Fastly launches CDN edge computing into beta

Analysts - Craig Matsumoto

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Introduction

Fastly has announced the beta release of Compute@Edge, a form of serverless computing that runs on the company's content delivery network (CDN) and lets users augment its operations. It's the latest edge computing move among CDNs, which continue to transform into programmable edge platforms.

The 451 Take

Fastly was early in letting users write code to execute on its platform, but other CDN providers have been introducing edge computing recently in the form of serverless functions. Most of those efforts are based on JavaScript, but Fastly instead chose WebAssembly for its performance advantages. That's characteristic, as Fastly targets a user base that wants to 'engineer' the CDN. Even so, the vendor faces competition from Cloudflare, which launched its own WebAssembly capability last year. Fastly users showed their appetite for Compute@Edge during the year that it was in preview, so we expect it to enjoy a strong reception. More generally, these serverless functions represent a new era for CDNs, with richer options for handling tasks such as content delivery, routing and security. We expect edge computing to become a strong competitive front among the CDN providers.

Details

Fastly has always let developers write their own code to configure the CDN. The catch is that this code has to be written in the vendor's variant of the open source Varnish Configuration Language, which isn't as well-known as languages such as C++, JavaScript and Rust. Last year, Fastly announced that it was developing a coding sandbox that would theoretically allow for programming in other more popular languages, and would let users build more complex applications than previously. The sandbox used WebAssembly, a protocol commonly employed in browsers, to bring that code into a format executable on the Fastly platform. The sandbox was soon named Terrarium, and it has now been released into beta under the moniker Compute@Edge. Rust is the first language supported, with others to follow. Compute@Edge was launched in early November and was a focal point of Fastly's Altitude customer conference in New York City the following week.

In recent years, some of the major CDN providers have begun offering what they call edge computing. Really, it's a serverless functions capability similar to Amazon Web Services' Lambda, where a triggering event causes a relatively small set of code to spring into action. The idea is to give users the ability to program the CDN's behavior. Possible use cases for this capability include A/B testing or ad insertion, where the serverless function would alter the CDN routing to redirect users or files to the correct places.

So far, WebAssembly has not been the popular choice for CDN providers' serverless functions. Akamai Edge Workers, Cloudflare Workers and StackPath EdgeEngine are all based on a JavaScript runtime called V8. Fastly chose WebAssembly for its performance, claiming that Compute@Edge can spin up a program from a cold start within 35.4 microseconds, compared with five milliseconds for V8. That performance is driven partly by the fact that the company wrote its own compiler and runtime for WebAssembly called Lucet.

The only competitor with a WebAssembly-based offering is Cloudflare, which added WebAssembly support to Cloudflare Workers last year, shortly after Fastly announced Terrarium. That support began at a basic level but has matured quickly to support C and C++ as well as Rust.

While WebAssembly might seem like a high-performance niche option, the support of multiple languages could help attract a wide audience, including customers new to Fastly. To help expand WebAssembly's profile, the vendor has launched the Bytecode Alliance with cofounders Mozilla, Intel and Red Hat. The alliance aims to bring WebAssembly to uses beyond web browsers, and it touts WebAssembly as a way to make code more portable and trustable.