



02 April 2025

Subject: SSAC2025-01: SSAC Public Comment for Fourth Proceeding for Proposed Language for Draft Sections of Next Round Applicant Guidebook

This document presents the Security and Stability Advisory Committee's (SSAC) public comments regarding the proposed implementation of the Name Collision Risk Assessment Framework, specifically addressing Draft Applicant Guidebook (AGB) Topic 29: Name Collision for the next round of generic Top-Level Domain (gTLD) applications.

SSAC highlights three concerns with the draft language:

- **Use of DNS Assessment Method:** The SSAC seeks clarity on which specific domain name system (DNS)-related assessment methods (No Interruption, Controlled Interruption, Visible Interruption) recommended in the Name Collision Analysis Project (NCAP) Study 2 Final Report (NCAP2) will be used during temporary delegation. Additionally, The SSAC would appreciate understanding the justification if certain methods are excluded, and emphasizes the need for approaches that enable sufficient data collection.
- **Assessment in Support of Mitigation and Remediation Plans:** The SSAC notes the apparent omission of the "Visible Interruption and Notification" assessment method. The SSAC believes this method is important for the root cause analysis required to develop effective mitigation plans and therefore requests clarification on its exclusion, particularly given its potential necessity in certain cases.
- **Implementation of the Technical Review Team:** The SSAC would appreciate more information on the planned implementation of NCAP Final Report Recommendation 7. This information should cover the specific responsibilities and accountability of the Technical Review Team (TRT) concerning conducting assessments and the process for reviewing and advising on applicant mitigation plans..

A. Use of DNS Assessment Method

Topic 29, Section 4 outlines the data collection process during temporary delegation:

During temporary delegation, the applied-for gTLD string will be delegated to DNS nameservers managed by ICANN in order to collect data about the volume and nature of DNS traffic for that String.

ICANN will evaluate the data collected during temporary delegation, that includes DNS queries to TLD servers, diversity of queries, origins, query names (labels), query types, etc.

The Name Collision Risk Assessment Framework proposed in NCAP2 outlines four assessment methods, detailed further in NCAP2 Section 3.5. This is the framework the ICANN Board adopted via NCAP2 Recommendation 8 and subsequently directed ICANN org to implement.¹ Three of these methods, which operate at the DNS or transport layer with relatively minimal application impact compared to the fourth (application-layer) method, are the focus of this section:

1. **No interruption:** This is a new method developed expressly because according to DNS experts it is likely to have minimal if any direct impact on the behavior of a DNS client, which will see a conventional negative response. As a result, application clients are expected to continue to behave as if the temporary delegation is not present. Its benefit is that it pulls name collision data out of the DNS infrastructure, most notably global resolvers, and makes it accessible in the authoritative root server. It adds data that is not visible in root servers and other longitudinal datasets.
2. **Controlled interruption:** This is the same method that was used in the 2012 Round. It does have a direct impact on the application making the DNS query. Its benefit is that it provides one type of notification on the client side, a notification that is typically only visible to system administrators or users with some technical knowledge. Unfortunately, it does not work for IPv6.
3. **Visible interruption:** This is a new method developed expressly because it is similar to “Controlled interruption,” it adds support for IPv6, and it provides an opportunity for a more direct notification to a user by the application client.

The implementation of these three methods is different. Each provides additional information and benefits that are not available in the longitudinal datasets. The latter two provide different notification opportunities to users.

NCAP2 provides the following context in Section 3.6:

The DG had broad consensus that the methods proposed provided the most viable options to support future assessments. Additionally, the DG at large recognized that there are benefits in each of the proposed tools, along with potential privacy risks associated with the use of some.

¹ See Approved Resolutions | Regular Meeting of the ICANN Board | 7 September 2024, 2.c. Name Collisions: SAC124 Advice and NCAP Discussion Group Recommendations, <https://www.icann.org/en/board-activities-and-meetings/materials/approved-resolutions-regular-meeting-of-the-icann-board-07-09-2024-en#section2.c>

The DG also widely agreed that this report should document the techniques we know about for collection and use of name collision related data, draw awareness to potential risks associated with these tools, and leave assessment of when their use is appropriate or the sequence of methods for assessment to the Technical Review Team.

Privacy and legal risks related to the use of data collection methods are not new to this study as the fine balance between identification and notification of potential name collisions with privacy protection involves the exercise of judgment.²

As the DG is neither in a position to assess such non-technical risks nor to operationalize mitigation strategies, the DG looks to the ICANN org to implement the relevant recommendations and necessary procedures required to limit potential negative impacts to the DNS and the ICANN org, including a data privacy and protection policy, along with other appropriate risk mitigation measures for legal compliance.

SSAC would like clarity on which of the three DNS-related methods are to be implemented and, for those that may be rejected, SSAC would like clarity and rationale for the basis of the rejection.

As ICANN org considers the basis for any rejection of these methods, the SSAC highlights the suggestion in NCAP2 that the TRT should have the opportunity to offer insight into which methods are used for assessment. Furthermore, the SSAC encourages ICANN org to also consider SAC124 Recommendation 2, which echoes the call for solutions that permit sufficient data collection:

Recommendation 2: The SSAC urges the ICANN Board to prioritize finding appropriate solutions within the proposed Name Collision Risk Assessment Framework that allow for sufficient data collection and analysis to properly inform mitigation strategies for name collisions.

Specifically, SSAC notes that both NCAP2 and the SSAC previously recognized that there may be non-technical concerns that impact the choice of assessment. This is why the SSAC recommendation is to find appropriate solutions to these non-technical concerns that allow for sufficient data collection and analysis.

