This document is provided pursuant to the disclaimer provided on the last page.
Contact

<table>
<thead>
<tr>
<th>Name</th>
<th>Neustar Customer Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone</td>
<td>+1 844 677 2878</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:reg-support@support.neustar">reg-support@support.neustar</a></td>
</tr>
</tbody>
</table>

Classification

Public

Purpose

This document provides an overview of the Neustar RDAP implementation for anonymous and authenticated users.

Audience

Public
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1 Introduction

RDAP (Registry Data Access Protocol) is an application that allows users to query for Registry data (domains, contacts, hosts and Registrars) over HTTPS where responses are provided in JSON. RDAP is an API and is intended for machine to machine interaction, as such there is no web-based interface available to submit RDAP requests.

Like WHOIS, most Registries will have an RDAP service on the hostname rdap.nic.[TLD], where [TLD] represents the applicable Registry’s TLD. If you find that there is no response on a Registry’s assumed RDAP host, it may be that the Registry Operator has not implemented an RDAP service at this time.

RDAP is publicly accessible; while anyone may submit a query, some data may be redacted depending on the user access type.

1.1 Using a Command Line Tool to Access RDAP

If you are intending to use a command line tool such as CURL, below is an example as to how you can execute various RDAP requests.

You will need to ensure that you place the certificate you have been issued in a known location and then construct your RDAP query as follows:

```
curl -v --cert-type P12 --cert ./[CERT];[CERT PASSWORD] -X GET -H "Content-Type: application/json" -u [USERNAME];[USER PASSWORD] [RDAP REQUEST]
```

Notes

‘CERT’ and ‘CERT PASSWORD’

- ‘CERT’:
  - Ensure that you provide the precise location of where you have stored your issued certificate, ‘CERT’ should be replaced with the certificate name as provided to you, e.g. cr1234567890.p12.
  - The example implies that the curl request is being executed from the directory where the p12 certificate is located.

- ‘CERT PASSWORD’: This is the password that was issued with your certificate.

- ‘USERNAME’ and ‘USER PASSWORD’:
  - Enter the username as issued to you for Authenticated access.
  - Enter the password as issued to you for Authenticated access.

- ‘RDAP REQUEST’:
  - Enter the desired RDAP request and include the full URL. Below is an sample request for the details of registry.neustar:

```
```
1.2 Access Types

There are two access types:

- **Anonymous**: anyone on the open internet may query the RDAP service, however responses will be redacted and some queries will be restricted, for example domain name queries may not contain contact details.

- **Authenticated**: users may apply for authenticated access, allowing them to receive un-redacted responses and access to other queries. Authenticated users will be provided with a username, password and a Neustar-signed SSL certificate which must be provided on each request for authenticated access.

**Note**: The Neustar provided SSL certificate is a closed certificate therefore please ensure that you add the Neustar CA into your trust store to ensure your system allows the use of the Neustar certificate.

Certificates will be valid for 12 months from the date of issue, please ensure you monitor your certificate’s expiry date.

You should ensure that you request a new certificate from us at least seven (7) days prior to the expiry of your existing certificate.

1.3 Request Header

For all requests, please ensure that in the request header the following KEY and VALUE are defined:

<table>
<thead>
<tr>
<th>KEY</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content-Type</td>
<td>application/json</td>
</tr>
</tbody>
</table>

If you have authenticated access, please ensure that the authorization type used is Basic Auth and is included in your request header.
1.4 Summary of User Type Query Access

The querying format for RDAP is {service host}/(Query) where {service host} is the hostname of the Registry’s RDAP service and {Query} is the query that you want to submit.

For example, below is a domain query for registry.neustar against the .neustar RDAP service

- rdap.nic.neustar/domain/registry.neustar

**Note:** Queries are CASE SENSITIVE, please ensure that the case of queries are correct as listed below.

<table>
<thead>
<tr>
<th>Query</th>
<th>Anonymous</th>
<th>Authenticated</th>
</tr>
</thead>
<tbody>
<tr>
<td>domain/XXXX</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>domains?name=XXXX</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>domains?nsLdhName=XXXX</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>domains?nsIp=XXXX</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>nameservers?name=XXXX</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>nameservers?ip=XXXX</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>entity/XXXX</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>entities?handle=XXXX</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>entities?fn=XXXX</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>help</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
2 Help Query

The ‘Help’ query provides a list of all the supported queries and their querying format.

