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Financial: Eliminating Third-Party Test Environment Access Fees

A leading brokerage firm needed to increase the scope and frequency of testing without incurring increased fees for accessing their banking partner's test environment. Parasoft's service virtualization enabled them to cut their dependency on the partner's test environment. Parasoft Virtualize is currently being used to emulate the behavior of partner services (including those communicating over a specialized FIX protocol). The organization plans to expand usage throughout the test organization as well as leverage service virtualization to facilitate training.

The Challenge: Scaling the Test Environment Without Additional Third-Party Access Fees

A leading brokerage firm wanted to expand their testing efforts without incurring additional fees for accessing third-party test environments. The organization had been paying for a fixed number of lines of access to the partner's test environment. This enabled them to execute test transactions where their own banking system interacted with their banking partner's test environment (sending messages to it, then receiving and processing the correlated responses).

As the organization decided to scale their application as well as increase the frequency and scope of testing, the cost of scaling access to this environment became an increasingly pressing issue.

Service Virtualization: Improving Access to (and Control Over) Partner Dependencies

Since the organization was a long-time Parasoft SOAtest customer, they approached us with their challenge, and we explored how service virtualization with Parasoft Virtualize could meet their needs.

Using Parasoft Virtualize to emulate interactions with the third-party services, the organization was not only able to cut the dependency on their partner (and reduce the associated fees), but also acquire a solution that would expand test environment access and test coverage throughout the organization.

As the organization scales their application, new testing is performed exclusively against Parasoft Virtualize. No additional lines of access to the partner's test environment need to be purchased because Parasoft Virtualize replaces 100% of the relevant partner system functionality.

To achieve this comprehensive application behavior emulation, virtual assets were created by rapidly modeling the behavior of the third-party test environment. For instance, within an hour and a half, testers were able to exercise a stateful transaction that involved the Application Under Test adding a new account to the emulated third-party environment, performing transactions that change the account balance, then later validating that the account balance was updated correctly.

Since the initial rollout, the team has updated the original system to keep it in synch with application changes. This involves extending the virtual assets to cover new operations, modified request formats, etc.

Emulating Behavior Over Custom Protocols

The organization's environment used a broad array of messaging formats and protocols, including XML, ISO 8583, MQ, HTTP, and JDBC. These were supported "out-of-the box" by Parasoft Virtualize.

The organization also extended Parasoft Virtualize to support a custom protocol extension for Financial Information eXchange (FIX). One of the organization's teams needed to test against FIX services that were connected to the application under test. Since these services were difficult to access for testing purposes, they wanted to emulate their functionality through service virtualization. Parasoft's implementation of a custom protocol for these FIX services enabled them to test against these services whenever they wanted—and to rapidly configure a breadth of behavior (performance, response conditions etc.) that enabled them to significantly extend the test coverage in relation to these FIX services.

Using Service Virtualization for "Disposable" Training Environments

The next step in the organization's service virtualization rollout is to leverage the technology in a training environment. Currently, onboarding new employees involves setting up a test system where they can learn how to use the organization's banking and trading applications. Configuring such systems is extremely time-consuming due to the amount of data that must be set up, then purged or reset before the system can be used for the next round of training.

Since all of these data transactions are web service calls, it will be simple for the organization to represent this behavior as virtual assets, then have the training system interact with these virtual assets rather than an actual staged environment. This way, after each round of training is completed, they can simply click a button to reset the system to its original state so that it's immediately ready for the next round of training. Configuration that used to take days can now be completed in a matter of minutes.

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