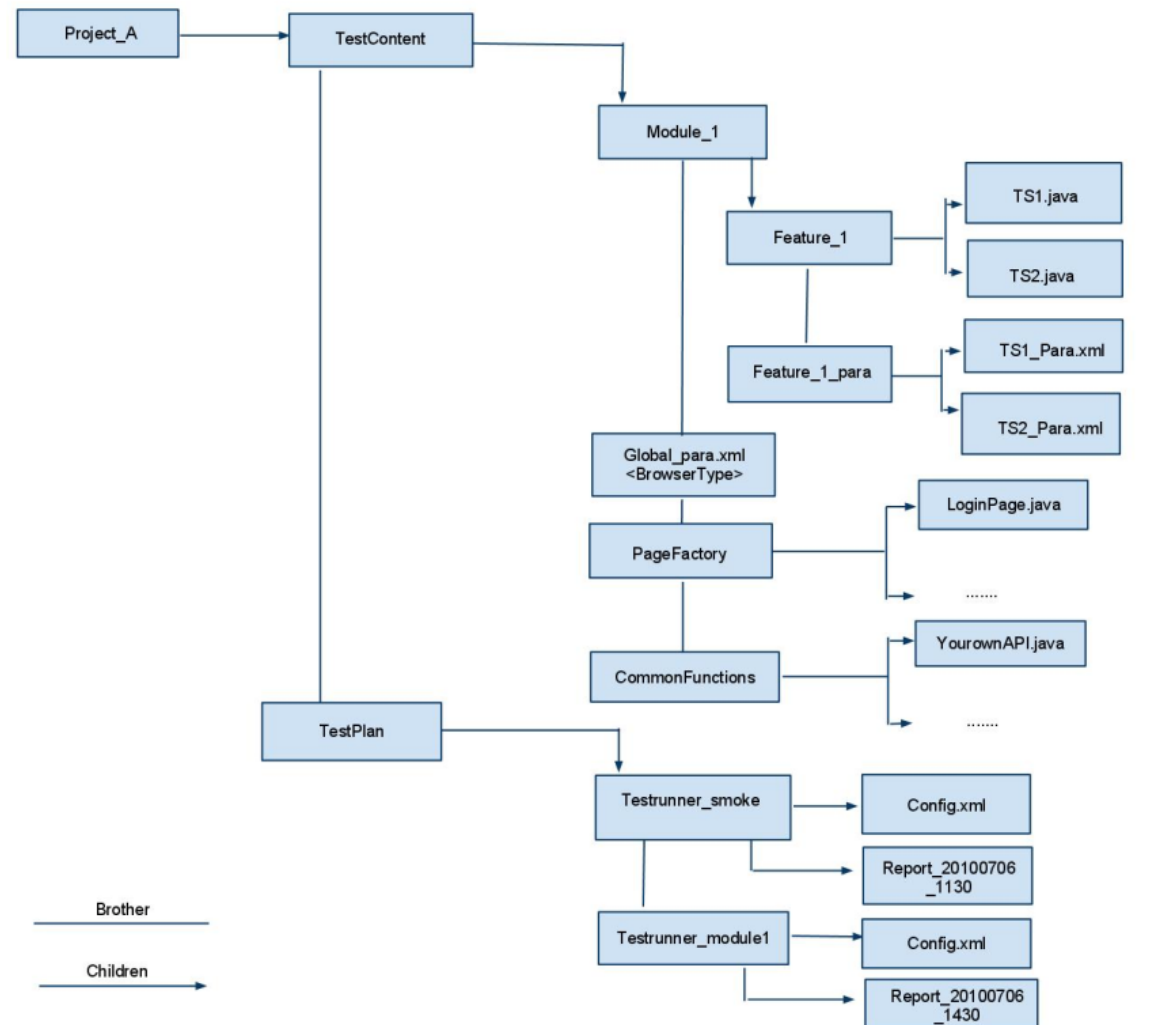


# Raft Framework User Guide(V1.0)

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## Raft framework project folder structure overview



## Project folder/files description

**TestContent** folder store your test suite/test cases/local test parameter and other java files: commonapi, page factory, global parameters)

**TestPlan** folder store your test plan

**Classes** folder store all the testing class files, globalPara.xml, ...

**Lib** folder store all webdriver necessary jar(s) and testng jar(s), raft-xx.xx.jar, ...

**TestRunner\_Module/ TestRunner\_Cross\_Module** folder store test plan runner, config, report files

**Runner.bat** launch raft framework and start your test

**Config.xml** testng configuration file

**Log.txt** output of Runner.bat  
**Report\_XXX** report for each Test module  
**Logs:** Log output for each test case(method)  
**Screenshots:** Taking screen shot on Exception/failed case  
**Html reports:** Summary report and detail test case report

...

