UPDATE & CONSULTATION ON
New gTLD Subsequent Procedures
Consensus Building on Recommendations

NAME COLLISIONS (v02)

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Name Collision in SubPro

- What is the New gTLD Subsequent Procedures ("SubPro")?
  - The set of rules and mechanisms applicable to the next round for New gTLDs, i.e. they DO NOT apply to legacy TLDs, ccTLDs, or delegated new gTLDs or those still unresolved from the 2012 application round
  - "An update" to the 2012 Round rules and mechanisms

- Reach of Name Collision Policy
  - Name Collision may be 1 of only 2 exceptions which reach impacts early round.

- "Two parallel line of work" – related but not *necessarily* dependent
  - Name Collision topic under SubPro PDP WG purview (since 2016)
  - Name Collision Analysis Project (NCAP) under SSAC purview (since 2018)

Background to Name Collisions

What is a name collision?

ICANN Board – A name collision occurs when an attempt to resolve a name used in the private name space (eg. under a non-delegated TLD, or a short, unqualified name) results in a query to the public DNS. When administrative boundaries of private and public namespaces overlap, name resolution may yield unintended or harmful results.

SSAC NCAP DG – Name collision refers to the situation in which a name that is used in one namespace may be used in a different namespace, where users, software, or other functions in that domain may misinterpret it. In the context of TLDs, the term "name collision" refers to the situation in which a name that is used in the global DNS namespace defined in the root zone as published by the root management partners (the RZM namespace) may be used in a different namespace (non-RZM), where users, software, or other functions in that domain may misinterpret it.

Calendar	Event
15 Nov 2010	SSAC released SAC045, recommending inter alia, that "*ICANN promote a general awareness of the potential problems that may occur when a query for a TLD string that has historically resulting in a negative response begins to resolve to a TLD.*"
2012	• No measures taken prior to acceptance of new gTLD applications. • New gTLD Program launches – applications were submitted for thousands of strings **including .CORP, .HOME, and .MAIL**
Mar 2013	SSAC released SAC057: "SSAC Advisory on Internal Name Certificates" – highlighted issue of "name collision" and provided ICANN Board with steps for mitigation.
18 May 2013	ICANN Board adopted resolution on SAC057, commissioning a study on use of TLDs that were not then delegated at the root level of the public DNS in enterprises
Aug 2013	• Interisle released a report which looked at historical query traffic – **found .HOME and .CORP as the 2 top most frequently queried** • ICANN Org sought broad community participation in development of solution – **a draft mitigation plan citing .HOME and .CORP as high-risk strings, and proposing not to delegate these 2 strings**

Background to Name Collisions (Cont'd)

Calendar	Event
7 Oct 2013	• ICANN Board adopted the ***New gTLD Collision Occurrence Management*** **Plan** – to address potential issues arising from name collision • Contracting-delegation period extended to make SSL certificate providers aware of new TLDs to be delegated to ensure revocation of existing SSL certificates • ICANN allowed launch of some TLDs where ROs agreed to implement Alternate Path to Delegation (APD) which required ROs to block registration of thousands of SLDs; while awaiting another solution.
30 Jul 2014	ICANN Board adopted the Final ***Name Collision Occurrence Management Framework*** – allowing other ROs to implement APD or introduce wildcard in the whole zone for 90 days after delegation – a warning mechanism called "controlled interruption" (CI). Framework **identified .CORP, .HOME and .MAIL as high-risk strings whose delegation be deferred indefinitely.**
28 Oct 2015	JAS Global Advisors issued "*Mitigating the Risk of DNS Namespace Collisions (Final Report)*" – recommendations consistent with efforts
2015	**IETF's DNS Operations WG attempted to develop an RFC to reserve CORP, HOME and MAIL labels from delegation at the TL but were unable to reach consensus on the criteria by which labels would be reserved**
24 Aug 2016	Applicants for .CORP, .HOME, and .MAIL wrote to ICANN Board requesting that "the Board commission a timely examination of mitigation measures that will enable the release of .CORP, .HOME, and .MAIL."
2 Nov 2017	ICANN Board resolved to request **SSAC to conduct a study in a thorough and inclusive manner to present data, analysis, and POV, and provide advice regarding risks posed to users and end systems if .CORP, .HOME, and .MAIL strings were to be delegated in the root, & possible courses of action to mitigate identified risks.** → **Name Collision Analysis Project (NCAP)**
2 Nov 2017	ICANN Board also instructed CEO to provide options on how to address applications for .CORP, .HOME, and .MAIL
13 Dec 2017	ICANN Org presented ICANN Board with options to address the applications for .CORP, .HOME, and .MAIL
4 Feb 2018	ICANN Board directed CEO that the **applications for .CORP, .HOME, and .MAIL should not proceed**, and to account for the unseen impact to application processing, ICANN is to provide applicants for .CORP, .HOME, and .MAIL with a full refund of application fees upon withdrawal of the applications.

