

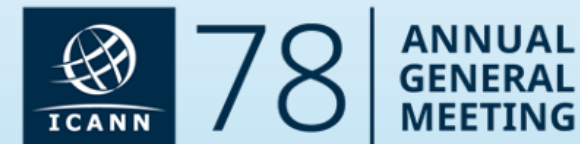
IANA Update to the ccNSO

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PTI | An ICANN Affiliate

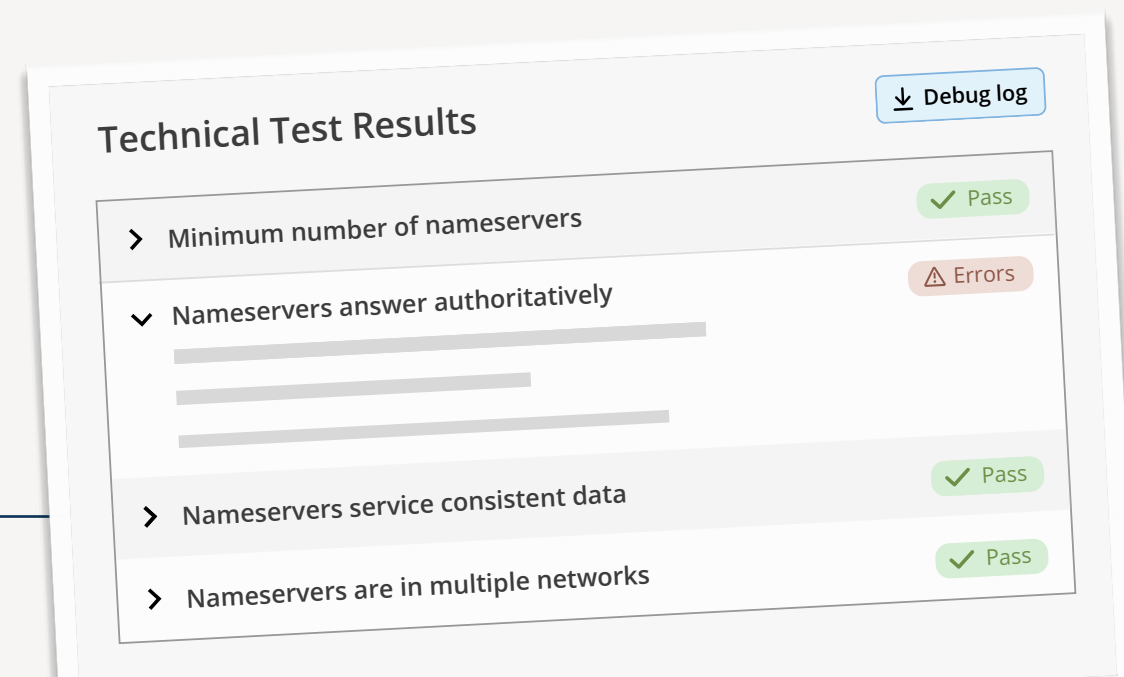


Agenda

- Operations Update
 - Root Zone Management System
 - Root Zone KSK Updates
 - ZONEMD
 - Performance at a glance
- Caretaker designation for .LB
- Developing our FY2025 Operating Plan and Budget
- Our annual community survey

