Frequently Asked Questions (FAQ)

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Note: Registry System Testing (RST) is an umbrella term used to describe both Pre-Delegation Testing (PDT) and post delegation testing for TLDs undergoing backend operator changes.

Registry System Testing (RST)

What is the process for RST?

Once the TLD is eligible for RST, the RO's (Registry Operator's) primary contact will be notified via the Customer Portal. The key steps of the process are as follows:

- A test appointment will be established between the RO and ICANN via the ICANN Customer Portal.
- The RO's Technical Testing Contact will be notified to begin data entry into the RST System. Data input must be completed by 11.59 UTC on the Friday prior to the test start.
- Testing will be conducted by the RST Service Provider in the RST System.
- Test results will be communicated to the RO via the ICANN Customer Portal.

For new Registry Operators, it is recommended that RST, specifically Pre-Delegation Test (PDT), be completed within 120 days after the Registry Agreement is executed.

What is the timeline for the RST process?

Below are the definitions of the key dates of the RST process:

Earliest Available Date: This is the earliest that you, the Registry Operator (RO), will be prepared to provide the necessary data and systems access to be tested by the RST Service Provider.

Scheduled Start Date: On this date, the RST Service Provider will begin testing. The RO and their Technical Testing Contact will receive a notification from the customer portal confirming this date. The scheduled date is based on:

1. Your earliest available date

2. Your priority number (only applies to applicants from the 2012 New gTLD round)

3. RST capacity

RST Credentials Set up and Begin Data Entry: Approximately five days before the scheduled start date, the RST Service Provider will contact the Technical Testing Contact and provide them with instructions and credentials to access the RST system. Once credentials have been established, the data entry may begin.

Data Entry Deadline: On the Friday before the scheduled test start date at 11.59 UTC, all required RST input data must be uploaded and submitted in the RST system.

RST Start Date: On this date, the RST Service Provider will begin testing. This is the date that was confirmed to you by the New gTLD Operations Team. The scheduled start date will always be a Monday.

Testing Duration: Once RST starts on its scheduled date, it typically takes two (2) weeks to complete testing. Should issues remain preventing a "pass", the appointment will usually be extended to a third (3rd) week to attempt to remedy the outstanding issues.

Results Report Distribution: RST results reports are compiled and reviewed for quality prior to release to the RO. An RO can expect to receive their RST Results Report approximately one week after their appointment has ended.

How long does RST take?

The testing for RST is expected to take two (2) weeks, which assumes no follow up questions are required. The testing period can usually be extended an additional week to allow the Registry Operator (RO) and RST Service Provider to resolve any items preventing completion. Once testing is completed, a test result report will be provided by ICANN to the RO's primary contact within one (1) week. Thus, from the appointment start date to receiving the results RST should take between three to four (3–4) weeks.

Can someone other than the Registry Operator's primary contact participate in RST?

The Registry Operator's primary contact may delegate their responsibilities for RST to someone of their choosing; we call this delegate the Technical Testing Contact. When the Registry Operator is contacted to schedule a RST appointment via the Customer Portal, there will be a form to complete to declare the Technical Testing Contact. The Technical Testing Contact will be notified by the RST Service Provider prior to the test appointment to initiate the data entry step in the process. All test results will be provided by ICANN to the RO's primary contact via the Customer Portal.

Who should be the Technical Testing Contact for my TLD?

The Technical Testing Contact should be someone knowledgeable in the technical infrastructure and the registry services of the prospective registry. If the registry services function is being outsourced, it is recommended to use someone at this firm to act as the Technical Testing Contact. We do allow a single Technical Testing Contact to represent multiple TLDs, including TLDs from different Registry Operators.

What RST Types are there?

Standard PDT: Pre-Delegation Testing ensures that a Registry Operator (RO) has the capacity to operate a new generic Top-Level Domain in a stable, secure manner. Every new Registry must demonstrate that it has established operations in accordance with the technical and operational criteria described in the Applicant Guidebook (Module 5: Transition to Delegation). Only after passing PDT can a Registry's gTLD be introduced into the root zone of the Internet.

Standard RSP Change Testing: Identical to PDT criteria and will include any additions over time required to meet policy and implementation requirements.

SRS Gateway RSP Change Testing: Test that a solution with a SRS Gateway meet the requirement of Whois and EPP services.

IDN (Table) RST Review: Review of a TLD that has changed IDN specification in the Registry Agreement.

Does each TLD need to undergo testing? If so, why can testing not be conducted once per registry service provider?