Name Collision Analysis Project (NCAP)

Is an SSAC project with multiple aspects – born out of ICANN Board's 2 Nov 2017 resolution requesting SSAC to conduct studies in a thorough and inclusive manner to present data, analysis, and POV; and provide advice:

1. Regarding the risks posed to user and end systems if .CORP, .HOME, and .MAIL strings were to be delegated in the root & possible courses of action that might mitigate identified risks.
2. On a range of questions around name collisions, including:
   - A proper definition for name collision and the underlying reasons why strings that manifest name collisions are so heavily used,
   - The harm to existing users that may occur if Collision Strings were to be delegated
   - Possible courses of action that might mitigate harm
   - Suggested criteria for determining whether an undelegated string should be categorized as a Collision String
   - Suggested criteria for determining whether a Collision String should not be delegated & how to remove from Collision String list
   - Measures to protect against intentional or unintentional consequences

Costs and schedule subject to review and approval by Board

Name Collision Analysis Project (NCAP) (Cont'd)

- Jan 2018 – SSAC NCAP Work Party (NCAP WP) formed, prepared plan for 3 Studies. Different to NCAP Administration which is a smaller group comprising NCAP WP and SSAC Leaderships to guide NCAP effort
- June 2018 – Although NCAP is SSAC project, OCTO was assigned to manage completion of NCAP Studies since scope is larger than normally undertaken by SSAC
- Sep 2018 – SSAC published **"SSAC Proposal for the Name Collision Analysis Project", proposes 3 consecutive studies** to address Board's requests:
    1. **Study 1: Understanding the current state of name collisions and data repository** [Board has only approved funding for Study 1]
    2. **Study 2: Name collision root cause and impact analysis**
    3. **Study 3: Analysis of Mitigation Options**
- Oct 2018 – OCTO assessed the Proposal – survey and summary of previous research important, but a data repository and associated policies for repository use may not be necessary if decision made to not continue with Studies 2 and 3 – so OCTO refined Study 1 scope to defer implementation of data repository
- Feb 2019 – Updated version of SSAC Proposal published, with minor changes by OCTO
- Apr 2019 – NCAP Discussion Group (NCAP DG) formed to allow community members to also participate in the NCAP Project, joining NCAP WP members.
- May 2019 – Confirmed NCAP Statement of Work for Study 1 with 3 goals:
    1. Examine all prior work on name collisions, produce a summary report to act as primer for those new to the subject
    2. Create a list of results of the data used in past studies, identify gaps, if any and list additional data required to successfully conduct Studies 2 and 3
    3. Decide whether NCAP should proceed with Study 2 and Study 3 based on survey of prior work and availability of data
- Jul 2019 – Proposed Definition of Names Collision and Scope of Inquiry for NCAP RFP finalized and issued for Study 1
- By Early 2020 – OCTO outsourced Study 1 to a contractor, after an RFP process
- Feb 2020 – First work product out, i.e. the NCAP Study 1 Draft Report
- May 2020 – Progress toward completion of first work product, i.e. the NCAP Study 1 Final Report

Name Collision Analysis Project (NCAP) Study 1

OCTO's NCAP Study 1 Draft Report

- Subjected to public comment 13 Feb to 14 Apr 2020 – only 3 comments received
- It addressed first 2 goals of Study 1, summarized as:
  1. Document prior work on name collisions
  2. Assessing name collision datasets
- Contains:
  - A name collisions primer
  - A review of pertinent previous work
  - Evidence of harm caused by name collisions
  - Mitigation techniques and their technical impact
  - An initial list of data sets that would be needed for Studies 2 and 3
  - Does not address 3rd goal of Study 1: a recommendation on whether or not the proposed follow-on Studies 2 and 3 should be performed

