

# From WHOIS to RDAP



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February 2024

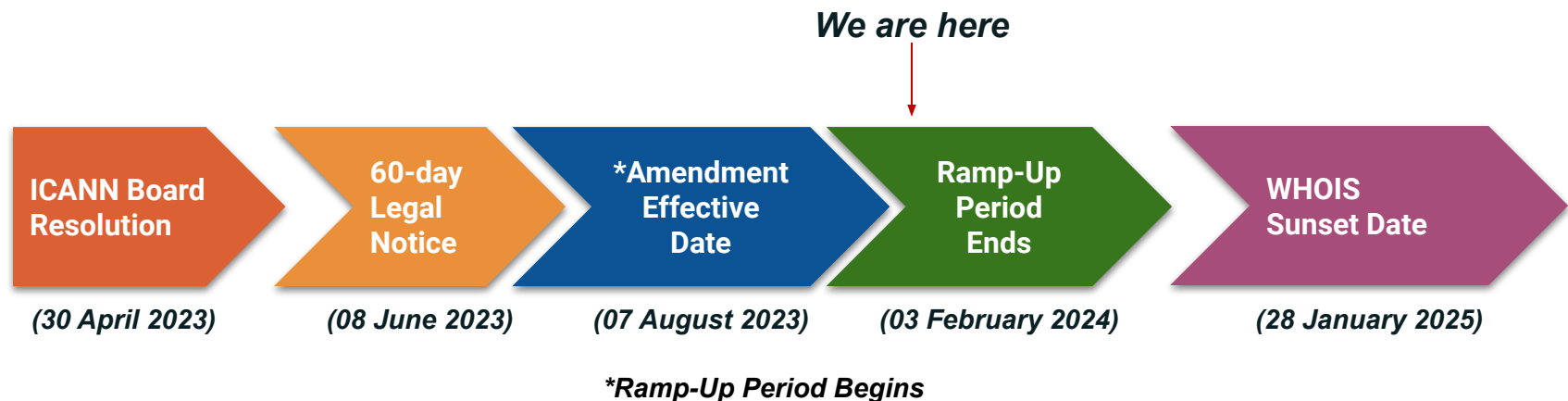
# Registration Data Access Protocol (RDAP)

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- Since 26 August 2019, gTLD registries and registrars are required to implement an RDAP service
- In the first half of 2023 negotiations finished in the gTLD space to:
  - Require a common gTLD RDAP profile
  - Have an explicit RDAP Service Level Agreement
  - Have RDAP query volume reporting requirements
  - Eventually retire WHOIS
- ICANN's RDAP page: <https://icann.org/rdap>

# RDDS Timeline in the gTLD Space

- The Registration Data Directory Services (RDDS) are currently provided over WHOIS (port 43), web-based WHOIS, and the Registration Data Access Protocol (RDAP).
- The RDAP Amendment for gTLD Registries and Registrars is now effective.
- **After the WHOIS Sunset Date, RDAP will be the only required RDDS service.**



# Current status of RDDS

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- The RDAP Ramp-up Period ended on February 3.
- This means that all contractual obligations in relation to RDAP (conformance, service availability, etc) are now in full effect
  - Registries and registrars **MUST** provide an RDAP service
  - The RDAP services **MUST** comply with the specifications and SLA
- Conversely, registries and registrars will no longer be required to provide a port-43 service (or web frontend) from January 28 2025.
- **If you currently rely on port-43 WHOIS, you should consider switching to RDAP**
- Going to a registry or registrar's website and hitting the "WHOIS" link may also stop working

# Additional ICANN org Work on RDAP

# RDAP Lookup Tool

[العربية](#) [简体中文](#) [English](#) [Français](#) [Русский](#) [Español](#)

ICANN | LOOKUP

## Registration data lookup tool

Enter a domain name or an Internet number resource (IP Network or ASN) [Frequently Asked Questions \(FAQ\)](#)

By submitting any personal data, I acknowledge and agree that the personal data submitted by me will be processed in accordance with the ICANN [Privacy Policy](#), and agree to abide by the website [Terms of Service](#) and the [registration data lookup tool Terms of Use](#).

