

CASE STUDY

TurboBytes Case Study

INDUSTRY

Software

SOLUTIONS

Managed DNS

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Aaron Peters
Cofounder of TurboBytes

TurboBytes, a young web performance company, is on a mission to make the Web faster. They believe a key requirement for online success is performance: your website or application must load fast and run smoothly, or users will walk away dissatisfied.

TurboBytes’ multi-CDN service abstracts the details of managing several independent CDNs, and enables companies to deliver content to end users more reliably and faster, resulting in a better user experience and higher conversion. Today, TurboBytes’ platform enables customers to leverage five major CDN providers spanning 116 POPs, across all major internet exchanges.

WHY MULTI-CDN?

TurboBytes’ co-founders, Aaron Peters and Sajal Kayan, originally met at the Velocity Conference in 2011 and realized they both shared a deep interest in CDNs and delivery performance. Soon after, they began running RUM-based performance measurements on several CDNs. What immediately became clear was that there were significant differences in CDN performance across the US and Western Europe.

Aaron and Sajal concluded that for the best possible performance, you need to utilize multiple CDNs, and intelligently route to the “best” one in real-time.

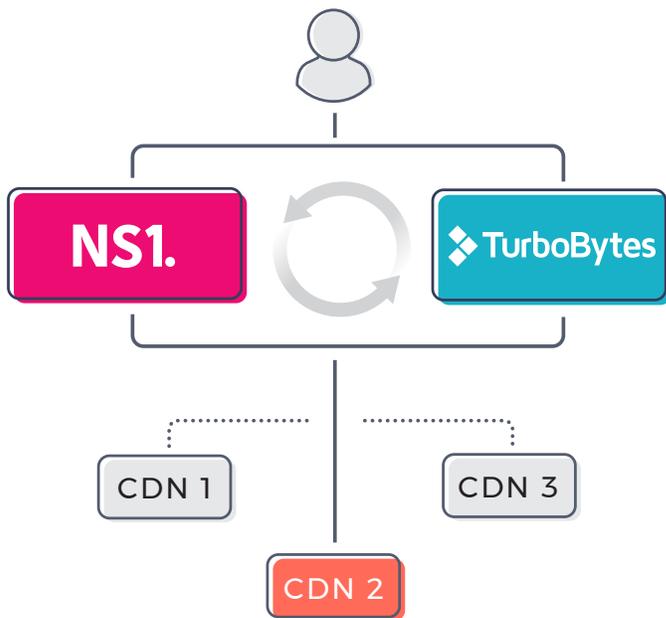
And so, the idea behind TurboBytes was born: a multi-CDN platform, offering SMBs and large companies an easy way to leverage the power of several CDNs, improving the reliability and speed of their online sites and applications while abstracting the complexity of multiple CDN vendors and APIs.

TurboBytes customers enjoy several other advantages:

- ▶ One-stop-shop: When leveraging TurboBytes technology, you do not need to manage multiple accounts with different providers. TurboBytes

customers have access to several major CDN providers, including EdgeCast, Highwinds, Fastly, MaxCDN and Tata Communications -- with a single UI and bill.

- ▶ Global coverage: TurboBytes provides delivery around the world, even in China, where The Great Firewall has traditionally posed challenges to many CDN providers.
- ▶ "It just works": Part of TurboBytes' magic is automatically handling CDN switching on your behalf. Because the service continuously optimizes CDN selection for end users, you don't need to focus on fine-tuning settings for each CDN and can use TurboBytes like any other CDN, out of the box.



TurboBytes uses NSONE to help optimize CDN selection for its customers.

CHALLENGE

To build their world-class multi-CDN service, TurboBytes turned to NS1 to help overcome some key obstacles.

The first was to make changes to many DNS records quickly. TurboBytes has many CNAME records and needed to be able to make changes on the fly. They used NS1's full-featured REST API which enabled TurboBytes in making rapid change records programmatically, and in bulk.

Second, as is core to their business, TurboBytes needed to propagate DNS changes immediately, to route users to the best performing CDN with minimal delay. NSONE was a clear winner in this regard, offering the world's fastest DNS propagation time. Changes pushed through the NS1 API are deployed across the entire global NSONE network in near real-time (<500ms).

The next challenge for TurboBytes was targeting accuracy. To send end users to the best CDN, TurboBytes needed to precisely determine the location of the end user. Authoritative DNS

servers get queries from resolvers, and determining end user geo-location based on resolver IP often goes wrong, especially for Google DNS and OpenDNS users in Asia and South-America where users frequently leverage resolvers outside their own countries. NS1 is the only major authoritative DNS provider to support the recent EDNS-Client-Subnet DNS protocol extension, which improves accuracy in pinpointing end user geographic location. In addition, NSONE's technology constantly scours the internet, building ever more accurate maps of major DNS resolvers, resulting in the most accurate routing in the industry.

Recently, TurboBytes wanted to improve performance even further by increasing targeting granularity. Initially, TurboBytes optimized traffic routing on the country

and state level. With the help of NS1, they increased granularity by routing at the ASN and IP subnet level, which, according to TurboBytes' performance measurements, provided substantial performance improvements. NS1 was the only provider in the industry with a flexible platform and the traffic routing know-how to meet these needs.

Finally, TurboBytes needed to deploy its DNS setup in a way that could be compatible with other DNS providers with less flexible toolkits. NSONE worked with TurboBytes to build custom filters for the NSONE Filter Chain. The custom filters NSONE built for TurboBytes work in conjunction with wildcard records to collapse hundreds of country and state specific DNS records, and potentially thousands of ASN and IP subnet specific records, down to just a few simple DNS records. This approach maximized manageability and delivery performance while enabling a DNS naming scheme that works when expanded to individual records in other providers.



WHY NS1?

"The folks at NS1 are experts.", said Aaron Peters, cofounder of TurboBytes. "They instantly understood our platform, the challenges we faced, and how to address those challenges. NS1's technology perfectly matches our functional requirements -- they are API driven, flexible and high-performance -- just like us."

"NS1's support is quick and helpful. They are highly technical and speak our non-corporate language.", Aaron continued. "Using NS1 gives us confidence that we're in good hands and our platform is future-proof."

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.

