



The Internet Corporation for Assigned Names and Numbers

19 October 2016

Patrik Fältström
Chair, ICANN Security and Stability Advisory Committee (SSAC)

ICANN Board Advice Register and Status of SSAC's Historical Advice to the ICANN Board

Dear Patrik Fältström:

Over the past year, ICANN has reviewed historical advice to the ICANN Board to ensure it has been processed and to identify any items that have not yet received Board consideration, so they can be driven to closure. To this end, we reviewed the historical advice issued between 2010 and mid-2015 by the ALAC, RSSAC, SSAC, and the Universal Acceptance Steering Group. This correspondence provides a status update on this set of historical items from the SSAC.

Attached to this letter is a full list of the historical advice items reviewed by ICANN. We have categorized each advice item as follows:

Open - Prior to Board Consideration: Board consideration of the advice is still required.

Open - In Implementation: Board consideration is complete and implementation of advice item is ongoing.

Closed: This item has been processed as much as is relevant and is considered complete; no work is outstanding from the perspective of Board Advice (note that related implementation work may have been integrated into ICANN's ongoing operations or other initiatives).

Summary of SSAC's Historical Advice 2010 – Mid 2015		
Open Prior to Board Consideration	Open in Implementation	Closed
11	15	80

Recent advice – issued during the second half of 2015 through the present – is being handled through a Board Advice pilot project. Currently, the scope of requests addressed through the pilot is limited to advice from the ALAC, SSAC, and RSSAC. The recent advice documents from the SSAC



being processed through the pilot include:

- SAC070 - Advisory on the Use of Static TLD / Suffix Lists
- SAC073 - SSAC Comments on Root Zone Key Signing Key Rollover Plan
- SAC074 - SSAC Advisory on Registrant Protection: Best Practices for Preserving Security and Stability in the Credential Management Lifecycle
- SAC075 - SSAC Comments to ITU-D on Establishing New Certification Authorities
- SAC076 - SSAC Comment on the CCWG-Accountability 3rd Draft Proposal
- SAC077 - SSAC Comment on gTLD Marketplace Health Index Proposal
- SAC078 - Advisory on Uses of the Shared Global Domain Name Space
- SAC079 - SSAC Advisory on the Changing Nature of IPv4 Address Semantics
- SAC080 - SSAC Approval of CCWG-Accountability Supplemental Final Proposal on Work Stream 1 Recommendations
- SAC083 - SSAC Comment on Proposed Amendments to Base New gTLD Registry Agreement

In addition to the recent items identified above, historical items that are open and require further consideration by the ICANN Board and/or have not begun implementation will be tracked and managed through the pilot to ensure they will be driven to closure. These items are noted in the attached list of historical items.

Thank you for your time and commitment to ICANN over the years. We look forward to continued positive engagement between the ICANN Board and the SSAC.

If you have any questions about the information provided here, we encourage you to share them with Steve Sheng, Director, SSAC & RSSAC Advisories Development Support at ICANN, and to bring them for discussion during the ICANN57 public meeting in Hyderabad, India.

Sincerely,

A handwritten signature in black ink, appearing to read "Stephen D. Crocker", is written in a cursive style.

Dr. Stephen D. Crocker
Chair, ICANN Board of Directors

APPENDIX 1: Update on SSAC's Historical Advice Items (Open Items)

Updated on 07 October 2016

Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC045	Invalid Top Level Domain Queries at the Root Level of the Domain Name System 15 Nov 2010	6 of 6: The SSAC recommends that ICANN define circumstances where a previously delegated string may be re-used, or prohibit the practice.	Open - Implementation	This advice item requires further policy determination. ICANN will refer this advice to the GNSO for consideration.
SAC046	Report of the Security and Stability Advisory Committee on Root Scaling 6 Dec 2010	4 of 5: ICANN should update its "Plan for Enhancing Internet Security, Stability, and Resiliency," to include actual measurement, monitoring, and datasharing capability of root zone performance, in cooperation with RSSAC and other root zone management participants to define the specific measurements, monitoring, and data sharing framework.	Open - Implementation	The plan will be updated to include actual measurement, monitoring, and datasharing capability of root zone performance, in cooperation with RSSAC and other root zone management participants to define the specific measurements, monitoring, and data sharing framework.
SAC047	SSAC Comment on the ICANN gTLD Registry Transition Processes Model 15 Apr 2011	2 of 7: The SSAC recommends that ICANN preserve operational data about ex-registries. ICANN should define a framework to share such data with the community. Availability of such data will ensure that the registration transition process can be studied and if needed, improved.	Open - Implementation	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.
SAC047	SSAC Comment on the ICANN gTLD Registry Transition Processes Model 15 April 2011	5 of 7: The SSAC notes that in certain operating circumstances, registry functions, especially critical services such as DNS resolution and DNS security (DNSSEC), may be separable from other functions (registry database maintenance). The SSAC asks whether in such circumstances critical functions can be transitioned separately.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.
SAC048	SSAC Comment on the Orphan Glue Records in the Draft Applicant Guidebook 12 May 2011	2 of 3: Orphaned glue can be used for abusive purposes; however, the dominant use of orphaned glue supports the correct and ordinary operation of the DNS. Thus it is inappropriate to include the management of orphaned glue under the rubric of "abuse prevention and mitigation" and we suggest that it be removed.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.

APPENDIX 1: Update on SSAC's Historical Advice Items (Open Items)

Updated on 07 October 2016

Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC051	SSAC Report on WHOIS Terminology and Structure 19 Sep 2011	<p>2 of 3: The ICANN community should evaluate and adopt a replacement domain name registration data access protocol that supports the query and display of Internationalized DNRD as well as addressing the relevant recommendations in SAC 003, SAC 027 and SAC 033.</p>	Open - Implementation	Implementation of this specific advice item is ongoing. ICANN is determining how to implement the new protocol in the gTLD space. On 28 September 2015, ICANN published a proposed draft of the RDAP operational profile for gTLD registries and registrars. In December 2015, Registration Data Access Protocol (RDAP) Operational Profile for gTLD Registries and Registrars was placed for public comment and in April 2016, the Report of Public comments was published: https://www.icann.org/public-comments/rdap-profile-2015-12-03-en . The final RDAP Operational Profile was published on 26 July 2016: https://www.icann.org/resources/pages/rdap-operational-profile-2016-07-26-en . See also 2015 Annual Report on WHOIS improvements: https://whois.icann.org/sites/default/files/files/improvements-annual-report-04feb16-en.pdf
SAC059	Interdisciplinary studies of security and stability implications from expanding the root zone 18 April 2013	<p>1 of 2: The SSAC recommends those issues that previous public comment periods have suggested were inadequately explored as well as issues related to cross-functional interactions of the changes brought about by root zone growth should be examined.</p>	Open - Implementation	Issues related to the expansion of the root zone have been/are being considered through other means, including Name Collision and DNSSEC roll over. Other reports on the expansion of the root zone include: - Scaling the Root Report on the Impact on the DNS Root System of Increasing the Size and Volatility of the Root Zone: https://www.icann.org/en/system/files/files/root-scaling-study-report-31aug09-en.pdf - Summary of the Impact of Root Zone Scaling: https://archive.icann.org/en/topics/new-gtlds/summary-of-impact-root-zone-scaling-06oct10-en.pdf - Impact on Root Server Operations and Provisioning Due to New gTLDs: http://newgtlds.icann.org/en/about/historical-documentation/root-scaling-27jun12-en.pdf - Continuous Data Driven Analysis of Root Server System Stability Study Plan (Public Comment): https://www.icann.org/public-comments/cdar-study-plan-2015-12-02-en ICANN continues to work to address the issues identified in SAC059.

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC059	Interdisciplinary studies of security and stability implications from expanding the root zone 18 April 2013	<p>2 of 2: The SSAC believes the use of experts with experience outside of the fields on which the previous studies relied would provide useful additional perspective regarding stubbornly unresolved concerns about the longer-term management of the expanded root zone and related systems.</p>	Open - Implementation	Issues related to the expansion of the root zone have been/are being considered through other means, including Name Collision and DNSSEC roll over. Other reports on the expansion of the root zone include: - Scaling the Root Report on the Impact on the DNS Root System of Increasing the Size and Volatility of the Root Zone: https://www.icann.org/en/system/files/files/root-scaling-study-report-31aug09-en.pdf - Summary of the Impact of Root Zone Scaling: https://archive.icann.org/en/topics/new-gtlds/summary-of-impact-root-zone-scaling-06oct10-en.pdf - Impact on Root Server Operations and Provisioning Due to New gTLDs: http://newgtlds.icann.org/en/about/historical-documentation/root-scaling-27jun12-en.pdf - Continuous Data Driven Analysis of Root Server System Stability Study Plan (Public Comment): https://www.icann.org/public-comments/cdar-study-plan-2015-12-02-en ICANN continues to work to address the issues identified in SAC059.
SAC060	Active Variant TLDs23 Jul 2013	<p>2 of 14: ICANN must maintain a secure, stable, and objective process to resolve cases in which some members of the community (e.g., an applicant for a TLD) do not agree with the result of the Label Generation Rules (LGR) calculations.</p>	Open - Implementation	Implementation of this specific advice item is in progress and is part of Project 7 of the IDN Variant TLD Program. Each release of the integrated IDN Label Generation Ruleset for the Root Zone (LGR) will be open to public comments prior to publication. In addition, the LGR process has been further detailed to allow for a script community to submit additional revisions of MSR and LGR, which can then be reviewed. Recently two public comment periods closed that dealt with LGR and IDN issues: Guidelines for Developing Reference Label Generation Rulesets for the Second Level (https://www.icann.org/public-comments/comments-lgr-second-level-2015-11-05-en), and Public Comment on Label Generation Ruleset for Root Zone Version 1 (LGR-1): https://www.icann.org/public-comments/lgr-1-2015-12-04-en

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC060	Active Variant TLDs 23 Jul 2013	<p>3 of 14: ICANN should concentrate foremost on the rules for the root zone (versus rules for TLD registry operators).</p>	Open - Implementation	<p>ICANN agrees with this recommendation and the IDN Label Generation Ruleset for the Root Zone (LGR) procedure will implement this recommendation. Implementation of this specific advice item is in progress and is part of Project 2.2. Considerable work has been underway on IDNs and IDN variants. Some of this work can be found below:</p> <p>IDN Implementation Guidelines: https://www.icann.org/resources/pages/implementation-guidelines-2012-02-25-en</p> <p>IDN Variant Program information: https://www.icann.org/resources/pages/variant-tlds-2012-05-08-en</p> <p>IDN Variant TLD Root LGR Procedure and User Experience Study Recommendations: https://features.icann.org/idn-variant-tld-root-lgr-procedure-and-user-experience-study-recommendations?language=es</p> <p>Procedure to Develop and Maintain the Label Generation Rules for the Root Zone in Respect of IDNA Labels: https://www.icann.org/en/system/files/files/lgr-procedure-20mar13-en.pdf</p> <p>Public Comment on Label Generation Ruleset for Root Zone Version 1 (LGR-1): https://www.icann.org/public-comments/lgr-1-2015-12-04-en</p> <p>Community Wiki on Root Zone LGR Project: https://community.icann.org/display/croscomlgrprocedure/Root+Zone+LGR+Project</p>

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SAC060	Active Variant TLDs23 Jul 2013	<p>4 of 14: ICANN should coordinate and encourage adoption of these rules at the second and higher levels as a starting point by: - Updating the IDN Implementation Guidelines; - Maintaining and publishing a central repository of rules for second- level domain labels (2LDs) for all Top Level Domains (TLDs); and - Conducting specific training and outreach sessions</p>	Open - Implementation	<p>ICANN agrees with these recommendations. Implementation of this specific advice item is in progress, and there is an active working group that is working on the next version of IDN implementation guidelines as well as on second-level label generation rules (LGRs). ICANN staff are focusing on the implementation of the LGR procedure for the root zone, and many different projects are underway in pursuit of implementation. The IDN Implementation Guidelines are published here: https://www.icann.org/resources/pages/implementation-guidelines-2012-02-25-en. There was a call for experts to review the Implementation Guidelines in July 2015: https://www.icann.org/news/announcement-2015-07-20-en. Future public comment periods will also be opened for the following matters (see here for upcoming public comments: https://www.icann.org/resources/pages/upcoming-2012-02-25-en):</p> <ul style="list-style-type: none"> - Reference Second Level Label Generation Rules (Batch One) - Proposal for Khmer Script Label Generation Rule for the Root Zone - Proposal for Lao, Thai Script Label Generation Rule for the Root Zone - Reference Second Level Label Generation Rules (Batch Two) - IDN Variant TLD Implementation - Proposal for Chinese, Japanese Script Label Generation Rule for the Root Zone - IDN Implementation Guidelines Initial Recommendations

