The Software Delivery Experts

Integrating Mobile Automation with Jenkins:

Case Study using Perfecto Mobile with Jenkins

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Agenda

- ➢ Introduction
- ➢ Case Study Background
- ➢ Tool Selection
- ➢ Implementation Planning
- ➢ Outcome
- ➢ Demo
- ➢ Conclusion

Introduction

As more companies adopt Continuous Integration (CI) and create digital channels, there is a greater need to improve QA/testing processes to keep up. One method is to leverage test automation. However, as the use of test automation increases and scales, we must ensure it remains effective and efficient. This presentation outlines a case study for automating a website on both desktop browsers and mobile browsers with CI.

Case Study Background

➢ Insurance company that is increasing its Digital Channels (web, mobile, wearable)

➢ Agile software development methodologies in use (Not as mature in Agile as they hope)

➢ Development uses Jenkins for CI

➢ Company wants open source toolsets for test automation

➢ Some automated unit testing paired with Jenkins

Case Study Background

Company needed/wanted:

➢ One automated script to test mobile and desktop website

➢ Subset of the automation suite (smoke test) to run as part of Continuous Integration (client using Jenkins)

➢ Timely reporting to make go/no go decisions

➢ Low maintenance of automated suite

➢ Automated suite to handle advanced and dynamic web content

Tool Selection

| Eclipse with Java	Jenkins
TestNG	ReportNG
Maven	Selenium WebDriver
Perfecto Mobile	SVN

Implementing Planning

➢ QA roles and responsibilities

➢ Type of testing within a sprint (unit, functional, integration, etc.)

➢ Test environments

➢ Test data strategies

➢ Level of testing (UI, backend, database, etc.)

➢ Application technologies

➢ Defect tracking

➢ QA resource skillsets

Plan and Design Test Automation
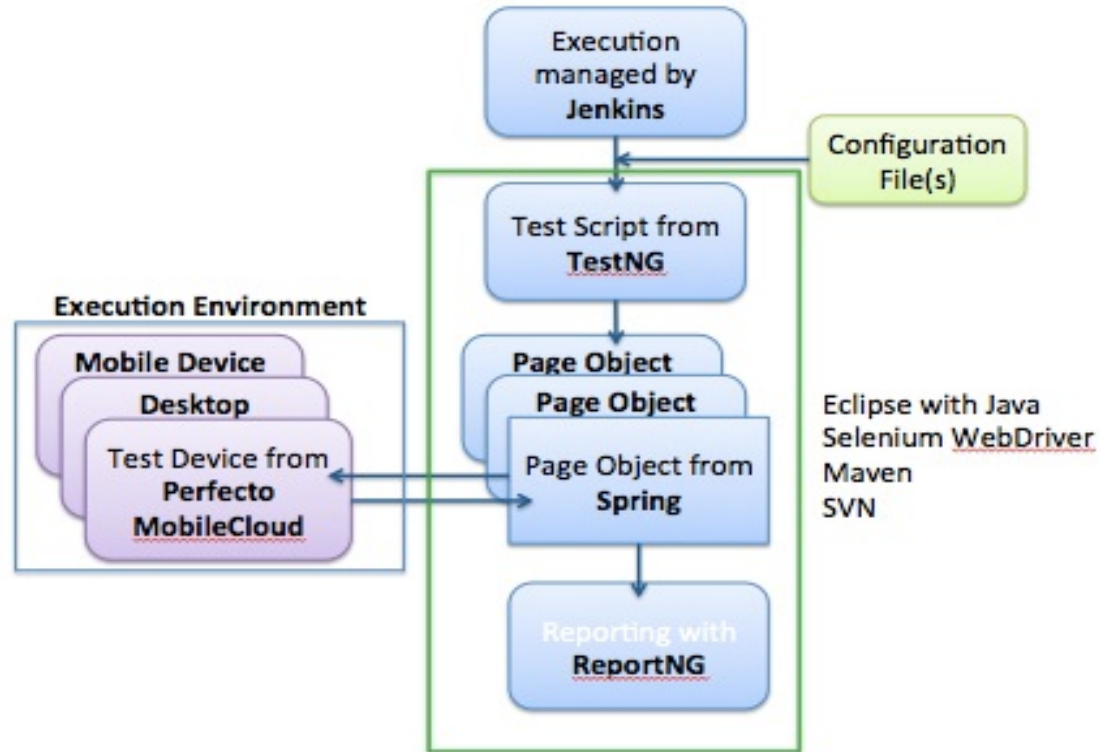
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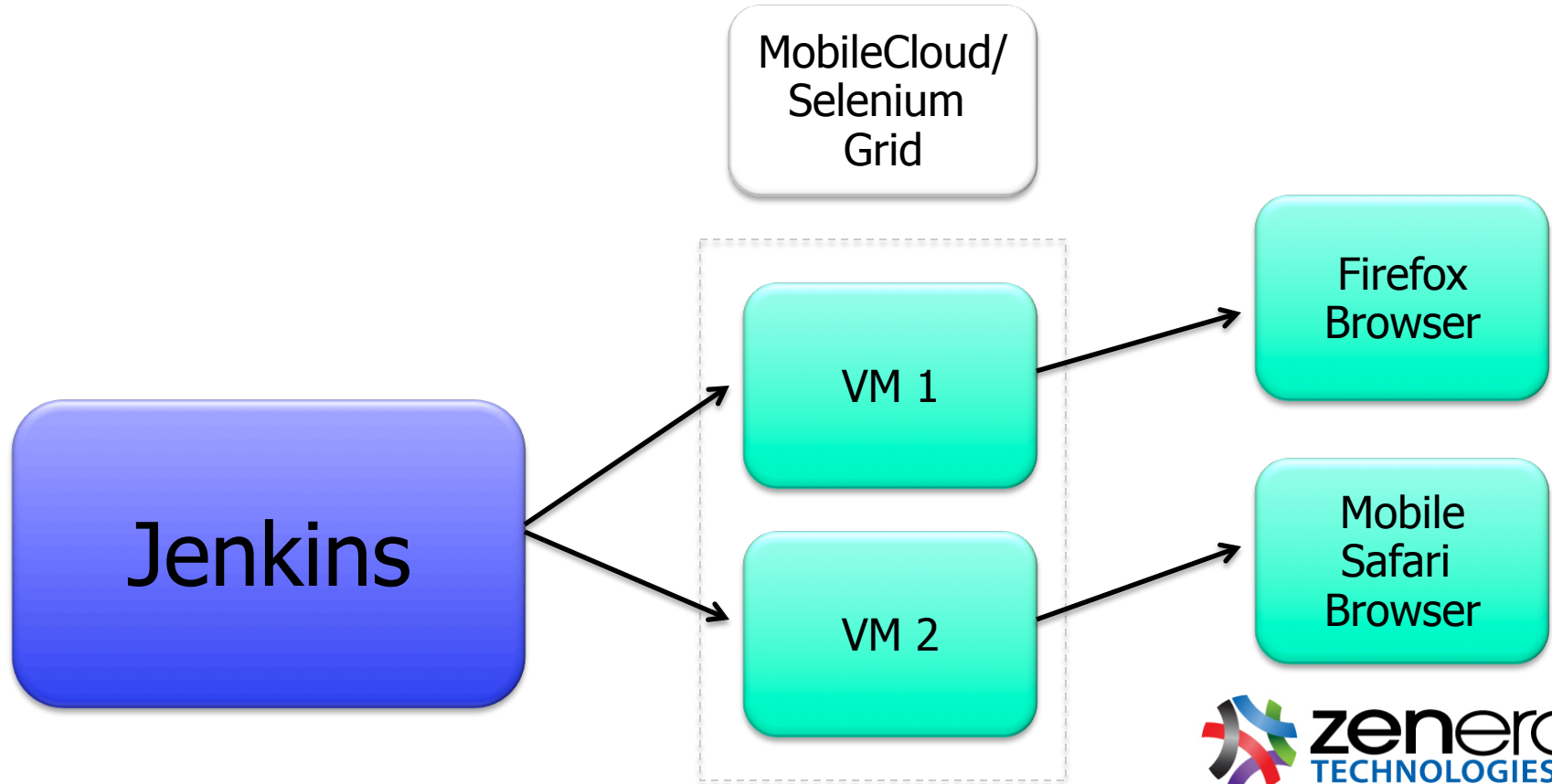
Selenium WebDriver