## Test case Management,Execution (TestNG)

### *How to run a test class(all of its method)?*

config your config.xml file like this:

```
<!DOCTYPE suite SYSTEM "http://testng.org/testng-1.0.dtd" >
<suite name="Suite Demo" verbose="1" >
<test name="Test Demo">
<classes>
    <class name="demo.Demo" />
</classes>
</test>
</suite>
```

### *How to pick up a few methods to run?*

config your config.xml file like this:

```
<!DOCTYPE suite SYSTEM "http://testng.org/testng-1.0.dtd" >
<suite name="Suite Demo" verbose="1" >
<test name="Test Demo">
<classes>
<class name="demo.Demo">
    <methods>
        <include name="test1" />
        <include name="test2" />
    </methods>
</class>
<class name="demo.Demo2">
    <methods>
        <include name="try1" />    <include name="try2" />
    </methods>
</class>
</classes>
</test>
</suite>
```

### ***How to run multiple rounds of one test method?***

add an attribute on @Test annotation

```
@Test(invocationCount = 2)
public void test1() {
...}
```

### ***How to set running timeout of a test method?***

add an attribute on @Test annotation

```
@Test(timeOut = 10000)
public void test1() {
...}
```

Note: timeout means the maximum time in milliseconds this test will take.

### ***How to run multiple Test suites (more than one testNG XML files)?***

Solution1:

modify your Runner.bat

```
java -cp ..\Classes;..\lib\*; raft.engine.TestEngine ..\Classes ..\Classes\globalParam.xml
smoke.xml,uat.xml > log.txt
```

Note the xml file separator should be “,” here.

Solution2:

refer to “6.How to config cross module config.xml”

### ***How to config cross module config.xml?***

config your config.xml file like this:

```
<!DOCTYPE suite SYSTEM "http://testng.org/testng-1.0.dtd" >
<suite name="Suite1" verbose="1" >
  <test name="test1">
    <classes>
      <class name="module1.feature1.TS1" />
    </classes>
  </test>

  <test name="test2">
    <classes>
      <class name="module2.feature2.TS3" />
    </classes>
  </test>
```

```
</suite>
```

or:

```
<!DOCTYPE suite SYSTEM "http://testng.org/testng-1.0.dtd" >
<suite name="Suite1" verbose="1" >
  <test name="test1">
    <classes>
      <class name="module1.feature1.TS1" />
    </classes>
  </test>

  <test name="test2">
    <parameter name="testngFile" value="TestRunner_Module2\Config.xml" />
  </test>
</suite>
```

notice: name="testngFile" will tell framework to treat the following value specified xml file as a testng configuration file. value="XXX" XXX is the path of a testng configuration file

## Control Your WebDriver

### *How to get a WebDriver(No logging functionality)?*

you can use:

```
WebDriver driver = new FirefoxDriver();
```

or:

```
FirefoxDriver driver = new FirefoxDriver();
```

or:

```
WebDriver driver = WebDriverBasic.newWebDriverInstance("Firefox");
```

or:

```
WebDriver driver =
```

```
WebDriverBasic.newWebDriverInstance(LoadPara.getGlobalParam("browser"));
```

notice: LoadPara refer "5. Load parameters"

### *How to get a WebDriverPlus(which accompanied by logging, report function)?*

```
WebDriverPlus driver =
```

```
WebDriverPlus.newWebDriverPlusInstance(LoadPara.getGlobalParam("browser"));
or
WebDriver driver =
WebDriverPlus.newWebDriverPlusInstance(LoadPara.getGlobalParam("browser"));
```

