

The Current State of RDAP

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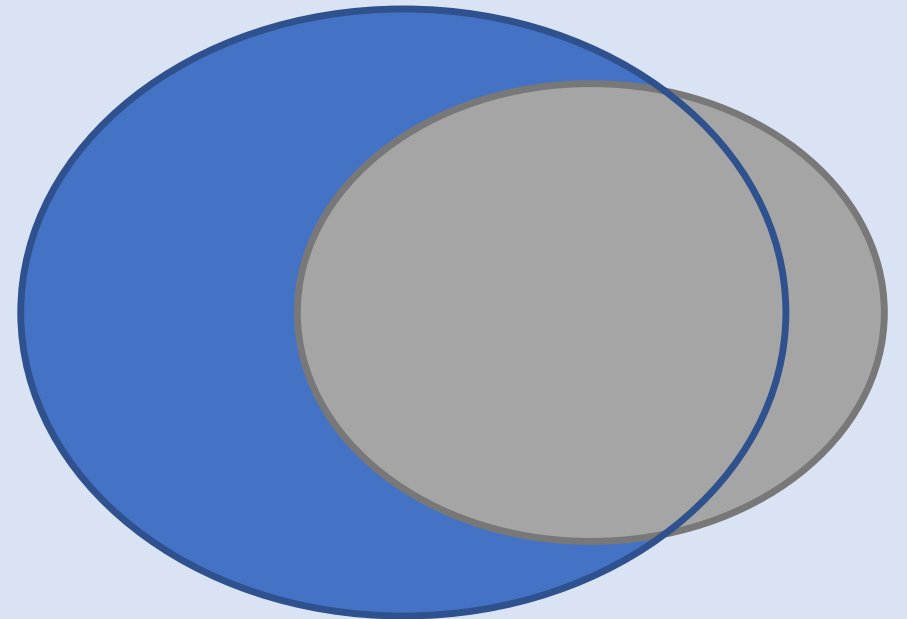
RDAP: A Primer

- Registry Data Access Protocol
 - ARIN & RIPE NCC independently developed separate, incompatible RESTful services for Whois
 - Many people want a fix to the technical problems of Whois
 - No internationalization
 - No clear method for finding authoritative services
 - No authentication
 - No security
 - Many, many different output formats
- The IETF decides to address the problem
 - Produces RFCs in March 2015

RDAP Basics

- REST – JSON over HTTPS
 - HTTPS for security and authentication
 - JSON for structure and I18N
- Supports both Domain Name Registries and IP Address Registries

RDAP RIR-centric operations are a superset of DNR queries and data are modeled such that operations, for the most part.