- **URL:** https://(service host)/help
- **Method:** GET

**Response:**

```
[{
    "notices": [ {
      ],
        "links": [ {
            "rel": "self",
            "value": "TBC",
            "href": "TBC",
            "type": "application/rdap+json"
          } ],
        "title": "RDAP Help"
      }, {
        "description": [ "TBC", "TBC"
      ],
        "links": [ {
            "rel": "self",
            "value": "TBC",
            "href": "TBC",
            "type": "TBC"
          } ],
        "title": "RDAP Terms of Service"
      },
      "rdapConformance": [ "rdap_level_0"
    ]
}]
```
3 Queries

A list of RDAP queries and examples of such are provided below. Please note the following:

- XXXX represents/is a placeholder for user input.
- Wildcard characters are not supported, for instance the use of * is forbidden.
- Result sets for queries where a list of items are provided is limited to 20 items.
- HTTPS requests method must be GET in order to return the responses listed below.

**Response – anonymous user response for queries that are disallowed**

```json
{
    "status": "FORBIDDEN",
    "message": "Forbidden",
    "rdapConformance": "rdap_level_0"
}
```

**Response – authenticated user response for queries with use of wildcard character**

```json
{
    "message": "Invalid input",
    "status": "BAD_REQUEST",
    "rdapConformance": "rdap_level_0"
}
```

3.1 Domain

<table>
<thead>
<tr>
<th>Query</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>domain/XXXX</td>
<td>Search for a specific domain.</td>
</tr>
<tr>
<td>domains?name=XXXX</td>
<td>Search domains that match domain provided.</td>
</tr>
<tr>
<td>domains?nsLdhName=XXXX</td>
<td>Search for domains which are delegated to the provided name server. Note:</td>
</tr>
<tr>
<td></td>
<td>host name must be provided in LDH form (only letters, digits and hyphens).</td>
</tr>
<tr>
<td>domains?nsIp=XXXX</td>
<td>Search for domains which are delegated to name servers which have the IP</td>
</tr>
<tr>
<td></td>
<td>address defined. Note: this does not perform a delegation lookup on the</td>
</tr>
<tr>
<td></td>
<td>internet, this is only in context to the data recorded in the Registry.</td>
</tr>
</tbody>
</table>

3.1.1 domain/XXXX

**Response – domain does not exist**

```json
{
    "status": "NOT_FOUND",
    "message": "No data found",
    "rdapConformance": "rdap_level_0"
}
```

**Response – anonymous user response**

```json
{
    "objectClassName": "domain",
    "handle": "D1234567890-TLD",
    "ldhName": "example.tld",
    "status": [
        "active"
    ],
    "events": [    ]
}
```
"objectClassName": "entity",
"handle": "C1234567890-NSR",
"roles": [
    "admin"
],
"remarks": [
    "title": "Data Policy",
    "type": "Response truncated due to authorization",
    "description": [
        "Some of the data in this object has been removed"
    ],
    "links": [
        "rel": "alternate",
        "value": "TBC",
        "href": "TBC",
        "type": "text/html"
    ]
],
"status": ["removed"]
},
{ "objectClassName": "entity",
  "handle": "C1234567890-NSR",
  "roles": ["technical"],
  "remarks": [
    "title": "Data Policy",
    "type": "Response truncated due to authorization",
    "description": ["Some of the data in this object has been removed"],
    "links": [
      "rel": "alternate",
      "value": "TBC",
      "href": "TBC",
      "type": "text/html"
    ]
  ],
  "status": ["removed"]
},
{ "handle": "1234567890",
  "vcardArray": [
    "vcard",
    ["version",
     {}],
    "text",
    "4.0"
  ],
  "fn",
  ["text",
   "Example Registrar Inc"
  ],
  "adr",
  ["text",}
["", "", [
  "123 Example Street",
], "Melbourne",
"Victoria",
"3004",
"AU"
], 
[ "tel", 
  
  "type": "voice"
], "uri",
"tel:+61.312345678"
], 
[ "tel", 
  "type": "fax"
], "uri",
"tel:+61.312345678"
], 
[ "email", 
  
  "text",
  "email@example.tld"
]
],
"entities": [
  
  "objectClassName": "entity",
  "vcardArray": [
    "vcard",
    [
      "version",
      
