

Registry System Testing

Searchable Whois Test Area Specification

Version A

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1. Introduction

This document describes the searchable Whois Test within the Registry System Testing framework.

1.1 Scope

The Whois Search test cases are only run if Exhibit A of the Registry Agreement states that the TLD has support for searchable Whois.

1.2 References

1.2.1 External

- IEEE 829-2008
- ICANN gTLD Applicant Guidebook, Version 2012-06-04
- <https://www.icann.org/resources/pages/registry-agreement-raa-rdds-2015-04-27-en>
- Registry-Agreement, "Base Registry Agreement", Updated 21 August 2014, <https://itp.cdn.icann.org/en/files/registry-agreements/base-registry-agreement-21-01-2024-en.pdf>.

1.2.2 Standards

- RFC791, "Internet Protocol. Darpa Internet Program Protocol Specification", <https://tools.ietf.org/html/rfc791>
- RFC952, "DOD Internet Host Table Specification", <https://tools.ietf.org/html/rfc952>
- RFC1123, "Requirements for Internet Hosts -- Application and Support", <https://tools.ietf.org/html/rfc1123>
- RFC 2119, "Key words for use in RFCs to Indicate Requirement Levels", <https://tools.ietf.org/html/rfc2119>
- RFC3339, "Date and Time on the Internet: Timestamps", <https://tools.ietf.org/html/rfc3339>
- RFC4291, "IP Version 6 Addressing Architecture", <https://tools.ietf.org/html/rfc4291>
- RFC5322, "Internet Message Format", <https://tools.ietf.org/html/rfc5322>
- RFC5890, "Internationalized Domain Names for Applications (IDNA): Definitions and Document Framework", <https://tools.ietf.org/html/rfc5890>
- RFC7230, "Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing", <https://tools.ietf.org/html/rfc7230>
- XML-Schema, "XML Schema Part 2: Datatypes Second Edition", <http://www.w3.org/TR/xmlschema-2/>

1.2.3 Repositories

- IANA-Repository, "Extensible Provisioning Protocol (EPP) Repository Identifiers", <https://www.iana.org/assignments/epp-repository-ids/epp-repository-ids.xhtml>,

1.2.4

1.2.5 Internal

- Registry System Testing, Master Test Plan

- Registry System Testing, Documentation Test Area Specification
- Design and principles for SRS Gateway Testing

1.3 Earlier documents

This document replaces, in contents, the following documents that were part of PDT (Pre-Delegation Testing):

- Pre-Delegation Testing: Whois Test Plan (version D)
- Pre-Delegation Testing: Whois CLI Test Cases (version I)
- Pre-Delegation Testing: Whois Web Test Cases (version H)
- Pre-Delegation Testing: Whois Search Test Cases (version G)
- SRS Gateway Testing: Test Sequence Three Test Cases: validation of consistency in Whois (version A)

1.4 Level in the overall sequence

This Test Area and the associated Test Cases can be run in parallel with the other Test Areas.

1.5 Test classes and overall test conditions

The Searchable Whois service of the gTLD is available over IPv4/IPv6 via a web interface. Both reachability and response format will be tested with positive test cases. Valid test data is provided by the Registry Operator. In case of an IDN-TLD, the ASCII-compatible form (A-Label) must be used.

2. Test Requirements

2.1 Approach

2.1 Approach

The Whois Search test cases are **only run if Exhibit A of the Registry Agreement states that the TLD has support for Searchable Whois.**

2.2 Item pass/fail criteria

The test will pass if an expected response was received from the Searchable Whois service. It will however fail if it is not following the requirements.

2.3 Suspension criteria and resumption requirements

The only suspension criteria for the test would be if there were external network problems outside the control of the Registry Operator or the RST tester.

2.4 Test deliverables

The Searchable Whois test level will produce:

- Level Test Logs (LTL)
- Anomaly Report (AR) in case of error
- Level Test Report (LTR)

3. Test Traceability Matrix

This table describes the different test cases and their mapping to the requirements.

