The Sunset of WHOIS in the gTLD namespace

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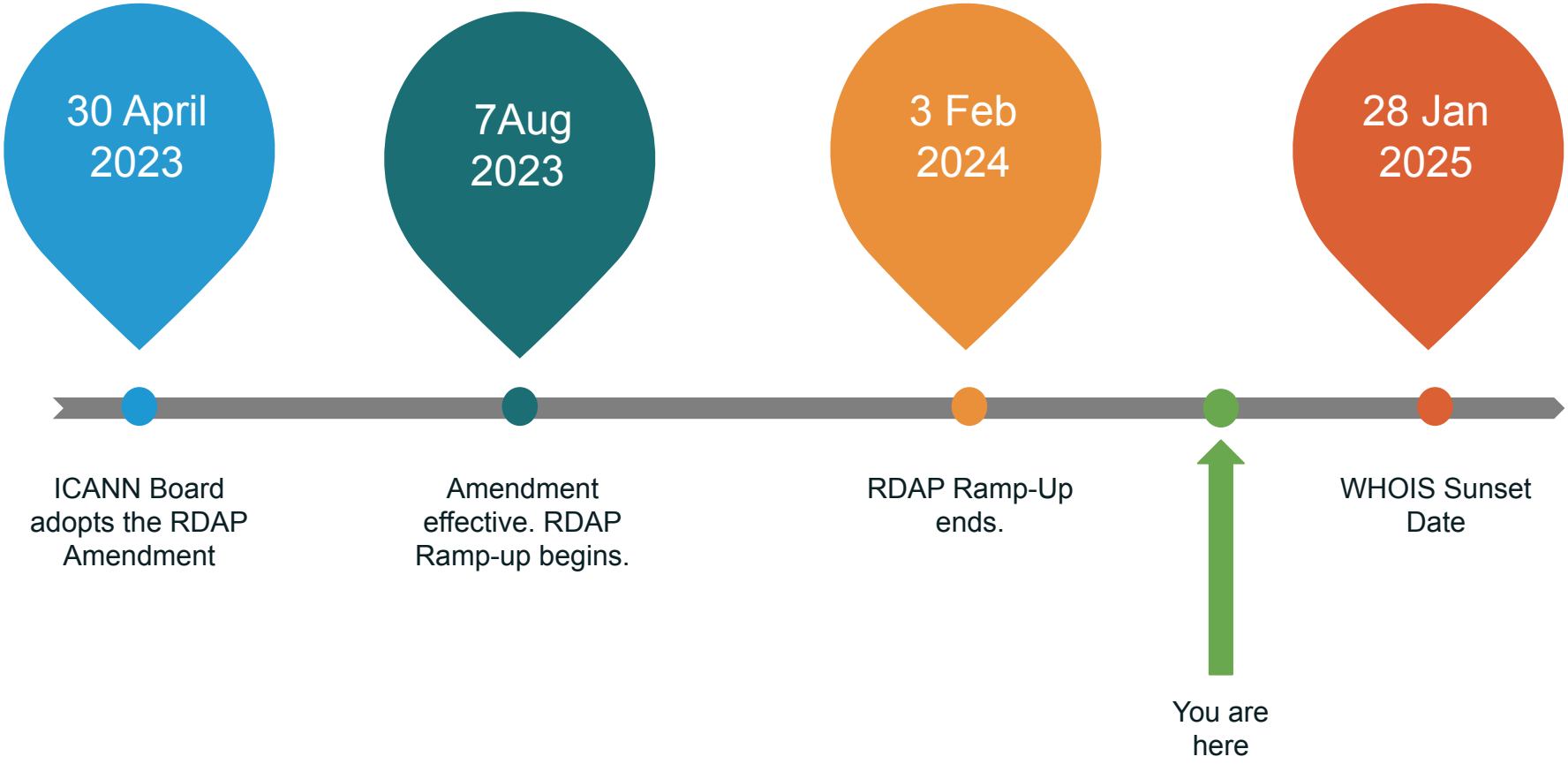
The Deprecation of WHOIS for gTLDs



What this means

- WHOIS has been around since the 1980s, and many people outside the narrow world of the domain industry who depend on access to registration data may be affected. This includes:
  - network engineers
  - domain resellers and hosting providers
  - security researchers
  - law enforcement and security services
  - IP lawyers
- If you have anything that relies on WHOIS, it will keep working for another 6 months.
- But after that, you can’t rely on WHOIS being available for all gTLD domains.
- You still have 6 months to switch from WHOIS to RDAP.

Quick overview of RDAP

- IETF Internet Standard (STD 95):
  - RFC 7480 - HTTP usage
  - RFC 7481 - Security Services
  - RFC 9082 - Query Format
  - RFC 9083 - Response Format
  - RFC 9224 - Bootstrapping
- Available for both name and number registries.
- Based on HTTP and the REST model.
- Responses are encoded in JSON.
- Standardised data structure for domain names, IP address blocks, AS numbers.
- IANA bootstrap registries provide discoverability.
- Command-line, web based and mobile clients available for most platforms, and libraries available for several programming languages.

RDAP Development Timeline

- IETF formed the WEIRDS working group formed in 2011.
- Registration Data Access Protocol (RDAP) published in 2015.
- RIRs began deploying RDAP shortly thereafter.
- First ccTLDs deployed RDAP in 2017.
- gTLD registries and registrars began deploying RDAP in 2019.
- In 2023, the ICANN Board approved amendments to registry and registrar contracts to deprecate Whois in favour of RDAP.

Working with RDAP

- Use a hosted service such as lookup.icann.org
- Use an off-the-shelf client/library
- Use the bootstrap registries
- Use a bootstrap server
- curl and jq are your friend

Available clients and libraries

Client	Language
RDAP Browser	Swift (iOS), Kotlin (Android)
client.rdap.org*	Javascript
rdap.org bootstrap server*	PHP
Net::RDAP / rdapper*	Perl
nicinfo	Ruby
ICANN RDAP client	Rust
OpenRDAP client	Go
rdap.net bootstrap server	Go
DNS Belgium RDAP client	Java
CNNIC RDAP client	Java
Metaregistrar RDAP client	PHP
rdapcheck	Typescript
arrayaccess/rdap-client	PHP
rdap_client	Rust

* maintained by me in my personal capacity.

ICANN's RDAP CLI client

- https://github.com/icann/icann-rdap
- Developed in Rust in order to be portable to many platforms
- Pre-compiled binaries on the GitHub releases page

RDAP pitfalls

- Not all ccTLDs have deployed RDAP yet
  - some have deployed a server, but haven't bootstrapped
- JSON data structures are not always compliant
  - ICANN maintains a conformance tool to help implementers
- Registries sometimes lack the data needed to provide references to registrar RDAP servers
- Rate limiting & WAFs can block access to "suspicious" clients

How to get problems fixed

- Try emailing the registry/registrar first
  - you *should* find an email address in every RDAP response
- Then report to ICANN Compliance
  - https://www.icann.org/compliance/complaint
- The gtld-tech mailing list is a good place to discuss RDAP-related issues
  - https://mm.icann.org/mailman/listinfo/gtld-tech
- Join the regext working group at the IETF to participate in protocol development
  - https://datatracker.ietf.org/wg/regext/

Questions?

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