

CASE STUDY

PulsePoint: Immediate ROI Through DNS-Based Routing Accuracy.

INDUSTRY

Advertising Technology

SOLUTIONS

Managed DNS

Filter Chain

“ We have stringent latency requirements, so directing a user to the closest data center means a better experience for the end user, and the publisher. NS1's adoption of edns-client-subnet has improved the accuracy of user and datacenter relationship.

James Marcus
Director IT Operations,
PulsePoint

PulsePoint is the leading global advertising platform. Their solution fuses the science of programmatic targeting, distribution, and optimization with the art of brand engagement.

By using terabytes of impression-level data, PulsePoint's customers are able to efficiently engage the right audiences at scale while helping publishers increase yield through actionable insights.

PulsePoint required a flexible DNS solution that could accommodate their unique business routing logic to increase the number of ads they were able to bid on, automate provisioning, improve performance, help maintain perfect uptime, and support their internal DNS requirements.

Today, PulsePoint utilizes NS1 to help run a global platform with data centers on multiple continents and over 3.5 billion ad transactions per day.

CHALLENGE

Despite being only 10 years old, the AdTech space is - at \$15 billion - huge and booming with double digit growth. This growth is being driven by the dramatic increase in internet traffic coupled with the ability to precisely target end users with very specific messages and calls to action based on demographic and behavioral data. Like any growing industry, new challenges emerge and companies need to conquer these challenges in order to be competitive. For PulsePoint visibility, performance, and operational efficiency are critical to their success.

- ▶ **Routing Intelligence and Accuracy.** PulsePoint needed better visibility into where their users were geographically located. This directly correlates with the number of relevant ad impressions they can serve and thus has an immediate impact on revenue.

PulsePoint: Big Data for Big Reach and Big Insights

- ▶ **20TB** of data analyzed each day
- ▶ **11 billion** ad transactions a month
- ▶ **800 billion** annual biddable impressions
- ▶ **40** data attributes analyzed per impression every millisecond
- ▶ **12** brand safety & transparency filters every impression must clear

- ▶ **Automation.** To save time and simplify provisioning, PulsePoint needed a programmatic method for device discovery.
- ▶ **Private DNS & Ease-of-Management.** PulsePoint had been using an open-source solution (BIND) for their internal DNS needs which include service and device discovery, and serving sensitive internal-only DNS records that should not be visible outside of their protected network. Managing a DNS network is not part of most company's core competencies however, and it requires valuable engineering resources to manage and maintain.

Furthermore, their legacy solution lacked some key features such as API support, statistics and advanced routing.

- ▶ **Uptime.** PulsePoint operates their infrastructure on multiple continents and in several regions. To protect their uptime, they needed a solution to intelligently route around traffic spikes and network problems before they had any impact on their business.

SOLUTION

After testing and benchmarking, PulsePoint chose NS1 to address its internal DNS, external DNS and routing challenges.

First, to improve routing accuracy NS1 worked directly with PulsePoint's hardware load balancer vendors in order to ingest real-time metrics via unique Data Feeds. By gathering telemetry like system load and active HTTP connection counts, NS1 can dynamically bleed traffic off to the next nearest (and healthiest) PulsePoint facility, avoiding system overload. All of this works in concert with NS1's geotargeting and geofencing to further balance traffic load.

This strategy allows PulsePoint to create a more even traffic distribution across its network to avoid "hot spots" and maintain consistent performance, even in the face of traffic spikes and large ad buys.

Now a single RFC-compliant PulsePoint record can perform complex geographic routing all while factoring in the status, weight, priority, and real-time system telemetry of every possible answer.

As PulsePoint adds new facilities to its delivery infrastructure, NS1 enables granular geofencing on a sliding scale, first funneling a small number of end users from a handful of IP prefixes or countries to the new facility, and gradually increasing the scope in tandem with their footprint.

Utilizing NS1's full-featured API along with our Ansible toolkit, PulsePoint performs automatic device discovery including automated forward and reverse DNS.

To handle their internal DNS requirements, PulsePoint leveraged NS1's Private DNS solution for unified control of their DNS through a single portal and API. NS1 fully manages PulsePoint's Private DNS network remotely, completely removing all operational burden.

RESULTS

NS1's global Managed DNS network substantially improved PulsePoint's application performance, resulting in better routing accuracy and protection against missed ad impressions.

By using NS1's Filter Chain, PulsePoint can now maintain consistent performance for its users and reliably and efficiently add datacenters with zero customer impact.

PulsePoint was also able to address their internal DNS needs with NS1's Private DNS solution which gave them all of the advantages of NS1 Managed DNS - full API support, statistics and advanced routing - with the ability to control both services from a single pane of glass.

Ultimately, PulsePoint is able to streamline configurations, decrease operational overhead and protect their revenue model using NS1's next-gen DNS and traffic management solution.

“ NS1 has improved our ability to lower latency issues, allowing us to better facilitate the buying and selling of advertising across our exchange. They spent the time to understand our business model and goals to recommend new and important NS1 features that suit our needs. ”

James Marcus
Director IT Operations, PulsePoint

ABOUT NS1

NS1 is the leader in next generation DNS solutions that orchestrate the delivery of the world's most critical internet and enterprise applications. Only NS1's purpose-built platform, which is built on a modern API-first architecture, transforms DNS into an intelligent, efficient and automated system, driving dramatic gains in reliability, resiliency, security and performance of application delivery infrastructure. Many of the highest-trafficked sites and largest global enterprises trust NS1, including Salesforce, LinkedIn, Dropbox, Nielsen, Squarespace, Pandora and The Guardian.