      "text",
      "4.0"
    ],
    [ "tel",
      
      "type": "voice"
    ], "uri",
    "tel:+61.312345678"
  ], 
  "email",
  
  "text",
  "abuse@example.tld"
]
],
"roles": [
  "abuse"
]
],
"roles": [
  "registrar"
],
"publicIds": [ 
}
"identifier": "1234567890",
"type": "IANA Registrar ID"
],
"events": [
[
"eventAction": "registration",
"eventDate": "2018-02-01T04:49:20Z",
"eventActor": "REGISTRY"
],
[
"eventAction": "last changed",
"eventDate": "2018-04-24T13:56:20Z",
"eventActor": "tro (Registry)"
]
]
],
"nameservers": [
{
"objectClassName": "nameserver",
"handle": "H1234567890-NSR",
"ldhName": "ns1.test.tld",
"status": ["ok"],
"events": [
[
"eventAction": "registration",
"eventDate": "2018-03-27T04:22:53Z",
"eventActor": "Registry"
],
[
"eventAction": "last update of RDAP database",
"eventDate": "2018-05-01T09:31:49Z"
]
}
],
{
"objectClassName": "nameserver",
"handle": "H0987654321-NSR",
"ldhName": "ns2.test.tld",
"status": ["ok"],
"events": [
[
"eventAction": "registration",
"eventDate": "2018-03-27T04:23:01Z",
"eventActor": "Registry"
],
[
"eventAction": "last update of RDAP database",
"eventDate": "2018-05-01T09:31:49Z"
]
}
],
"notices": [
{
"description": ["terms of service string 1", "terms of service 2"],
"links": [
{"rel": "self", "value": "TBC", "href": "TBC", "type": "application/rdap+json"}],
"title": "RDAP Terms of Service"}
"rdapConformance": [  "rdap_level_0"
],
"remarks": [  "description": [  "This response conforms to the RDAP Operational Profile for gTLD Registries and Registrars version 1.0"
  ]
  
  ]
  
  ]
  "title": "EPP Status Codes",
  "description": [  "For more information on domain status codes, please visit https://icann.org/epp"
  ],
  "links": [  [  "rel": "alternate",
    "value": "https://icann.org/epp",
    "href": "https://icann.org/epp",
    "type": "text/html"
  ]
  
  ],
  "title": "Whois Inaccuracy Complaint Form",
  "description": [  "URL of the ICANN Whois Inaccuracy Complaint Form: https://www.icann.org/wicf"
  ],
  "links": [  [  "rel": "alternate",
    "value": "https://www.icann.org/wicf",
    "href": "https://www.icann.org/wicf",
    "type": "text/html"
  ]
  ]
]

