coindesk

CoinDesk is the leading digital media, events and information services company for the crypto asset and blockchain technology community. Its mandate is to inform, educate and connect the global community as the authoritative daily news provider dedicated to chronicling the space.

Founded in May 2013, CoinDesk reaches over 10 million unique visitors who come back 50 million times a month. Across Twitter, Facebook, and LinkedIn, CoinDesk has over 600,000 followers with 150,000 people subscribed to its Daily and Weekly newsletters. It also has the most widely sourced Bitcoin Price Index, with The Wall Street Journal, Financial Times, and others incorporating the BPI charts into their reporting.

The Challenge

Coindesk was having performance problems with their site, especially as cryptocurrency events attained a national spotlight and their traffic surged as much 100 times the normal load. Our initial introduction to Coindesk was focused on fixing a specific issue preventing them from deploying updates to their website. After we address that issue, we turned our attention to addressing some larger infrastructure issues which had arisen. Specifically, there was no comprehensive monitoring solution that provided real-time feedback to the DevOps team about the performance of the site.

The Solution

Privo worked closely with Coindesk to completely re-architect the code deployment process, implement a comprehensive monitoring solution, and improve security.

The project started in January of 2017 and concluded in October of 2017, however, continuous improvement are still being made to the infrastructure.

Specific solutions deployed included:

- Fixed critical CodeDeploy errors and improved the CI/CD pipeline by leveraging Jenkins to manage the pipeline and the AWS CLI to push the CodeDeploy bundle
- Wrote AWS Systems Manager Documents that installed and configured Nginx / PHP-FPM, and gracefully allowed disk queues to recover during traffic spikes
- Tuned Auto-Scaling Group (ASG) policies to better respond to traffic spikes
- Implemented a caching layer to dramatically improve the cost efficiency and performance of the web server tier. Specifically, we implemented OPCache which improved PHP performance by storing precompiled script bytecode in shared memory, thereby removing the need for PHP to load and parse scripts on each request.
- Implemented FastCGI Process Manager (FPM) to improve the throughput of the web server. FPM spawns the FastCGI children processes on each web server adaptively (meaning it will launch more if the current exceeds a defined threshold).
- Enabled AWS CloudTrail and AWS Config, and configured newly spawned web servers to automatically install DataDog and Sumo logic via User Data
- Deployed GuardDuty for centralized threat detection, as well as OpenVPN for secure remote access to the VPC
- Deployed a new set of consistent and secure IAM policies using CloudFormation

The Result

As a result of this project the performance and resilience of the infrastructure was dramatically improved. Throughout the project and afterwards, countless news stories on the Coindesk site went viral across the globe, causing a massive influx of traffic. Each and every time the infrastructure handled the events gracefully and Coindesk was able to cement its status as the go to source for cryptocurrency news

and analysis. Furthermore, the development team was able to deploy code changes more frequently and with less effort, accelerating their pace of innovation. Finally, the security of the site, which is important due to its high profile status, was greatly improved.

Lessons Learned

For Privo, we learned a tremendous amount about operating WordPress websites at scale.

About Privo

Privo is an AWS consulting firm with offices near Boston and San Francisco. We liberate businesses from the ball and chain of traditional IT infrastructure, leveraging the transformational power of the AWS platforms to help them innovate faster. We help customers architect, migrate, manage, monitor, secure, and optimize their AWS infrastructure.

For more information about how Privo can help your company run faster on the AWS Cloud, see Privo's listing in the [AWS Partner Directory](#) or [visit our website](#).