Test ID	Description
WhoisSearch00	Verify support for Searchable Whois. Verify information on how to use Searchable Whois.
WhoisSearch01	Visit the web-based Whois over IPv4. Verify abuse protection.
WhoisSearch02	Visit the web-based Whois over IPv4. Perform partial match queries. Verify that the response contains the expected result.
WhoisSearch03	Visit the web-based Whois over IPv4. Perform exact-match queries. Verify that the response contains the expected result.
WhoisSearch04	Visit the web-based Whois over IPv4. Perform boolean queries. Verify that the response contains the expected result.
WhoisSearch09	Visit the web-based Whois over IPv6. Perform a search query. Verify that a response to the search is received.

4. Test management

The goal of these documents is to describe the test cases and how the new gTLDs are tested. This is just a part of a larger project and defining test management is not part of this subproject. However, some information can be found in the Master Test Plan.

5. Test Case WhoisSearch00: Verify if Whois Search is Supported

5.1 Test case identifier

WhoisSearch00

5.2 Objective

The objective is to verify if the Registry Operator is contractually obligated to support searchable Whois service. If the RO will support searchable Whois, instructions must be provided on how to use the searchable Whois service.

5.3 Inputs

The following information will be needed as input for this test case:

Id	Description	Type
RegAgree	The Registry Agreement for the specific gTLD	Document
SearchWhoisDoc	URL to a manual for searchable whois for the specific gTLD	String

5.4 Outcome(s)

- If searchable Whois is required by the Registry Agreement for the specific gTLD then remainder of the test cases must be performed, and the Registry Operator must provide instructions on how to use searchable Whois service.
- If the Registry Agreement does not require support for searchable Whois no further tests will be performed.

5.5 Environmental needs

- Web browser

5.6 Special procedural requirements

Lookup time must not exceed 10 seconds.

5.7 Ordered description of steps to be taken to execute the test case

1. Identify support for searchable Whois within the Registry Agreement. Expected location is Exhibit A. Determine if support for searchable Whois is required by contract.
If not, the test will end and the result of this test case and the following test cases are N/A.
2. If it exists continue:
 - a. Browse to the web page where information on how to use searchable Whois is located.
 - b. Information must be presented in English.
 - c. Make a note on any visible information regarding how to use searchable Whois.
 - d. If the solution for searching is self-explanatory then no separate information is needed.

Criteria for N/A:

- Searchable Whois is not required by Exhibit A.



Criteria for PASS:

- Searchable Whois is required by Exhibit A, and
- enough information on how to use searchable Whois is available, and
- the information is in English, and
- the information is comprehensible and complete.

Criteria for FAIL:

- Searchable Whois is required by Exhibit A but is not available, or
- no information on how to use searchable Whois is available, or
- the information is not in English, or
- the information is incomplete or not comprehensible.

6. Test Case WhoisSearch01: Verify Abuse Protection

6.1 Test case identifier

WhoisSearch01

6.2 Objective

The objective is to verify the abuse protection.

6.3 Inputs

The following information will be needed as input for this test case:

Id	Description	Type
TLD	The ASCII compatible name of the TLD	String
WhoisCredentials	Optional credentials. E.g. username and password for accessing the Whois service	String
DnsGlueRecord	IPv4 or IPv6 addresses for auth NS	String

6.4 Outcome(s)

Abuse protection **MUST** exist for the Whois service.

6.5 Environmental needs

- Web browser
- IPv4 connectivity
- <WhoisIPv4> from resolving <whois.nic.TLD> using the delegation data.

6.6 Special procedural requirements

Whois query response time must not exceed 10 seconds.

6.7 Intercase dependencies

This test has no intercase dependencies.

6.8 Ordered description of steps to be taken to execute the test case

1. Resolve IP addresses of the host whois.nic.<TLD> using <DnsGlueRecord>. This result will also be used for subsequent tests.
2. Make sure that whois.nic.<TLD> resolves to <WhoisIPv4>.
3. Browse to http://whois.nic.<TLD>
4. Make a note on any visible abuse protection.
5. Access the service with <WhoisCredentials>, if required.

