



# Enjoy Writing Tests with the new Keycloak Test Framework

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KeyConf25

# About me

- Simon Vacek, IBM employee, former Red Hatter
- Brno, Czech republic
- At Keycloak since July 2023
- On the new test framework almost since the beginning
- 1st time at Keyconf

Raise your hand if you...

Have you contributed to Keycloak?

Raise your hand if you...

Are you a Keycloak extension developer?

Raise your hand if you...

Do you like writing tests?

# Do you like writing tests?

Nobody  
does,  
of course

## Writing unit tests

### Pros:

- they'll improve the quality of my code
- it'll take like 10 mins max
- literally everyone says that I should

### Cons:

- i don't wanna

**CONCLUSION: i will not write unit tests**

[reddit.com/r/ProgrammerHumor](https://www.reddit.com/r/ProgrammerHumor/)  
or

Why change something that works?

# What Arquillian does for Keycloak tests

- Keycloak server lifecycle
- Test Enrichment (DI)
- Drone (Selenium browser)
- Graphene pages



# State of the old test suite

- Examples
  - EventConfigTest
  - UserTest

# Summary

- Steep learning curve for beginners
- Maintainability
- Messy configurations spread across classes and files
- Get rid of Arquillian
- Migrate from JUnit 4 to JUnit 5

Let's make something just for us!

# The New Test Framework features

- JUnit5 extension
- Declarative configuration
  - Based in Java, no more JSON, XML, ...
- Keycloak specific IoC container
  - Managed realms, users, server, databases

Let's take a look...

# SmallRye Configuration

- Sources:
  - System properties
  - Environment variables
  - `.env.test` file
  - A properties file specified with `kc.test.config` system property or `KC_TEST_CONFIG` environment variable

# SmallRye Configuration

- KC\_TEST\_SERVER
  - KC\_TEST\_BROWSER
  - KC\_TEST\_DATABASE
  - KC\_TEST\_LOG\_FILTER
  - KC\_TEST\_CONSOLE\_COLOR
  - KC\_TEST\_LOG\_LEVEL
  - KC\_TEST\_LOG\_CATEGORY\_\_<category>\_\_LEVEL
- Levels
    - TRACE
    - DEBUG
    - INFO
    - WARN
    - ERROR

# Summary

- Automatically managed instances
  - Realm, user, client, adminclient, oauthclient, webdriver, mailserver, pages, ...
- Resource configuration with builder pattern in Java code
- Runtime configuration for DB, server, logging, browser



# “The best thing since sliced bread”

- all of you after this session (hopefully)

- [Framework readme](#)
- [Test logging readme](#)
- [Test examples](#)
- [GitHub Discussion](#)