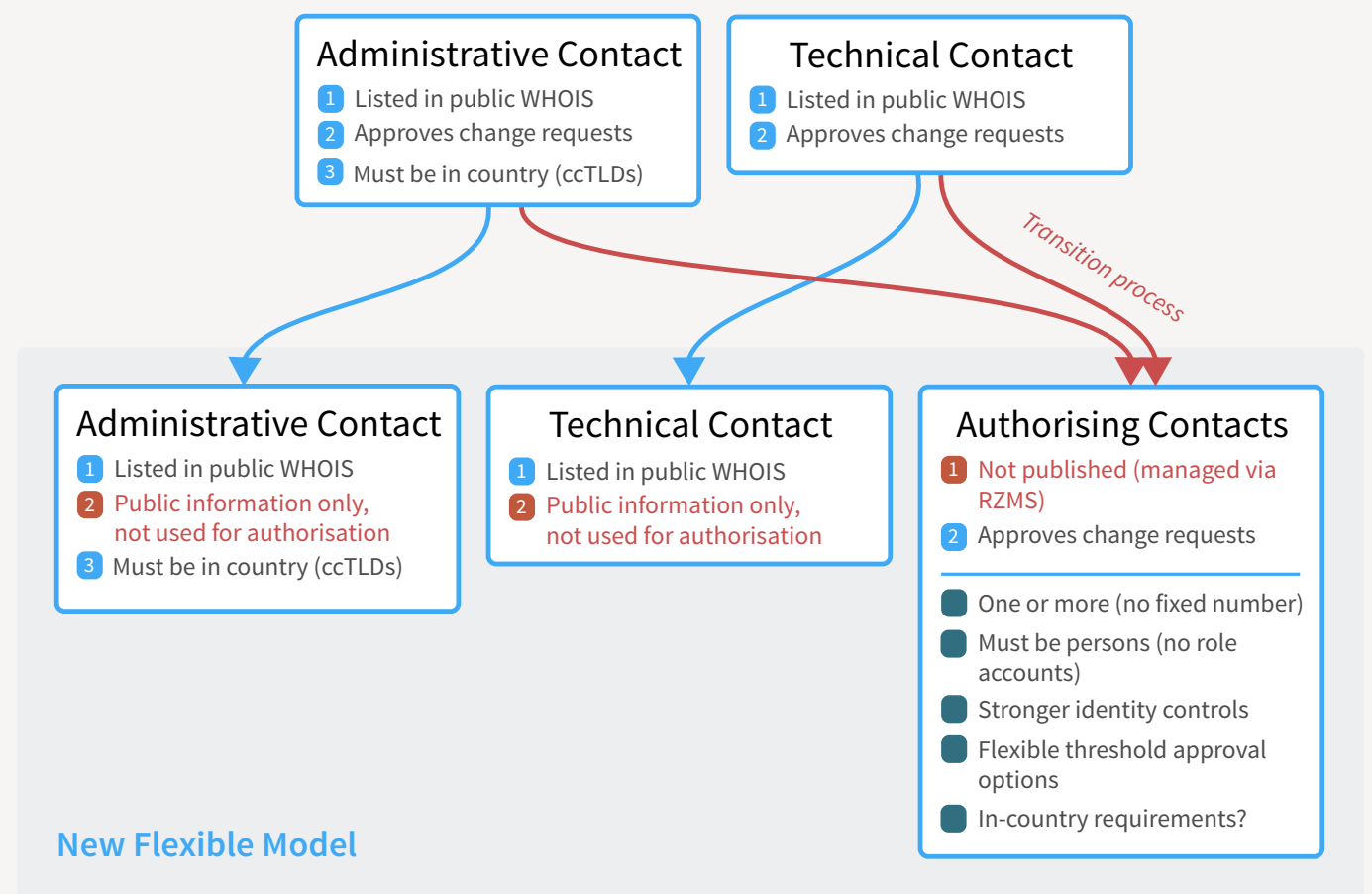
Root Zone Management System

- Our portal for TLD managers to submit change requests and interact
- Ground-up rewrite launched in December 2022
 - Previous code base had 20 year old origins
 - Largely reimplements existing functionality
- Separated technical check process into a separate module
 - More performant, easier to evolve on an independent track
 - Debug logs available to customers via self-service
- Enhanced audit logging



Root Zone Management System (2)

- **Key change is a new contact model**
 - Administrative and Technical Contacts separated
 - Now are only public facing points of contact in WHOIS etc.
 - New “authorizer” or “user” concept, fully configurable by TLD manager with privilege grants, granular to job responsibility

