API TESTING FOR THE ENTERPRISE, IoT, AND EMBEDDED

Modern connected applications are aggregating data from private, partner, and public APIs at a staggering pace, in order to drive business and consumer value. As applications grow increasingly connected, the security, functionality, and performance of an application’s “mashup” is only as strong as its weakest link. The success of an end-to-end transaction depends on all the parts working flawlessly all the time. Even small glitches from a popular API can singlehandedly choke thousands of transactions, or worse yet, be used as a security exploit. Ensuring the integrity of APIs is made complicated by a number of factors:

- Extensive testing is required to ensure that APIs will satisfy expectations under the extreme conditions they might face in production
- Validating end-to-end test scenarios typically requires access to third-party systems that are often unavailable or costly
- Each of the many continuously-evolving components involved in modern applications requires very specialized domain expertise to test and analyze
- Manual testing efforts lack the breadth, depth, and repeatability that is critical for identifying application risks prior to production

REAL RESULTS

Parasoft’s customers include the following, who used Parasoft SOAtest to benefit their businesses:

- **AT&T**: To ensure the reliability of iPhone billing systems
- **IRS**: To ensure the accuracy and performance of corporate tax e-filing systems
- **CDC**: To validate rule-based specimen management systems
- **Sabre**: To ensure the reliability of the world’s largest travel network
- **Cisco**: To audit business processes
- **IBM**: To enforce governance policies
- **Fidelity**: To create and manage emulated service assets
- **Bloomberg**: To validate performance expectations
- **MedicAlert**: To safeguard personal health record management services
- **SIEMENS**: To ensure secure, reliable account management and email services
- **Lufthansa**: To ensure that cargo shipments are planned and fulfilled
- **Loral**: To ensure expected quality of service
Parasoft’s comprehensive enterprise-grade solution dramatically simplifies the complex testing needed for today’s connected business, IoT, and embedded systems.

**SIMPLE GENERATION OF FLEXIBLE, EXTENSIBLE TESTS**
From a user-friendly interface, generate tests by monitoring live application traffic or analyzing key application resources. Intuitive GUIs visualize message structures, making it simple to fine-tune test messages and validations for GUI-less services and APIs. Parasoft’s tests are engineered for easy sharing, reuse, and extension.

**REPEATABLE AUTOMATED END-TO-END TESTING**
Using automatically-generated tests as building blocks, SOAtest provides you with the ability to rapidly define complex test scenarios that exercise and validate business transactions across multiple endpoints. From the messaging layer to the web UI to the database, ESB, and mainframes, the intuitive interface makes it simple to validate whether business logic satisfies expectations. Easy integration with continuous integration platforms ensures that critical errors are exposed immediately upon introduction.

**SIMULATE THE BEHAVIOR OF DEPENDENCIES**
Testing efforts are often delayed and/or compromised due to difficulty accessing or configuring dependent components (third-party applications or services, databases, mainframes, etc.). Parasoft Virtualize enables rapid, flexible simulation of these dependencies’ behavior, giving functional and performance testers unconstrained access to (and unparalleled control over) the dependent components they need to test against. This promotes earlier, faster, and more complete testing.

**ENSURE THAT INTERCONNECTED APPLICATIONS MEET EXPECTATIONS**
Parasoft SOAtest was built from the ground up to simplify the complex testing that’s vital for secure, reliable, and compliant connected enterprise, IoT, and embedded applications. The result? **Reduced costs** by reducing testing costs, reducing technical debt, and exposing defects earlier in the SDLC; **reduced risks** by applying more exhaustive testing techniques, increasing test coverage, identifying security vulnerabilities, and immediately exposing any defects introduced by modifications; and **increased efficiency** by leveraging easy-to-use automation and enabling artifact reuse.

An API testing solution is commonly applied in the following situations:

- **COMPLEX CONNECTED APPLICATIONS**: To visualize and validate how messages and events flow through the distributed system
- **CLOUD-BASED APPLICATIONS**: To facilitate cloud migration and ensure functionality, security, and performance expectations are met in dynamic environments
- **IoT DEVELOPMENT**: To ensure the continued functionality, security, and performance of the frequently-evolving APIs that enable and drive IoT applications
- **END-TO-END FUNCTIONAL TESTING**: To automate and analyze test scenarios across the many disparate, specialized endpoints involved in a single business transaction