

Web TCT User Guide

Version 1.0, for Tizen 2.2.1

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1 Introduction

This document provides comprehensive information about Web TCT Test Set, including the following: Overview, Prerequisites, Installation and Usage, Troubleshooting and Known Issue etc.

2 Web TCT Overview

2.1 What is Web TCT?

TCT is short for the Tizen Compliance Tests, which validates platform compatibility for Tizen. Web TCT consists of Web TCT Manager (UI tool), Web TCT Shell (console tool), Testkit-lite (backend test runner), Web TCT Behavior Test Tool (device behavior checker) and the web test suites. This document provides comprehensive information about the Tizen Compliance Tests (TCT) tools, with an overview, installation instructions, configuration data, testing instructions, troubleshooting information, and known issues.

2.2 How does Web TCT work?

Web TCT has four main components:

- **Web TCT Manager** is a java GUI tool that runs on the host machine, allow users to create a test execution plan, trigger the test execution, and view the test report. By supporting both automated and manual web API testing, Web TCT Manager makes it much easier for users to conduct TCT tests and enter hardware capability information.
- **Web TCT Behavior Test Tool** is a device behavior checker from a user perspective. It can be manually launched and operated by clicking the corresponding thumbnail icon on target devices.
- **Web TCT Shell** is a lightweight console tool that runs on the host machine, allowing users to debug single failed case, or trigger TCT testing with an existing test plan by specifying a test suite list or test case ID. Test suites are executed on target devices under the management of Testkit-lite.
- **Testkit-lite** is a back-end test runner that communicates with Testkit-stub through the Smart Development Bridge (SDB).

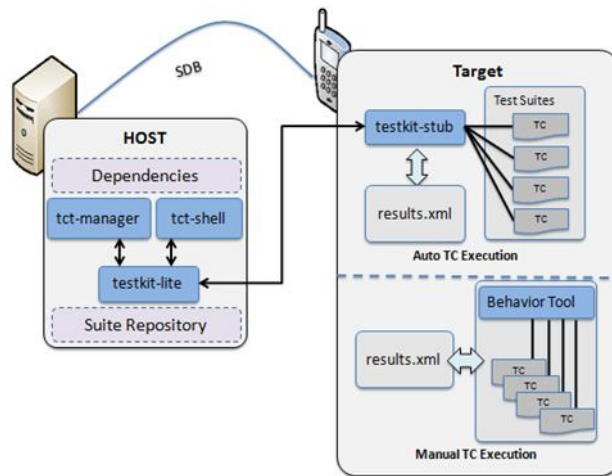


Figure 2-1. Web TCT Workflow

2.3 Test Coverage

Tizen Web TCT covers the web requirements in the Tizen Compliance Specification Mobile Profile (<https://source.tizen.org/compliance/compliance-specification>):

- Tizen Web API
- Tizen Web Runtime
- Web User Interface Framework (UIFW)
- Supplementary APIs
- Device Behavior Features
- Device Capability Features

2.4 Glossary

TC: Test Case

TCT: Tizen Compliance Tests

Testkit-stub: program running on target device that communicates with testkit-lite to conduct the web testing

3 Prerequisites

Make sure these items in place are ready before starting:

- One of the following Linux distribution versions is installed:

- Ubuntu 12.04 (32-bits)
- Ubuntu 12.04 (64-bits)
- Ubuntu 12.10 (32-bits)
- Ubuntu 12.10 (64-bits)
- Tizen capable devices with the latest Tizen implementation are available.
- A network environment is available for getting dependency packages from the Ubuntu repository or any internal mirror.
- There is a USB connection between the host and the target device.
- Enable “USB debugging” option in settings on target device.
- Ensure the “unzip” command-line tool installed on target device.

