Quarterly Stakeholder Update

FY17 Q4



6 September 2017

FY17 Q4 Update

- Shorter executive summary of the full report, to give you a better overview
- View the full report and other materials here: <u>https://www.icann.org/quarterlyreports</u>
- Q&A webinar on 13 September which is your opportunity to ask any questions
- Accountability Indicators beta launch
 https://kpi-dashboard.icann.org/sgat/homepage.html



Executive Summary

Göran Marby, ICANN President and CEO



Overview

- ICANN59 Policy Forum major highlight
 - 1,336 attendees, 169 public sessions
 - o 376 newcomers
 - o https://www.icann.org/news/blog/icann59-by-the-numbers
 - o <u>https://meetings.icann.org/en/johannesburg59/pre-icann59-policy-report-16jun17-</u> <u>en.pdf</u>
- International Office Strategy updated
 - o <u>https://www.icann.org/news/blog/our-international-office-strategy</u>
- May CEO Report to the Board
 - o <u>https://www.icann.org/uploads/board_report/attachment/25/executive-team-reports-may-2017.pdf</u>
- ⊙ View Complaints Office reports
 - o <u>https://www.icann.org/complaints-report</u>



Organization Operations, People and Finances

- ⊙ Closed FY17 with excess of \$1m
 - Higher funding than budgeted by \$2m and lower expenses by \$8m
 - \$460m funds under management including \$235m in auction proceeds
- Board approved FY18 Operating Plan and Budget



Bryan Schilling - Director of Consumer Safeguards



Daniel Halloran – Chief Data Protection Officer



2017 Nominating Committee Selections

ICANN Board of Directors

- Avri Doria (North America)
- Sarah Deutsch (North America)

At-Large Advisory Committee (ALAC)

- Hadia Elminiawi (Africa)
- Kaili Kan (Asia, Australia, Pacific Islands)
- Richardo Holmquist (Latin America, Caribbean Islands)

Council of the Country Code Names Supporting Organization

• Marita Moll (North America)

Council of the Generic Names Supporting Organization (GNSO)

- Carlos Gutierrez (Latin America, Caribbean Islands)
- Syed Ismail Shah (Asia, Australia, Pacific Islands)



https://www.icann.org/news/announcement-2-2017-09-01-en

Policy Update

• ICANN59 Policy Forum held in Johannesburg

- 1,336 attendees and 169 public sessions
- 13 participants in the NextGen program
- o 376 newcomers
- 53 Fellow Alumni attended ICANN59 along with 15 participants from the Regional Newcomer Fellowship pilot program
- Generic Names Supporting Organization (GNSO)
 - o 9 motions adopted
 - 9 policy development processes underway
- Country-code Top Level Domains (ccTLD)
 - o 16 resolutions adopted
 - 3 policy activities underway
- Address Supporting Organization (ASO) review published final report on 3 August <u>https://www.nro.net/wp-content/uploads/ASO-Review-Report-</u> <u>2017.pdf</u>



International Office Strategy

REGIONAL OFFICES

Regional Office	Managing Director				
Los Angeles – Headquarters	Göran Marby				
Brussels	Jean-Jacques Sahel				
Istanbul	Nick Tomasso				
Montevideo	Rodrigo de la Parra				
Singapore	Jia-Rong Low				



ENGAGEMENT CENTERS

Engagement Center	Managing Director				
Washington, D.C.	Duncan Burns				
Geneva	Tarek Kamel				

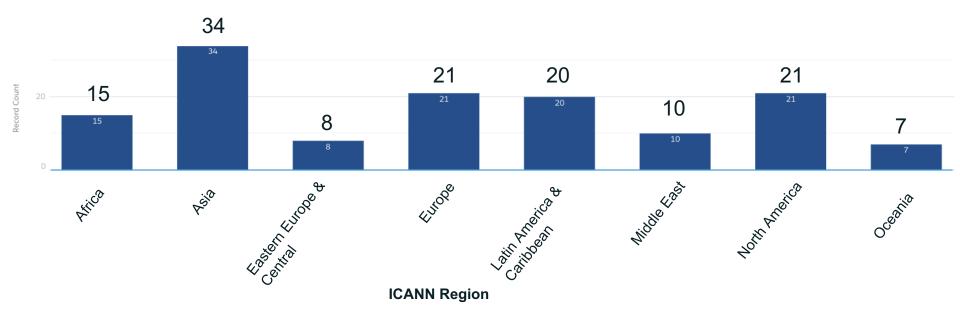
ENGAGEMENT CENTERS & PARTNERSHIPS

Engagement Centers &	Office Head				
Partnerships					
Beijing - Engagement Center	Jian-Chuan Zhang				
Nairobi - Engagement Center	Pierre Dandjinou				
Seoul – Engagement Center	Billy Cheon				
Cairo - Partnership Center	N/A				
Asunçion – Partnership Center	N/A				



Global Stakeholder Engagement

Engagement Events by Region – FY17 Q4





Global Domains Division

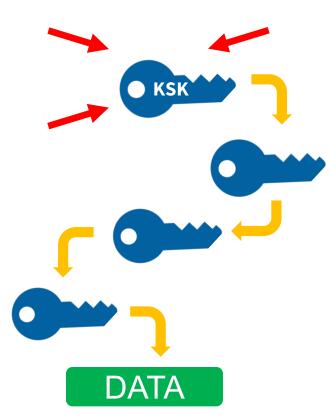
- Satisfaction survey to Contracted Parties issued
 - <u>https://www.icann.org/resources/pages/metrics-gdd-2015-01-30-en</u>
- Preparation for European Union's General Data Protection Regulation
- Ongoing work to support registrants
- 1,226 new gTLDs delegated
- 1,241 registry agreements signed
- 150 International Domain Names delegated (56 IDN ccTLDs from 38 countries and territories covering 33 languages in 19 scripts)



Key Signing Key (KSK) Rollover: An Overview

ICANN is in the process of performing a Root Zone DNS Security Extensions (DNSSEC) Key Signing Key (KSK) rollover

- ⊙ The Root Zone DNSSEC Key Signing Key "KSK" is the top most cryptographic key in the DNSSEC hierarchy
- The KSK is a cryptographic public-private key pair:
 - Public part: trusted starting point for DNSSEC validation
 - Private part: signs the Zone Signing Key (ZSK)
- Builds a "chain of trust" of successive keys and signatures to validate the authenticity of any DNSSEC signed data



ACTION: Testbed to determine readiness - https://automated-ksk-test.research.icann.org



Board Update

Lito Ibarra, Board Member



- Board workshop and update from ICANN59
- Agenda for upcoming Board workshop in Montevideo
- Issues concerning the Board:
 - Board's FY18 goals and structure
 - Workshop structure
 - Board chair transition at ICANN60



FY17 Q4 Report April – June 2017



Policy Update



Generic Names Supporting Org. (GNSO)

New Areas of Work in Q4

- Initiation of the GNSO's policy modification process on the recommendations relating to the protection of names of the International Red Cross and Red Crescent
- Opening of public comment forum on proposed revisions to the GNSO Operating Procedures and potential corresponding changes to ICANN Bylaws

Completed Work in Q4

- Nomination of GNSO Candidates for the Registration Directory Service (formerly WHOIS) Review Team
- Adoption of the GNSO Council Comment on FY18 Budget
- GNSO Council review of gTLD policy issues covered by the Governmental Advisory Committee (GAC) Communiqué from ICANN58
- Selection and notification of selection of Matthew Shears for Seat 14 on the ICANN Board
- Validation of the Cross-Community Working Group on Accountability Workstream 2 request for extension of mandate and funding for FY18
- Confirmation of the process and criteria for the selection of the GNSO representative to the Empowered Community Admin



