From Whois to RDAP

David Huberman
2 June 2025


ARPANET

```
> finger alex
Login: alex                             Name: Alex
Directory: /home/alex                   Shell: /bin/bash
Office: 98, 84893202                    Home Phone: 19283893
On since Wed Aug 21 18:38 (UTC) on pts/2 from 192.168.64.1
    25 seconds idle
No mail.
No Plan.
>
```

Ken Harrenstien
Vic White
Network Information Center
SRI International

RFC-812
1 March 1982

NICNAME/WHOIS

INTRODUCTION

The NICNAME/WHOIS Server is an NCP/TCP transaction based query/response server, running on the SRI-NIC machine, that provides netwide directory service to ARPANET users. It is one of a series of ARPANET/Internet name services maintained by the Network Information Center (NIC) at SRI International on behalf of the Defense Communications Agency (DCA). The server is accessible across the ARPANET from user programs running on local hosts, and it delivers the full name, U.S. mailing address, telephone number, and network mailbox for ARPANET users.

This server, together with the corresponding Identification Data Base provides online directory look-up equivalent to the ARPANET Directory. DCA strongly encourages network hosts to provide their users with access to this network service.

WHO SHOULD BE IN THE DATA BASE

DCA requests that each individual with a directory on an ARPANET host, who is capable of passing traffic across the ARPANET, be registered in the NIC Identification Data Base. To register, send full name, middle initial, U.S. mailing address (including mail stop and full explanation of abbreviations and acronyms), ZIP code, telephone (including Autovon and FTS, if available), and one network mailbox, via electronic mail to NIC@SRI-NIC.

Network Working Group
Request for Comments: 954
Obsoletes: RFC 812

K. Harrenstien (SRI)
M. Stahl (SRI)
E. Feinler (SRI)
October 1985

NICNAME/WHOIS

STATUS OF THIS MEMO

This RFC is the official specification of the NICNAME/WHOIS protocol. This memo describes the protocol and the service. This is an update of RFC 812. Distribution of this memo is unlimited.

INTRODUCTION

The NICNAME/WHOIS Server is a TCP transaction based query/response server, running on the SRI-NIC machine (26.0.0.73 or 10.0.0.51), that provides netwide directory service to internet users. It is one of a series of internet name services maintained by the DDN Network Information Center (NIC) at SRI International on behalf of the Defense Communications Agency (DCA). The server is accessible across the Internet from user programs running on local hosts, and it delivers the full name, U.S. mailing address, telephone number, and network mailbox for DDN users who are registered in the NIC database.

