DATADOG

CASE STUDY

Monitoring a Complex and Elastically Scaling Cloud Infrastructure to Avoid Performance Issues

GAMECHANGER

GameChanger (www.gamechanger.io) produces a popular Android and iOS application used to record scores, statistics and more for amateur basketball, baseball and softball teams. GameChanger keeps score for tens of thousands of sports games per weekend, pushing real-time updates to fans online through texts, emails and its mobile application. "People expect sports to be perfectly live," says Kiril Savino, CTO, GameChanger. "The whole thing has to feel real time. We're trying to deliver on that for every single amateur game."

The Need: Tailored Monitoring for a Complex Cloud Infrastructure

GameChanger runs a complex and elastically scaling cloud infrastructure hosted on Amazon Web Services (AWS) to support its mobile and web-based applications. This environment includes multiple databases and services, each of which requires monitoring. Taking data from tens of thousands of sources, transforming it into reader-friendly snippets, and then pushing it to fans in real-time means GameChanger has to be ready to handle high traffic, heavy I/O and to troubleshoot issues at a moment's notice. "We're propagating data that has to be transformed very heavily. It takes a lot of processing work to take our data and turn it into content. And it has to happen very, very fast," says Savino.

GameChanger first built its own infrastructure monitoring tools in-house from the open-source components Graphite and StatsD. These homegrown monitoring tools got the job done but at a steep price: they required an extra $1,000 of AWS resources and more than half an FTE's hours each month just to keep GameChanger running. "It was a huge pain point for us," says Savino.

Easy-to-Use Monitoring that Supports the Infrastructure Immediately

Engineers from GameChanger's infrastructure group were the first to suggest Datadog. Savino found that Datadog's monitoring solutions did exactly what GameChanger was trying to do in-house, but in an easy-to-use turnkey solution, at a lower cost and with no dedicated FTE time required. Datadog integrated seamlessly with AWS, MongoDB, StatsD and the many other services and databases that made up GameChanger's infrastructure. This immediate integration made the company's switch to Datadog quick and easy. "Going from zero to getting data in through Datadog took somebody a single morning," says Savino.

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Setting up essential monitoring displays and custom alerts was similarly straightforward. "Within a day of elapsed time, we had data inputs and the first level of alerts configured," explains Savino. "It was really easy." GameChanger no longer had to rely on costly and time-consuming in-house solutions; it instead could monitor its entire infrastructure with Datadog.

Preventing Performance Issues

Because of the volume of asynchronous data processing required at GameChanger — the website and mobile apps handle and transform huge amounts of information almost instantaneously — performance problems could be hard to track down to a particular process, particularly at peak load. Without Datadog, "it's really hard for us to know why an issue happened after the fact," says Savino. "We used to have to go back and dig through logs, but using Datadog, we are able to track live processes to prevent problems."

Now, instead of watching large sets of graphs for anomalies, GameChanger's engineers can build custom dashboards on the fly to monitor the company's systems. "Being able to explore data, understand where our performance problems were, and how to dive into them was a big motivator," says Savino. "It's going from having 'n' different systems you have to look into to understand how everything's performing to having one place to look at with Datadog."

Better, Faster Troubleshooting

When performance issues do occur, Datadog allows GameChanger to quickly find the root problem. GameChanger can look at the performance of a set of components individually and in aggregate, which is important for a website that has multiple tiers and relies on MongoDB, Redis, and several APIs. "We can drill down and see what's actually happening," says Savino. "With Datadog, we can trace the problem all the way back to a single MongoDB call."

Datadog also helps GameChanger build reports to diagnose prior performance issues quickly and easily. If a performance issue arises but doesn't set off any alerts, "we're able to go back into the data and understand when we started to see a degradation," explains Savino. From there, GameChanger can "track error rates across the last twelve hours, track back to which release probably caused the problem, and track back how much customer impact there was."

Custom Dashboards and Alerts

When it came to setting custom alerts at GameChanger, Savino says, "a lot of the kinds of things we had to watch for were hard to monitor." Before Datadog, GameChanger used its homegrown systems to set up custom alerts, but "that was becoming a time suck," explained Savino, "Now, when we need to set a new alert, one of our engineers just has to find the right graph, draw a line, and walk away."

Putting the Engineer's Focus Back on GameChanger's Product

While GameChanger had the ability to build in-house monitoring tools, Savino chose to relieve pressures on the company's engineering resources and budget by finding a solution that could scale with the company's growth; GameChanger ultimately chose to let Datadog take care of monitoring their infrastructure.

Using Datadog has let GameChanger put more engineering resources into its core product, rather than in maintaining and checking the health of its systems. "Datadog does the monitoring that we were trying to do," says Savino, "it's a big problem for us that has been solved in a useful way."

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