

## TECHNOLOGY AUDIT

# FoneMonkey 5.0, FlexMonkey 5.0

**Gorilla Logic**

Reference Code: OI00070-086

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**SUMMARY****Catalyst**

FoneMonkey and FlexMonkey from Gorilla Logic are automated functional testing tools for the user interface, featuring record/playback of user interactions for applications built with Apple iOS (for the iPhone and iPad) and Adobe Flex (for the Adobe Flash and AIR runtime, available on all browser platforms) respectively. Both tools are free and open-source, licensed under the GPL2. Gorilla Logic offers custom development services, consulting, and training based around these tools.

The competition for automated functional testing of Apple iOS and Adobe Flex applications is limited and the vendor sees this as an opportunity to distinguish its tools and services. The company uses Agile practices internally and these tools are able to be part of a fully automated continuous integration (CI) process, commonly found in Agile and test driven development processes.

**Key findings**

- Automated functional testing for Adobe Flex and Apple iOS applications, with record and playback capabilities for all user interactions.
- Tests can run in an automated, CI testing environment, especially suitable for Agile processes.

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- Generates native code for complete test customization and extensibility.
- The products are currently limited in not having an interface to specify control flow and variable management, rather these need to be added to the generated native code.
- Due to Apple restrictions, FoneMonkey can only be offered as an iOS library module rather than as a framework, resulting in some complexity in configuring it for different iOS projects.
- FlexMonkey relies on the Adobe Automation Framework, which is not freely licensed and requires purchase of tools from Adobe.

### **Ovum recommends**

- For any mobile application developers targeting Apple iOS and the Flash platform then FoneMonkey and FlexMonkey should be considered for testing and QA purposes.
- For enterprise application developers working on the Adobe Platform that require greater automated flow control than is possible out-of-the-box, the generated code can be customized. It is also possible to add FlexMonkey to the Selenium IDE through the FlexMonkium plug-in (available as free open source tools).
- FoneMonkey stands out in a market where options for Apple iOS automated functional testing is more limited.

### **Value proposition**

Unit testing and CI are now standard practices in many organizations, whether through Agile methodology adoption or through introduction of test driven development ideas into traditional and hybrid development environments. Ideally as much as possible of the process should be automated to reduce the lag time between work completion, testing, and test report feedback to developers. Automation also allows the scale of testing to increase and thereby improve code coverage. It is possible to run functional tests through the tools FoneMonkey/FlexMonkey, but by automating functional testing it is possible to add these tests to unit tests and run the combined set in a CI environment. For iOS the unit test framework is OCUnt and for Flex it is FlexUnit, available from the open source community.

Gorilla Logic has focused on offering tools for the Apple iOS and Adobe Flex development market. The Apple iOS QA market is comparatively poorly served: the consumer app target is mainly served by individuals or small teams, and this means enterprises and their larger budgets are not available to drive support tools. This scenario is likely to change though as more enterprises,

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particularly in the financial services, target customers via their iOS (and Flash) supported mobile devices.

FoneMonkey and FlexMonkey can help developers targeting iOS and Flex/Flash to improve their QA process. The free open source model allows zero cost of entry to these tools with support available through open forums or through support contracts available from the vendor. Gorilla Logic aims to establish itself in the market through these tools, and drive support, consulting, and custom development to its doors.

## **SOLUTION ANALYSIS**

### **Functionality**

FoneMonkey and FlexMonkey allow user interactions to be recorded and played back automatically, for testing and QA purposes. FoneMonkey tests can play back on the simulators provided with the iOS SDK, or on actual iOS/iPhone devices - Figure 1 shows the overlay on an iPhone screen that allows the user to control recording of tests. FlexMonkey tests can play back in any environment which supports the Adobe Flash Player, or the Adobe AIR runtime.

Both products use a library of platform extensions which are linked into the application to be tested. In the case of FlexMonkey, these extensions are based on the Adobe Automation Framework, part of the Flex SDK. For FoneMonkey, they have been custom-developed in Objective-C by Gorilla Logic for the FoneMonkey project.

At record time, these extensions record user interactions with applications, by intercepting UI framework events (and, for iOS, delegate dispatches). The intercepted events and dispatches are interpreted and written to a capture file before being sent on their way. At playback time, the capture file is opened and the recorded events and delegate dispatches are recreated and directed to the target components. In general, components are identified by unique identifiers which can be added as properties by developers, or created by Fone/FlexMonkey. The events and delegate dispatches are at a high, semantic level, allowing the test to remain robust to basic changes to the application's layout.

The granularity of activity monitored can be increased; while this makes the tests more brittle to change, there are scenarios where developers want to know for example where on a button the user is pressing. Some of the higher level of detail is captured automatically and some needs to be enabled through configuration settings - the tester is then free to choose what of level of activity is actually accessed in the tests.

