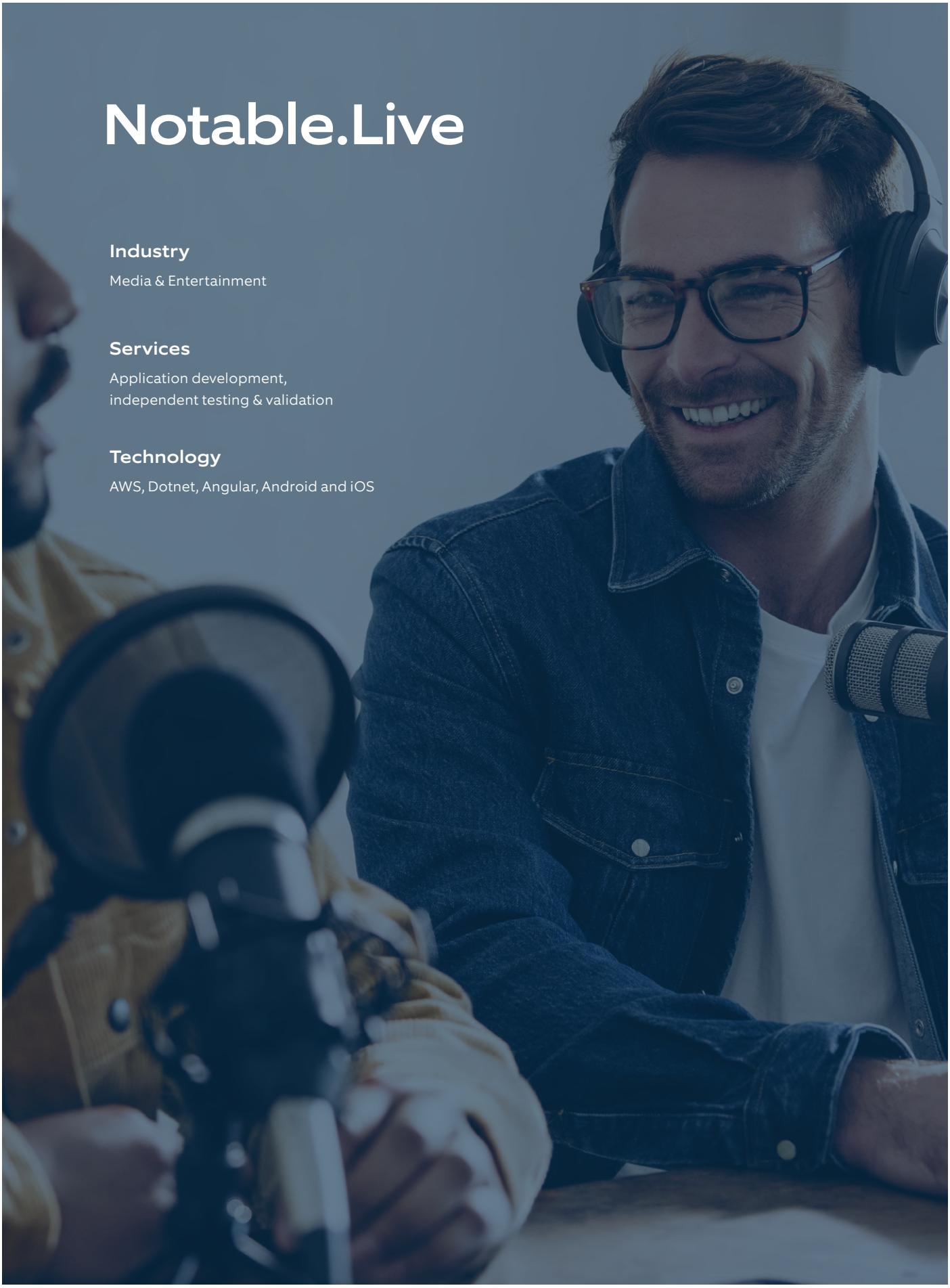
nagarro

notable LIVE

Notable.Live



Industry

Media & Entertainment

Services

Application development,
independent testing & validation

Technology

AWS, Dotnet, Angular, Android and iOS

The story

Notable.live is a leading video streaming platform provider that enables influencers to broadcast themselves in real-time from their mobile device or tablet. On notable.live, fans can connect with celebrities through live video.