Country-Code Names Supporting Org. (ccNSO)

New areas of work in Q4

- ccPDP 3 Working group on retirement of ccTLDs well underway
- ccNSO Guideline Review Committee focus on ccNSO as Decisional Participant: Role of Council and ccNSO members final decisionmaking
- Final paper adopted by Cross-Community Working Group (CCWG) (with the GNSO) on use of country and territory names as Top level Domains, including recommendations to close the CCWG and continue work on the topic and be inclusive

Completed work in Q4

- Cross-Community Working Group on Use of Country/Territory Names as TLDs completed final paper
- Strategic and Operating Planning Working Group submitted feedback to ICANN's FY18 budget and operating



Number Resource Org. (NRO) & Address Supporting Org. (ASO)

- Address Supporting Organization Advisory Committee (ASO AC)
 - Call for nominations for 2018 ICANN NomCom. September 7 deadline to confirm the appointment
 - <u>https://www.nro.net/aso-call-for-nominations-to-2018-icann-nomcom/</u>
 - New ASO AC procedures: Schulze method to be used for call for nominations for selection to ICANN Board in 2018
 - Call for nominations for 2018 ICANN Board election scheduled for October 2
 - Work underway to develop ASO Empowered Community procedures
- ASO Independent Review :
 - Interviews at APNIC 43 Ho Chi Minh City, ICANN 58 in Copenhagen, ARIN 39 in New Orleans, RIPE 74 in Budapest, LACNIC 27 Foz do Iguazu, AFRINIC 26 in Nairobi
 - Final draft presented in ICANN59 in Johannesburg: <u>https://www.nro.net/call-for-comments-for-the-aso-review-draft-final-report/</u>
 - Published final report on 3 August: <u>https://www.nro.net/wp-content/uploads/ASO-Review-Report-2017.pdf</u>





Number Resource Org. (NRO) & Address Supporting Org. (ASO)

- Work underway on initial draft of Identifier Technology Health Indicators (ITHI) for the Internet number registries – outcome to be released for comment in number community
- Regional Internet Registries (RIRs) preparing to deploy "All resources" RPKI services by September 30
 - <u>https://www.nro.net/regional-internet-registries-are-preparing-to-deploy-all-resources-rpki-service/</u>
- Upcoming RIR Meetings:

APNIC 44, Taichung Taiwan, 7-14 September 2017
 LACNIC 28, Montevideo Uruguay, 18-22 September 2017
 ARIN 40, San Jose CA USA, 5 -6 October 2017
 RIPE 75, Dubai UAE, 22 – 26 October 2017
 AFRINIC 27, Lagos Nigeria, 26 November – 2 December 2017





Management Update



Office of the Chief Technology Officer (OCTO)

- Open Data Initiative's early pilots program launched a set of four implementations tools
 - ICANN's Open Data Initiative Early Pilot Platforms Now Available
- Public key portion of Key Signing Key- 2017(KSK) published in root zone Domain Name System; will become the active root zone KSK on October 11, 2017
 - <u>A "Key" Milestone in Protecting the DNS</u>
- RFC 8162 "Using Secure DNS to Associate Certificates with Domain Names for S/MIME," was published
 - <u>RFC 8162</u>
- Supported advancement of IPv6 uptake in Initiative phase 1 & 2 by collecting key data
- Progressed with Domain Abuse Activity Reporting (DAAR) project, including working with developers and defining an API for automated reporting
- ◎ Initiated building of comprehensive Technical Messaging Toolkit



Why is ICANN Rolling the Key Signing Key (KSK)?

- As with passwords, the cryptographic keys used in DNSSEC-signing Domain Name System (DNS) data should be changed periodically
 - Ensures infrastructure can support key change in case of emergency
- This type of change has never before occurred at the root level
 - There has been one functional, operational Root Zone DNSSEC KSK since 2010
- The KSK rollover must be widely and carefully coordinated to ensure that it does not interfere with normal operations

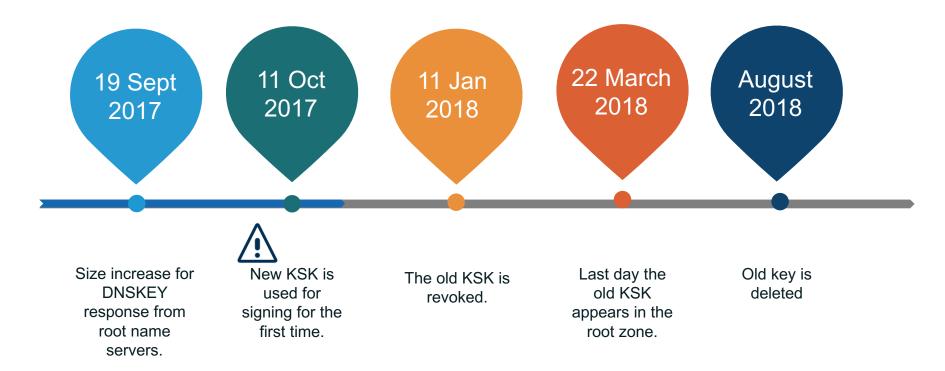
DNSSEC



When Does the Rollover Take Place?

The KSK rollover is a process, not a single event

The following dates are key milestones in the process when end users may experience interruption in Internet services:





Programs to Support the Community

As of ICANN58

Fellowship	53 Fellow Alumni attended ICANN59 along with 15 participants from the Regional Newcomer Fellowship pilot program
NextGen	 13 Participants at ICANN59 Plus 4 Ambassadors who've previously attended an ICANN meeting
Newcomer	• 376 Newcomers at ICANN59



- Published WHOIS Accuracy Reporting System data results
- GDD Summit May 2017; 450 attended from 60 countries with dozens remote
- Conducted ICANN Contracted Parties Satisfaction Survey
- Completed an Emergency Back-End Registry Operator (EBERO) simulation
- Formed ICANN internal General Data Protection Regulation (GDPR) task force and engaged with community volunteers to assist with information gathering centered on Data Protection/Privacy
- Delivered enhanced RADAR bulk feature for registrars allows primary contacts for groups of affiliated registrars to manage user accounts, user access and edit registrar details for multiple registrars at once.



WHY IT'S IMPORTANT

The New gTLD Program is driving the largest expansion of the Domain **Name** System ever. Hundreds of new toplevel domain names are being introduced into the Internet on a rolling basis.

The New gTLD Program is meant to enhance competition, innovation and choice.





Community: 51



Geographic: 53



IDNs: 94



Total registry agreements signed

* As of 30 June 2017. May fall into more than one subcategory



WHY IT'S IMPORTANT

IDNs at the top-level enable Internet users to access domain names in local languages and scripts.

IDN ccTLDs allow countries and territories to represent their respective names scripts other than US-ASCII characters.



