RIR RDAP Profile & Related Standardization Work

Registration Operations Workshop 12

20 June 2023

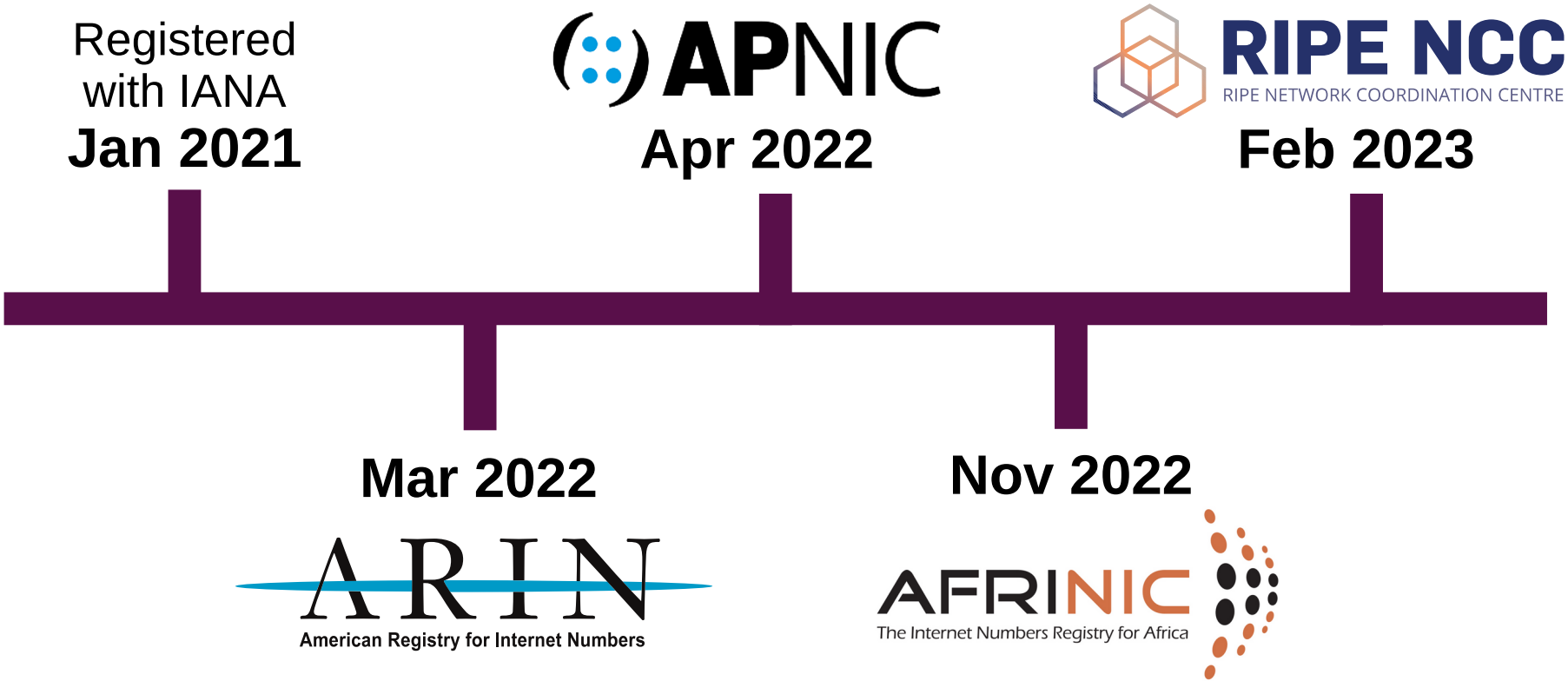
What is the RIR RDAP Profile?

- A set of additional requirements past those from the base RDAP documents
- Similar purpose to the ICANN gTLD RDAP Profile
- Available at https://www.iana.org/assignments/rdap-extensions/rdap-extensions.xhtml

Why is it useful?

- The base RDAP documents are very flexible
- Additional requirements can be placed on RIR implementations and number implementations more generally
- These requirements/conditions help to ease the burden on client implementors