Notable was considering launching a big event. But before going live they wanted to make sure their app would be able to handle heavy traffic and a considerable load of users. They approached Nagarro to conduct a thorough round of end-to-end load testing. They required a centralized solution to not only perform load testing of streaming services, but also calculate the response time of different app features like getting a fan live, live contests, initiating a selfie mode with a celebrity, and more.

Nagarro created a scalable end-to-end performance testing framework simulating loads from different devices and users , with the flexibility to integrate as many devices as required - all based on actual load requirements.

The Challenge

Functionality of the Notable.live application to be tested

The Notable.live application offers video communication between devices including video/audio streaming and signaling and messaging over the WebRTC channel. For example, when the admin initiates an event, this signal (via the application's native APIs) goes to the communication platform. The platform further connects with the dialed-in fans to either play an audio/video stream or perform any tasks like making a fan live or starting a contest, taking a selfie, and more. Fans can also go live and ask questions to a celebrity. This message again goes to the communication platform and the fan's video/audio is broadcasted to other fans and the celebrity.

Identifying the right application testing framework

The client wanted to check the end-to-end transaction time of different journeys - from admin screen to application native APIs, to communication platform, to either Notable's or the fan's screen. We started exploring on tools that support the WebRTC protocol for the performance testing of the app. But the existing tools were able to test only in parts, like only the audio/video streaming and yet, were quite costly too. No tool supported the performance testing of the entire end-to-end journey.

Creating an end-to-end app testing solution

To be able to offer an end-to-end app testing solution, we created a customized protocol-agnostic framework. This framework was capable of spawning the required Genymotion devices as per the user count which was provided as an input by the tester to load test the application.

We developed four framework layers for the following tasks

- Creation of custom script to create the infrastructure
- Implement the Appium package on the AWS EC2 ECS for easy scalability
- Simulate real user actions on the devices using Appium and network scripts
- Load Test executor script to be executed on the created infra on the cloud