### Domain Information

**Name:** EXAMPLE.COM

**Registry Domain ID:** 2336799\_DOMAIN\_COM-VRSN

**Domain Status:**  
[clientDeleteProhibited](#)  
[clientTransferProhibited](#)  
[clientUpdateProhibited](#)

**Nameservers:**  
A.IANA-SERVERS.NET  
B.IANA-SERVERS.NET

### Dates

**Registry Expiration:** 2024-08-13 04:00:00 UTC

**Updated:** 2023-08-14 07:01:38 UTC

**Created:** 1995-08-14 04:00:00 UTC

### Registrar Information

- The registration data lookup tool is a javascript-based client application which makes use of RDAP to query, parse and display registration data in a human-friendly format.
- Results come directly from registry operators and/or registrars in real-time.
- If the queried information is not available in RDAP, the query will be redirected to the WHOIS service of the corresponding gTLD registry operator.

<https://lookup.icann.org>

# RDAP Command-Line Client

Complaint Form  
RDAP Inaccuracy Complaint Form: <https://www.icann.org/wicf>  
<https://www.icann.org/wicf> of type 'application/rdap+json' for <https://www.icann.org/wicf>

Domain icann.org

Identifiers	
LDH Name	icann.org
Unicode Name	icann.org
Handle	628dbbcb4edc464b9401cbadea0a08b2-LROR

Events

Transfer	Wed, 12-Aug-2009 17:40:26 +00:00
Expiration	Tue, 7-Dec-2027 17:04:26 +00:00
Registration	Mon, 14-Sep-1998 04:00:00 +00:00
Last Changed	Tue, 14-Feb-2023 22:18:25 +00:00
Last Update Of RDAP Database	Wed, 24-May-2023 11:29:11 +00:00

Links

Related	<ul style="list-style-type: none"><li><a href="https://rdap.godaddy.com/v1/domain/icann.org">https://rdap.godaddy.com/v1/domain/icann.org</a></li><li><a href="https://rdap.godaddy.com/v1/domain/icann.org">application/rdap+json</a></li><li><a href="https://rdap.godaddy.com/v1/domain/icann.org">https://rdap.godaddy.com/v1/domain/icann.org</a></li></ul>
Self	<ul style="list-style-type: none"><li><a href="https://rdap.publicinterestregistry.org/rdap/domain/icann.org">https://rdap.publicinterestregistry.org/rdap/domain/icann.org</a></li><li><a href="https://rdap.publicinterestregistry.org/rdap/domain/icann.org">application/rdap+json</a></li><li><a href="https://rdap.publicinterestregistry.org/rdap/domain/icann.org">https://rdap.publicinterestregistry.org/rdap/domain/icann.org</a></li></ul>

Registrant

Identifiers	
Handle	

Events

Last Update Of RDAP Database	Wed, 24-May-2023 11:29:11 +00:00
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Checks

SpecWarn	RFC 9083 recommends self links for all object classes
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in this object has been removed.

PRIVACY  
RDAP service of the Registrar of Record identified in this output for information on how to contact the Registrant of

Why create an RDAP command line interface (CLI)?

- The command prompt is where network operators and many other technicians live.
- CLI tools can be incorporated into scripts for automation purposes.
- As a library, it can be incorporated into more sophisticated programs (e.g. intrusion detection systems, spam filtering, etc...)

<https://github.com/icann/icann-rdap>

# RDAP Conformance Tool

- A stand-alone, open-source tool to verify that an RDAP server implements the specifications developed by the IETF and optionally, the gTLD RDAP profile.
  - Free
  - Developed in Java 11
  - Command line
  - Flexible configuration to enable/disable specific checks as needed

<https://github.com/icann/rdap-conformance-tool>

	Test groups	Tests
RDAP Standards/RFCs	27	212
gTLD RDAP Profile 2019	11	74



# RDAP Pending List in ICANN

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- Communicate to end users the upcoming end of WHOIS services and need to migrate to RDAP
- Finalize RDAP CLI client
- Update RDAP conformance tool
- Update RDAP web client
- Monitor registries and registrar RDAP performance requirements
- Monitor registries and registrar RDAP output requirements
- Enable registries and registrar's view of ICANN org's compliance data
- Provide ICANN org's Compliance function with tools for enforcement

