CYARA

Best Practices for Regression Testing Your IVR

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Introduction

One of the biggest issues in today's complex customer engagement centers is the constant change required to keep up with customer demands and to outpace the competition. Whether it's new development, a small code change, a revision to existing functionality, or a migration to a new IVR, regression testing your IVR is a big job for your QA testers. In fact, many companies have over 1,000 test scripts for complete regression testing, yet if they are relying on manual testing, they may have the time and resources to run only about 200 of these scripts.

You may already know that Cyara's automated testing can enable you to increase your test coverage and dramatically reduce the time and resources needed for testing. You may have even read the case studies about Cyara customers who have been able to cut the time needed for full regression testing by 40 percent or more and free up the number of testers needed by as much as 75 percent. In fact, an example of these savings is included in this paper.

This white paper takes automated testing a step further by presenting a best practices approach to tuning test scripts for greater efficiency. The example in this paper is in fact taken from a project with a Cyara customer who is a major US financial institution. The paper explains how this approach, which was developed by a Cyara QA analyst, simplifies script writing and also enables new staff members to quickly ramp up when assigned to a project.

Traditional Approach

Dialogue specifications (specs) are detailed documents that are written by business analysts documenting what the IVR is to say and do. Essentially, they are the engineering blueprints for the IVR's functionality, and they are constantly changing. Numerous changes to the specs are common early into a development project, especially when the design and functionality are still evolving. Adding to the complexity of frequent changes, the specs continue to be revised throughout the life of the IVR and can become a tedious and often confusing document.

For a typical project, most QA analysts begin to write their test scripts while the code for the IVR project is still being written. When hundreds of test scripts are needed for a project, the earlier the QA analyst can start scripting Test Cases, the better. The biggest question for the analyst with traditional scripting is how to quickly and efficiently locate the exact spot where a change was made in order to test the change.

This paper presents a best practices approach that takes automated testing a step further, simplifying script writing and enabling staff to quickly ramp up on new projects.

Best Practices Approach

The best practices approach described here provides a simple way to answer this question, but first it may be helpful to clarify when this approach is most applicable. While the method for writing test scripts detailed here can be used with Cyara Cruncher when doing stress testing or with Cyara Pulse when doing monitoring, both of these types of testing typically have a limited number of test scripts as just a few call flows are tested. The real benefit of this approach is seen when using Cyara Replay for full regression testing where test scripts can easily number into the hundreds.

Skill Set Needed

This best practices approach requires a solid understanding of writing test scripts and familiarity with dialogue specs. Any QA analyst who is familiar with writing test scripts and using the Cyara Platform will be able to follow this approach. The real advantage to the approach is that it creates a logical order that makes it very easy to transition work from one analyst to another or to train a new analyst to write test scripts.

Method and Execution

Typically dialogue specs show logical states that help determine the call flow. For easy reference, the Cyara Test Case Name can start with the name of the dialogue state in which you are testing. The states include the verbiage of the audio clips. For clarity, these verbiages can be marked with a name associated with the audio clip. In Cyara, every audio clip then becomes its own block, with the audio clip name, the block name and the step description. Using this method makes it much easier for the QA analyst to find where to make changes. When there is a change to the IVR, the dialogue specs are updated, and the QA tester can see where the change was made based on the dialogue state name, or audio clip name. Then, using the Cyara Platform, the QA tester can easily look up the name to find where this change was made and modify the exact block. The scripting example below will help to further clarify this approach.

Best Practices Examples

The figures below illustrate the best practices for following this approach to writing test scripts.

Every audio clip listed in the dialogue specs becomes a test block. The audio clip name becomes the Block Name and the Step Description, as shown in Figure 1.