OCTO's NCAP Study 1 Final Report

- Subject to public comment 8 May to 1 Jul 2020
- It addressed first 2 goals of Study 1 as per Draft Report:
- Contains, in additional to that per Draft Report:
  - Executive Summary – incl. discussion of NCAP DG on
    - (i) effectiveness of CI since no success criteria were defined,
    - (ii) whether minimal name collision problems reported since CI was instituted while new TLDs have been used for past 6 years, was any indication that name collision risk remained significant
  - An updated initial list of data sets that would be needed for Studies 2 and 3
  - A recommendation regarding Studies 2 and 3, which is:

"***That Studies 2 and 3 should not be performed as currently designed.***" Why? According to contractor:

"*Study 2: analyzing datasets is unlikely to identify significant root causes for name collisions that have not already been identified. New causes for name collisions are far more likely to be found by investigating TLD candidates for potential delegation on a case by case basis.*

Study 3: CI has already proven an effective mitigation strategy, does not appear to be a need to identify, analyze, test alternatives for vast majority of TLD candidates.

*….. **this does not mean further study should not be conducted into name collision risks and the feasibility of potentially delegating additional domains that are likely to cause name collisions**. Most notably, the Study 3 question of how to mitigate name collisions for potential delegation of the corp, home, and mail TLDs is still unresolved. However, the proposals for Studies 2 and 3, which were developed years ago, do not seem to be effective ways of achieving the intended goals."*

Name Collision Analysis Project (NCAP) Study 1

Conclusion?

On Public Comment on NCAP Study 1 Final Report

- NCAP DG Co-Chair has stated that SSAC intends to move forward with Studies 2 and 3.
- Whether the Board decides to fund Studies 2 and 3 will be subject to further SSAC-Board communication because both Studies 2 and 3 form part of the work scope to answer Board's request for advice.

Options for ALAC in reacting to this public comment

- **Option 1:** Provide a general acknowledgment of this work product and include a comment of support for SSAC's onward action with Studies 2 and 3.
- **Option 2:** Do nothing - withholding comment would not be detrimental since we know that the SSAC-OCTO-NCAP DG tripartite groupings will continue with work on providing answers as requested by the Board in a feasible way, and only the Board has the final say with respect to its funding of Studies 2 and 3.

Impact on SubPro PDP WG Recommendations

- One school of thought suggests that there is no dependency between the work of SSAC on name collision and the completion of SubPro PDP WG's work
- ALAC have so far opted not to wade into the "dependency" debate, but instead to defer to SSAC's work on name collisions in responding to SubPro PDP WG's initial recommendations, including a reference to SAC090.
- **In particular we have drawn a hard line at delegation, if not the launching of the application window, until the NCAP study(ies) are completed and recommendations are addressed in implementation, retrospectively for the new round, if the recommendations come in after the application window is launched.**

Name Collisions: Consensus Building

Key Issue

- How to deal with risk or occurrence of name collisions in subsequent procedures?

Latest ALAC STATEMENT expressed:

- Concern that name collisions have the potential for great user harm
- Need for deference to SAC090 and for SSAC NCAP results to be in before proceeding with next round
- In particular we have drawn a hard line at delegation, if not the launching of the application window, until the NCAP study(ies) are completed and recommendations are addressed in implementation, retrospectively for the new round, if the recommendations come in after the application window is launched.

RELATED SubPro Areas/Topics include:

- SSAC Name Collision Analysis Project (NCAP)
- SSAC SAC090

COMPETITION, CONSUMER CHOICE & TRUST (CCT) RECOMMENDATIONS

- None

Impact of SubPro Recommendations* as at 26 May 2020

SubPro PDP WG

For At-Large Consensus Building

Affirmation #1

WG affirms Recommendation 4 of the 2007 policy, which states: "Strings must not cause any technical instability."

WG's Rationale

- WG agreed that the policy goal continues to be what it was in 2007, which is that any string must not cause any technical instability.
- This still remains an appropriate objective, and therefore affirms Recommendation 4 from the 2007 policy.

Impact

- As per affirmation

Additional intervention

- Any concerns? What else needs to be done?

