> "Sumo Logic has brought order, standards, and visibility to what had been a very haphazard approach to dealing with our massive amounts of machine data."

Dan Jackson
Principal Architect

Challenge

As one of the U.K.'s largest media companies, Channel 4 provides nearly two dozen distinct content viewing apps and platforms designed to support an expanding, demanding viewer community of greater than 20 million people. All of this activity generates huge quantities of disparate log data that had not been properly gathered or analyzed, making it difficult to optimize the user experience as well as fully exploit the next generation of cloud computing architectures.

Solution

The company implemented Sumo Logic's born-in-the-cloud machine data analytics platform to collect — in a standardized format — machine data generated by all viewing apps and hosted services. Channel 4 has also laid the foundation for expanding to the remainder of its technology portfolio.

Results

Even though the Sumo Logic rollout is still underway, Channel 4 has already realized impressive benefits from this initiative. Its key client applications — the ones used by millions of viewers each day — are now feeding consistent, vital log data into Sumo Logic. This has given operational staff much better intelligence to resolve problems with the viewing experience.

Channel 4 is a public service broadcaster serving the United Kingdom with a rapidly growing audience of millions of viewers. The company operates under a unique business model: it's a publicly owned organization, but obtains funding privately. This means that like any public broadcasting system, it must produce relevant and diverse content that's of value to the British public, yet must also turn to advertising to cover all of its financial needs. The company created a video-on-demand product known as All 4 to offer its ample content selection to viewers everywhere. All 4 is available on an expansive range of clients, from set top boxes to mobile devices as well as Channel 4's website. Additionally, Channel 4 has created numerous viewing apps for big screen TVs and consoles, such as: Roku, Amazon Firestick, YouView, FreeView, PlayStation 4, and Xbox One.

Company
Channel 4

Industry
Media

Headquarters
London, United Kingdom

Size
800 employees

Use cases
Operations

Standardizing on Sumo Logic to aggregate, organize, and analyze enormous volumes of machine data helps Channel 4 improve the media playback experience for millions of viewers.

Along with supplying this extensive group of client-side apps, Channel 4 also produced and maintains a large array of server-side services and components. These are all running within Amazon Web Services (AWS), which Channel 4 selected as its strategic public cloud technology provider. The company's server-side logic is generally written in either Java or Node.js, and runs within containers on AWS ECS (Elastic Container Service). The clients interact with these resources via numerous distinct business services that have been organized into RESTful APIs. Channel 4 also implemented a set of core APIs that furnish its business services with baseline capabilities, including: authentication, authorization, user history, favorites, and technical metadata for media playback.

Channel 4 also employs many AWS data storage solutions (e.g. Dynamo, ElasticCache, and Relational Database Service (RDS)), and is beginning to roll out AWS serverless components that utilize cloud technologies like Lambda, Simple Notification Service (SNS), and Simple Queue Service (SQS). Although Channel 4 is very reliant on AWS, the company still has some significant on-premise resources such as Mule for data transformation and integration to AWS. Channel 4 also utilizes Apigee to control access to their business services.

With so many applications and hosted services delivering media to such a high number of viewers via a common set of APIs, it's no surprise that Channel 4 generates stupendously large transaction volumes and associated log data byproducts. Each month, this results in tens of billions of API requests and petabytes of streamed content. Yet despite all of this activity taking place under the oversight of a highly sophisticated, organized enterprise, it was difficult for Channel 4's technical leadership to get a true picture of the diagnostic information resident in their machine data. Logs were neither centralized nor aggregated; instead, they were frequently scattered among disparate servers on local disk drives. This meant that when problems inevitably occurred, administrators were forced to use cumbersome approaches like manually connecting to individual servers and wading through log files to discover the root cause of these issues.

Initially, Channel 4 tried several approaches to overcome this "log chaos", including attempting to deploy an open source suite consisting of Elasticsearch, Logstash, and Kibana (also known as the ELK stack). Unfortunately, none of these tactics were able to deliver a scalable, low-overhead, and cost-effective solution. The company recognized that it was time to improve how machine data was captured, organized, and analyzed. This was essential not only to support current activities and future growth; it was also necessary to adhere to stringent data mandates such as the European Union's General Data Protection Regulation (GDPR).

