Web TCT User Guide

Version 1.0, for Tizen 2.3.1

Contents

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).

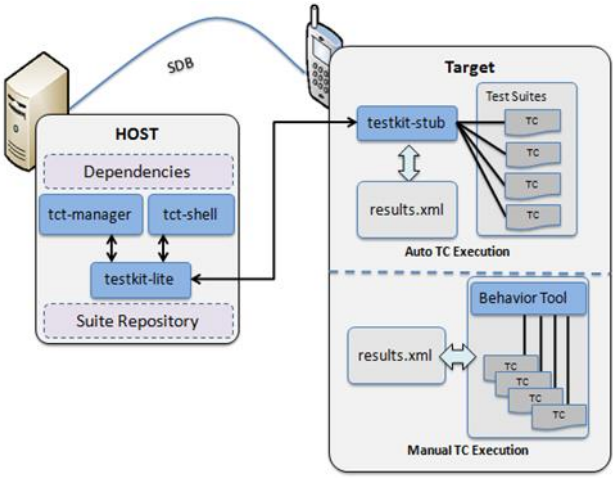

Figure 2-1. Web TCT Workflow

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:

3.1 Host Requirements

- One of the following OS distribution versions is installed:
  - Ubuntu 12.04 (32-bits)
  - Ubuntu 12.04 (64-bits)
  - Ubuntu 12.10 (32-bits)
  - Ubuntu 12.10 (64-bits)
  - Windows 7 (32-bits)
  - Windows 7 (64-bits)
- OpenJDK7 or oracle JDK6 (or later version).
- TIZEN SDK: make sure sdb is set in $PATH to be accessed from anywhere.
- Python2.7: for windows Host, "c:\Python27\" is required as installation location.
- Python library package: requests (version> 1.0.0)

3.2 Device Requirements

- Tizen capable devices with the latest Tizen implementation are available.
- 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

- Download Web TCT release from http://download.tizen.org/tct/ to your host machine.
- Reboot your device to make sure the device environment is clean.
- 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 the device connected with sdb command:

```
$ sdb devices
```

The key packages of Web TCT on Host: Web TCT Manager, Web TCT Shell, Testkit-lite.

The key packages of Web TCT on Device: Testkit-stub, Tinyweb.

4.2 Installation on Ubuntu Host

Un-compress Web TCT tar ball to local path on Ubuntu Host.

You can get help information of the config script firstly.

```
$ cd /path/to/<TCT_pkg_folder>/tools
$ python ./tct-config-host.py -h
$ python ./tct-config-device.py -h
```

- Deployment on Host

```
$ cd /path/to/<TCT_pkg_folder>/tools
$ sudo python ./tct-config-host.py
```

- Deployment on Device

```
$ cd /path/to/<TCT_pkg_folder>/tools
$  python ./tct-config-device.py
```

4.3 Installation on Windows Host

Un-compress Web TCT zip file to local path on Windows Host.

You can get help information of the config script firstly.

```
$ cd  <path_to>\<TCT_pkg_folder>\tools
$ c:\Python27\python.exe   tct-config-host.py -h
$ c:\Python27\python.exe   tct-config-device.py -h
```

- Deployment on Host

```
$ cd  <path_to>\<TCT_pkg_folder>\tools
$ c:\Python27\python.exe   tct-config-host.py
```

- Deployment on Device

```
$ cd <path_to>\<TCT_pkg_folder>\tools
$ c:\Python27\python.exe  tct-config-device.py
```

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 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:

