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RDAP Implementation in the gTLD Space

Tech Day

Francisco Arias

ICANN 63
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ICANN

Agenda

- Introduction

- RDAP Implementation Status in gTLDs

- Next Steps

Introduction

Issues with (port-43) WHOIS

- ⊙ No standardized format

- ⊙ Lack of Support for Internationalization

- ⊙ Unable to authenticate and thus provide different outputs depending on the user

- ⊙ Lookup only; no search support

- ⊙ Lack of standardized redirection/reference

- ⊙ No standardized way of knowing what server to query

- ⊙ Insecure
  - ○ No way to authenticate the server
  - ○ No way to encrypt data between server and client

Chronology of RDAP Implementation [1/2]

- **19 September 2011**: SSAC's SAC 051: "*The ICANN community should evaluate and adopt a replacement domain name registration data access protocol*"

- **28 October 2011**: Board resolution adopts SAC 051

- **4 June 2012**: Roadmap to implement SAC 051 is published

- **2012**: RDAP community development within IETF WG begins

- **March 2015**: RDAP IETF RFCs are published

- **June 2015**: work on the RDAP gTLD Profile which maps RDAP features to existing policy and contractual requirements begins

- **26 July 2016**: Version 1.0 of RDAP gTLD Profile is published

Chronology of RDAP Implementation [2/2]

- **9 August 2016**: The RySG submitted a "Request for Reconsideration" regarding the inclusion of RDAP in the Consistent Labeling & Display policy, among other things

- **1 February 2017**: A revised Consistent Labeling & Display Policy, removing the RDAP requirement was published

- **1 August 2017**: ICANN org received a proposal from the RySG with support from the RrSG to implement RDAP

- **1 September 2017**: ICANN org responded to the RySG accepting the proposal

- **25 May 2017**: The Temporary Specification for gTLD Registration Data calls for gTLD registries and registrars to implement RDAP following a common profile, SLA, and registry reporting

RDAP Features [1/2]

The Registration Data Access Protocol (RDAP) is a protocol designed in the IETF (RFCs 7480 - 7484) to replace the existing WHOIS protocol and provides the following benefits:

- ⊙ Standardized query, response and error messages

- ⊙ Secure access to data (i.e., over HTTPS)

- ⊙ Extensibility (e.g., easy to add output elements)

- ⊙ Enables differentiated access (e.g., limited access for anonymous users, full access for authenticated users)

RDAP Features [2/2]

⊙ Bootstrapping mechanism to easily find the authoritative server for a given query

⊙ Standardized redirection/reference mechanism (e.g., from a registry to a registrar)