Pre-delegation testing is conducted per gTLD in order to ensure that the related registry systems are ready for the specific gTLD. For example, the test ensures that the DNS, Whois, and EPP servers correctly respond to queries specific to each gTLD. Such testing must be conducted on a per TLD basis.

Who do I contact with questions about Registry System Testing?

Please contact the ICANN New gTLD Global Support Center, using the Customer Portal or at globalsupport@icann.org.

To log into the RST System the first time, follow the link in the email sent by the RST Service Provider to create a password. The newly created password must be authenticated with the Technical Testing Contact's email address and the TLD (A-label). The TLD can be found on ICANN's website and in the email from ICANN announcing the time slot assignment for the Registry System Testing.

After creating the password, log into the RST System using the email address and password. A password should consist of at least 8 characters from at least three out of four character classes: uppercase, lowercase, digits and special characters. "Special characters" are any characters except A-Z, a-z and 0-9.

For more information of the RST System please see the "RST System user guide".

What can I do if I have problem logging into the RST System?

The RST Service Provider can be reached by email at rst@iis.se

I have not received a new link to create a password for a new TLD. Do I need a new link?

The same RST System account will be used for all TLDs for the designated Technical Testing Contact.

I have forgotten my password. Can I reset my password?

A new password can be requested by using the password reset function found on RST System login screen. If the problem persists, please contact the RST Service Provider at rst@iis.se

How can I change my password in RST System?

A new password can be requested on the start page of the RST System by using the Password Reset function (https://rst.iis.se/user/reset). A password reset email will be sent to the registered Technical Testing Contact's email address.

What are the requirements for choosing a password for RST System?

A password should consist of at least eight (8) characters from at least three out of four character classes: uppercase, lowercase, digits and special characters. "Special characters" are any characters except A-Z, a-z and 0-9.

How do I change my username in RST System?

The username cannot be changed.

How can I contact the RST Service Provider?

The RST Service Provider should only be contacted while the TLD is in RST testing. All other RST related inquiries should be sent to ICANN's New gTLD customer service. In order to contact the RST Service Provider, a messaging system is available in the RST System. An email will notify the Technical Testing Contact when there is a new message in the system to read.

Where can I find a glossary of gTLD terminology?

The ICANN New gTLD Glossary can be found on this link:
http://newgtlds.icann.org/en/applicants/glossary

Can I add documents to my submitted TLD test appointment?

No. Once the TLD has been completed **and submitted** for testing by the Technical Testing Contact (status: SUBMITTED in the RST System) it is no longer possible to add files or change the already submitted files. Should additions be necessary, please contact the RST Service Provider through the messaging tool in the RST System.

Can I resubmit my files?

When you submit the data, the system will show this message: "*Your data file(s) have been locked and submitted to the RST Service Provider. It is not possible to edit, delete or replace a submitted data file.*" If you need to replace a file you need to contact the RST Service Provider and explain why. This must be done prior to the start of

testing.

How can I verify what input data is uploaded?

The Technical Testing Contact can see all uploaded documentation by logging into the RST System. Under the tab "*Applications*" there is a page containing all TLDs for RST testing divided in two tables. "*Ongoing Applications*" contains active RST testing and "Archived Applications" contains earlier RST testing that have been processed and closed. For each "*Ongoing Application*" there is a "View" link that opens a new page with all the data and documentation uploaded by the Registry Operator for this specific gTLD. Please note this can only be done before the data has been submitted.

How do I contact the RST Service Provider?

In order to facilitate secure case management, always use the built in Message function inside the RST System when contacting the RST Service Provider. The Message function has the following features:

- Each RST testing has its own message dialogue with the RST Service Provider.
- For multiple TLDs that undergo RST testing, there are message correspondence fields for each TLD.
- The Message function is located at the bottom of each TLD page (found under the "Applications" tab). If more than one TLD is submitted for RST testing, please use the Message function on the corresponding page for that TLD when contacting the RST Service Provider.

Where can I see uploaded files?

All uploaded files can be found by logging into your account in the RST System, using the credentials received from the RST Service Provider. The uploaded files are available for viewing immediately after uploading from the same screen, use the link "view" or "download".

What files should be uploaded?

What files that should be uploaded depends on what RST Type is to undergo testing. Exactly which files that are needed will be shown in the RST System for each TLD to undergo RST testing.

Why is the system locked and what can I do about it?

If the files are locked, it could be due to the fact that you have submitted data. If so, you cannot change or upload additional data. Alternatively, the session (input time) may have expired. If you encounter such problems, please contact the RST Service Provider.