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<p>SAC060</p>	<p>Active Variant TLDs</p> <p>23 Jul 2013</p>	<p>8 of 14: A process should be developed to activate variants from allocatable variants in LGR.</p>	<p>Open - Implementation</p>	<p>ICANN agrees with this recommendation and the entire Project 7 of the IDN Variant TLD Program is dedicated to developing the processes to handle variant mechanisms, including the life cycle of a variant label. Implementation of this specific advice item is in progress and is part of project 7. Considerable work has been underway on IDNs and IDN variants. Some of this work can be found at the links listed below:</p> <ul style="list-style-type: none"> - IDN Implementation Guidelines: https://www.icann.org/resources/pages/implementation-guidelines-2012-02-25-en - IDN Variant Program information: https://www.icann.org/resources/pages/variant-tlds-2012-05-08-en - IDN Variant TLD Root LGR Procedure and User Experience Study Recommendations: https://features.icann.org/idn-variant-tld-root-lgr-procedure-and-user-experience-study-recommendations?language=es - Procedure to Develop and Maintain the Label Generation Rules for the Root Zone in Respect of IDNA Labels: https://www.icann.org/en/system/files/files/lgr-procedure-20mar13-en.pdf - Public Comment on Label Generation Ruleset for Root Zone Version 1 (LGR-1): https://www.icann.org/public-comments/lgr-1-2015-12-04-en - Community Wiki on Root Zone LGR Project: https://community.icann.org/display/croscomlgrprocedure/Root+Zone+LGR+Project

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SAC060	Active Variant TLDs23 Jul 2013	9 of 14: ICANN must ensure that Emergency Back-End Registry Operator (EBERO) providers support variant TLDs, and that parity exists for variant support in all relevant systems and functions associated with new TLD components.	Open - Implementation	Implementation of this specific advice item is underway and part of Project 7. All EBERO providers support variant TLDs; there is parity for variant support in all relevant systems and functions. Please see the following links for more information on both IDN Variants and EBERO, including the EBERO Agreement, which stipulates requirements regarding IDN variants: EBERO Resources: https://www.icann.org/resources/pages/ebero-2013-04-02-en IDN Variant Resources: - IDN Implementation Guidelines: https://www.icann.org/resources/pages/implementation-guidelines-2012-02-25-en - IDN Variant Program information: https://www.icann.org/resources/pages/variant-tlds-2012-05-08-en
SAC062	SSAC Advisory Concerning the Mitigation of Name Collision Risk7 Nov 2013	1 of 3: ICANN should work with the wider Internet community, including at least the IAB and the IETF, to identify (1) what strings are appropriate to reserve for private namespace use and (2) what type of private namespace use is appropriate (i.e., at the TLD level only or at any additional lower level).	Open - Implementation	The ICANN Board passed a resolution on 21 Nov 2013 that, "directs ICANN's President and CEO to have the advice provided in SAC062 evaluated": https://www.icann.org/resources/board-material/resolutions-2013-11-21-en#2.d ICANN staff will continue to work with the wider internet community on this issue in the context of the IETF.
SAC063	SSAC Advisory on DNSSEC Key Rollover in the Root Zone 7 November 2013	Internet Corporation for Assigned Names and Numbers (ICANN) staff, in coordination with the other Root Zone Management Partners (United States Department of Commerce, National Telecommunications and Information Administration (NTIA), and Verisign), should immediately undertake a significant, worldwide communications effort to publicize the root zone KSK rollover motivation and process as widely as possible.	Open - Implementation	The communication plan is part of the overall KSK Rollover Project. See https://www.icann.org/resources/pages/ksk-rollover . The outstanding work on this advice item will be addressed through the BAR pilot process.

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Updated on 07 October 2016

Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC063	SSAC Advisory on DNSSEC Key Rollover in the Root Zone 7 November 2013	ICANN staff should lead, coordinate, or otherwise encourage the creation of a collaborative, representative testbed for the purpose of analyzing behaviors of various validating resolver implementations, their versions, and their network environments (e.g., middle boxes) that may affect or be affected by a root KSK rollover, such that potential problem areas can be identified, communicated, and addressed.	Open - Implementation	The test pas is part of the overall KSK Rollover Project. See https://www.icann.org/resources/pages/ksk-rollover . The outstanding work on this advice item will be addressed through the BAR pilot process.
SAC063	SSAC Advisory on DNSSEC Key Rollover in the Root Zone 7 November 2013	ICANN staff should lead, coordinate, or otherwise encourage the collection of as much information as possible about the impact of a KSK rollover to provide input to planning for future rollovers.	Open - Implementation	The communication plan is part of the overall KSK Rollover Project. See https://www.icann.org/resources/pages/ksk-rollover . The outstanding work on this advice item will be addressed through the BAR pilot process.
SAC064	SSAC Advisory on DNS Search List Process 13 February 2014	Recommendation 1: The SSAC invites all ICANN Supporting Organizations and Advisory Committees, the IETF, and the DNS operations community to consider the following proposed behavior for search list processing and comment on its correctness, completeness, utility and feasibility. a. Administrators (including DHCP server administrators) should configure the search list explicitly, and must not rely on or use implicit search lists; Where DNS parameters such as the domain search list have been manually configured, these parameters should not be overridden by DHCP. b. When a user enters a single label name, that name may be subject to search list processing if a search list is specified, but must never be queried in the DNS in its original single-label form. c. When a user queries a hostname that contain two or more labels separated by dots, such as www.server, applications and resolvers must query the DNS directly. Search lists must not be applied even if such names do not resolve to an address (A/AAAA). Therefore www.server is always a FQDN.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.

APPENDIX 1: Update on SSAC's Historical Advice Items (Open Items)

Updated on 07 October 2016

Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC064	SSAC Advisory on DNS Search List Process 13 February 2014	Recommendation 2: The SSAC recommends ICANN staff to work with the DNS community and the IETF to encourage the standardization of search list processing behavior.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.
SAC064	SSAC Advisory on DNS Search List Process 13 February 2014	Recommendation 3: In the context of mitigating name collisions, ICANN should consider the following steps to address search list processing behavior. a. Commission additional research studies to further understand the cause of invalid queries to the root zone and the significance of search list processing as a contributor to those queries. b. Communicate to system administrators that search list behaviors currently implemented in some operating systems will cause collision with names provisioned under the newly delegated top-level domains. Such communication should complement the current ICANN effort in this area with findings and recommendations from this report.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.

APPENDIX 1: Update on SSAC's Historical Advice Items (Open Items)

Updated on 07 October 2016

Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC065	SSAC Advisory on DDoS Attacks Leveraging DNS Infrastructure 18 February 2014	Recommendation 1: ICANN should help facilitate an Internet-wide community effort to reduce the number of open resolvers and networks that allow network spoofing. This effort should involve measurement efforts and outreach and cooperation in relevant technical fora involving network operators worldwide, but will not have an operational component. ICANN should support this effort with adequate staffing and funding. Such a program should cover at least the following topics: a. Collect, create, and organize material that will assist in the implementation of recommendations 2-5 below. This would include: i. On an annual basis, publish and widely disseminate a report on the number and extent of open recursive DNS servers. ii. On an annual basis, publish and widely disseminate a report on the extent of networks that allow network spoofing. iii. Create and maintain an information portal with links to educational material, to be complemented by ICANN staff and community subject-matter expert contributions. iv. Inform how certain products (e.g., CPE devices) can play a significant role in DNS amplification attacks. v. Publish a regular (at least annual) advisory/report on the state-of-the-art-mechanisms to identify or otherwise prevent amplification and reflection attacks, and ensure that such an advisory/report is widely disseminated in the Internet community. vi. Provide an annual report on the work accomplished. b. Coordinate with the Internet community to popularize and support recommendations 2-5 below. This coordination should include exploration of whether operational requirements regarding open resolvers and the prevention of network spoofing can be incorporated into regulatory compliance frameworks and certification regimes.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.

APPENDIX 1: Update on SSAC's Historical Advice Items (Open Items)

Updated on 07 October 2016

Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC065	SSAC Advisory on DDos Attacks Leveraging DNS Infrastructure 18 February 2014	Recommendation 2: All types of network operators should take immediate steps to prevent network address spoofing. This involves: a. Implement network ingress filtering, as described in BCP38 and SAC004, to restrict packet-level forgery to the greatest extent possible; b. Disclose the extent of their implementation of network ingress filtering to the Internet community as a means of encouraging broader and more effective use of ingress filtering.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.
SAC065	SSAC Advisory on DDos Attacks Leveraging DNS Infrastructure 18 February 2014	Recommendation 3: Recursive DNS server operators should take immediate steps to secure open recursive DNS servers. This involves: a. Identify unmanaged open recursive DNS servers operating in the network and take immediate steps to restrict access to these servers in order to prevent abuse. b. Follow SAC008 Recommendation 3 to (1) disable open recursion on name servers from external sources and (2) only accept DNS queries from trusted sources to assist in reducing amplification vectors for DNS DDoS attacks. c. DNS Application Service Providers should take all reasonable steps to prevent abusive use of their open resolvers so that they are not targets of abuse. This would include continuous monitoring for anomalous behavior, limiting or blocking known abuse queries (e.g., ripe.net ANY); tracking likely target victim IPs (attacks reported or addresses of heavily targeted servers) and restricting or disallowing responses to those IPs; and sharing information with similar operators to coordinate efforts to quell such attacks.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.
SAC065	SSAC Advisory on DDos Attacks Leveraging DNS Infrastructure 18 February 2014	Recommendation 4: Authoritative DNS server operators should investigate deploying authoritative response rate limiting. This involves: a. Investigate mechanisms to deter DNS amplification attacks (e.g., Response Rate Limiting (RRL) in DNS server software), and implement those that are appropriate for their environment; b. Encourage DNS software vendors to provide such capabilities; and c. Frequently review the state of the art of such mechanisms and update their environment as necessary.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.

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Updated on 07 October 2016

Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC065	SSAC Advisory on DDos Attacks Leveraging DNS Infrastructure 18 February 2014	Recommendation 5: DNS operators should put in place operational processes to ensure that their DNS software is regularly updated and communicate with their software vendors to keep abreast of latest developments. This should minimally include: a. Audit and update operational practices as necessary to ensure that a process is in place to systematically perform DNS software updates on both an on-going and an emergency basis; and b. Encourage DNS software vendors to implement and refine the relevant capabilities at reasonable cost in system resources.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.
SAC065	SSAC Advisory on DDos Attacks Leveraging DNS Infrastructure 18 February 2014	Recommendation 6: Manufacturers and/or configurators of customer premise networking equipment, including home networking equipment, should take immediate steps to secure these devices and ensure that they are field upgradable when new software is available to fix security vulnerabilities, and aggressively replacing the installed base of non-upgradeable devices with upgradeable devices. This minimally involves: a. Ensuring that the default configuration on these devices does not implement an unmanaged open recursive DNS resolver; b. Providing updates and patches for their equipment to keep the installed base of networking equipment up-to-date to address current security threats, or as a necessary alternative replacing non-updatable equipment with appropriately configured devices; c. Ensuring that large-scale participants in purchasing of customer premise networking equipment (e.g., ISPs, government procurement, large enterprises) insist that networking equipment meet the standards discussed in this document.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.

Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC045	Invalid Top Level Domain Queries at the Root Level of the Domain Name System 15 Nov 2010	<p>The SSAC recommends that ICANN promote a general awareness of the potential problems that may occur when a query for a TLD string that has historically resulted in a negative response begins to resolve to a new TLD. Specifically, ICANN should:</p> <p>1 of 6: Study invalid TLD query data at the root level of the DNS and contact hardware and software vendors to fix any programming errors that might have resulted in those invalid TLD queries. The SSAC is currently exploring one such problem as a case study, and the vendor is reviewing its software. Future efforts to contact hardware or software vendors, however, are outside SSAC's remit. ICANN should consider what if any organization is better suited to continue this activity.</p>	Closed	<p>The ICANN Board New gTLD Program Committee (NGPC) resolutions on name collision adopted on 7-Oct-2013 and 30-Jul-2014 addressed the issues related to invalid top-level domain queries at the root level of the DNS: http://www.icann.org/en/groups/board/documents/resolutions-new-gtld-07oct13-en.htm; https://www.icann.org/resources/board-material/resolutions-new-gtld-2014-07-30-en As part of the 30 July 2014 Board Resolution, a Name Collision Occurrence Management Framework was also published, which can be found here: https://www.icann.org/en/system/files/files/name-collision-framework-30jul14-en.pdf It should be noted however that invalid TLD query data has not yet been studied and such a study would be required for future "subsequent procedures" for new gTLDs. ICANN has also developed materials to help IT Professionals understand and address the root cause of name collision: https://www.icann.org/resources/pages/name-collision-2013-12-06-en#resources Materials include a guide for IT departments to identify and manage the name collision risks in their networks among other measures towards that end: https://www.icann.org/en/system/files/files/name-collision-mitigation-01aug14-en.pdf</p>

APPENDIX 2: Update on SSAC's Historical Advice Items (All Items)

Updated on 07 October 2016

Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC045	Invalid Top Level Domain Queries at the Root Level of the Domain Name System 15 Nov 2010	<p>2 of 6: ICANN should contact organizations that are associated with strings that are frequently queried at the root. Forewarn organizations who send many invalid queries for TLDs that are about to become valid, so they may mitigate or eliminate such queries before they induce referrals rather than NXDOMAIN responses from root servers.</p>	Closed	<p>The ICANN Board New gTLD Program Committee (NGPC) resolutions on name collision adopted on 7-Oct-2013 and 30-Jul-2014 addresses the issues related to invalid Top Level Domain queries at the root level of the DNS: http://www.icann.org/en/groups/board/documents/resolutions-new-gtld-07oct13-en.htm; https://www.icann.org/resources/board-material/resolutions-new-gtld-2014-07-30-en As part of the 30 July 2014 Board Resolution, a Name Collision Occurrence Management Framework was also published, which can be found here: https://www.icann.org/en/system/files/files/name-collision-framework-30jul14-en.pdf ICANN has also developed materials to help IT Professionals understand and address the root cause of name collision: https://www.icann.org/resources/pages/name-collision-2013-12-06-en#resources Materials include a guide for IT departments to identify and manage the name collision risks in their networks among other measures towards that end: https://www.icann.org/en/system/files/files/name-collision-mitigation-01aug14-en.pdf</p>
SAC045	Invalid Top Level Domain Queries at the Root Level of the Domain Name System 15 Nov 2010	<p>3 of 6: ICANN should educate users so that, eventually, private networks and individual hosts do not attempt to resolve local names via the root system of the public DNS.</p>	Closed	<p>ICANN has developed materials to help IT Professionals understand and address the root cause of name collision: https://www.icann.org/resources/pages/name-collision-2013-12-06-en#resources Materials include a guide for IT departments to identify and manage the name collision risks in their networks among other measures towards that end: https://www.icann.org/en/system/files/files/name-collision-mitigation-01aug14-en.pdf</p>

