

IANA Update to the GNSO

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October 2023

PTI | An ICANN Affiliate

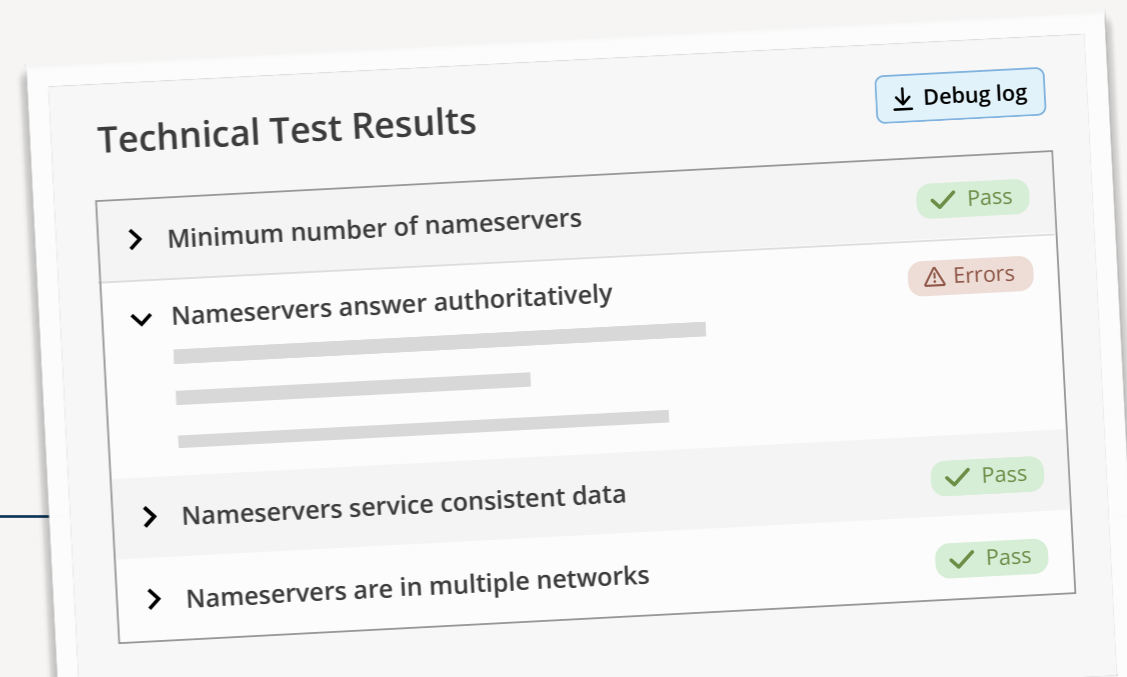


Agenda

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

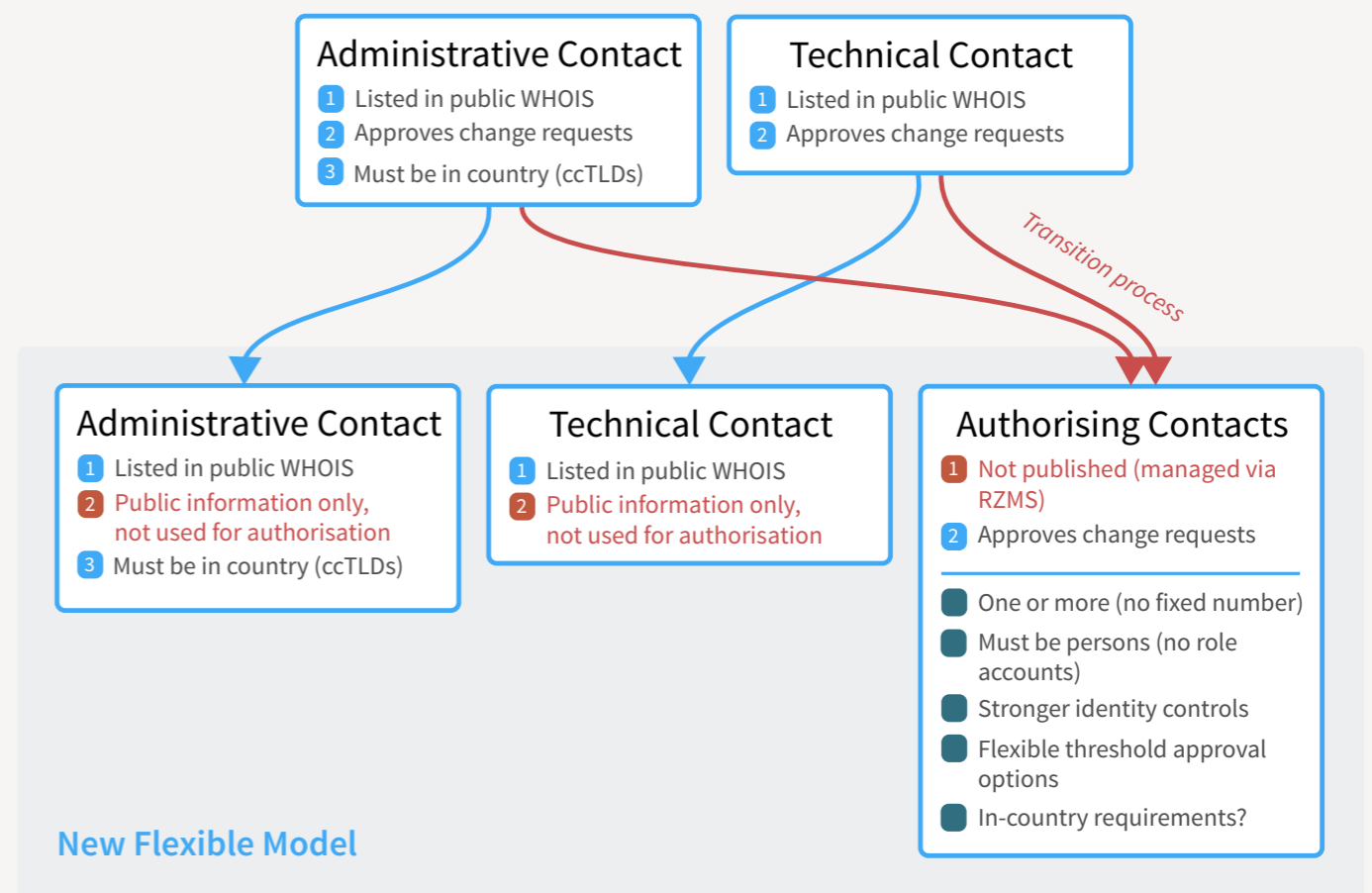
Root Zone Management System

- 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

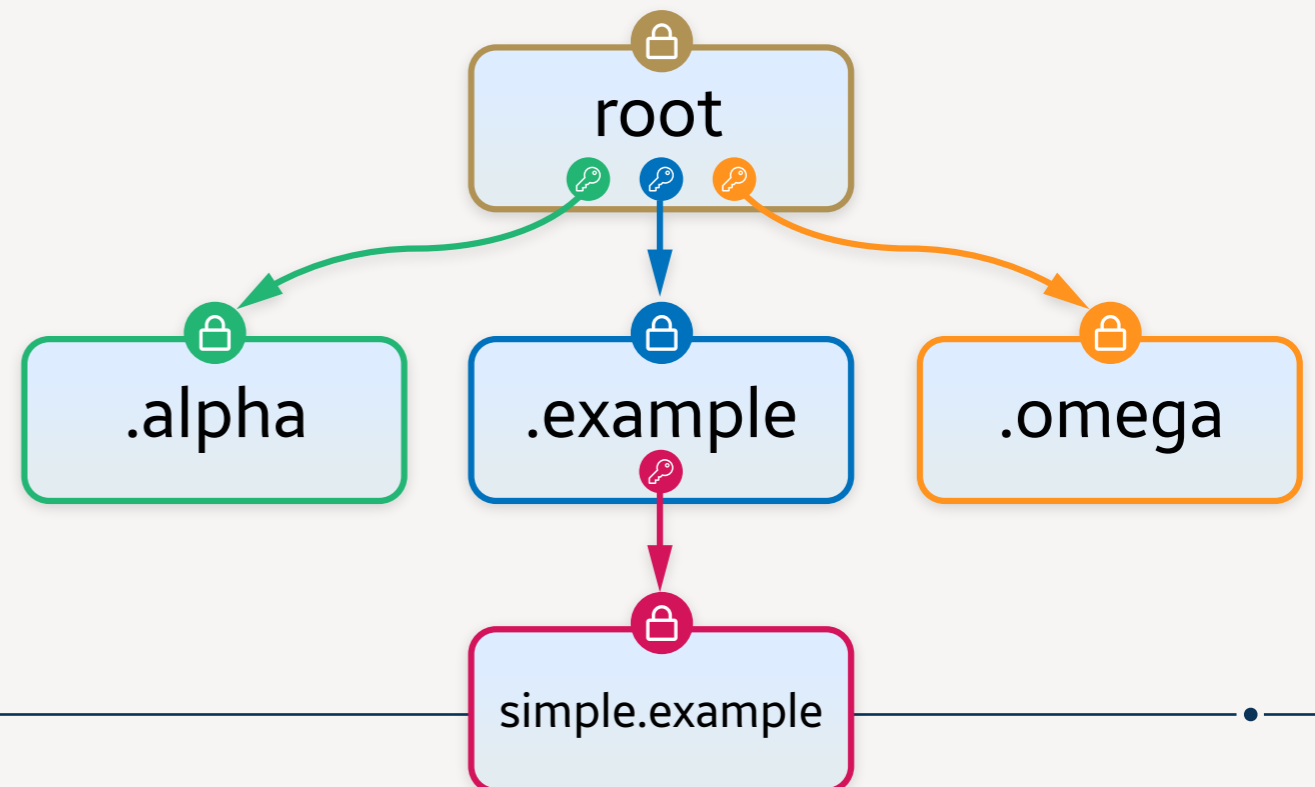


Root Zone Management System future work

- **Multi-factor authentication**