** From SubPro PDP WG, not limited to recommendations, but also affirmations and implementation guidance*

Impact of SubPro Recommendations

SubPro PDP WG

Recommendation #2

ICANN **must have ready prior to the opening of the Application Submission Period a mechanism to evaluate the risk of name collisions** in the New gTLD evaluation process as well as during the transition to delegation phase.

WG's Rationale

- WG agreed that ICANN must include a mechanism to evaluate the risk of name collisions in the TLD evaluation process as well during the transition to delegation phase is still relevant, with the addition of the requirement for such a mechanism to be ready prior to the next application period.
- WG agreed that the requirement for a mechanism would promote predictability for applicants and other parties.
- In response to concerns raised in comments, WG agreed that it did not have to recommend what the mechanism is.

For At-Large Consensus Building

Impact

- ICANN to have pre-established mechanism to evaluate risk of name collisions before opening for applications
- WG not recommending a new mechanism but are affirming use of the existing mechanism and providing a series of IGs – Affirmation #3

Additional intervention

- Any concerns? What else needs to be done?

Impact of SubPro Recommendations

SubPro PDP WG

Affirmation #3

- WG affirms continued use of the **New gTLD Collision Occurrence Management framework** unless and until the ICANN Board adopts a new mitigation framework –
- Includes **not changing the controlled interruption duration and the required readiness** for human-life threatening conditions for currently delegated gTLDs and future new gTLDs.

WG's Rationale

- With respect to NCAP – WG agreed that it is up to the ICANN community and ICANN Board of Directors to determine any dependencies between the NCAP and the next round of new gTLD applications
- Board letter 1 Nov 2019, "*Board has not sought to establish a new dependency on completion of the PDP work based on commissioning NCAP Study 1 upon completion of Study 1, the Board can determine in consultation with the community whether additional NCAP work is necessary and, if so, which elements should be a dependency for any of the other future milestones …*"
- WG notes that ICANN org, in cooperation with the NCAP Discussion Group, has since completed its Study 1, leveraging an outside consultant. The consultant who produced the Study 1 report made conclusions relating to Studies 2 and 3.

WG's Rationale (Cont'd)

- Given that WG did not agree on a new mitigation framework, WG affirms continued use of the New gTLD Collision Occurrence Management framework unless and until the ICANN Board adopts a new mitigation framework.

For At-Large Consensus Building

Impact

- No change to how name collision issues will be handled in SubPro – using the New gTLD Collision Occurrence Management framework until a new mitigation framework were established
- Does not discount the work of SSAC / OCTO for NCAP, but does not make it a dependency to complete WG's work.

Additional intervention

- Any concerns? What else needs to be done?

Impact of SubPro Recommendations

SubPro PDP WG

Affirmation #3 (Cont'd)

Implementation Guidance

- ICANN should develop a mechanism or test to determine the name collision risk for any given string - suggest putting them into three categories: high risk, aggravated risk, and low risk.
  - High-risk strings should not be allowed to be applied for (if possible) or delegated, and aggravated risk strings should require the inclusion of a specific name collision mitigation framework.
- To the extent possible, ICANN should seek to identify high-risk strings in advance of opening the Application Submission Period, which should constitute a "Do Not Apply" list.
- ICANN should also seek to identify aggravated strings in advance, which would be expected to require a specific name collision mitigation framework. However, all applied-for strings should be subject to a DNS Stability evaluation to determine whether they represent a high, aggravated, or low risk of name collision.
- If controlled interruption (CI) for a specific label (usually a 2nd-level domain) is found to cause disruption, ICANN may decide to allow CI to be disabled for that label while the disruption is fixed, provided that the minimum CI period is still applied to that label.

WG's Rationale

- WG agreed that ICANN should develop a mechanism or test to determine name collision risk for any given string in manner stated in IG
- WG did not see the need to formulate guidance to address these concerns at this time – although agreed that SSAC's advice in SAC090 may provide guidance concerning the development of a risk mechanism or test.
- Including "Do Not Apply" list as Implementation Guidance since high-risk strings are likely to cause technical instability by definition, so these should not be able to be delegated.
- The approach wrt CI received consensus support of WT4.

For At-Large Consensus Building

Impact

- A "Do Not Apply" list of high-risk strings to be established ahead of next round.
- Flexibility for ICANN to administer CI as needed, but min 90-day CI period stays

Additional intervention

- Any concerns? What else needs to be done?