WHITE PAPER

NS1 Application Traffic Automation and Intelligence Solutions

Connecting the world's applications and audiences

NS1.

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Digital transformation calls for modern technology foundations

Applications power our digital world. From the movies and games we enjoy to the conversations we have with colleagues, family, and friends to life-saving procedures and essential services, the applications we rely on shape our daily lives and our expectations for what's possible.

The innovators that build and deliver these applications are constantly discovering new ways to improve our lives and work. They help us solve some of society's biggest challenges. Yet, bound by legacy technology foundations, these organizations are too often constrained by a belief that delivering new application experiences is risky, disruptive, onerous, or costly.

That's because legacy application and networking infrastructures can no longer keep up with the pace of innovation required to rise to the demands and opportunities of today's rapid digital transformation. Modern applications require a modern foundational approach, one that can accommodate several shifts catalyzed by digital transformation:

- Application audiences, such as customers, employees, and devices, are global and have higher expectations for fast, reliable, and secure applications
- Applications are increasingly built on elastic and microservices-oriented architectures and delivered through hybrid and globally distributed edge infrastructures
- Organizations are adopting IT operating models such as DevOps and NetOps focused on accelerating the pace of innovation and driving efficiency through automation

To accommodate these shifts, modern application and networking infrastructures must address application deployment, connectivity, and delivery in a holistic manner while eliminating the conventional boundaries that exist between applications, audiences, data, and infrastructures:

- It should be **deployed, managed and dynamically scaled** as part of the application or microservices fabric
- It should provide **fast, secure, resilient and automated connectivity** across multiple deployment surfaces, locations and devices
- It should be **data-driven, intelligent and adaptive** to reliably and optimally **deliver** applications anytime, anywhere

NS1 Application Traffic Automation and Intelligence

NS1 connects the world's applications and audiences through our Application Traffic Automation and Intelligence portfolio. Our portfolio uniquely brings together cloud-native network services, edge-to-cloud networking, and application traffic optimization technologies. By delivering these technologies through a unified delivery platform, NS1 Connect, we enable our customers to break through conventional boundaries between application infrastructures and data. Our solutions help the world's most innovative companies to deliver exceptional application experiences, drive IT efficiency and modernization, and ensure enterprise and application reliability and security.

The NS1 portfolio includes technologies for:

- **Cloud-native network services:** With our solutions, globally distributed and cloud-connected organizations can deploy, automate, and scale software-defined network services everywhere they need, from the data center to the cloud to the edge, while maintaining centralized control, visibility, and security.
- **Edge-to-cloud networking:** Our global DNS infrastructures enable organizations to deploy and connect internal enterprise applications and public-facing internet applications across multiple deployment surfaces while ensuring the highest levels of reliability, performance, and security.
- **Application traffic optimization:** Our intelligent and automated application traffic steering solutions make it simple for organizations to balance application delivery performance, capacity, and cost using real-time telemetry about internet and cloud conditions, users, networks, and infrastructure.

Eliminating the boundaries between application infrastructures, data, and audiences