History

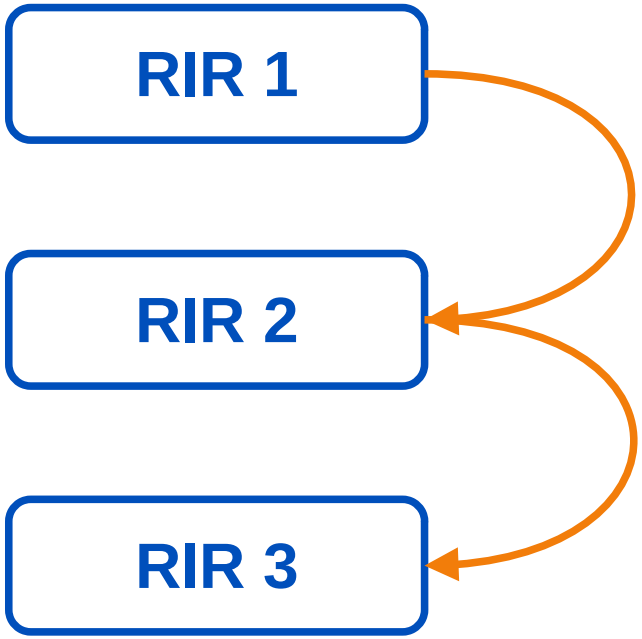

Registered with IANA
Jan 2021
APNIC
Apr 2022
RIPE NCC
RIPE NETWORK COORDINATION CENTRE
Feb 2023
Mar 2022
ARIN
American Registry for Internet Numbers
Nov 2022
AFRINIC
The Internet Numbers Registry for Africa

Query resolution (RFC 9224)

- Client retrieves bootstrap file from IANA
- Contains delegations from IANA to RIRs and the RDAP server to query
- Does not define server behaviour where resources have been transferred


```
{
  "description": "RDAP bootstrap file for IPv4
address allocations",
  "publication": "2019-06-07T19:00:02Z",
  "services": [
    [
      [
        "41.0.0.0/8",
        "102.0.0.0/8",
        "105.0.0.0/8",
        "154.0.0.0/8",
        "196.0.0.0/8",
        "197.0.0.0/8"
      ],
      [
        "https://rdap.afrinic.net/rdap/",
        "http://rdap.afrinic.net/rdap/"
      ]
    ],
    …
  ]
}
```

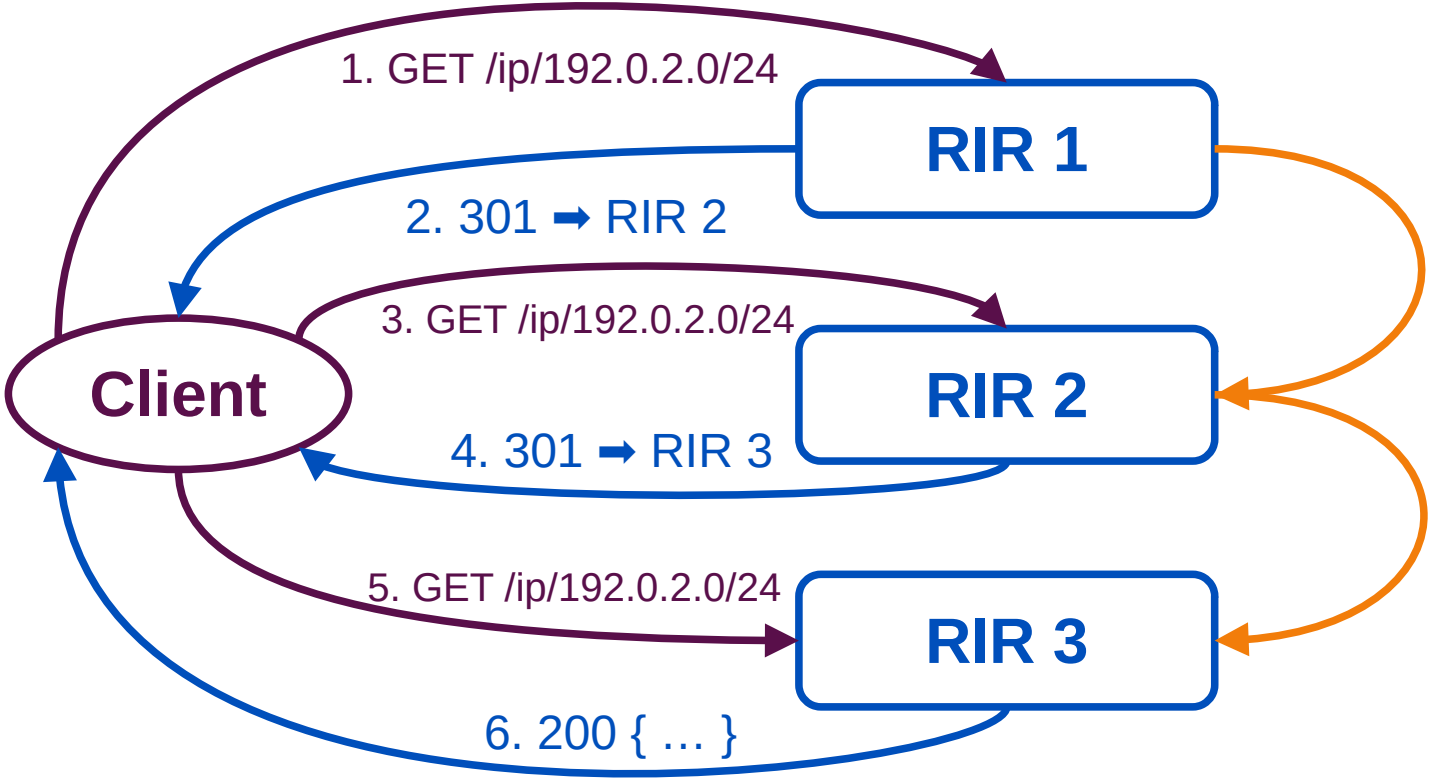
Query resolution (profile) (1)



