

FlexMonkey 1.0 Code Generation

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FlexMonkey can record and run tests that interact directly with your application views, allowing quick, easy creation of GUI tests. FlexMonkey can also save your tests as Actionscript test classes, allowing them to be run in Continuous Integration or customized by editing the generated Actionscript.

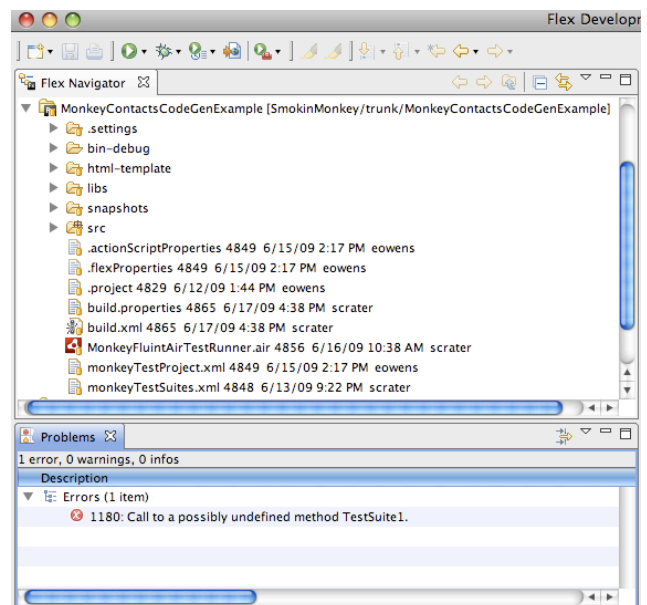
This article shows how to generate a simple FlexMonkey test to Actionscript and run it using either an Air test runner application or a Flex test launcher in a browser. In either case the test is invoked from an Ant build script; if you are new to Ant, see http://www.adobe.com/devnet/flex/articles/flex_ant_pt1_03.html for an intro on using Ant with FlexBuilder.

GENERATING THE CODE

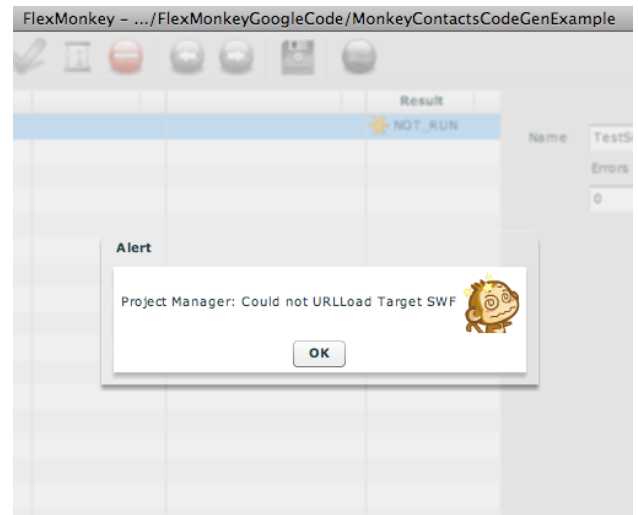
MonkeyContactsCodeGenExample is the same MonkeyContacts sample application from *Getting Started With FlexMonkey 1.0*, complete with a FlexMonkey test project already set up for you, a Flex module MXML file to package up the compiled test code, and a simple Ant build script which runs the test and produces a test report. A complete test has already been created in the FlexMonkey project, so all you need to do is load the project, generate code, compile, and run; however, a few settings will need to be fixed to match your machine's configuration. These are called out in the steps below, but for reference here are the settings and where they are set:

Setting	Set in
Target SWF Location	FlexMonkey Project Properties
Source Directory for Generated Code	FlexMonkey Project Properties
MonkeyFluintAirTestRunner Location	build.properties