Criteria for N/A:

- Searchable Whois is not required by Exhibit A.

Criteria for PASS:

- Abuse protection is used.

Criteria for FAIL:

- No abuse protection can be detected.

7. Test Case WhoisSearch02: Partial Match Capabilities

7.1 Test case identifier

WhoisSearch02

7.2 Objective

Manual search queries will be performed on the Whois IPv4 website. The objective is to verify the partial match capabilities.

7.3 Inputs

- Information on webpage in English on how to use the Searchable Whois.
- The following information will be needed as input for this test case:

Id	Description	Type
TLD	The ASCII compatible name of the TLD	String
WhoisCredentials	Optional credentials. E.g. username and password for accessing the Whois service	String
WhoisTestDomain	An existing domain which has Whois data	String

7.4 Outcome(s)

The Whois service MUST offer partial match capabilities.

7.5 Environmental needs

- Web browser
- IPv4 connectivity
- <WhoisIPv4> from resolving <whois.nic.TLD> using the delegation data.

7.6 Special procedural requirements

Whois query response time must not exceed 10 seconds.

7.7 Intercase dependencies

This test has no intercase dependencies.

7.8 Ordered description of steps to be taken to execute the test case

1. Make sure that whois.nic.<TLD> resolves to <WhoisIPv4>.
2. Browse to http://whois.nic.<TLD>
3. Access the service with <WhoisCredentials>, if required.
4. For the following tests, use data from previous domain query. If the data field or fields have been redacted based on **Temp-Spec-for-gTLD-data**, the test is skipped.
 - a. Perform a partial match search based on domain name.
 - b. Perform a partial match search based on contact name unless redacted.
 - c. Perform a partial match search based on registrant name unless redacted.

- d. Perform a partial match search based on contact postal address (e.g. street, city, state, or province) unless redacted.
 - e. Perform a partial match search based on registrant postal address (e.g. street, city, state, or province) unless redacted.
5. The search results **MUST** include the domain name(s) matching the search criteria.

Criteria for N/A:

- Searchable Whois is not required by Exhibit A.

Criteria for PASS:

- A partial match search based on domain name was successfully completed, and
- a partial match search based on contact name was successfully completed or skipped, and
- a partial match search based on registrant name was successfully completed or skipped, and
- a partial match search based on contact postal address was successfully completed or skipped, and
- a partial match search based on registrant postal address was successfully completed or skipped, and
- all search results included the domain name(s) matching the search criteria.

Criteria for FAIL:

- Any search query failed to complete, or
- Any search result failed to include the domain name(s) matching the search criteria.

8. Test Case WhoisSearch03: Exact Match Search

8.1 Test case identifier

WhoisSearch03

8.2 Objective

Manual search queries will be performed on the Whois IPv4 website. The objective is to verify the exact-match capabilities.

8.3 Inputs

- Information on webpage in English on how to use the Searchable Whois.
- The following information will be needed as input for this test case:

Id	Description	Type
TLD	The ASCII compatible name of the TLD	String
WhoisCredentials	Optional credentials. E.g. username and password for accessing the Whois service	String
WhoisTestDomain	An existing domain which has Whois data	String

8.4 Outcome(s)

The Whois service MUST offer exact-match capabilities.

8.5 Environmental needs

- Web browser
- IPv4 connectivity
- <WhoisIPv4> from resolving <whois.nic.TLD> using the delegation data.

8.6 Special procedural requirements

Whois query response time must not exceed 10 seconds.

8.7 Intercase dependencies

This test has no intercase dependencies.

8.8 Ordered description of steps to be taken to execute the test case

1. Make sure that whois.nic.<TLD> resolves to <WhoisIPv4>.
2. Browse to http://whois.nic.<TLD>
3. Access the service with <WhoisCredentials>, if required.
4. Perform an exact-match search based on registrar id. Use data from a previous domain query.
5. Perform an exact-match search based on name server name. Use data from a previous domain query.
6. The search results MUST include the domain name(s) matching the search criteria.

