building the kselftests use:

```
make headers
make -C tools/testing/selftests #you may have to use sudo
```

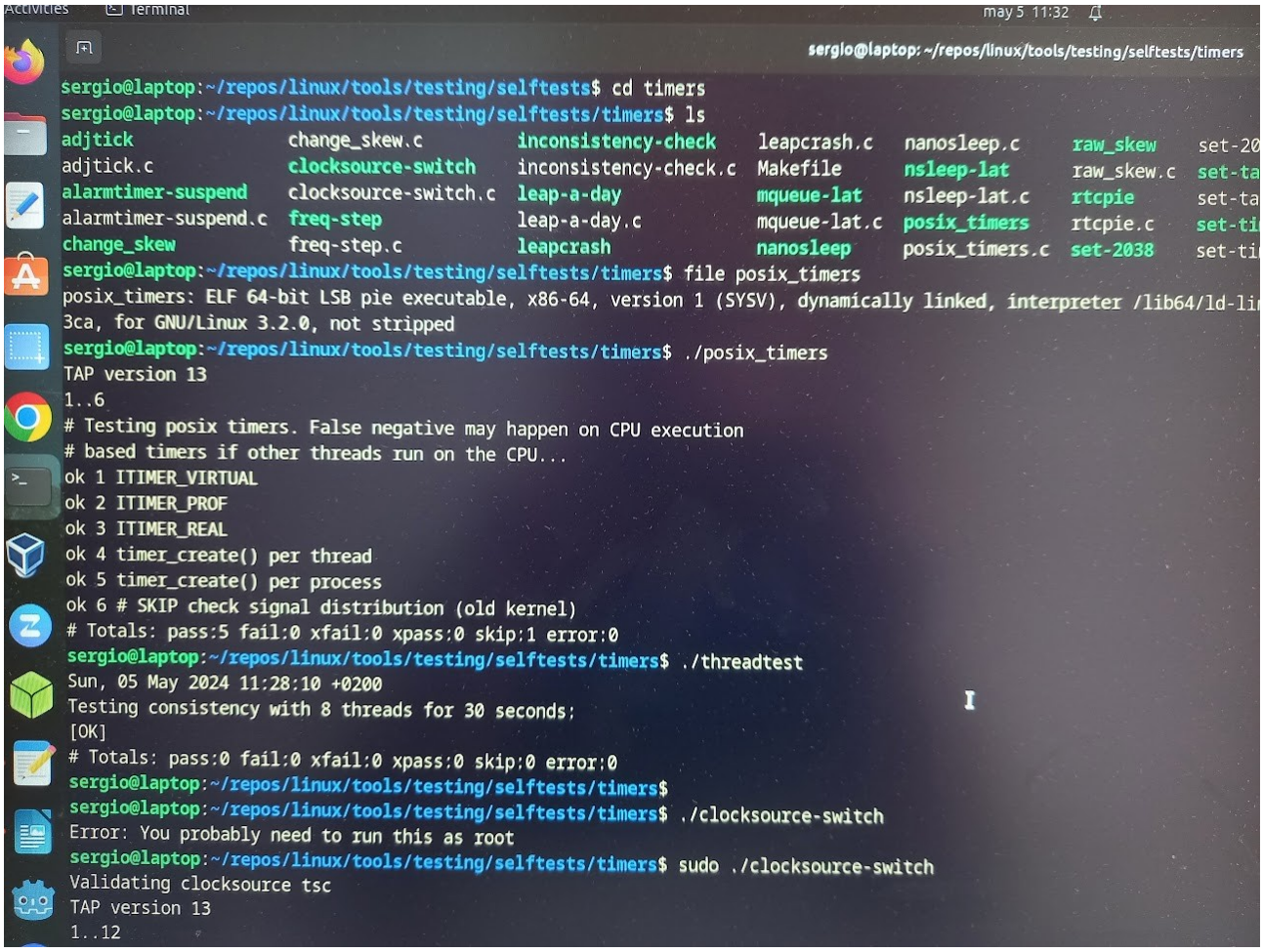
For cleaning the generated files:

```
make kselftests-clean
```

For building and running:

```
make -C tools/testing/selftests run_tests
make kselftest
make summary=1 kselftest # outputs a summary
```

After compiling and example of execution of the self tests is:



