MPOWR IT

Software Testing — Excellence Class

Content Preview

INTRODUCTION

Who is this workshop for?

This workshop targets developers and operators of a software product which is already extensively tested with automated strategies like unit, integration and functional testing, but have the need to fulfil strong requirements of stability, scalability, elasticity and security on top of that.

What can you expect from this Workshop?

This workshop will lead you beyond common software testing to meta and system-wide tests that will shake on every corner of your application. It will show you how to test the quality of your tests, how your system reacts on sudden or constant load, how to test for stable performance and identified attack surfaces by penetrating an isolated instance of the application.

This workshop comes in **four sessions** à four hours.

In the first session it will guide you through the **theoretical basics** of mutation testing, load and performance testing as well as penetration testing, followed by an introduction to tools and their setup which then will be used throughout the following three practical sessions.

The second session will show you how to **write tests for your tests** and how to run **custom load / performance tests** on your product.

The third session will introduce you to **penetration testing** that tries to break your system open on previously identified attack vectors.

The fourth session shows you how to **secure the attack vectors** of your system with automated tests and how to **apply counter measures** in case of a breach. The last part will discuss **test results and individual metrics** that derive from your findings.

What will be the takeaways?

As we do this workshop **individually on your codebase**, you'll learn on **real-world examples** you already know.

We will write tests for your tests, identify bottlenecks and attack surfaces that we try to compromise and secure. You can directly make use of all the **tests and fixes via pull/merge requests**. You will be able to extend these tests and scenarios by yourself and will gain a broader awareness for all the aspects of your system that can be covered and secured by automated tests. You will be able to **measure and retain the real performance** of your product as well as **lower the risk** of harmful cyber attacks.

SESSIONS

First session

- Theory: What is mutation testing?
- Theory: What is load/performance testing?
- Theory: What is penetration testing?
- Tooling: Chosen testing tools for your project
- Tooling: Setup of testing tools

Second session

- Testing your tests and catching mutants
- Gathering performance expectations about the system
- Running tests to evaluate the system's performance
- Running tests on different load levels to check your system's stability, elasticity and scalability

Third session

- Identifying attack vectors by gathering information about the system
- Scanning the system for vulnerabilities
- Trying to exploit the system through one of the attack vectors

Fourth session

- Securing attack vectors with automated tests
- Applying counter measures in case of a breach
- Discussing results and individual metrics

REQUIREMENTS

Access

- We need access to your software in a version controlled manner
- We need the authorization to create branches and pull/merge requests

Time

- We need **7 days of preparation** in advance to the first session
- We need **3 days of post-processing** after the third session in order to hand over the workshop results
- Each session of 4 hours takes place **on a separate day**, preferably 4 days in a row

Participants

- We need at least 2 participating developers and at least one person with an operations role in the team
- Each participant needs a computer with a running development environment and the authorization to install new tooling to this environment
- Each participant needs access to the software in a version controlled manner
- Each participant needs the authorization to create branches and pull/merge requests

Equipment (only if workshop is on-site)

- Beamer & canvas or a large screen with HDMI connector
- Power outlets for computers
- Internet connection

IMPRINT & LEGAL NOTES

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