Web Test Tools Dev Guide

Version 1.0

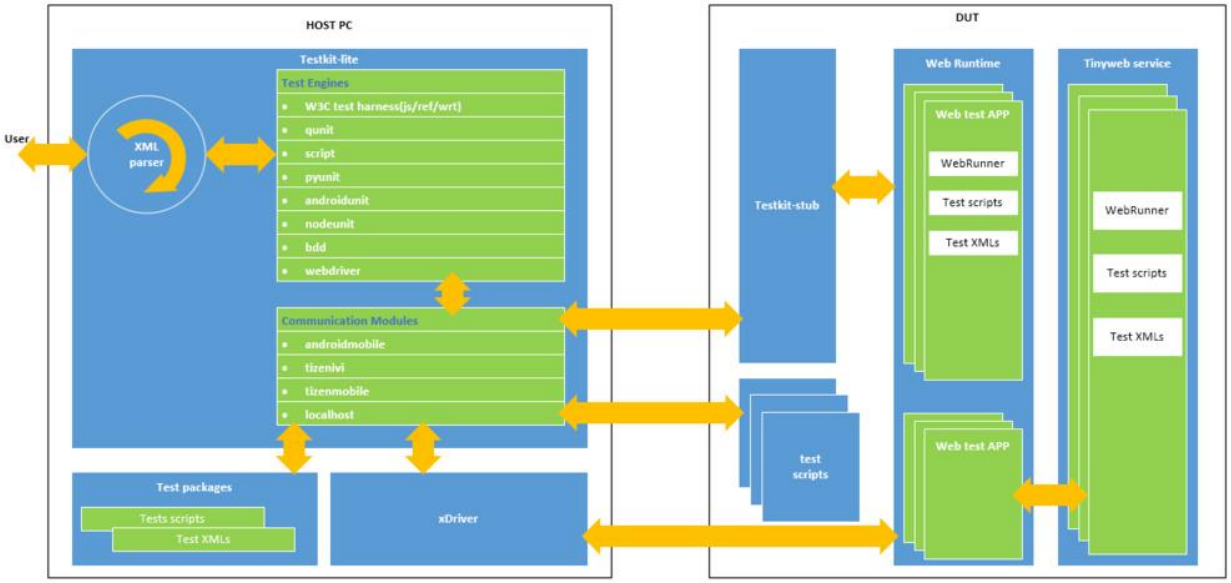
Contents

1 Introduction

Testkit-lite is a light-weight testing execution framework, composed by 5 components:

- **testkit-lite** is the command line interface(CLI) of Testkit-lite. Which provides comprehensive options for web/core testing and supports cross platform.
  In **TCT**, **CATS** usage, it is usually invoked as a background test runner.
- **test engines** is distribute engine responsible for handling various tests types.
- **com-module** is a common module responsible for handling interaction with target device, such as TIZEN device, Android device or localhost workstation.
- **testkit-stub** is a native process running on test target, which work as proxy between test suite and testkit-lite.
- **xDriver** is a special WebDriver implementation.

2 Architecture



3 Pre-condition

- Host: Ubuntu 12.04 LTS 64bit/32bit

- Pre-install the following tools/libs:
  - ✧ Python (2.7)
  - ✧ Java SDK (oracle)
  - ✧ Android SDK (android-15) & Eclipse
  - ✧ Android NDK (android-ndk-r10e)
  - ✧ Tizen SDK (tizen-sdk-ubuntu64-v2.2.71) & Tizen SDK Image
  - ✧ Git
  - ✧ setuptools, dpkg-dev, debhelper, python-support, rpm, libncurses5-dev
  - ✧ busybox, refer to http://forum.geeksphone.com/index.php?topic=6135.0

4 Build testkit-lite

- Downloads testkit-lite source codes from github:.

  $ git clone git@github.com:testkit/testkit-lite.git
- Build deb/rpm package on Ubuntu 12.04 LTS Host:

  $ cd testkit-lite

  $ sudo rm -rf testkitmerge testkit-merge

  - ✧ Generate deb package: testkit-lite_<version>_all.deb

    $ sudo python setup.py install

    $ sudo dpkg-buildpackage

    ###PS: Need install setuptools, dpkg-dev, debhelper, python-support firstly. After executed this command, it would build out ../testkit-lite_<version>_all.deb and ../testkit-lite_<version>.tar.gz etc.

    $ save generated testkit-lite_<version>_all.deb as testkit-lite-<version>/testkit-lite_<version>_all.deb
  - ✧ Generate rpm package: testkit-lite-<version>-1.noarch.rpm from above generated testkit-lite_<version>.tar.gz

    $ cp ../testkit-lite_<version>.tar.gz packaging

    $ rpmbuild --define 'python_sitelib /usr/lib/python2.7/site-packages' -tb packaging/testkit-lite_<version>.tar.gz --nodeps --target=noarch

    ###PS: Need install rpm firstly. After executed this command, it would build

out ~/rpmbuild/RPMS/noarch/testkit-lite-<version>-1.noarch.rpm
$ save generated testkit-lite-<version>-1.noarch.rpm as
testkit-lite-<version>/testkit-lite-<version>-1.noarch.rpm

5 Build testkit-stub

- Download testkit-stub source codes from github:
  $ git clone git@github.com:testkit/testkit-stub.git
- Make executable binary for Tizen/Ubuntu/Deepin
  - ✧ Build executable binary for ARM