```bash
sergio@laptop:~/repos/linux/tools/testing/selftests/timers$ ls
adjtick               change_skew.c         inconsistency-check
leapcrash.c   nanosleep.c     raw_skew    set-2038.c       settings
threadtest
adjtick.c             clocksource-switch    inconsistency-check.c  Makefile
nsleep-lat      raw_skew.c  set-tai          set-tz
threadtest.c
alarmtimer-suspend    clocksource-switch.c  leap-a-day             mqueue-
lat    nsleep-lat.c    rtcpie      set-tai.c        set-tz.c
valid-adjtimex
alarmtimer-suspend.c  freq-step             leap-a-day.c           mqueue-
lat.c  posix_timers    rtcpie.c    set-timer-lat    skew_consistency
valid-adjtimex.c
change_skew           freq-step.c           leapcrash              nanosleep
posix_timers.c  set-2038    set-timer-lat.c  skew_consistency.c
sergio@laptop:~/repos/linux/tools/testing/selftests/timers$ file
posix_timers
posix_timers: ELF 64-bit LSB pie executable, x86-64, version 1 (SYSV),
dynamically linked, interpreter /lib64/ld-linux-x86-64.so.2,
BuildID[sha1]=f3c1adb0d4fb8e8350ae2e2fd4e742315839b3ca, for GNU/Linux 3.2.0,
not stripped
sergio@laptop:~/repos/linux/tools/testing/selftests/timers$ ./posix_timers
TAP version 13
1..6
# Testing posix timers. False negative may happen on CPU execution
# based timers if other threads run on the CPU...
ok 1 ITIMER_VIRTUAL
ok 2 ITIMER_PROF
ok 3 ITIMER_REAL
ok 4 timer_create() per thread
ok 5 timer_create() per process
ok 6 # SKIP check signal distribution (old kernel)
# Totals: pass:5 fail:0 xfail:0 xpass:0 skip:1 error:0
sergio@laptop:~/repos/linux/tools/testing/selftests/timers$ ./threadtest
Sun, 05 May 2024 11:28:10 +0200
Testing consistency with 8 threads for 30 seconds:
[OK]
# Totals: pass:0 fail:0 xfail:0 xpass:0 skip:0 error:0
sergio@laptop:~/repos/linux/tools/testing/selftests/timers$
sergio@laptop:~/repos/linux/tools/testing/selftests/timers$ ./clocksource-
switch
Error: You probably need to run this as root
sergio@laptop:~/repos/linux/tools/testing/selftests/timers$ sudo
./clocksource-switch
Validating clocksource tsc
TAP version 13
1..12
ok 1 CLOCK_REALTIME
ok 2 CLOCK_MONOTONIC
ok 3 CLOCK_PROCESS_CPUTIME_ID
ok 4 CLOCK_THREAD_CPUTIME_ID
ok 5 CLOCK_MONOTONIC_RAW
ok 6 CLOCK_REALTIME_COARSE
ok 7 CLOCK_MONOTONIC_COARSE
ok 8 CLOCK_BOOTTIME
ok 9 CLOCK_REALTIME_ALARM
ok 10 CLOCK_BOOTTIME_ALARM
ok 11 # SKIP UNKNOWN_CLOCKID
ok 12 CLOCK_TAI
# Totals: pass:11 fail:0 xfail:0 xpass:0 skip:1 error:0
TAP version 13
1..12
ok 1 CLOCK_REALTIME
ok 2 CLOCK_MONOTONIC
ok 3 # SKIP CLOCK_PROCESS_CPUTIME_ID
ok 4 # SKIP CLOCK_THREAD_CPUTIME_ID
ok 5 # SKIP CLOCK_MONOTONIC_RAW
```

```
ok 6 # SKIP CLOCK_REALTIME_COARSE
ok 7 # SKIP CLOCK_MONOTONIC_COARSE
ok 8 CLOCK_BOOTTIME