On Ubuntu Host:

```
$ /opt/tct/tizen_web_2.3.1/tct-mgr
```

On Windows Host:

```
$ c:\opt\tct\tizen_web_2.3.1\tct-mgr
```

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

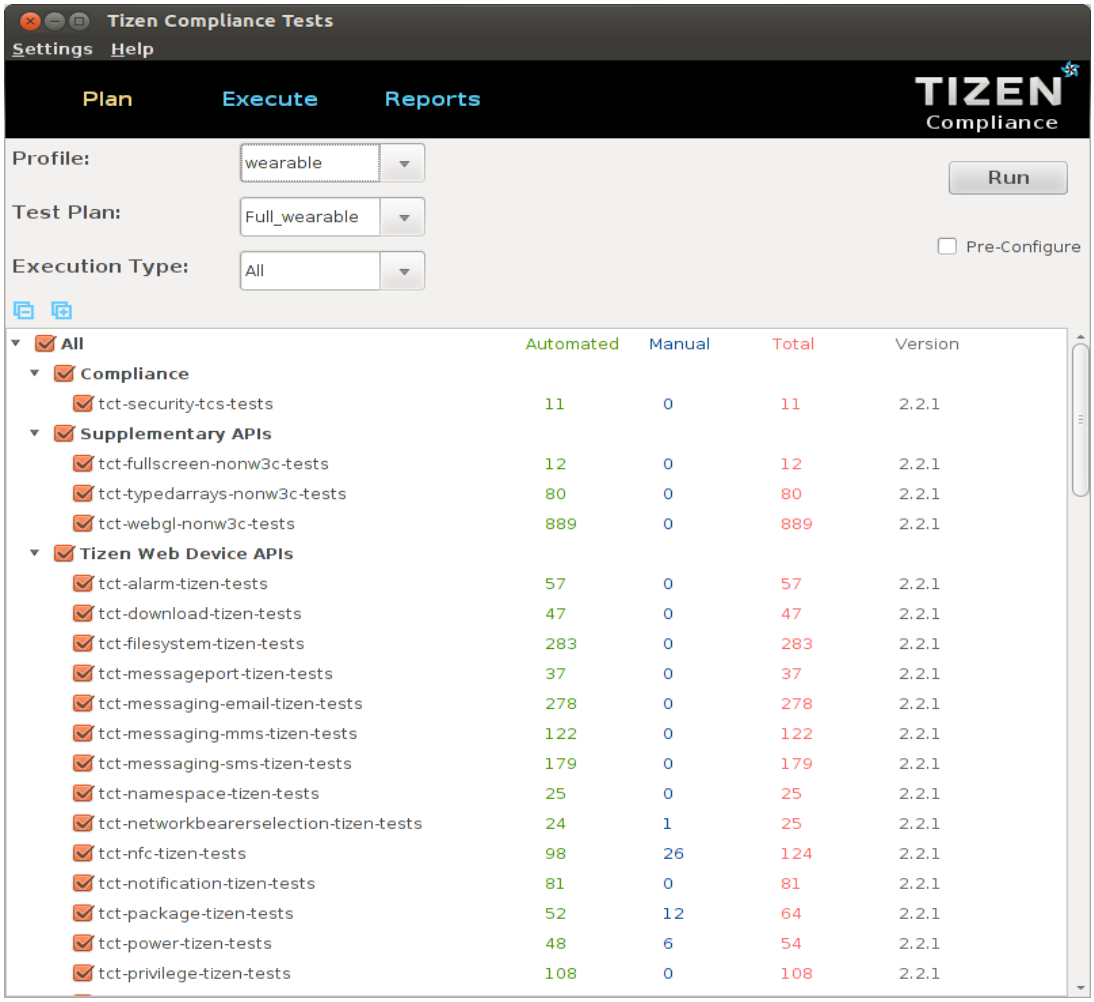

Figure 5-1.Web TCT Manager Plan Page

5.1.2 Selecting or Creating a Test Plan

On the Plan page, select a test profile to switch the test plan set. For instance, the “Full_wearable” is a test plan includes all test suites. 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.