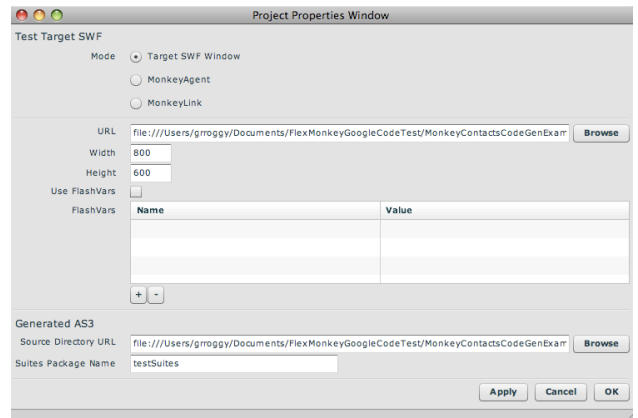
Extract *MonkeyContactsCodeGenExample.zip* to your workspace and import it as a FlexBuilder project (you can also check out MonkeyContactsCodeGenExample via SVN here <URL>.) Next, copy the contents of *MonkeyAccessories.zip/libs* to the example project's *libs* directory. Don't be concerned by the compile error in *MonkeyContactsCodeGenExampleTestModule.mxml* - that will disappear in a moment. Note that FlexBuilder successfully builds the target application, *MonkeyContacts.swf*, in spite of this error.



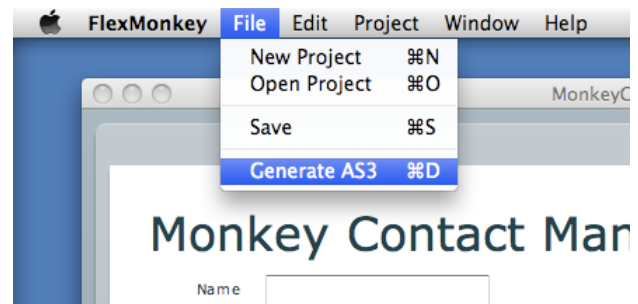
Run FlexMonkey and open the MonkeyContactsCodeGenExample project. The target application window will show an error that the target SWF can't be loaded. Click OK on the error.



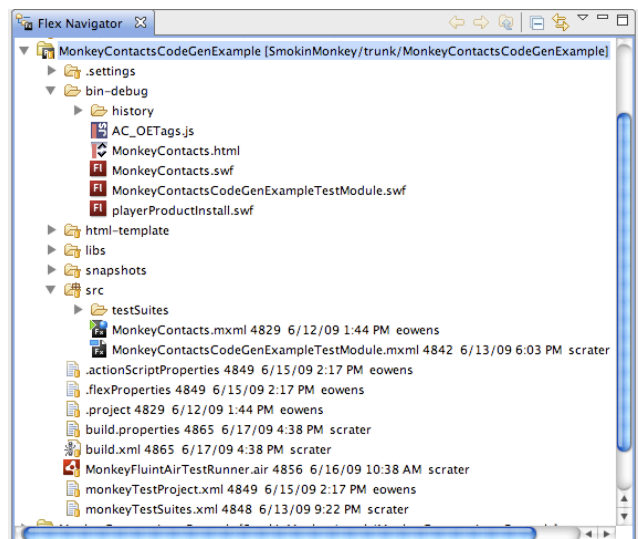
Now open Project Properties from the menu. You will see that the Test Target SWF URL needs to be changed. (FlexMonkey 1.0 does not support relative paths in project files.) Browse to and select MonkeyContacts.swf in your MonkeyContactsCodeGenExample FlexBuilder project's bin-debug folder. Also set the Source Directory URL to your FlexBuilder project's src folder. Your Project Properties Window should now have valid paths for your machine. Click OK to save these changes; the MonkeyContacts application will appear



Now, select Generate AS3 from the main File menu.



Refresh your FlexBuilder project and you should see the testSuite package appear under src. When you rebuild the project, you should see the error in MonkeyContactsCodeGenExampleTestModule.mxml go away as the missing class references have now been resolved. Take a quick look at testSuites.TestSuite1.tests.TestCase1; you may recognize the MonkeyCommand objects there from the FlexMonkey test.