B. Assessment in Support of Mitigation and Remediation Plans

Topic 29, Section 5.1 specifies the data provided to applicants:

² See ICANN Name Collision Occurrence Management Framework, ICANN, <https://www.icann.org/en/system/files/files/name-collision-framework-30jul14-en.pdf>

The applicant will be provided with all relevant non-personal data generated during the Initial Assessment and/or temporary delegation of the string to assist in developing the Mitigation Plan.

Combined with the data collection described in Topic 29 Section 4, this suggests that the fourth assessment described in Recommendation 8 of NCAP2 is being rejected. That method is identified as “Visible Interruption and Notification”, described fully in Section 3.5 of NCAP2, and summarized here.

Visible Interruption and Notification: With this method, instead of universally rejecting incoming connections, a sinkhole server is configured to accept application-layer communications for a small subset of ports and services and to return a descriptive response of the name collision problem via the corresponding protocol. Its benefit is that it provides information regarding how a domain name is being used, which is essential to a root cause analysis and the development of a mitigation and remediation plan.

SSAC refers to NCAP 2 Finding 4.2, a portion of which is excerpted here:

Drawing from the Case Study of Collision Strings (see Section 2.1 and the associated report) and the Root Cause Analysis (RCA) Reports (see Section 2.3 and the associated reports), there are no guarantees when it comes to identifying and mitigating name collisions. Quantitative data analysis only produces indicators of visible name collisions, but the questions of whether or not there is an actual name collision problem, how broad the population of affected users or systems is, and what level of harm is or would be experienced cannot be definitively answered without qualitative analysis.

... Potential indicators of impact and risk can be learned from the available data. To definitively ascertain the level of impact or even the existence of any particular name collision, any quantitative analysis must be combined with a qualitative assessment.

SSAC observes that DNS query data is insufficient to ensure that a root cause analysis can be conducted. The primary reason for this is that DNS query data does not provide any insight as to the use or purpose of the domain name that results in a name collision. Without a root cause analysis it is unlikely that a mitigation and remediation plan can be developed. NCAP2 did take note of the additional data privacy concerns that may be present when the fourth assessment is used.

SSAC would like clarity on why this method has not been discussed in the draft AGB Topic 29, particularly because it is necessary in certain specific cases.

Because the principle applies equally to the potential rejection of this method, the SSAC reiterates the point made in Section A. As ICANN org considers a basis for the rejection of this method, the SSAC, again, highlights the suggestion in NCAP2 that the TRT should have the

opportunity to offer insight into which methods are used for assessment. Likewise, the SSAC refers to SAC124 Recommendation 2:

Recommendation 2: The SSAC urges the ICANN Board to prioritize finding appropriate solutions within the proposed Name Collision Risk Assessment Framework that allow for sufficient data collection and analysis to properly inform mitigation strategies for name collisions.

Specifically, SSAC notes that both NCAP2 and the SSAC previously recognized that there may be non-technical concerns that impact the choice of assessment. This is why the SSAC recommendation is to find appropriate solutions to these non-technical concerns that allow for sufficient data collection and analysis.

C. Technical Review Team

NCAP2 includes the following recommendation:

Recommendation 7: ICANN should establish a dedicated Technical Review Team function

NCAP2 explains that name collision assessment requires significant technical expertise in Internet measurements and the DNS. Recommendation 7 lists four specific skill sets that must be present in the TRT. The requirement for these skills is supported by the experience drawn from the Case Study of Collision Strings (described in Section 2.1 of NCAP2) and the Root Cause Analysis (RCA) Reports (described in Section 2.3 of NCAP2).

Topic 29 references the TRT only once, in Section 5.1, when discussing the Mitigation Plan to be submitted by an Applicant. It states:

The Mitigation Plan submitted by the applicant must contain at minimum the following:

1. A summary of the findings from the Initial Assessment, and, if applicable, of the Technical Review Team's findings during Temporary Delegation;

In Section 4 there is no reference to a TRT conducting the Initial Assessment. Section 4 states:

... ICANN will produce a report outlining the findings, which will be published for applicants and other interested parties to review.

SSAC believes that a dedicated TRT is essential to the successful implementation of a name collision assessment and review of a mitigation and remediation plan.

SSAC would like clarity on the implementation of Recommendation 7. Will there be a TRT? What responsibilities and accountability will they have in the execution of the name collision assessment?

Further, the SSAC notes the following from Appendix 3 “Name Collision Risk Assessment Framework”, Section “Technical Review Team Development”, Subsection “Document the results”:

Part of the documentation effort would include offering reports to the applicant(s) that includes one to two degrees of anonymized, aggregated data. Making this data available allows for an open dialogue with the applicant(s) and should provide insight into any steps needed for developing a mitigation or remediation plan.

The purpose of the Appendix is to offer additional insight into the workflow that is likely necessary to implement the proposed Name Collision Framework. NCAP2 was careful to focus on technical functionality and to avoid being prescriptive about the operationalization of the Framework.

SSAC notes that Topic 29 states the following in Section 5.1:

The Mitigation Plan will be evaluated by a panel of technical experts, who may advise the applicant on possible improvements to it.

Because of the significant technical skills necessary to conduct and assess name collisions, SSAC recommends that the “may” in that statement be changed to a “should.”

In addition, SSAC recommends that Section 4 be expanded to include a requirement that the TRT be available to explain in detail the findings in the Initial Assessment. Both of these changes would allow for a more collaborative understanding and development of a mitigation and remediation plan, since the skills necessary to complete this task may not be readily available to most applicants.