➢ Selenium automates browsers

➢ We use Selenium WebDriver to:

- Interact with browser objects

- Work with both desktop browsers and mobile browsers

- Navigate, validate, sync, output, etc.

Jenkins

➢ Jenkins is a continuous integration (CI) tool.

➢ We use Jenkins to:

- Manage the build process for automation runs

- Kick off scheduled automation runs

  - Regression, Integration, and Functional Tests

- Kick off smoke tests after development build

- Use for on-demand execution

  - Re-execution and defect verification

- Maintain build history and reports

- Integrate with existing CI process

TestNG

- ➢ TestNG is a testing framework

- ➢ We use TestNG to:

  - Manage test flow

  - Facilitate test setup and tear down

  - Group tests into different suites

Page Object

➢ Page objects:

- model pages of the application in code

- encapsulate business logic that test scripts can call

➢ Multiple versions of the page objects are required due to:

- variation between page layouts

- differences in best practices between mobile and desktop automation

Spring

➢ Spring is an application infrastructure framework

➢ The benefits of using Spring include:

- The ability to provide the correct version of the page object to the test script for each run

- The test script does not need to know which version of the page object it will use to run the test

Report NG

➤ ReportNG is a plugin that extends the reporting functionality of TestNG

➤ ReportNG reports are:

- Color-coded and easy to understand at-a-glance

- Shareable and web-based

- Fully customizable

Perfecto Mobile

➢ Perfecto MobileCloud enables distributed testing on real mobile devices.

➢ MobileCloud will provide:

- A platform for thorough cross browser/device testing

- A scalable network of devices

- The ability to do parallel test execution

Perfecto Mobile Cloud Example

Project Outcome

- Automated 300 test cases

  - Business process flow level test cases with average of 40 steps/test case

  - 20 test cases are used for smoke testing by pairing with Jenkins

  - Test cases are divided into three priorities (high, medium, low)

  - Project team and QA determine tests to run

Outcome of the Project

- ➢ Execution of full automation suite takes around 2 days using Selenium Grid

  - ➢ Manual testing would have taken 12 resources 13 days to execute the same suite

  - ➢ Each test runs on 8 desktop browsers (IE, FF, Chrome, Safari) and 8 mobile devices (iPhone, iPad, Samsung Galaxy, Samsung Tab)

  - ➢ Ran 4800 instances for full regression (16 browsers * 300)

  - ➢ Maintenance of the suite, on average, is less than 8 hours per execution

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Demo

Demo: Use the same script to run across multiple desktop browsers and mobile devices

Conclusion

There are many benefits to leveraging Selenium for desktop browser and mobile browser test automation. However, it is important to create a detailed plan and roadmap to ensure success.

Questions?

➢ Final questions or discussion?

Thank you!

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