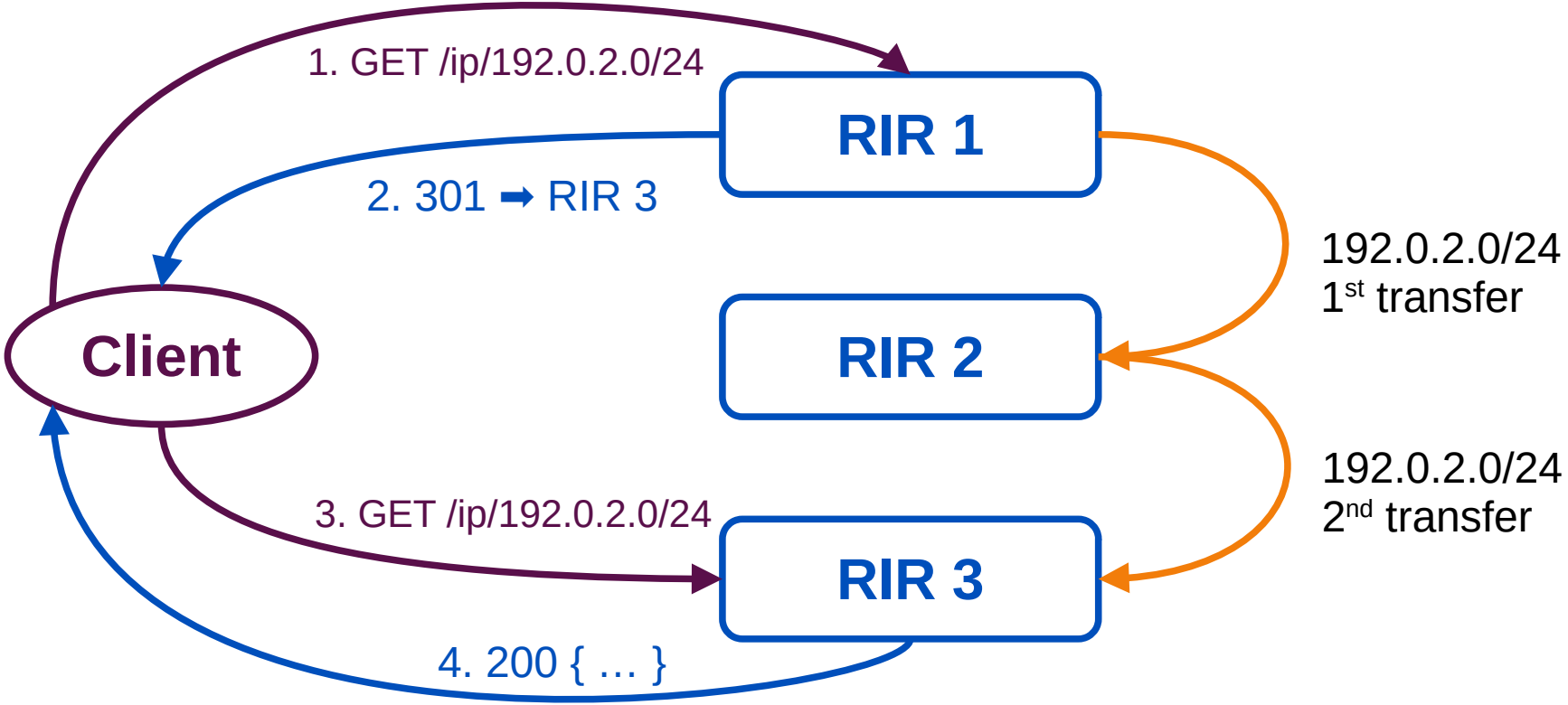
192.0.2.0/24 first transferred from RIR 1 to RIR 2