 - TOTP (now), WebAuthn/Passkeys (later)
 - 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 API**
 - Implement feedback to first iteration; add sandbox

Root Zone KSK

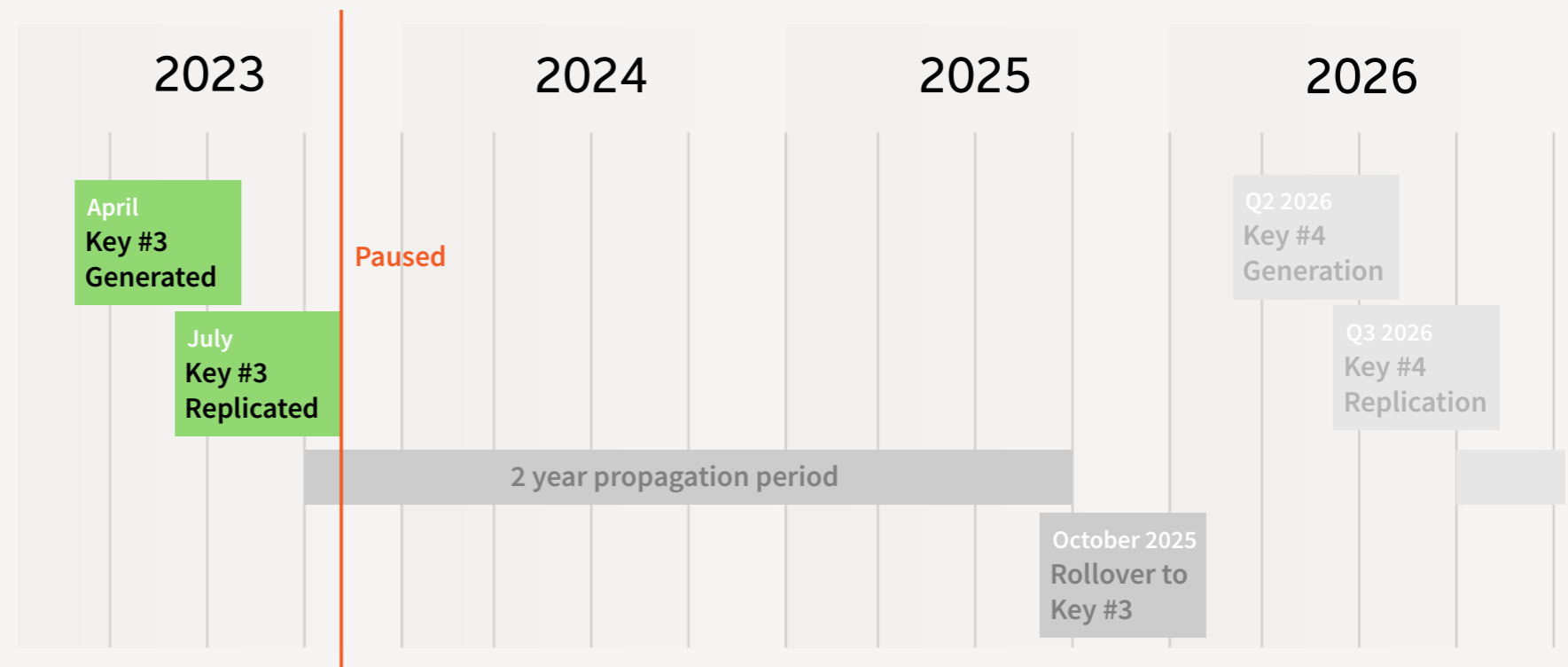
- **Algorithm Rollover Study**
 - Community convened activity to develop requirements to update the cryptographic key in the Root Zone
 - Draft findings now seeking public comment
 - <https://www.icann.org/en/public-comment/proceeding/draft-report-of-the-root-zone-dnssec-algorithm-rollover-study-19-10-2023>
- **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/>
 - IANA 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+X7ND2sgWBabKnFhftrOsSx9DUhKR3gpMPIxac84Nou8Wzkiu2A/sTzP1F6
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h0DEj1ywtRpkpPnge03gmINoa2tz+Kff67kbQb0NhHJYZPRpViaMEWZI9pgGH9ZyuFdNrNRx68XSio7
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 