IDNs delegated into the root zone -Includes 56 IDN ccTLDs from 38 countries and territories covering 33 languages in 19 scripts

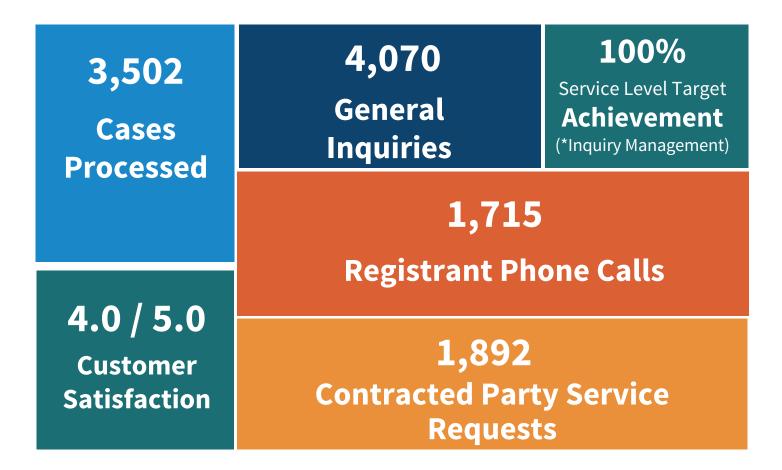


Root Zone Label General Rules (RZ-LGR) proposals submitted

 Arabic, Armenian, Ethiopic, Georgian, Khmer, Lao, and Thai



GDD: Global Support & Operations





GDD: Public Comment Activities

- Internationalized Domain Name (IDN) Implementation Guidelines (closed 2 May)
- Proposal for Ethiopic Script Root Zone Label Generation Rules (summary report published 15 May)
- Competition, Consumer Trust and Consumer Choice Review Team Draft Report of Recommendations for New gTLDs (closed 19 May)
- Proposed Renewal of .NET Registry Agreement (closed 30 May)
- Revised ICANN Procedure for Handling WHOIS Conflicts with Privacy Law: Process and Next Steps (opened 3 May)
- Label Generation Rules for the Root Zone Version 2 (opened 6 June)
- Security Framework Drafting Team (opened 14 June)



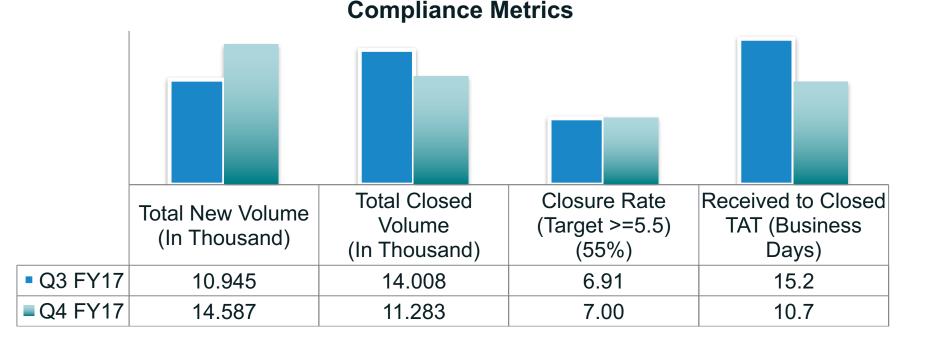
Contractual Compliance

REGISTRY AGREEMENT AUDIT

Target Completion August 2017 21 TLDS in scope

REGISTRAR AUDITS - 2013 RAA

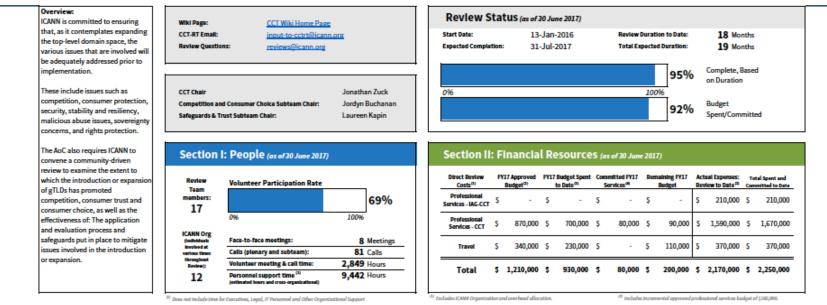
17 Registrars Completed 33 in Remediation



In FY17 Q4, ICANN received a total of 4701 Whois Accuracy Reporting tickets (Whois ARS).<u>https://whois.icann.org/en/whoisars-contractual-compliance-metrics</u>

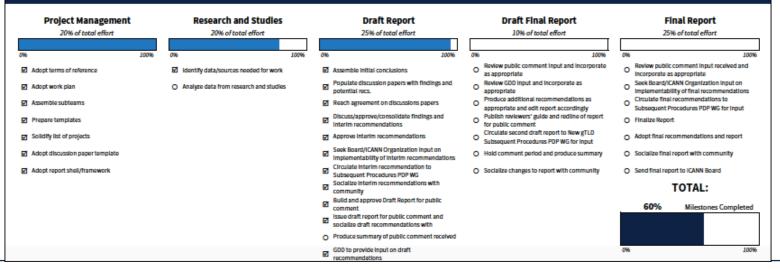


Competition, Consumer Trust, and Consumer Choice Review Fact Sheet



⁽²⁾ Based on the most recent month and financials (may not include recent expenditures). Recrements esperant incurred since inception of work. ⁽⁰⁾ Professional services includes services from signed contracts to be provided or involved; travel includes upcoming scheduled meetings.

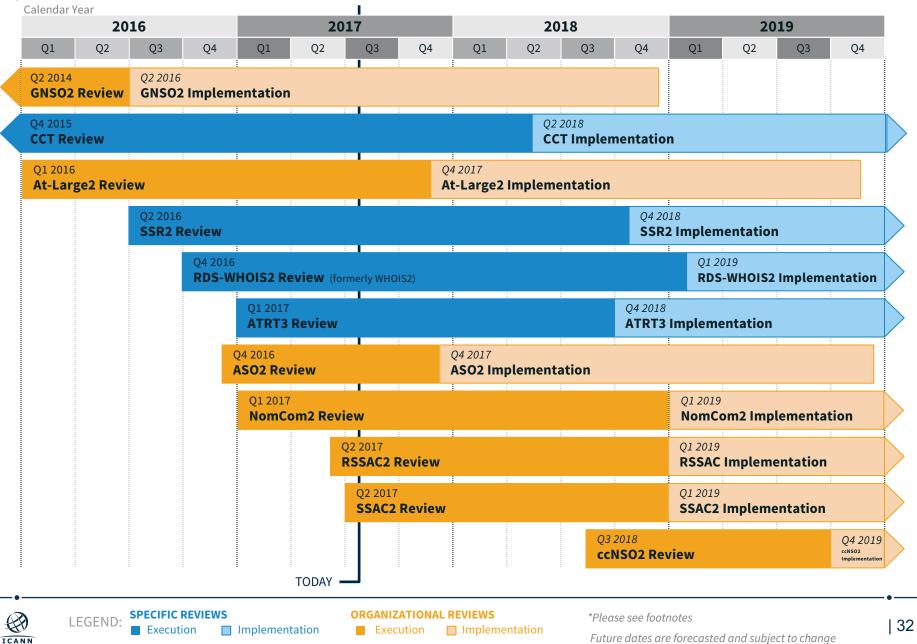
Section III: Milestones (as of 30 June 2017)





View online here

ICANN Reviews Timeline - Overview



Engineering & IT Update

- New Governmental Advisory Committee (GAC) website
 - Released to General Availability on 5 September
- Conducted several regular/routine IT audits (by expert 3rd parties)

ICANN.org	English	العربية	Español	Français	Русский	中文	Site Sea	rch Q	Login/Register र््े
ICANN GAC Governmental Advisory Committee	NEWS	ABOU	T THE GA	C GAC	ADVICE	MEETING	S & RECORDS	WORK EFFORTS	

Welcome to the new GAC website! Effective 5 September 2017, new content will be published to this site. If you have difficulty finding information, please email: gac-staff@icann.org. The former GAC site remains available during this transition. Learn more about this project here.

