HashiCorp

SIMPLI.FI | CUSTOMER CASE STUDY

Right on cue

Global leader in advertising success uses HashiCorp solutions to save 16 months on a full Google Cloud Platform migration.

About Simpli.fi

Simpli.fi is the leading advertising success platform, providing programmatic advertising solutions and workflow software to over 2,000 media teams, agencies, and brands. Simpli.fi empowers advertisers to maximize relevance, in what they do, in the connections made, and in the results delivered across CTV, mobile, display, and other media types. Our platform delivers performance on budgets of all sizes, executing over 140,000 campaigns for 30,000 advertisers in a typical month. Simpli.fi's investors include leading private equity firms Blackstone and GTCR.

140K+ Active Monthly Campaigns

Reduced time for outage recovery from several days to 30 minutes

Cost savings of $12k per month by eliminating load balancer spend

30K + Active Monthly Advertisers

$20B+ media managed

600 employees

> "We've really been able to benefit from the consistency and control that the maturity model provides. It's helped us to improve our cloud infrastructure practices and ensure that everything is running smoothly and efficiently."
>
> JOSH SCOTT
> PRINCIPAL ENGINEER, SIMPLI.FI

Simplifying ad buying for modern marketers

The right message, to the right person, at the right time. Simpli.fi has helped tens of thousands of companies worldwide deliver high-impact ads to potential customers tailored to their particular buying habits.

The market-leading advertising success platform — part of a $20 billion, all-encompassing media buying and workflow solution — provides media buying and workflow solutions designed for marketers to capture their ideal audience and power their best work. Its Demand-Side Platform (DSP) enables companies to rapidly target their advertising campaigns into specific neighborhoods, cities, and even at the specific address level through hyperlocal targeting using a combination of GPS data, IP targeting, and other location-based technologies.

With such a high degree of customization and personalization of a programmatic model, Simpli.fi's operations demand a higher level of reliability, scalability, and security than most businesses could imagine.

"With clients bidding on ad inventory in real time, we need to make sure the platform only charges for impressions that are likely to result in clicks or conversions," says Josh Scott, a Principal Engineer at Simpli.fi. "Customers see a responsive, cost-effective service, but what they don't see is the huge amount of computational infrastructure required to provide it."

Sprawling infrastructure leads to unwieldy operations

One of the biggest challenges Simpli.fi faced was meeting a 10ms service-level agreement (SLA) for responding to client map-based queries while also getting the targeting right. According to Scott, system responsiveness and the ability to deliver near real-time results will have a direct impact on the bottom line.

In the past, Simpli.fi ran much of its core infrastructure over bare metal servers to capitalize on the ability to choose its own operating systems and IT components. However, the company also had to contend with the downside of bare metal — unplanned downtime lasting up to two hours at a time that challenged customer-facing teams to quell concerns among existing users and made both contract renewals and new customer acquisition unnecessarily more difficult.

"In a time-sensitive business like ours, even a minute of downtime can harm the reputation we've worked hard to build and stifle our growth plans," Scott explains. "We knew we needed to get out of the restrictive agreement with our previous vendor and find a way to migrate to Google Cloud Platform (GCP) quickly to address these issues."

Challenges

Uptime mandates and tight SLAs directly impacted revenue

Data-intensive applications made maintenance and management with Kubernetes on bare metal challenging, with frequent outages impacting credibility with customers

Data processing and reporting were difficult to scale

Desire to leverage Consul for machine-to-machine communication

> "The zero trust security framework has been really valuable for us. It allows us to verify and authorize every request made to our infrastructure, which helps to prevent unauthorized access and data breaches."
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> PRINCIPAL ENGINEER, SIMPLI.FI

A stable, scalable solution for today and tomorrow

In choosing to migrate to GCP, Simpli.fi needed a reliable cloud infrastructure development solution to help recapture customer confidence and bolster its growth efforts. The solution also had to offer containerized workloads in order to run applications in a more lightweight and efficient way, as well as support multi-region deployments to minimize latency, improve performance, and reduce the risk of downtime.

Simpli.fi adopted HashiCorp Terraform to deploy its infrastructure as code. Unlike its bare metal environment where provisioning resources could take days or weeks, Terraform empowers Simpli.fi's platform team to easily spin up and tear down resources in the cloud, making changes to infrastructure quickly and easily.

Terraform eliminates redundant manual coding that makes mass cloud migration time- and resource-intensive. "The reusable components in Terraform help us save time, money, and a lot of infrastructure-related headaches we used to deal with every day," Scott explains. "It also helped us ensure that our governance policies and security controls are consistently applied across the cloud infrastructure without having to add overhead or more work for our team."

Scott says he views containerization as a game-changer for deploying and scaling services and spinning up new containers on demand. "Being able to easily and quickly respond to changes in customer demand or traffic spikes is essential to delivering the quality and predictable service our customers expect," he says. "Having the capacity to isolate applications from each other to improve security and reduce the risk of system failures helps us focus on serving our customers and innovating new services instead of constantly worrying that something's about to break. It's really what brought us to HashiCorp's stack in the first place."

Zeroing in on migration and containerization targets

Cloud migrations on the scale of Simpli.fi's are frequently arduous and can be incredibly time-consuming. In fact, Simpli.fi had been given a migration plan to follow from GCP that would have taken about two years to complete.