4 Installing Web TCT

4.1 The installation procedure

1. Download Web TCT tarball package from <http://download.tizen.org/tct/> to your host machine.
2. Power off and then power on your device to make sure the device environment is clean.
3. To burn the new Tizen image to the target device (refer to <https://source.tizen.org/documentation/reference/flash-device>) and make sure the host machine is well connected to the target device through USB. The device need enable ‘USB debugging’ in setting. If you already have SDB installed on your host machine, you can check using this command:

```
$ sdb devices
```

Device will be shown if it’s properly attached to the host machine.

4. Un-compress Web TCT tarball package. Install Web TCT Manager and packages on your host machine.

```
$ sudo tar -zxf <TCT_package.tar.gz>
$ cd <TCT_pkg_folder>/tools
$ sudo ./tct-config-host.sh
$ ./tct-config-device.sh
```

The following message indicates that Web TCT has been successfully installed:

“All of host installation process is DONE” after running `tct-config-host.sh`, and “All of installation process on device are completed” after running `tct-config-device.sh`.

If this message appears without any errors or warnings, key packages for both the host machine and the target device have been successfully generated and are ready for use.

Web TCT depend on openJDK7 or JDK6 upper version. Make sure JDK version is correct.

4.2 Host Machine Layout after Installation

The key packages are: Web TCT Manager, Web TCT Shell, Testkit-lite and sdb.

Web TCT test packages are available in the `/opt/tct/packages/` folder.

There are some dependency packages installed on the host for Web TCT: `rpm2cpio`, `tree`, `python-support`, `python-pip`, and `python-requests`.

4.3 Target Device Layout after Installation

The key packages are: Testkit-stub, TinyWeb service (which is launched as a daemon), getCap and Web TCT BehaviorTest Tool widgets (which are installed on the home screen).

Note: TinyWeb is an embedded web server that runs on the device. It provides an HTTP directory, CGI, and a WebSocket service for web testing. getCap is a widget to collect hardware capability information of current target device.

5 Using Web TCT

5.1 Using Web TCT Manager

This section presents the basic functions of Web TCT Manager. For detailed usage of Web TCT Manager, please refer to the user guide in help, or refer to the document referenced in item 2 of the appendix at the end of this document.

5.1.1 Launching Web TCT Manager on Host Machine

Launch the Web TCT Manager by shell command:

```
$ tct-mgr
```

When the below screen is shown, Web TCT Manager is launched successfully.