This server, together with the corresponding WHOIS Database can also deliver online look-up of individuals or their online mailboxes, network organizations, DDN nodes and associated hosts, and TAC telephone numbers. The service is designed to be user-friendly and the information is delivered in human-readable format. DCA strongly encourages network hosts to provide their users with access to this network service.

```
WHOIS Server: whois.launchpad.com

Domain Name: LISTOFFREEWARE.COM
Registry Domain ID:
Registrar WHOIS Server: whois.launchpad.com
Registrar URL: LaunchPad.com
Updated Date: 23-Dec-2013
Creation Date: 23-Oct-2013
Registrar Registration Expiration Date: 23-Oct-2016
Registrar: Launchpad, Inc. (HostGator)
Registrar IANA ID: 955
Registrar Abuse Contact Email: abuse@websitewelcome
Registrar Abuse Contact Phone: +1.713-574-5287
Domain Status: clientTransferProhibited
Registry Registrant ID: HG_25956450
Registrant Name: Ishan Bansal
Registrant Organization: N/A
Registrant Street: 543 Sector 31
Registrant City: Faridabad
```

```
DAHU-9214:~ david.huberman$ whois -h whois.ripe.net 80.10.159.0
inetnum:        80.10.159.0 - 80.10.159.255
netname:        ORANGE-FR
descr:          Orange
country:        FR
admin-c:        AR10027-RIPE
tech-c:         ER1049-RIPE
status:         ASSIGNED PA
remarks:        for security problems, send mail to abuse.mobile@orange.fr
mnt-by:         FT-BRX
created:        2012-07-03T09:14:57Z
last-modified:  2012-09-18T08:35:03Z
source:         RIPE

role:           Architectes Reseau
address:        ORANGE FRANCE
address:        1 avenue Nelson Mandela, 94745 Arcueil Cedex
admin-c:        BRX1-RIPE
tech-c:         BRX1-RIPE
nic-hdl:        AR10027-RIPE
mnt-by:         FT-BRX
created:        2011-09-21T13:44:11Z
last-modified:  2025-04-29T09:34:23Z
source:         RIPE # Filtered

role:           EXPERT Reseau
address:        ORANGEFRANCE
address:        1 avenue Nelson Mandela, 94745 Arcueil Cedex
admin-c:        BRX1-RIPE
tech-c:         BRX1-RIPE
nic-hdl:        ER1049-RIPE
mnt-by:         FT-BRX
created:        2005-01-05T15:06:21Z
last-modified:  2025-05-06T13:55:56Z
source:         RIPE # Filtered
```

```
last-modified:  2018-11-22T15:27:31Z
source:         RIPE

% Information related to 'AS28708'

% Abuse contact for 'AS28708' is 'gestionip.ft@orange.com'

aut-num:        AS28708
as-name:        ORANGEFR-PORTAL-AS
descr:          DSI mutualized internet access
import:         from AS3215 action pref=100; accept any
import:         from AS5511 action pref=100; accept any
export:         to AS3215 announce AS28708
export:         to AS5511 announce AS28708
org:            ORG-FT2-RIPE
admin-c:        FTDD1-RIPE
tech-c:         FTDD1-RIPE
status:         ASSIGNED
mnt-by:         RIPE-NCC-END-MNT
mnt-by:         FT-BRX
created:        2003-02-05T09:08:42Z
last-modified:  2017-11-15T09:20:33Z
source:         RIPE

organisation:   ORG-FT2-RIPE
org-name:       Orange S.A.
country:        FR
org-type:       LIR
```

STD 95

Status | History

STD 95 consists of:

RFC 7480 : HTTP Usage in the Registration Data Access Protocol (RDAP)

RFC 7481 : Security Services for the Registration Data Access Protocol (RDAP)

RFC 9082 : Registration Data Access Protocol (RDAP) Query Format

RFC 9083 : JSON Responses for the Registration Data Access Protocol (RDAP)

RFC 9224 : Finding the Authoritative Registration Data Access Protocol (RDAP) Service