"We used Terraform to stand up our GCP servers instead of working from GCP's charts. We went from zero to a thousand in fifteen minutes, which we'd never seen anyone do before," Scott says." If we'd done it GCP's way, it would have taken us a couple of years. Instead, we ended up getting the entire environment set up in only eight months."

Simpli.fi now leverages HashiCorp Consul and Nomad to manage and link up its containerized applications across its various data centers and cloud environments. Nomad enables the team to specify the resources required by each application — CPU, memory, and disk space — and then automatically schedule and deploy the application onto the appropriate nodes within the infrastructure.

"We have Nomad already in production, which enables prototyping that would have been impossible in our previous environment," Scott says. "We used to spin up a theme and send it to the server to prototype, which could take days or weeks. Large projects that used to take three months now take 5 minutes."

Meanwhile, Consul has helped further refine and reshape the team's operations. Unlike other solutions that either only supported Kubernetes or didn't provide support at all, Consul delivers effortless service discovery across myriad environments — including Kubernetes.

Now, it's faster and easier to migrate workloads and ensure that all the services are working together and the solution's service mesh capabilities also enable the team to keep track of all its services and respective IP addresses and better manage traffic between services for maximum availability and performance.

"Consul's service discovery, load balancing, and health checking capabilities directly improve the reliability and scalability of our whole platform," Scott opines. "We used to spend more than $10,000 a month on load balancers for backend servers, but Consul has replaced them while also eliminating having to manage performance all by hand. Now we can just code a file to run everything."

Zero trust for maximum security

Processing massive amounts of customer and end-user data also comes with inherent security risks. Scott envisions HashiCorp solutions like Vault will fit seamlessly within Simpli.fi's zero-trust cloud infrastructure strategy.

With Vault, Simpli.fi will be able centrally store, access, and distribute dynamic secrets and tightly control both human-to-machine and machine-to-machine access to sensitive systems and data. Having already implemented a variety of security controls and technologies, the company will further enhance its security posture by combining Consul with Vault to secure its service networking and increase confidence among customers and internal operators that only authorized users have access.

"The zero-trust security framework will be really valuable for us when it's fully implemented. It'll allow us to verify and authorize every request made to our infrastructure, which can help to prevent unauthorized access and data breaches while delivering a high-performance, high-availability platform that underpins our customers' businesses."

Unlocking future value

With Simpli.fi's cloud infrastructure on a mature, stable footing, the engineering team is looking forward to a broader adoption of Nomad. Scott sees a lot of applications that could benefit from scheduling jobs or running smaller workloads without having to worry about server resources. Having these tools available to the infrastructure team opens up new opportunities for streamlining and optimizing workloads.

"I've worked with a lot of different products, but very few have offered such positive experiences as HashiCorp," enthuses Scott. "They're designed for engineers and operators, and it shows."

With products that work seamlessly together but also separately, new uses are unlocked and services are up and running sooner. "We've seen a lot of benefits from using HashiCorp's products and frameworks," Scott says. "They've helped us to improve our security posture and better manage our infrastructure, which has allowed us to better serve our customers and put us on the path to achieve bigger, broader, and previously impossible business goals."

Outcomes

A maturity model and cloud operating model enabled Simpli.fi to improve the consistency and control of its cloud infrastructure practices, allowing for efficient infrastructure management

Implementing a zero-trust security framework ensured the security of the platform and customer data, allowing Simpli.fi to verify and authorize every request and prevent unauthorized access and data breaches

The platform team's emphasis on shared services helped the company to realize cost savings by eliminating redundancy and improving efficiencies, reducing infrastructure costs while still maintaining the same level of performance and reliability

Prototyping in Nomad reduces large projects from three months to five minutes

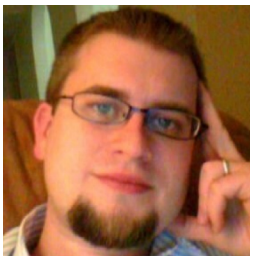
Replaced costly load balancers with automated Consul capabilities to save more than $10,000 per month

Outages reduced from intermittent, one-to two-hour occurrences to short zone outages that can easily be isolated and only take 30 minutes to recover from

Solution

Simpli.fi uses Terraform, Consul, Nomad, and Vault with HashiCorp's cloud maturity model and zero trust security framework to streamline its cloud infrastructure. Since migrating to Google Cloud, HashiCorp helps Simpli.fi ensure that applications are always available, perform optimally, and that sensitive information is secure. The company relies on Nomad for container orchestration, deployment, and scheduling, and Consul for features such as service discovery, load balancing, and health checking, which improve platform reliability and scalability. Simpli.fi deploys Vault to securely manage and store sensitive information and for centralized secret management, ensuring that sensitive information is encrypted, protected, and only accessible by authorized users.

Simpli.fi Partner



Josh Scott mixes business and financial sense and knowledge with strong hands-on technology experience in order to recommend and implement technology solutions to business problems. He designs applications from the ground up — or sky down. He has end-to-end experience in databases, application server, software engineering, and design, resulting in cohesive applications that meet the needs of customers or business units.

Josh Scott
Principal Engineer,
Simpli.fi

Technology Stack

- **Orchestrator:** HashiCorp Nomad
- **Provisioning:** HashiCorp Terraform
- **Configuration management:** HashiCorp Consul
- **Security management:** HashiCorp Vault

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