



Algolia

Case Study

Algolia is a leading Search as a Service provider and aims to become the search layer of the Internet. Founded in 2012, the company already lays claim to some of the most prominent names in the tech, media and e-commerce industries including Periscope, Vevo, CrunchBase, HackerNews and DigitalOcean among others.

Their pitch: Instead of building and maintaining search functionality yourself, let the experts at Algolia manage search for you. Just plug in Algolia's proprietary technology within a website or app and instantly enable a smarter, faster search experience for end users. Algolia's solution offers out-of-the-box support for every language, is typo-tolerant, provides results in milliseconds and allows easy ranking configuration for unique data sets.

A big part of Algolia's success is dependent upon the speed and reliability of their solution as well as their ability to deliver to their customers' geographically distributed end users. Since DNS is the road that all requests to Algolia travel, it was critical that they got this part of their application architecture right. That is why, after evaluating a number of vendors and do-it-yourself options, Algolia selected NS1's intelligent DNS + traffic management platform.



“ NS1 is a critical component of our application architecture. We’ve seen amazing performance from the platform, enabling us to deliver a flawless experience to our customers’ end users”

Julien Lemoine
CTO, Algolia

The Challenge

Building a high performance, distributed infrastructure to accommodate millions of geographically distributed users is no easy task - especially when you are a young startup. Yet that is exactly what Algolia’s devops team needed to accomplish in order to gain a competitive edge and help drive the company’s meteoric growth.

Getting users to the application as fast as possible is the critical first step. Not satisfied with traditional approaches to managed DNS, Algolia’s devops team set out to find a truly disruptive DNS solution that would ensure their application’s performance leads the pack.

- > **Speed & accuracy.** Algolia required lightning fast DNS & robust visibility into their end users’ geographic location in order to help route them to the optimal data center, reduce latency and improve response time.
- > **Granular & customizable.** Algolia needed the ability to build custom routing maps with account-specific logic based on their clients’ service plan. If a plan gave their customer access to all of Algolia’s geographic regions, their architecture needed to make all data centers available from that full set. If a plan only permitted access to a single region, end users would only be sent to data centers in that region.
- > **Integrated & easy to deploy.** To assign their clients to the proper routing rule-sets, Algolia required an easy-to-use API to automate the process for new and existing clients.
- > **Agility & reliability.** Because data centers sometimes go dark and hardware eventually fails, Algolia needed a solution to dynamically control their global traffic and automatically perform failover or load shedding to maintain their SLA uptime guarantee.

Quick Facts:

- > Algolia’s distributed network has high-end, dedicated machines hosted in **14 worldwide regions with 26 data-centers**
- > Master-master setup replicates their search engine on **at least 3 different machines** at any given time
- > Processes over **8 billion queries** per month
- > Handles over **20 billion write operations** per month
- > 90% of queries are **answered in less than 15ms**

The Solution

After a thorough evaluation against the competition and do-it-yourself options, Algolia decided that NS1's intelligent DNS + traffic management platform delivered the speed, reliability and control they needed.

As part of the deployment process, Algolia integrated their account-specific logic into the NS1 platform using the solution's streamlined API-first approach. Algolia then used NS1's edns-client-subnet support, which leverages user metadata that Google Public DNS, OpenDNS, and other resolvers provide, to significantly improve georouting.

Next, Algolia leveraged NS1's patent-pending filter chain to direct users to the optimal data center based on real-time network, user and infrastructure data.

In addition, Algolia implemented rules for disaster recovery, failover and load shedding to protect against unexpected network and infrastructure events as well as planned maintenance.

NS1's anycasted global network substantially improved Algolia's network performance, resulting in a better, more responsive user experience.

NS1's scalability, performance and configuration capabilities allow Algolia to provide their customers with a fully scalable application that serves billions of queries per month from 13 worldwide regions, all with an average server response time of under 7 milliseconds.

By using traffic filters to protect their network from outages and hardware failure, Algolia is able to maintain consistent performance for its users across the globe. The same filters are used to easily remove data centers from rotation in order to perform system maintenance with zero customer impact.

Ultimately, Algolia is able to save time and lower operational costs by using the configurability and automation provided by NS1's intelligent DNS + traffic management platform.



Results:

About NS1

NS1's intelligent DNS + traffic management platform converges public DNS, private DNS and traffic management into a single, next-generation solution that delivers unprecedented performance, visibility and control over Internet traffic.

NS1 is backed by leading venture capital firms including Flybridge Capital Partners, Sigma Prime Ventures, Founder Collective and Center Electric.



NS1 is the only solution that allows us to build custom routing rules directly into our distributed search network architecture. This enables us to automate customer onboarding and configuration management on a per-account basis - saving us time while improving the performance of our solution”

Adam Surák
DevOps Engineer, Algolia

Corporate Headquarters

16 Beaver Street
3rd Floor
New York, NY 10004

West Coast Office

180 Sansome Street
4th Floor
San Francisco, CA 94104