192.0.2.0/24 then transferred from RIR 2 to RIR 3

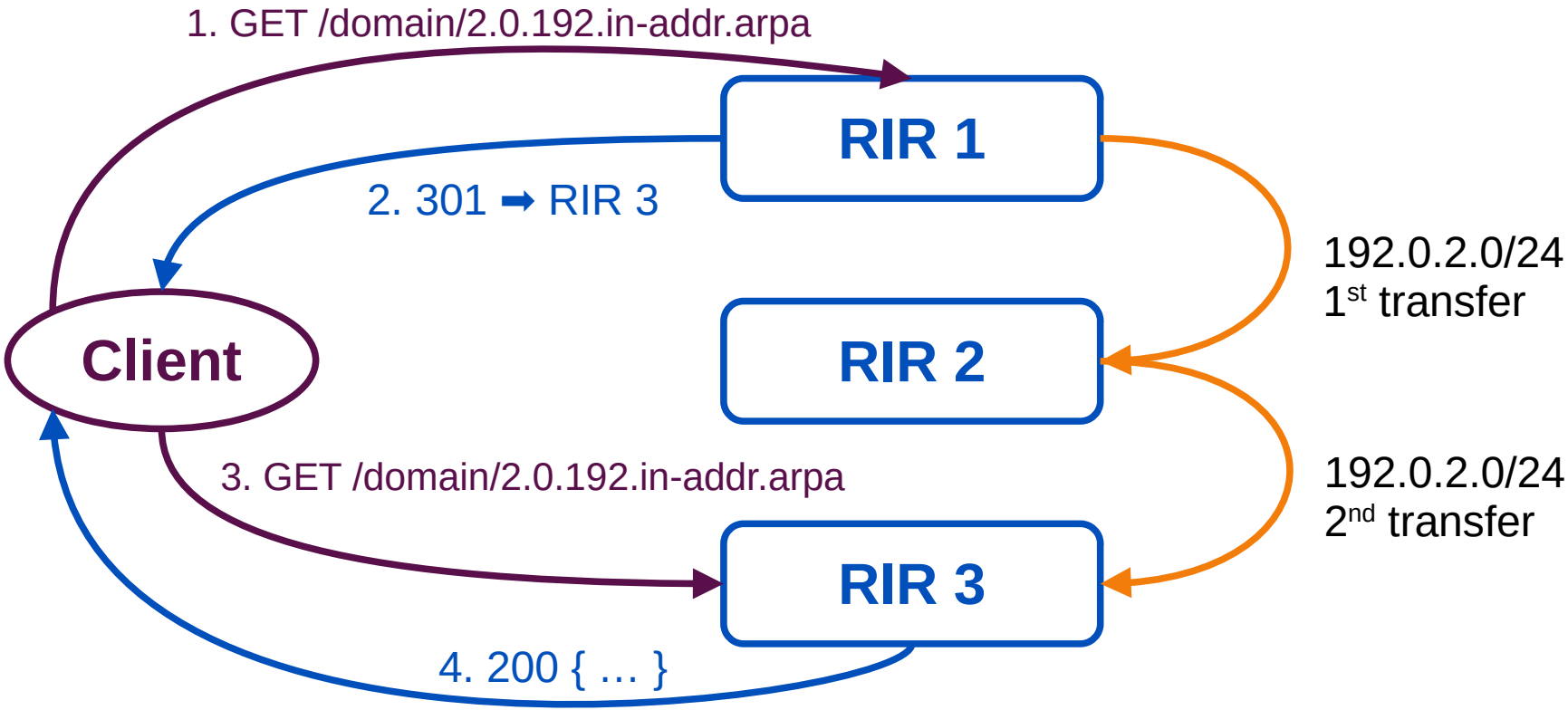
Query resolution (profile) (2)



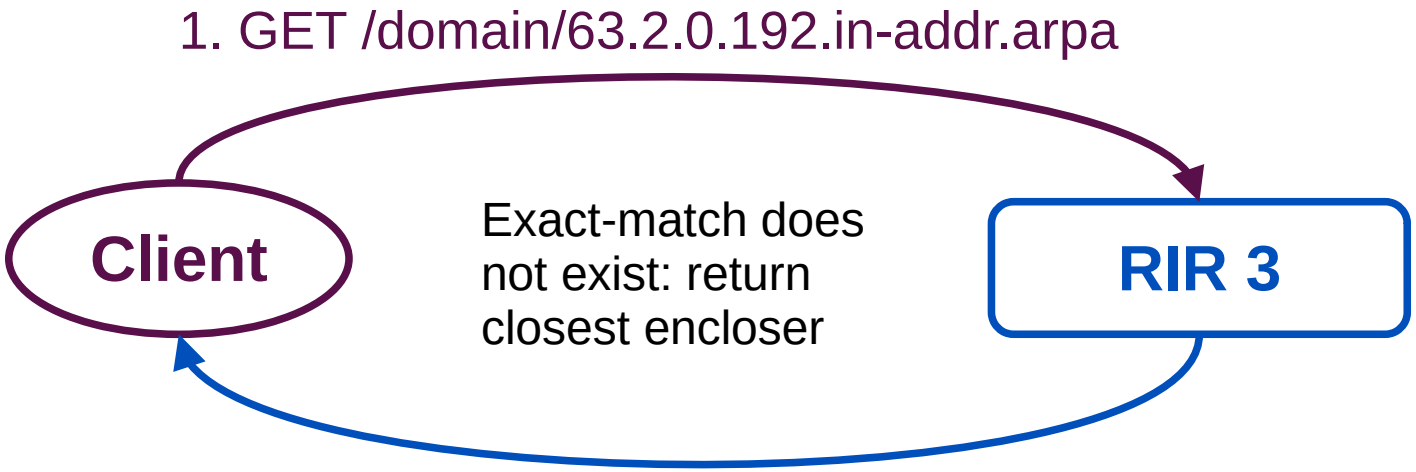
Query resolution (profile) (3)