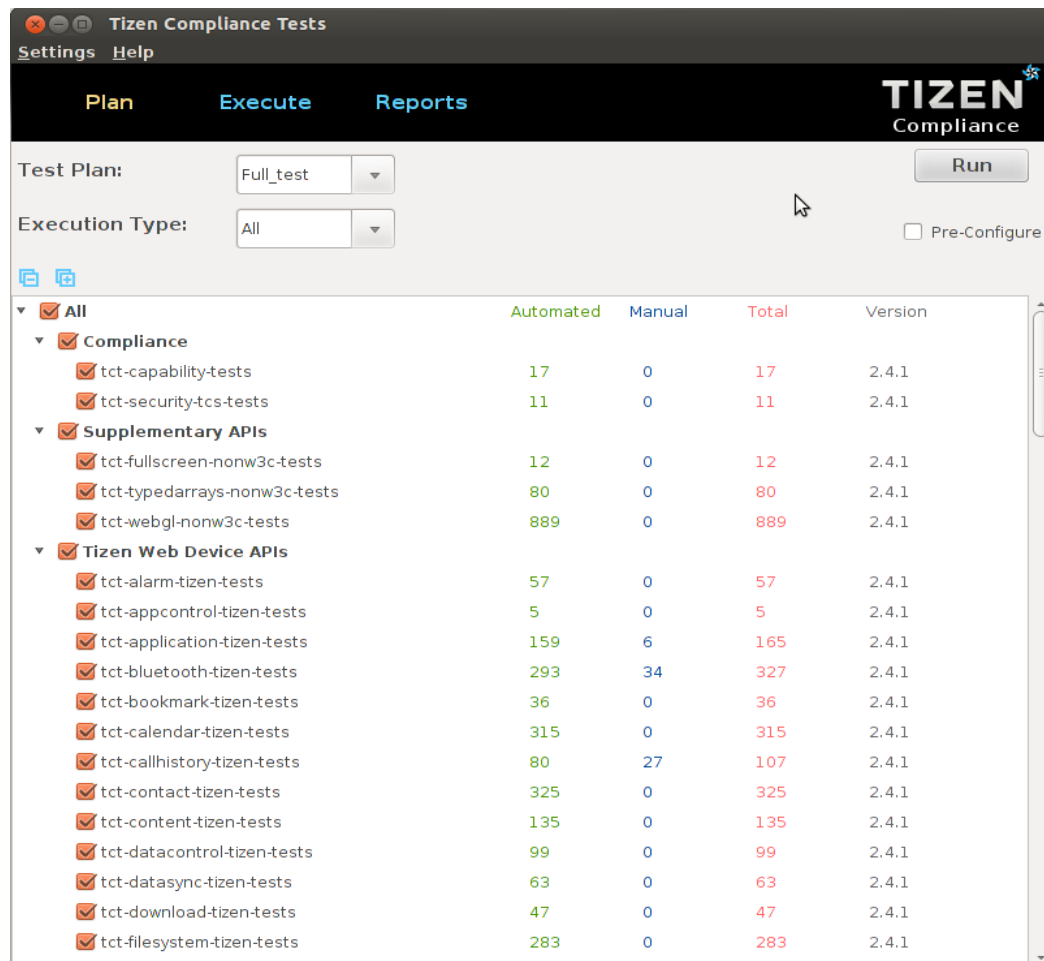


Figure 5-1. Web TCT Manager Plan Page

5.1.2 Selecting or Creating a Test Plan

On the Plan page, the default test plan is Full_test for all automated execution types. To use this, click **Run** button.

Select some packages and click **Run** button. A dialog will pop-up to guide to save a new plan, configure the device, and start to run the test.

5.1.3 Configuring Test Environment

According to pre-configuration steps in the pop-up dialog, set the test environment before start testing.