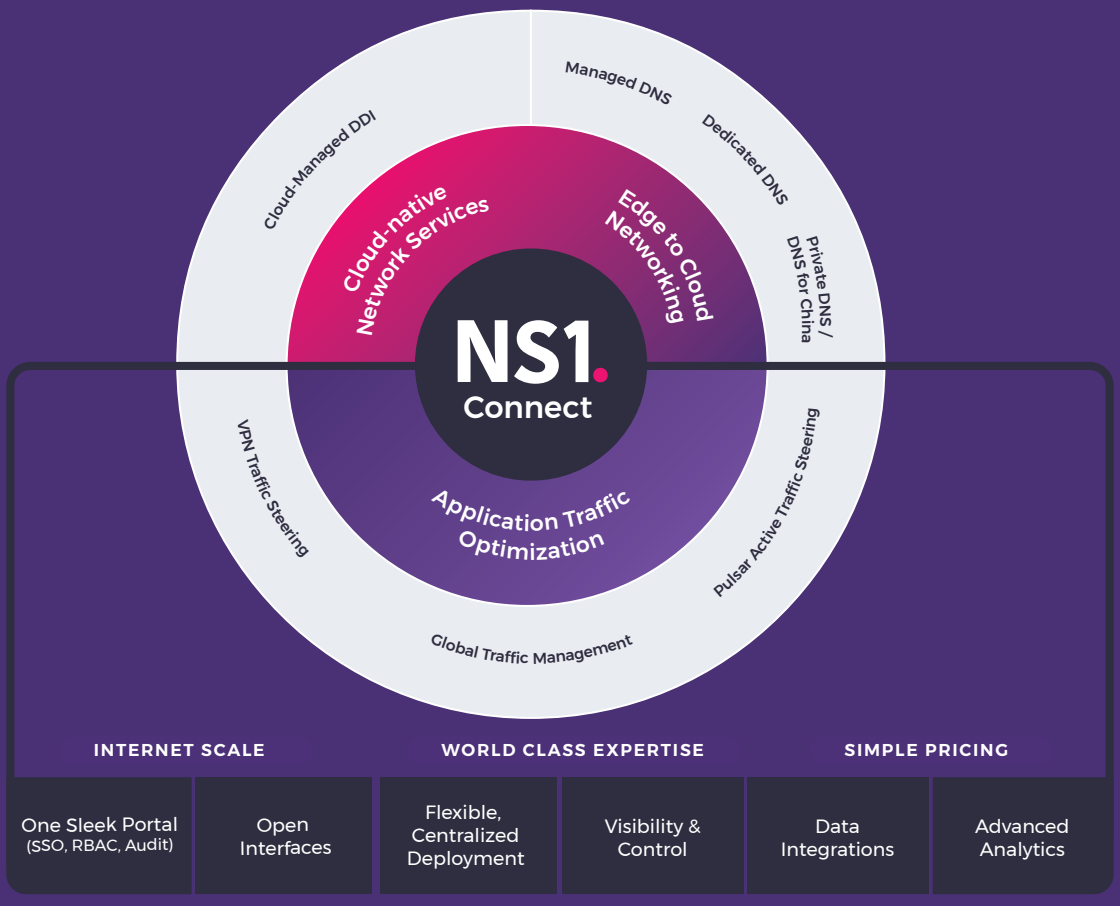
Application and networking infrastructures that worked for traditional "walled" data centers and centralized networks can no longer keep up with the pace of innovation required in today's application-powered world. Conventional boundaries become barriers to innovation:

- Built for on-premises networks, legacy application delivery infrastructures have rigid deployment requirements and do not scale or span multiple deployment surfaces or hybrid environments
- Monolithic network resource management solutions are difficult to automate and extend to distributed locations, cloud, and edge locations and microservices architectures
- Platform-specific services lack flexibility, resilience, cross-platform observability, and a centralized management plane
- Legacy infrastructures do not have the extensibility and programmability needed for a true "infrastructure as code" application delivery stack

Built on a unified technology platform

NS1 technologies are delivered through a single, unified delivery platform, NS1 Connect. The cloud-based platform consolidates the deployment, configuration, and management of NS1 technologies for globally distributed and complex network footprints. NS1 Connect gives modern application delivery and networking teams the visibility, control, and automation they need to deliver exceptional application experiences everywhere they operate.

With NS1 Connect, all NS1 technologies uniformly benefit from a single, secure cloud portal and full API management. The open, extensible platform has a large integration ecosystem for essential workflow management, infrastructure-as-code, and monitoring tools, so NS1 Connect fits easily into a programmable and scalable application delivery stack. The data-driven platform uses diverse data sources to make intelligent application traffic steering decisions optimized for reliability, performance, and cost. In addition, NS1 Connect is backed by Internet-scale infrastructure, world-class support and service expertise, and simple subscription pricing.



NS1's Technology Benefits

NS1's innovative approach to application traffic automation and intelligence delivers a number of benefits including:

Removes performance and placement constraints

We provide modern, cloud-managed technologies built on Internet-scale infrastructure. This allows organizations to deliver application and network services everywhere they need while maintaining a single, centralized management plane in the cloud. Our cloud-native architecture frees organizations from the artificial performance and capacity constraints associated with hardware-based solutions, allowing IT teams to dynamically scale their DNS infrastructure as the business needs without ballooning cost or complexity.

Improves efficiency and automation

NS1 solutions share a common high-performance API framework that enables application teams and network administrators to automate configuration and management tasks using standard tool chains. This improves efficiency and speed, minimizes manual errors, and streamlines change management.

Our platform offers a large integration ecosystem that capitalizes on the platform's intelligence, response, and visibility capabilities. With built-in integrations for workflow management, infrastructure as code, monitoring, security, and other essential tools, you can seamlessly introduce NS1 Connect as part of a programmable and scalable application delivery stack.

NS1 Connect provides a single, secure user interface to provide administrators complete flexibility and visibility of operations. The NS1 Connect portal provides single sign-on support, granular role-based access controls, and full audit logging. This allows administrators to eliminate slow, manual workflows and service tickets for DNS changes and instead, empower developers and DevOps teams to self-service what they need without losing oversight.