Various questions require submission of multiple files, yet the interface only provides a single file upload control. Should we pack the files in a container such as a zip archive?

You can upload multiple files for the tests that require it, by using the upload control multiple times. Do not use any form of container file unless explicitly permitted for a test area. Such files will be rejected and may prevent testing from proceeding according to schedule. See "RST Input Data Instructions" found from https://www.icann.org/resources/registry-system-testing for a detailed description of type and name of the files to be submitted.

How will I know when the deadline for input data is?

The deadline will be made clear when the appointment is confirmed by ICANN, and will also be visible in the RST System.

RST tests are scheduled to start on Mondays. The deadline to input data will always be 11.59 UTC the Friday before the scheduled RST test start. Specific dates and deadlines will be provided by ICANN once the appointment is confirmed.

General questions

Will I be contacted if any data is missing?

Yes. The RST Service Provider will contact you if they need additional data. All communication between the Registry Operator and the RST Service Provider is handled within the RST System.

Can I email files if I can't upload them in the system?

If you experience problems uploading files, please contact the RST Service Provider and they will assist you in solving the issue.

What happens after I have submitted my data?

Your submitted data will go into the Registry System Testing process where the TLD will be reviewed and tested in every test area included in the specific RST Type. If the TLD test appointment needs further clarification, the RST Service Provider will contact you via the Message function. Once the testing process has been completed, a report will be sent to ICANN. ICANN will provide the TLD's primary contact the result report of the completed RST.

What happens if I do not submit my information on time?

The test will be considered 'Not Pass' and the Registry Operator will be contacted by ICANN to reschedule their RST appointment. Should it be apparent that a Registry Operator will not be able to complete data entry prior to their scheduled test appointment, please contact ICANN New gTLD Global Support Center, using the Customer Portal or at globalsupport@icann.org.

Can I have a status update on the progress of the testing? Will I be notified as to which test has been completed?

Status updates are not provided while testing is in progress. When testing has been completed, the RST Service Provider will send a result report to ICANN who will notify you of the outcome of the tests.

Preparing for RST

Where can I find instructions for the test preparation?

Read the document "RST Input Data Instructions" found from https://www.icann.org/resources/registry-system-testing. You will also find the test nodes that the RST will be conducted from.

What does "optional" mean within the test appointment?

Optional means that it is not mandatory to submit an answer for that question. Rather, it is up to you to submit this information for clarification or additional information.

Are there any test tools that I can use to verify my data before submitting?

Yes, the following tools are available to assist you:

IDN testing
- You can do basic validation of the text IDN tables before submission (RFC 4290 or RFC 3743). The tool will output a list of the code points in the IDN table and some relevant commentary on the IDN table. Please note that passing the tool does not mean that the IDN tables will pass RST. It means that the IDN tables seem to have acceptable format, and that there are no code-points in the IDN tables that are prohibited in IDNA 2008.
  - https://github.com/dotse/idn-properties

- You can do basic validation of the LGR/XML IDN tables before submission (RFC 7940). ICANN provides a web based tool to inspect LGR IDN tables.
  - https://www.icann.org/resources/pages/lgr-toolset-2015-06-21-en

- ICANN publishes a set of of language based reference IDN tables that you are welcome to use for your TLD. The tables are in XML format, but the contents can be applied to text IDN tables too. Code points can be removed from the reference IDN tables but the RST Service Provider will ask for justification for any additional code points. The IDN tables also include all necessary contextual rules and variant rules.
  - https://www.icann.org/resources/pages/second-level-lgr-2015-06-21-en

XML validator
- You can validate your XML document by using XMLLINT before submission.
  - http://xmlsoft.org/xmllint.html

DNS
- Zonemaster may be useful to check delegation and name server configuration prior to RST. An online tool is available at
  - https://zonemaster.net/
- The RST DNS tests are largely based on the Zonemaster tool set. It can be downloaded to be integrated in custom made tools. See Github for more information about the tool set.
  - https://github.com/dotse/zonemaster

Whois
- The Whois Selftest Tool can be used for compliance testing. It has been created to prepare for the Whois CLI Test Cases, Whois over TCP port 43. The Whois Selftest Tool can be found at Github.
  - https://github.com/dotse/Whois-Selftest-Tool

EPP
- The EPP Selftest Tool can be used for compliance testing. It has been created to match the RST tests for EPP.
  - https://github.com/dotse/EPP-Selftest-Tool

How will testing be performed in regards to load testing?