Response – authenticated user response

[
  "objectClassName": "domain",
  "handle": "D1234567890-NSR",
  "ldhName": "example.tld",
  "status": [  "active"
  ],
  "events": [  {  "eventAction": "registration",
    "eventDate": "2018-03-28T03:25:40Z",
    "eventActor": "Registry"
  },
  {  "eventAction": "expiration",
    "eventDate": "2028-03-28T03:25:40Z"
  },
  {  "eventAction": "last changed",
    "eventDate": "2018-04-23T09:03:55Z"
  },
  {  "eventAction": "last update of RDAP database",
    "eventDate": "2018-05-01T09:28:58Z"
  }
  ]
  "secureDNS": {  "delegationSigned": true,
"keyData": [
  {
    "flags": 1,
    "protocol": 3,
    "algorithm": 3,
    "publicKey": "=123"
  }
],
"dsData": [
  {
    "keytag": 772,
    "algorithm": 3,
    "digestType": 2,
    "digest": "9A1D0CE7C99EA49704D6B54105DA729DDA3C19F91C6B61A013D4D58DCEA8C9"
  }
],
"entities": [
  {
    "objectClassName": "entity",
    "handle": "C1234567890-TLD",
    "vcardArray": [
      "vcard",
      [
        "version",
        {},
        "text",
        "4.0"
      ],
      "fn",
      {},
      "text",
      "John Smith"
    ],
    "adr",
    {},
    "text",
    [
      "123 Example Street"
    ],
    "Melbourne",
    "Victoria",
    "3004",
    "au"
  }
],
"tel",
[
  "type": "voice"
],
"uri",
"tel:+61.312345678;ext=123"
],
"tel",
[
  "type": "fax"
],
"uri",
"tel:+61.387654321;ext=123"
],
"email",
[],
"text",
"email@email.tld"
"objectClassName": "entity",
"handle": "C1234567890-NSR",
"vcardArray": [
  "vcard",
  [
    "version",
    {},
    "text",
    "4.0"
  ],
  [
    "fn",
    {},
    "text",
    "John Smith"
  ],
  [
    "adr",
    {},
    "text",
    [
      ",",
      "123 Example Street"
    ],
    "Melbourne",
    "Victoria",
    "3004",
    "au"
  ],
  [
    "tel",
    [
      "type": "voice"
    ],
    "uri",
    "tel:+61.312345678;ext=123"
  ]
]
"tel",
  [
    "type": "fax"
  ],
"uri",
"tel:+61.387654321;ext=123",
[
  "email",
  [],
  "text",
  "email@email.tld"
]
],
"roles": [
  "billing"
],
"events": [
  {
    "eventAction": "registration",
    "eventDate": "2018-03-14T20:57:37Z",
    "eventActor": "One.inc"
  },
  {
    "eventAction": "last changed",
    "eventDate": "2018-04-23T05:39:05Z",
    "eventActor": "Registry"
  },
  {
    "eventAction": "last update of RDAP database",
    "eventDate": "2018-05-01T09:28:58Z"
  }
],
"status": [
  "clientDeleteProhibited",
  "clientUpdateProhibited",
  "clientTransferProhibited",
  "serverDeleteProhibited",
  "serverUpdateProhibited",
  "serverTransferProhibited"
]
],
{
  "objectClassName": "entity",
  "handle": "C1234567890-TLD",
  "vcardArray": [
    "vcard",
    [
      "version",
      {}],
    "text",
    "4.0"
  ],
  "fn",
  [],
  "text",
  "John Smith"
],
"adr",
[],
"text",
["","
  ["123 Example Street"
],
"Melbourne",
"Victoria",
"3004",]
"au"
],
[
  "tel",
  {
    "type": "voice"
  },
  "uri",
  "tel:+61.312345678;ext=123"
],
[
  "tel",
  {
    "type": "fax"
  },
  "uri",
  "tel:+61.387654321;ext=123"
],
[
  "email",
  {},
  "text",
  "email@email.tld"
]
],
"roles": [{
  "admin"
},
"events": [
  {
    "eventAction": "registration",
    "eventDate": "2018-03-14T20:57:37Z",
    "eventActor": "One.inc"
  },
  {
    "eventAction": "last changed",
    "eventDate": "2018-04-23T05:39:05Z",
    "eventActor": "Registry"
  },
  {
    "eventAction": "last update of RDAP database",
    "eventDate": "2018-05-01T09:28:58Z"
  }
],
"status": [
  "clientDeleteProhibited",
  "clientUpdateProhibited",
  "clientTransferProhibited",
  "serverDeleteProhibited",
  "serverUpdateProhibited",
  "serverTransferProhibited"
]
],
{
  "objectClassName": "entity",
  "handle": "C1234567890-TLD",
  "vcardArray": [
    "vcard",
    [
      "version",
      {},
      "text",
      "4.0"
    ],
    [
      "En",
      {},
      "text",
      "John Smith"
    ]
  ]}
"adr",
[],
"text",
[

"
"
"
[
"123 Example Street"
],
"Melbourne",
"Victoria",
"3004",
"au"
]
],
{
"tel",
{
"type": "voice"
},
"uri",
"tel:+61.312345678;ext=123"
],
{
"tel",
{
"type": "fax"
},
"uri",
"tel:+61.387654321;ext=123"
],
{
"email",
{}
,"text",
"email@email.tld"
]
],
"roles": ["technical"
],
"events": [
{
"eventAction": "registration",
"eventDate": "2018-03-14T20:57:37Z",
"eventActor": "One.inc"
},
{
"eventAction": "last changed",
"eventDate": "2018-04-23T05:39:05Z",
"eventActor": "Registry"
},
{
"eventAction": "last update of RDAP database",
"eventDate": "2018-05-01T09:28:58Z"
}
],
"status": [
"clientDeleteProhibited",
"clientUpdateProhibited",
"clientTransferProhibited",
"serverDeleteProhibited",
"serverUpdateProhibited",
"serverTransferProhibited"
]
],
{
"handle": "1234567890",
"vcardArray": [
"vcard",
[
"version",
..
[]