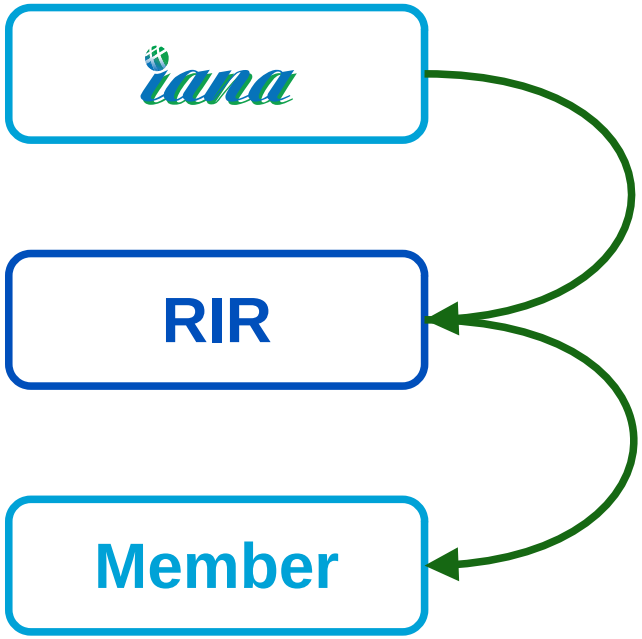
Query resolution for RDNS (profile) (1)



Query resolution for RDNS (profile) (2)



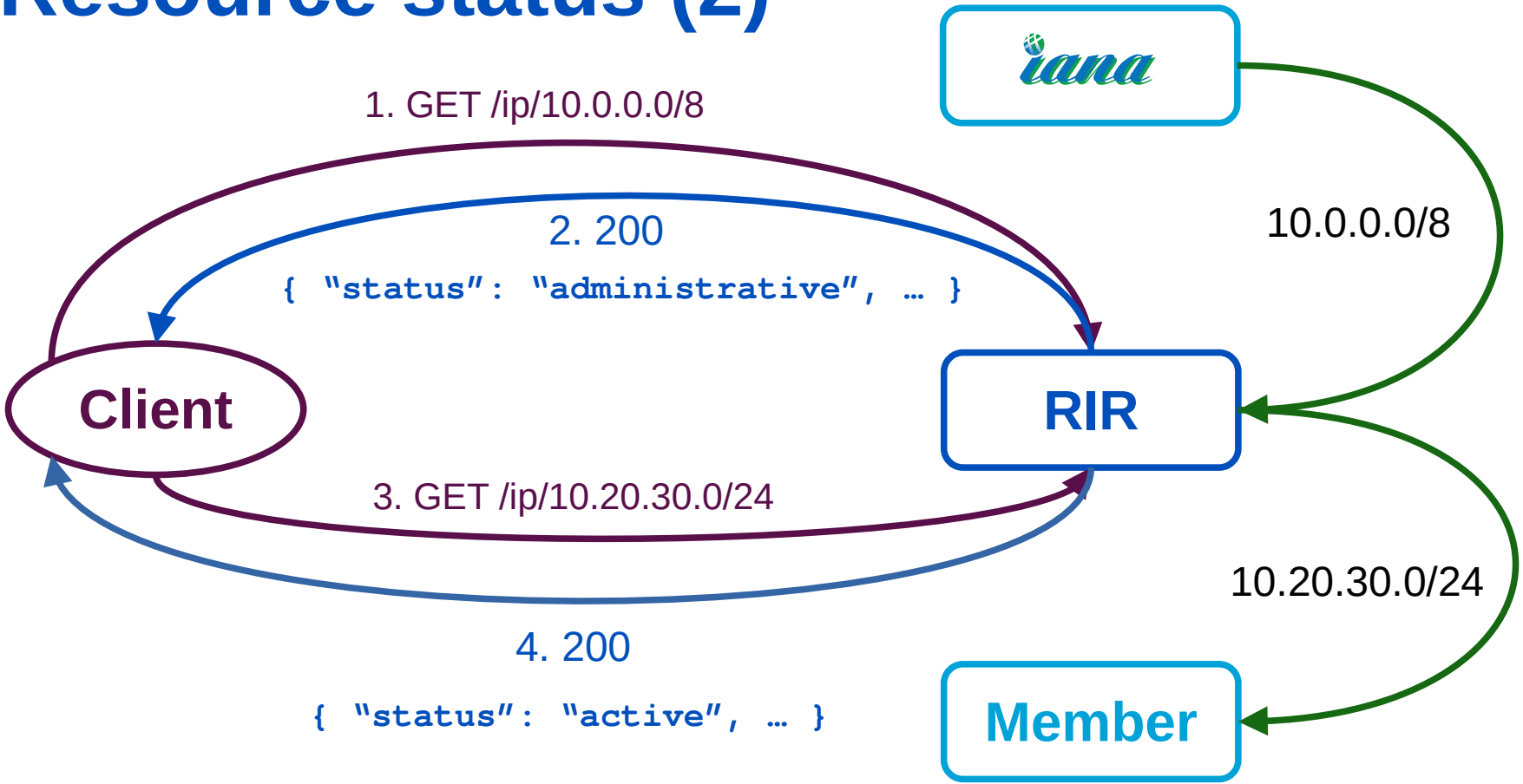
Resource status (1)