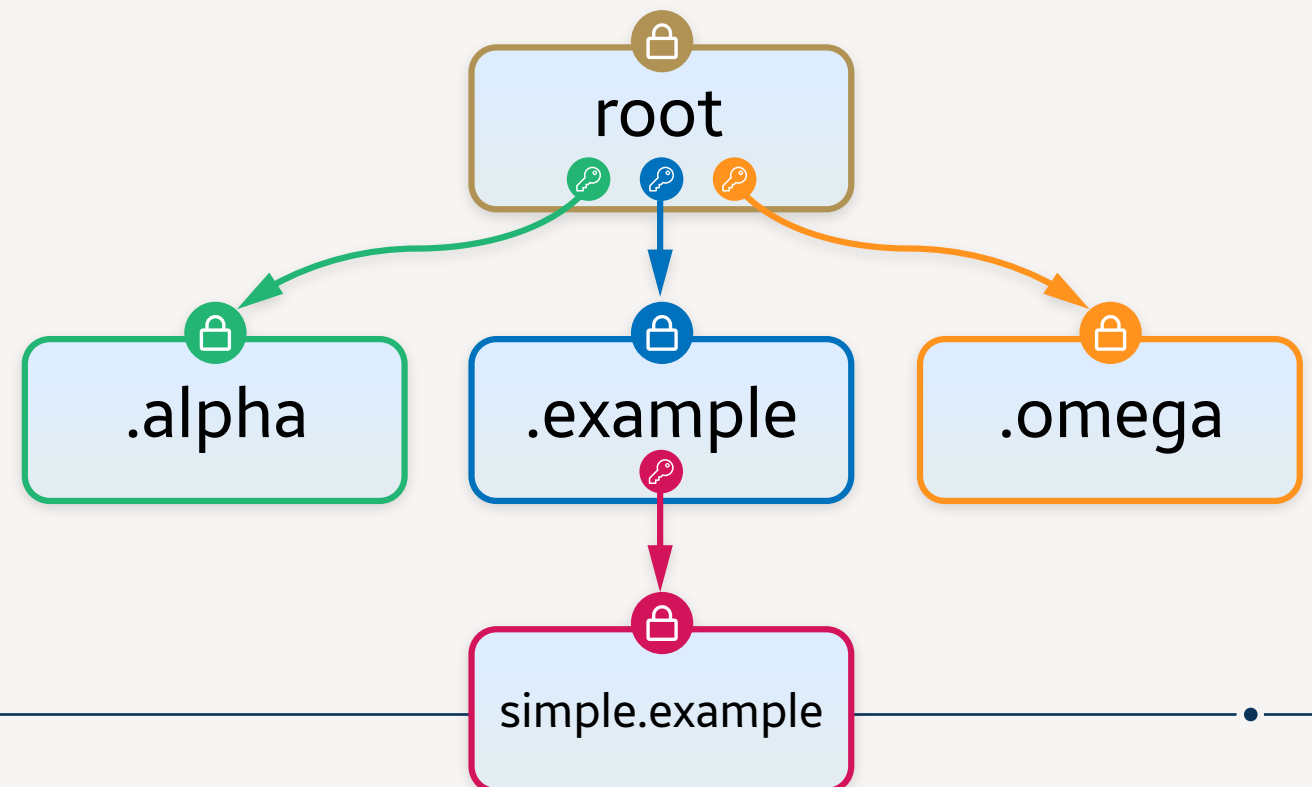


Root Zone Management System future work

- **Multi-factor authentication**
 - TOTP, WebAuthn
 - Adopted SSR2 recommendation
 - Difficulty is not technological but operational procedures
 - Implement enhanced “know your customer” procedures
- **Pass/fail/warn technical checks**
 - Provides flexibility to warn of conditions that TLD manager can self-dismiss, rather than blocking a change request
- **Health checks**
 - Proactively monitor TLDs, notify of issues to be remedied
 - Root Zone update study recommendation
- **Evolution of preliminary AP**
 - Implement feedback to first iteration; add sandbox