text
"4.0"
],

tel
{}
text
{}

Example Registrar Inc
]

adr
{}
text
[
"
"
"
"123 Example Street"
],
"Melbourne",
"Victoria",
"3000",
"AU"
]
],
tel
{}
type: "voice"
]

uri
tel:+61.312345678
]
],
tel
{}
type: "fax"
]

uri
tel:+61.387654321
]
],
email
{}
text
"email@email.tld"
]
]
entities
[
objectClassName: "entity",
vcardArray
vcard
[
version
{}
text
"4.0"
],
tel
{}
type: "voice"
]

uri
tel:+61.312345678
],
email
{}
text

"email@email.tld"
]
"roles": ["abuse"
]
"roles": ["registrar"
,"publicIds": [
  
  "identifier": "1234567890",
  "type": "IANA Registrar ID"
  
],
"events": [
  
  "eventAction": "registration",
  "eventDate": "2018-02-01T04:29:20Z",
  "eventActor": "REGISTRY"
],
  
  "eventAction": "last changed",
  "eventDate": "2018-04-24T13:56:20Z",
  "eventActor": "tro (Registry)"
  
],
"nameservers": [
  
  "objectClassName": "nameserver",
  "handle": "H1234567890-TLD",
  "ldhName": "ns1.test.tld",
  "status": ["ok"
  
],
"events": [
  
  "eventAction": "registration",
  "eventDate": "2018-03-27T04:22:53Z",
  "eventActor": "Registry"
],
  
  "eventAction": "last update of RDAP database",
  "eventDate": "2018-05-01T09:28:58Z"
}]
},
  
  "objectClassName": "nameserver",
  "handle": "H0987654321-TLD",
  "ldhName": "ns2.test.tld",
  "status": ["ok"
  
],
"events": [
  
  "eventAction": "registration",
  "eventDate": "2018-03-27T04:22:53Z",
  "eventActor": "Registry"
],
  
  "eventAction": "last update of RDAP database",
  "eventDate": "2018-05-01T09:28:58Z"
}]
],
"notices": [
3.1.2 domains?name=XXXX

Response – authenticated user response

```json
{
  "domainSearchResults": [
    {
      "objectClassName": "domain",
      "handle": "D1234567890-NSR",
      "ldhName": "example.tld",
      "remarks": [
        {
          "description": "This response conforms to the RDAP Operational Profile for gTLD Registries and Registrars version 1.0"
        }
      ],
      "links": [
        {
          "rel": "alternate",
          "value": "https://icann.org/epp",
          "href": "https://icann.org/epp",
          "type": "text/html"
        }
      ],
      "title": "Whois Inaccuracy Complaint Form",
      "description": "URL of the ICANN Whois Inaccuracy Complaint Form: https://www.icann.org/wicf"
    }
  ]
}```
"title": "Incomplete Data",
"type": "Result set truncated due to unexplainable reasons",
"description": [
  "Summary data only. For complete data, send a specific query
for the object"  
],
"statuses": [
  "inactive"
],
"notices": [
  {
    "description": [
      "TBC"
    ],
    "links": [
      {
        "rel": "self",
        "value": "TBC",
        "href": "TBC",
        "type": "application/rdap+json"
      }
    ],
    "title": "RDAP Terms of Service"
  }
],
"rdapConformance": [
  "rdap_level_0"
],
"remarks": [
  {
    "title": "EPP Status Codes",
    "description": [
      "For more information on domain status codes, please visit
https://icann.org/epp"
    ],
    "links": [
      {
        "rel": "alternate",
        "value": "https://icann.org/epp",
        "href": "https://icann.org/epp",
        "type": "text/html"
      }
    ]
  },
  {
    "title": "Whois Inaccuracy Complaint Form",
    "description": [
      "URL of the ICANN Whois Inaccuracy Complaint Form:
https://www.icann.org/wicf"
    ],
    "links": [
      {
        "rel": "alternate",
        "value": "https://www.icann.org/wicf",
        "href": "https://www.icann.org/wicf",
        "type": "text/html"
      }
    ]
  }
]
3.1.3 domains?nsLdhName=XXXX

Response – authenticated user response