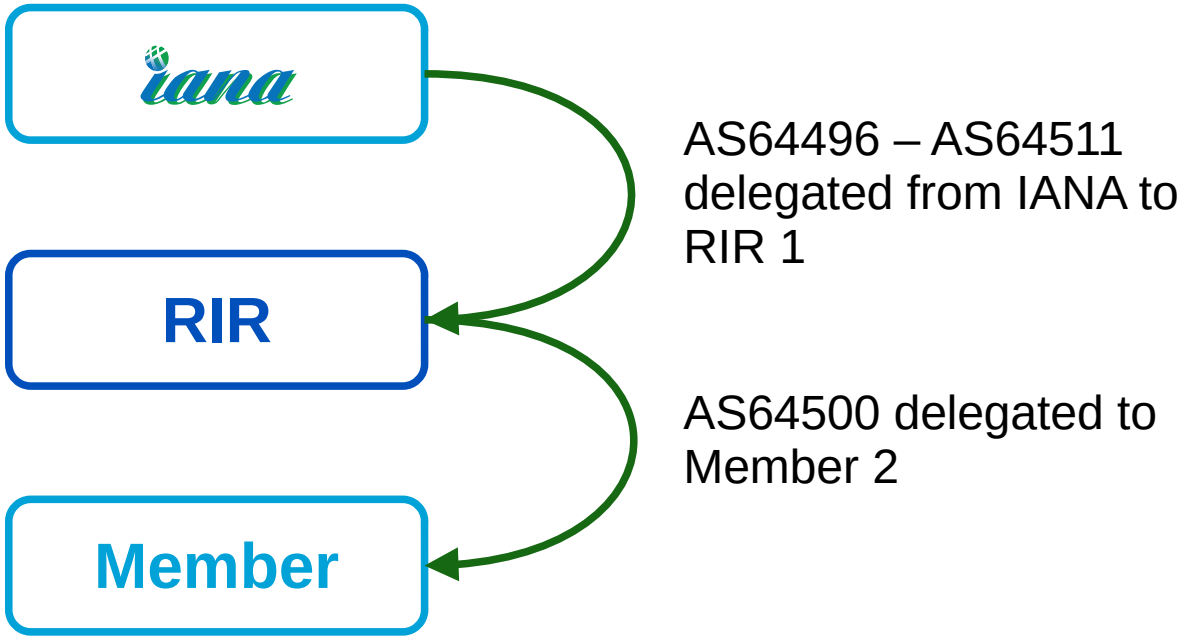
10.0.0.0/8 delegated
from IANA to RIR

10.20.30.0/24 delegated
from RIR to Member

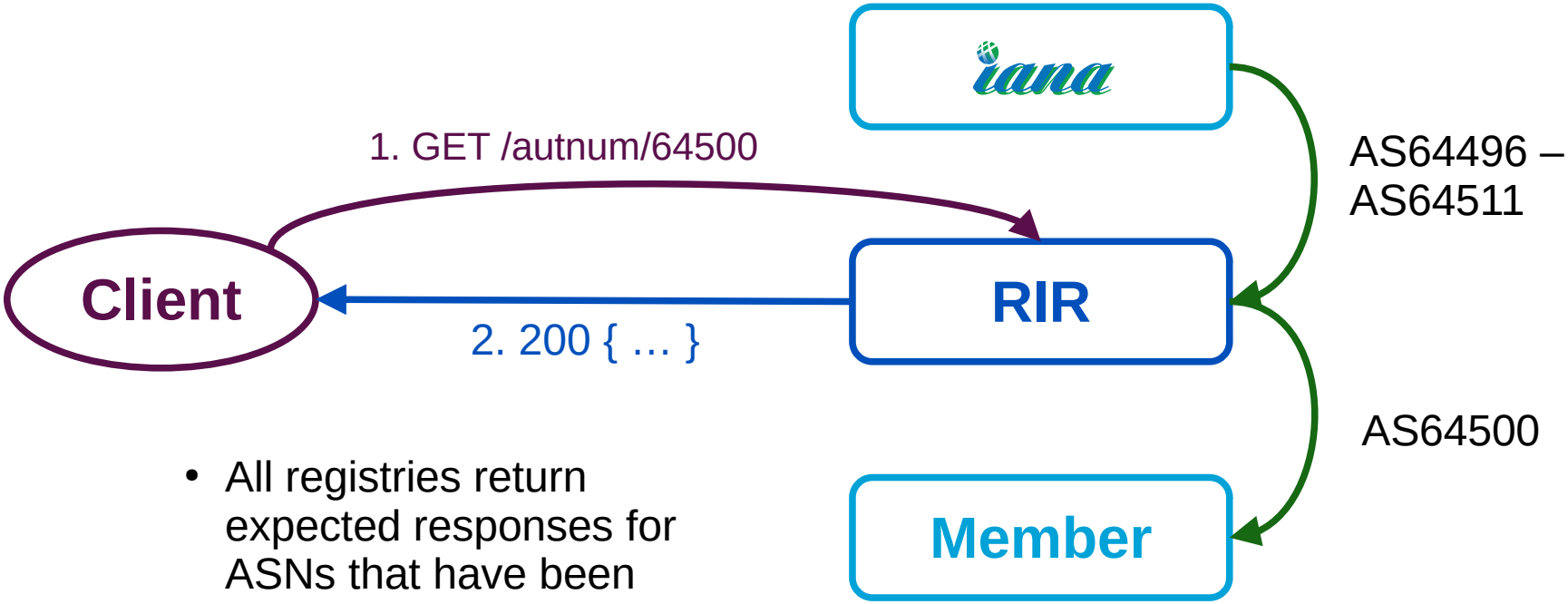
Resource status (2)