Supports your cyber risk and compliance goals

Security is built into everything we do. NS1 follows cybersecurity best practices and provides enterprise-grade security controls to help ensure the highest levels of infrastructure availability and reliability while also supporting your cyber risk and compliance goals. Our solutions support DNSSEC without sacrifice on redundancy or traffic steering capabilities. Our DDI data architecture adheres to zero-trust network access principles. We harden our global DNS infrastructure against DDoS attacks through multiple methods and monitor it 24 x 7. In addition, NS1 maintains a SOC 2 Type 2 compliance. Our integrations with security and monitoring technologies, including **Cisco Umbrella**, help to improve security visibility and reduce MTTR.

Extends across multi-cloud and hybrid environments

Our solutions are built for cloud-connected organizations and support public, private, multi- and hybrid-cloud environments as well as connectivity across microservices architectures. With our solutions, DevOps teams can easily integrate infrastructure into their CI/CD pipelines and connect with cloud-native services like AWS CloudWatch, monitoring, and workflow automation tools.

Turns insights into action

Optimizing application delivery performance requires continuous decision making as internet, network, infrastructure, and user conditions change. Legacy solutions either lack intelligent traffic steering capabilities or make it too complex to use them effectively. Our platform makes it simple and automatic to intelligently steer your application traffic and workloads to optimize for application reliability, performance, and cost. Our patented NS1 **Filter Chain**™ technology is a powerful policy engine built on the NS1 Connect platform. It uses real-time telemetry about your infrastructure, users, network conditions, and other user-supplied data to make intelligent global and local DNS routing decisions. Its point-and-click interface provides a simple and intuitive way to build highly complex and dynamic application traffic steering policies across your environment.

Eliminates complexity

Delivering applications to diverse users at a global scale can be complex, but that shouldn't automatically imply infrastructure or operational complexity. We work to simplify application delivery, network services automation, and intelligent traffic steering through our modern, unified approach. A uniform cloud-based management plane across internal DDI and external DNS services helps to reduce management overhead. NS1 Filter Chains™ technology makes application traffic steering accessible by providing a simple, point-and-click interface to build even the most complex traffic steering policies. Our solutions integrate with a variety of toolkits and solutions across the ecosystem making it an easy and seamless fit into your modern application delivery stack.

Problems we solve for our customers

Our customers leverage our unique technology platform and portfolio of solutions to solve a number of business-critical problems:

- Extend network services to distributed networks and edge locations
- Deploy dedicated secondary DNS to improving DNS resiliency without platform limitations
- Retire legacy appliances and migrate to software-defined infrastructures and OPEX models
- Enable secure remote access through software-defined load balancing
- Orchestrate application access across multi- and hybrid-cloud environments and microservices architectures
- Improve security visibility and control of critical application infrastructure
- Optimize delivery performance for latency-critical applications like online gaming and streaming across globally distributed multi-CDN and edge networks
- Enable NetOps and DevOps teams to steer application traffic in blue-green deployments, canary releases and more
- Align to cybersecurity and privacy compliance regimes like the GDPR through regionalized traffic routing

Case Study
Rakuten Viber

Blog Post
Intelligent DNS Based Load Balancing at Dropbox

Blog Post
Driving DNS with Network Latency Feedback at Salesforce

A modern foundation for exceptional application experiences

Our solutions enable organizations to eliminate conventional boundaries and continuously innovate in today's application-powered world. We provide comprehensive features and support for application and network environments of all shapes and sizes while enabling adoption of new technologies and operating models like cloud, mobility, edge, and DevOps.

Our solutions:

- Are delivered through a single, cloud-based delivery platform, NS1 Connect
- Can be deployed, managed and dynamically scaled as part of the application fabric
- Provide fast, secure, resilient and automated connectivity across multiple deployment surfaces, edge locations, and devices
- Are data-driven, intelligent and adaptive to reliably and optimally deliver applications anytime, anywhere

We enable the world's most innovative organizations to modernize IT infrastructures, enhancing efficiency, reliability, and security so they can deliver exceptional application experiences that will build the better future.

Learn more at **www.ns1.com**

About NS1

The internet and applications powering our world depend on NS1. Billions of people connect to work, school, entertainment, healthcare and stay informed because of the company's innovative technology. As an ally for innovators, NS1 helps our customers turbocharge their ideas in pursuit of building the better future through connecting applications and audiences at the distributed edge. NS1's application traffic intelligence and automation portfolio makes applications faster, reliable and secure everywhere. With technologies for cloud-native network services, edge to cloud networking, and application traffic optimization, NS1 helps eliminate the barriers between applications, users, infrastructure and data. NS1 has more than 725 customers across the globe such as Dropbox, Fox, Salesforce.com, LinkedIn, and Ebay.