The tests will not contain any form of load testing. Load testing is completed by the Registry Operator as part of the self-certification documents. ICANN reserves the right to perform load testing as part of an on-site audit of the TLD. However, this is an option of last resort for ICANN, and any load testing will be pre-coordinated with the Registry Operator.

DNS tests

For Registry System Testing to be successful, please check the following:
- The TLD is configured on the name servers specified.
- All name servers for a TLD are resolvable by the time of testing; either via the tested domain or via the public Internet.
- Provide all name servers and necessary glue for in-bailiwick name servers.

External testing tools are available (e.g. select "Pre-delegated domain check" at https://zonemaster.net/) to ensure that the TLD delegation works as expected before submitting your data.

What are Distributed DNS tests?

The basic DNS tests are conducted from five test nodes, one in each of the ICANN regions. The Distributed DNS tests are conducted from a large number of nodes by utilizing parts of ICANN's global infrastructure. RST will thus test a larger portion of the TLD's anycast network(s) than with the five nodes only.

How do I prepare for a distributed DNS test?

The Registry Operator does not have to do anything to prepare for a distributed DNS test. Simply confirm that the DNS infrastructure is functional and reachable from the public Internet and correct data is submitted.

How many test nodes are used in Distributed DNS tests?

The RST Service Provider utilizes at least 20 test nodes, but potentially up to 100 or more in ICANN's global infrastructure.

Whois Server Setup

As described in the NEW gTLD AGREEMENT SPECIFICATION (Specification 4), the Whois server MUST be named *whois.nic.TLD*. For RST to be successful, please check the following:

- The zone nic.TLD is delegated from the TLD, i.e. whois.nic.TLD MUST NOT be an address record within the TLD zone itself.
- All name servers for nic.TLD are resolvable by the time of testing; either via the tested domain or via the public Internet.
- whois.nic.TLD has address records for both IPv4 and IPv6.
- whois.nic.TLD is reachable via both IPv4 and IPv6.
- whois.nic.TLD responds to both port 43 and port 80.

Do we have to support Searchable Whois?

If the Registry Agreement (Exhibit A) states that Searchable Whois will be supported, then the RST Service Provider will test this function. If Searchable Whois is listed in the Registry Agreement but is missing or does not function correctly, the test will result in a FAIL.

What are A-label and U-label, and how should they be presented in Whois?

The A-label is the ASCII form of an IDN label while the U-label is the Unicode form. All operations defined in the DNS use A-labels exclusively, but a user typically expects to see the U-label displayed in applications such as web browsers.

When did the RST Whois testing change?

RST Whois testing changed 2016-11-01 according to the updated RST Whois Test Cases. From that date until 2017-07-31 there was a transition period, during which deviations from new, stricter test requirements were permitted. As of 2017-08-01 the test requirements are fully applied, which means that any deviation will result in a FAIL.

What are the requirements of Whois?

See the following documents on the Whois output format:

- "Advisory: Clarifications to the Registry Agreement, and the 2013 Registrar Accreditation Agreement (RAA) regarding applicable Registration Data Directory Service (Whois) Specifications"
  - https://www.icann.org/resources/pages/registry-agreement-raa-rdds-2015-04-27-en
- "Additional Whois Information Policy"
  - https://www.icann.org/resources/pages/policy-awip-2014-07-02-en
- "gTLD Registry Advisory: Correction of non-compliant ROIDs"
  - https://www.icann.org/resources/pages/correction-non-compliant-roids-2015-08-26-en
- "Registry Registration Data Directory Services Consistent Labeling and Display Policy"
  - https://www.icann.org/rdds-labeling-display
- "Temporary Specification for gTLD Registration Data"
  - https://www.icann.org/resources/pages/gtld-registration-data-specs-en

What are the main changes in 2018-05-25 Temp Spec to the RST Whois testing?

Field submission rules have been relaxed, delimiting the inputs to include acceptance of redacted data.

Where can I find the details of the Temporary Specification?

The Temporary Specification is available at the ICANN ORG page,
https://www.icann.org/resources/pages/gtld-registration-data-specs-en

What are the main changes in 2016-11-01 to the RST Whois testing?

New field names in some cases, some new fields and stricter data requirements on IDs.

Where can I find the details of the new RST Whois testing specification?

The updated RST Whois Test Case specifications are available at the ICANN RST Microsite,
https://www.icann.org/resources/registry-system-testing

What "ROID Suffixes" are verified against the listed EPP Repository Identifier?

The "ROID Suffix" of the ROID in the "Domain ID" field is the only suffix verified against the EPP Repository Identifier listed in the pdtwhois.xml.

Must every "ROID Suffix" of all ROIDs in the Whois output be a registered EPP Repository Identifier?