GOVERNMENTAL ADVISORY COMMITTEE

Internet Corporation for Assigned Names and Numbers

The GAC serves as the voice of Governments and International Governmental Organizations in ICANN's multi-stakeholders representative structure.

Our key role is to provide advice to ICANN on issues of public policy, especially where there may be an interaction between ICANN's activities or policies and national laws or international agreements. We discuss issues with the ICANN Board and other ICANN Supporting Organizations, Advisory Committees and other groups and deliver regular Advice. About the GAC



Liaising with the Government Advisory Committee (GAC)

- Two regional capacity building workshops for regional GAC members held: 1) Fiji in conjunction with the APT meeting; 2) in Johannesburg, South Africa just before ICANN59
- Planning underway for possible future events in Latin America and South Asia

Participation in Internet Governance Discussions

- Participation in IGF MAG Open Consultations and meetings for IGF 2017 in Geneva
- Submission of Open Forum and Day Zero event proposals for IGF 2017
- Participation in ICANN Studienkreis Stockholm discussions about global IG ecosystem, ICANN empowered community
- Participation in the EuroDig 2017 Conference and ministerial bilateral discussions in Tallinn, Estonia
- Asia Pacific Regional IGF Bangkok presentation on ICANN and Internet Governance



Latin America and Caribbean Spotlight



Latin America and the Caribbean Region





Göran's visit to Brazil: May 2017



Göran gave a keynote speech at LACNIC's 27 Meeting reflecting on ICANN after the IANA Stewardship Transition and thanking the community for their support and participation to make this happen.

He held meetings with the LACNNIC Leadership and members of their community.



LACTLD Workshop



Göran was invited to meet with the LAC ccTLD community.



Göran's trip to Brazil included a visit to Brasilia to meet with Government Officials and a visit to Sao Paulo to meet with the CGI



Göran witnessed the signing of an MoU between LACNIC and LACRALO.



Ciência, Tecnologia, Inovações e Comunicações

Relações Exteriores



LAC-i-Roadshow | June 2017, Lima, Peru

- The LAC-i-Roadshow is one of the projects of the LAC Strategy, a strategy that was developed by the different stakeholder groups represented at ICANN from the LAC region. It is designed to raise awareness across the region on key topics related to the DNS critical infrastructure such as the transition to IPv6, SSR (Security, Stability and Resiliency) and the impact of the new gTLD program.
 - \circ 4th year of this initiative.
 - \circ 11 editions, 11 different cities in LAC.
 - o 990 participants.
- The 2017 Andean Region edition was held in Lima, Peru
 - o 110 participants
 - o 7 media outlets covered the workshop, 25 publications
 - Speakers & topics:
 - Ed Lewis (ICANN): KSK Rollover.
 - Rodrigo de la Parra (ICANN): New gTLDs.
 - Oscar Robles (LACNIC): IPv6 in the LAC region.





Highlights from the Caribbean

- ICANN Fellows took the lead in the following events:
 - ICANN58 Readout St. Vincent & the Grenadines (April)
 - ICANN58 Readout Grenada (April)
 - National IGF Barbados (June)
- Caribbean LACRALO Representative appointed as ALAC member.







LAC Communications Highlights

The LAC Year in Review Report was launched in May 2017

This comprehensive report was put together by ICANN's regional team. The resource allows to relive all our activities in the LAC region during 2016 and is available in English, Spanish and Portuguese.

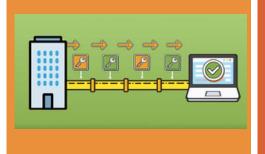
ICANN's LAC Team Launches a New Regional Strategy Resource

In April, ICANN's LAC team published a new trifold to describe its regional strategy. The trifold highlights some of our most prominent projects and explains how you can participate and stay informed on the latest regional news. It is available in English, Spanish and Portuguese.



ICANN

2016 LAC YEAR IN REVIEW



KSK Rollover videos

ICANN's LAC team created a short video that explains in plain, accessible language how to prepare your systems for the KSK rollover. The videos were shared in April in English, Spanish, French and Portuguese through our ICANN LAC Youtube Playlist.

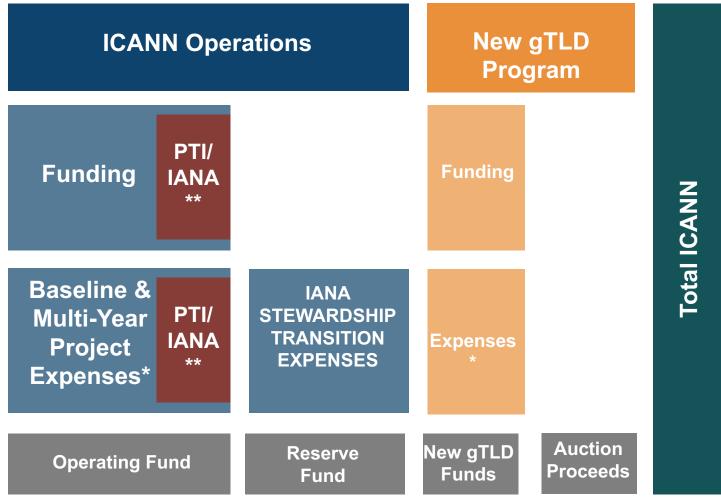


Financial Update

For July 2016 – June 2017



ICANN Organization Reporting Structure



*Excludes depreciation and bad debt expenses

**IANA Services includes ICANN's and PTI's IANA Expenses

FY17 Year-to-date Overview

ICANN OPERATIONS

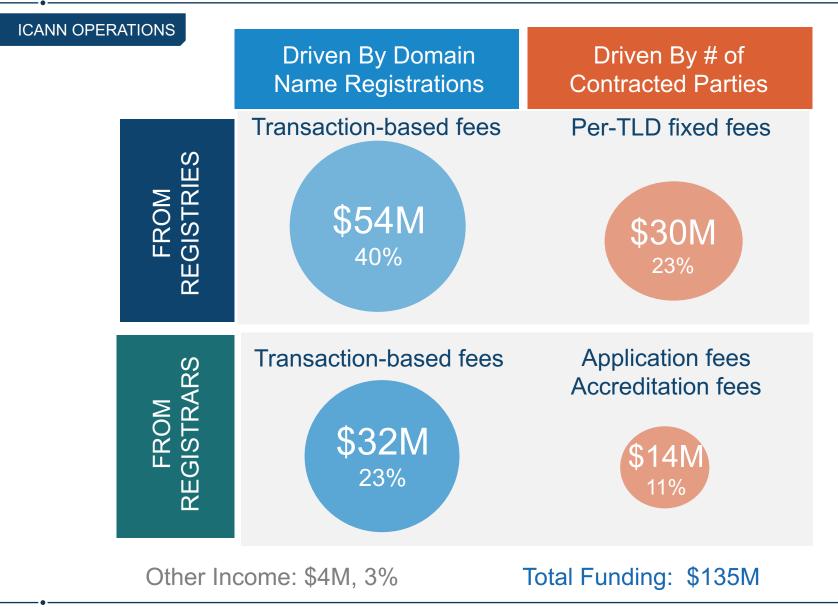
Funding ahead of target and expenses below target.