JSON Response

Searches



Search Results

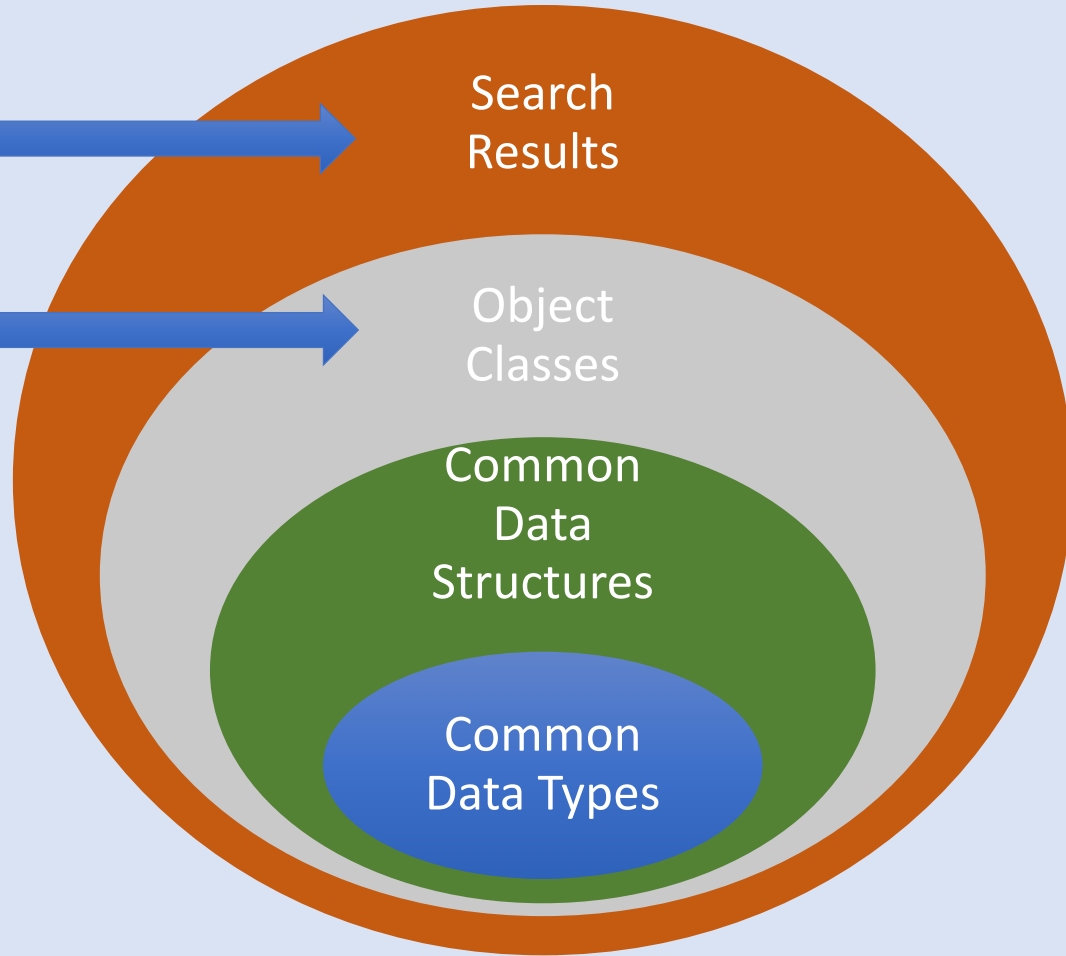
Lookups



Object Classes

Common Data Structures

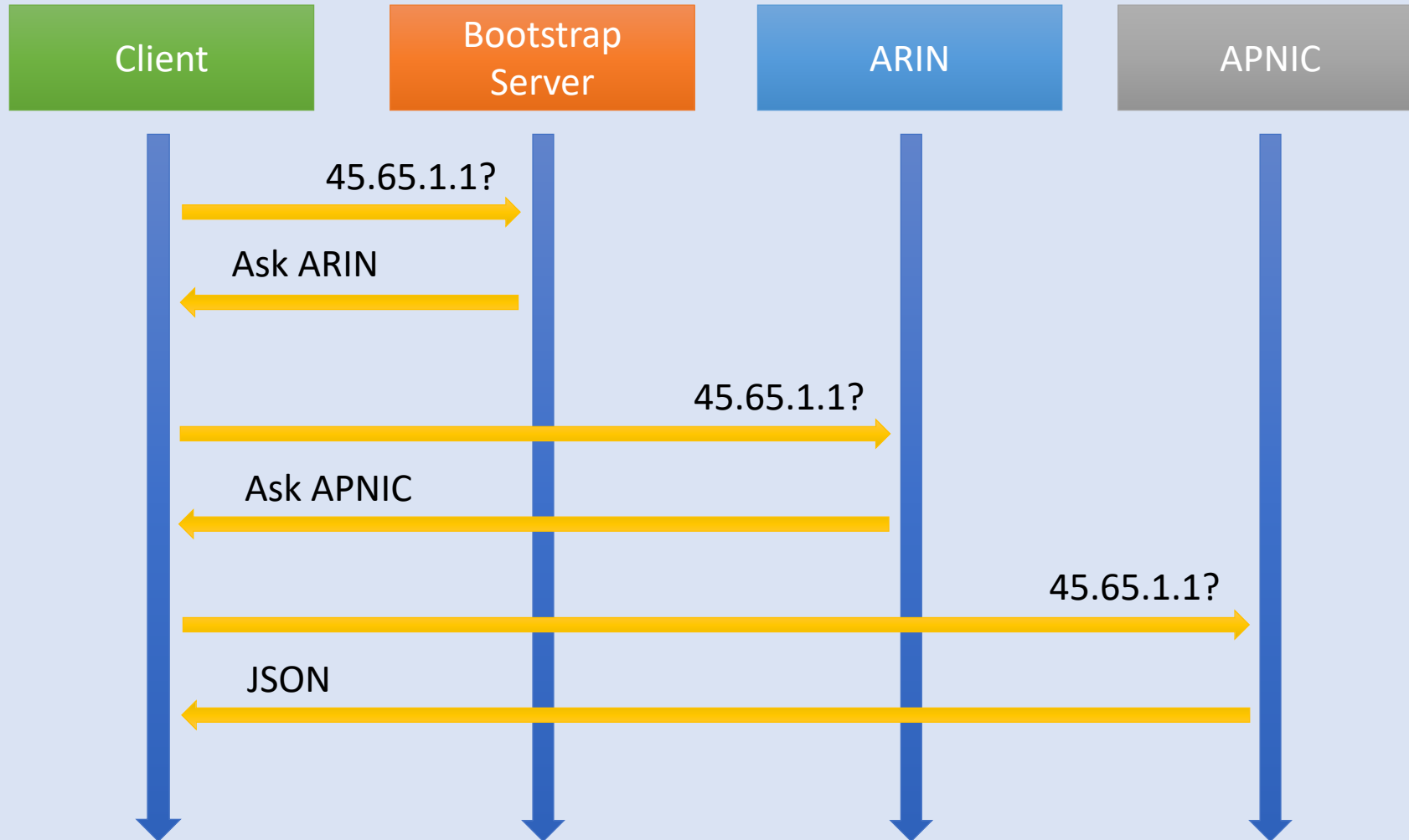
Common Data Types



Bootstrapping

- Or... how to find the right server for a query
- IANA will periodically publish bootstrap JSON files
 - <http://data.iana.org/rdap/asn.json>
 - <http://data.iana.org/rdap/ipv4.json>
 - <http://data.iana.org/rdap/ipv6.json>
 - <http://data.iana.org/rdap/dns.json>
- Client will periodically go fetch them

Bootstrapping for IP Addresses



It's been 3 years! Where are we?



RIR Deployments

- Now deployed by all 5 RIRs.
- Plus bootstrap servers
 - Takes the IANA bootstrap files and issues HTTP redirects when queried
 - Clients no longer need to worry about bootstrapping
 - ARIN developed, deployed, and open sourced
 - LACNIC improved upon it, and deployed
- LACNIC has two-tiered authentication
 - Rate limits unless you use an API KEY

DNR Deployments

- VeriSign
 - com and net
- ccTLDs
 - .ar
 - .cr
 - .cz
 - .br

Tooling

- ARIN, LACNIC, and APNIC have developed conformance test suites
- NicInfo – the **BEST** command line client as reviewed by Mark Kosters
 - `gem install nicinfo`
- > 30 GitHub projects related to RDAP
- Visual AS tool from APNIC
 - apnic.net/vizas
- APNIC has an incredible blog series on RDAP

APNIC's RDAP "WhoWas"