← References | → Referenced by

Benefits of RDAP

Structured queries

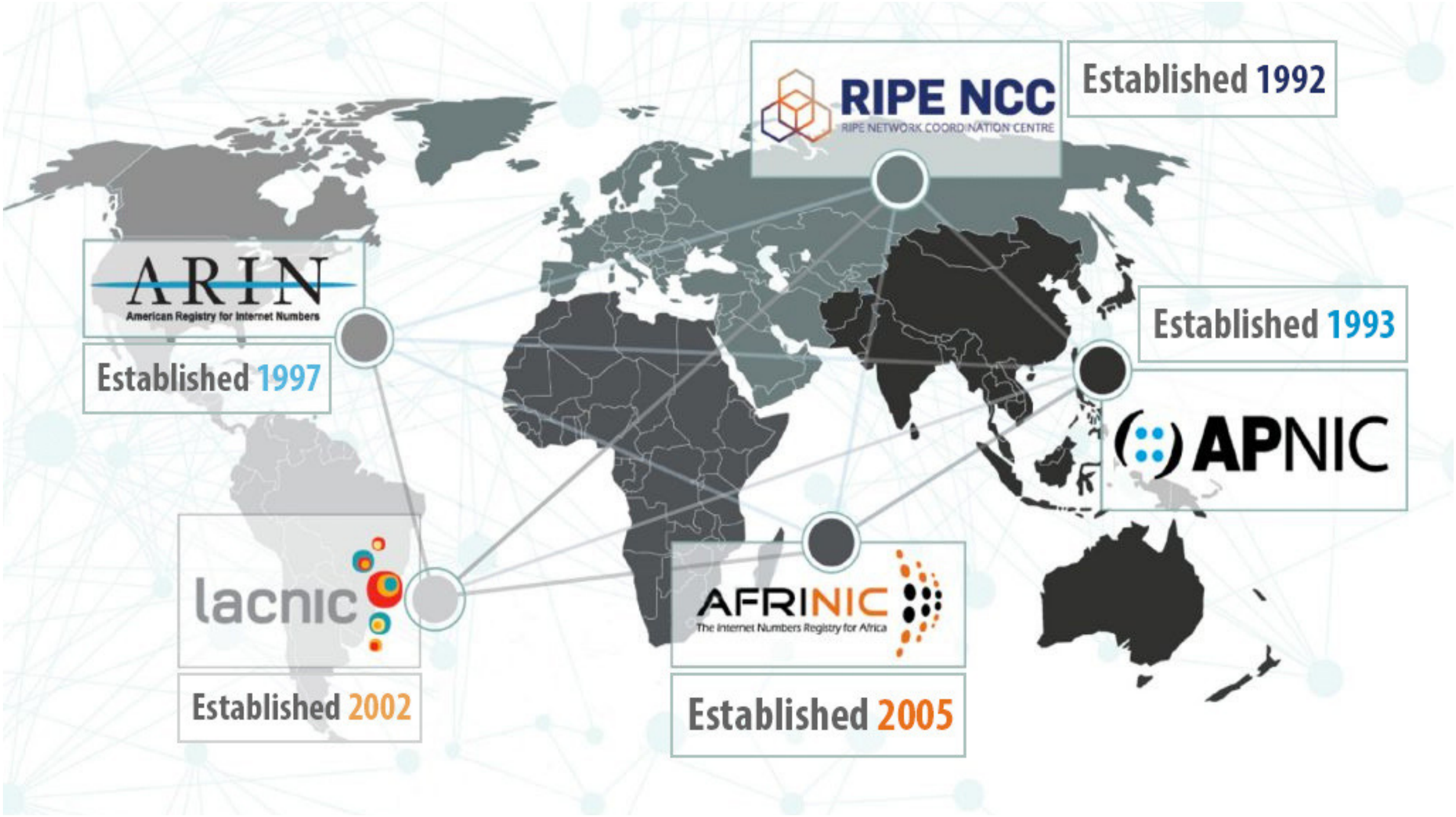
Structured responses

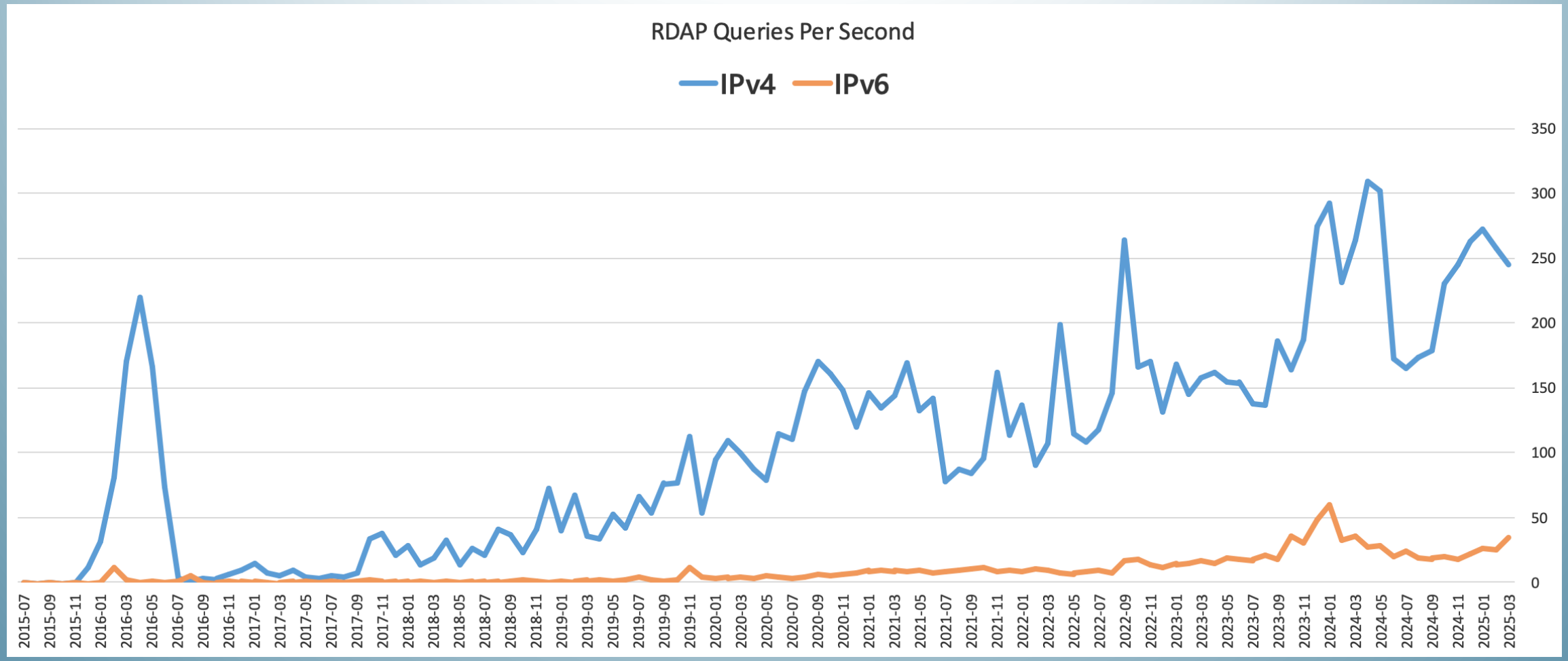
Internationalization

Transport security

Authoritative servers

Extensibility