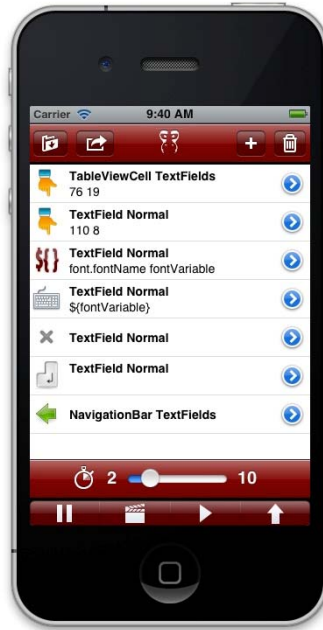


In iOS testing, FoneMonkey's recorded tests can be used to generate Objective-C code, which takes the form of OCUnt tests and therefore can be run using the OCUnt framework, available from Sen:te. This generated code can be modified and extended to create any test scenario; the resulting tests can be run by automated scripts on a Mac server (running in a simulator) or on actual iPhone/iPad devices. For FlexMonkey and Adobe Flex apps, the corresponding unit testing framework is FlexUnit.

According to Gorilla Logic, FoneMonkey is the only automated record/playback UI testing tool available for the iOS platform. Apple itself offers the "UIAutomation" Javascript framework, but it does not record interactions. Apple's UI Automation is incomplete in the interactions it can automate, and is not really automatable in an unattended, headless, CI style.

FlexMonkey can be run in the popular Selenium IDE for web application testing, as a plug-in called FlexMonkium. This plug-in will generate JUnit test scripts for running in Selenium Remote Control. FlexMonkey has functions like "Wait For" for robust interactions with variable speed internet services and devices.

**Figure 1: iPhone emulator showing overlay on the screen with recording controls for testing**



Source: Gorilla Logic

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## Go to market strategy

FlexMonkey and FoneMonkey are aligned with the strong trends in software development toward the Agile practices of test-driven development, CI, and automated testing. The free open source availability of these tools is clearly attractive to the smaller developer teams, and the backup of a service model from the vendor provides the reassurance of support that an enterprise customer would wish: Gorilla Logic's value proposition rests on its being a software development organization, systems integrator, and digital tools supplier offering technical excellence and breadth of experience. FoneMonkey and FlexMonkey provide the company with an opportunity to establish a broad reputation in the leading high-end internet-based consumer platform market built around Apple iOS and Adobe Flash player.

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Gorilla Logic's primary market target is for paid support, software development, and integration in organizations with 100+ employees. Gorilla Logic focuses on software development for customization of the tool, serving customers in the US and worldwide.

Direct channel provides 95 percent of revenue and the company is just beginning to establish partnerships with cloud-based load testing services. Typical project values are \$6,000 for entry level, \$15,000 for average, covering annual support and Quickstart programme, and \$75,000 for the largest projects, involving product customization and integration support.

Gorilla Logic releases both products several times per year and is committed to support new platform versions within 30 days.

## Deployment

Development projects require skilled resources in Adobe Flex and/or Apple iOS, and for larger scale projects skilled teams covering development, QA, and operations. Product support is available on a free online forum. Gorilla Logic offers per-incident support and a yearly support contract offering unlimited incidents, named liaisons, monthly status reviews, using an email/ticket system to open and manage cases and with 24 hour response time.

The tool is intuitive to use, however the company offers the option of customized training. Gorilla Logic tools are offered on-premise and there are also SaaS load testing services. Platforms supported are those that support Adobe and Apple iOS, so for FlexMonkey it is Microsoft Windows, Mac OS, and Linux running Adobe Flash Builder 3, 4, and 4.5. FoneMonkey requires Apple iOS and Xcode, the Apple Mac integrated development environment.

Deployment examples:

- A major SaaS sales-support/opportunity management company, with thousands of users, and a Flex-based front-end. It uses FlexMonkey (with support from Gorilla Logic) in a CI environment for functional and regression testing of new features.
- A major telecommunications company uses FoneMonkey to test iPad delivery of interactive video solutions. A team runs the tests interactively on a desktop as well as in CI (multiple Mac servers running iPad simulators).
- A nationwide retailer implementing an interactive consumer book-creation site with large Flex applications for image manipulation and page composition. It engaged Gorilla Logic for load-testing and results were critical in identifying scalability limitations and bottlenecks. It hired the company to remediate the application, and



adopted FlexMonkey for regression testing and ongoing SaaS based load testing, as an integrated part of their development cycle.

- A Fortune 500 networking equipment provider, moving to Adobe Flex-based onboard configuration systems and interactive field training. It uses FlexMonkey on developer desktops and in CI to support functional and regression testing.

## DATA SHEET

### Key facts about the solution

Table 1: Data sheet			
Product name	FlexMonkey, FoneMonkey	Product classification	Software Testing & QA
Version number	5.0, 5.0	Release date	Currently available
Industries covered	all	Geographies covered	All
Relevant company sizes	all	Platforms supported	Adobe Flex and Apple iOS
Languages supported	English	Licensing options	Support and services
Deployment options	As Adobe Flex and Apple iOS	Route(s) to market	Mostly direct
URL	www.gorillalogic.com	Company headquarters	Gorilla Logic, Inc. 11800 Ridge Parkway, Suite 100 Broomfield, CO 80021 USA
		North America headquarters	Gorilla Logic, Inc. PMB 241 4800 Baseline Rd. Suite E-104 Boulder, CO 80303

Source: Ovum





## APPENDIX

### Further reading

- Enterprise Mobile Development: Trends, Platforms, and Tools, Ovum Analyst Insight, OI00127-009, Michael Azoff, March 2011.

### Methodology

Ovum Technology Audits are independent product reviews carried out using Ovum's evaluation model for the relevant technology area, supported by conversations with vendors, users, and service providers of the solution concerned, and in-depth secondary research.

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