APPENDIX 2: Update on SSAC's Historical Advice Items (All Items)

Updated on 07 October 2016

Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC045	Invalid Top Level Domain Queries at the Root Level of the Domain Name System 15 Nov 2010	<p>Recommendation (2): The SSAC recommends that ICANN consider the following in the context of the new gTLD program.</p> <p>4 of 6: Prohibit the delegation of certain TLD strings. RFC 2606, "Reserved Top Level Domain Names," currently prohibits a list of strings, including test, example, invalid, and localhost. 4 ICANN should coordinate with the community to identify a more complete set of principles than the amount of traffic observed at the root as invalid queries as the basis for prohibiting the delegation of additional strings to those already identified in RFC 2606.</p>	Closed	<p>The ICANN Board New gTLD Program Committee (NGPC) resolutions on name collision adopted on 7-Oct-2013 and 30-Jul-2014 addresses the issues related to invalid Top Level Domain queries at the root level of the DNS: http://www.icann.org/en/groups/board/documents/resolutions-new-gtld-07oct13-en.htm; https://www.icann.org/resources/board-material/resolutions-new-gtld-2014-07-30-en As part of the 30 July 2014 Board Resolution, a Name Collision Occurrence Management Framework was also published, which can be found here: https://www.icann.org/en/system/files/files/name-collision-framework-30jul14-en.pdf</p>
SAC045	Invalid Top Level Domain Queries at the Root Level of the Domain Name System 15 Nov 2010	<p>5 of 6: The SSAC recommends that ICANN alert the applicant during the string evaluation process about the pre-existence of invalid TLD queries to the applicant's string. ICANN should coordinate with the community to identify a threshold of traffic observed at the root as the basis for such notification.</p>	Closed	<p>The NGPC resolutions on name collision adopted on 7-Oct-2013 and 30-Jul-2014 addresses the issues related to invalid Top Level Domain queries at the root level of the DNS: http://www.icann.org/en/groups/board/documents/resolutions-new-gtld-07oct13-en.htm; https://www.icann.org/resources/board-material/resolutions-new-gtld-2014-07-30-en As part of the 30 July 2014 Board Resolution, a Name Collision Occurrence Management Framework was also published, which can be found here: https://www.icann.org/en/system/files/files/name-collision-framework-30jul14-en.pdf</p>
SAC045	Invalid Top Level Domain Queries at the Root Level of the Domain Name System 15 Nov 2010	<p>6 of 6: The SSAC recommends that ICANN define circumstances where a previously delegated string may be re-used, or prohibit the practice.</p>	Open - Implementation	<p>This advice item requires further policy determination. ICANN will refer this advice to the GNSO for consideration.</p>

APPENDIX 2: Update on SSAC's Historical Advice Items (All Items)

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC046	Report of the Security and Stability Advisory Committee on Root Scaling 6 Dec 2010	[...] the SSAC recommends the following steps be taken before launching additional gTLDs, in parallel with continued deployment of IDNs and IPv6. 1 of 5: Formalize and publicly document the interactions between ICANN and the root server operators with respect to root zone scaling.	Closed	The Board requested the CEO to direct staff to work with the root server operators via RSSAC to complete the documentation of the interactions between ICANN and the root server operators with respect to root zone scaling: https://www.icann.org/resources/board-material/resolutions-2012-09-13-en#1.c In a letter of 30 April 2013, ICANN's Chief Security Officer wrote to the SSAC Chair regarding the concerns raised in SAC046 and SAC047: https://www.icann.org/en/system/files/correspondence/moss-to-falstrom-30apr13-en.pdf RSSAC communications including advisories, reports, and statements are available on the ICANN website: https://www.icann.org/resources/pages/rssac-publications-2014-05-12-en
SAC046	Report of the Security and Stability Advisory Committee on Root Scaling 6 Dec 2010	2 of 5: ICANN, National Telecommunications and Information Administration (NTIA), and VeriSign should publish statements, or a joint statement, that they are materially prepared for the proposed changes.	Closed	The Board recommended the CEO to direct staff to work with NTIA and Verisign to explore publication of one or more statements regarding preparation for the proposed changes. https://www.icann.org/resources/board-material/resolutions-2012-09-13-en#1.c ICANN staff worked with NTIA and Verisign and the parties released a joint statement on 5 November 2012: https://www.icann.org/en/system/files/correspondence/icann-et-al-to-icann-board-ssac-05nov12-en.pdf
SAC046	Report of the Security and Stability Advisory Committee on Root Scaling 6 Dec 2010	3 of 5: ICANN should publish estimates of expected and maximum growth rates of TLDs, including IDNs and their variants, and solicit public feedback on these estimates, with the end goal of being as transparent as possible about the justification for these estimates.	Closed	The Board recommended the CEO to direct staff to publish current estimates of the expected growth rates of TLDs: https://www.icann.org/resources/board-material/resolutions-2012-09-13-en#1.c As part of the implementation of the New gTLD Program, ICANN regularly published the expected and maximum growth of TLDs. For example, ICANN's estimates were published as part of a plan to utilize a drawing method to prioritize new gTLD applications (https://newgtlds.icann.org/sites/default/files/root-scaling-23jun12-en.pdf) and in other regular new gTLD updates.

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Updated on 07 October 2016

Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC046	Report of the Security and Stability Advisory Committee on Root Scaling 6 Dec 2010	4 of 5: ICANN should update its "Plan for Enhancing Internet Security, Stability, and Resiliency," to include actual measurement, monitoring, and datasharing capability of root zone performance, in cooperation with RSSAC and other root zone management participants to define the specific measurements, monitoring, and data sharing framework.	Open - Implementation	The plan will be updated to include actual measurement, monitoring, and datasharing capability of root zone performance, in cooperation with RSSAC and other root zone management participants to define the specific measurements, monitoring, and data sharing framework.
SAC046	Report of the Security and Stability Advisory Committee on Root Scaling 6 Dec 2010	5 of 5: ICANN should commission and incent interdisciplinary studies of security and stability implications from expanding the root zone more than an order of magnitude, particularly for enterprises and other user communities who may implement strong assumptions about the number of TLDs or use local TLDs that may conflict with future allocations.	Closed	After submission of a letter to the SSAC from the ICANN Chairman on 25 September 2012 (https://www.icann.org/en/system/files/correspondence/crocker-to-faltstrom-25sep12-en.pdf), the SSAC formed a work party to provide a response to the ICANN Board. On 16 April 2013, the SSAC submitted SAC 059: SSAC Letter to the ICANN Board Regarding Interdisciplinary Studies to the ICANN Board. ICANN commissioned Interisle to study the namespace issue raised in SAC059 and further to JAS to provide a report on mitigating namespace collisions.
SAC047	SSAC Comment on the ICANN gTLD Registry Transition Processes Model 15 Apr 2011	1 of 7: The SSAC recommends that ICANN define a testing process that emulates a full failover scenario and that successor and emergency registry operators demonstrate their ability to satisfy the testing criteria.	Closed	SAC047 was considered by ICANN and relevant recommendations were implemented into the Registry Transition process, including the requirement for an emergency back-end registry operator (EBERO) to conduct failover testing periodically. The Registry Transition process is available here: https://www.icann.org/resources/pages/transition-processes-2013-04-22-en . A process for EBEROs was implemented into the New gTLD Program and accounted for in GNSO Policy (http://gns0.icann.org/en/issues/new-gtlds/pdp-dec05-fr-part-08aug07.htm), the Applicant Guidebook (http://newgtlds.icann.org/en/applicants/agb/guidebook-full-04jun12-en.pdf), and the New gTLD Base Registry Agreement (https://newgtlds.icann.org/sites/default/files/agreements/agreement-approved-09jan14-en.pdf).

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC047	SSAC Comment on the ICANN gTLD Registry Transition Processes Model 15 Apr 2011	2 of 7: The SSAC recommends that ICANN preserve operational data about ex-registries. ICANN should define a framework to share such data with the community. Availability of such data will ensure that the registration transition process can be studied and if needed, improved.	Open - Implementation	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.
SAC047	SSAC Comment on the ICANN gTLD Registry Transition Processes Model (3 of 7) 15 Apr 2011	3 of 7: The SSAC emphasizes that in many if not most circumstances, restoring domain name system (DNS) resolution services will be the number one priority for registrants and gTLD users. This requires DNS zone files for gTLDs to be escrowed separately.	Closed	A process for Registry Data Escrow was implemented into the New gTLD Program in the Applicant Guidebook (http://newgtlds.icann.org/en/applicants/agb/guidebook-full-04jun12-en.pdf), and the New gTLD Base Registry Agreement (https://newgtlds.icann.org/sites/default/files/agreements/agreement-approved-09jan14-en.pdf)
SAC047	SSAC Comment on the ICANN gTLD Registry Transition Processes Model 15 Apr 2011	4 of 7: The SSAC notes that the Explanatory Memorandum makes no provision to ensure that a registrant retains the registration of a domain name during transition. The process must have a provision to lock domain ownership during a transition.	Closed	SAC047 was issued in response to the Explanatory Memorandum on Registry Transition Procedures as part of the New gTLD Applicant Guidebook development process. ICANN considered this advice item, but ultimately this recommendation was not implemented as part of the Registry Transition process.
SAC047	SSAC Comment on the ICANN gTLD Registry Transition Processes Model 15 April 2011	5 of 7: The SSAC notes that in certain operating circumstances, registry functions, especially critical services such as DNS resolution and DNS security (DNSSEC), may be separable from other functions (registry database maintenance). The SSAC asks whether in such circumstances critical functions can be transitioned separately.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC047	SSAC Comment on the ICANN gTLD Registry Transition Processes Model 15 Apr 2011	<p>6 of 7: With respect to registration fees, the SSAC also notes that certain registrant information is not associated with or collected for the purpose of the public directory service, but is instead part of the administrative data that might be split between the registry and the registrar. If the registry is replaced, one of two conditions might exist: 1) The current registry operator has information on the payment cycle. In this case, the current registry operator must provide the billing and payment cycle to the successor registry along with each registrant registration information. 2) The registrar has payment information. In this case, the current registry operator must provide the sponsoring registrar information for each domain that is registered to the successor registry.</p>	Closed	The payment cycle information is reflected by the expiration date of the domain name, which is included as part of the data escrow that the successor registry receives. Each gTLD Registry is required to escrow their registration data with an ICANN approved data escrow agent on a daily basis and this activity is monitored by ICANN contractual compliance and Technical Services. Additionally in the event of a transition the DNS Zone files continue to be escrowed daily. Registry Data Escrow requirements are noted here: Applicant Guidebook, Attachment to Module 2: Evaluation Questions and Criteria http://newgtlds.icann.org/en/applicants/agb/guidebook-full-04jun12-en.pdf), New gTLD Base Registry Agreement, Spec 2: Data Escrow Requirements (https://newgtlds.icann.org/sites/default/files/agreements/agreement-approved-09jan14-en.pdf). More information regarding New gTLD Registry Data Escrow Requirements and Process can be found here: https://newgtlds.icann.org/en/applicants/data-escrow
SAC047	SSAC Comment on the ICANN gTLD Registry Transition Processes Model 15 Apr 2011	<p>7 of 7: Lastly, the SSAC makes the following recommendations regarding the construction of the Explanatory Memorandum: 1) It should be footnoted with references to the AG. 2) It should reference and use defined terms from the Applicant Guidebook rather than crafting its own definitions. 3) It imposes requirements on various parties, but it is unclear if these have the stature of requirements stated in the Applicant Guidebook. Since its function is to be explanatory, the text should truly be explanatory as opposed to normative.</p>	Closed	ICANN adopted these recommendations and clarified in the Registry Transition process that the Explanatory Memorandum is part of the Applicant Guidebook. See: https://www.icann.org/resources/pages/transition-processes-2013-04-22-en

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC048	SSAC Comment on the Orphan Glue Records in the Draft Applicant Guidebook 12 May 2011	The SSAC offers the following comments for consideration on the removal of orphan glue records: 1 of 3: Orphaned glue is an ambiguous term for which no definitive definition exists. The SSAC has prepared a definition that we recommend be included for reference in the Applicant Guidebook (see below for the proposed definition).	Closed	ICANN implemented this advice in the language of the Applicant Guidebook (https://newgtlds.icann.org/en/applicants/agb/guidebook-full-04jun12-en.pdf) and the New gTLD Base Registry Agreement, Specification 6, Section 4.2, which references the SSAC Advisory directly: "Malicious Use of Orphan Glue Records. Registry Operators shall take action to remove orphan glue records (as defined at http://www.icann.org/en/committees/security/sac048.pdf) when provided with evidence in written form that such records are present in connection with malicious conduct." (See https://newgtlds.icann.org/sites/default/files/agreements/agreement-approved-09jan14-en.pdf .)
SAC048	SSAC Comment on the Orphan Glue Records in the Draft Applicant Guidebook 12 May 2011	2 of 3: Orphaned glue can be used for abusive purposes; however, the dominant use of orphaned glue supports the correct and ordinary operation of the DNS. Thus it is inappropriate to include the management of orphaned glue under the rubric of "abuse prevention and mitigation" and we suggest that it be removed.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.
SAC048	SSAC Comment on the Orphan Glue Records in the Draft Applicant Guidebook 12 May 2011	3 of 3: Finally, to mitigate the actual abuse of orphaned glue, registry operators should take action to remove these records when provided with evidence that the glue is indeed present to abet malicious conduct.	Closed	ICANN implemented this advice in the language of the Applicant Guidebook (https://newgtlds.icann.org/en/applicants/agb/guidebook-full-04jun12-en.pdf) and the New gTLD Base Registry Agreement, Specification 6, Section 4.2, which references the SSAC Advisory directly: "Malicious Use of Orphan Glue Records. Registry Operators shall take action to remove orphan glue records (as defined at http://www.icann.org/en/committees/security/sac048.pdf) when provided with evidence in written form that such records are present in connection with malicious conduct." See https://newgtlds.icann.org/sites/default/files/agreements/agreement-approved-09jan14-en.pdf .