⊙ Builds on top of the well-known web protocol, HTTP

⊙ Internationalization support for registration data
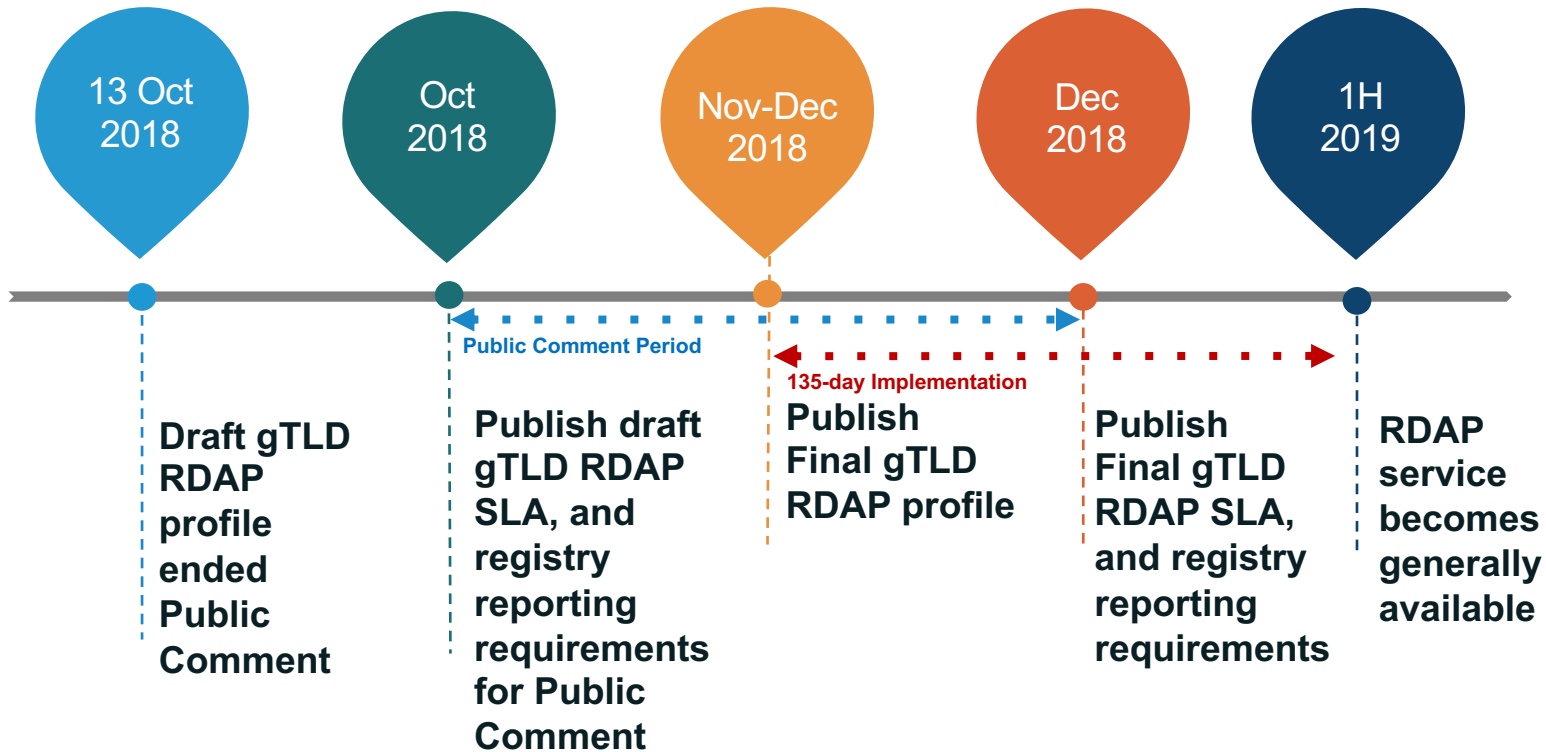
⊙ Enables searches for objects (e.g., domain names)

RDAP Implementation Status in gTLDs

Implementation Status

- The Temporary Specification for gTLD Registration Data calls for gTLD registries and registrars to implement RDAP following a common profile, SLA, and registry reporting requirements

- A proposal for a gTLD RDAP Profile ended its public comment period on 13 October 2018

- ICANN org and the contracted parties continue to negotiate an RDAP SLA and registry reporting requirements

Expected Implementation Timeline

13 Oct 2018
Draft gTLD RDAP profile ended Public Comment

Oct 2018
Publish draft gTLD RDAP SLA, and registry reporting requirements for Public Comment

Public Comment Period

Nov-Dec 2018
Publish Final gTLD RDAP profile

135-day Implementation

Dec 2018
Publish Final gTLD RDAP SLA, and registry reporting requirements

1H 2019
RDAP service becomes generally available

Next Steps

Differentiated Access

- The Temporary Specification for gTLD Registration Data sets the basis for differentiated access by defining a minimum output and requiring contracted parties to provide access to further data on the basis of a legitimate interest

- Further policy work/requirements have to be developed in order to have a Unified Access Model that would provide for this access in a consistent way in the gTLD space

- On the technical side, authentication/authorization technologies have to be chosen in order to have a unified implementation

RDAP Client

- ⊙ API for technical and frequent users:
  - ○ RDAP by itself provides this

- ⊙ Command line for technical, non-frequent users:
  - ○ There are a couple of freely available clients
  - ○ Ultimately, web crawlers (e.g., curl, wget) with some JSON formatter could be enough

- ⊙ Web interface for the non-technical users providing "human-friendly" HTML output:
  - ○ ICANN likely interested to offer one; maybe others?
  - ○ Un-authenticated queries work if "Access-Control-Allow-Origin" header included (RFC 7480, §5.6 recommends it)
  - ○ Authenticated queries may or may not work depending on the authentication technology

Resources

- ⊙ RDAP page: https://icann.org/rdap

- ⊙ Pilot page:
  https://community.icann.org/display/RP/RDAP+Pilot
  - ○ Six registries covering 50+ gTLDs

- ⊙ Mailing list:
  https://mm.icann.org/mailman/listinfo/gtld-tech

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