RIPE NCC
RIPE NETWORK COORDINATION CENTRE
Established 1992
ARIN
American Registry for Internet Numbers
Established 1997
Established 1993
APNIC
lacnic
Established 2002
AFRINIC
The Internet Numbers Registry for Africa
Established 2005


RDAP Queries Per Second
IPv4
IPv6
350
300
250
200
150
100
50
0
2015-07
2015-09
2015-11
2016-01
2016-03
2016-05
2016-07
2016-09
2016-11
2017-01
2017-03
2017-05
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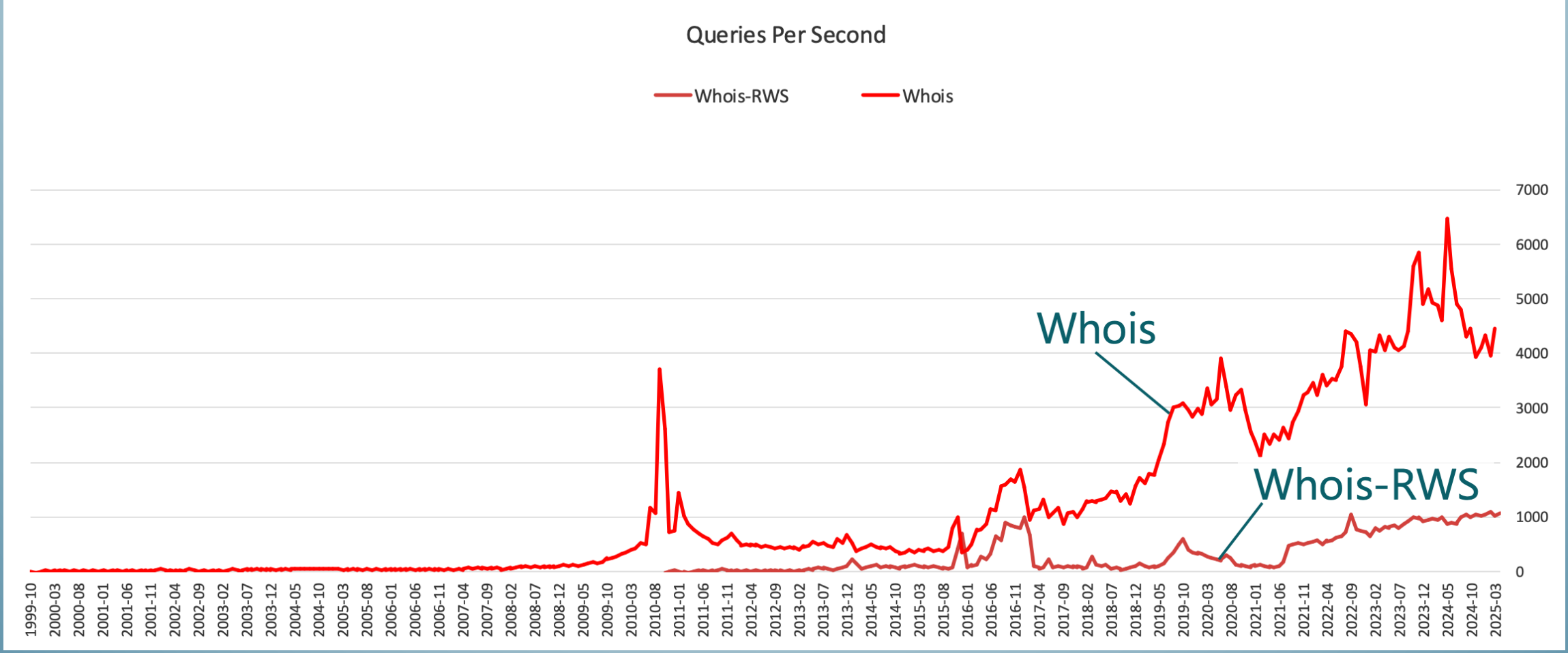
2025-01
2025-03