    $ cd testkit-stub/CommandLineBuild
    $ /path/to/tizen-sdk/tools/native-make clean
    $ /path/to/tizen-sdk/tools/native-make -a armel -t GCC-4.5
    #would generate executable testkit-stub under current directory
    $ save generated testkit-stub as
    testkit-lite-<version>/web-test-utilities/testkit-stub/tizen/arm/testkit-stub
  - ✧ Build executable binary for IA32

    $ cd testkit-stub/CommandLineBuild
    $ /path/to/tizen-sdk/tools/native-make clean
    $ /path/to/tizen-sdk/tools/native-make -a i386 -t GCC-4.5
    #would generate executable testkit-stub under current directory
    $ save generated testkit-stub as testkit-lite-<version>/web-test-utilities/testkit-stub/debian(tizen)/ia32/testkit-stub
  - ✧ Build executable binary for X86_64 on Ubuntu 12.04 LTS 64bit

    $ cd testkit-stub
    $ make
    #would generate executable testkit-stub under current directory
    $ save generated testkit-stub as testkit-lite-<version>/web-test-utilities/testkit-stub/debian(tizen)/x64/testkit-stub
- Make Apk package for Android

- Generate executable binaries of all target APP_ABI in testkit-stub/android/libs folder

  $ cd testkit-stub/andrioid/jni
  $ /path/to/android-ndk-r10e/ndk-build

- Make APK package by Eclipse tool:

  $ Click File/Import… to import testkit-stub project
  $ Click File/Export… to make Apk package
  $ save generated testkit-stub apk as testkit-lite-<version>/web-test-utilities/testkit-stub/android/testkit-stub_all.apk

6 Build tinyweb

- Download tinyweb source codes from github:

  $ git clone git@github.com:testkit/tinyweb.git

- Make executable binary for Tizen/Ubuntu/Deepin

  - Build executable binaries for ARM

    $ config gcc as arm-linux-androideabi-gcc
    $ cd tinyweb
    $ make
    #would generate executable cgi-getcookie,cgi-getfield,tinyweb under current directory
    $ save generated cgi-getcookie,cgi-getfield,tinyweb as testkit-lite-<version>/web-test-utilities/tinyweb/tizen/arm/cgi-getcookie, cgi-getfield,tinyweb
    $ cp server.pem as testkit-lite-<version>/web-test-utilities/tinyweb/tizen/arm/server.pem

  - Build executable binaries for IA32 on Ubuntu 12.04 LTS 32 bit

    $ cd tinyweb
    $ make
    #would generate executable cgi-getcookie,cgi-getfield,tinyweb under current directory

$ save generated cgi-getcookie,cgi-getfield,tinyweb as testkit-lite-<version>/web-test-utilities/tinyweb/debian(tizen)/ia32/cgi-getcookie,cgi-getfield,tinyweb
$ cp server.pem as testkit-lite-<version>/web-test-utilities/tinyweb/tizen/debian(tizen)/server.pem

- Build executable binaries for X86_64 on Ubuntu 12.04 LTS 64bit

$ cd tinyweb
$ make
#would generate executable cgi-getcookie,cgi-getfield,tinyweb under current directory
$ save generated cgi-getcookie,cgi-getfield,tinyweb as testkit-lite-<version>/web-test-utilities/debian(tizen)/tinyweb/x64/cgi-getcookie,cgi-getfield,tinyweb
$ cp server.pem as testkit-lite-<version>/web-test-utilities/tinyweb/tizen/x64/server.pem

- Make APK package for Android
  - Generate executable binaries of all target APP_ABI in tinyweb/android/native /libs folder

$ cd tinyweb/android/native/jni
$ /path/to/android-ndk-r10e/ndk-build
$ cp -r ../libs ../../assets/system

  - Build android busybox according to APP_ABI

$ export PATH=/path/to/android-ndk-<version>/toolschans/path/to/$CROSS_COMPILER-VERSION/prebuild/[linux-x86|linux-x86_64]/bin:$PATH

$ cd tinyweb/third-party/busybox-1.22.1
$ configure *CONFIG_CROSS_COMPILER_PREFIX && CONFIG_SYSROOT && CONFIG_EXTRA_CFLAGS* in configs/android_ndk_defconfig
$ make
$ save generated busybox as

tinyweb/android/assets/system/libs/<APP_ABI>/busybox

- ✧ Make APK package by Eclipse tool:

  $ Click File/Import… to import tinyweb project

  $ Click File/Export… to make Apk package

  $ save generated tinyweb apk as testkit-lite-<version>/web-test-utilities/tinyweb/android/tinyweb_all.apk

7 Pack all-in-one testkit-lite package for release

- Copy the following document files in testkit-lite/doc into testkit-lite-<version>/docs folder

  test_definition_schema.pdf

  testkit-lite_tutorial.pdf

  testkit-lite_user_guide.pdf

- Download webruuner repo and copy webrunner folder (exclude webrunner/.git) into testkit-lite-<version> folder

  $ git clone git@github.com:testkit/tinyweb.git

- Execute above 4-6 **Build testkit-lite/testkit-stub/tinyweb**
- Zip testkit-lite-<version> folder as testkit-lite-<version>.tar.gz package

  $ tar czvf testkit-lite-<version>.tar.gz testkit-lite-<version>