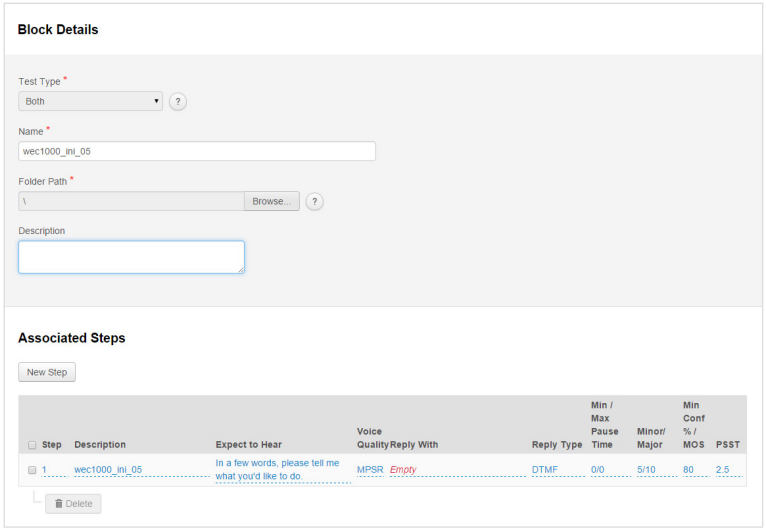

Figure 1. Test Block Detail

This best practices approach requires a solid understanding of writing test scripts and familiarity with dialogue specs. Any QA analyst who is familiar with writing test scripts and using the Cyara Platform will be able to follow this approach.

By using the **New Step** button in the Associated Steps section of the Block Details screen, a QA tester creates the step associated with the verbiage of the audio clip. The QA tester supplies the following information for the step, as shown in Figure 1:

- **Name** is the name of the audio clip.
- **Step Description** also is the name of the audio clip.
- **Expect to Hear** is the verbiage associated with the audio clip.
- **Voice Quality** stays as the defaulted MPSR.
- **Reply With** is NEVER filled into the block. The Reply With can be created as a separate block, or as an individual step in the Test Case.
- **Reply Type** can remain as the default DTMF, as replying is not done in the block.
- **Min/Max Pause Time** is always left as 0/0.
- The **Min/Max Threshold** can be left as the default or specified as a default value that is good for the specific environment.
- **Confidence** can be left at the standard 80%.
- **PSST** is 0 if the audio clip is not waiting for a reply at the end of a dialogue state, or 2.5 if it is. During tuning, the PSST value may need to be changed.

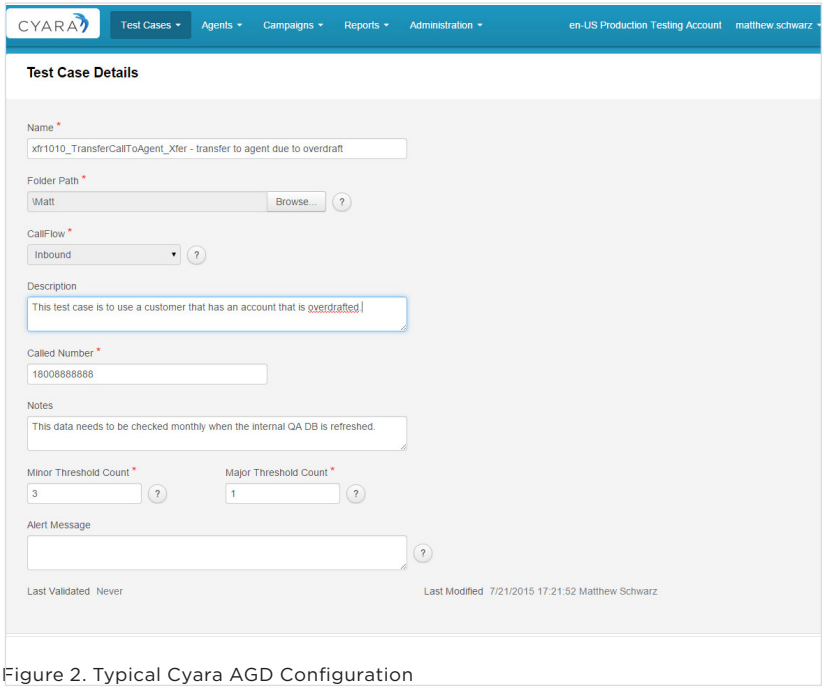

Figure 2. Typical Cyara AGD Configuration

Notice in the Test Case Details screen (Figure 2) that the QA tester adds the Test Case name in the **Name** field to indicate the dialogue state that is being tested. The text in the **Description** field describes what the Test Case is doing and what the test is to achieve. The **Notes** field can be used to indicate additional information; for example, that the data needs to be refreshed.