RUNNING THE ANT BUILD – LAUNCHER OPTION

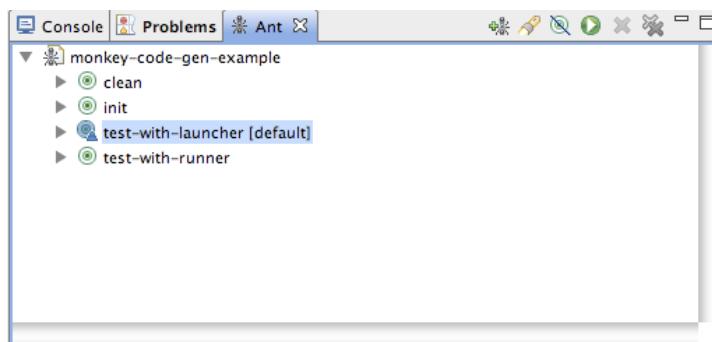
Now that the test has compiled we can run it from Ant. In the same way that there are two ways to connect FlexMonkey to your application, there are two ways to run your FlexMonkey generated test code from Ant. The `MonkeyTestLauncher` is a Flex application that runs in a browser, while the `FluintMonkeyAIRTestRunner` is an AIR application. We will run the launcher first. The launcher consists of three files, `MonkeyTestLauncher.swf`, `MonkeyTestLauncher.html`, and `AC_OETags.js`. Copy these from `MonkeyAccessories/MonkeyTestLauncher` into the example's `bin-debug` directory. You should also copy the contents of `MonkeyAccessories/MonkeyLibs` to the example's `libs` directory.

You may want to take a look at `build.xml` to see what we are about to run. The `test-with-launcher` target will run the test launcher in your default browser and send it the target SWF and test module SWF parameters specified. After the test is run, the `junitreport` task will format the results.

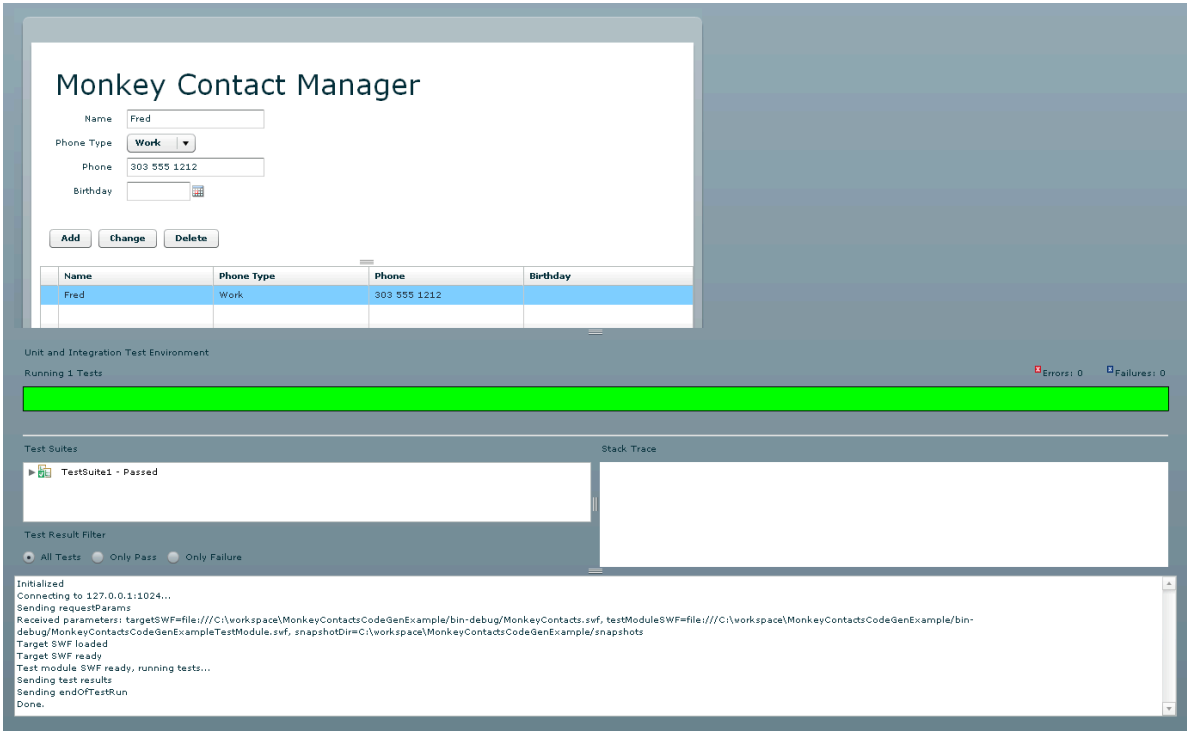
```
<target name="test-with-launcher" depends="init">
  <monkey-test-launcher
    timeout="0"
    launcher="${basedir}/bin-debug/MonkeyTestLauncher.html"
    targetSwf="MonkeyContacts.swf"
    testModuleSwf="MonkeyContactsCodeGenExampleTestModule.swf"
    snapshotDir="../../snapshots"
    toDir="${report.dir}"
    haltonfailure="false" />

  <junitreport todir="${report.dir}">
    <fileset dir="${report.dir}">
      <include name="TEST-*.xml"/>
    </fileset>
    <report format="frames" todir="${report.dir}/html"/>
  </junitreport>
</target>
```

