

Before the
FEDERAL COMMUNICATIONS COMMISSION
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changing threats to the security and safety both of their own networks and operations, and of the consumers they serve. It should also encourage ISPs to offer tools that empower consumers to choose, if they wish, to filter content further to restrict what they define as inappropriate, and to achieve more robust threat protections. The FCC should be mindful of encouraging investment and innovation by companies like Nominum, which develops and offers high-quality DNS-related tools that help ISPs manage and optimize their networks from both security and business perspectives, and provides consumers with more choices and control.

II. Background on Nominum

Nominum develops Domain Name System (DNS) software and value-added subscriber facing applications.³ While the Nominum name may not be well-known to consumers, our DNS resolvers and applications based upon those resolvers are used by more than 125 ISPs in over 40 countries around the world, including numerous major ISPs in the United States. These resolvers and applications enhance network performance and provide ISPs' subscribers a more efficient and secure experience. More than 500 million subscribers use Nominum DNS software for more than 1.6 *trillion* transactions every day. Nominum has over 15 years of experience engaging with large global ISPs, expertise in networks and DNS, and a strong track record of innovative thinking about how best to safeguard the network and enhance the subscriber experience.

Security is one of the critical challenges of our time, and Nominum's history of research, collaboration and innovation has helped to advance the state of DNS, which has been vital to improving the level of security for ISPs. Nominum's data science team conducts research on DNS data from ISP networks that has been essential to combat DNS DDoS attacks that have plagued the Internet. Corresponding innovation in DNS server software has resulted in smarter

³ A complete listing of the products Nominum offers is available at www.nominum.com.

servers which automatically protect themselves and the ultimate targets of attacks, and dynamically adapt in parallel as attacks change.⁴

Nominum also provides DNS-based services that assist content delivery networks (CDN) and ISPs in providing a more efficient delivery of bandwidth-intensive content, such as video and audio streaming as well as website optimization. It does this by caching content on servers in various locations throughout the country so the content is closer to the end users.

Further, Nominum develops applications based on DNS technology that help enable ISPs to protect their networks not only from DDoS attacks, but also from adverse impacts from malware-like bots. In addition, Nominum provides a suite of offerings that provide consumer-controlled security, messaging, and parental control applications based on DNS technology. These are normally offered to consumers as options by ISPs worldwide to help protect consumers from malware, bots, phishing, and other exploits, and to allow families to personalize their Internet access to manage when and what content is permitted in their homes. These applications also enable ISPs to communicate operational and administrative status more effectively with their subscribers. To provide these applications, Nominum provides software to an ISP that allows individual consumers the ability to filter, monitor, and otherwise control the operation of the DNS and some web traffic in a scalable manner that does not degrade performance. In April, Nominum's N2™ Secure Consumer (formerly known as N2 Engage), was awarded "Best Commercial Product, Service or Software" by Cablefax. The product was recognized for its DNS-based subscriber protection against online threats including phishing,

⁴ For example, Nominum's ThreatAvert automatically throttles unwanted DNS traffic while ensuring legitimate queries always get answered. ThreatAvert Global Intelligence Xchange (GIX) dynamic threat lists and Precision Policies target malicious traffic, protecting provider networks against fast changing threats. <http://nominum.com/product/vantio-threatavert/>.

ransomware, malware and viruses to shield consumers from identity and financial theft, as well as its parental control capabilities which enable adults to set rules and limit online access for their kids during homework, bedtime and other family time, etc.

As the above description of Nominum's services demonstrates, DNS and the opportunities it presents provide functionalities for ISPs and end-users that go well beyond management and control of telecommunications service.⁵ DNS is essential to operating ISP services. Without DNS, consumers would be reduced to navigating the Internet via the use of IP addresses. Further, 97 percent of Internet users in the United States rely on ISP's to provide DNS resolution services as deploying these services at an ISP provides superior performance and reduces latency associated with retrieving content from the Internet.⁶ DNS-based services can provide ISPs the ability to offer consumers a more secure Internet experience and allow ISPs to offer their subscribers, through consumer controls, the ability to tailor their Internet experience to meet their needs.