```json
{
    "domainSearchResults": [
        {
            "objectClassName": "domain",
            "handle": "D1234567890-TLD",
            "ldhName": "example.tld",
            "remarks": [
                {
                    "title": "Incomplete Data",
                    "type": "Result set truncated due to unexplainable reasons",
                    "description": [
                        "Summary data only. For complete data, send a specific query for the object"
                    ]
                }
            ],
            "statuses": ["inactive"]
        },
        {
            "objectClassName": "domain",
            "handle": "D0987654321-TLD",
            "ldhName": "another-example.tld",
            "remarks": [
                {
                    "title": "Incomplete Data",
                    "type": "Result set truncated due to unexplainable reasons",
                    "description": [
                        "Summary data only. For complete data, send a specific query for the object"
                    ]
                }
            ],
            "statuses": ["inactive"]
        }
    ],
    "notices": [
        {
            "description": ["terms of service string 1", "terms of service 2"],
            "links": [
                {
                    "rel": "self",
                    "value": "TBC",
                    "href": "TBC",
                    "type": "application/rdap+json"
                }
            ],
            "title": "RDAP Terms of Service"
        }
    ],
    "rdapConformance": ["rdap_level_0"],
    "remarks": [
        {
            "title": "EPP Status Codes",
            "description": ["For more information on domain status codes, please visit https://icann.org/epp"],
            "links": [""
```
3.1.4 domains?nslp=XXXX

Response – authenticated user response

```json
{
    "domainSearchResults": [
        {
            "objectClassName": "domain",
            "handle": "D1234567890-TLD",
            "ldhName": "example.tld",
            "remarks": [
                {
                    "title": "Incomplete Data",
                    "type": "Result set truncated due to unexplainable reasons",
                    "description": [
                        "Summary data only. For complete data, send a specific query for the object"
                    ]
                }
            ],
            "statuses": [
                "active"
            ],
            "notices": [
                {
                    "description": [
                        "TBC"
                    ],
                    "links": [
                        {
                            "rel": "self",
                            "value": "TBC",
                            "href": "TBC",
                            "type": "application/rdap+json"
                        }
                    ],
                    "title": "RDAP Terms of Service"
                }
            ],
            "rdapConformance": [
                "rdap_level_0"
            ],
            "remarks": [
```
### 3.2 Contact

For Authenticated users, contact responses will be redacted; as contact data is provided in full in a domain response, individual contact queries are redundant.

<table>
<thead>
<tr>
<th>Query</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>entity/XXXX</td>
<td>Search for a contact with the provided ROID/handle</td>
</tr>
<tr>
<td>entities?handle=XXXX</td>
<td>Search for contacts that match the provided ROID/handle</td>
</tr>
<tr>
<td>entities?fn=XXXX</td>
<td>Search for contacts that contain the provided &quot;FN&quot; (Full Name)</td>
</tr>
</tbody>
</table>

#### 3.2.1 entity/XXXX

**Response – contact does not exist**

```
{
    "status": "NOT_FOUND",
    "message": "No data found",
    "rdapConformance": "rdap_level_0",
}
```

**Response – anonymous user response**

```
{
    "objectClassName": "entity",
    "rdapConformance": [
        "rdap_level_0"
    ],
    "handle": "C1234567890-TLD",
    "version": "1",
    "notices": [  
```

```
"description": 
  "Some of the data in this object has been removed"
],
"links": [
  {
    "rel": "self",
    "value": "TBC",
    "href": "TBC",
    "type": "text/html"
  }
],
"title": "Data Policy",
"type": "Response truncated due to authorization"
],
"description": ["TBC"]
],
"links": [
  {
    "rel": "self",
    "value": "https://rdap.registry.neustar/rdap/help/tos",
    "href": "https://rdap.registry.neustar/rdap/help/tos",
    "type": "application/rdap+json"
  }
],
"title": "RDAP Terms of Service"
],
"remarks": [
  {
    "description": [
      "This response conforms to the RDAP Operational Profile for gTLD Registries and Registrars version 1.0"
    ]
  }
],
"events": [
  {
    "eventAction": "registration",
    "eventDate": "2018-03-14T20:57:37Z",
    "eventActor": "One.inc"
  },
  {
    "eventAction": "last changed",
    "eventDate": "2018-04-23T05:39:05Z",
    "eventActor": "Registry"
  },
  {
    "eventAction": "last update of RDAP database",
    "eventDate": "2018-05-01T09:42:17Z"
  }
],
"status": [
  "removed"
]