Open the Ant view in FlexBuilder (Window/Other Views/Ant). Drag the example `build.xml` to the Ant view, open it to display its tasks and double-click on the `test-with-launcher` task.

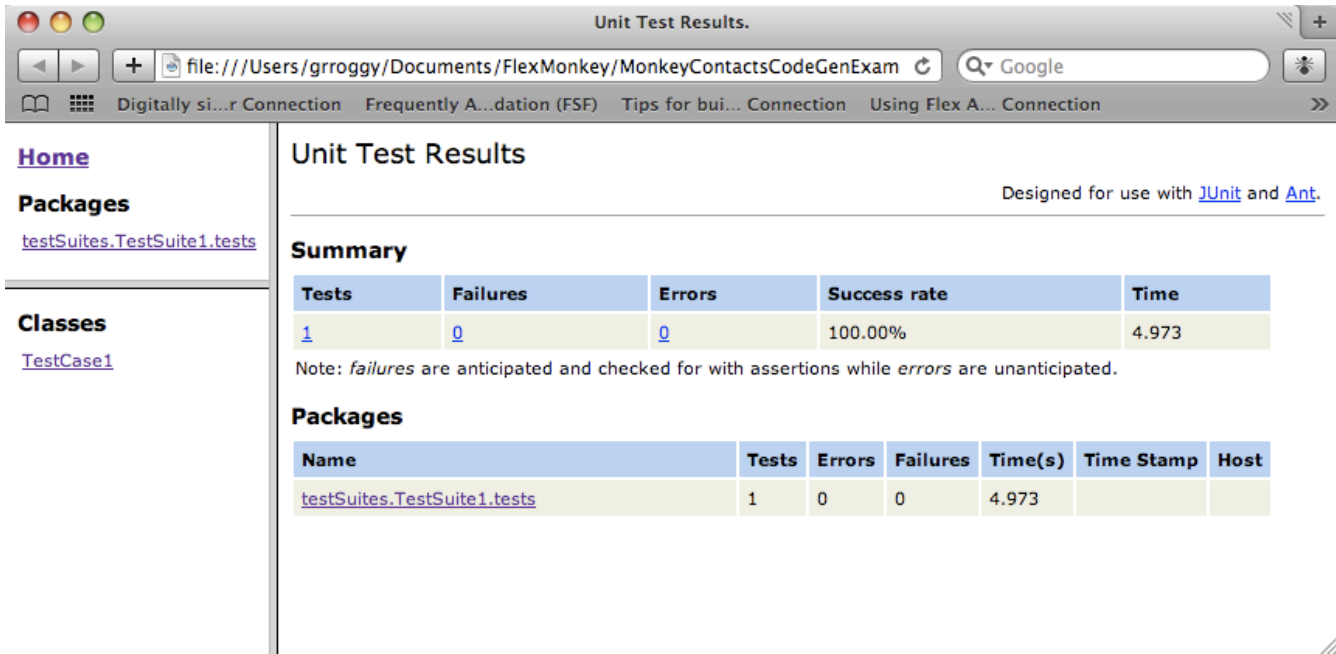


The test launcher should appear in a browser, and the MonkeyContacts application should come up in its upper panel. The bottom panel is a console window that logs the launcher's progress; after a few seconds it should look something like this:



If MonkeyContacts has not come up, or if the test has not run, this console may provide a clue about what's wrong.