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC049	SSAC Report on DNS Zone Risk Assessment and Management 3 Jun 2011	The SSAC recommends that registrants consider implementing [NINE] safeguards and proactive measures to manage the risk associated with loss, disruption, or inconsistent availability of name service: (1) Thoroughly document all aspects of your DNS architecture and operations; (2) Design for resiliency; (3) Actively manage DNS information; (4) Protect domain registration and hosting accounts against unauthorized access or misuse; (5) Monitor the health and well being of your name service; (6) Track operational statistics and trends; (7) Develop a continuity plan for recovering from DNS; (8) Before making changes in provisioning, plan carefully, and; (9): Make informed choices when selecting DNS providers.	Closed	This specific advice item contains no action for ICANN.

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<p>SAC050</p>	<p>DNS Blocking: Benefits Versus Harms: An Advisory from the Security and Stability Advisory Committee on Blocking of Top Level Domains at the Domain Name System</p> <p>14 Jun 2011</p>	<p>Blocking or altering responses to Domain Name System (DNS) queries is increasingly prominent. Domain name or Internet Protocol (IP) address filtering (or otherwise preventing access to web content as a matter of security policy) may be viewed by some organizations as a natural extension of historical telephony controls that aimed to block people within an organizations from incurring toll charges. Technical approaches to DNS blocking are intended to affect users within a given administrative domain, such as a privately or publicly operated network. Preventing resolution of the domain name into an IP address will prevent immediate connection to the named host, although circumvention techniques may enable connectivity to the intended system anyway (this includes simply accessing the site via IP address rather than via a Fully Qualified Domain Name (FQDN)). A DNS resolver or network operator could also rewrite a DNS response to contain an IP address mapping the operator chooses, whether rewriting a Non-Existent Domain (NXDOMAIN) response or rewriting the DNS response for an existing FQDN, with potentially harmful effects on DNS Security Extension (DNSSEC)-supporting name servers and their users. A particularly coarse-grained approach is for an operator to silently discard DNS responses, although this results in non-deterministic behavior and may itself be problematic. Regardless of the mechanism used, organizations that implement blocking should apply these principles: 1. The organization imposes a policy on a network and its users over which it exercises administrative control (i.e., it is the administrator of a policy domain). 2. The organization determines that the policy is beneficial to its objectives and/or the interests of its users. 3. The organization implements the policy using a technique that is least disruptive to its network operations and users, unless laws or regulations specify certain techniques. 4. The organization makes a concerted effort to do no harm to networks or users outside its policy domain as a consequence of implementing the policy.</p>	<p>Closed</p>	<p>This specific advice item contains no action for ICANN as it is general advice to organizations implementing DNS blocking rather than advice directed to the ICANN Board.</p>
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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC051	SSAC Report on WHOIS Terminology and Structure 19 Sep 2011	1 of 3: The ICANN community should adopt the terminology outlined in this report in documents and discussions, in particular: - Domain Name Registration Data (DNRD). The data that domain name registrants provide when registering a domain name and that registrars or registries collect. - Domain Name Registration Data Access Protocol (DNRD-AP). The components of a (standard) communications exchange - queries and responses - that specify the access to DNRD. - Domain Name Registration Data Directory Service (DNRD-DS). The service(s) offered by domain name registries and registrars to implement the DNRD-AP and to provide access to DNRD-DS. Additional terminology includes "DNRDe," "DNRD Policy," "DNRD-DS Policy," "Internationalized DNRD," and "Localized DNRD." The term "WHOIS" should only be used when referring to the protocol as currently specified in RFC 3912.	Closed	On 8 November 2012, the ICANN Board approved resolution directing that work begin related to the development of new directory service policy and that it incorporate the language used by the SSAC: https://www.icann.org/resources/board-material/resolutions-2011-10-28-en#5 . Both the New gTLD Base Registry Agreement and the 2013 Registrar Accreditation Agreement incorporate the SSAC's terminology: https://www.icann.org/resources/pages/registries/registries-agreements-en , https://www.icann.org/resources/pages/approved-with-specs-2013-09-17-en
SAC051	SSAC Report on WHOIS Terminology and Structure 19 Sep 2011	2 of 3: The ICANN community should evaluate and adopt a replacement domain name registration data access protocol that supports the query and display of Internationalized DNRD as well as addressing the relevant recommendations in SAC 003, SAC 027 and SAC 033.	Open - Implementation	Implementation of this specific advice item is ongoing. ICANN is determining how to implement the new protocol in the gTLD space. On 28 September 2015, ICANN published a proposed draft of the RDAP operational profile for gTLD registries and registrars. In December 2015, Registration Data Access Protocol (RDAP) Operational Profile for gTLD Registries and Registrars was placed for public comment and in April 2016, the Report of Public comments was published: https://www.icann.org/public-comments/rdap-profile-2015-12-03-en . The final RDAP Operational Profile was published on 26 July 2016: https://www.icann.org/resources/pages/rdap-operational-profile-2016-07-26-en . See also 2015 Annual Report on WHOIS improvements: https://whois.icann.org/sites/default/files/files/improvements-annual-report-04feb16-en.pdf

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC051	SSAC Report on WHOIS Terminology and Structure 19 Sep 2011	3 of 3: The ICANN community should develop a uniform and standard framework for accessing DNRD that would provide mechanisms to define and implement a range of verification methods, credential services, and access control capabilities.	Closed	This specific advice item contains no action for the Board. The PDP on Next Generation gTLD Registration Directory Services (RDS) is currently considering this topic.

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<p>SAC052</p>	<p>SSAC Advisory on the Delegation of Single-Character Internationalized Domain Name Top-Level Domains</p> <p>31 Jan 2012</p>	<p>1 of 2: Given the potential for user confusion and the currently unfinished work on string similarity and IDN variants, the SSAC recommends a very conservative approach to the delegation of single-character IDN top-level domains. In particular, until ICANN completes its work on user confusion/string similarity and IDN variants, the SSAC recommends:</p> <ol style="list-style-type: none"> 1. Delegation of all single-character IDN TLDs in all scripts should be disallowed by default. 2. Exceptions may be made for some scripts, but only after careful consideration of potential confusability both within and across scripts. Such consideration should invite comments from the technical and linguistic community, and from ICANN's advisory committees. 3. Single-character TLD applications in an exceptionally allowed script should be accepted only when there is clear evidence that there is no risk of user confusion. Each applied-for single-character TLD label must be explicitly examined across scripts to ensure that there is absolutely no possibility of user confusion within or across scripts. 4. ICANN should consult with the technical and linguistic community to determine which scripts, if any, should be restricted with respect to the delegation of single character TLDs, and how any such restrictions should be defined, and how such restrictions may be relaxed if appropriate. 5. ICANN should take into consideration the outcome of the IETF work on the creation of a concise specification of the TLD label syntax based on existing syntax documentation, extended minimally to accommodate IDNs.¹¹ 6. ICANN should consider adopting the following guidelines regarding its consideration of which scripts and code points could be accepted as exceptions: <ol style="list-style-type: none"> a) The code point must be PVALID according to IDNA2008. b) The code point is from one of the following Unicode categories: lower case letter (Ll), upper case letter (Lu), and other letter (Lo) as defined by the Unicode Standard.¹² c) Some single-character IDN TLDs are composed of multiple Unicode code points, which may include non Lx-class code 	<p>Closed</p>	<p>The ICANN Board adopted this conservative approach and did not change the New gTLD Applicant Guidebook to allow for the delegation of single character IDN TLDs (https://newgtlds.icann.org/en/applicants/agb/guidebook-full-04jun12-en.pdf).</p>
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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
		<p>points. These should be subjected to a more stringent technical and confusability analysis, whose criteria should be well defined and made public. d) The script in which an exception is made and a single character IDN is allowed should not have characters that are intrinsically confusable with characters of another script (for example, Latin/Greek/Cyrillic, Lao/Thai, etc.). e) The existing and extended rules of confusability must be met. Single-character code points must explicitly be examined across scripts. Denial of a single character TLD application does not imply blocking of the script. Similarly, acceptance of a single-character TLD application does not imply acceptance of the script. f) If a script is allowed, a distinct and explicit specification of which subset of the script is available for single-character TLDs should be required prior to the acceptance of a single-character TLD application. By default all characters are disallowed, even when a script is allowed, and an explicit single-character-TLD-allowed list must be generated for each case.</p>		
<p>SAC052</p>	<p>SSAC Advisory on the Delegation of Single-Character Internationalized Domain Name Top-Level Domains</p> <p>31 Jan 2012</p>	<p>2 of 2: Because important relevant work on string similarity, IDN variant issues, and TLD label syntax is currently underway within ICANN, the IETF, and other bodies, ICANN should review the Findings of this report, and any policies that it adopts in response to Recommendation 1, no later than one year after the three work items mentioned above have been completed.</p>	<p>Closed</p>	<p>Considerable work has been performed or is ongoing relating to IDNs and IDN variants. Some of this work can be found on the Internationalized Domain Names page of the ICANN website: https://www.icann.org/resources/pages/idn-2012-02-25-en</p> <p>A String Similarity study was proposed as part of the Root Zone Label Generation Rules (Project 5), but this project was deprioritized based on public comment, and the work suggested by this recommendation will not be undertaken.</p>
<p>SAC053</p>	<p>SSAC Report on Dotless Domains</p> <p>23 Feb 2012</p>	<p>Dotless domains will not be universally reachable and the SSAC recommends strongly against their use. As a result, the SSAC also recommends that the use of DNS resource records such as A, AAAA, and MX in the apex of a Top-Level Domain (TLD) be contractually prohibited where appropriate and strongly discouraged in all cases.</p>	<p>Closed</p>	<p>On 13 August 2013, the ICANN Board New gTLD Program Committee (NGPC) adopted a resolution affirming that "dotless domain names" are prohibited: https://www.icann.org/resources/board-material/resolutions-new-gtld-2013-08-13-en#1.</p>

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC054	SSAC Report on the Domain Name Registration Data Model 11 Jun 2012	1 of 2: The SSAC invites all ICANN Supporting Organizations and Advisory Committees, and in particular Registry and Registrar Stakeholder groups to (a) consider this data model and comment on its completeness, and (b) comment on the utility of the model in furthering the definition of a directory service for domain name registration data as outlined in SAC033 and SAC051.	Closed	This specific advice item contains no action for ICANN. However, the Board in its November 8 2012 resolution directed that work related to the development of new directory service policy begin and that it incorporate the language used by the SSAC: https://www.icann.org/resources/board-material/resolutions-2012-11-08-en
SAC054	SSAC Report on the Domain Name Registration Data Model 11 Jun 2012	2 of 2: The SSAC encourages the community to adopt the labeling and terminology used in this data model in future work.	Closed	This specific advice item contains no action for ICANN. However, the Board in its November 8 2012 resolution directed that work related to the development of new directory service policy begin and that it incorporate the language used by the SSAC: https://www.icann.org/resources/board-material/resolutions-2012-11-08-en
SSAC Letter to the ICANN	The New Generic Top Level Domain (gTLD) Process 2 Jul 2012	1 of 6: Ensure that the overall root zone publication system is audited and monitored to confirm that its resources can support an increase without degradation in the current service level.	Closed	This item has been cancelled as the recommendations are a duplicate of those in SAC046.
SSAC Letter to the ICANN	The New Generic Top Level Domain (gTLD) Process 2 Jul 2012	2 of 6: Recommendation 1 from SAC 046 on Root Scaling: Formalize and publicly document the interactions between ICANN and the root server operators with respect to root zone scaling. ICANN and the root server operators may choose to utilize RSSAC to facilitate this interaction.	Closed	This item has been cancelled as the recommendations in this letter are a duplicate of those in SAC046 (Recommendation 1).
SSAC Letter to the ICANN	The New Generic Top Level Domain (gTLD) Process 2 Jul 2012	3 of 6: Recommendation 2 from SAC 046 on Root Scaling: ICANN, U.S. Dept. of Commerce, National Telecommunications and Information Administration (NTIA), and VeriSign should publish statements, or a joint statement, that they are materially prepared for the proposed changes.	Closed	This item has been cancelled as the recommendations in this letter are a duplicate of those in SAC046 (Recommendation 2).
SSAC Letter to the ICANN	The New Generic Top Level Domain (gTLD) Process 2 Jul 2012	4 of 6: Recommendation 3 from SAC 046 on Root Scaling: ICANN should publish estimates of expected and maximum growth rates of TLDs, including IDNs and their variants, and solicit public feedback on these estimates, with the end goal of being as transparent as possible about the justification for these estimates.	Closed	This item has been cancelled as the recommendations in this letter are a duplicate of those in SAC046 (Recommendation 3).

