

Universal Acceptance: Conformance Testing of Libraries and Languages

Progress Report

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Agenda

- ⦿ Introduction
- ⦿ Test Cases
- ⦿ Test Suite
- ⦿ Test Results
- ⦿ Analysis and Recommendations

Introduction

- ⦿ Testing done by Viagénie on various software languages and libraries related to their support of Universal Acceptance.
- ⦿ The first step was to identify a proper set of test cases.
- ⦿ Then a test suite was developed to enable repeated and consistent test results on all languages and libraries tested.
- ⦿ This test suite would then be used to verify compliance on subsequent versions of languages and libraries.
- ⦿ Finally, the test suite was executed on various software languages and libraries and results are provided.
- ⦿ For those who are not conforming, recommendations on remedy is provided

Test Cases

- ⦿ The Universal Acceptance Steering Group has produced an initial set of test cases[UASG-018].
- ⦿ We revised them towards a more implementable set, while still very comprehensive.

Test Suite

- ⦿ That new set of test cases were implemented in a test suite developed in Python.
- ⦿ For each new library or language, a wrapper is developed in the target language to be able to receive and execute the various test cases from the test suite.
- ⦿ The output of the tests from the target is then compared with the expected results.

Test Suite

- ⦿ The test suite has been executed on the following languages and libraries:
 - Python IDNA library
 - Python Encodings.idna library
 - Python Django
 - Rust IDNA
 - Java Commons Validator
 - Java ICU
 - Java JRE
 - Java Guava

Test Results

Language	Library	Test summary
Java	Commons validator	24 passed, 1 failed
Java	Guava	14 passed, 4 failed
Java	ICU	54 passed, 5 failed
Java	JRE	42 passed, 17 failed
Python3	Django_auth	9 passed, 1 failed
Python3	Encodings_idna	40 passed, 19 failed
Python3	Idna	58 passed, 1 failed
Rust	Idna	52 passed, 7 failed

Be careful about conclusions on tests failed numbers. See analysis next.

Analysis

- ◉ Detailed Analysis available on web site and report
- ◉ Summary:
 - Python IDNA library
 - Fully compliant except small issue, fixed, sent to maintainer
 - Python Encodings.idna library :
 - based on IDNA2003. Do not use nor fix
 - Python Django
 - Fully compliant except one issue, already fixed and sent to maintainer.
 - Rust IDNA
 - Implements IDNA from the WHATWG URL Specifications. Fails in many tests unless it is configured to use UTS46, where it pass most tests, except that it let through some invalid code points.

Analysis

- ⊙ Summary:
 - Java Commons Validator
 - This library does delegated TLD verification.
 - Java ICU
 - Fully compliant except small issue
 - Java JRE
 - based on IDNA2003. Do not use nor fix
 - Java Guava
 - Fully compliant except small issue

Proposed Future Work

- ⦿ Add new languages and libraries to the testing pipeline
 - We have some ideas. Open to suggestions!

- ⦿ Questions or Suggestions

- ⦿ Project site: <https://viagenie.ca/ua>