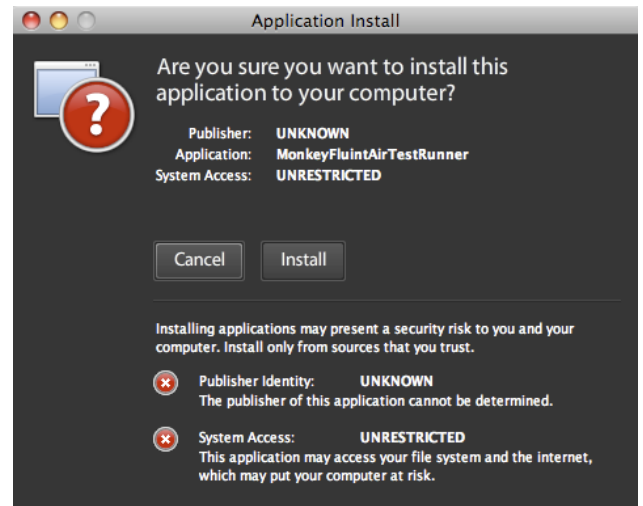
When the test has completed, open MonkeyContactsCodeGenExample/output/flex/index.html; this is the test report generated by the `junitreport` ant task. Links in the report allow you to navigate to the results for specific tests.



RUNNING THE ANT BUILD – AIR TEST RUNNER OPTION

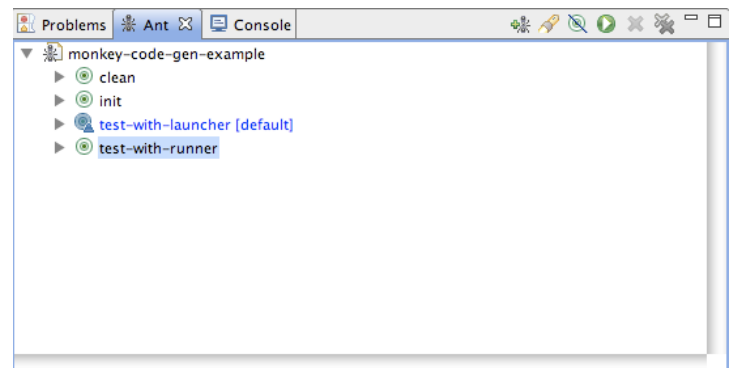
Another option for running FlexMonkey tests is MonkeyFluintAirTestRunner, also included in the FlexMonkey suite. Users needing to test AIR specific functionality can do so using MonkeyFluintAirTestRunner, and some users may find this option easier to integrate into their builds.

The installer MonkeyFluintAirTestRunner.air is included for your convenience in *MonkeyAccessories*. Double click that now to install the application. Note the location of the installed application, as we will need that for the next step. The installer will bring the application up, but it won't be very interesting to look at yet, so close it. If you haven't done it already, you should copy the contents of *MonkeyAccessories*/*MonkeyLibs* to the example's *libs* directory.