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SSAC Letter to the ICANN	The New Generic Top Level Domain (gTLD) Process 2 Jul 2012	5 of 6: Recommendation 4 from SAC 046 on Root Scaling: ICANN should update its "Plan for Enhancing Internet Security, Stability, and Resiliency," to include actual measurement, monitoring, and data-sharing capability of root zone performance, in cooperation with RSSAC and other root zone management participants to define the specific measurements, monitoring, and data sharing framework.	Closed	This item has been cancelled as the recommendations in this letter are a duplicate of those in SAC046 (Recommendation 4).
SSAC Letter to the ICANN	The New Generic Top Level Domain (gTLD) Process 2 Jul 2012	6 of 6: Recommendation 5 from SAC 046 on Root Scaling: ICANN should commission and incent interdisciplinary studies of security and stability implications from expanding the root zone more than an order of magnitude, particularly for enterprises and other user communities who may implement strong assumptions about the number of TLDs that may conflict with future allocations.	Closed	This item has been cancelled as the recommendations in this letter are a duplicate of those in SAC046 (Recommendation 5).
SAC055	WHOIS: Blind Men And An Elephant 14 Sep 2012	An accuracy policy should define each data element and require that it be examined and indicate for each element a method for determining the level of accuracy of the data.	Closed	This statement was considered as part of a public comment period: https://www.icann.org/resources/pages/whois-rt-final-report-2012-05-11-en In November 2012, the Board provided a resolution on the WHOIS Policy Review Team Report recommendations: https://www.icann.org/resources/board-material/prelim-report-2012-11-08-en#1.a Implementation work on WHOIS Accuracy Reporting System (ARS) is underway and general information about the implementation efforts can be found here: https://whois.icann.org/en/whoisars . The expert working group is evaluating accuracy policies and a policy development process (PDP) on registration data policy by the GNSO will follow the EWG's work. The policy recommendations arising from the GNSO's work will then be sent to the Board for consideration.

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC055	WHOIS: Blind Men And An Elephant 14 Sep 2012	Internationalized Domain Names: Internationalization MUST be supported by default, not called out separately. The focus should be on Recommendation 2 from the IRD-WG final report.	Closed	This statement was considered as part of a public comment period: https://www.icann.org/resources/pages/whois-rt-final-report-2012-05-11-en In November 2012, the ICANN Board provided a resolution on the WHOIS Policy Review Team Report recommendations: https://www.icann.org/resources/board-material/prelim-report-2012-11-08-en#1.a In response to recommendation 2 of the International Registration Data Working Group's (IRD-WG's) final report, a GNSO Policy Development Process has been started on the translation and transliteration of contact data, which addresses the submission of internationalized data. Board resolution 2016.03.10.06-7 requests GNSO to review policy implications of IRD Final Report and directs staff to incorporate IRD recommendations into Translation & Transliteration policy implementation as consistent with policy (https://www.icann.org/resources/board-material/resolutions-2016-03-10-en#1.e).
SAC055	WHOIS: Blind Men And An Elephant 14 Sep 2012	1 of 3: The Board should pass a resolution clearly stating the criticality of the development of a registration data policy defining the purpose of domain name registration data	Closed	This statement was considered as part of a public comment period: https://www.icann.org/resources/pages/whois-rt-final-report-2012-05-11-en In November 2012, the Board provided a resolution on the WHOIS Policy Review Team Report recommendations: https://www.icann.org/resources/board-material/prelim-report-2012-11-08-en#1.a
SAC055	WHOIS: Blind Men And An Elephant 14 Sep 2012	2 of 3: The Board should direct the CEO to create a registration data policy committee that includes the highest levels of executive engagement to develop a registration data policy which defines the purpose of domain name registration data, as described elsewhere in this document	Closed	This statement was considered as part of a public comment period: https://www.icann.org/resources/pages/whois-rt-final-report-2012-05-11-en In November 2012, the Board provided a resolution on the WHOIS Policy Review Team Report recommendations: https://www.icann.org/resources/board-material/prelim-report-2012-11-08-en#1.a
SAC055	WHOIS: Blind Men And An Elephant 14 Sep 2012	3 of 3: The Board should explicitly defer any other activity (within ICANN's remit) directed at finding a "solution" to "the WHOIS problem" until the registration data policy identified in (1) and (2) has been developed and accepted by the community.	Closed	This statement was considered as part of a public comment period: https://www.icann.org/resources/pages/whois-rt-final-report-2012-05-11-en In November 2012, the Board provided a resolution on the WHOIS Policy Review Team Report recommendations: https://www.icann.org/resources/board-material/prelim-report-2012-11-08-en#1.a

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC056	SSAC Advisory on Impacts of Content Blocking via the Domain Name System 9 Oct 2012	SAC 056 concludes that "Governments and others should take these issues into consideration and fully understand the technical implications when developing policies that depend upon the DNS to block or otherwise filter Internet content	Closed	SAC 056 is an Advisory that contains no recommendations that require Board action. The information in the conclusion of the Advisory has been disseminated through published articles referenced within SAC 056 and has been acted upon in various outreach and engagement with governments to help explain the technical implications of policies.
SAC057	Advisory on Internal Name Certificates 27 Jan 2016	1 of 4: Outreach to the CA/B forum and CAs, requesting that they treat applied for new gTLDs as if they were delegated TLDs as soon as possible, as well as discussing the broader implications and mitigation steps. (conducted confidentially)	Closed	This work was undertaken by ICANN staff including the Security Team. ICANN has coordinated mitigation efforts with the CA/Browser forum. Specifically, 1. ICANN worked with the Certificate Authority Browser Forum (CA/B Forum), which passed Ballot 96.
SAC057	Advisory on Internal Name Certificates 27 Jan 2016	2 of 4: A Disclosure Policy as informed by industry best practices for vulnerability disclosure (e.g. CERT / CC vulnerability disclosure). Such a policy should take into consideration that once the disclosure is public, it is trivial to exploit the vulnerability.	Closed	This work was undertaken by ICANN staff including the Security Team. ICANN has coordinated mitigation efforts with the CA/Browser forum. Specifically, 1. ICANN worked with the Certificate Authority Browser Forum (CA/B Forum), which passed Ballot 96.
SAC057	Advisory on Internal Name Certificates 27 Jan 2016	3 of 4: A communication plan on informing affected parties as determined by the disclosure policy.	Closed	This work was undertaken by ICANN staff including the Security Team. ICANN has coordinated mitigation efforts with the CA/Browser forum. Specifically, 1. ICANN worked with the Certificate Authority Browser Forum (CA/B Forum), which passed Ballot 96. Finally, the disclosure policy can be found here: https://www.icann.org/news/blog/icann-coordinated-disclosure-guidelines .
SAC057	Advisory on Internal Name Certificates 27 Jan 2016	4 of 4: A contingency plan to be executed if the vulnerability is leaked to the public prematurely, as well as a proactive vulnerability disclosure plan.	Closed	This work was undertaken by ICANN staff including the Security Team. ICANN has coordinated mitigation efforts with the CA/Browser forum. Specifically, 1. ICANN worked with the Certificate Authority Browser Forum (CA/B Forum), which passed Ballot 96. Finally, the disclosure policy can be found here: https://www.icann.org/news/blog/icann-coordinated-disclosure-guidelines .
SAC058	SSAC Report on Domain Name Registration Data Validation 27 Mar 2013	1 of 3: The SSAC recommends that the ICANN community should consider adopting the terminology outlined in this report in documents and discussions.	Closed	The adoption of this language is complete and extends beyond the ICANN community in which the ICANN WHOIS Expert Working Group (EWG), the Application Guidebook, the New gTLD Base Registry Agreement and the 2013 Registrar Accreditation Agreement incorporate terminology used within the SAC058.

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC058	SSAC Report on Domain Name Registration Data Validation 27 Mar 2013	2 of 3: As the ICANN community discusses validating contact information, the SSAC recommends that the following meta-questions regarding the costs and benefits of registration data validation should be answered	Closed	Many of these questions were addressed in the Expert Working Group's work and are part of the policy questions posed within a future PDP by the GNSO. The EWG delivered its Final Report: https://www.icann.org/en/system/files/files/final-report-06jun14-en.pdf . Information on the public comment process can also be found here: https://www.icann.org/public-comments/rds-prelim-issue-2015-07-13-en . The GNSO PDP process information can be found here: http://gns0.icann.org/en/group-activities/active/rds
SAC058	SSAC Report on Domain Name Registration Data Validation 27 Mar 2013	3 of 3: The SSAC recommends that the ICANN community should seek to identify validation techniques that can be automated and to develop policies that incent the development and deployment of those techniques. The use of automated techniques may necessitate an initial investment but the long-term improvement in the quality and accuracy of registration data will be substantial.	Closed	The WHOIS Accuracy Reporting System was born out of the Recommendations from the WHOIS Policy Review Team of 2012. With the system, ICANN committed to proactively identifying potentially inaccurate generic Top Level Domain (gTLD) WHOIS contact data and forwarding potentially inaccurate records to gTLD registrars for investigation and follow-up. To accomplish these tasks and address Governmental Advisory Committee (GAC) concerns on WHOIS accuracy, ICANN initiated the development of the WHOIS Accuracy Reporting System (ARS)?a framework for conducting repeatable assessments of WHOIS accuracy, publicly report the findings, and provide data to the ICANN Contractual Compliance team to follow up on potentially inaccurate records with registrars. WHOIS ARS Reports can be found here: https://whois.icann.org/en/whoisars-reporting .

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC059	Interdisciplinary studies of security and stability implications from expanding the root zone 18 April 2013	<p>1 of 2: The SSAC recommends those issues that previous public comment periods have suggested were inadequately explored as well as issues related to cross-functional interactions of the changes brought about by root zone growth should be examined.</p>	Open - Implementation	Issues related to the expansion of the root zone have been/are being considered through other means, including Name Collision and DNSSEC roll over. Other reports on the expansion of the root zone include: - Scaling the Root Report on the Impact on the DNS Root System of Increasing the Size and Volatility of the Root Zone: https://www.icann.org/en/system/files/files/root-scaling-study-report-31aug09-en.pdf - Summary of the Impact of Root Zone Scaling: https://archive.icann.org/en/topics/new-gtlds/summary-of-impact-root-zone-scaling-06oct10-en.pdf - Impact on Root Server Operations and Provisioning Due to New gTLDs: http://newgtlds.icann.org/en/about/historical-documentation/root-scaling-27jun12-en.pdf - Continuous Data Driven Analysis of Root Server System Stability Study Plan (Public Comment): https://www.icann.org/public-comments/cdar-study-plan-2015-12-02-en ICANN continues to work to address the issues identified in SAC059.

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC059	Interdisciplinary studies of security and stability implications from expanding the root zone 18 April 2013	2 of 2: The SSAC believes the use of experts with experience outside of the fields on which the previous studies relied would provide useful additional perspective regarding stubbornly unresolved concerns about the longer-term management of the expanded root zone and related systems.	Open - Implementation	Issues related to the expansion of the root zone have been/are being considered through other means, including Name Collision and DNSSEC roll over. Other reports on the expansion of the root zone include: - Scaling the Root Report on the Impact on the DNS Root System of Increasing the Size and Volatility of the Root Zone: https://www.icann.org/en/system/files/files/root-scaling-study-report-31aug09-en.pdf - Summary of the Impact of Root Zone Scaling: https://archive.icann.org/en/topics/new-gtlds/summary-of-impact-root-zone-scaling-06oct10-en.pdf - Impact on Root Server Operations and Provisioning Due to New gTLDs: http://newgtlds.icann.org/en/about/historical-documentation/root-scaling-27jun12-en.pdf - Continuous Data Driven Analysis of Root Server System Stability Study Plan (Public Comment): https://www.icann.org/public-comments/cdar-study-plan-2015-12-02-en ICANN continues to work to address the issues identified in SAC059.

