



TF-M Regression Test Refinements Summary

Since TF-M v1.4.0

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Summary

+ Major Features

- Add control of individual test suite
- Support extra test suites for out-of-tree build
- Run secure tests alone in IPC model without NS side

+ Restructure

- Test services are moved into related test suites folders
- Test specific configurations are moved to tf-m-tests repo

+ Minor Improvements

- Get rid of test result from each test suite structure
- Add TEST_SKIPPED in test results

Add Individual Test Suite Control

- + Those new control flags are added, TEST_NS/TEST_S are still used to control all non-secure and secure test suites.
- + Now we can use single test configuration to control what we want to build. This will help:
 - Decrease the binary size and build time.
 - Decrease the runtime cost.
 - Developers focus on specific tests and thus debug quickly.

-DTEST_NS=OFF

```
-DTEST_NS_ATTESTATION=OFF
-DTEST_NS_AUDIT=OFF
-DTEST_NS_CRYPT=OFF
-DTEST_NS_ITS=OFF
-DTEST_NS_PS=OFF
-DTEST_NS_PLATFORM=OFF
-DTEST_NS_FWU=OFF
-DTEST_NS_IPC=OFF
-DTEST_NS_FPU=OFF
-DTEST_NS_CORE=OFF
-DTEST_NS_QCBOR=OFF
-DTEST_NS_T_COSE=OFF
-DTEST_NS_MULTI_CORE=OFF
-DTEST_NS_SLIH_IRQ=OFF
-DTEST_NS_FLIH_IRQ=OFF
-DTEST_NS_SFN_BACKEND=OFF
-DTEST_NS_MANAGE_NSID=OFF
```

-DTEST_S=OFF

```
-DTEST_S_ATTESTATION=OFF
-DTEST_S_AUDIT=OFF
-DTEST_S_CRYPT=OFF
-DTEST_S_ITS=OFF
-DTEST_S_PS=OFF
-DTEST_S_PLATFORM=OFF
-DTEST_S_FWU=OFF
-DTEST_S_IPC=OFF
-DTEST_S_FPU=OFF
```

Add Individual Test Suite Control

+ Note:

- A new single test suite configuration should begin with 'TEST_NS_'/'TEST_S_'
- Need to check dependencies like:
 - + Platform support
 - + Partitions or test services
 - + Conflicts with other test cases
- More details: [Adding a new test suite](#)
- Those files need attention:

File	Function
set_config.cmake	Silence test configurations if dependencies are not supported
default_test_config.cmake	Default test configurations when TEST_NS=OFF and TEST_S=OFF
default_ns_test_config.cmake	Default non-secure configurations when TEST_NS=ON
default_s_test_config.cmake	Default secure configurations when TEST_S=ON
check_config.cmake	Check the valid configurations from command line

Extra test suites

- + Extra test folder is provided for developers to implement their local tests quickly.
 - Perform tests quickly to improve test efficiency.
 - Maintain tests code outside tf-m-tests repo in case of confidential information or IP issues
- + How to use:
 - EXTRA_NS_TEST_SUITES_PATHS and EXTRA_S_TEST_SUITES_PATHS are provided for users to import extra test suites code paths.
 - tf-m-tests/test/secure_fw/suites/extra folder provides several interfaces for developers to connect to TF-M test framework to join secure or non-secure tests.
 - More details: [Out-of-tree regression test suites](#)

Run secure tests alone

- + Now secure tests can run without non-secure side in **IPC model**. Developers of platforms can verify the secure test image first without preparing non-secure image especially in dual-core platform.
- + For 'A+M' platforms, secure image for Cortex-M core can be built individually, and these interfaces or services required by NS side (like Linux) will be selected.
 - We can build a secure image first to meet NS side requirements
 - This secure image can run individually on Cortex-M core to run secure test
 - Platform maintainers don't need to create the NS image at the very beginning

Move service to related test suite folder

- + Help users/developers to more easily understand the dependencies between test suites and services.
- + It becomes more flexible for developers to organize the test folder structure.
- + It becomes more easier for developers to implement those complex tests, including:
 - Multiple suites may depend on the same service. We put a `common_test_services` folder to maintain these services.
 - Some suites and services may share definitions/implementations.
 - + It is easier to find head files in `CMakeLists.txt`

Some other changes

- + Test specific configurations are moved into tf-m-tests repo.
 - It will help further decouple TF-M and tf-m-tests repo.
- + Minor changes:
 - Remove test result from each test suite structure to decrease code size.
 - TEST_SKIPPED will be supported in test framework.

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Thank You

Danke

Gracias

Grazie

谢谢

ありがとう

Asante

Merci

감사합니다

धन्यवाद

Kiitos

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