# Capgemini

# Capgemini, API Fortress and Oracle Cloud Team Up to Help a Large Retailer Adopt a CI/CD Pipeline

Capgemini partners with API Fortress (continuous API testing) and Oracle Cloud (API management) to transform API-first development with intelligent, efficient automation.

This large retailer has set a high bar for customer experience (CX), employee experience (EX) and brand strength. Their mobile apps and API programs have been critical to their ongoing success, particularly as they have taken on new challenges in the on-demand economy.

When the retailer partnered with Capgemini and API Fortress, one of their top goals was to significantly accelerate time-to-market for new releases and features. At the same time, they wanted to avoid increasing the risk of costly software defects and API failures. By adopting a continuous integration and continuous delivery (CI/CD) pipeline within a microservices architecture, the retailer took a major step toward achieving breakthrough "quality at speed."

In the PoC, we noticed a considerable increase in the quality of code released with the help of API Fortress. Their flexible platform makes it easy to integrate API testing into any workflow without disrupting legacy or new tools. We shifted testing left and standardized a single API testing strategy across the whole organization.

-Sander Rensen, Lead Solution Architect at CapGemini

## CHALLENGE

- API testing was constraining time to production (bottlenecking)
- Siloed testing methods were causing inconsistent API quality between teams and environments
- Feedback loops were too slow, and bugs were not found quickly
- Testing cycles were too long for an efficient, high-performance CI/CD pipeline
- Software and test engineers were not unified in API quality methodology
- API testing was not occurring at the Oracle API gateway to help save time

## SOLUTION

- Automated API functional test generation, which then allowed for easy creation of integration tests that reproduce user behaviors
- Functional and load test automation as part of the CI/CD flow (Jenkins)
- Functional uptime monitoring using existing tests
- Centralized API testing solution that improves collaboration, efficiency, and visibility across all departments
- Immediate feedback from API Fortress along with a unified dashboard, data visualization, reporting, and notifications about defects at the API level
- Helped Capgemini reduce testing cycles thanks to automation, integration with existing tools, ability to reuse tests, and ability to unify software and test engineers
- API mocking allowed QA testers to shit testing left and write accurate API tests before software went live
- Integration of API Fortress with Oracle Cloud API Platform further accelerates and simplifies the testing cycle by unifying test creation with API designs

# Digital Transformation Starts with Continuous Quality

*"Build quality in early. Testing as an afterthought totally disrupts Agile development velocity, since developers waste a lot of time going back and fixing complex bugs of code they wrote days and weeks before."*

-**Diego Lo Giudice, Vice President, Principal Analyst at Forrester**

Lead Solution PaaS Architect at Capgemini, Sander Rensen, has managed the successful rollout of API-first development, microservices architectures, and CI/CD pipelines at multiple global enterprises. Capgemini clients have benefited from accelerated journeys to complete and safe digital transformation.

For this retailer, Sander and other Capgemini leaders knew from experience that one of their first priorities was to solve the problem of bottlenecks in testing, particularly those costly and time-consuming testing bottlenecks that come late in the lifecycle and frustrate developers, product owners and business owners.

The UI testing solution already in place was not enough to achieve continuous quality and eliminate testing bottlenecks. After all, UI testing cannot sufficiently test APIs, the backbone of all modern mobile apps and web services. Formerly, software quality teams may have divided testing into 80% for UI and 20% for APIs. But modern apps and services have inverted the allocation of testing to 80% for APIs and 20% of UI.

Learn More about **API Testing vs. UI Testing for CI/CD** or Download the **API Fortress Solution Brief** for Insight into Digital Transformation

Capgemini also recognized that the agile development teams at the retailer would be challenged to create and manage increasingly granular test cases to support increasingly sophisticated apps and cloud-native apps. If the retailer was going to achieve continuous quality at speed with the sophisticated apps, they needed an easy way to seamlessly integrate API testing with test case management, version control systems and more.

Sander Rensen explains: "When 20% of total testing was API testing, it was okay for test engineers to keep API testing in a silo. But today, testing cannot happen in a silo: there are way too many moving parts. Continuous API testing for CI/CD must happen on a highly interoperable and collaborative platform. Developers, test engineers, and product or business owners need to be able to work in parallel with nothing lost in translation."

# Proof of Concept: Results

Capgemini selected API Fortress to power continuous API testing for the retailer's CI/CD. As an API-first platform, API Fortress easily integrated with the retailer's test case management, version control systems, and collaboration and notifications apps. The API Fortress platform is completely made of APIs.

API Fortress also integrated effortlessly via a built-in integration with the retailer's **Jenkins CI/CD pipeline** and **Oracle Cloud API Platform**. With synched API design, management, testing, mocking (via API Fortress), and monitoring, the Oracle-API Fortress bundle was ready out-of-box to shift testing left for best practices CI/CD.

Any user at Capgemini or the retailer was able to create and automate sophisticated API tests—including unified functional tests, integration and end-to-end tests, and load tests and more. API Fortress made it easy for developers to build tests alongside API code in their own IDE. Other users were able to auto-generate scriptless tests with the drag-and-drop APIF Composer. Optionally, API Fortress also offered a downloadable IDE (**APIF Forge**), allowing anyone to build and
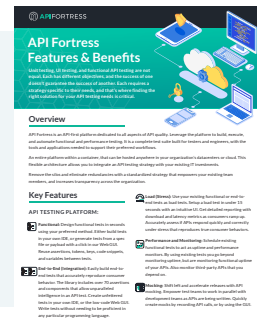
collaborate on API tests on their laptop computers without having to work in a silo.

It was also important for the retailer to maintain ownership of all tests and testing data behind their perimeter. Capgemini activated the on-premises version of API Fortress that safely tests internal, partner, and third-party APIs.

Capgemini and the retailer needed to test anything and everything at any scale. That meant increased regression testing could not be held back by traditional seat-based licensing. API Fortress provided an Unlimited License with a one-time ("continuous testing") activation fee.

With everything in a single platform to shift testing left, integrate with anything, and drive continuous testing, mocking, and monitoring of APIs throughout the lifecycle, API Fortress provided the ultimate solution for Capgemini and the retailer to develop a successful API quality plan.

Learn More about API Fortress:

**Features & Benefits Sheet**