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC060	Active Variant TLDs 23 Jul 2013	<p>1 of 14: Regarding ICANN's Report on Examining the User Experience Implications of Active Variant TLDs, The root zone must use one and only one set of Label Generation Rules (LGR).</p>	Closed	<p>ICANN agrees with this recommendation. The implicit assumption of the current LGR work is that the root zone will use one and only one set of label generation rules. Considerable work has been underway on IDNs and IDN variants. Some of this work can be found below:</p> <p>IDN Implementation Guidelines: https://www.icann.org/resources/pages/implementation-guidelines-2012-02-25-en</p> <p>IDN Variant Program information: https://www.icann.org/resources/pages/variant-tlds-2012-05-08-en</p> <p>IDN Variant TLD Root LGR Procedure and User Experience Study Recommendations: https://features.icann.org/idn-variant-tld-root-lgr-procedure-and-user-experience-study-recommendations?language=es</p> <p>Procedure to Develop and Maintain the Label Generation Rules for the Root Zone in Respect of IDNA Labels: https://www.icann.org/en/system/files/files/lgr-procedure-20mar13-en.pdf</p> <p>Public Comment on Label Generation Ruleset for Root Zone Version 1 (LGR-1): https://www.icann.org/public-comments/lgr-1-2015-12-04-en</p> <p>Community Wiki on Root Zone LGR Project: https://community.icann.org/display/croscomlgrprocedure/Root+Zone+LGR+Project</p>

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC060	Active Variant TLDs23 Jul 2013	<p>2 of 14: ICANN must maintain a secure, stable, and objective process to resolve cases in which some members of the community (e.g., an applicant for a TLD) do not agree with the result of the Label Generation Rules (LGR) calculations.</p>	Open - Implementation	Implementation of this specific advice item is in progress and is part of Project 7 of the IDN Variant TLD Program. Each release of the integrated IDN Label Generation Ruleset for the Root Zone (LGR) will be open to public comments prior to publication. In addition, the LGR process has been further detailed to allow for a script community to submit additional revisions of MSR and LGR, which can then be reviewed. Recently two public comment periods closed that dealt with LGR and IDN issues: Guidelines for Developing Reference Label Generation Rulesets for the Second Level (https://www.icann.org/public-comments/comments-lgr-second-level-2015-11-05-en), and Public Comment on Label Generation Ruleset for Root Zone Version 1 (LGR-1): https://www.icann.org/public-comments/lgr-1-2015-12-04-en

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC060	Active Variant TLDs 23 Jul 2013	<p>3 of 14: ICANN should concentrate foremost on the rules for the root zone (versus rules for TLD registry operators).</p>	Open - Implementation	<p>ICANN agrees with this recommendation and the IDN Label Generation Ruleset for the Root Zone (LGR) procedure will implement this recommendation. Implementation of this specific advice item is in progress and is part of Project 2.2. Considerable work has been underway on IDNs and IDN variants. Some of this work can be found below:</p> <p>IDN Implementation Guidelines: https://www.icann.org/resources/pages/implementation-guidelines-2012-02-25-en</p> <p>IDN Variant Program information: https://www.icann.org/resources/pages/variant-tlds-2012-05-08-en</p> <p>IDN Variant TLD Root LGR Procedure and User Experience Study Recommendations: https://features.icann.org/idn-variant-tld-root-lgr-procedure-and-user-experience-study-recommendations?language=es</p> <p>Procedure to Develop and Maintain the Label Generation Rules for the Root Zone in Respect of IDNA Labels: https://www.icann.org/en/system/files/files/lgr-procedure-20mar13-en.pdf</p> <p>Public Comment on Label Generation Ruleset for Root Zone Version 1 (LGR-1): https://www.icann.org/public-comments/lgr-1-2015-12-04-en</p> <p>Community Wiki on Root Zone LGR Project: https://community.icann.org/display/croscomlgrprocedure/Root+Zone+LGR+Project</p>

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC060	Active Variant TLDs 23 Jul 2013	<p>4 of 14: ICANN should coordinate and encourage adoption of these rules at the second and higher levels as a starting point by: - Updating the IDN Implementation Guidelines; - Maintaining and publishing a central repository of rules for second- level domain labels (2LDs) for all Top Level Domains (TLDs); and - Conducting specific training and outreach sessions</p>	Open - Implementation	<p>ICANN agrees with these recommendations. Implementation of this specific advice item is in progress, and there is an active working group that is working on the next version of IDN implementation guidelines as well as on second-level label generation rules (LGRs). ICANN staff are focusing on the implementation of the LGR procedure for the root zone, and many different projects are underway in pursuit of implementation. The IDN Implementation Guidelines are published here: https://www.icann.org/resources/pages/implementation-guidelines-2012-02-25-en. There was a call for experts to review the Implementation Guidelines in July 2015: https://www.icann.org/news/announcement-2015-07-20-en. Future public comment periods will also be opened for the following matters (see here for upcoming public comments: https://www.icann.org/resources/pages/upcoming-2012-02-25-en):</p> <ul style="list-style-type: none"> - Reference Second Level Label Generation Rules (Batch One) - Proposal for Khmer Script Label Generation Rule for the Root Zone - Proposal for Lao, Thai Script Label Generation Rule for the Root Zone - Reference Second Level Label Generation Rules (Batch Two) - IDN Variant TLD Implementation - Proposal for Chinese, Japanese Script Label Generation Rule for the Root Zone - IDN Implementation Guidelines Initial Recommendations
SAC060	Active Variant TLDs 23 Jul 2013	<p>5 of 14: Be very conservative with respect to the code points that are permitted in root zone labels.</p>	Closed	<p>ICANN agrees with this recommendation and the IDN LGR procedure is designed to follow a conservative and minimalist approach to maintain the security and stability of the root zone. The LGR procedure including guidelines has been put in place (Project 2.1 of the IDN Variant TLD Program) and is being imposed by integration panel. General information on the Root Zone Label Generation Rules can be found here: https://www.icann.org/resources/pages/root-zone-lgr-2015-06-21-en.</p>

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC060	Active Variant TLDs 23 Jul 2013	6 of 14: Because the removal of a delegation from the root zone can have significant non-local impact, new rules added to a LGR must, as far as possible, be backward compatible so that new versions of the LGR do not produce results that are incompatible with historical (existent) activations.	Closed	ICANN agrees with this recommendation and backwards compatibility will be one of the main considerations the Integration Panel has to take into account in each release of the IDN LGR. The LGR procedure including guidelines has been put in place (Project 2.1 of the IDN Variant TLD Program) and is being imposed by integration panel. General information on the Root Zone Label Generation Rules can be found here: https://www.icann.org/resources/pages/root-zone-lgr-2015-06-21-en .
SAC060	Active Variant TLDs 23 Jul 2013	7 of 14: Should ICANN decide to implement safeguards, it should distinguish two types of failure modes when a user expects a variant to work, but it is not implemented: denial of service versus misconnection.	Closed	This specific advice item is part of project 2.1 LGR Procedure. Information on Project 2.1 of the LGR can be found here: https://community.icann.org/display/VIP/P2.1-Label+Generation+Ruleset+Process+for+the+Root Considerable work has been underway on IDNs and IDN variants. Some of this work can be found at the links listed below: <ul style="list-style-type: none"> - IDN Implementation Guidelines: https://www.icann.org/resources/pages/implementation-guidelines-2012-02-25-en - IDN Variant Program information: https://www.icann.org/resources/pages/variant-tlds-2012-05-08-en - IDN Variant TLD Root LGR Procedure and User Experience Study Recommendations: https://features.icann.org/idn-variant-tld-root-lgr-procedure-and-user-experience-study-recommendations?language=es - Procedure to Develop and Maintain the Label Generation Rules for the Root Zone in Respect of IDNA Labels: https://www.icann.org/en/system/files/files/lgr-procedure-20mar13-en.pdf - Public Comment on Label Generation Ruleset for Root Zone Version 1 (LGR-1): https://www.icann.org/public-comments/lgr-1-2015-12-04-en - Community Wiki on Root Zone LGR Project: https://community.icann.org/display/croscomlgrprocedure/Root+Zone+LGR+Project

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SAC060	Active Variant TLDs 23 Jul 2013	<p>8 of 14: A process should be developed to activate variants from allocatable variants in LGR.</p>	Open - Implementation	<p>ICANN agrees with this recommendation and the entire Project 7 of the IDN Variant TLD Program is dedicated to developing the processes to handle variant mechanisms, including the life cycle of a variant label. Implementation of this specific advice item is in progress and is part of project 7. Considerable work has been underway on IDNs and IDN variants. Some of this work can be found at the links listed below:</p> <ul style="list-style-type: none"> - IDN Implementation Guidelines: https://www.icann.org/resources/pages/implementation-guidelines-2012-02-25-en - IDN Variant Program information: https://www.icann.org/resources/pages/variant-tlds-2012-05-08-en - IDN Variant TLD Root LGR Procedure and User Experience Study Recommendations: https://features.icann.org/idn-variant-tld-root-lgr-procedure-and-user-experience-study-recommendations?language=es - Procedure to Develop and Maintain the Label Generation Rules for the Root Zone in Respect of IDNA Labels: https://www.icann.org/en/system/files/files/lgr-procedure-20mar13-en.pdf - Public Comment on Label Generation Ruleset for Root Zone Version 1 (LGR-1): https://www.icann.org/public-comments/lgr-1-2015-12-04-en - Community Wiki on Root Zone LGR Project: https://community.icann.org/display/croscomlgrprocedure/Root+Zone+LGR+Project

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SAC060	Active Variant TLDs 23 Jul 2013	<p>9 of 14: ICANN must ensure that Emergency Back-End Registry Operator (EBERO) providers support variant TLDs, and that parity exists for variant support in all relevant systems and functions associated with new TLD components.</p>	Open - Implementation	Implementation of this specific advice item is underway and part of Project 7. All EBERO providers support variant TLDs; there is parity for variant support in all relevant systems and functions. Please see the following links for more information on both IDN Variants and EBERO, including the EBERO Agreement, which stipulates requirements regarding IDN variants: EBERO Resources: https://www.icann.org/resources/pages/ebero-2013-04-02-en IDN Variant Resources: - IDN Implementation Guidelines: https://www.icann.org/resources/pages/implementation-guidelines-2012-02-25-en - IDN Variant Program information: https://www.icann.org/resources/pages/variant-tlds-2012-05-08-en
SAC060	Active Variant TLDs 23 Jul 2013	<p>10 of 14: The current rights protection regime associated with the Trademark Clearinghouse (TMCH) process is susceptible to homographic attacks. The roles of the involved parties, specifically registrars, registries, and TMCH, related to matching must be made clear.</p>	Closed	ICANN responded to the SSAC most recently in early 2016, and is awaiting a response before taking further action. However, projects focused on planning and implementation of IDN variant TLDs are ongoing. TMCH Resources: - General information on TMCH: http://newgtlds.icann.org/en/about/trademark-clearinghouse - Information on TMCH and Registrars and Registries: http://newgtlds.icann.org/en/about/trademark-clearinghouse/registries-registrars - Trademark Clearinghouse & Internationalized Domain Names Webinar: http://newgtlds.icann.org/en/about/trademark-clearinghouse/idns-19jun13-en.pdf IDN Variant Resources: - IDN Implementation Guidelines: https://www.icann.org/resources/pages/implementation-guidelines-2012-02-25-en - IDN Variant Program information: https://www.icann.org/resources/pages/variant-tlds-2012-05-08-en

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SAC060	Active Variant TLDs 23 Jul 2013	11 of 14: When registries calculate variant sets for use in validation during registration, such calculations must be done against all of the implemented LGRs covering the script in which the label is applied for.	Closed	This specific advice item is directed at Registries and contains no actionable advice for ICANN.
SAC060	Active Variant TLDs 23 Jul 2013	12 of 14: The matching algorithm for TMCH must be improved.	Closed	<p>ICANN responded to the SSAC most recently in early 2016, and is awaiting a response before taking further action. However, projects focused on planning and implementation of IDN variant TLDs are ongoing.</p> <p>TMCH Resources:</p> <ul style="list-style-type: none"> - General information on TMCH: http://newgtlds.icann.org/en/about/trademark-clearinghouse - Information on TMCH and Registrars and Registries: http://newgtlds.icann.org/en/about/trademark-clearinghouse/registries-registrars - Trademark Clearinghouse & Internationalized Domain Names Webinar: http://newgtlds.icann.org/en/about/trademark-clearinghouse/idns-19jun13-en.pdf <p>IDN Variant Resources:</p> <ul style="list-style-type: none"> - IDN Implementation Guidelines: https://www.icann.org/resources/pages/implementation-guidelines-2012-02-25-en - IDN Variant Program information: https://www.icann.org/resources/pages/variant-tlds-2012-05-08-en

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC060	Active Variant TLDs 23 Jul 2013	<p>13 of 14: The TMCH must add support for IDN variant TLDs. Particularly during the TM Claims service, a name registered under a TLD that has allocated variant TLDs should trigger trademark holder notifications for the registration of the name in all of its allocated variant TLDs.</p>	Closed	ICANN responded to the SSAC most recently in early 2016, and is awaiting a response before taking further action. However, projects focused on planning and implementation of IDN variant TLDs are ongoing. TMCH Resources: - General information on TMCH: http://newgtlds.icann.org/en/about/trademark-clearinghouse - Information on TMCH and Registrars and Registries: http://newgtlds.icann.org/en/about/trademark-clearinghouse/registries-registrars - Trademark Clearinghouse & Internationalized Domain Names Webinar: http://newgtlds.icann.org/en/about/trademark-clearinghouse/idns-19jun13-en.pdf IDN Variant Resources: - IDN Implementation Guidelines: https://www.icann.org/resources/pages/implementation-guidelines-2012-02-25-en - IDN Variant Program information: https://www.icann.org/resources/pages/variant-tlds-2012-05-08-en
SAC060	Active Variant TLDs 23 Jul 2013	<p>14 of 14: ICANN should ensure that the number of strings that are activated is as small as possible.</p>	Closed	ICANN agrees with this recommendation and the number of strings that may become activated as a result of the Label Generation Rules for the Root Zone (LGR) procedure should be minimal. Similar to SAC060 Recommendation 5, the IDN LGR procedure is designed to follow a conservative and minimalist approach to maintain the security and stability of the root zone. General information on the Root Zone Label Generation Rules can be found here: https://www.icann.org/resources/pages/root-zone-lgr-2015-06-21-en .

