Blackbox test of Device-Virtual with Robot Framework

Presenter: Cloud Tsai
Date: 12/08/19
Good study materials for understanding Robot Framework

Introduction: https://www.slideshare.net/pekkaklarck/robot-framework-introduction

How to write good test cases: https://github.com/robotframework/HowToWriteGoodTestCases/blob/master/HowToWriteGoodTestCases.rst

Dos and Don'ts: https://www.slideshare.net/pekkaklarck/robot-framework-dos-and-donts


Reference: https://robotframework.org/#documentation
Introduce Device-Virtual Test Suite

https://github.com/FelixTing/Playground_RobotFramework/blob/master/suites/device_virtual_tests.robot

*** Settings ***

Library ../lib/EdgeX.py <- import library (supports Python and Java)
Resource resource.robot <- import other robot file (contains reusable variables and keywords)
Suite Setup Deploy EdgeX <- execute method "deploy_edgex" at suite setup
Suite Teardown Shutdown EdgeX <- execute method "shutdown_edgex" at suite teardown

“Deploy EdgeX” and “Shutdown EdgeX” is implemented in EdgeX.py
**Introduce Device-Virtual Test Suite (Cont.)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>${DEVICE_PROFILE_BOOL}</td>
<td>Random-Boolean-Device</td>
</tr>
<tr>
<td>${DEVICE_PROFILE_INT}</td>
<td>Random-Integer-Device</td>
</tr>
<tr>
<td>${DEVICE_PROFILE_UINT}</td>
<td>Random-UnsignedInteger-Device</td>
</tr>
<tr>
<td>${DEVICE_PROFILE_FLOAT}</td>
<td>Random-Float-Device</td>
</tr>
<tr>
<td>${DEVICE_BOOL}</td>
<td>Random-Boolean-Device</td>
</tr>
<tr>
<td>${DEVICE_INT}</td>
<td>Random-Integer-Device</td>
</tr>
<tr>
<td>${DEVICE_UINT}</td>
<td>Random-UnsignedInteger-Device</td>
</tr>
<tr>
<td>${DEVICE_FLOAT}</td>
<td>Random-Float-Device</td>
</tr>
</tbody>
</table>
Introduce Device-Virtual Test Suite (Cont.)

Workflow test (in gherkin style)

*** Test Cases ***

Health check <- Test case name

Given send ping request
When response status is ok
Then response time should be less than "600" milliseconds
And response should have header "Content-Type"
And response text should include version number "1.0.0"

keyword name: explain what the keyword does (see how it does in resource.robot)

arguments embedded to keyword name
Data-driven test

*** Test Cases ***
Device profile existence check

[Template]  Device profile should exist in metadata
${DEVICE_PROFILE_BOOL}
${DEVICE_PROFILE_INT}
${DEVICE_PROFILE_UINT}
${DEVICE_PROFILE_FLOAT}

*** Keywords ***
Device profile should exist in metadata

[Arguments]  ${device_profile_name}

Given get device profile "${device_profile_name}"
When response status is ok
Then response time should be less than "600" milliseconds
And response should have header "Content-Type"
And content type is "application/json"
And response body is json format
And device profile name is "${device_profile_name}"
Testing report

Pros

- Open source
- User doesn’t need programming skill to understand or write test cases
- Supports Keyword-driven, Data-driven and Behaviour-driven approaches
- Automatically generate testing report
- Plentiful libraries(https://robotframework.org/#libraries)
- Easy to maintain (compared with Postman collection)
Thank You

Contacts:

cloud@iotechsys.com