Queries Per Second
Whois-RWS
Whois
Whois
Whois-RWS
7000
6000
5000
4000
3000
2000
1000
0
1999-10
2000-03
2000-08
2001-01
2001-06
2001-11
2002-04
2002-09
2003-02
2003-07
2003-12
2004-05
2004-10
2005-03
2005-08
2006-01
2006-06
2006-11
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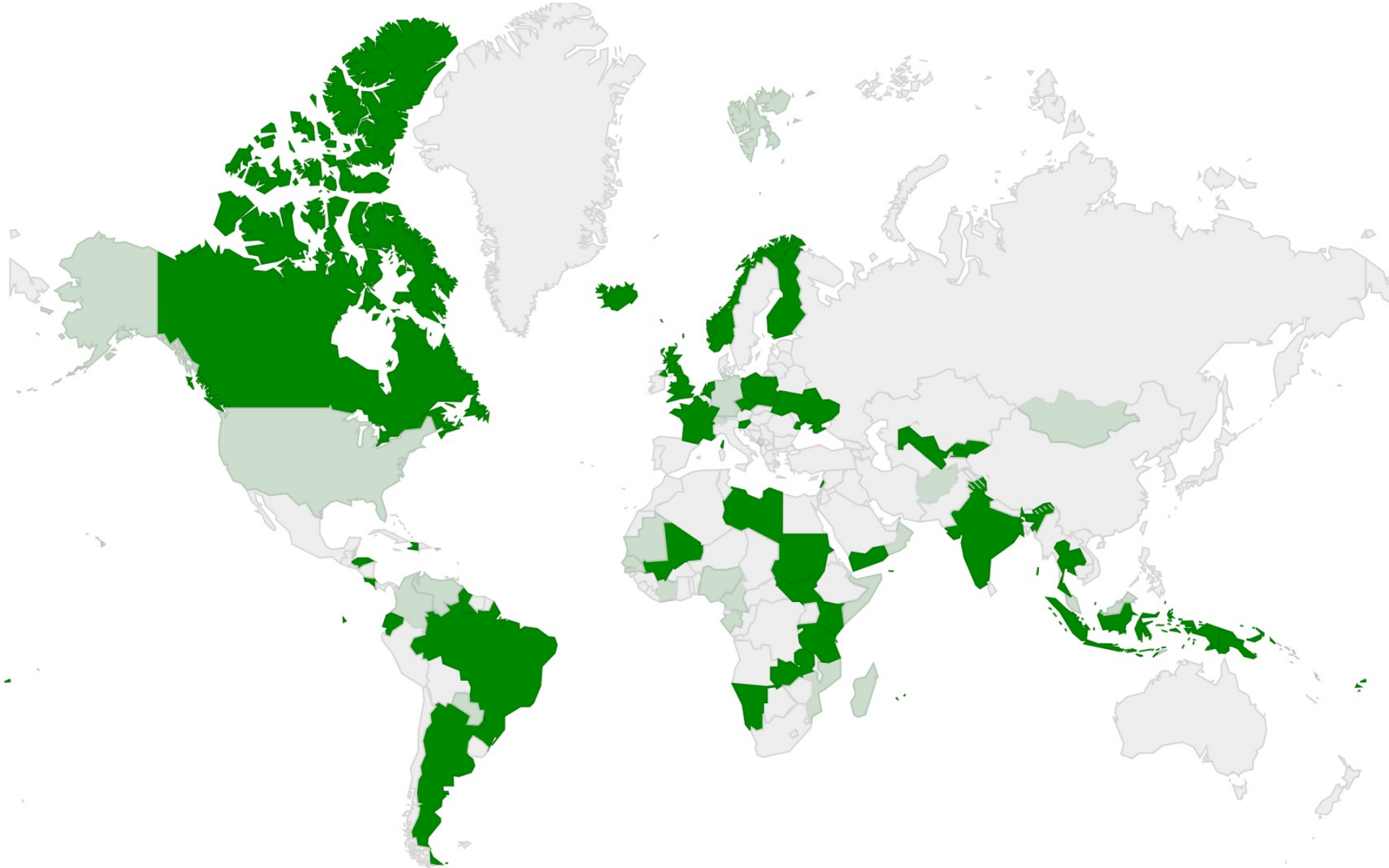
2019-10
2020-03
2020-08
2021-01
2021-06
2021-11
2022-04
2022-09
2023-02
2023-07
2023-12
2024-05
2024-10
2025-03