	In Millions USD	Actual	Buo 1	dge t	Var	% Var	FY16	Var	% Var
	Funding	\$ 135	\$1	.32	\$2	2 %	\$ 126	\$9	7 %
	Baseline Expenses	-\$ 128	-\$ 1	132	\$5	3 %	-\$ 107	-\$ 21	-20 %
	IANA Stewardship Transition Expenses	-\$ 5	-\$	9	\$3	39 %	-\$ 18	\$ 13	70 %
	Net	\$1	-\$	9	\$ 10	n/a	\$1	\$ 0	9 %
	Breakdown of Baseline Expenses	Actual	Budge t	Var	% Var	FY16	Var %	Var	
	IANA Services*	-\$ 6	-\$7	\$2	24 %	-\$ 6	\$1 1	2 %	
	All Other	-\$ 122	-\$ 125	\$3	2 %	-\$ 100	-\$ 22 -2	2 %	

*IANA Services includes ICANN's and PTI's Expenses relative to IANA functions from the effective PTI affiliate incorporation date.

Note: Expenses exclude bad debt and depreciation and include capital expenses.

FY17 Year-to-date Funding



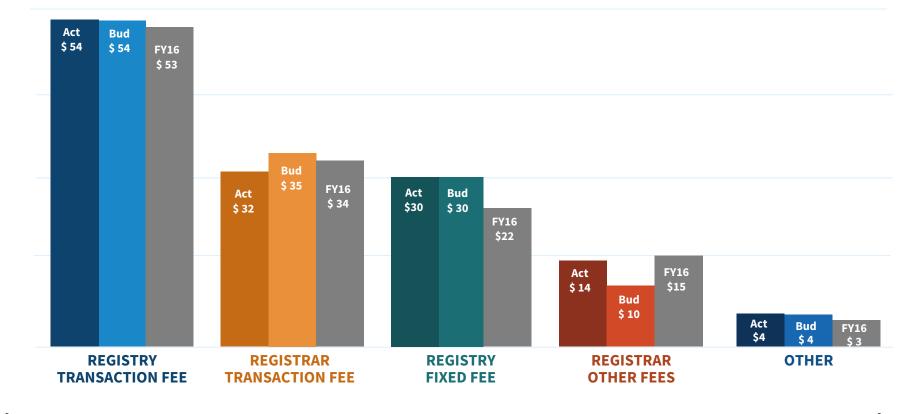


FY17 Year-to-date Funding vs Budget and FY16

ICANN OPERATIONS

Funding ahead of target due to higher than budget new registrar application and accreditation fees

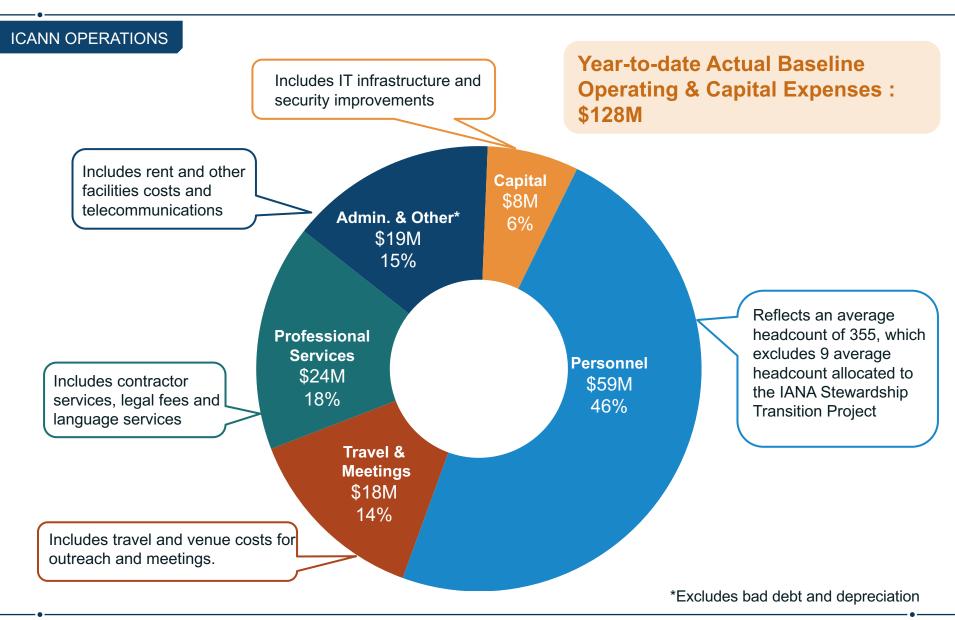
Actual:	\$ 135m
Budget:	\$ 132m
FY16:	\$ 126m





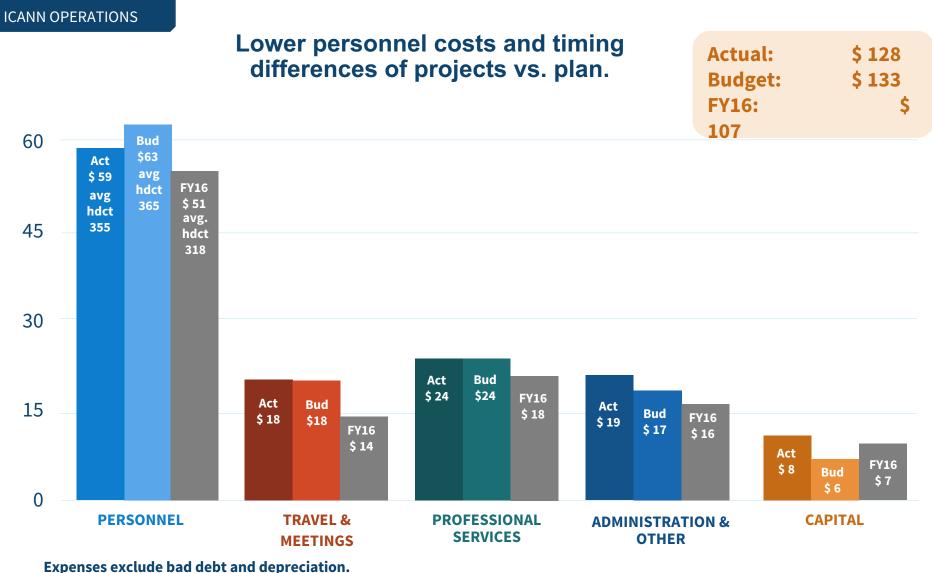
In millions, USD- unaudited - Arithmetic inconsistencies are due to rounding to the nearest million.

FY17 Year-to-date Baseline Operating & Capital Expenses





FY17 Year-to-date Baseline Expenses vs Budget and FY16



Expenses exclude bad debt and depreciation.

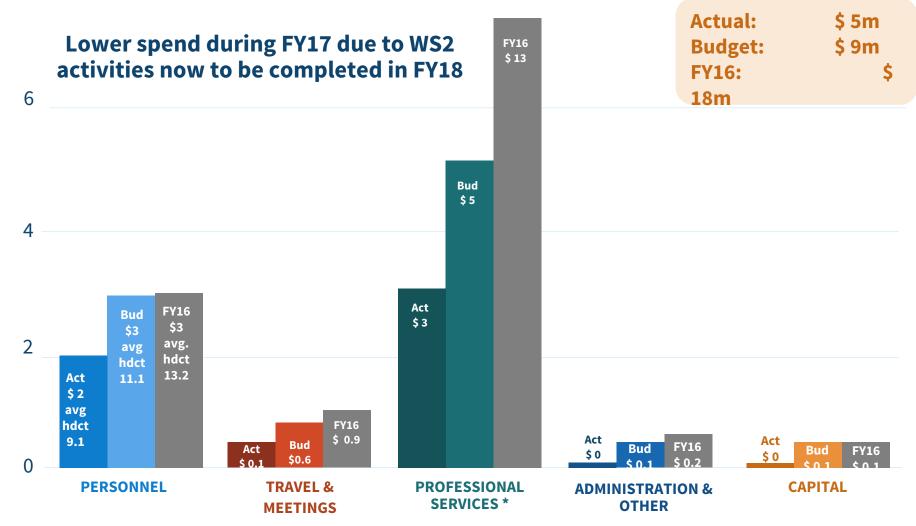
Avg hdct: Average Headcount over a 12-month period (Jul 2016 – Jun 2017)



In millions, USD- unaudited - Arithmetic inconsistencies are due to rounding to the nearest million.

