neustar

August 27, 2013

Mr. Cherine Chalaby, Chair
New gTLD Program Committee
Internet Corporation for Assigned Names and Numbers

Dear Mr. Chairman and Members of the New gTLD Program Committee,

Neustar appreciates the opportunity to respond to ICANN staff's proposal to mitigate the risk of collisions between new gTLDs and existing private uses of the same strings. ICANN's fundamental mission turns on promoting innovation in the domain name system through competition while preserving the security and stability of the DNS. With this in mind, Neustar has carefully reviewed the Interisle report on Domain Name Collisions, an issue that was raised by ICANN's Security and Stability Advisory Committee in 2010 and has existed for the launch of every new gTLD and ccTLD for the past decade or longer. While we agree that it is important to address potential collision issues head on, and on balance, we believe that ICANN's response should be more pro-active, better reflect the need to execute with urgency, and take into account mitigation efforts already underway.

In particular, ICANN's 80/20 division of applied-for strings appears to be entirely arbitrary, and arbitrarily high. Staff's response to the Interisle report appears to be overly conservative, involving potentially significant delays even in cases where the risk of collision appears to be extremely low. It is time for ICANN to roll up its sleeves and work with applicants to develop a focused and efficient plan of attack to identify and address real risks and to remove roadblocks to launching new gTLDs where no material risk exists. Neustar urges ICANN to pursue the alternative approach to mitigation outlined in the NTAG response to this consultation, which is both pragmatic and sufficiently conscious of the security and stability issues presented by new TLDs.

Neustar Background

Neustar (NYSE: NSR) is a trusted global technology and information services company serving the Internet, telecommunications, marketing and media industries. Across these industries, Neustar has a unique, global vantage point with visibility into various sets of carrier and DNS network traffic, IP data and IP geolocation data and related sets of information. Neustar has operated .BIZ on behalf of ICANN for over 10 years and has extensive experience operating ccTLDs, such as .US and .CO. Neustar also operates UltraDNS, a leading managed alternative to BIND with a large recursive service. Neustar provides instantaneous answers to more than 27 billion queries per day from the Internet and answers over 300 thousand questions every second. Every day, Neustar manages almost 7 billion physical and virtual addresses, resolves over 18 billion DNS queries, and manages 5.9 million domain names. In the US, Neustar also enables 6 billion Text Messages and 4 billion phone calls daily. Across the world, Neustar generates geo-location data for nearly 3 billion IP addresses and answers

2.1 billion customer client queries every day. Neustar maintains a fully staffed NOC on the east coast and west coast and a central SOC based in Sterling, VA.

Recommendations for Moving Forward

Based on Neustar's review of the Interisle report and its own preliminary data analysis of the billions of daily queries that it receives from the variety of DNS services that it provides, Neustar recommends the following course of action:

High Risk Strings. Neustar concurs with the two strings identified as "High Risk" in the Interisle report and with the NTAG position that further research be conducted on the best mechanisms to mitigate the potential for name collision with respect to these two strings.

Uncalculated Risk Strings. With respect to the twenty percent (20%) of strings falling into the "Uncalculated Risk" category, the query threshold used to classify these strings appears to be overly conservative. In fact, the risks for most of the "Uncalculated Risk" strings are more calculable than those for all of the new gTLDs and ccTLDs launched in the past 7 years. As Verisign concedes in its recent paper, "New gTLD Security, Stability, Resiliency Update: Exploratory Consumer Impact Analysis,"[1] when .xxx launched in 2011, that new TLD received more queries before delegations than any of the proposed new strings. Nonetheless, the launch of .xxx proceeded without significant security and stability issues.[2] Additionally, as stated in the NTAG response .asia, .kp, .ax, .um and .cw all saw higher query traffic than all 279 of the "Uncalculated Risk" strings; yet the launch of these strings proceeded without any known issues. These string traffic volumes are real world examples of new string delegation and provide a baseline: they used existing traffic, did not cause security and stability impacts, and can serve as a more effective threshold in classifying risk based on query volume. Due to this, Neustar believes that virtually all of the "Uncalculated Risk" strings should be reclassified as "Low Risk" strings.

To better understand the current query traffic for "Uncalculated Risk" TLDs, Neustar conducted an analysis of query volume data from the UltraDNS recursive platform for a period of 46 days, from July 1, 2013 to August 16, 2013. Neustar's initial findings suggest that not only are the current query volumes of a number of these "Uncalculated Risk" TLDs extremely low when compared to the volume of the "high risk" TLDs, but also that the queries these names do

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[1] "New gTLD Security, Stability, Resiliency Update: Exploratory Consumer Impact Analysis," Verisign Labs Technical Report #1130008 Version 1.0, August 5, 2013, http://techreports.verisignlabs.com/docs/tr11300081.pdf

[2] Neustar notes that there was one documented issue within .xxx that involved a name collision (described at http://www.geek.com/news/just-launched-russian-itunes-full-of-porn-due-to-xxx-domain-snafu-1531240/), however, that issue most likely arose because a system designer decided to use an internal .xxx placeholder after the TLD was delegated and not before. No form of mitigation can prevent the collision of a name after the TLD has been delegated.

have are highly concentrated towards specific second level domains. For example, for an "Uncalculated Risk" TLD during this period, a single second level domain (the .NYC top level domain[3], which has yet to launch) accounted for 85% of the queries received by the UltraDNS recursive platform, while another second level domain accounted for 13% of all such queries. The high concentration of domains indicates a potentially small number of affected organizations, which significantly limits the potential security and stability impact and allows for quick identification and notification of organizations. Additionally, the small number of SLDs found in queries leaves the option of reserving these names for a short period of time to allow impacted network operators to update configurations.