### ***How to get real IE/Firefox/Chrome/... browser webdriver instance?***

```
WebDriverPlus driver =
WebDriverPlus.newWebDriverPlusInstance(LoadPara.getGlobalParam("browser"));

// driverType now is actual IE/FF/Chrome/... browser webdriver instance.
WebDriver driverType = driver.getBrowserType();
```

### ***How to judge browser type?***

```
WebDriverPlus driver =
WebDriverPlus.newWebDriverPlusInstance(LoadPara.getGlobalParam("browser"));
if( driver.isIE() ) {
    //do something
} else if (driver.isFirefox()) {
    //do something else
} ...
```

### ***Load parameters***

Global parameters: all .java files of your test cases can share these parameters

Local parameters: one .java file has one corresponding .xml data file(they must have the same file name), only this .java can access the parameters of the mapping .xml data file.

#### **a)global parameters**

parameters stored at "globalPara.xml"

format is like:

```
<data>
<var name="browser">Firefox</var>
<var name="globalList">gv1,gv2</var>
</data>
```

#### **b)local parameters**

must ensure you put the xml file with right name and right place.

suppose we have **TS1.java**, class is module1.feature1.TS1, then the mapping local parameter file should be **TS1.xml** and it should be under module1\feature1\_para folder.

the format is also like:

```
<data>
<var name="browser">Firefox</var>
```

```
<var name="globalList">gv1,gv2</var>
</data>
```

now we support:

```
String getGlobal/LocalParam(String name)
int getGlobal/LocalParamInt(String name)
String[] getGlobal/LocalParamArray(String name)
```

notice: when reading a list/array, **default separator is “,”**, also enable user to define the separator string like this:

```
<var name="arraySeparator">|</var>
```

global parameters when reading to a list/array, will first search the arraySeparator’s setting under “globalPara.xml”, if not found, use default value “,”

local parameters when reading to a list/array, will first search the arraySeparator’s setting under its own xml data file, if not found, search arraySeparator’s setting under “globalPara.xml”, if not found, use default value “,”.

Note: Working with XML data is sometimes challenging, and there are usually certain caveats to be aware of. Using characters such as ampersands and greater-than can cause your XML parser to fail, you can avoid problems with special characters using predefined character references:

Ampersand—&—&amp;

greater-than—>—&gt;

for more info, please refer to:

[http://articles.techrepublic.com.com/5100-10878\\_11-5032714.html](http://articles.techrepublic.com.com/5100-10878_11-5032714.html)

### **Assertion utilities**

provide some utilities:

- 1) public static **boolean** **hasText**(WebDriver driver, **String** text) //whether the page contain the text.
- 2) public static **boolean** **matchText**(WebDriver driver, **String** regex) // whether the page contain the text with a regular expression.
- 3) public static **boolean** **hasElement**(WebDriver driver, **By** by) //whether the page contains the WebElement

Samples:

```
assertTrue(Assertion.hasText(driver, "XX Page"), "A Page expected, but failed.");
assertTrue(Assertion.matchText(driver, "^Title$"), "A Page expected, but failed.");
assertTrue(Assertion.hasElement(driver, By.partialLinkText(facilityname)), "A Page expected, but failed.");
```

### **How to control global rounds of test suites running?**

modify `globalRunCount` in `globalPara.xml` file like this:

add an item:

```
<var name="globalRunCount">2</var> //notice: default is 1, can be 0, 1, 2, ...
```

### ***How can I get browser page screenshot?***

So, if webdriver exception occurs, such as “`driver.findElement(By.linkText("download test4"))`”; “ and “download test4” actually not exist, we will take a browser page screenshot.

if testing method failed (such as assertion fail or java exception thrown), if driver not closed/quit, we will take a browser page screenshot.

The browser page screenshot file can be found under `Report_XXX\screenshots` folder, and the full path of the file can be found in the `log_XXX.txt` file.