Criteria for N/A:

- Searchable Whois is not required by Exhibit A.

Criteria for PASS:

- An exact match search based on registrar id was successfully completed, and
- an exact match search based on name server name was successfully completed, and
- all search results included the domain name(s) matching the search criteria.

Criteria for FAIL:

- Any search query failed to complete, or
- Any search result failed to include the domain name(s) matching the search criteria.

9. Test Case WhoisSearch04: Boolean Search Capabilities

9.1 Test case identifier

WhoisSearch04

9.2 Objective

Manual search queries will be performed on the Whois IPv4 website. The objective is to verify the Boolean search capabilities.

9.3 Inputs

- Information on webpage in English on how to use the Searchable Whois.
- The following information will be needed as input for this test case:

Id	Description	Type
TLD	The ASCII compatible name of the TLD	String
WhoisCredentials	Optional credentials. E.g. username and password for accessing the Whois service	String
WhoisTestDomain	An existing domain name which has Whois data	String

9.4 Outcome(s)

The Whois service MUST offer Boolean search capabilities.

9.5 Environmental needs

- Web browser
- IPv4 connectivity
- <WhoisIPv4> from resolving <whois.nic.TLD> using the delegation data.

9.6 Special procedural requirements

Whois query response time must not exceed 10 seconds.

9.7 Intercase dependencies

This test has no intercase dependencies.

9.8 Ordered description of steps to be taken to execute the test case

1. Make sure that whois.nic.<TLD> resolves to <WhoisIPv4>.
2. Browse to http://whois.nic.<TLD>
3. Access the service with <WhoisCredentials>, if required.
4. Perform a Boolean search using AND based on data from a previous domain query.
5. Perform a Boolean search using OR based on data from a previous domain query.
6. Perform a Boolean search using NOT based on data from a previous domain query.
7. The search results MUST include the domain name(s) matching the search criteria.

Criteria for N/A:

- Searchable Whois is not required by Exhibit A.

Criteria for PASS:

- A Boolean search using AND was successfully completed, and
- a Boolean search using OR was successfully completed, and
- a Boolean search using NOT was successfully completed, and
- all search results included the domain name(s) matching the search criteria.

Criteria for FAIL:

- Any search query failed to complete, or
- Any search result failed to include the domain name(s) matching the search criteria.

10. Test Case WhoisSearch09: Search over IPv6

10.1 Test Case Identifier

WhoisSearch09

10.2 Objective

A manual search query will be performed on the Whois IPv6 website. The objective is to verify that the search is reachable and responds over IPv6.

10.3 Inputs

- Information on webpage in English on how to use the Searchable Whois.
- The following information will be needed as input for this test case:

Id	Description	Type
TLD	The ASCII compatible name of the TLD	String
WhoisCredentials	Optional credentials. E.g. username and password for accessing the Whois service	String
WhoisTestDomain	An existing domain name which has Whois data	String

10.4 Outcome(s)

The Whois service **MUST** be reachable over IPv6 and it **MUST** return a valid response.

10.5 Environmental needs

- Web browser
- IPv6 connectivity
- <WhoisIPv6> from resolving <whois.nic.TLD> using the delegation data.

10.6 Special procedure requirements

Whois query response time must not exceed 10 seconds.

10.7 Intercase dependencies

This test has no intercase dependencies.

10.8 Ordered description of steps to be taken to execute the test case

1. Make sure that whois.nic.<TLD> resolves to <WhoisIPv6>.
2. Browse to http://whois.nic.<TLD>
3. Access the service with <WhoisCredentials>, if required.
4. Verify that all communication is done over IPv6 and that no intermediate step is done over IPv4.
5. Perform a search. Use the data from a previous domain query.
6. The search result **MUST** be successful.

Criteria for N/A:

- Searchable Whois is not required by Exhibit A.

Criteria for PASS:

- All communication is done over IPv6, and
- The search was successfully completed.

Criteria for FAIL:

- Some communication is done over IPv4, or
- The search did not successfully complete, or
- The search result did not include the domain name matching the search criteria.