



arm

# TF-M Tests Out-of-Tree Build

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# Purposes

TF-M supports two ways to maintain platform specific tests code

- Creating a folder for vendors to upstream the code
  - Welcome upstream!
- **Out-of-tree build:**
  - Perform tests quickly during development to improve test efficiency.
  - Maintain tests code outside tf-m-tests repo in case of confidential information or IP issues.
- [[TF-M patch](#)][[tf-m-tests patch](#)][[tf-m-extras patch](#)] for out-of-tree build are under review.

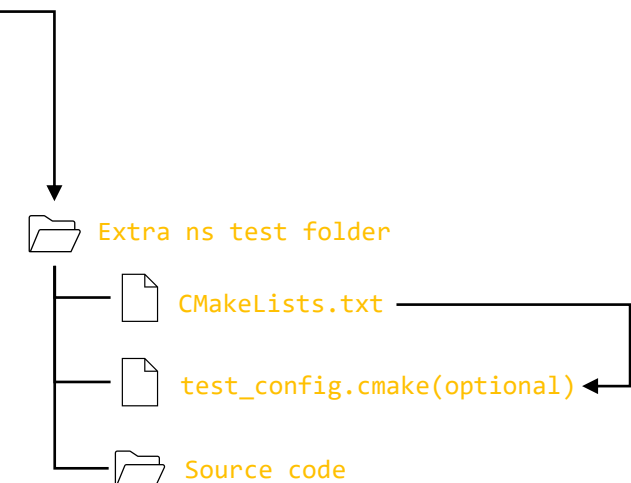
# Proposal

- Two new configurations via command line
  - **EXTRA\_NS\_TEST\_SUITES\_PATHS**
    - A list of the absolute directories of the out-of-tree non-secure test suites source code folder(s).
  - **EXTRA\_S\_TEST\_SUITES\_PATHS**
    - A list of the absolute directories of the out-of-tree secure test suites source code folder(s).

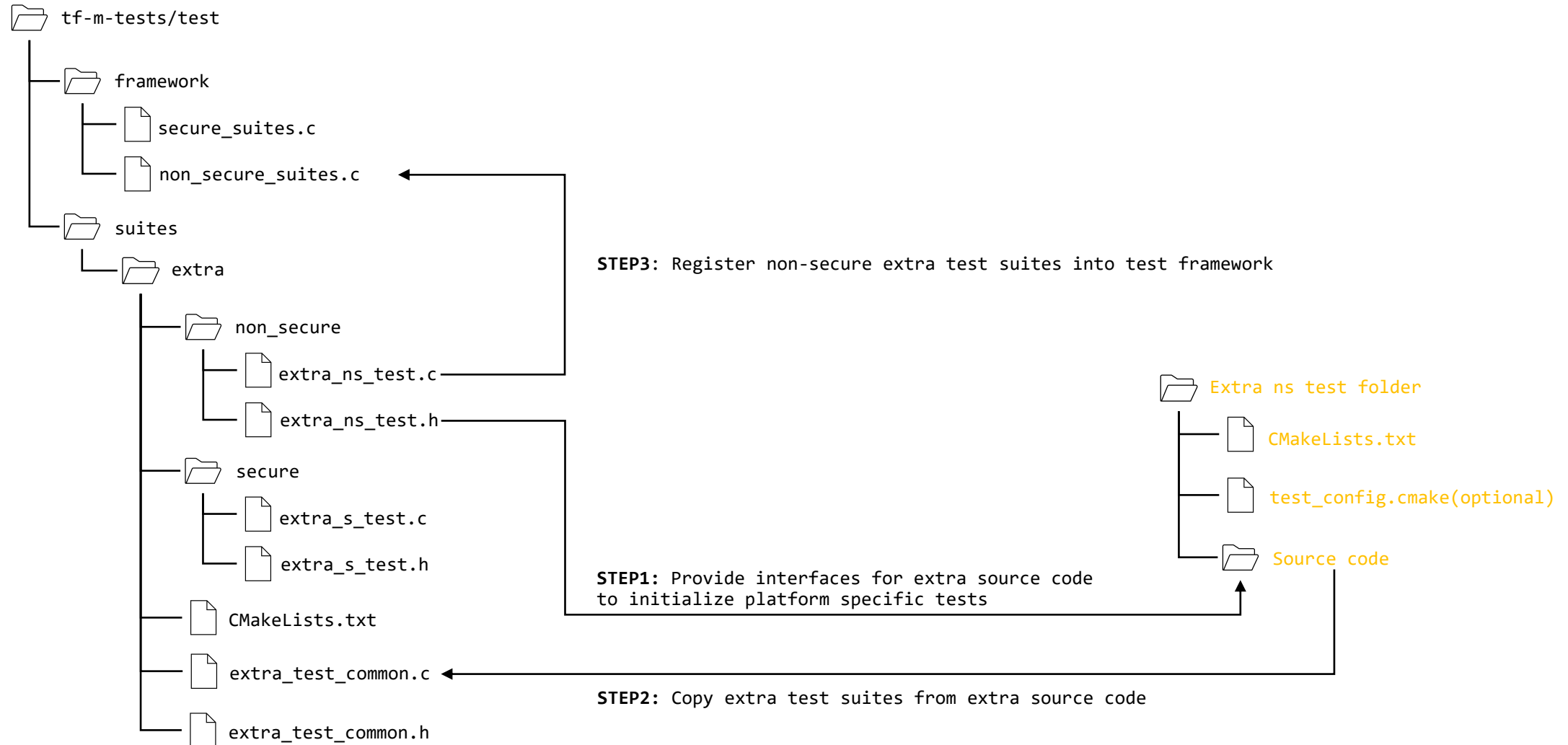
```
cmake -S . -B build
```

```
.....
```