Response – authenticated user response

{
  "objectClassName": "entity",
  "rdapConformance": ["rdap_level_0"],
  "handle": "C1234567890-TLD",
  "version": "1",
  "notices": [
    {
      "description": ["Some of the data in this object has been removed"
        ],
      "links": [
```
3.2.2 entities?handle=XXXX

Response – no match

```json
{
  "status": "NOT_FOUND",
  "message": "No data found",
  "rdapConformance": "rdap_level_0"
}
```

Response – authenticated user response

```json
{
  "entitySearchResults": [
    {
      "objectClassName": "entity",
      "handle": "C1234567890-NSR",
      ...
    }
  ]
}
```
3.2.3 entities?fn=XXXX

Response – no match

```json
{
    "status": "NOT_FOUND",
    "message": "No data found",
    "rdapConformance": "rdap_level_0"
}
```

Response – authenticated user response

```json
{
    "entitySearchResults": [
        {
            "objectClassName": "entity",
            "handle": "C123456789-TLD",
            "remarks": [
                {
                    "title": "Data Policy",
                    "type": "object truncated due to unexplainable reasons",
                    "description": ["Summary data only. For complete data, send a specific query for the object."]
                }
            ],
            "rdapConformance": ["rdap_level_0"
        },
        {
            "objectClassName": "entity",
            "handle": "C0987654321-NSR",
            "remarks": [
                {
                    "title": "Data Policy",
                    "type": "object truncated due to unexplainable reasons",
                    "description": ["Summary data only. For complete data, send a specific query for the object."]
                }
            ],
            "rdapConformance": ["rdap_level_0"
        }
    ]
}
```
"Summary data only. For complete data, send a specific query for the object."

3.3 Name Server

<table>
<thead>
<tr>
<th>Query</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>nameservers?name=XXXX</td>
<td>Search for hosts that match the hostname provided</td>
</tr>
<tr>
<td>nameservers?ip=XXXX</td>
<td>Search for hosts that contains the IP address provided</td>
</tr>
</tbody>
</table>

3.3.1 nameservers?name=XXXX

Response – host does not exist

```json
{
   "message": "No data found",
   "status": "NOT_FOUND",
   "rdapConformance": "rdap_level_0"
}
```

Response – authenticated user response

```json
{
   "nameserverSearchResults": [
      {
         "objectClassName": "nameserver",
         "handle": "H1234567890-TLD",
         "ldhName": "ns1.test.tld",
         "status": ["ok"],
         "ipAddresses": [],
         "remarks": [
            {
               "title": "Data Policy",
               "type": "object truncated due to unexplainable reasons",
               "description": [
                  "Summary data only. For complete data, send a specific query for the object."
               ]
            }
         ]
      }
   ]
}
```
3.3.2 nameservers?ip=XXXX

Response – no match

```json
{
    "message": "No data found",
    "status": "NOT_FOUND",
    "rdapConformance": "rdap_level_0"
}
```
Response – host exists

```json
{
    "nameserverSearchResults": [
        {
            "objectClassName": "nameserver",
            "handle": "H1234567890-NSR",
            "ldhName": "ns1.test-domain.neustar",
            "status": ["ok"],
            "ipAddresses": [
                {
                    "v4": [
                        "1.1.1.1"
                    ]
                }
            ],
            "remarks": [
                {
                    "title": "Data Policy",
                    "type": "object truncated due to unexplainable reasons",
                    "description": [
                        "Summary data only. For complete data, send a specific query for the object."
                    ]
                }
            }
        },
        {
            "objectClassName": "nameserver",
            "handle": "H0987654321-NSR",
            "ldhName": "ns2.test-domain.neustar",
            "status": ["ok"],
            "ipAddresses": [
                {
                    "v4": [
                        "1.1.1.1"
                    ]
                }
            ],
            "remarks": [
                {
                    "title": "Data Policy",
                    "type": "object truncated due to unexplainable reasons",
                    "description": [
                        "Summary data only. For complete data, send a specific query for the object."
                    ]
                }
            }
        }
    ],
    "notices": [
        {
            "description": ["TBC"],
            "links": [
                {
                    "rel": "self",
                    "value": "TBC",
                    "href": "TBC",
                    "type": "application/rdap+json"
                }
            ],
            "title": "RDAP Terms of Service"
        }
    ],
    "rdapConformance": ["rdap_level_0"]
}
```
### 3.4 Registrar

<table>
<thead>
<tr>
<th>Query</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>entities?fn=XXXX</td>
<td>Search for a Registrar with the Full Name provided</td>
</tr>
<tr>
<td>entity/XXXX</td>
<td>Search for a Registrar with the IANA ID provided</td>
</tr>
</tbody>
</table>

#### 3.4.1 entities?fn=XXXX

**Response – Registrar does not exist**

