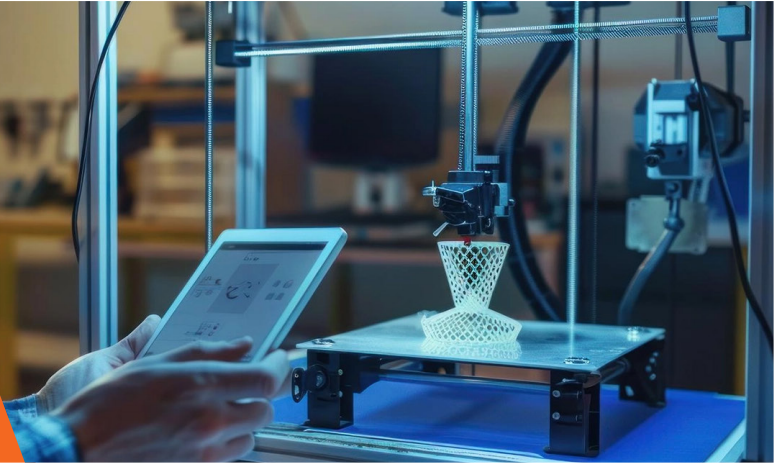


# Simplifying 3D Model Uploads to Accelerate Order Processing for a Leading Printing Marketplace



## The Overview

Our customer, a top-tier US-based online 3D printing service provider, has been catering to more than a million clients since 2007. The company sought to establish and manage a robust product engineering services unit for its primary business, namely the marketplace, as well as to implement its SaaS, digital platform, and cloud migration strategies.

They were looking to:

- Migrate to the AWS cloud for better disaster recovery, portability, and reliability
- Upgrade the links between the marketplace and the 3D printing platform by leveraging APIs
- Enhance the back-end and front-end of the internal portal used by the 3D printing platform
- Simplify the 3D model upload process to reduce processing time

## The Challenge

The client was using legacy applications and platforms that led to longer turnaround times, lower productivity, and limited capability to serve processes in the digital age and influence growth. They also faced severe scalability issues that impacted operations and incurred a high maintenance cost, negatively affecting the bottom line. Besides, the client also faced significant cloud migration and adoption challenges. The QA also encountered challenges with inconsistent test cases, which impacted the speed of the testing process.

## The Solution

The client partnered with CriticalRiver for its strengths in engineering services and AWS expertise. We provided them with multiple options, including nearshore, offshore, and hybrid team structures. The customer chose to look at 100% offshoring as it offered complete working hours overlap with the client's team in Europe and a four-hour overlap with its US team.

Our team structure consisted of front-end and back-end engineers, DBAs, and automation analysts. CriticalRiver team continues to work as an extension of the client's internal team to deliver the tech stack modernization program and the implementation and adoption of AWS infrastructure. Here's a quick look at the overall solutions delivered to the customer:

- DevOps: The team at CriticalRiver provided solutions using Terraform that helped the client in setting up RDS (database). We also created the infrastructure for the DevOps process.
- Integration with the marketplace: Our experts upgraded the integration code to a new API version and undertook unit testing for a smooth transition.
- Reinventing internal portals: CriticalRiver suggested a uniform API format and response pattern for the back end while also integrating swagger UI to manage the API via the route link. Our experts recommended using bootstrap to fix design and responsiveness issues for the front end.
- Quality assurance: CriticalRiver recommended using the faster Playwright automation tool to create automation Scripts and suggested the POM-Page Object Model for better page design flow. In addition, we shifted to the VS code, which is easier for debugging and viewing the test reports.

## Impact Delivered

- Reduced delivery time by 70%
- Increased output by 100% with faster completion of test runs
- Improved the 3D printing process by 60%

## The Results

CriticalRiver team closely worked with the customer to understand their business objectives, goals, and future plans and presented a tailored approach with flexible options that fully aligned with their vision. Listed below are some of the impacts that have resulted from the execution of the project.

- Enhanced optimizations and quicker results
- Taking screenshots and auto-recording test scripts is a huge advantage
- Faster test run speed and 100% test output
- Reduced time to read test scripts
- Created a new deployment using Terraform for the new RDS cluster in AWS

The client was able to enhance work speed and overall efficiency significantly. The project work continuously progressed across different time zones while continuing to build greater trust and reliability.