III. No Blocking and No Throttling Are Key Elements of a Free and Open Internet

In the *NPRM*, the Commission seeks comment on whether there is a need for rules that prohibit these activities by ISPs.⁷ With regard to no-blocking rule, the Commission states that it has "repeatedly found the need for a no-blocking rule on principle" and makes clear that "we oppose blocking lawful material."⁸ The Commission further states that it is "merely seek[ing] comment on the appropriate means to achieve this outcome consistent with the goals of

⁵ *NPRM*, 32 FCC Rcd. at 4446, para. 37.

⁶ *Id.* at 4443, para. 28.

⁷ *Id.* at 4461-4462, paras. 80-84.

⁸ *Id.* at 4461, para. 80.

maintaining Internet freedom, maximizing investment, and respecting the rule of law.”⁹

Regarding the no-throttling rule, the Commission noted that it mirrors the no-blocking rule but was a “sufficiently severe and distinct threat” that it warranted a separate rule. The Commission seeks comment on whether a separate rule for throttling remains necessary.¹⁰

Nominum agrees with ISPs, consumer groups and others that have publicly noted that no-blocking and no-throttling are essential elements of a framework that is designed to protect consumers and assure a free and open Internet remains.¹¹ As the Commission itself notes, the no-blocking and no-throttling concepts have been in place since the original formulation of the “Internet Freedoms” put forward by then-FCC Chairman Michael Powell.¹²

Moreover, most ISPs abided by no-blocking and no-throttling even in the absence of such rules.¹³ Nominum, therefore, believes that these concepts, which are important to consumers and have been part of many ISPs’ policies, whether incorporated in rules or not, must be retained as part of whatever framework the Commission crafts to ensure a free and open Internet. Nominum would encourage the Commission to make clear, as the Commission has done in one form or another since Chairman Powell did so in 2004, and as the Commission does in the *NPRM*, that it opposes blocking and throttling of consumers’ access to lawful content.

⁹ *Id.*

¹⁰ *Id.* at 4461, para. 83.

¹¹ *Supra* n.2.

¹² *NPRM* at 4438, n. 36 (*citing* Chairman Powell’s remarks at the Silicon Flatirons Symposium in which he stated concerning blocking, “I challenge all facets of the industry to commit to allowing consumers to reach the content of their choice.” Regarding no-throttling he stated, “I challenge all facets of the industry to let the market work and allow consumers to run applications unless they exceed service plan limitations or harm the provider’s network.”).

¹³ *Id.* at 4461, para. 80.

IV. Transparency Protections

In the *NPRM*, the Commission seeks comment on whether it should retain the transparency requirements. The Commission notes that its purpose in adopting the rule was to promote “effective disclosure of ISPs network management practices, performance, and commercial terms of service to promote competition, innovation, investment, end-user choice and broadband adoption” and that it still supports these objectives and seeks comment on the best way to accomplish them.¹⁴ Nominum agrees that clear disclosure helps achieve these objectives and effective disclosure also can help prevent consumer confusion.

Nominum notes that tools are now available in the marketplace, such as Nominum’s N2 Reach in-browser subscriber communications, that allow ISPs to communicate in an innovative and timely way with their subscribers, about current network management practices and to provide timely alerts and information to subscribers concerning changes in service, usage limitations, billing, and other service-related information.¹⁵ These tools can be extremely effective in ensuring that consumers better understand the service they are subscribed to and receive the timely information they need to make informed decisions at relevant moments, such as about an opportunity to opt-in or out, or about an important safety consideration.

V. The “Reasonable Network Management” Exception Is Critical to Ensuring that ISPs Have the Flexibility to be Responsive to Whatever Network Demands Arise

As noted above, Nominum is a provider of a range of DNS-based services to ISPs. Among the services that Nominum provides are tools that ISPs use to manage their network traffic, improve content delivery and to provide consumers the opportunity to manage their Internet experience. In the *NPRM*, the Commission seeks comment on whether the reasonable network

¹⁴ *Id.* at 4463, para. 89.

