

Three Common Enterprise DNS Challenges, and How to Solve Them

Discover how NS1's Dedicated DNS enables powerful routing that delivers capabilities beyond those provided by Open Source solutions.

Increased demands are being placed on IT departments as enterprises embrace cloud computing, respond to the consumerization of IT, and as they adopt the DevOps model for application delivery – all of which present significant DNS challenges.

For decades, Open Source technology has been the goto solution for solving DNS and traffic management challenges on internal networks and on the Internet. In fact, the large majority of DNS servers on the internet are running Open Source solutions like BIND, djbdns, PowerDNS, gdnssd, and NSD.

Although Open Source DNS solutions are capable of routing traffic in modern environments, most were not purpose-built to do so – meaning that configuring them is often a difficult and time-consuming project for IT departments.

In this white paper we will explore three of the ways that Open Source DNS solutions can present challenges when deployed in your infrastructure and how NS1's Dedicated DNS solution is powerfully equipped to address these challenges.

Three Open Source DNS Challenges

DNS Server Routing Intelligence and Configurability

For routing and traffic management, sending a user to the closest available server is considered to be a best practice. Although Open Source DNS solutions can be modified to incorporate geography and up/down measurements into their decision-making process, enablement and maintenance of these functions requires significant modifications or complex



third party software integrations along with lots of time.

Let us consider the scenario when the geographically closest server is not the best option. What if the closest server is overloaded or if poor network conditions have reduced inbound connections to a crawl? Open Source DNS solutions are incapable of responding appropriately to situations like these. In these cases it would be ideal to leverage an intelligent routing solution that could detect these states and route traffic elsewhere.

NS1's Dedicated DNS solution enables you to easily and intelligently manage traffic across your network in a manner that will make the best use of your infrastructure. It enables you to easily configure routing algorithms that will orchestrate traffic on your infrastructure on the basis of a combination of metrics that you choose and configure.

For example, you can route traffic based on overall system health, eyeball telemetry, geography, network location, system load, service provider bandwidth commits and more, including your own custom-defined metrics. This will empower you to wring every last drop of performance from your infrastructure, resulting in the most bang for your buck.

DNS Server Security

Security vulnerabilities come with the territory of running applications on the modern internet. For example, BIND version 9, one of the most venerable and widely used Open Source DNS servers has averaged at least one vulnerability per month in the last 12 months. Managing and patching vulnerabilities in a way that's transparent and doesn't affect uptime is a full time job and often proves to be an operational challenge, especially if you or a third party have built custom code on top of the Open Source code.



NS1's dedicated DNS solution mitigates security liability for your organization because it is fully managed – meaning that we are responsible for security patches, updates, health monitoring and general support. We employ a 24x7x365 "follow the sun" NOC, and promptly and responsively apply security fixes and patches to the underlying operating system and libraries to ensure the security of your Dedicated DNS servers. Our Dedicated DNS platform provides the flexibility and ease of use of a SaaS solution but the power of a dedicated device deployed in your infrastructure: on-premise, colocated, or in the cloud.

Ease of Use

As Open Source DNS solutions like BIND do not have native GUIs or robust API integrations, deploying and maintaining such a solution across your infrastructure is generally a complex process that is fraught with difficulty. Proper

Routing Capability	NS1	Open Source DNS
Geotargeting	★	★*
Up/Down (Failover/DR)	★	★*
System Health	★+	★
Network Location	★	★
System Load	★+	★
Bandwidth Commits	★+	★
Eyeball Telemetry	★	★
Custom Metrics	★+	★
3rd Party Data Feeds	★	★

* Requires significant modification or complex third party software

+ Available via simple API integration

deployment and maintenance would require pulling adept DevOps staff off development projects or other mission critical tasks to address the myriad steps and configurations required.

NS1's Dedicated DNS solution features a simple and powerful single pane of glass user interface through which you can manage traffic across your entire infrastructure. It is built atop a clean and fully-featured RESTful API that speaks JSON to ensure seamless integration. NS1's easy-to-use solution frees your organization to focus its resources on product differentiators and other mission critical tasks.



Summary

NS1's Dedicated DNS solution is critical for businesses that want more from DNS. With our solution, businesses can mitigate the challenges inherent in deploying Open Source DNS while also ensuring that their infrastructure delivers optimal experiences to their end users.

Whether you're building the next big thing or you've already made it to the Fortune 500, NS1's Dedicated DNS technology can help you solve previously intractable problems and improve the performance of your applications.

About NS1

NS1 is defining the future of application delivery and performance by converging real-time user, infrastructure and network data, enabling organizations control their applications at the extreme edge. Our intelligent DNS + traffic management platform delivers the speed, performance and reliability needed to drive digital transformation and enhance customer experience, all through an elegant, integrated and unified platform. With ground-up, next-generation architecture, the NS1 Platform is purpose-built to

maximize the potential of elastic, scalable and distributed applications & infrastructure all while simplifying the management of complex, mission critical pathways to your digital estate. Launched in 2013 in New York City, NS1 counts well known brands including Imgur, Algolia, Collective Media, OneLogin and other top-tier organizations as customers. NS1 is backed by leading venture capital firms including Flybridge Capital Partners, Sigma Prime Ventures, Founder Collective and Center Electric.

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