Open build.properties and set the flexmonkey.runner property to the location where the installer placed the MonkeyFluintAirTestRunner application:

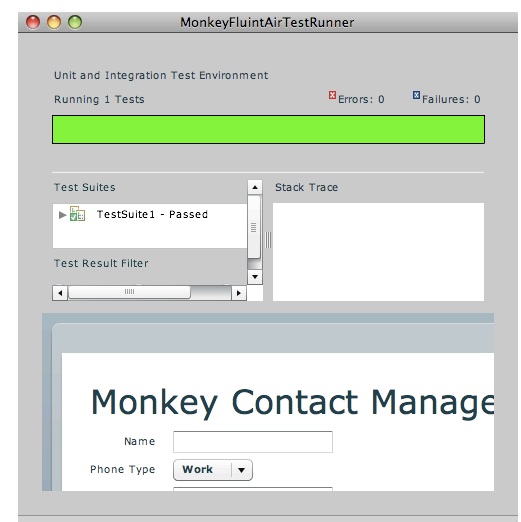
```
# Location of the MonkeyFluintAirTestRunner executable installed by the AIR installer
# On Windows the default is: C:/Program Files/MonkeyFluintAirTestRunner/MonkeyFluintAirTestRunner.exe
# On Mac: /Applications/MonkeyFluintAirTestRunner.app/Contents/MacOS/MonkeyFluintAirTestRunner
flexmonkey.runner=/Applications/MonkeyFluintAirTestRunner.app/Contents/MacOS/MonkeyFluintAirTestRunner
```



Now run the test-with-runner task in build.xml.

You should see the MonkeyFluintAirTestRunner come up, the MonkeyContacts application come up in a panel of the MonkeyFluintAirTestRunner, and see some activity as the MonkeyCommands run. MonkeyFluintAirTestRunner will close when the test has completed.

As before, the junitreport task will format the test results when the run has completed.



GENERATED CODE AND THE MONKEYLINK

If you are using the MonkeyLink to record your tests, you will still generate the AS3 version of your tests as described above. However, to run your tests from ANT, you should refer to the example project dedicated to the MonkeyLink:

MonkeyContactsMonkeyLinkedCodeGenExample

This project is a complete, working example that demonstrates the use of the `MonkeyLinkTestLauncher`, the companion test launcher for the MonkeyLink. The `MonkeyLinkTestLauncher` is found in the `MonkeyLinkTestLauncherLibrary.swc`.

When you are ready to run generated AS3 tests with the MonkeyLink, you should compile your application with the following compile options:

```
-includes com.gorillalogic.monkeylink.MonkeyLinkTestLauncher
-include-libraries "../Easy2BuildMonkeyLink/libs/FlexAutomationLibrary.swc"
-include-libraries "${flexlib}/libs/automation.swc"
-include-libraries "${flexlib}/libs/automation_agent.swc"
-include-libraries "${flexlib}/libs/automation_dmv.swc"
```

This compile line differs from the one you used to link the MonkeyLink with your application -- instead of building in the MonkeyLink itself, now you build in the `MonkeyLinkTestLauncher`.

To run this project on your machine, you will need to modify one line in the `build.xml` file. The launcher parameter in the target “test-with-launcher” currently reads:

```
launcher="/Applications/Firefox.app/Contents/MacOS/firefox-bin http://serverb/MonkeyContacts.html"
```

You will need to modify the line to point to your Browser executable -- the current launcher parameter points to Firefox on a Mac. Also, you will need to modify the url at the end of the launcher parameter to point to the application you compiled (building in the `MonkeyLinkTestLauncher`).

When you run your generated tests this way, all you will see is your application being exercised in the browser. You will not see the Test Launcher GUI that you can see when you run tests as described earlier in this document. All the run-time output will be directed to the console, and the `junitreport` task will format the test results when the run has completed.

NOTES

Here are a few things you will need to know as you begin to explore generating code from FlexMonkey:

- The test module class (called `MonkeyContactsCodeGenExampleTestModule.mxml` in the example) is not generated by FlexMonkey 1.0, so you will need to create it by hand and update it when you add or rename test suites.
- FlexMonkey generates class and method names based on the TestSuite, TestClass and Test names you assign in your test. FlexMonkey 1.0 does not check for uniqueness of these names, so if your names are not unique you will see compile errors in FlexBuilder when you generate Actionscript.
- You can write your own FlexMonkey Actionscript or modify the generated code. You do not need to use the `VerifyMonkeyCommand` to add verification code – you can call the `Fluint assert()` and `fail()` methods and their variants directly. See the Fluint documentation at <http://code.google.com/p/fluint/>.