Root Zone KSK

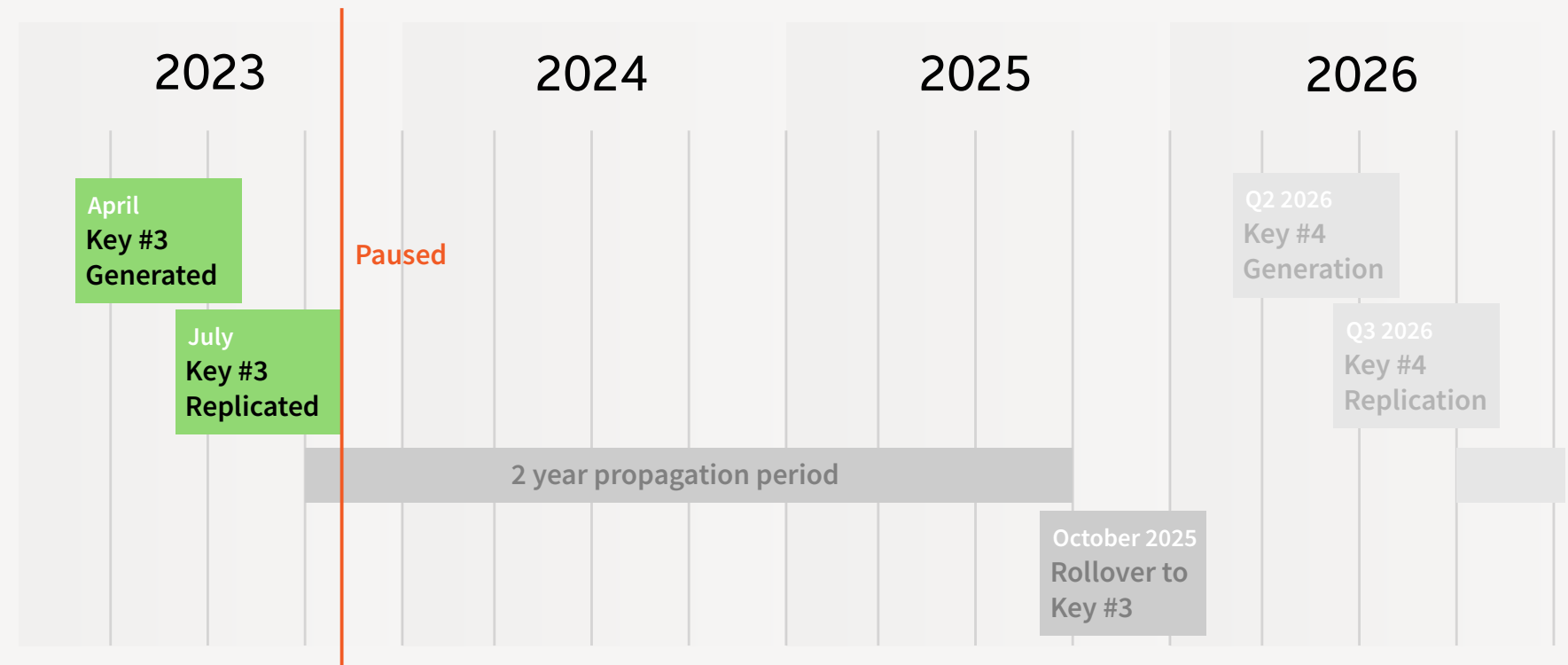
- **Algorithm Rollover Study**
 - Community convened activity to develop requirements to update the cryptographic key in the Root Zone
 - Draft findings now seeking public comment
 - <https://www.icann.org/en/public-comment/proceeding/draft-report-of-the-root-zone-dnssec-algorithm-rollover-study-19-10-2023>
- **Ongoing activity to replace Trusted Community Representatives**
 - Always seeking new qualified candidates
 - <https://iana.org/tcr>



Root Zone KSK (2)

- **2nd Key Rollover and HSM Replacement**

- We've embarked on the 2nd ever replacement of the key
 - Highly orchestrated event, propagation to all validators through vendor updates etc.
- Stalled due to the need to replace our hardware security modules, will restart soon and regenerate a new key
- Community work on algorithm rollover requirements for public comment soon (e.g. elliptic curve algorithm)