¹⁵ <https://www.nominum.com/wp-content/uploads/2016/09/Nominum-Product-Brief-N2-Reach.pdf>.

management exception should be retained and if so whether it should be modified to eliminate the restriction adopted in 2015 that narrowed the 2010 exception by expressly limiting the applicability of the exception to technical management justifications rather than other business justifications.¹⁶ Additionally, the Commission seeks comment on whether the case-by-case approach to evaluating reasonable network management practices should continue to be followed.¹⁷

Reasonable network management is a concept the Commission has recognized since the inception of the Internet Freedom principles in 2004.¹⁸ The balance the Commission has sought to strike over the last thirteen years is to provide the parameters of what is reasonable so consumers can continue to enjoy the Internet as they have come to expect it, while providing the ISPs with the flexibility to experiment and innovate as they reasonably manage their networks.¹⁹

Nominum urges the Commission to continue to strive to achieve this balance. The 2012 formulation of the rule, which defined a reasonable network management practice as a practice that “is primarily used for and tailored to achieving a legitimate network management practice taking into account the particular network architecture and technology of the broadband Internet access service” afforded ISPs greater flexibility to experiment and innovate than the current formulation that explicitly limits the application of the exception to “technical network

¹⁶ *Id.* at 4464, paras. 93.

¹⁷ *Id.*, paras. 94.

¹⁸ Michael K. Powell, Chairman, Federal Communications Commission, *Preserving Internet Freedom: Guiding Principles for the Industry*, Remarks at the Silicon Flatirons Symposium, https://apps.fcc.gov/edocs_public/attachmatch/DOC-243556A1.pdf. (stating “network operators have a legitimate need to manage their networks and ensure a quality experience”) (Feb. 8, 2004).

¹⁹ *In the Matter of Protecting and Promoting the Open Internet*, WC Docket No. 14-28, Report and Order on Remand, Declaratory Ruling, and Order, 30 FCC Rcd 5601 (2015) (*2015 Open Internet Order*).

management justifications.”²⁰ There are justifications other than technical management that should be permissible for ISPs to pursue to help further innovation in network management. For example, Nominum and others continue to develop products and services that ISPs can deploy to enhance their subscribers’ experiences or provide a better network experience.²¹

The Commission’s guidance in both the 2010 and 2015 orders stating that “a network management practice is more likely to be found reasonable if it is transparent, and either allows the end user to control it or is application-agnostic” should be more assertive. As Nominum’s products demonstrate, ISPs can incorporate services into their broadband offerings that provide a more secure and efficient Internet experience for their end users and offer their end users products that allow them the ability to exercise greater control over that experience. Moreover, there are tools ISPs can utilize that allow them to effectively communicate with their end users in real-time. The Commission should state that these tools are of the kind the Commission seeks to encourage as part of the reasonable network management exception.²² Such a change would empower ISPs to innovate and provide opportunities for greater consumer control. It would encourage research and investment in new and better products and services involving DNS and other technologies that benefit consumers and ISPs, rather than potentially chilling such investment due to regulatory uncertainty and risk. It is also vital in an environment with agile threat actors and rapidly changing attacks that the risk of regulatory second-guessing not inhibit ISPs from exercising reasonable discretion, innovating, making rapid decisions, and taking decisive action to meet these challenges.

²⁰ *Id.* at 4464, n. 204.

²¹ *See infra* at 2-4.

²² *See 2015 Open Internet Order*, 30 FCC Rcd at 5702, para. 221; *Preserving the Open Internet*, GN Docket No. 09-191, WC Docket No. 07-52, Report and Order, 25 FCC Rcd 17953, para. 85 (2010).

VI. Conclusion

Nominum appreciates this opportunity to share its perspective on these issues with the Commission and the public. In reassessing the framework for ensuring a free and open Internet continues to thrive, Nominum supports the broad goals set out by the Commission to ensure consumer protections and afford ISPs the flexibility to innovate. By continuing to support a framework that protects against blocking and throttling and adopts a transparency regime that provides meaningful disclosure, the Commission can help ensure that consumers are able to experience the Internet consistent with their expectations and with a clear understanding of how their ISPs can assist them in achieving that experience.

The Commission also can ensure that the Internet remains a vibrant and more secure engine for economic opportunity by providing a flexible framework when it comes to reasonable network management practices. ISPs and the ecosystem of vendors need the certainty to invest in developing new and innovation solutions that enhance the subscriber's experience, provide better security, and place more choices in the hands of subscribers.

Respectfully submitted,

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