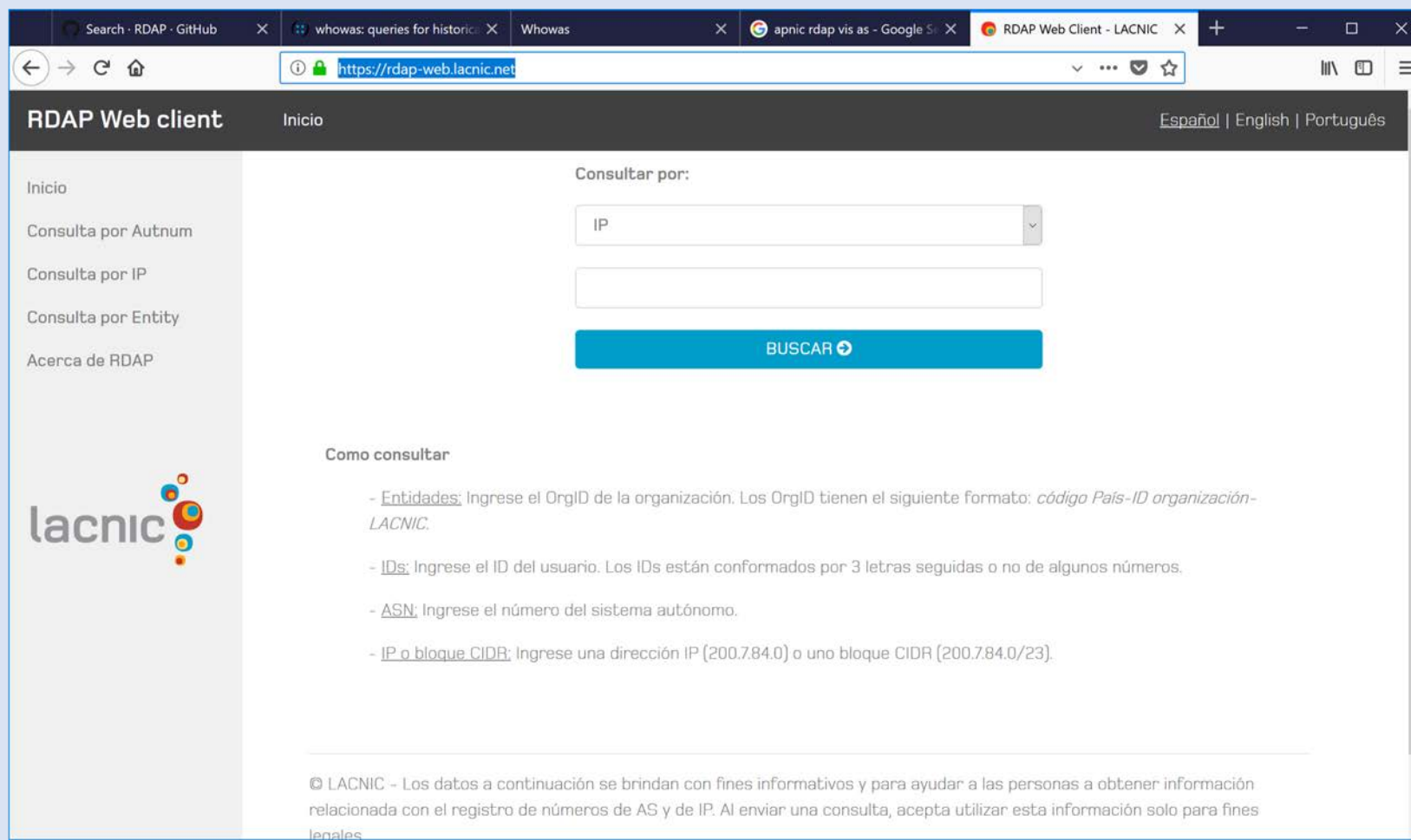
apnic.net/whowas

The screenshot displays the APNIC RDAP WhoWas interface. The browser address bar shows the URL `https://apnic-net.github.io/rdap-history-ui/#202.12.31.0/24`. The page header includes the APNIC logo and a "WHOIS SEARCH" button. The main content area features a search bar with the IP address `202.12.31.0/24` and a timeline from 2008 to 2018. The timeline shows several data points, with the most recent one on 2017. Below the timeline, the network details are displayed:

- network name: APNIC-SERVICES
- network: 202.12.31.0 - 202.12.31.255
- country: AU
- type: ASSIGNED PORTABLE
- description: APNIC-ANYCAST
Asia Pacific Network Information Centre
Regional Internet Registry for the Asia-Pacific Region
- handle: [IRT-APNIC-IS-AP](#)
- name: IRT-APNIC-IS-AP
- kind: group
- address: South Brisbane, Australia
- email: (not visible)

LACNIC's very new Web Client

<https://rdap-web.lacnic.net/>



The screenshot shows a web browser window with the URL <https://rdap-web.lacnic.net/>. The page title is "RDAP Web client" and the current page is "Inicio". The interface is in Spanish. On the left, there is a navigation menu with the following items: Inicio, Consulta por Autnum, Consulta por IP, Consulta por Entity, and Acerca de RDAP. The main content area has a search form titled "Consultar por:" with a dropdown menu currently set to "IP" and an empty text input field below it. A blue "BUSCAR" button is positioned below the input fields. Below the search form, there is a section titled "Como consultar" with the following instructions:

- Entidades: Ingrese el OrgID de la organización. Los OrgID tienen el siguiente formato: *código País-ID organización-LACNIC*.
- IDs: Ingrese el ID del usuario. Los IDs están conformados por 3 letras seguidas o no de algunos números.
- ASN: Ingrese el número del sistema autónomo.
- IP o bloque CIDR: Ingrese una dirección IP (200.7.84.0) o uno bloque CIDR (200.7.84.0/23).

At the bottom of the page, there is a copyright notice: "© LACNIC - Los datos a continuación se brindan con fines informativos y para ayudar a las personas a obtener información relacionada con el registro de números de AS y de IP. Al enviar una consulta, acepta utilizar esta información solo para fines legales."

The Future

- ARIN - planning search networks by Origin AS
- IETF – federated authentication using Oauth
- Gaps between the RIR implementations
 - “Death to Whois” – Matt Griswold presentation at NANOG *
 - Comments on ARIN and RIPE mailing lists
 - Issues discovered by staff
 - Working with the other RIRs to address problems, fix implementations, and improve the standard
- Bulk RDAP
 - Wouldn't it be great if all 5 RIRs had the same bulk data format?

* https://pc.nanog.org/static/published/meetings/NANOG72/1601/20180220_Griswold_Death_To_Whois_v1.pdf

Questions? Comments?