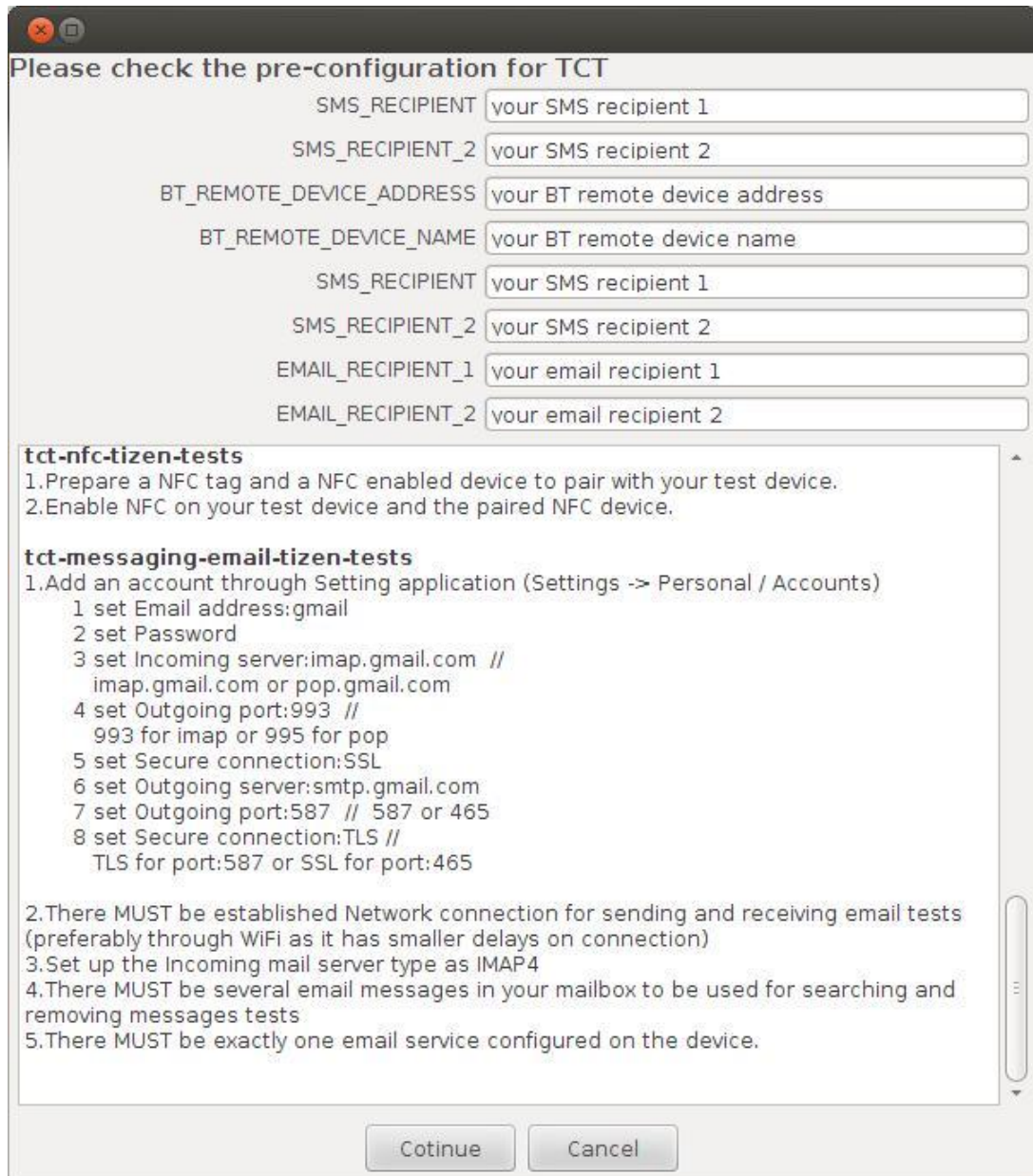


Figure 5-2. Web TCT Manager Pre-configuration Page

5.1.4 Monitoring Test Execution

After clicking **Close** button in the configuration window, Web TCT Manager will go to Execute page. The test status and log information will appear there. Clicking **Suspend** button can stop the test.

5.1.5 Retrieving Test Result

The test summary and details of the current test appear when the test is done. When select the Plan page, the history testing information will show up. Clicking functional icons can easily export a test report or rerun failed cases for any test plan.

5.2 Using Web TCT Shell

This section presents basic Web TCT Shell functions. For more details on this tool, refer to document referenced in entry1 in the appendix at the end of this document.

5.2.1 Getting help

To use Web TCT Shell on the host machine to get help:

```
$ tct-shell
```

5.2.2 Running Tests

To use Web TCT Shell on the host machine:

Run an existing test plan

```
$tct-shell --plan-list
```

```
$tct-shell --testplan '<somewhere/testplan.xml>'
```

Run one or multiple test packages

```
$tct-shell --test '<package1, package2, ..., packageN>'
```

Run one test case

```
$tct-shell --test 'package' --id <caseid>
```

Rerun cases that failed

```
$tct-shell --rerun-fail '<somewhere/test-result.xml>'
```

5.2.3 Checking Test Result

Check the result by viewing the test summary displayed on the web page.

Note: Upon test completion, Web TCT Shell automatically launches Firefox to display the test summary.

5.2.4 Debugging Test Case

After getting the case ID from the test summary, show the log and perform debugging by executing this command:

```
$tct-shell --test 'package' --id <caseid>
```

To get dlog information when debugging one case, following steps should be run beforehand:

1. enable dlog logging on target device

```
$ dlogctrl set platformlog 1
```

2. reboot target device
3. run web testing by Web TCT Shell
4. check dlog information in report

5.3 Using the Web TCT Behavior Test Tool

Web TCT Behavior Test Tool is used to check how correct the device behavior is. All of the cases that run in Web TCT Behavior Test Tool are manual or semi-manual.

This section presents basic functions. For details on the Web TCT Behavior Test Tool, check the document referenced in entry 3 of the appendix, at the end of this document.