APPENDIX 2: Update on SSAC's Historical Advice Items (All Items)

Updated on 07 October 2016

Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC061	SSAC Comment on ICANN's Initial Report from the Expert Working Group on gTLD Directory Services 6 Sep 2013	1 of 4: The ICANN Board should explicitly defer any other activity (within ICANN's remit) directed at finding a 'solution' to 'the WHOIS problem' until the registration data policy has been developed and accepted in the community.	Closed	This statement was considered as part of a public comment period on the initial report: http://mm.icann.org/pipermail/input-to-ewg/2013/thread.html . A Final Report was published in June 2014: https://www.icann.org/en/system/files/files/final-report-06jun14-en.pdf .
SAC061	SSAC Comment on ICANN's Initial Report from the Expert Working Group on gTLD Directory Services 6 Sep 2013	2 of 4: The ICANN Board should ensure that a formal security risk assessment of the registration data policy be conducted as an input into the Policy Development Process.	Closed	This statement was considered as part of a public comment period on the initial report: http://mm.icann.org/pipermail/input-to-ewg/2013/thread.html . A Final Report was published in June 2014: https://www.icann.org/en/system/files/files/final-report-06jun14-en.pdf .
SAC061	SSAC Comment on ICANN's Initial Report from the Expert Working Group on gTLD Directory Services 6 Sep 2013	3 of 4: SSAC recommends that the EWG state more clearly its positions on specific questions of data availability.	Closed	This statement was considered as part of a public comment period on the initial report: http://mm.icann.org/pipermail/input-to-ewg/2013/thread.html . A Final Report was published in June 2014: https://www.icann.org/en/system/files/files/final-report-06jun14-en.pdf .

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC061	SSAC Comment on ICANN's Initial Report from the Expert Working Group on gTLD Directory Services 6 Sep 2013	<p>4 of 4: The SSAC suggests that the EWG address this recommendation from SAC058: "SSAC Report on Domain Name Registration Data Validation: As the ICANN community discusses validating contact information, the SSAC recommends that the following meta-questions regarding the costs and benefits of registration data validation should be answered: What data elements need to be added or validated to comply with requirements or expectations of different stakeholders? Is additional registration processing overhead and delay an acceptable cost for improving accuracy and quality of registration data? Is higher cost an acceptable outcome for improving accuracy and quality? Would accuracy improve if the registration process were to provide natural persons with privacy protection upon completion of multi-factored validation?"</p>	Closed	This statement was considered as part of a public comment period on the initial report: http://mm.icann.org/pipermail/input-to-ewg/2013/thread.html . A Final Report was published in June 2014: https://www.icann.org/en/system/files/files/final-report-06jun14-en.pdf .
SAC062	SSAC Advisory Concerning the Mitigation of Name Collision Risk 7 Nov 2013	<p>1 of 3: ICANN should work with the wider Internet community, including at least the IAB and the IETF, to identify (1) what strings are appropriate to reserve for private namespace use and (2) what type of private namespace use is appropriate (i.e., at the TLD level only or at any additional lower level).</p>	Open - Implementation	The ICANN Board passed a resolution on 21 Nov 2013 that, "directs ICANN's President and CEO to have the advice provided in SAC062 evaluated": https://www.icann.org/resources/board-material/resolutions-2013-11-21-en#2.d ICANN staff will continue to work with the wider internet community on this issue in the context of the IETF.

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Updated on 07 October 2016

Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC062	SSAC Advisory Concerning the Mitigation of Name Collision Risk 7 Nov 2013	<p>2 of 3: ICANN should explicitly consider the following questions regarding trial delegation and clearly articulate what choices have been made and why as part of its decision as to whether or not to delegate any TLD on a trial basis:</p> <ul style="list-style-type: none"> - Purpose of the trial: What type of trial is to be conducted? What data are to be collected? - Operation of the trial: Should ICANN (or a designated agent) operate the trial or should the applicant operate it? - Emergency Rollback: What are the emergency rollback decision and execution procedures for any delegation in the root, and have the root zone partners exercised these capabilities? - Termination of the trial: What are the criteria for terminating the trial (both normal and emergency criteria)? What is to be done with the data collected? Who makes the decision on what the next step in the delegation process is? 	Closed	<p>The ICANN Board passed a resolution on 21 Nov 2013 that, "directs ICANN's President and CEO to have the advice provided in SAC062 evaluated": https://www.icann.org/resources/board-material/resolutions-2013-11-21-en#2.d</p> <p>The recommendation was considered by ICANN while developing the Name Collision Occurrence Management Framework. Recommendation was taken and included in the framework. See: https://www.icann.org/resources/board-material/resolutions-new-gtld-2014-07-30-en</p>
SAC062	SSAC Advisory Concerning the Mitigation of Name Collision Risk 7 Nov 2013	<p>3 of 3: ICANN should explicitly consider under what circumstances un-delegation of a TLD is the appropriate mitigation for a security or stability issue. In the case where a TLD has an established namespace, ICANN should clearly identify why the risk and harm of the TLD remaining in the root zone is greater than the risk and harm of removing a viable and in-use namespace from the DNS. Finally, ICANN should work in consultation with the community, in particular the root zone management partners, to create additional processes or update existing processes to accommodate the potential need for rapid reversal of the delegation of a TLD.</p>	Closed	<p>The ICANN Board passed a resolution on 21 Nov 2013 that, "directs ICANN's President and CEO to have the advice provided in SAC062 evaluated": https://www.icann.org/resources/board-material/resolutions-2013-11-21-en#2.d</p> <p>The recommendation was considered by ICANN while developing the Name Collision Occurrence Management Framework. Recommendation was taken and included in the framework. See: https://www.icann.org/resources/board-material/resolutions-new-gtld-2014-07-30-en</p>

APPENDIX 2: Update on SSAC's Historical Advice Items (All Items)

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC063	SSAC Advisory on DNSSEC Key Rollover in the Root Zone 7 November 2013	Internet Corporation for Assigned Names and Numbers (ICANN) staff, in coordination with the other Root Zone Management Partners (United States Department of Commerce, National Telecommunications and Information Administration (NTIA), and Verisign), should immediately undertake a significant, worldwide communications effort to publicize the root zone KSK rollover motivation and process as widely as possible.	Open - Implementation	The communication plan is part of the overall KSK Rollover Project. See https://www.icann.org/resources/pages/ksk-rollover . The outstanding work on this advice item will be addressed through the BAR pilot process.
SAC063	SSAC Advisory on DNSSEC Key Rollover in the Root Zone 7 November 2013	ICANN staff should lead, coordinate, or otherwise encourage the creation of a collaborative, representative testbed for the purpose of analyzing behaviors of various validating resolver implementations, their versions, and their network environments (e.g., middle boxes) that may affect or be affected by a root KSK rollover, such that potential problem areas can be identified, communicated, and addressed.	Open - Implementation	The test pas is part of the overall KSK Rollover Project. See https://www.icann.org/resources/pages/ksk-rollover . The outstanding work on this advice item will be addressed through the BAR pilot process.
SAC063	SSAC Advisory on DNSSEC Key Rollover in the Root Zone 7 November 2013	ICANN staff should lead, coordinate, or otherwise encourage the creation of clear and objective metrics for acceptable levels of "breakage" resulting from a key rollover.	Closed	This part of the overall KSK Rollover Project. See https://www.icann.org/resources/pages/ksk-rollover .
SAC063	SSAC Advisory on DNSSEC Key Rollover in the Root Zone 7 November 2013	ICANN staff should lead, coordinate, or otherwise encourage the development of rollback procedures to be executed when a rollover has affected operational stability beyond a reasonable boundary.	Closed	This part of the overall KSK Rollover Project. See https://www.icann.org/resources/pages/ksk-rollover .
SAC063	SSAC Advisory on DNSSEC Key Rollover in the Root Zone 7 November 2013	ICANN staff should lead, coordinate, or otherwise encourage the collection of as much information as possible about the impact of a KSK rollover to provide input to planning for future rollovers.	Open - Implementation	The communication plan is part of the overall KSK Rollover Project. See https://www.icann.org/resources/pages/ksk-rollover . The outstanding work on this advice item will be addressed through the BAR pilot process.

APPENDIX 2: Update on SSAC's Historical Advice Items (All Items)

Updated on 07 October 2016

Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC064	SSAC Advisory on DNS Search List Process 13 February 2014	Recommendation 1: The SSAC invites all ICANN Supporting Organizations and Advisory Committees, the IETF, and the DNS operations community to consider the following proposed behavior for search list processing and comment on its correctness, completeness, utility and feasibility. a. Administrators (including DHCP server administrators) should configure the search list explicitly, and must not rely on or use implicit search lists; Where DNS parameters such as the domain search list have been manually configured, these parameters should not be overridden by DHCP. b. When a user enters a single label name, that name may be subject to search list processing if a search list is specified, but must never be queried in the DNS in its original single-label form. c. When a user queries a hostname that contain two or more labels separated by dots, such as www.server, applications and resolvers must query the DNS directly. Search lists must not be applied even if such names do not resolve to an address (A/AAAA). Therefore www.server is always a FQDN.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.
SAC064	SSAC Advisory on DNS Search List Process 13 February 2014	Recommendation 2: The SSAC recommends ICANN staff to work with the DNS community and the IETF to encourage the standardization of search list processing behavior.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC064	SSAC Advisory on DNS Search List Process 13 February 2014	Recommendation 3: In the context of mitigating name collisions, ICANN should consider the following steps to address search list processing behavior. a. Commission additional research studies to further understand the cause of invalid queries to the root zone and the significance of search list processing as a contributor to those queries. b. Communicate to system administrators that search list behaviors currently implemented in some operating systems will cause collision with names provisioned under the newly delegated top-level domains. Such communication should complement the current ICANN effort in this area with findings and recommendations from this report.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.

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Updated on 07 October 2016

Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC065	SSAC Advisory on DDoS Attacks Leveraging DNS Infrastructure 18 February 2014	Recommendation 1: ICANN should help facilitate an Internet-wide community effort to reduce the number of open resolvers and networks that allow network spoofing. This effort should involve measurement efforts and outreach and cooperation in relevant technical fora involving network operators worldwide, but will not have an operational component. ICANN should support this effort with adequate staffing and funding. Such a program should cover at least the following topics: a. Collect, create, and organize material that will assist in the implementation of recommendations 2-5 below. This would include: i. On an annual basis, publish and widely disseminate a report on the number and extent of open recursive DNS servers. ii. On an annual basis, publish and widely disseminate a report on the extent of networks that allow network spoofing. iii. Create and maintain an information portal with links to educational material, to be complemented by ICANN staff and community subject-matter expert contributions. iv. Inform how certain products (e.g., CPE devices) can play a significant role in DNS amplification attacks. v. Publish a regular (at least annual) advisory/report on the state-of-the-art-mechanisms to identify or otherwise prevent amplification and reflection attacks, and ensure that such an advisory/report is widely disseminated in the Internet community. vi. Provide an annual report on the work accomplished. b. Coordinate with the Internet community to popularize and support recommendations 2-5 below. This coordination should include exploration of whether operational requirements regarding open resolvers and the prevention of network spoofing can be incorporated into regulatory compliance frameworks and certification regimes.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC065	SSAC Advisory on DDos Attacks Leveraging DNS Infrastructure 18 February 2014	Recommendation 2: All types of network operators should take immediate steps to prevent network address spoofing. This involves: a. Implement network ingress filtering, as described in BCP38 and SAC004, to restrict packet-level forgery to the greatest extent possible; b. Disclose the extent of their implementation of network ingress filtering to the Internet community as a means of encouraging broader and more effective use of ingress filtering.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.
SAC065	SSAC Advisory on DDos Attacks Leveraging DNS Infrastructure 18 February 2014	Recommendation 3: Recursive DNS server operators should take immediate steps to secure open recursive DNS servers. This involves: a. Identify unmanaged open recursive DNS servers operating in the network and take immediate steps to restrict access to these servers in order to prevent abuse. b. Follow SAC008 Recommendation 3 to (1) disable open recursion on name servers from external sources and (2) only accept DNS queries from trusted sources to assist in reducing amplification vectors for DNS DDoS attacks. c. DNS Application Service Providers should take all reasonable steps to prevent abusive use of their open resolvers so that they are not targets of abuse. This would include continuous monitoring for anomalous behavior, limiting or blocking known abuse queries (e.g., ripe.net ANY); tracking likely target victim IPs (attacks reported or addresses of heavily targeted servers) and restricting or disallowing responses to those IPs; and sharing information with similar operators to coordinate efforts to quell such attacks.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.
SAC065	SSAC Advisory on DDos Attacks Leveraging DNS Infrastructure 18 February 2014	Recommendation 4: Authoritative DNS server operators should investigate deploying authoritative response rate limiting. This involves: a. Investigate mechanisms to deter DNS amplification attacks (e.g., Response Rate Limiting (RRL) in DNS server software), and implement those that are appropriate for their environment; b. Encourage DNS software vendors to provide such capabilities; and c. Frequently review the state of the art of such mechanisms and update their environment as necessary.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC065	SSAC Advisory on DDos Attacks Leveraging DNS Infrastructure 18 February 2014	Recommendation 5: DNS operators should put in place operational processes to ensure that their DNS software is regularly updated and communicate with their software vendors to keep abreast of latest developments. This should minimally include: a. Audit and update operational practices as necessary to ensure that a process is in place to systematically perform DNS software updates on both an on-going and an emergency basis; and b. Encourage DNS software vendors to implement and refine the relevant capabilities at reasonable cost in system resources.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.
SAC065	SSAC Advisory on DDos Attacks Leveraging DNS Infrastructure 18 February 2014	Recommendation 6: Manufacturers and/or configurators of customer premise networking equipment, including home networking equipment, should take immediate steps to secure these devices and ensure that they are field upgradable when new software is available to fix security vulnerabilities, and aggressively replacing the installed base of non-upgradeable devices with upgradeable devices. This minimally involves: a. Ensuring that the default configuration on these devices does not implement an unmanaged open recursive DNS resolver; b. Providing updates and patches for their equipment to keep the installed base of networking equipment up-to-date to address current security threats, or as a necessary alternative replacing non-updatable equipment with appropriately configured devices; c. Ensuring that large-scale participants in purchasing of customer premise networking equipment (e.g., ISPs, government procurement, large enterprises) insist that networking equipment meet the standards discussed in this document.	Open - Prior to Board Consideration	There is outstanding work on this advice item, and it will be addressed through the BAR pilot process.