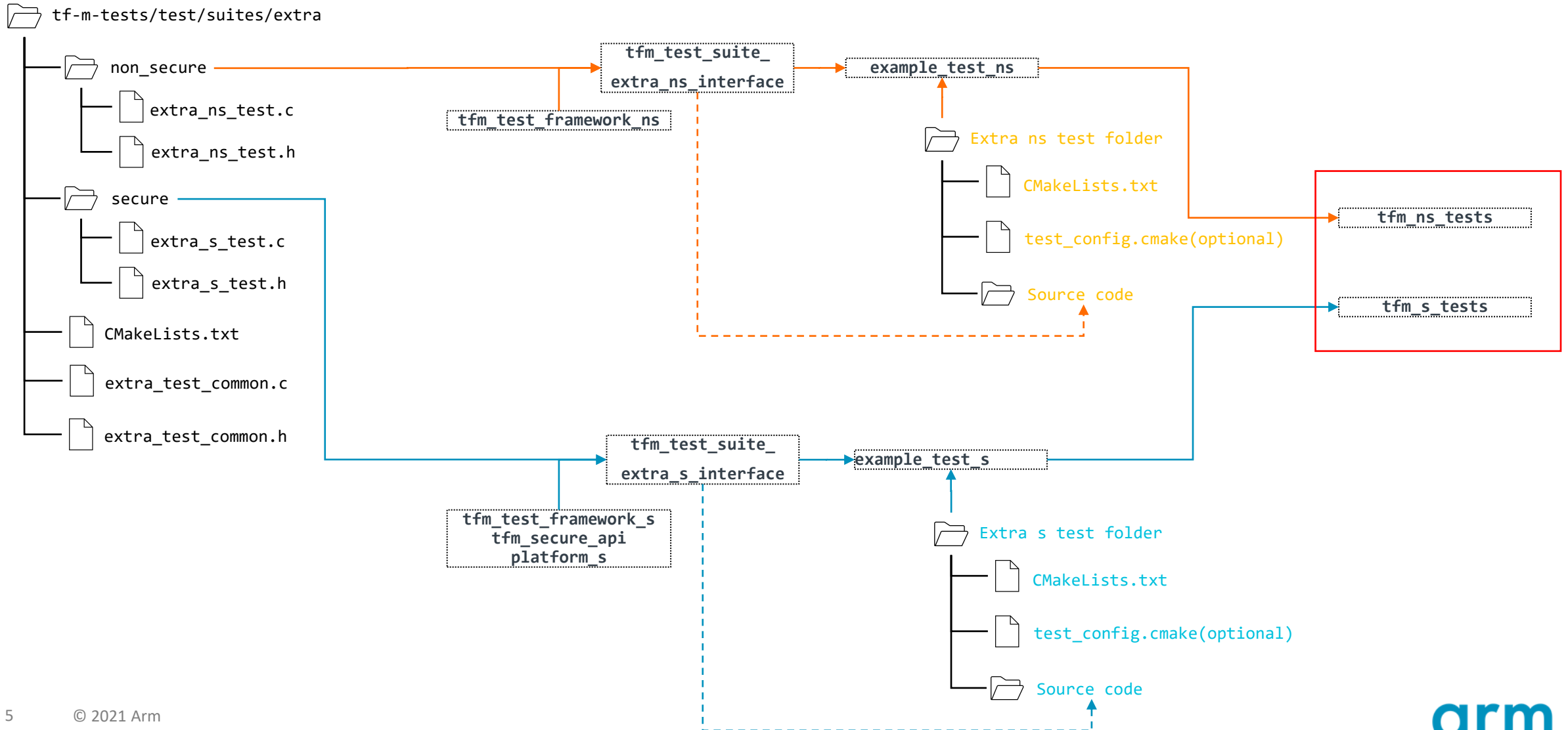
```
-DEXTRA_NS_TEST_SUITES_PATHS=<Absolute-path-extra-test-folder>
```