ZONEMD

- New record in the root zone, provides a checksum that allows software to confirm they've received a complete uncorrupted version of a root zone
 - Helps implementers of local root zones, e.g. hyperlocal technique
- Provisionally added to root zone in September in an unverifiable format
 - Shake out any software issues before full production release
 - Some implementers did run into problems
 - <https://blog.cloudflare.com/1-1-1-1-lookup-failures-on-october-4th-2023/>
 - DNSANA too! Some of our internal tools needed some updates
- Planned to launch full production use on December 6

```
.          518400  IN      NS      l.root-servers.net.
.          518400  IN      NS      m.root-servers.net.
.          172800  IN      DNSKEY  256 3 8 AwEAAAddS95RV5uUtkUCN7vy
vpb0kDZgmtXwN5Sj/d08+X7ND2sgWBabKnFhfrOsSx9DUhKR3gpMPIxac84Nou8Wzkiu2A/sTzP1F6
KpCL8epgemdLZVd1ATHEjpB0KHIQmDjSE0/frGgi8ijQ2vDF3AMsrUwH7qntL1E5ufPHGKRM+agGghc
AYfJHJN1dw7Ki3Fo22RDB3VZBxU9yJ3vL/T4hngEL7zK84vgl62tLJJw1rK5S/3U4p/bZarjtMFOHdf
h0DEj1ywtRpkpPnge03gmINoa2tz+Kff67kbQb0NhJYzPRpViaMEWZI9pgGH9ZyuFdNrNRx68XSi07
sya7/i+c=
.          172800  IN      DNSKEY  257 3 8 AwEAAaz/tAm8yTn4Mfeh5ey
I96WSVexTBAvkMgJzkKT0iW1vkIbzxef3+/4RgW0q7HrxRixHlFLEx0LAJr5emLvN7SWXgnLh4+B5xQ
lNVz80g8kvArMtNR0xVQuCaSnIDdD5LKyWbRd2n9WGe2R8PzgCmr3EgVLRjyBxWezF0jLHwVN8efS3r
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kUTV74bU=
.          86400   IN      ZONEMD  2023101901 1 241 AB9A775ACBF196
9EAA05090F0384FB6060B6703C1C12E9A2292C49ED8B1476DC969B2819CA9B221253D1F34C0164A
5A0
aaa.       172800  IN      NS      a.nic.aaa.
aaa.       172800  IN      NS      b.nic.aaa.
```


Performance

At a glance

Naming



99.5%

SLAs met between July and September 2023

Protocol Parameters



100%

SLAs met between July and September 2023

Numbers



100%

SLAs met between July and September 2023

Satisfaction



95.7%

customer satisfaction during September 2023

System Status



No known issues.

Security



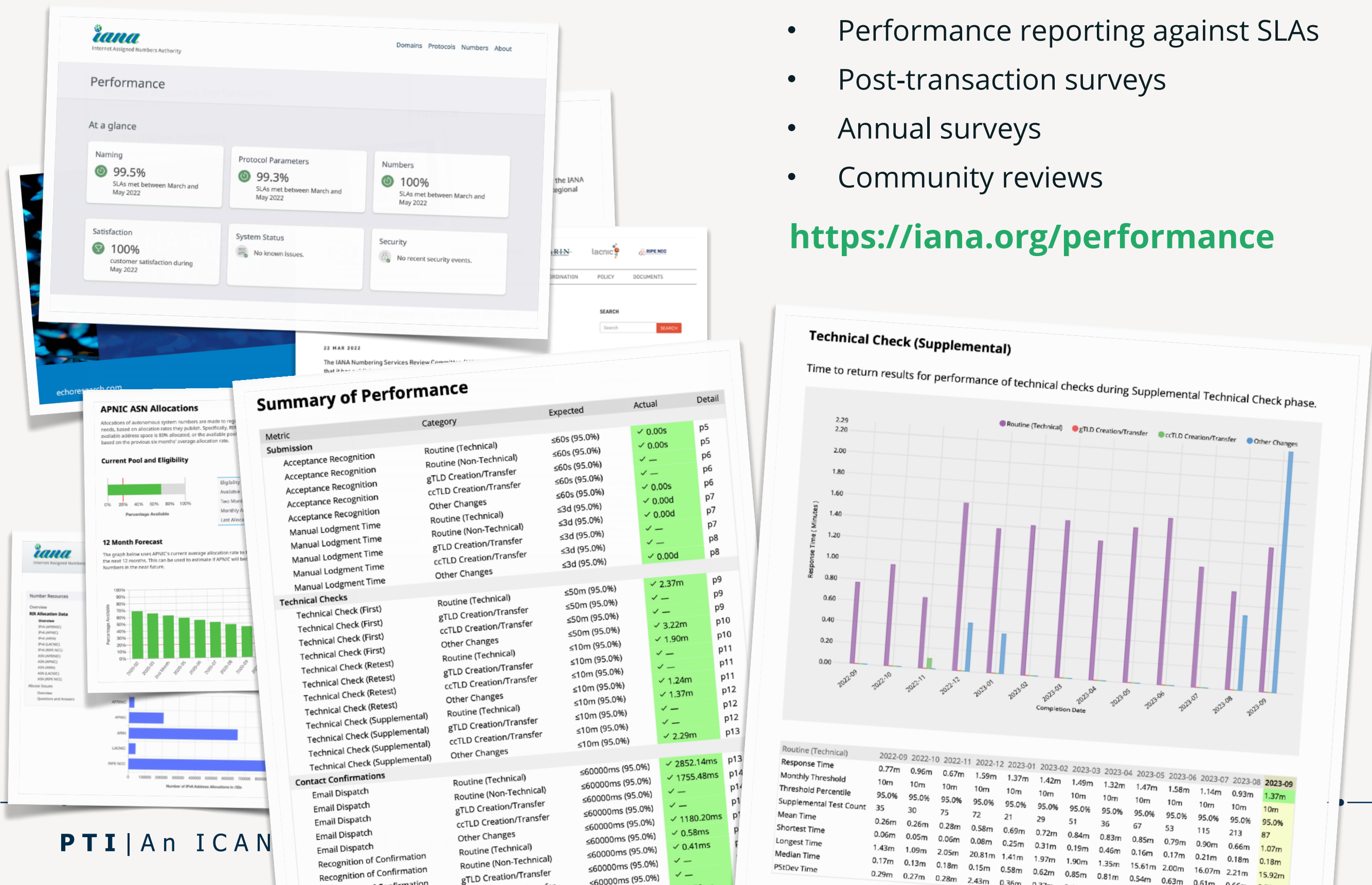
No recent security events.