5.3.1 Launching the Web TCT Behavior Test Tool

The Web TCT Behavior Test Tool widget is installed on the target device after run `./tct-config-host.sh` on the host machine. The home screen looks like this:

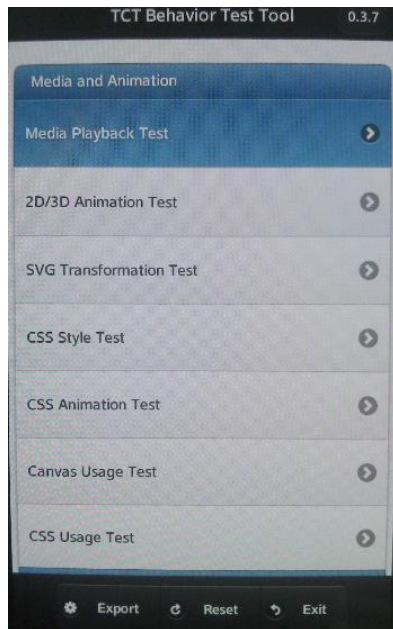


Figure 5-3. Web TCT Behavior Test Tool Home screen

5.3.2 Checking the behavior cases one by one

Click on every item, and go to the detailed check screen for current device behavior. Take VideoPlayback as an example. Below screen will show:

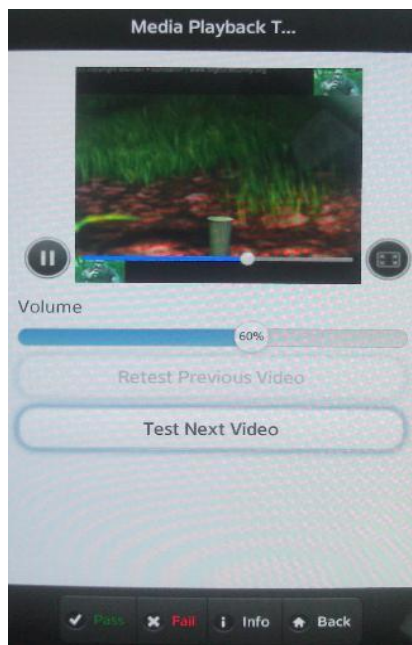


Figure 5-4. Web TCT Behavior Test Tool VideoPlayBack screen

Click **Play** button to check the playback quality of the video clip, and then click **Pass** or **Fail** button based on the output quality.

5.3.3 Getting the Result File

After all the items are checked, click Export on the home screen and export the XML test report to local file system.

6 Troubleshooting

1. **Q:** On target device, power consumption is faster than power charging through a USB cable. What should I do to make sure the full TCT test can be executed on my device?

A: Use target device with a power supply

2. **Q:** Some web test packages failed to be installed on the target device. What should I do?

A: It might be because the certification for these packages did not pass. Set the target device's time and date to the current date to avoid this issue.

7 Known Issues

1. Symptom: All automated testing fails and an error message says: "fail to connect with test service."

Solution: After changing to use another target device, need to rerun `tct-config-device.sh` on host side to set up the test environment of the new target device.

2. Symptom: When rerunning failed cases, the UIFW package will not be tested even there is failed cases in UIFW.

Solution: Rerunning UIFW failed case is not supported yet.

A Appendix

1. To use the Web TCT Shell console tool, launch it in host machine by using the Web TCT Shell command. To see command usage, enter Web TCT Shell --help. The user guide is available in `./doc/Web_TCT_2.2.1_Shell_User_Guide_v1.0.pdf`
2. To use Web TCT Manager and review the results, please follow instructions in `./doc/Web_TCT_2.2.1_Manager_User_Guide_v1.0.pdf`.
3. To check Tizen device behavior status, launch the Web TCT Behavior Test Tool on the target device by clicking the widget icon, and then follow the instructions in `./doc/Web_TCT_2.2.1_Behavior_Test_Tool_User_Guide_v1.0.pdf`.