

User Defined Resource Error

IETF Interim Meeting May 2020

Colm Divilly

Oracle

Context/Motivation

- Multi-tenant service for customers to build REST-APIs using SQL & PL/SQL
- We provide and operate the service, *customer provides the SQL & PL/SQL*
- *We make mistakes, customers makes mistakes.* When mistakes happen we want to quickly differentiate between our error and customer error
- Our errors expected to be infrequent, need immediate & efficient remediation
- Customer mistakes expected to be frequent, unlikely to require remediation
- **Problem: Customer errors identified as our errors**

Why are errors misclassified?

- The appropriate HTTP status code is: **500 Internal Server Error**
- Means: 'The server was not able to process the request'
- *Gives no insight into root cause of error*
- Misunderstood by customers to mean: *'The server is broken'*, first assumption is service operator (us) has a problem, not that customer made a mistake.
- Customer reaches out to Support. Support may not understand nuance of the situation, reaches out to Development. Development triages logs, clarifies that the issue is a customer mistake.
- Customer, Support, Development have all wasted time/effort/money

How can we do better?

- Change the HTTP status line reason phrase:
 - 500 Internal Server Error -> 500 User Defined Resource Error
 - Access Logs do not show reason phrase, *signal is lost*
 - Intermediaries may not show reason phrase to clients
- Add custom error message to response
 - Add 'Error-Reason' header to response
 - Access Logs do not show headers
 - Clients do not know about header (without special knowledge) so ignore it
 - Add explanatory text to response body
 - Clients may not display response body
 - Users don't read/understand the text!

Proposed Solution

- New HTTP status code to indicate error in user defined resource
 - 500 Internal Server Error -> 5NN User Defined Resource Error
 - 5NN will appear in access log and error log
 - Automated Monitoring tools can branch/classify based on status code
- Customers can 'google' 5NN and immediately understand they have made a mistake. They don't call Support.
- Customer/Support/Development all save time and money