FY17 Year-to-date IANA Stewardship Transition Costs

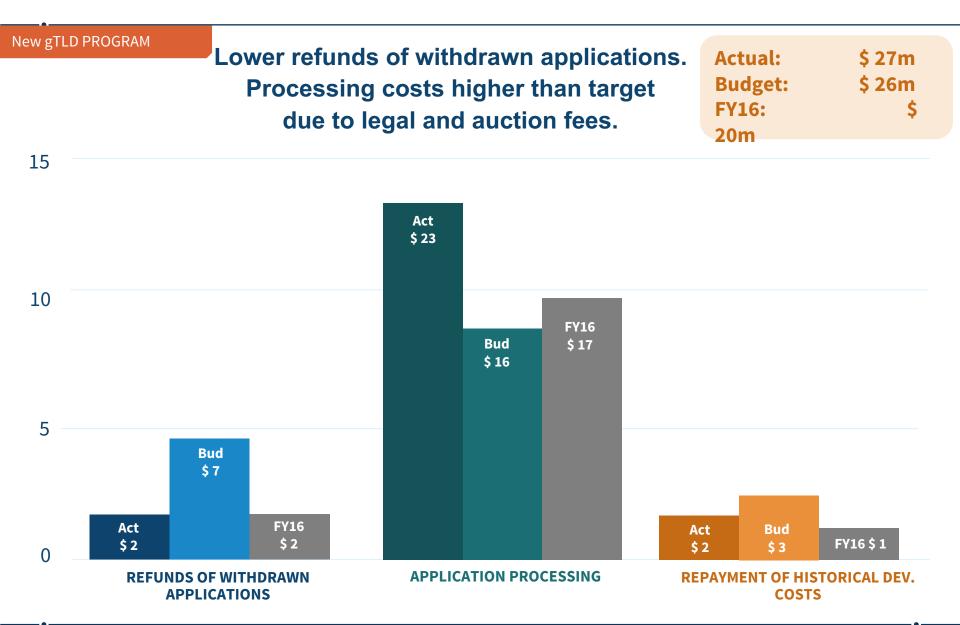
ICANN OPERATIONS



*Includes external legal advice of \$1.8M in FY17 and \$9.4M in FY16.

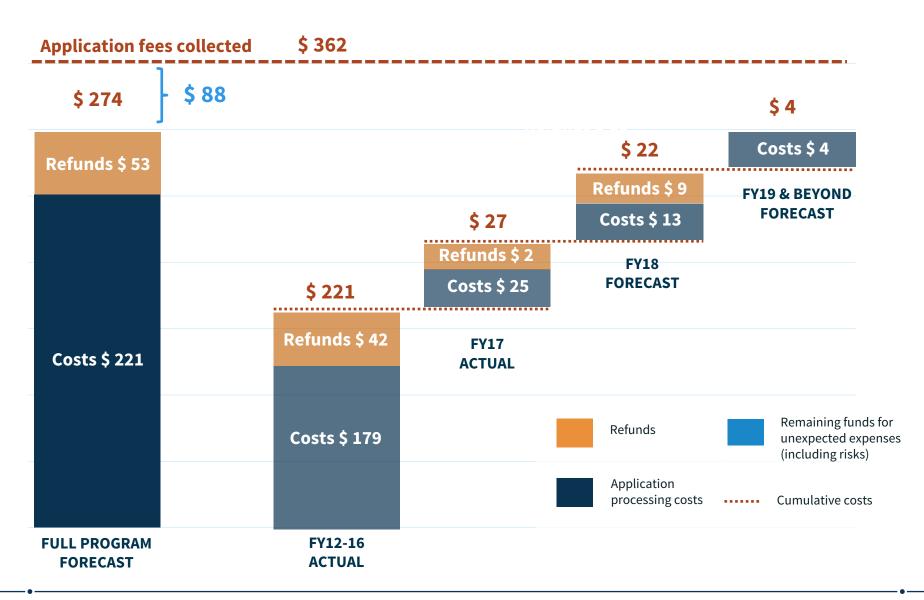


FY17 Year-to-date New gTLD Program Expenses vs Budget and FY16





New gTLD Program – Multi-year Forecast





FY17 Year-to-date Total ICANN Organization Actuals

TOTAL ICANN ORG.

	ICANN Baseline Operations (A)	IANA Stewardship Transition (B)	Total ICANN Operations (A+B)	New gTLD Program (C)	Total ICANN Org. (A+B+C)
Funding	\$ 135	\$0	\$ 135	\$ 157	\$ 291
Expenses*	-\$ 128	-\$ 5	-\$ 133	\$ -23	-\$ 156
Net	\$ 7	-\$ 5	\$1	\$ 134	\$ 135

ICANN Organization is the sum of ICANN Baseline Operations (A), IANA Stewardship Transition (B), and New gTLD Prgram (C).

*Expenses exclude bad debt, depreciation and refunds for withdrawn New gTLD applications which are included in the Funding line.



Funds Under Management as of 30 Jun 2016 and 2017

FUNDS UNDER MGMT.

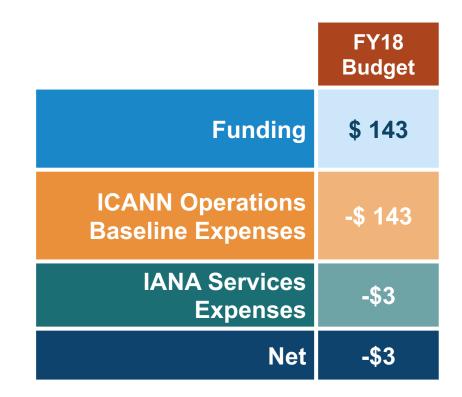




FY18 Budget Overview

ICANN OPERATIONS

FY18 (Jul 17-Jun 18) approved ICANN Operations budget, aligned to Operating Plan, published on ICANN.org



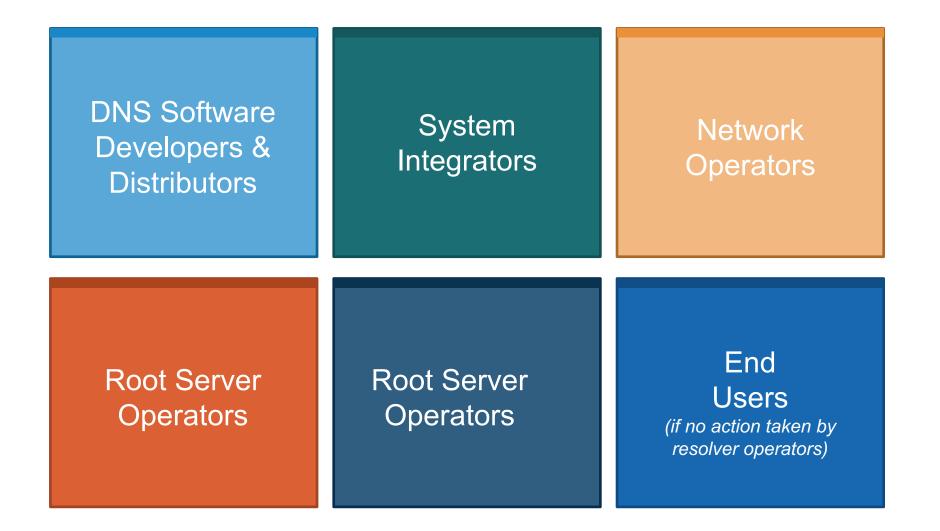
*Expenses exclude bad debt and depreciation.



