Converged Application and Access Networking Solutions

Digital transformation requires new foundational technologies

In modern, cloud-connected networks, users, devices and applications are ultimately your network's end-points. Success for most organizations depends on connecting and delivering applications to employees and customers at global-scale.

Digital transformation in this hyper-connected economy is enabled through new deployment surfaces (private, public and hybrid clouds), highly distributed application, network, device and workforce architectures (microservices, edge, serverless, IOT/OT, remote work) and new operating models (DevOps, NetOps, SecOps). In turn, these emerging paradigms are driving a convergence in traditionally siloed aspects of network, application, compute and storage infrastructures.

One of the most apparent aspects of this convergence is between traditional network access infrastructures that primarily provide connectivity across the network surface and conventional application delivery infrastructures that primarily deliver application workloads over the network surface.

Application and network infrastructures that work for traditional "walled" data-centers and centralized networks will have a hard time operating in this new world:

- Traditional solutions have rigid deployment requirements. They do not lend themselves to automation, support modern application architectures or effectively support DevOps models

- Siloed solutions built for centralized networks and data centers do not easily extend to cloud deployments, distributed networks and edge

- Traffic management, when available, is either too basic or too complex and does not effectively and intelligently leverage user, infrastructure and network data

A modern application and access networking stack should address application deployment, connectivity and delivery in a holistic manner:

- 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.

NS1 Converged Application and Access Networking Solutions

NS1's enables converged application and access networking for cloud-connected enterprises by providing resilient, elastic, intelligent solutions to deploy, connect and deliver external and internal applications and services to customers and employees at global scale.

The NS1 portfolio includes:

- **NS1 DNS & Application Traffic Management** that connects customers and users to your business. This SaaS based offering includes reliable, secure and scalable external DNS, global traffic management with policy-based control, and PULSAR active traffic steering for extremely precise traffic management

- **NS1 Enterprise DDI** that connects internal users, applications and devices together. This software based solution spans DNS, DHCP, IP Address Management, and traffic steering for enterprises looking to modernize their DDI infrastructure.

NS1's solutions are built on a common technology platform and benefit from a uniform user interface, data, APIs and robust integrations to provide a consistent user experience.
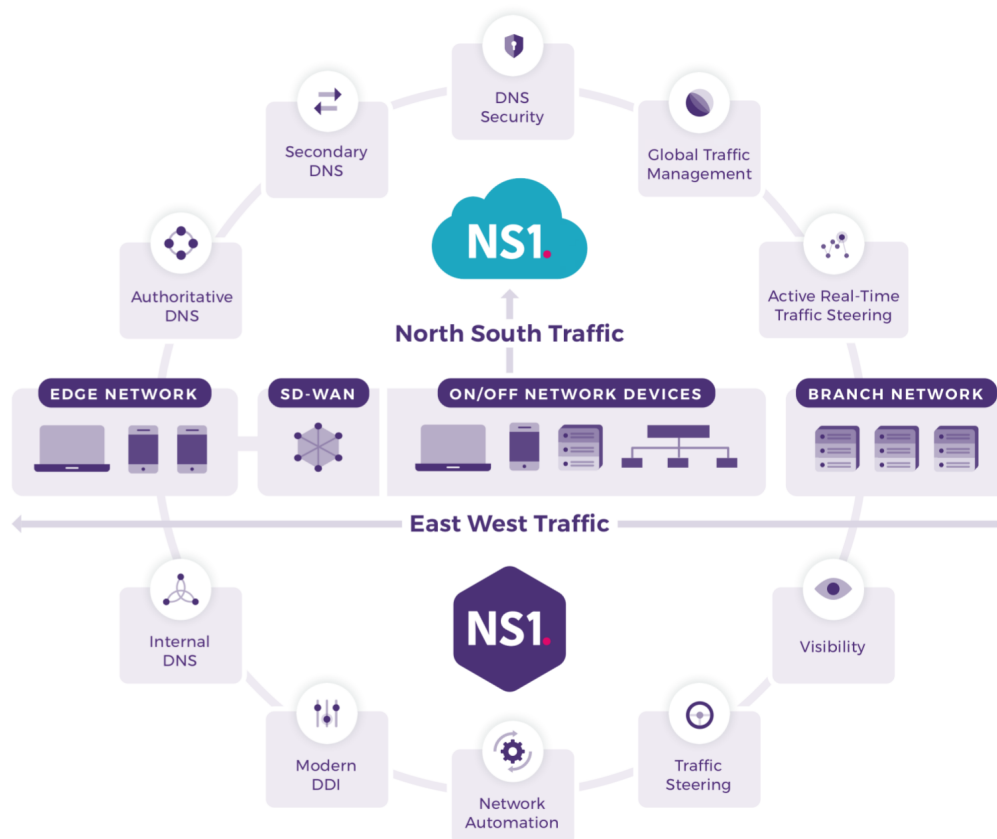
Built on a powerful technology platform