ok 9 CLOCK_REALTIME_ALARM
ok 10 CLOCK_BOOTTIME_ALARM
ok 11 # SKIP UNKNOWN_CLOCKID
ok 12 CLOCK_TAI
# Totals: pass:6 fail:0 xfail:0 xpass:0 skip:6 error:0
Validating clocksource hpet
TAP version 13
1..12
ok 1 CLOCK_REALTIME
ok 2 CLOCK_MONOTONIC
ok 3 CLOCK_PROCESS_CPUTIME_ID
ok 4 CLOCK_THREAD_CPUTIME_ID
ok 5 CLOCK_MONOTONIC_RAW
ok 6 CLOCK_REALTIME_COARSE
ok 7 CLOCK_MONOTONIC_COARSE
ok 8 CLOCK_BOOTTIME
ok 9 CLOCK_REALTIME_ALARM
ok 10 CLOCK_BOOTTIME_ALARM
ok 11 # SKIP UNKNOWN_CLOCKID
ok 12 CLOCK_TAI
# Totals: pass:11 fail:0 xfail:0 xpass:0 skip:1 error:0
TAP version 13
1..12
ok 1 CLOCK_REALTIME
ok 2 CLOCK_MONOTONIC
ok 3 # SKIP CLOCK_PROCESS_CPUTIME_ID
ok 4 # SKIP CLOCK_THREAD_CPUTIME_ID
ok 5 # SKIP CLOCK_MONOTONIC_RAW
ok 6 # SKIP CLOCK_REALTIME_COARSE
ok 7 # SKIP CLOCK_MONOTONIC_COARSE
ok 8 CLOCK_BOOTTIME
ok 9 CLOCK_REALTIME_ALARM
ok 10 CLOCK_BOOTTIME_ALARM
ok 11 # SKIP UNKNOWN_CLOCKID
ok 12 CLOCK_TAI
# Totals: pass:6 fail:0 xfail:0 xpass:0 skip:6 error:0
Validating clocksource acpi_pm
TAP version 13
1..12
ok 1 CLOCK_REALTIME
ok 2 CLOCK_MONOTONIC
ok 3 CLOCK_PROCESS_CPUTIME_ID
ok 4 CLOCK_THREAD_CPUTIME_ID
ok 5 CLOCK_MONOTONIC_RAW
ok 6 CLOCK_REALTIME_COARSE
ok 7 CLOCK_MONOTONIC_COARSE
ok 8 CLOCK_BOOTTIME
ok 9 CLOCK_REALTIME_ALARM
^[[Aok 10 CLOCK_BOOTTIME_ALARM
ok 11 # SKIP UNKNOWN_CLOCKID
ok 12 CLOCK_TAI
# Totals: pass:11 fail:0 xfail:0 xpass:0 skip:1 error:0
TAP version 13
1..12
ok 1 CLOCK_REALTIME
ok 2 CLOCK_MONOTONIC
ok 3 # SKIP CLOCK_PROCESS_CPUTIME_ID
ok 4 # SKIP CLOCK_THREAD_CPUTIME_ID
ok 5 # SKIP CLOCK_MONOTONIC_RAW
ok 6 # SKIP CLOCK_REALTIME_COARSE
ok 7 # SKIP CLOCK_MONOTONIC_COARSE
ok 8 CLOCK_BOOTTIME
ok 9 CLOCK_REALTIME_ALARM
ok 10 CLOCK_BOOTTIME_ALARM
ok 11 # SKIP UNKNOWN_CLOCKID
ok 12 CLOCK_TAI
```

```
# Totals: pass:6 fail:0 xfail:0 xpass:0 skip:6 error:0
Running Asynchronous Switching Tests...
TAP version 13
1..12
ok 1 CLOCK_REALTIME
ok 2 CLOCK_MONOTONIC
ok 3 CLOCK_PROCESS_CPUTIME_ID
ok 4 CLOCK_THREAD_CPUTIME_ID
ok 5 CLOCK_MONOTONIC_RAW
ok 6 CLOCK_REALTIME_COARSE
ok 7 CLOCK_MONOTONIC_COARSE
ok 8 CLOCK_BOOTTIME
ok 9 CLOCK_REALTIME_ALARM
ok 10 CLOCK_BOOTTIME_ALARM
ok 11 # SKIP UNKNOWN_CLOCKID
ok 12 CLOCK_TAI
# Totals: pass:11 fail:0 xfail:0 xpass:0 skip:1 error:0
TAP version 13
1..12
ok 1 CLOCK_REALTIME
ok 2 CLOCK_MONOTONIC
ok 3 # SKIP CLOCK_PROCESS_CPUTIME_ID
ok 4 # SKIP CLOCK_THREAD_CPUTIME_ID
ok 5 # SKIP CLOCK_MONOTONIC_RAW
ok 6 # SKIP CLOCK_REALTIME_COARSE
ok 7 # SKIP CLOCK_MONOTONIC_COARSE
ok 8 CLOCK_BOOTTIME
ok 9 CLOCK_REALTIME_ALARM
ok 10 CLOCK_BOOTTIME_ALARM
ok 11 # SKIP UNKNOWN_CLOCKID
ok 12 CLOCK_TAI
# Totals: pass:6 fail:0 xfail:0 xpass:0 skip:6 error:0
TAP version 13
1..1
ok 1 clocksource-switch
# Totals: pass:1 fail:0 xfail:0 xpass:0 skip:0 error:0
```