APPENDIX 2: Update on SSAC's Historical Advice Items (All Items)

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC066	SSAC Comment Concerning JAS Phase One Report on Mitigating the Risk of DNS Namespace Collisions 6 Jun 2014	Operational Recommendation 1: 'The Internet Corporation for Assigned Names and Numbers (ICANN) should expand the range of situations that would trigger an emergency response, for example national security, emergency preparedness, critical infrastructure, key economic processes, commerce, and the preservation of law and order.	Closed	The recommendation was considered by ICANN while developing the Name Collision Occurrence Management Framework. Recommendation was rejected and reasoning was explained to SSAC and the public. A Name Collision Management Framework was approved by the NGPC on 30 July 2014: https://www.icann.org/resources/board-material/resolutions-new-gtld-2014-07-30-en .
SAC066	SSAC Comment Concerning JAS Phase One Report on Mitigating the Risk of DNS Namespace Collisions 6 Jun 2014	Operational Recommendation 2: 'Instead of a single controlled interruption period, ICANN should introduce rolling interruption periods, broken by periods of normal operation, to allow affected end-user systems to continue to function during the 120-day test period with less risk of catastrophic business impact.	Closed	The recommendation was considered by ICANN while developing the Name Collision Occurrence Management Framework. Recommendation was rejected and reasoning was explained to SSAC and the public. A Name Collision Management Framework was approved by the NGPC on 30 July 2014: https://www.icann.org/resources/board-material/resolutions-new-gtld-2014-07-30-en .
SAC066	SSAC Comment Concerning JAS Phase One Report on Mitigating the Risk of DNS Namespace Collisions 6 Jun 2014	Operational Recommendation 3: ICANN should perform an evaluation of potential notification approaches against at least the requirements provided by the SSAC prior to implementing any notification approach.	Closed	The recommendation was considered by ICANN while developing the Name Collision Occurrence Management Framework. Recommendation was taken and included in the framework. See https://www.icann.org/resources/board-material/resolutions-new-gtld-2014-07-30-en .
SAC066	SSAC Comment Concerning JAS Phase One Report on Mitigating the Risk of DNS Namespace Collisions 6 Jun 2014	Operational Recommendation 4: ICANN should implement a notification approach that accommodates Internet Protocol Version 6 (IPv6)-only hosts as well as IP Version 4 (IPv4)-only or dual-stack hosts.	Closed	The recommendation was considered by ICANN while developing the Name Collision Occurrence Management Framework. Recommendation was rejected and reasoning was explained to SSAC and the public. A Name Collision Management Framework was approved by the NGPC on 30 July 2014: https://www.icann.org/resources/board-material/resolutions-new-gtld-2014-07-30-en .

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC066	SSAC Comment Concerning JAS Phase One Report on Mitigating the Risk of DNS Namespace Collisions 6 Jun 2014	Operational Recommendation 5: ICANN should provide clarity to registries on the rules and the method of allocation of blocked names after the conclusion of the test period	Closed	The recommendation was considered by ICANN while developing the Name Collision Occurrence Management Framework. Recommendation was taken and included in the framework. See https://www.icann.org/resources/board-material/resolutions-new-gtld-2014-07-30-en
SAC066	SSAC Comment Concerning JAS Phase One Report on Mitigating the Risk of DNS Namespace Collisions 6 Jun 2014	Strategic Recommendation 1: ICANN should consider not taking any actions solely based on the JAS Phase One Report. If action is planned to be taken before the entire report is published, communications to the community should be provided to indicate this clearly.	Closed	The recommendation was considered by ICANN while developing the Name Collision Occurrence Management Framework. This recommendation was not accepted, and the Name Collision Management Framework was approved by the NGPC on 30 July 2014: https://www.icann.org/resources/board-material/resolutions-new-gtld-2014-07-30-en .
SAC066	SSAC Comment Concerning JAS Phase One Report on Mitigating the Risk of DNS Namespace Collisions 6 Jun 2014	Strategic Recommendation 2: ICANN should in due course publish information about not yet disclosed issues.	Closed	The recommendation was considered by ICANN while developing the Name Collision Occurrence Management Framework. The Name Collision Management Framework was approved by the NGPC on 30 July 2014: https://www.icann.org/resources/board-material/resolutions-new-gtld-2014-07-30-en .
SAC066	SSAC Comment Concerning JAS Phase One Report on Mitigating the Risk of DNS Namespace Collisions 6 Jun 2014	Strategic Recommendation 3: ICANN should seek to provide stronger justification for extrapolating findings based on one kind of measurement or data gathering to other situations.	Closed	The recommendation was considered by ICANN while developing the Name Collision Occurrence Management Framework. This recommendation was accepted and included in the framework. See https://www.icann.org/resources/board-material/resolutions-new-gtld-2014-07-30-en .

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC067	SSAC Overview and History of the IANA Functions 15 Aug 2014	No recommendations	Closed	There are no actionable items for the ICANN Board.
SAC068	SSAC Report on the IANA Functions Contract 10 Oct 2014	No recommendations	Closed	There are no actionable items for the ICANN Board.
SAC069	SSAC Advisory on Maintaining the Security and Stability of the IANA Functions Through the Stewardship Transition 10 Dec 2014	Recommendation 7: NTIA should clarify the processes and legal framework associated with the role of the Root Zone Maintainer after transition.	Closed	In March 2015, the NTIA requested ICANN and Versign to work together to develop a proposal for transitioning the NTIA's administrative role associated with root zone management. A proposal was submitted in August 2015, and Root Zone Maintainer Agreement was published for public comment on 29 June 2016 (see announcement here: https://www.icann.org/news/blog/root-zone-management-transition-update-preservation-of-security-stability-and-resiliency) and was approved by the Board on 9 August 2016 (https://www.icann.org/resources/board-material/resolutions-2016-08-09-en#2.c).
SAC069	SSAC Advisory on Maintaining the Security and Stability of the IANA Functions Through the Stewardship Transition 10 Dec 2014	Recommendation 6: Effective arrangements should be made for the reliable and timely performance of all aspects of the root zone management process post-transition, including inter-organization coordination if the post-transition RZM process involves more than one root zone management partner.	Closed	In March 2015, the NTIA requested ICANN and Versign to work together to develop a proposal for transitioning the NTIA's administrative role associated with root zone management. A proposal was submitted in August 2015, and Root Zone Maintainer Agreement was published for public comment on 29 June 2016 (see announcement here: https://www.icann.org/news/blog/root-zone-management-transition-update-preservation-of-security-stability-and-resiliency) and was approved by the Board on 9 August 2016 (https://www.icann.org/resources/board-material/resolutions-2016-08-09-en#2.c).

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC069	SSAC Advisory on Maintaining the Security and Stability of the IANA Functions Through the Stewardship Transition 10 Dec 2014	Recommendation 2b: Each of the communities should review and (if necessary) enhance its policy development process to ensure that all of the instructions that it provides to the IANA Functions Operator are clear and implementable.	Closed	In March 2015, the NTIA requested ICANN and Versign to work together to develop a proposal for transitioning the NTIA's administrative role associated with root zone management. A proposal was submitted in August 2015, and Root Zone Maintainer Agreement was published for public comment on 29 June 2016 (see announcement here: https://www.icann.org/news/blog/root-zone-management-transition-update-preservation-of-security-stability-and-resiliency) and was approved by the Board on 9 August 2016 (https://www.icann.org/resources/board-material/resolutions-2016-08-09-en#2.c).
SAC069	SSAC Advisory on Maintaining the Security and Stability of the IANA Functions Through the Stewardship Transition 10 Dec 2014	Recommendation 3: Each of the communities should investigate and clarify the process for handling the possibility of governmental sanctions and restrictions (e.g., the protocol for obtaining OFAC2 licenses where U.S. sanctions might interfere with the ability to execute proper instructions to IANA) following the stewardship transition.	Closed	In March 2015, the NTIA requested ICANN and Verisign to work together to develop a proposal for transitioning the NTIA's administrative role associated with root zone management. A proposal was submitted in August 2015, and Root Zone Maintainer Agreement was published for public comment on 29 June 2016 (see announcement here: https://www.icann.org/news/blog/root-zone-management-transition-update-preservation-of-security-stability-and-resiliency) and was approved by the Board on 9 August 2016 (https://www.icann.org/resources/board-material/resolutions-2016-08-09-en#2.c).
SAC069	SSAC Advisory on Maintaining the Security and Stability of the IANA Functions Through the Stewardship Transition 10 Dec 2014	Recommendation 1: The operational communities (protocol parameters, names, and numbers) that have been invited to submit proposals should determine 1) whether or not the requirements and deliverables defined in the IANA Functions Contract should be retained, and if so which ones; 2) whether or not additional external controls are necessary for requirements that should be retained; and 3) if additional external controls are necessary, how and by whom they should be administered.	Closed	In March 2015, the NTIA requested ICANN and Verisign to work together to develop a proposal for transitioning the NTIA's administrative role associated with root zone management. A proposal was submitted in August 2015, and Root Zone Maintainer Agreement was published for public comment on 29 June 2016 (see announcement here: https://www.icann.org/news/blog/root-zone-management-transition-update-preservation-of-security-stability-and-resiliency) and was approved by the Board on 9 August 2016 (https://www.icann.org/resources/board-material/resolutions-2016-08-09-en#2.c).

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Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC069	SSAC Advisory on Maintaining the Security and Stability of the IANA Functions Through the Stewardship Transition 10 Dec 2014	Recommendation 2a: Each of the communities should determine whether or not existing mechanisms outside of the IANA Functions Contract are sufficiently robust to hold the IANA Functions Operator accountable to the affected communities for the proper performance of the IANA Functions after the IANA Functions Contract expires; and if they are not, the communities should determine what additional accountability mechanisms will be needed.	Closed	In March 2015, the NTIA requested ICANN and Verisign to work together to develop a proposal for transitioning the NTIA's administrative role associated with root zone management. A proposal was submitted in August 2015, and Root Zone Maintainer Agreement was published for public comment on 29 June 2016 (see announcement here: https://www.icann.org/news/blog/root-zone-management-transition-update-preservation-of-security-stability-and-resiliency) and was approved by the Board on 9 August 2016 (https://www.icann.org/resources/board-material/resolutions-2016-08-09-en#2.c).
SAC069	SSAC Advisory on Maintaining the Security and Stability of the IANA Functions Through the Stewardship Transition 10 Dec 2014	Recommendation 4: As part of the transition process, each of the affected communities should consider the extent to which the importance of transparency and freedom from improper influence in the performance of the IANA Functions might require additional mechanisms or other safeguards.	Closed	In March 2015, the NTIA requested ICANN and Verisign to work together to develop a proposal for transitioning the NTIA's administrative role associated with root zone management. A proposal was submitted in August 2015, and Root Zone Maintainer Agreement was published for public comment on 29 June 2016 (see announcement here: https://www.icann.org/news/blog/root-zone-management-transition-update-preservation-of-security-stability-and-resiliency) and was approved by the Board on 9 August 2016 (https://www.icann.org/resources/board-material/resolutions-2016-08-09-en#2.c).
SAC069	SSAC Advisory on Maintaining the Security and Stability of the IANA Functions Through the Stewardship Transition 10 Dec 2014	Recommendation 5: Noting the stability and efficiency of existing structures, processes, and mechanisms for the management of the root zone, the SSAC recommends that any proposal to replace NTIA's final authorization of root zone changes with an alternative be at least as reliable, resilient, and efficient as the current process.	Closed	In March 2015, the NTIA requested ICANN and Verisign to work together to develop a proposal for transitioning the NTIA's administrative role associated with root zone management. A proposal was submitted in August 2015, and Root Zone Maintainer Agreement was published for public comment on 29 June 2016 (see announcement here: https://www.icann.org/news/blog/root-zone-management-transition-update-preservation-of-security-stability-and-resiliency) and was approved by the Board on 9 August 2016 (https://www.icann.org/resources/board-material/resolutions-2016-08-09-en#2.c).

APPENDIX 2: Update on SSAC's Historical Advice Items (All Items)

Updated on 07 October 2016

Advice Document Reference ID	Name of Advice Document	Recommendation	Status	Action(s) Taken
SAC071	SSAC Comments on Cross Community Working Group Proposal on ICANN Accountability Enhancements8 Jun 2015	This is a Comment to the Cross Community Working Group on ICANN Accountability Enhancements from the ICANN Security and Stability Advisory Committee (SSAC) on the Proposal (Work Stream 1).	Closed	This statement was considered as part of a public comment period. See https://forum.icann.org/lists/comments-ccwg-accountability-draft-proposal-04may15/msg00072.html . On 10 March 2016, the ICANN Board accepted the CCWG-Accountability Work Stream 1 Report and directed the President and CEO to proceed with implementation: https://www.icann.org/resources/board-material/resolutions-2016-03-10-en#2.c .