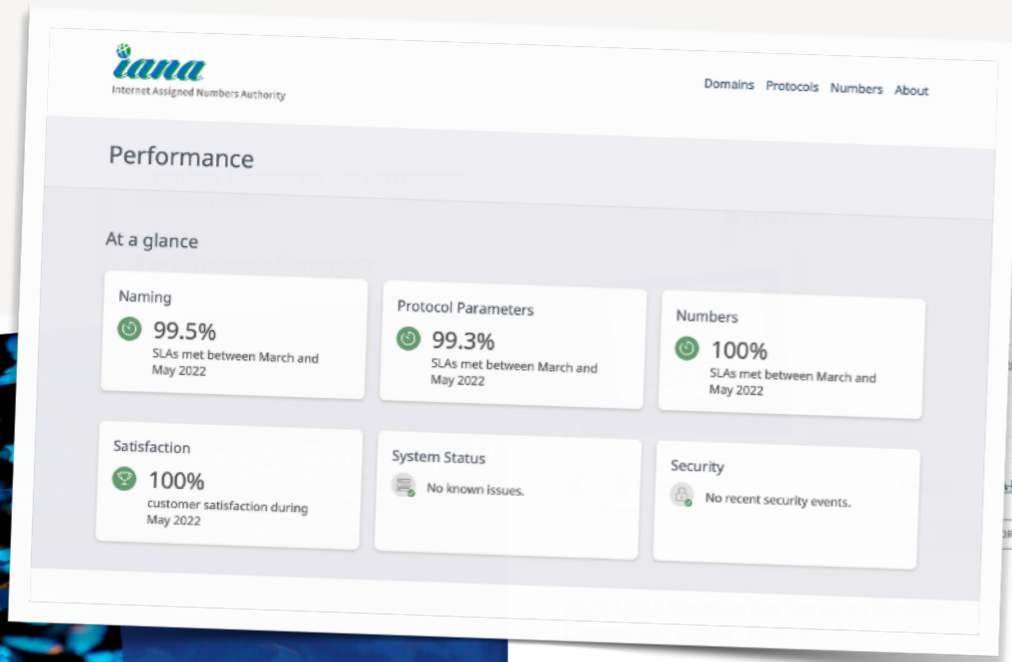
Primary cause: Unreachable nameservers

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>



Summary of Performance

Metric	Category	Expected	Actual	Detail
Submission	Routine (Technical)	≤60s (95.0%)	✓ 0.00s	p5
Acceptance Recognition	Routine (Non-Technical)	≤60s (95.0%)	✓ —	p5
Acceptance Recognition	gTLD Creation/Transfer	≤60s (95.0%)	✓ —	p6
Acceptance Recognition	ccTLD Creation/Transfer	≤60s (95.0%)	✓ 0.00s	p6
Acceptance Recognition	Other Changes	≤60s (95.0%)	✓ 0.00d	p7
Manual Lodgment Time	Routine (Technical)	≤3d (95.0%)	✓ 0.00d	p7
Manual Lodgment Time	Routine (Non-Technical)	≤3d (95.0%)	✓ —	p7
Manual Lodgment Time	gTLD Creation/Transfer	≤3d (95.0%)	✓ —	p8
Manual Lodgment Time	ccTLD Creation/Transfer	≤3d (95.0%)	✓ 0.00d	p8
Manual Lodgment Time	Other Changes	≤3d (95.0%)	✓ 0.00d	p8
Technical Checks	Routine (Technical)	≤50m (95.0%)	✓ 2.37m	p9
Technical Check (First)	gTLD Creation/Transfer	≤50m (95.0%)	✓ —	p9
Technical Check (First)	ccTLD Creation/Transfer	≤50m (95.0%)	✓ 3.22m	p10
Technical Check (First)	Other Changes	≤50m (95.0%)	✓ 1.90m	p10
Technical Check (Retest)	Routine (Technical)	≤10m (95.0%)	✓ —	p11
Technical Check (Retest)	gTLD Creation/Transfer	≤10m (95.0%)	✓ —	p11
Technical Check (Retest)	ccTLD Creation/Transfer	≤10m (95.0%)	✓ 1.24m	p11
Technical Check (Retest)	Other Changes	≤10m (95.0%)	✓ 1.37m	p12
Technical Check (Retest)	Routine (Technical)	≤10m (95.0%)	✓ —	p12
Technical Check (Supplemental)	gTLD Creation/Transfer	≤10m (95.0%)	✓ —	p12
Technical Check (Supplemental)	ccTLD Creation/Transfer	≤10m (95.0%)	✓ 2.29m	p12
Technical Check (Supplemental)	Other Changes	≤10m (95.0%)	✓ 2.29m	p13
Contact Confirmations	Routine (Technical)	≤60000ms (95.0%)	✓ 2852.14ms	p13