In millions, USD- unaudited - Arithmetic inconsistencies are due to rounding to the nearest million.

Appendix DNSSEC: Important Update









If you have enabled DNSSEC validation, you must update your systems with the new KSK to help ensure trouble-free Internet access for users

- Currently, 25 percent of global Internet users, or 750 million people, use DNSSEC-validating resolvers that could be affected by the KSK rollover
- If these validating resolvers do not have the new key when the KSK is rolled, end users relying on those resolvers will encounter errors and be unable to access the Internet





Be aware of how trust is evaluated in your operations

Test/verify your set ups

Inspect configuration files, are they (also) up to date?



- $_{\circ}$ $\,$ Have a plan for participating in the KSK rollover $\,$
- $_{\circ}$ $\,$ Know the dates, know the symptoms, solutions



How To Update Your System

If your software supports automated updates of DNSSEC trust anchors (RFC 5011):

- The KSK will be updated automatically at the appropriate time
- You do not need to take additional action
 - Devices that are offline during the rollover will have to be updated manually if they are brought online after the rollover is finished

If your software does <u>not</u> support automated updates of DNSSEC trust anchors (RFC 5011) or is not configured to use it:

- The software's trust anchor file must be manually updated
- The new root zone KSK is now available here after March 2017:

http://data.iana.org/ root-anchors/



Check to See If Your Systems Are Ready

ICANN is offering a **test bed** for operators or any interested parties to confirm that their systems handle the automated update process correctly.

Check to make sure your systems are ready by visiting: go.icann.org/KSKtest

Automated Trust Anchor Update Testbed

The root zone Key Signing Key (KSK) is changing, or rolling, on 11 October 2017. Operators of recursive resolvers with DNSSEC validation enabled will need to ensure that their systems are updated with the new root zone KSK configured as a trust anchor before that date. If a recursive resolver supports RFC 5011, "Automated Updates of DNS Security (DNSSEC) Trust Anchors", and this feature is properly configured, the new KSK should automatically be installed as a trust anchor and DNSSEC validation should continue without problems.

If a validating resolver's implementation or configuration of the RFC 5011 automated trust anchor update protocol is incorrect for any reason, then its configuration might not be properly updated during the root zone KSK roll and resolution would fail after 10 October 2017.

This testbed allows operators of validating resolvers to test their implementation and confirm its ability to properly follow a KSK roll and update its trust anchor configuration.

This test tool assumes that you understand the upcoming KSK change, and at least some about RFC 5011.

Purpose of This Testbed

The test system described here allows the operator of a validating resort to test its support for the RFC 50111 automated trust anchor update protocol and therefore its readiness for the rozone KSK roll. The test operates in real time and should not affect the resolver's normal operation. The testbed works by starting a KSK roll is arone each week. These test zones are no used for any other purpose. For example, the current zone name is **201**7-**03**-

26.automated-ksk-test.research.icann.org. Because this zone is used only for the testbed and contains no names any





If your DNSSEC validation fails after the key role:



Stop the tickets

It's OK to turn off DNSSEC validation while you fix (but remember to turn it back on!)



Debug

If the problem is the trust anchor, find out why it isn't correct

- Did RFC 5011 fail? Did configuration tools fail to update the key?
- If the problem is fragmentation related, make sure TCP is enabled and/or make other transport adjustments

Test the recovery

Make sure your fixes take hold



For More Information





1

Join the conversation online

- Use the hashtag #KeyRoll
- Sign up to the mailing list https://mm.icann.org/listinfo/ksk-rollover



Ask a question to globalsupport@icann.org

• Subject line: "KSK Rollover"



Attend an event

 Visit https://features.icann.org/calendar to find upcoming KSK rollover presentations in your region



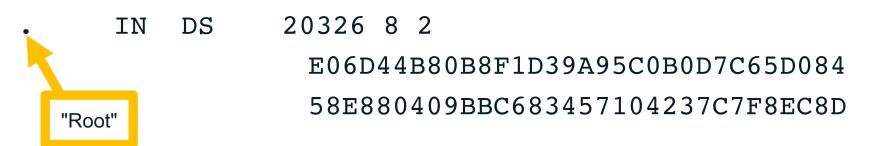
Additional Technical Slides



 \odot The KSK-2017's Key Tag is

20326

 \odot The Delegation Signer (DS) Resource Record for KSK-2017 is



Note: liberties taken with formatting for presentation purposes



KSK-2017 in a DNSKEY Resource Record

\odot The DNSKEY resource record will be:

IN DNSKEY 257 3 8

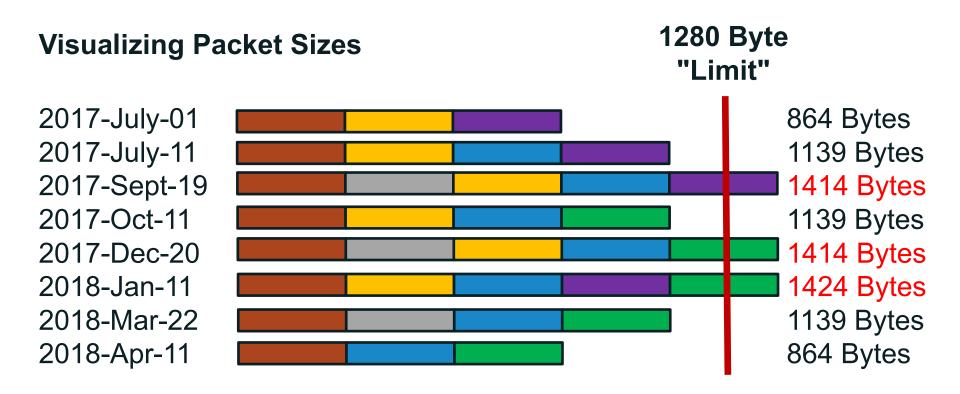
AwEAAaz/tAm8yTn4Mfeh5eyI96WSVexTBAvkMgJzkKTOiW1vkIbzxeF3 +/4RgWOq7HrxRixHlFlExOLAJr5emLvN7SWXgnLh4+B5xQlNVz8Og8kv ArMtNROxVQuCaSnIDdD5LKyWbRd2n9WGe2R8PzgCmr3EgVLrjyBxWezF 0jLHwVN8efS3rCj/EWgvIWgb9tarpVUDK/b58Da+sqqls3eNbuv7pr+e oZG+SrDK6nWeL3c6H5Apxz7LjVc1uTIdsIXxuOLYA4/ilBmSVIzuDWfd RUfhHdY6+cn8HFRm+2hM8AnXGXws9555KrUB5qihylGa8subX2Nn6UwN R1AkUTV74bU=

"Root"

Note: liberties taken with formatting for presentation purposes



Impact on the KSK Rollover Process



Current ZSK Next Z	SK KSK-2010	KSK-2017	RRSIG-2010	RRSIG-2017
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Additional Resources



Quick Look

Root Zone Key Signing Key (KSK) Rollover

KSK rollover at a glance

ICANN is planning to roll, or change, the "top" pair of cryptographic keys used in the Domain Name System Security Extensions (DNSSEC) protocol, commonly known as the <u>Root Zone KSK</u>. This will be the first time the KSK has been changed since it was initially generated in 2010.