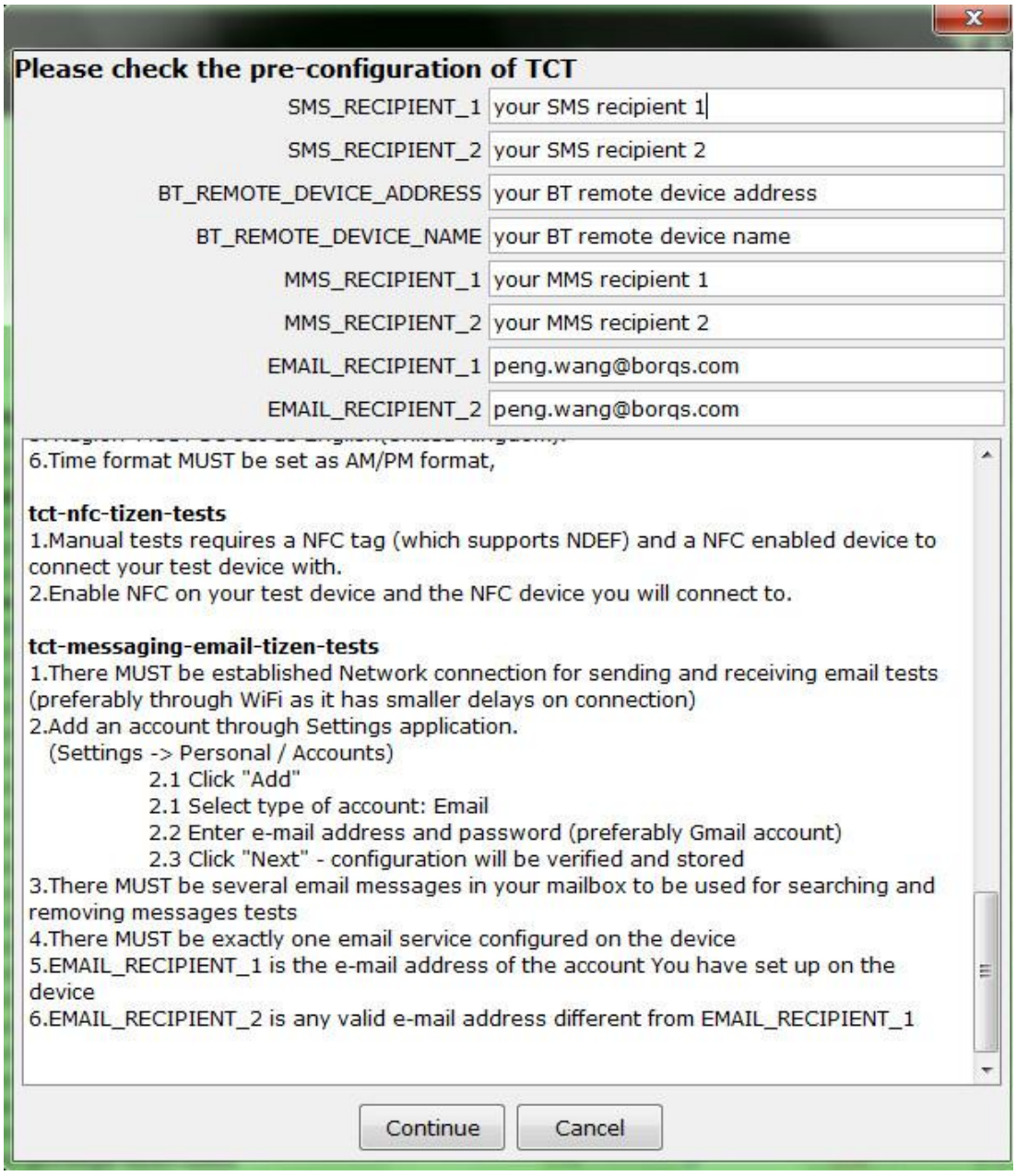

Figure 5-2. Web TCT Manager Pre-configuration Page

5.1.4 Monitoring Test Execution

After clicking **Continue** 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 Reports 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 entry 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:

```
$ cd /opt/tct/tizen_web_2.3.1/
$ 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 of the appendix, at the end of this document.

5.3.1 Installing the Web TCT Behavior Test Tool

The Web TCT Behavior Test Tool widget is installed on the target device after run tct-config-device.py with option "--bhtest **<device_profile>**", for instance we can install behavior test tool in wearable device as below

- On Windows Host

```
$ cd <path_to>\<TCT_pkg_folder>\tools
$ c:\Python27\python.exe  tct-config-device.py --bhtest wearable
```

- On Ubuntu Host

```
$ cd /path/to/<TCT_pkg_folder>/tools
$  python ./tct-config-device.py --bhtest wearable
```

5.3.2 Launching the Web TCT Behavior Test Tool

The Web TCT Behavior Test Tool widget is installed on the target device after run ./tct-config-device.py with option “--bhtest”

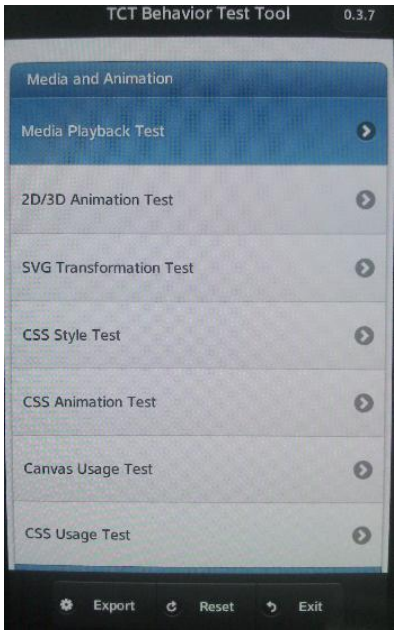

Figure 5-3. Web TCT Behavior Test Tool Home screen

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 MediaPlayback as an example. Below screen will show:

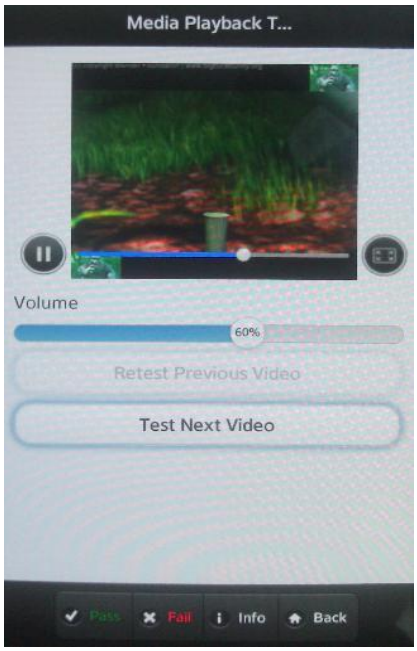

Figure 5-4. Web TCT Behavior Test Tool VideoPlayBack screen

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

- **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

- **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

- 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.

- 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

- 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 tct-shell --help. The user guide is available in ./doc/Web_TCT_2.3.1_Shell_User_Guide_v1.0.pdf
- To use Web TCT Manager and review the results, please follow instructions in ./doc/Web_TCT_2.3.1_Manager_User_Guide_v1.0.pdf.
- 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_2.3.1_Behavior_Test_Tool_User_Guide_v1.0.pdf.