Ultimately, Channel 4 selected Sumo Logic because of its combination of operational logs and metrics intelligence offered within a single product, along with its guarantee that Channel 4's data would not be hosted outside of the European Union.

The company began its new machine data initiative by selectively taking subsets of its logs and loading them into Sumo Logic, taking care to only incorporate data that would provide insight and value. The deployment team also began creating customized dashboards from scratch and gaining expertise in writing Sumo Logic queries, all while seeking to establish a set of best practices.

Today, Channel 4's Sumo Logic rollout continues. The current user community numbers approximately 40 people, split between the development and operations organizations. Even though this undertaking is still early in its lifecycle, the company has already made considerable advances. The biggest impact so far has been to instrument the client applications that present content to viewers. The Channel 4 technical team standardized on a single JavaScript Object Notations (JSON) log format as part of this effort.

> **"In a short amount of time, we've already made a tremendous amount of progress with Sumo Logic and we're confident that this is just the beginning."**
>
> **Dan Jackson**
> Principal Architect

Gathering consistent logs from all these applications has made it possible for the company's technical team to pinpoint and correct media playback problems, bolstered by newly created, customized dashboards for each distinct application. The result is that the mean time to identify and resolve problems has been slashed. Along with helping monitor for errors, other important events — such as subscriptions, payments, and cancellations — are now consistently captured as well.

Software developers are also enthusiastic Sumo Logic users, happily instrumenting an increasing number of other assets. This will pay large dividends in the future, particularly given Channel 4's distributed, outsourced software development teams and scaled agile methodology.

Going forward, Channel 4 has big ambitions for its Sumo Logic journey, including:

- Instrumenting containerized services
- Integrating with third party components (e.g. Apigee, Akamai, and content distribution networks (CDNs))
- Capturing log events from other AWS services, such as CloudTrail
- Continuing to refine metrics and correlating them with business objectives
- Creating a single view of all resources in their portfolio
- Inspecting machine data for guidance as its product architecture evolves

With all of these new scenarios coming on line, Channel 4 expects to expand its Sumo Logic user community. Additionally, the company will encourage product managers to work with Sumo Logic to build out their own tailored dashboards, while its administrators will also incorporate more governance to the deployment.

Standardizing on Sumo Logic - along with establishing company—wide guidelines for how machine data is formatted and utilized — has set the stage for Channel 4 to have unprecedented visibility into its technology portfolio. This will result in a better viewing experience for millions of customers, while concurrently fostering innovation.

About Channel 4

Channel 4 is a publicly-owned and commercially-funded UK public service broadcaster, with a statutory remit to deliver high-quality, innovative, alternative content that challenges the status quo. It was set up with a unique model as a 'publisher-broadcaster', meaning that Channel 4 does not have any in-house production, but instead commissions content from production companies throughout the UK.

Channel 4 is a self-sufficient business that reinvests all profits back into programs, at zero cost to the taxpayer. Channel 4's twin goals as a content provider and business are to fulfill its remit and to be commercially self-sufficient.

About Sumo Logic

Sumo Logic is a secure, cloud-native, machine data analytics service, delivering real-time, continuous intelligence from structured, semi-structured and unstructured data across the entire application lifecycle and stack. Nearly 2,000 customers around the globe rely on Sumo Logic for the analytics and insights to build, run and secure their modern applications and cloud infrastructures. With Sumo Logic, customers gain a multi-tenant, service-model advantage to accelerate their shift to continuous innovation, increasing competitive advantage, business value and growth.

Founded in 2010, Sumo Logic is a privately held company based in Redwood City, Calif. and is backed by Accel Partners, Battery Ventures, DFJ, Franklin Templeton, Greylock Partners, IVP, Sapphire Ventures, Sequoia Capital, Sutter Hill Ventures and Tiger Global Management. For more information, visit www.sumologic.com.