```json
{
    "message": "No data found",
    "status": "NOT_FOUND",
    "rdapConformance": "rdap_level_0"
}
```

**Response – anonymous and authenticated user response**

```json
{
    "entitySearchResults": [  
        {
            "handle": "1234567890",
            "vcardArray": [  
                "vcard",
                [  
                    "version",
                    {},
                    "text",
                    "4.0"
                ]
            ]
        }
    ]
}
```
[ "fn", [], "text", "Example Registrar Inc" ],
[ "adr", [], "text", [
  "", "

  [ "123 Example Street"
  ],
  "Melbourne",
  "Victoria",
  "3000",
  "AU"
]
],
[ "tel", {
  "type": "voice"
},
"uri",
"tel:+61.399999999"
],
[ "tel", {
  "type": "fax"
},
"uri",
"tel:+61.399988888"
],
[ "email", [], "text",
"email@email.tld"
]
],
"entities": [
  {
    "objectClassName": "entity",
    "vcardArray": [
      "vcard",
      [
        "version", [], "text", "4.0"
      ],
      [ "tel", {
        "type": "voice"
      },
      "uri",
      "tel:+61.312345678"
    ],
    [ "email", [], "text",
      "email@email.tld"
    ]
  }
]
3.4.2 entity/XXXX

Response – Registrar does not exist

```
{
    "message": "No data found",
    "status": "NOT_FOUND",
    "rdapConformance": "rdap_level_0"
}
```

Response – anonymous and authenticated user response

```
{
    "entitySearchResults": [
        {
            "handle": "1234567890",
```
"vcardArray": [
    "vcard",
    [
        "version",
        {},
        "text",
        "4.0"
    ],
    
    "fn",
    {},
    "text",
    "Example Registrar Inc"
    ],
    "adr",
    {},
    "text",
    [
        "",""
        "123 Example Street",
        "Melbourne",
        "Victoria",
        "3000",
        "AU"
    ],
    
    "tel",
    [
        "type": "voice"
    ],
    "uri",
    "tel:+61.39999999"
    ],
    
    "tel",
    [
        "type": "fax"
    ],
    "uri",
    "tel:+61.399988888"
    ],
    
    "email",
    {},
    "text",
    "email@email.tld"
    ]
    
"entities": [
    [
        "objectIdName": "entity",
        "vcardArray": [
    "vcard",
    [
        "version",
        {},
        "text",
        "4.0"
    ],
    
    "tel",
    [
        "type": "voice"
    ],
    "uri",
    "tel:+61.312345678"


[]

},

"email",

{},

"text",

"email@email.tld"
]

"roles":[

"abuse"
]

"roles":[

"registrar"
],

"publicIds":[

{

"identifier": "1234567890",

"type": "IANA Registrar ID"
}
],

"events":[

{

"eventAction": "registration",

"eventDate": "2018-02-01T04:49:20Z",

"eventActor": "REGISTRY"
},

{

"eventAction": "last changed",

"eventDate": "2018-04-24T13:56:20Z",

"eventActor": "tro (Registry)"
},

{

"eventAction": "last update of RDAP database",

"eventDate": "2018-05-01T10:38:35Z"
}
]

"notices":[

{

"description": ["TBC"
],

"links":[

{

"rel": "self",

"value": "TBC",

"href": "TBC",

"type": "application/rdap+json"
}
],

"title": "RDAP Terms of Service"
},

"rdapConformance": [

"rdap_level_0"
]
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