Email Dispatch	Routine (Non-Technical)	≤60000ms (95.0%)	✓ 1755.48ms	p14
Email Dispatch	gTLD Creation/Transfer	≤60000ms (95.0%)	✓ —	p14
Email Dispatch	ccTLD Creation/Transfer	≤60000ms (95.0%)	✓ —	p14
Email Dispatch	Other Changes	≤60000ms (95.0%)	✓ 1180.20ms	p14
Email Dispatch	Routine (Technical)	≤60000ms (95.0%)	✓ 0.58ms	p14
Recognition of Confirmation	Routine (Technical)	≤60000ms (95.0%)	✓ 0.41ms	p14
Recognition of Confirmation	Routine (Non-Technical)	≤60000ms (95.0%)	✓ —	p14
Recognition of Confirmation	gTLD Creation/Transfer	≤60000ms (95.0%)	✓ —	p14

Technical Check (Supplemental)

Time to return results for performance of technical checks during Supplemental Technical Check phase.



	2022-09	2022-10	2022-11	2022-12	2023-01	2023-02	2023-03	2023-04	2023-05	2023-06	2023-07	2023-08	2023-09
Routine (Technical)	0.77m	0.96m	0.67m	1.59m	1.37m	1.42m	1.49m	1.32m	1.47m	1.58m	1.14m	0.93m	1.37m
Response Time	10m	10m	10m	10m	10m	10m	10m	10m	10m	10m	10m	10m	10m
Monthly Threshold	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Threshold Percentile	35	30	75	72	21	29	51	36	67	53	115	213	87
Supplemental Test Count	0.26m	0.26m	0.28m	0.58m	0.69m	0.72m	0.84m	0.83m	0.85m	0.79m	0.90m	0.66m	1.07m
Mean Time	0.06m	0.05m	0.06m	0.08m	0.25m	0.31m	0.19m	0.46m	0.16m	0.17m	0.21m	0.18m	0.18m
Shortest Time	1.43m	1.09m	2.05m	20.81m	1.41m	1.97m	1.90m	1.35m	15.61m	2.00m	16.07m	2.21m	15.92m
Longest Time	0.17m	0.13m	0.18m	0.15m	0.58m	0.62m	0.85m	0.81m	0.54m	0.63m	0.61m	0.66m	0.66m
Median Time	0.29m	0.27m	0.28m	2.43m	0.36m	0.37m	0.37m	0.37m	0.37m	0.37m	0.37m	0.37m	0.37m
PstDev Time													

Operating Plan and Budget for FY2025

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 IANA 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!