GTLD RDAP DEPLOYMENT
100
imgflip.com

World map showing ccTLD RDAP deployments




85%

4. Client Implementations

4.1. Web Applications

4.2. Mobile Applications

4.3. CLI Applications

4.4. Libraries

5. Server Implementations

5.1. Authoritative Servers

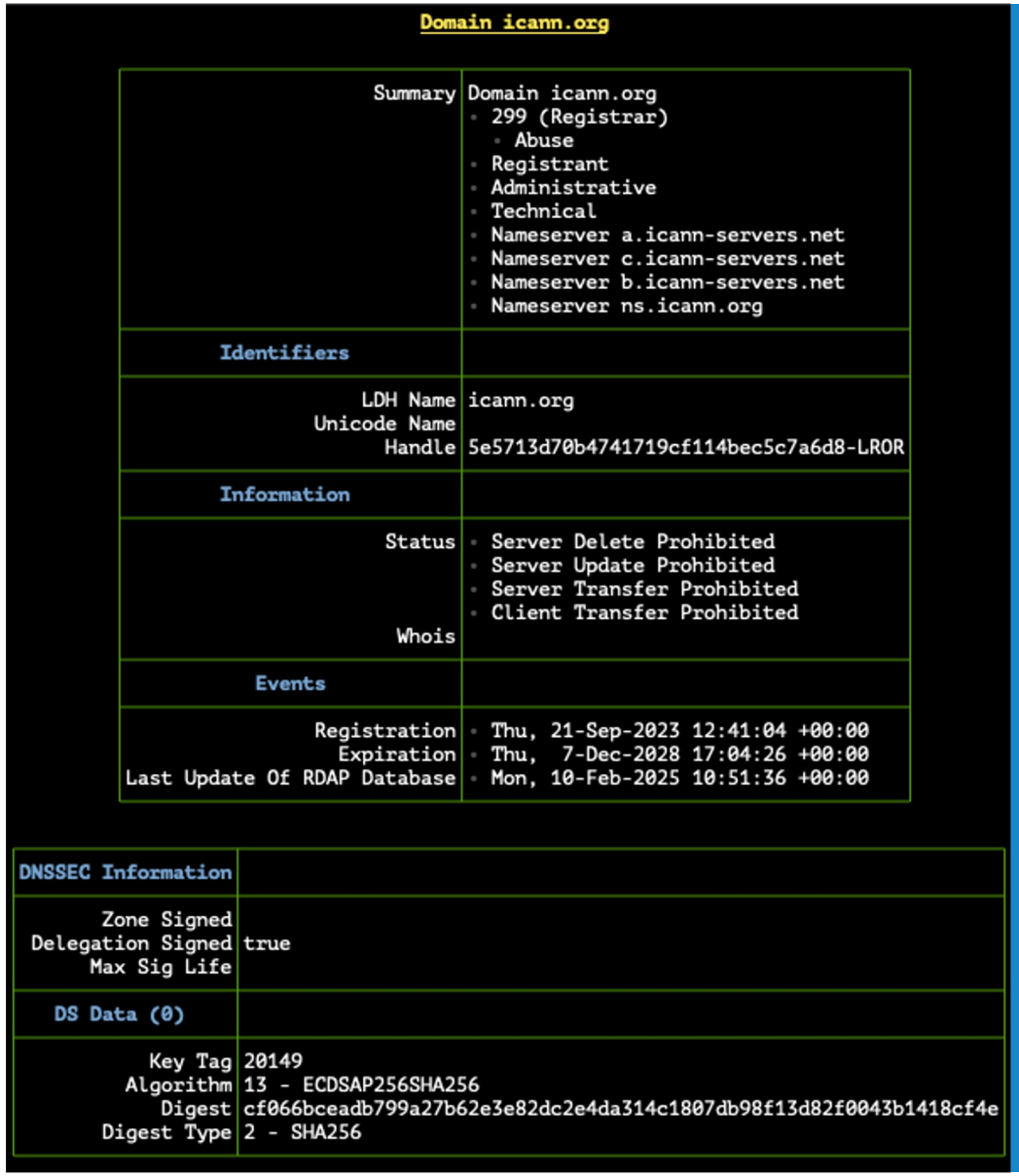
5.2. Redirect Servers

5.3. Conformance Tools

There are many implementations of RDAP clients and servers.

Many are cataloged at https://rdap.rcode3.com

- 40+ client implementations
- 15+ server implementations
- 5+ conformance tools



Domain icann.org

Summary	Domain icann.org • 299 (Registrar) • Abuse • Registrant • Administrative • Technical • Nameserver a.icann-servers.net • Nameserver c.icann-servers.net • Nameserver b.icann-servers.net • Nameserver ns.icann.org
Identifiers	
LDH Name	icann.org
Unicode Name	
Handle	5e5713d70b4741719cf114bec5c7a6d8-LROR
Information	
Status	• Server Delete Prohibited • Server Update Prohibited • Server Transfer Prohibited • Client Transfer Prohibited
Whois	
Events	
Registration	• Thu, 21-Sep-2023 12:41:04 +00:00
Expiration	• Thu, 7-Dec-2028 17:04:26 +00:00
Last Update Of RDAP Database	• Mon, 10-Feb-2025 10:51:36 +00:00

DNSSEC Information	
Zone Signed Delegation Signed Max Sig Life	true
DS Data (0)	
Key Tag	20149
Algorithm	13 - ECDSAP256SHA256
Digest	cf066bceadb799a27b62e3e82dc2e4da314c1807db98f13d82f0043b1418cf4e
Digest Type	2 - SHA256

ICANN actively updates and maintains an open-source, RDAP client for the command line.

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

If you have HomeBrew installed (macOS, Linux, WSL):

brew install icann-rdap

Registration data lookup tool

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

Enter a value

Lookup

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.

For additional information on ICANN Accredited Registrars including website and contact information, please visit https://www.icann.org/en/accredited-registrars.

About ICANN's registration data lookup tool

The ICANN registration data lookup tool gives you the ability to look up the current registration data for domain names and Internet number resources. The tool uses the Registration Data Access Protocol (RDAP) which was created as a replacement of the WHOIS (port 43) protocol. RDAP was developed by the technical community in the Internet Engineering Task Force (IETF).

RDAP has several advantages over the WHOIS protocol, including more secure access to data, a standardized and user-friendly format, support for internationalization, and the ability to provide differentiated access to registration data. More information can be found here. For additional information on registration data, please visit the Registration Data at ICANN page.

Nonpublic registration data

To request access to nonpublic registration data, use the Registration Data Request Service (RDRS). Please make sure you have first checked that the data is unavailable through the lookup tool. The RDRS is intended for use by those with a legitimate interest in nonpublic data like law enforcement, intellectual property professionals, consumer protection advocates, cybersecurity professionals, and government officials. For more information on the RDRS, visit https://www.icann.org/rdrs-en.