# Implementation details--Code



# Implementation details--Library



# Usage

- The example is in [[tf-m-extras patch](#)] .
- Function '*ns\_test*' is the high-level function of the total tests.
- The declaration of function '*extra\_ns\_tests\_init*' is in tf-m-tests repo, it shall be defined in extra source code.
- The last step in function '*extra\_ns\_tests\_init*' is to copy '*plat\_ns\_t*' to tf-m-tests repo.

```
int32_t ns_test(void)
{
    /* Add platform specific non-secure test suites code here. */
    return EXTRA_TEST_SUCCESS;
}
```

```
const struct extra_tests_t plat_ns_t = {
    .test_entry = ns_test,
    .expected_ret = EXTRA_TEST_SUCCESS
};

enum test_suite_err_t extra_ns_tests_init(struct extra_tests_t *internal_test_t)
{
    /* Add platform init code here. */

    return register_extra_tests(internal_test_t, &plat_ns_t);
}
```

# Result

The out-of-tree test source has been registered and are named as TFM\_EXTRA\_TEST\_1001.

```
Telnet localhost
Non-Secure system starting...

#### Execute test suites for the Secure area ####
Running Test Suite Extra Secure interface tests(TFM_S_EXTRA_TEST_1XXX)...
> Executing 'TFM_EXTRA_TEST_1001'
  Description: 'Extra Secure test'

#### This is extra Secure test ####
  TEST: TFM_EXTRA_TEST_1001 - PASSED!
TESTSUITE PASSED!

*** Secure test suites summary ***
Test suite 'Extra Secure interface tests(TFM_S_EXTRA_TEST_1XXX)' has PASSED

*** End of Secure test suites ***

#### Execute test suites for the Non-secure area ####
Running Test Suite Extra Non-Secure interface tests(TFM_NS_EXTRA_TEST_1XXX)...
> Executing 'TFM_EXTRA_TEST_1001'
  Description: 'Extra Non-Secure test'

#### This is extra Non Secure test ####
  TEST: TFM_EXTRA_TEST_1001 - PASSED!
TESTSUITE PASSED!

*** Non-secure test suites summary ***
Test suite 'Extra Non-Secure interface tests(TFM_NS_EXTRA_TEST_1XXX)' has PASSED

*** End of Non-secure test suites ***
```

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Thank You

Danke

Gracias

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Asante

Merci

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Thank You

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