## **Appendix**

### ***How to run multiple test methods concurrently?***

It contains two steps

a)ensure your test case is like:

```
@Test
public void t1() {
```

```
    WebDriverPlus driver =
```

```
    WebDriverPlus.newWebDriverPlusInstance(LoadPara.getGlobalParam("browser"));
```

```
    ...
    driver.quit();
}
```

```
@Test
```

```
public void t2() {
```

```
    WebDriverPlus driver =
```

```
    WebDriverPlus.newWebDriverPlusInstance(LoadPara.getGlobalParam("browser"));
```

```
    ...
    driver.quit();
}
```

b) modify your `Config.xml` under your test plan folder like this:



```
<suite name="My suite" verbose="1" parallel="methods" thread-count="2">
```

### ***Will framework quit the running webdriver when it met exception or failed?***

Yes. And user no need to worry about using driver.quit() multiple times. The driver will only quit once. So, user can try catch the webdriver exception or test failed exception and then finally call driver.quit().

User should know this:

- 1) framework will quit webdriver after this test method finished (pass or fail or skip);
- 2) While onException occurs, (webdriver) framework not to quit the webdriver. It will lead to cause test method failed, then (webdriver) framework will quit Webdriver.
- 3) If user used driver.quit() many times, no worry, it won't throw out webdriver internal errors. Framework will handle this and only quit once.

### ***What is browserKillerTimeout?***

Framework use the value to set the timeout of each test method. It is similar to @Test's timeout attribute. But this function will kill the browser process tree if a test method's execution time is longer than browserKillerTimeout's value. So, if you are using concurrency running test methods, be careful to use this setting.

It is useful to handle this situation: browser frozen(unknown error) during running.

Its default value is 10 minutes(600000).

### ***What is autoBrowserKiller?***

If this switch is turned on, framework will check whether there is browser process after a test method finish(pass or fail or skip), if the process exist, framework will kill the browser process tree. The original intention of this function is to quit the browser if user forgot to write driver.quit(). But if you are using concurrency running test methods, be careful to use this setting.

### ***If I do not want to take screen shot, what should I do?***

You can set "onExceptionScreenshot"/"onAssertionFailScreenshot" to false in globalPara.xml, it will disable screenshot functionality.

### ***What kind of Logging info do we have currently?***

- beforeNavigateTo()
- afterNavigateTo()

- `beforeClickOn()`
- `afterClickOn()`
- `beforeChangeValueOf()`
- `afterChangeValueOf()`
- `beforeFindBy()`
- `afterFindBy()`
- `beforeScript()`
- `afterScript()`
- `onException()`
- Assertion fail message

And we log the timing info on Click/Navigation/Script as well in order to find some slowness actions.

### ***How to Add your own APIs?***

You can put your own class/method in CommonAPI package, and in your test scripts to import them on demand.

### ***How to do a distribution test across multiple machines?***

You can use STAF(STAX) Open source tool to support your distribution test across multiple machines.

STAF(STAX) is a automation framework which developed by IBM. It provides several useful services to organize your testing work.

Installation STAF: For windows, just download the STAF setup .exe file, then install.

Installation STAX service: you just need to download the .zip file and unzip it into D:/STAF/services for example.

Config your STAX service: Open D:/STAF/bin/STAF.cfg, then you can edit this file:

```
# Set default local trust (trust level 5 required for some services)
trust default level 5

# Add default service loader
serviceloader library STAFDSL
SERVICE STAX LIBRARY JSTAF EXECUTE \
D:/STAF/services/stax/STAX.jar OPTION J2=-Xmx384m
SERVICE EVENT LIBRARY JSTAF EXECUTE \
D:/STAF/services/stax/STAFEvent.jar
SET MAXQUEUE SIZE 10000
```

You can find more info on how to write XML script for STAX from <http://staf.sourceforge.net/docs.php>

### ***How to query my data from DB?***

We currently provide this feature for MS SQL server. It support you fetch value for certain column, and put value into ArrayList. Here is one demo code:

```
String dburl = "jdbc:sqlserver://yourURL:yourport;DatabaseName=LOG";
String columnname = "methodname";

DBReader db1 = new DBReader();
db1.Getconnection(dburl, "sa", "sa");
List<String> abc = db1.Query("select top 1 * from dbo.log",
columnname);
db1.Close();
```

### ***How to add customized log info into my Test method?***

We provide a class “MyLogger” to support your own log info, it will append to your existing log file created by Raft for each test method, here is a demo code:

```
PrintWriter logger1= MyLogger.grabLogger();
logger1.println(logDateFormat.format(new Date()) + " : customized my
own log info here");
```