

RDAP Deployment Findings and Update

draft-blanchet-regex-rdap-deployfindings

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Context

- While developing various tools and software related to RDAP (client, servers, conformance tools), issues have been found and are documented in this draft.
- all issues were found in the field. some may have been corrected since (hopefully).
- any info on the guilty RDAP servers is redacted. Should it be?
- Applies to both domain and IP/AS registries
- RDAP deployment context:
 - RDAP Profile for ICANN contracted parties
 - ICANN requires contracted parties to deploy RDAP servers by end of August 2019.
- This presentation is a summary of the issues (details in the draft)
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RDAP Values not IANA registered or badly used

Remarks Type

Unregistered Values	Possibly Corresponding Registered Values
object truncated due to server policy	object truncated due to authorization
Response truncated due to authorization	object truncated due to authorization
Object truncated due to authorization	object truncated due to authorization
object redacted due to authorization	object truncated due to authorization

Event Action

Unregistered Values	Possibly Corresponding Registered Values
delegation check	
last correct delegation check	
last update	last changed

RDAP Values not IANA registered or badly used

Status Value

Unregistered Values	Possibly Corresponding Registered Values
server deleted prohibited ok	server delete prohibited active

Role Value

Unregistered Values	Possibly Corresponding Registered Values
owner	registrant

Registry Entity

- registry answering the answer is not currently modeled (while in whois it was).
Proposal: add an entity role = “registry”, enabling the registry to identify itself as an entity and provide info about it (ex: web site)
- downstream registry is not currently modeled. should it be rel: “down” or a specific entry?

RDAP Extensions not IANA registered or badly used

Values Seen	Corresponding Assumed Prefix	Prefix Already Registered in IANA
rdap_objectTag_level_0	rdap_objectTag	Y
fred_version_0	fred	Y
rdap_openidc_level_0	rdap_openidc	N
icann_rdap_technical_implementation_guide_0	icann_rdap_technical_implementation_guide	N -> Y
icann_rdap_response_profile_0	icann_rdap_response_profile	N -> Y
itNic_level_0	itNic	N
nicbr_level_0	nicbr	N
ur_domain_check_level_0		N
history_version_0		N
registrar_api_0		N

Cross-origin resource sharing(CORS)

- As specified in [RFC7480], the HTTP "Access-Control-Allow-Origin: *" header should be included in the responses, to enable Web clients to work properly.
- Some RDAP servers do not set this header.
- RFC7480 says "it is RECOMMENDED that servers".
- It should be updated to "for any public Internet deployment, servers MUST".

ObjectClassName Empty

```
{
  entities: [
    {
      "entities": [
        {
          "objectClassName": "",
          "handle": "",
        }
      ],
    },
  ],
}
```


Too Many Links Relation Values?

Links Relation Values Seen

Values	Registered in IANA registry
about	Y
alternate	Y
copyright	Y
describedBy	Y
help	Y
related	Y
self	Y
terms-of-service	Y
up	Y
https://restOfURLRedacted	N

- maybe some guidance would be appropriate so that we don't end up with all kind of values with no good standard semantics

Related link pointing to self causes infinite loop

```
{
  "links": [
    {
      "title": "Self",
      "rel": "self",
      "type": "application/rdap+json",
      "href": "https://rdapserver.example.com/domain/example.net"
    },
    {
      "title": "Registrar Data for this object",
      "rel": "related",
      "href": "https://rdapserver.example.com/domain/example.net",
      "type": "application/rdap+json"
    }
  ],
}
```

- update RFC7483 to prohibit this case explicitly

Link without rel

```
{  
  "links": [  
    {  
      title: "My Corporation",  
      href: "http://mycorp.mytld"  
    }  
  ],  
}
```

- without rel, what does this link mean? how should the client behave?
- Update RFC7483 to require a rel value

Value and href for IDNs in links

```
{  
  "links": [  
    {  
      "rel": "self",  
      "href": "http://myrdapserver.xn--abcd/domain/example.ULABEL"  
    }  
  ],  
}
```

- the self link should return self. in case of idn, which representation should be sent? (knowing that query itself can be of many kind).
- Recommendation: rel href/value for any rel returns A-Label for IDNs, independent of the query

Registrant Entity Too Deep

```
{
  entities: [
    {
      "objectClassName": "entity",
      "handle": "HANDLE1",
      "roles": [ "abuse" ],
      "vcardArray": [ ... ],
      "entities": [
        {
          "objectClassName": "entity",
          "handle": "HANDLE2",
          "roles": [ "registrant" ],
          "vcardArray": [ ... ],
        }
      ],
    },
  ],
},
```

- registrant entry should be at “top-level”

URL encoding of :

- One RIR RDAP server accepted:
 - <https://rdapserver.example.com/ip/2001:db8:0::/48>
- but rejected (the percent encoded version of it):
 - <https://rdapserver.example.com/ip/2001%3Adb8%3A0%3A%3A/48>
- client URL libraries often percent encode to be on the safer side.
- update RFC 7482 to explicitly say to support this case

Domain Registrar RDAP Server Location

- ICANN RDAP profile requires a link “rel”: “related” when the registrant info is available on another server.
- However, “related” is also used for other semantics, therefore causing a confusion from the client side.
- Recommendation: define a new "rel" type of "registrantInfo" (mnemonic TBD) to carry the specific semantic of registrant info.

Search patterns that are not

wording in RFC7482 to be fixed. Authors agreed.

jCards: really want to see some?

```
"vcardArray": [  
  "vcard",  
  [  
    [  
      "version",  
      {  
      },  
      "text",  
      "4.0"  
    ],  
    [  
      "kind",  
      {  
      },  
      "text",  
      "org"  
    ]  
  ]  
]
```

```
["adr", {}, "text",  
 [ "", "",  
  [ "", "", "" ],  
  "Exemptown", "AB", "18552",  
  "MyCountry"]  
]
```

IANA RDAP Bootstrap registries

- [RFC7484] section 3 says: "Base RDAP URLs MUST have a trailing "/" character". However, some values in the various IANA Bootstrap registries do not have the trailing "/" character. These should be added to provide consistency.

DONE. FIXED

Single target value?

- [RFC7484] provides a way to list multiple RDAP servers for an entry. This flexibility was designed initially to support multiple URI types, such as http: and https, and to provide some level of redundancy. However, given that security deployment policy is to use https everywhere and redundancy can be accomplished in other ways, deployment has shown that all entries in all bootstrap registries have a single target RDAP URL value. Therefore, we can consider updating the RFC to provide only one target value. However, this should be done carefully to avoid breaking current deployed clients.
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Document Status

- document contains:
 - Ephemeral issues (bugs in implementation, values to be registered in IANA)
 - Recommendations to specifications
 - Discussion points for how to improve
 - Other topics recently discovered need to be documented and published
- Should the wg decide to update the specs (RFC7482,7483,7484), then those recommendations, if agreed, could be folded in.
 - happy to start working on the updates if the wg/authors would like me to.
- Could become a BCP on deploying RDAP
- Adopt as wg doc?