Then the steps of the Test Case are just the blocks that have been created and inserted with individual replies given between them (Figure 3).

Benefits of this Approach

The primary benefit of using this best practices approach for writing test scripts is that

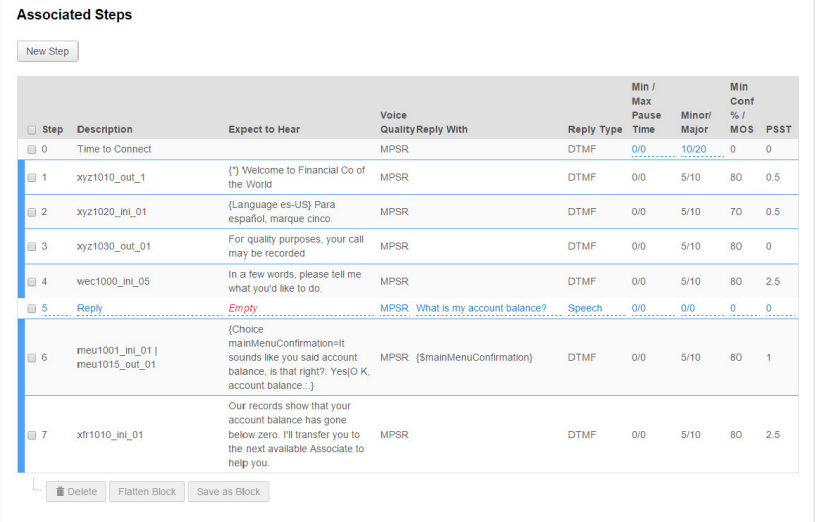

Figure 3. Test Block Additional Steps

it makes writing Test Cases virtually effortless. The QA tester only has to piece together related test blocks. When using this process, the majority of the steps run correctly with very little need for tuning.

When Test Cases and test blocks are named to correspond to the audio clips in the dialogue specs, it is also easier to run automated Test Cases because testers can quickly locate where iterative changes need to be made. This ease means that testers can begin writing Test Cases earlier in the development process and can move on to building out new Test Cases instead of being mired in the repetitive and often low-value work of executing Test Cases.

One Cyara customer calculated that using this methodology for writing test scripts and using automated testing saved them 176 person-days for a major project with about 8,000 unique Test Cases. This represented a 33% savings on QA, and the QA team was also freed up to work on test plan design, innovative testing techniques, and error evaluation. The testers could also work more closely with developers to thoroughly understand requirements and communicate the defects that were found.

In addition, companies generally understand and estimate that the error rate from manual testing is approximately 20%. Removing this error rate by replacing manual testing with automated testing saves time that would otherwise be spent investigating and reporting on erroneous defects.

Benefits of this approach:

- Simplifies writing Test Cases
- Makes it easier to locate changes
- Increases test coverage
- Removes human error rate
- Frees up testers for high-value tasks

Conclusion

Change is all too constant in most customer engagement centers. Using the methodology explained here, you can identify and fix changes more quickly. Additionally, creating Test Cases is streamlined, and you can develop new call paths by piecing blocks together. The benefits listed in this paper show that this streamlined approach can save significant testing time, which speeds your path to innovation, reduces the number of testers needed, and reduces the overall cost of development.

Many Fortune 100 companies trust Cyara and automated testing for their contact centers. The Cyara Platform is the market-leading omni-channel customer experience testing and monitoring platform, and Cyara was named a Gartner Cool Vendor in CRM, Customer Service and Customer Support, in 2015. In fact, the Gartner report said that by using Cyara's automated testing, organizations are able to deliver new capabilities faster and more reliably than with disparate tools and/or manual testing. How can Cyara help you take control of your customer experience?

ABOUT CYARA

Cyara is the global market-leading provider of an omni-channel customer experience testing and monitoring platform and was recently named a Gartner Cool Vendor in CRM Customer Service and Customer Support, 2015. Cyara enables its customers to rapidly innovate while dramatically reducing the cost of development and testing and the risk of exposing their customers to poor customer experiences. Every day, millions of flawless customer interactions are delivered by some of the most recognizable brands in the world utilizing the Cyara Platform.

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