# RDAP Deployment Timeline



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# Monitoring RDAP Deployment

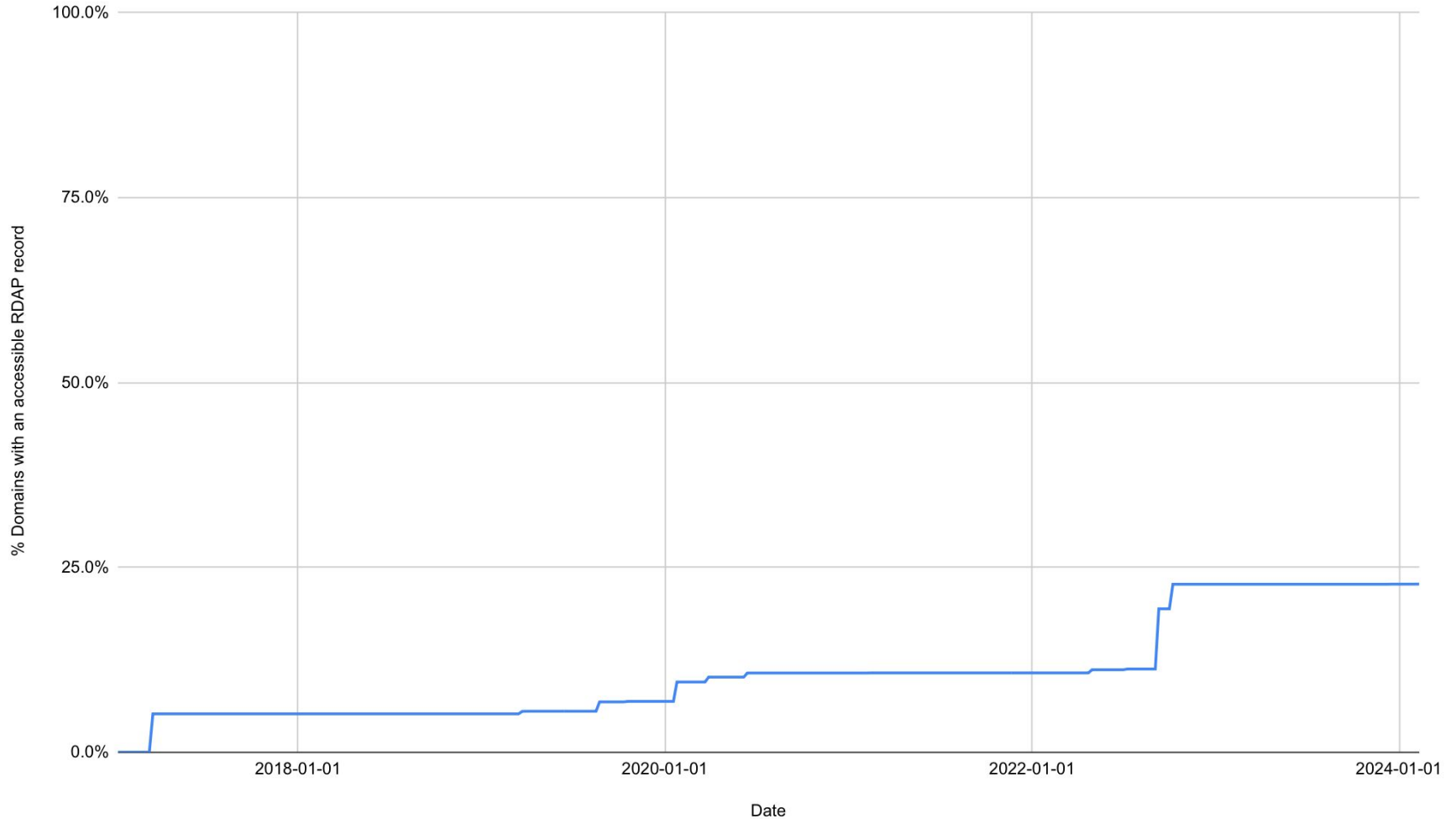
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- In my spare time I monitor the availability of RDAP under every TLD
  - Yes, I do this for fun.
- RDAP has a “bootstrap” registry which lists the RDAP server(s) for each TLD
- Every day I pull this file and check to see what’s changed
- I also check to see if the RDAP servers support:
  - HTTPS
  - DNSSEC
  - DANE
- Check it out at <https://deployment.rdap.org>
- RDAP.org also hosts a “bootstrap server” and a web client:
  - <https://about.rdap.org>



