RobotMK

Extend **Checkmk** with **Robot Framework E2E** tests

*Why infrastructure monitoring is not enough*

SIMON MEGGLE

FOSDEM'21
$me

- Simon Meggle, Germany
- independent IT consultant
- ~20 years experience
  - Configuration management (Ansible)
  - Open Source Monitoring (Checkmk)
  - Test automation (Robot Framework)
  - Python development
Checkmk

- 2008: Written by Mathias Kettner (GER) as a **Nagios addon**
- Evolved as an own, full-featured IT monitoring system
- All-in-one solution for monitoring servers, networks, databases, cloud services, containers, storage, IoT, …
- “Batteries included”: > **1800 check plugins**
- Two editions (https://checkmk.de/editions.html):
  - Raw Edition (Open Source)
  - Enterprise Edition (additional features, support)
Checkmk

IT infrastructure monitoring

OSI

8
App

7
6
5
4
3
2
1

?...

...HYPOTHESIS.
Robot Framework

- Generic test automation framework
- Written 2005 by Pekka Klärck at Nokia Siemens Networks (NSN)
- Open Source since 2008 (Apache License)
- 100% Python
- **keyword driven approach**
- library concept (Selenium, Playwright, Sikuli, REST, SOAP, Sockets...) => swiss army knife

"The decision for Robot Framework is not a decision for a company. It’s the decision for the “lingua franca of test automation”."
Robot Framework

Keywords

- abstract source code
- can be used like functions (parameters & return values)
- case insensitive
- allow Spaces ...
Robot Framework

Why Robot Framework?

“There is Selenium for Python...?”

```python
from selenium import webdriver

driver = webdriver.Chrome(r'C:\Users\drivers\chromedriver.exe')
driver.maximize_window()
driver.get("http://www.seleniumeasy.com/test/basic-first-form-demo.html")
assert "Selenium Easy Demo - Simple Form to Automate using Selenium" in driver.title

eleUserMessage = driver.find_element_by_id("user-message")
eleUserMessage.clear()
eleUserMessage.send_keys("Test Python")

eleShowMsgBtn=driver.find_element_by_css_selector('#get-input > .btn')
eleShowMsgBtn.click()

eleYourMsg=driver.find_element_by_id("display")
assert "Test Python" in eleYourMsg.text
driver.close()
```
Robot Framework

Why Robot Framework?

Robot for Selenium for Python
Robot for Playwright for Python
Robot for X/Y/Z for Python!

```robot
*** Settings ***
Library SeleniumLibrary
Suite Teardown Close All Browsers

*** Variables ***
${URL} - http://www.seleniumeasy.com/test/basic-first-form-demo.html

*** Test Cases ***
Selenium Demo

Open Browser ${URL} chrome service_log_path=null
Maximize Browser Window
Wait Until Element Is Visible at-cv-lightbox-close timeout=10 error=None
Click Element at-cv-lightbox-close
Page Should Contain Selenium Easy Demo - Simple Form to Automate using Selenium
Input Text user-message Test Robot
Click Button css:#get-input > .btn
Wait Until Element Contains display Test Robot timeout=3 error="Testtext konnte nicht gefunden werden!"
```
Robotmk

- MKP extension for Checkmk to integrate Robot Framework
- first line of code: November 2019
- Robocon Helsinki (FI), January 2020
- current state: v0.1.9
Benefits of E2E-Monitoring with Checkmk

- Monitor execution runtimes of test suites and/or sub-steps (keywords)
- Create SLA reports about the availability of applications/3rd party services
- Get alerts about application problems, execution runtimes and test failures (Email, SMS, Slack, Mattermost, ...)
- Record execution runtimes in time series databases
- optimal supplement for IT infrastructure monitoring
Robotmk

Architecture
Live Demo