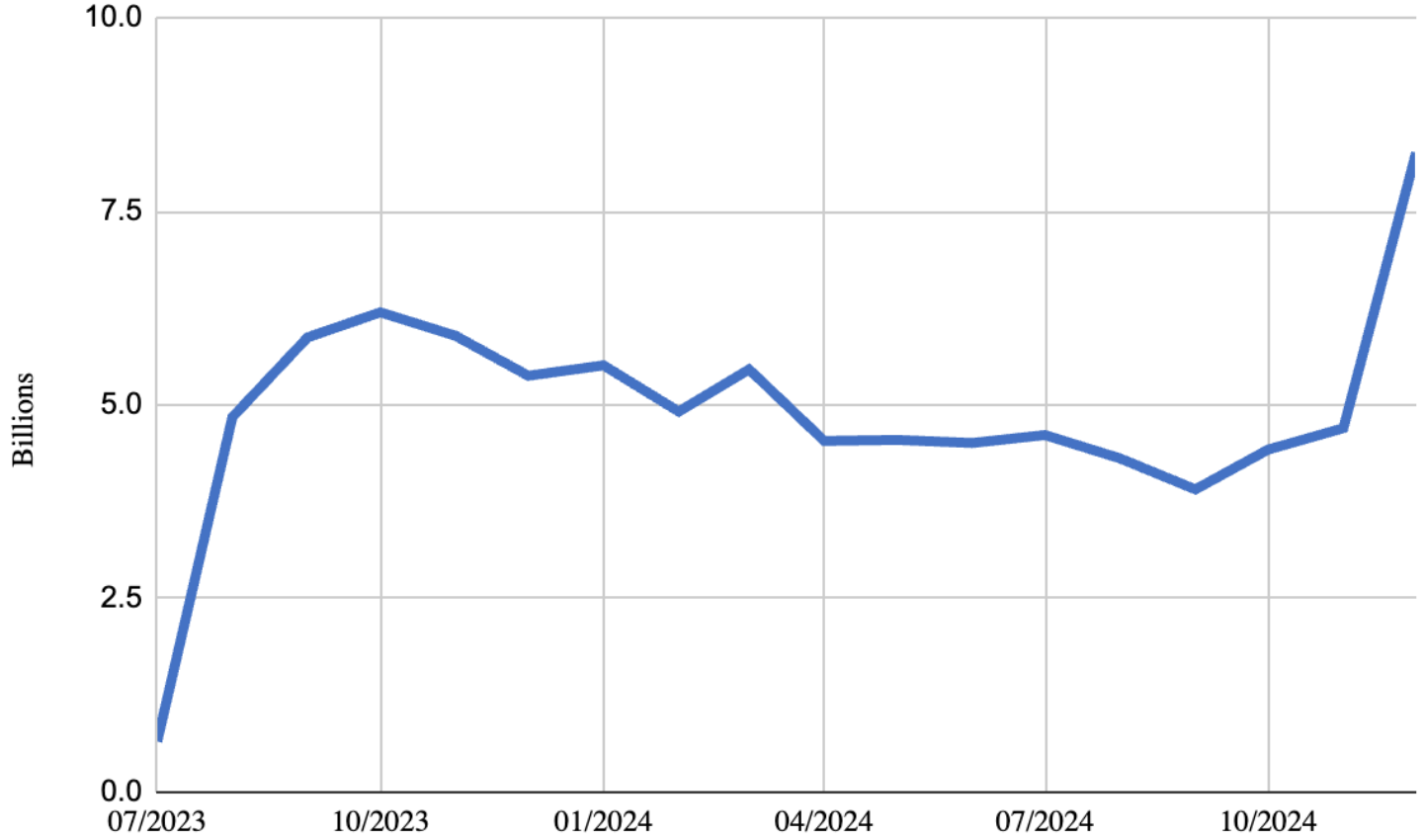
REGISTRATION DATA LOOKUP TOOL TERMS OF USE

The registration data lookup tool conducts Registration Data Access Protocol (RDAP) queries. RDAP enables users to access current registration data and

RDAP Conformance Tool (RDAPCT)

- ICANN actively maintains the RDAP Conformance Tool to help contracted parties with their compliance with STD 95 and the gTLD profile.
- Can be run locally or web browser.
- Download local version from GitHub: https://github.com/icann/rdap-conformance-tool
- Requires either Java or Docker
- Web browser version is at https://webrdapct.icann.org
- Runs in ICANN's network

gTLD RDAP Queries Rising




PRESENTATION FINISHED
...ANY QUESTIONS?
makeameme.org