Our powerful technology platform features a global, secure DNS network and comprehensive network services designed for performance, security and reliability. It offers a consistent user Interface, REST API, SDKs, and scores of integrations with solutions and toolkits across your ecosystem to automate deployment, management, monitoring and other workflows. Its patented Filter ChainTM decision engine can ingest a variety of data sources including configuration and topology data, infrastructure and internet telemetry as well as community and customer data and make real-time and policy driven traffic steering decisions to improve application performance or balance load across the network.
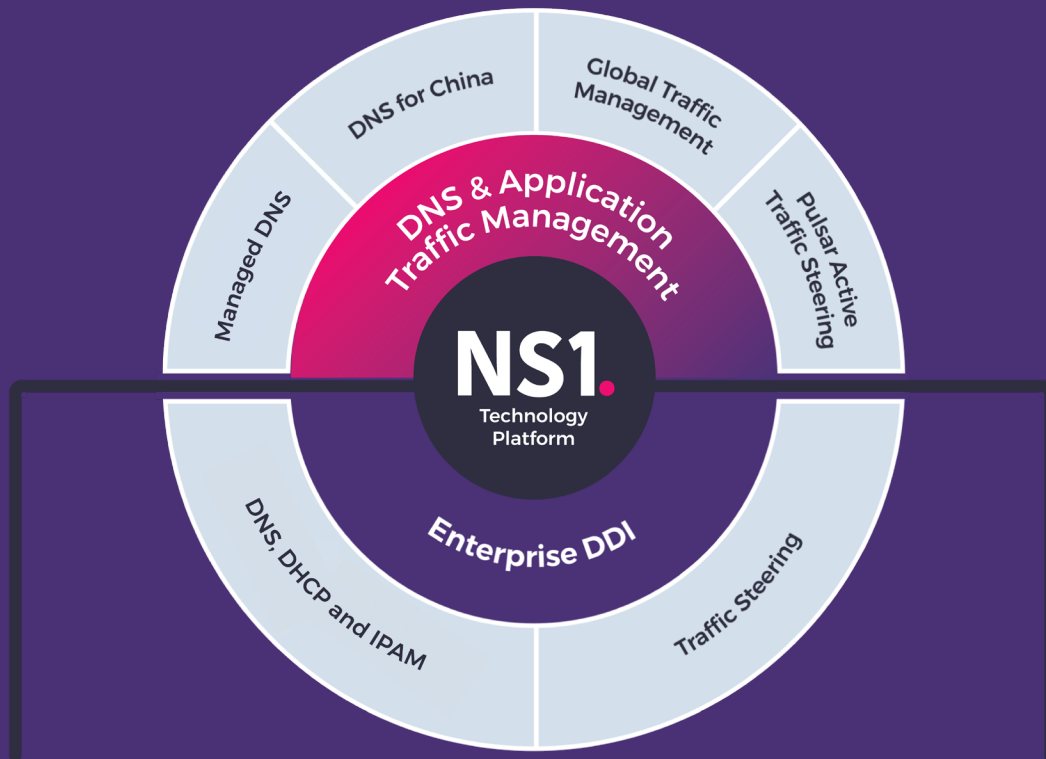
	Workflow Automation	Deploy and Orchestrate	Develop and Manage	Data, Visibility, and Monitoring
Integrations	Workflow Automation	Deploy and Orchestrate	Develop and Manage	Data, Visibility, and Monitoring
Data	Configuration and Topology	Infrastructure Telemetry	Internet Telemetry	Community and Custom
Core	Global Anycast DNS, Internal DNS, DHCP, and IPAM	API, SDKs	Filter Chains	Monitoring, Reporting, and Analytics

NS1. Technology Platform

NS1's Technology Benefits

NS1's innovative approach to application and access networking delivers a number of benefits including:

Removes performance and placement constraints

We provide flexible, hardware independent deployment options including SaaS and virtual instances. This allows organizations to deliver application and network services closest to where they are needed. The hardware independent architecture also frees organizations from artificial performance and capacity constraints allowing IT teams to dynamically scale their DNS infrastructure with evolving business needs.