Inside this testing framework

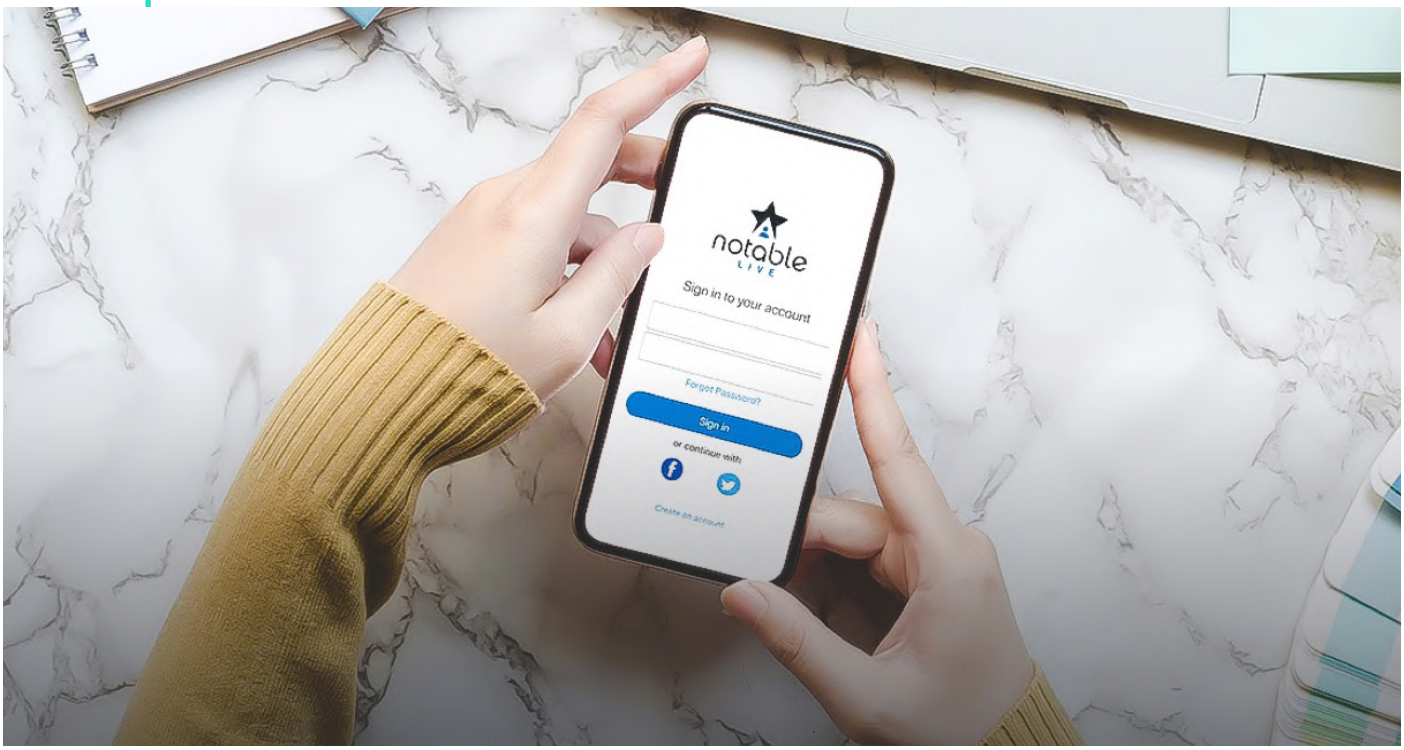
We used the Genymotion Android emulator to create a device farm. JMeter was at the heart of the framework to trigger user actions simultaneously on the Genymotion devices. We also wrote custom samplers in JMeter to configure the Appium server on these devices and further perform different user actions like – click, wait, input, etc. All this was done using custom scripts to save repetition of work and implement everything in an automated manner.

We used AWS ECS (Elastic Container Services) container management services over Amazon EC2(Elastic Compute Cloud) instances to contain Appium Server, Android SDK and other Android components, along with any and dependent files to run the Appium code triggered by the JMeter threads using the custom samplers. All the versioning of Appium server and APK update done using Shell scripts to ensure swift implementation.

But, in order to run the scripts, we also required a driver. This requirement was fulfilled in the form of a custom Shell script. This script asked the user about all the required parameters of the load test from the CLI itself, to avoid the need to shift to script of JMeter to provide inputs. Once the user type is identified, the test is run on the spawned Genymotion devices, covering all the end-to-end performance scenarios.

Impact to business

With such a scalable solution, the client has been able to handle load of any scale, depending on the anticipated user load for different planned events. The client also gets a realistic picture of the user experience during load conditions as the flows cover end-to-end user interactions. This helped the client to make informed decisions for the launch of various events. The framework is future-safe as it is protocol-agnostic. Even if the client switches to some other technology at the back end, the same tests can be used with minimal or no change.



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Client Testimonial

"After we had successfully developed and deployed our initial MVP for Notable Live, I engaged Nagarro to conduct extensive load and performance testing across the entire platform. The objective was to be confident via a set of high-fidelity tests coupled with automated simulation to stress known and identify any additional (unknown) bottlenecks in our backend and live events features. Nagarro developed a performance test platform, conducted a set of stress tests, provided me the results complete with detailed performance data and effectively communicated the results. Nagarro has generally been an excellent development partner, but this undertaking of load and stress testing is certainly a highlight of my experience with Nagarro! I am very pleased with the results, which Nagarro innovated and performed in a timely, efficient manner."

Jim Gaughan,
President & CEO,
Notable Live

About Nagarro
In a changing and evolving world, challenges are ever more unique and complex. Nagarro helps to transform, adapt, and build new ways into the future through a forward thinking, agile and caring mindset. We excel at digital product engineering and deliver on our promise of thinking breakthroughs. Today, we are 18,000 experts across 33 countries, forming a Nation of Nagarrians, ready to help our customers succeed.
www.nagarro.com