ASN model

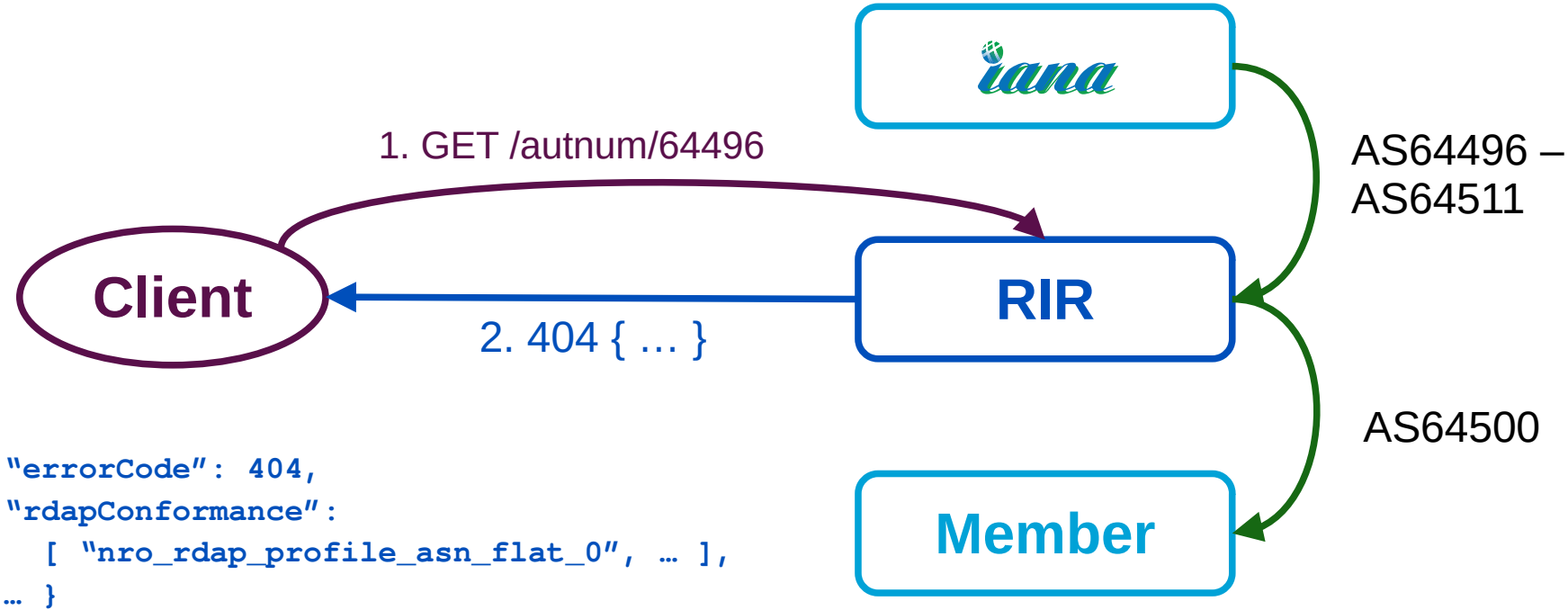

iana
RIR
Member
AS64496 – AS64511 delegated from IANA to RIR 1
AS64500 delegated to Member 2

ASN model (common)



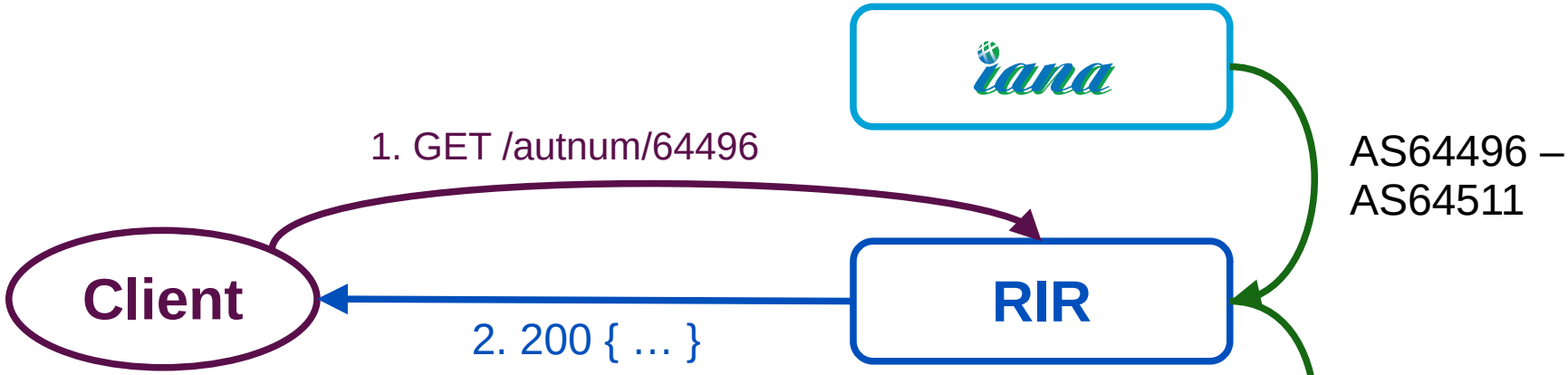
- All registries return expected responses for ASNs that have been delegated

ASN model (flat)




```
{ "errorCode": 404,
  "rdapConformance":
    [ "nro_rdap_profile_asn_flat_0", … ],
  … }
```

ASN model (hierarchical)




```
{ "startAutnum": 64496,
  "endAutnum": 64511,
  "status": "administrative",
  "rdapConformance":
    [ "nro_rdap_profile_asn_hierarchical_0", … ],
  … }
```

Notices

- Required notices
  - Terms of service
    - The conditions under which the service can be used
  - Inaccuracy reporting
    - A URL for reporting issues with results
- General improvement in consistency

jCard profiling

- jCard (RFC 7095) is a JSON formatting for vCard (RFC 6350)
- vCard is used to represent contact details
  - Lots of options and flexibility: 74-page specification
  - Much of this unnecessary in the RDAP context
- The profile limits jCard usage to the union of what the RIRs were using at the time of writing, plus internationalization features

Delegated services

- Typically operated by NIRs
  - Relevant to APNIC and LACNIC
  - Could be used to support general rwhois-type use cases
- The RDAP service handling the redirect includes its own data about the resource along with the redirect
- No guarantees as to conformance of delegated services

Related standardization work (1)

- **`draft-ietf-regext-rdap-reverse-search`**
  - Supports operations like finding resources associated with a given contact
  - Most RIRs provide this functionality today via their Whois services

Related standardization work (2)

- **`draft-ietf-regext-rdap-rir-search`**
  - Basic IP/ASN search
  - Reverse search extensions for IP/ASN records
  - Searches for more-specific and less-specific resources

Questions?