Improves efficiency, reduces risk and enhances security

NS1 solutions share a robust, high performance API framework that enables application teams and network administrators to automate many configuration and management tasks using standard tool chains. This improves efficiency and speed, minimizes manual errors and streamlines change management. Additionally, the solutions provide comprehensive, simple user interfaces to provide administrators complete management flexibility.

Security is fully integrated into the platform. Our infrastructure is hardened against volumetric attacks and the deployment and data architectures ensure adherence to zero trust principles. Administrative functions are secured through role based access controls, detailed activity logging and monitoring. The NS1 Enterprise DDI solution also integrates with Cisco Umbrella to improve security visibility and reduce MTTR.

We integrate with a variety of Continuous Integration/Continuous Deployment (CI/CD) toolkits such as Ansible and Jenkins. DNS records are created on the fly accelerating deployment velocity of applications.

NS1 empowers NetOps teams to safely provide self-service capabilities to developers and DevOps teams. They don't have to submit tickets and wait for DNS to be deployed for their needs - in test, dev, or sandbox environments. NetOps teams also don't have to keep servicing frequent requests by DevOps teams. Self-service with robust role-based access controls significantly improves productivity and speeds up app deployments - and ultimately innovation.

NS1.

Extends across cloud and hybrid and environments

Our software defined solutions are purpose built for cloud connected organizations. They can be deployed across public, private, and hybrid cloud environments. They provide connectivity across microservices architectures. They enable DevOps teams to easily integrate infrastructure into their CI/CD pipelines. They connect with cloud native services like AWS CloudWatch and monitoring and workflow automation tools.

Makes data actionable and easy to use

Precise, high performance, cost effective application delivery requires continuous data-driven decisions. Legacy solutions either lack sophisticated traffic management capabilities or make traffic management too complex to be effectively utilized. Our platform was built from the ground up to make data actionable towards traffic decisions. Our solutions can make global and local DNS and traffic routing decisions on a variety of data sources including configuration and topology data, internet and intranet data, real user telemetry as well as customer supplied data. Additionally, the simple policy framework allows administrators to create complex, granular traffic steering policies to match the specific needs of their business.

Eliminates complexity

Network and application complexity shouldn't automatically imply infrastructure complexity. We aim to simplify DNS and DDI deployment for organizations of all sizes. A consistent user experience across internal DDI and external DNS services reduces management overhead. Filter chains democratize application traffic management by providing a simple, point and click interface to build complex traffic steering policies. Our solutions integrate with a variety of toolkits and solutions across the ecosystem making it easy to deploy in existing environments.

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Problems we solve for our customers

Our customers have leveraged our unique technology platform and portfolio of solutions to solve a number of business critical problems such as:

- Deploy dedicated secondary DNS to improving DNS resiliency without platform dependencies

- Retire legacy appliances and migrate to software defined infrastructures

- Enable remote access through software defined load balancing

- Orchestrate application access across hybrid cloud environments and microservices

- Extend network services to distributed networks and edge locations

- Improve security visibility and control by deploying NS1 DDI along with Cisco Umbrella

- Leverage filter chains and Pulsar technology to deliver traffic in multi-CDN environments

- Implement a platform to deliver large scale streaming experiences

- Enable NetOps and DevOps teams to steer application traffic in blue green deployments, canary releases and more

- Adhere to compliance regulations like GDPR through regional 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

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NS1 provides a modern foundation for exceptional application experiences

Our solutions enable organizations to transform their legacy infrastructures to grow and innovate in today's hyper-connected 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:

- Can be deployed, managed and dynamically scaled as part of the application fabric

- Provide fast, secure, resilient and automated connectivity across multiple deployment surfaces, locations and devices

- Are data-driven, intelligent and adaptive to reliably and optimally deliver applications anytime, anywhere

We enable organizations of all sizes to modernize IT infrastructures, enhancing efficiency, reliability and security so you can deliver exceptional application experiences to your users.

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.

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