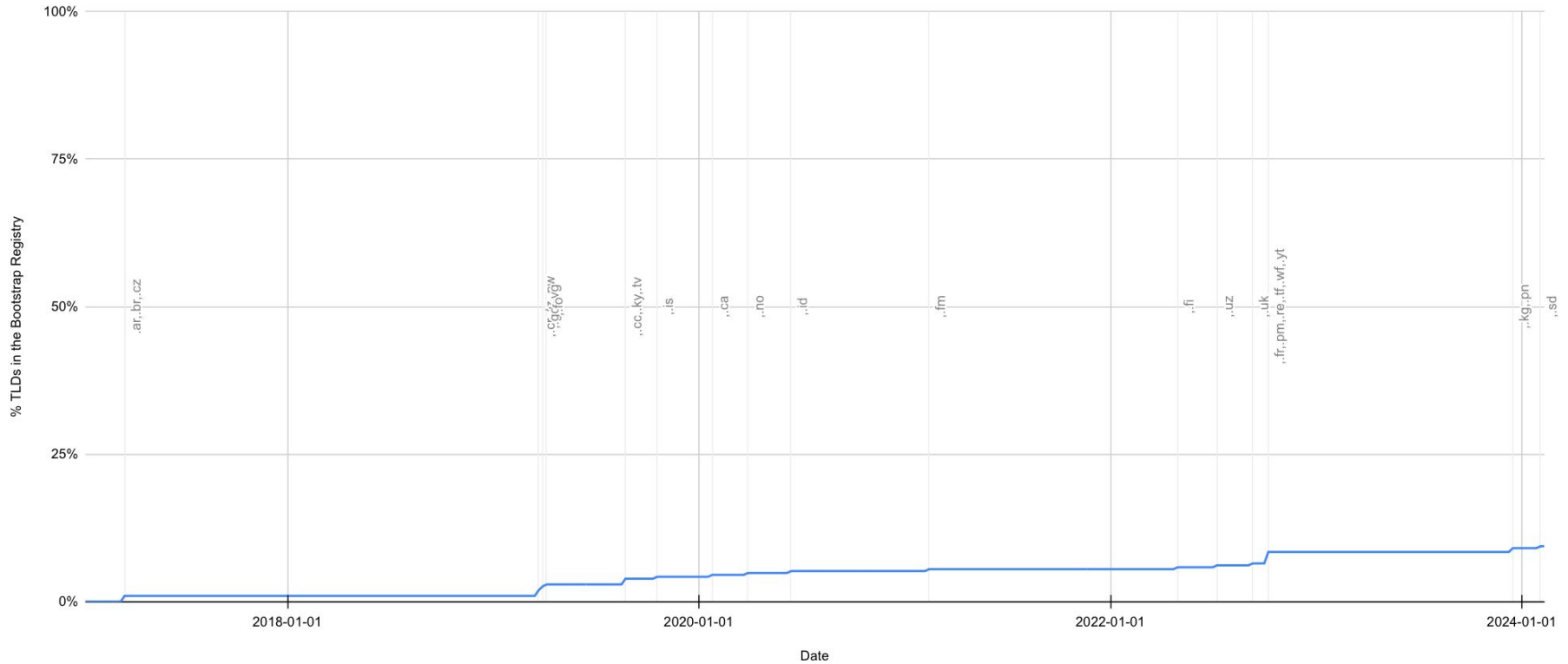
# RDAP Deployment Timeline for ccTLDs

Percentage of ccTLD domains with an accessible RDAP record



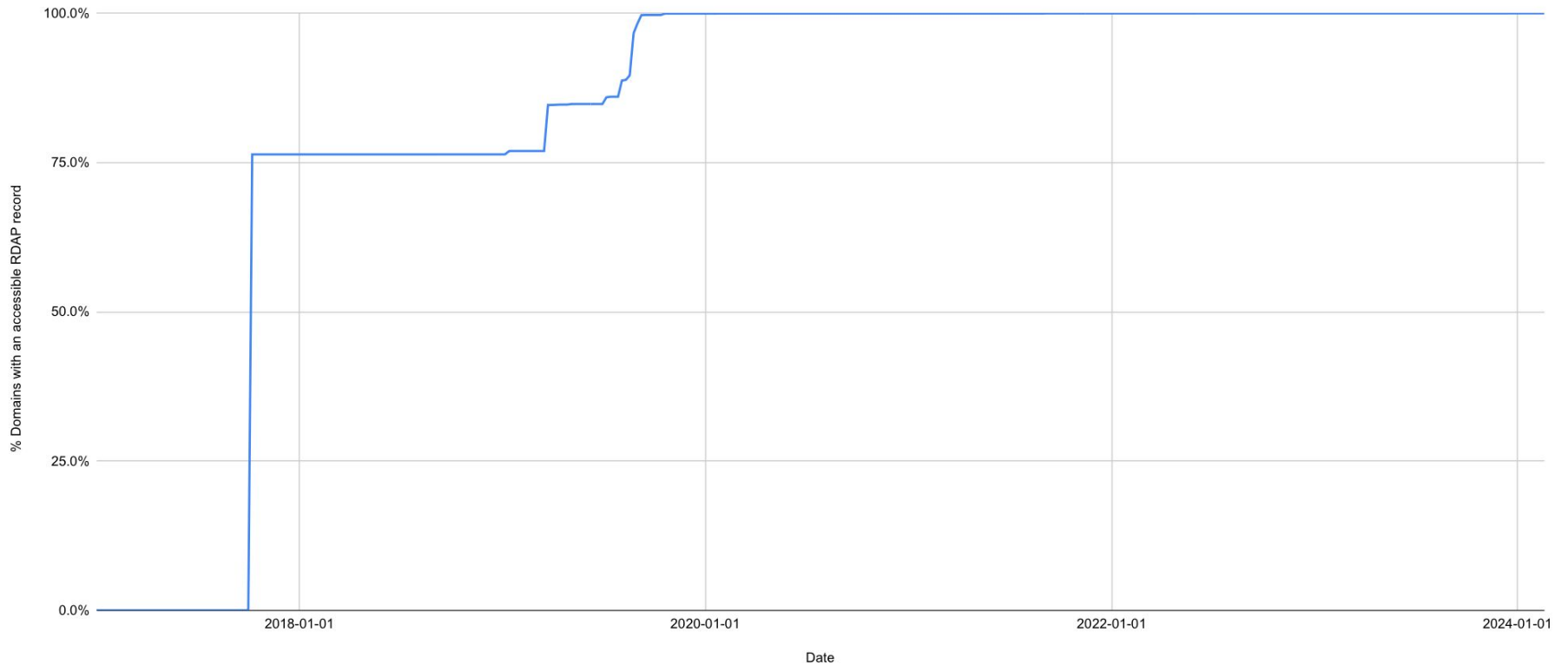
# RDAP Deployment Timeline for ccTLDs

Percentage of ccTLDs in the Bootstrap Registry



# RDAP Deployment Timeline for gTLDs

Percentage of gTLD domains with an accessible RDAP record



# Common issues

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- “Stealth RDAP”: deploying an RDAP server without adding it to the Bootstrap Registry
- No Access-Control-Allow-Origin header
  - on all responses (including errors)
- Not sticking to RFC 9083 syntax
- Not using validation tools/testing with clients



# Why aren't ccTLDs deploying RDAP?

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- You tell me!
- Is it because:
  - The benefits don't outweigh the costs?
  - RDAP is perceived to be an "ICANN thing"?
  - RDAP is too complex to implement?
  - RSPs/software vendors haven't implemented it yet?
  - There's no demand from users?
  - RDAP has been implemented but the IANA bootstrap registry hasn't been updated ("stealth RDAP")?
  - You're waiting for gTLDs to turn off WHOIS?
- Time for a poll!

# Questions

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