Not only did Neustar's findings indicate a high concentration of queries towards specific second level domains for certain "Uncalculated Risk" TLDs, but it also found that such queries are highly concentrated by source. For example, 99.6% of the query volume for the highest volume SLD in one of the tested datasets came from two sources. For the second highest volume SLD in that dataset, queries were limited to two sources. These highly concentrated sources allow for the potential of quick notification and rapid mitigation.

Low Risk Strings. Neustar also believes that the overwhelming majority of the "Uncalculated Risk" names as well as those currently classified as "Low Risk" names pose no significant threat to the security and stability of the DNS. Accordingly, these strings should proceed without delay and in most cases, without additional mitigation. Based on our review of the Interisle study and other publicly available materials, it seems that ICANN's proposal for a 120-day period prohibition on registries making any delegations into its TLD was intended to address ICANN's understanding of the Certificate Authority Community's recommendation to allow 120 days for Certificate Authorities to revoke any Certificates issued for Certificates matching the respective newly approved TLD strings. However, public comments recently made by a representative of the Certificate Authority Community from DigiCert at the TLD Security Forum in San Francisco on August 22, 2013[4] strongly suggest that ICANN's proposal was overly conservative. According to the presentation made by Digicert, the CA Forum is only really concerned about 14 of the newly applied-for TLDs (12 of the "Uncalculated Risk" TLDs and the two "High Risk" TLDs). In other words, it appears that the CA Forum would not need the 120-day revocation period for ANY of the "Low Risk" TLDs, or for all but 12 of those categorized as "Uncalculated Risk" TLDs.

Additionally, as the Interisle report demonstrates, the names that have been labeled as "Low Risk" TLDs generate a very small amount of query traffic. As a result, delegations of these strings should result in limited - if any - impact to systems. As one example, .NEUSTAR was classified as such a "Low Risk" string. According to the Interisle report, the query traffic for

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[3] .NYC was ranked as 109th of the 1409 applied for strings in terms of "risk," placing it in the "Uncalculated Risk" profile.

[4] See https://www.artemis.net/wp-content/uploads/2013/08/Security-Risks-of-Internal-Names.pptx.

.NEUSTAR was so insignificant that it was rounded down to 0 in 2012 and 2013, yet if ICANN's approach were followed, Neustar would be prohibited from making any delegations in that TLD for four additional months.

If despite the evidence presented above and in the Interisle report, ICANN still has concerns about mitigating potential name collisions for the "Low Risk" TLDs, Neustar recommends that in order to further reduce unnecessary delays ICANN should formally notify the CAB forum immediately about the impending delegations. There is no reason to delay informing the Certificate Authorities of these likely delegations and encouraging Certificate Authorities to commence the 120-day revocation period as soon as possible. If, despite the advice of ARIN, ICANN continues to believe that notification is needed, ICANN should immediately begin notifying contacts for IP address blocks issuing DNS requests for names under proposed strings. ICANN has query source information today and there is no need to delay notifications.

In addition, if ICANN continues to insist on a 120-day prohibition of delegations for the "Low Risk" TLDs, it should grant an exemption for domain names that the registry operator desires to use for the operation and promotion of its TLD as currently contemplated in the Registry Agreement, Specification 9 (Section 3.2). This will allow registries to at a minimum start their respective marketing activities in order to avoid additional unnecessary delays while at the same time presenting very little - if any - security risks.

Additional Studies and the Use of 2013 and Beyond Data. Evidence gathered by Neustar strongly suggests that the growth in query volume for proposed TLDs in the 2013 DITL data is an indicator of growing interest in new TLDs rather than a signal that the potential for name collisions has increased. The Interisle Consulting Group presented a comparison of 2012 and 2013 datasets; given the growth in interest in proposed TLDs since the list of strings applied for in the current round of TLDs was announced in mid-2012, we believe this isn't an accurate side-by-side comparison. Neustar believes this expanding interest is a primary driver of queries for proposed TLDs in 2013, rather than an increased risk in name collisions. Additionally, any further study should consider the impact of increased interest in new TLDs and artificial query traffic due to testing or other automated systems before using recent data as a measure of query traffic for new TLDs.

Summary: The Past as a Guide to the Future

As described in the NTAG response and statements by Paul Mockapetris, co-inventor of the DNS, the launch of new TLDs in the past has had little tangible impact on security and stability within the Internet while significantly increasing diversity of DNS. Going forward, Neustar counsels a balanced approach grounded in past experience and ongoing developments: forthrightly addressing the two "High Risk" strings, while reclassifying the majority of "Uncalculated Risk" strings to "Low Risk," in recognition of their minimal impact on DNS security

and stability. There is no demonstrated reason to hold these strings back or, in most cases, to mitigate. By allowing them to move forward without further delay, ICANN will adhere to the intent and spirit of the new gTLD program.

Sincerely,

Jeffrey J. Neuman
Vice President, Business Affairs
Neustar, Inc.