Changing these DNSSEC keys is an important security step, in much the same way that regularly changing passwords is considered a prudent practice by any Internet user.

The root zone KSK consists of a private key and a public key. The private component is securely stored by ICANN, but the public component is widely distributed and configured in a large number of devices, possibly numbering in the millions. The multi-step KSK rollover process basically involves generating a new cryptographic key pair and then distributing the new public key.

Internet service providers, enterprise network operators and others performing DNSSEC validation must ensure their systems are updated with the public part of the new KSK in order to assure trouble-free Internet access for their users.

The KSK is an essential component of DNSSEC, a security technology that authenticates the integrity of information within the Domain Name System (DNS), which is the Internet's global phone book. This type of change has never before occurred at the root level, so the rollover must be widely and carefully coordinated to ensure that it does not interfere with normal operations. For this reason, ICANN is informing the Internet operator and user communities about the changes now, before the rollover actually occurs.

What role does the KSK play in DNSSEC?

The KSK plays an important role in protecting Internet users from domain name hijacking by validating DNS data. As the phrase implies, domain name hijacking is taking control of a domain name, often by those with malicious intent who may be seeking illicit financial gain. For example, attempts to access bank account information may result in redirecting users to a site that steals identification and passwords.

Links:

- EN: https://www.icann.org/en/system/files/files/kskrollover-at-a-glance-22jul16-en.pdf
- ES: https://www.icann.org/es/system/files/files/ksk-rollover-at-a-glance-22jul16-es.pdf
- **FR:** https://www.icann.org/fr/system/files/files/ksk-rollover-at-a-glance-22jul16-fr.pdf
- **AR:** https://www.icann.org/ar/system/files/files/ksk-rollover-at-a-glance-22jul16-ar.pdf
- **PT:** https://www.icann.org/pt/system/files/files/ksk-rollover-at-a-glance-22jul16-pt.pdf
- RU: https://www.icann.org/ru/system/files/files/kskrollover-at-a-glance-22jul16-ru.pdf
- ZH: https://www.icann.org/zh/system/files/files/kskrollover-at-a-glance-22jul16-zh.pdf

KSK Rollover: Questions and Answers

What is the Key Signing Key?

- The Root Zone Key Signing Key (KSK) is a cryptographic public-private key pair that
 plays an important role in the Domain Name System Security Extensions (DNSSEC).
 The Root Zone KSK serves as the trusted starting point for DNSSEC validation, similar
 to how the root zone serves as the starting point for DNS resolution.
- Just as one starts at the root zone to resolve a domain name anywhere in DNS, software
 performing DNSSEC validation trusts the root zone KSK and builds a "chain of trust" of
 successive keys and signatures to validate the authenticity of any signed data in DNS.

What does the Key Signing Key (KSK) rollover involve?

 The KSK rollover process updates the root zone trust anchor by introducing a new KSK (KSK-2017) into the root zone.

Why roll the KSK?

- Because it's not good for a cryptographic key to live forever. Like any password, it needs to be changed sometimes.
- Because it's better to make proactive changes during normal operations when things are running smoothly, rather than be reactive in an emergency.
- When DNSSEC was first deployed in 2010, NTIA required that the KSK be rolled and the Root Zone Management Partners subsequently outlined requirements to change the key after five years of operations. The role of NTIA ended on 1 October 2016.

Who needs to know about the KSK rollover?

 Internet service providers, enterprise network operators and others who operate DNSSEC validation must update their systems with the public part of the new key signing key.

How will they know?

- ICANN is executing an extensive outreach campaign to ensure that those who currently use the KSK know about the change.
- Interested parties can view a <u>schedule of events</u> at which the rollover will be discussed on the ICANN website, where they can also follow <u>KSK updates</u> and join a special mailing list. They can also follow the hashtag #KeyRoll on social media to stay informed.

What's the impact on Internet users?

If completed smoothly, there will be no visible change for the end user.

What could go wrong?

· It's possible that some software performing DNSSEC validation will not be updated with

Links:

- EN: https://www.icann.org/en/system/files/files/kskrollover-questions-answers-31oct16-en.pdf
- ES: https://www.icann.org/resources/pages/kskrollover-2016-07-27-es
- **FR:** https://www.icann.org/fr/system/files/files/kskrollover-questions-answers-31oct16-fr.pdf
- **AR:** https://www.icann.org/ar/system/files/files/ksk-rollover-questions-answers-31oct16-ar.pdf
- **PT:** https://www.icann.org/pt/system/files/files/ksk-rollover-questions-answers-31oct16-pt.pdf
- RU: https://www.icann.org/ru/system/files/files/kskrollover-questions-answers-31oct16-ru.pdf
- ZH: https://www.icann.org/zh/system/files/files/kskrollover-questions-answers-31oct16-zh.pdf



Informational Video



Links:

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- EN: Prepare Your Systems for the Root KSK Rollover https://youtu.be/d7H1AkC9PIw
- ES: Préparer vos systèmes pour le roulement de la KSK de la racine https://youtu.be/Lph39UgS7e4
- PT: Preparem seus sistemas para a implementação da KSK da raíz https://youtu.be/AysAHXAEJFM
- FR: Prepare sus Sistemas para el Traspaso de la Clave para la Firma de la Llave de la Zona Raíz (KSK) https://youtu.be/cAPyLI1qowY



ICANN Testbed Launch Announcement

ICANN Launches Testing Platform for the KSK Rollover

This page is available in: Русский | Español | Français | 中文 | الحربية | English

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13 March 2017 – ICANN is offering a testing platform for network operators and other interested parties to confirm that their systems can handle the automated update process for the upcoming Root Zone Domain Name Systems Security Extensions (DNSSEC) Key Signing Key (KSK) rollover. The KSK rollover is currently scheduled for 11 October 2017.

"Currently, seven hundred and fifty million people are using <u>DNSSEC</u>-validating resolvers that could be affected by the KSK rollover," said <u>ICANN</u>'s Vice President of Research, Matt Larson. "The testing platform is an easy way for operators to confirm that their infrastructure supports the ability to handle the rollover without manual intervention."

Internet service providers, network operators and others who have enabled <u>DNSSEC</u> validation must update their systems with the new KSK. This can be done in one of two ways:

- An operator can configure a new trust anchor manually by obtaining the new root zone KSK from the iana.org website at https://www.iana.org/dnssec/files.
- An operator can enable a feature available in many validating resolvers that *automatically* detects
 and configures a new root zone KSK as a trust anchor, in which case they need take no action.

Check to see if your systems are ready by visiting go.icann.org/KSKtest.

The KSK has been widely distributed and configured by every operator performing <u>DNSSEC</u> validation. If the validating resolvers using <u>DNSSEC</u> do not have the new key when the KSK is rolled, end users relying on those resolvers will encounter errors and be unable to access the Internet. A careful and coordinated effort is required to ensure that the update does not interfere with normal operations.

More information is available at www.icann.org/kskroll.

Links:

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- EN: https://www.icann.org/news/announcement-2017-03-13-en
- ES: http://www.icann.org/news/announcement-2017-03-13-es
- **FR:** http://www.icann.org/news/announcement-2017-03-13-fr
- **AR:** http://www.icann.org/news/announcement-2017-03-13-ar
- **RU:** http://www.icann.org/news/announcement-2017-03-13-ru
 - **ZH:** https://www.icann.org/news/announcement-2017-03-13-zh