Metric	Category	Expected	Actual
Technical Check (Retest)	Routine (Technical)	10m	13.75m
Primary cause:	Unreachable nameservers		
Analysis/Comments:	One request exceeded the technical check threshold of 10 minutes. This exception relates to time spent waiting for responses from unreachable nameservers (i.e. time waiting to timeout, multiplied by retries).		

Performance (2)

- Performance reporting against SLAs
- Post-transaction surveys
- Annual surveys
- Community reviews

<https://iana.org/performance>



Caretaker designation for .LB

- Recently, IANA removed the ccTLD manager and administrative contact
- Update made as a consequence of two factors:
 - Existing listed manager relinquished all responsibility
 - Existing administrative manager had passed away
- We put placeholder text in “caretaker operations” with IANA contact details
 - Our database doesn’t allow a record to exist with an addresses so these are surrogate values, and allow us to respond to any questions about its status.
 - Some precedent in this approach

```
~$ whois -I lb
% IANA WHOIS server
% for more information on IANA, visit http://www.iana.org
% This query returned 1 object

domain:          LB

organisation:    Caretaker Operations
address:         Not applicable
address:         Lebanon

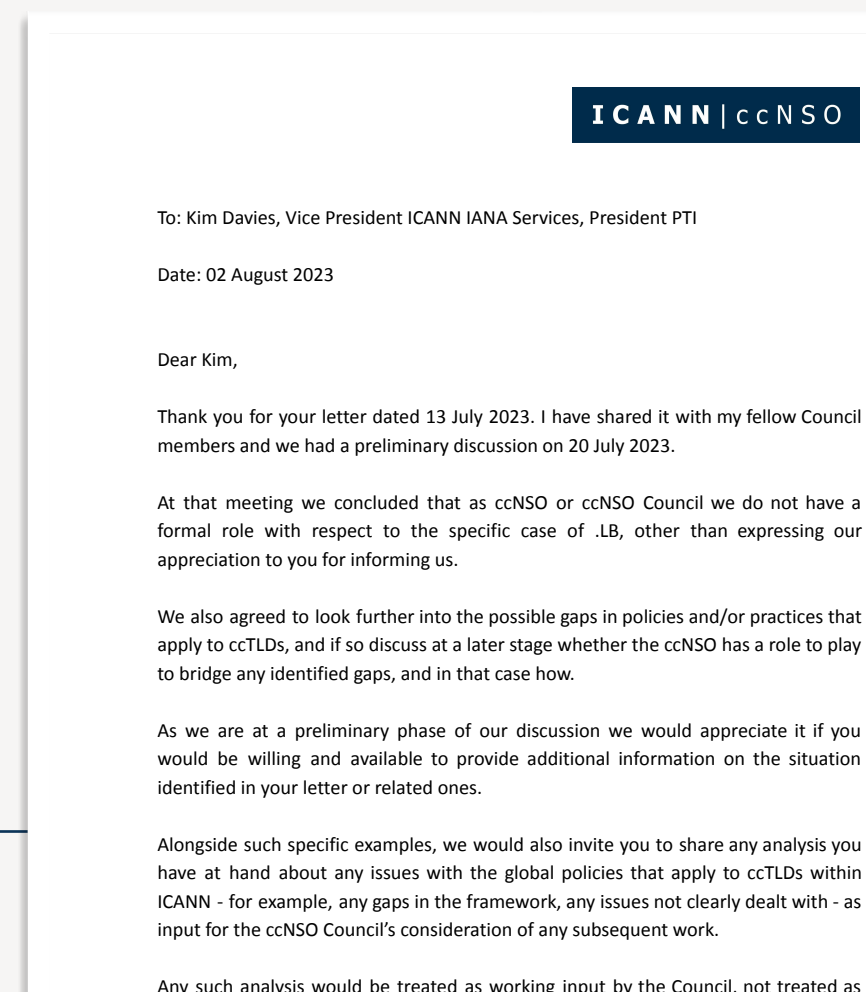
contact:         administrative
name:            Caretaker Operations
address:         Not applicable
address:         Lebanon
phone:           +1 424 254 5300
post-mgmt@iana.org
```

Caretaker designation for .LB (2)

- Prior to the change, IANA:
 - Established ground truth and confirmed these factors
 - Consulted with relevant parties in the appropriate action, including ccNSO leadership, GAC representative, and other directly involved parties
 - Gained permission from ICANN under the auspices of the IANA Naming Functions contract
- IANA has NOT taken over any responsibility as a result of this action — it continues to function as it did prior to the change
- An informal group of people involved in .LB's operations prior to the death of the administrative contact continue to operate the domain
 - IANA maintains contact with them to ensure ongoing day-to-day operation of the domain, and this is not considered at risk
 - IANA is helping foster local work to identify a local successor manager that meets policy requirements.

Caretaker designation for .LB (3)

- Activity has been memorialized through an exchange of correspondence between IANA and ccNSO
- IANA suggested there is an opportunity to review this as a case study for potential future ccNSO work, ccNSO responded inviting IANA's participation in exploring the issues
- Subsequently IANA has worked with a small ccNSO ad-hoc team in the lead up to ICANN 78



Caretaker designation for .LB (4)

- For us, .LB represents a specific unorthodox case of a more general problem — DNA data drifting from reality, and limited motivation and or remedies to keep it up-to-date.
- Most policies and procedures assume ccTLD managers will always follow best practice and actively keep records up-to-date
- Reality is a lot murkier, and the current approach promotes poor data quality in the root zone database.
- We are looking forward to supporting a broader discussion on where we should be aiming to be, and what policy and procedural evolution is necessary to support that.

Operating Plan and Budget for FY2025

Marilia Hirano

FY25 and Beyond

- PTI Bylaws changes approved in August 2023:
 - Extended current PTI Strategic Plan to end FY25.
 - Aligned the PTI Strategic Plan period to ICANN's: FY26-FY30.
 - Aligned PTI's Operating Plan & Budget process to ICANN's.

- FY25 PTI OP&B key priorities:
 - Continue to evolve RZMS, focusing on:
 - Identify new types of TLD technical issues, and allow low severity issues to be self-dismissed by the customer without the need for IANA staff intervention.
 - Implement passwordless authentication using new web authentication standards (e.g. passkeys)
 - Providing Root Zone DNSSEC management enhancements.
 - Review the recommendations from the algorithm rollover study and coordinate implementation with the multistakeholder communities.
 - Recommence the procedure for the next Key Rollover using next generation hardware security modules.
 - Ongoing significant operational improvements to the iana.org website.

CALL TO ACTION: Participate in the FY25 OP&B Public Comment from 12 December 2023 - 11 February 2024

We need your feedback!

- Each year we conduct a broad survey with community stakeholders.
- Help the ANA team identify areas of focus for the upcoming year by filling out a brief survey.
- A couple minutes of your time will greatly help us!



Thank you!