Yes, for every ROID it is verified that the "suffix" matches an *EPP Repository Identifier* registered at IANA.

- https://www.iana.org/assignments/epp-repository-ids/epp-repository-ids.xhtml

How do we register our EPP Repository Identifier?

EPP Repository ID registration requests should be sent to iana@iana.org. For examples of current registrations, please see the registry and the "People" directory at https://www.iana.org/assignments/epp-repository-ids. Please submit registration requests using the format "FOO, #x0046 #x004F #x004F" or "foo, #x0066 #x006F #x006F." In addition, please include an ID string, name, and email address for the registration's Change Controller and Reference/Contact.

Our Whois response over TCP port 43 is encoded in UTF-8 or ASCII. What should we specify in the pdtwhois.xml file?

If the responses over TCP port 43 are encoded in UTF-8 or ASCII then you set the value "UTF-8". If the responses are encoded in any other character encoding, then you have to set the correct value from the available codes. See the "RST Input Data Instructions" document found on the ICANN RST Microsite, https://www.icann.org/resources/registry-system-testing

Do we have to specify the encoding for RST Whois Web Whois Test Cases?

No, the encoding is implicit from the web server response.

Do we have to make our Web Whois available behind HTTPS?

It is not a requirement, but if it is not available, then a warning will be issued.

What IDN tables should I provide?

The Registry Operator should provide the set of IDN tables that correspond to the IDN tables identified in the Exhibit A of the Registry Agreement. In most cases, these are the IDN tables that passed initial evaluation (IE) as part of the TLD's application. Please note, all IDN tables must be provided in LGR/XML format (RFC 7940) or in machine-parsable TXT format as specified in RFC 4290 or RFC 3743. IDN tables in other formats (e.g. PDF) will be rejected and Registry System Testing fail.

Where can I find reference IDN tables?

ICANN and the community have developed a set of LGR formatted IDN tables in a number of languages that registries are welcome to use. The IDN tables are available at https://www.icann.org/resources/pages/second-level-lgr-2015-06-21-en.

I have a suggestion of an addition of a code point to an IDN Reference Table. How do I submit my suggestion?

See https://www.icann.org/resources/pages/second-level-lgr-2015-06-21-en for how to submit your suggestion.

How do I justify the inclusion of an additional code point to a language based IDN Reference Table?

The following are non-exhaustive examples of justification for a code point inclusion in a language IDN table:

- A generally recognized authority for the language in question accepts the character associated with the code point.
- Published dictionaries list the character associated with the code point as belonging to the written tradition of the language in question.
- The character associated with the code point is commonly used by publishing industry (books or newspapers) for words in that language.
- Education material (e.g. "abc" books or equivalent) uses the character associated with the code point.
- Submit your suggestion together with collected material to IDNProgram@icann.org.

I found an IDN table on the IANA website for language LANG. Can I assume that it is pre-approved for RST?

No. Those IDN tables may not have been reviewed and approved for RST.

How do I best prepare my language IDN table for RST?

Consult language and Unicode specialists. Do not include code points beyond what is used for writing that language. There may also be a suitable reference IDN table at https://www.icann.org/resources/pages/second-level-lgr-2015-06-21-en.

What code points in an IDN table need special considerations?

- Code points with Unicode script property value COMMON or INHERITED.
- Code points with IDN property CONTEXTJ or CONTEXTO.
- Right-to-left code points.
- Code points with general Unicode category Modifier Letter or Mark.
- Mixing of code points from different explicit Unicode scripts.

Do I need to have any contextual rules for my IDN table?

If any of the code points require contextual rules you must include them. Consult the IDNA 2008 standards, the Unicode Standard (http://www.unicode.org/), https://www.icann.org/resources/pages/second-level-lgr-2015-06-21-en and Test Case IDNvalid03 found in the "IDN Test Area Specification", found in the RST Test Specification ZIP file linked from https://www.icann.org/resources/registry-system-testing/#resources.

Do I need to have any variant rules for my IDN table?

It really depends on what language the IDN table is meant for and what Unicode script it is based on. The recommended approach is to follow the standard for the language or languages in question and to reuse the relevant ICANN Second-Level Reference table[1] which besides code point repertoire and contextual rules also contains appropriate variant rules.

Our Registry system supports IDN and DNSSEC but clients are not required to use those extensions. Should we consider them as mandatory or optional?

If those extensions are not mandatory for your clients, do not include them as mandatory for the test.

In what formats should we submit the self-certification document?

Use the headers, including numbering and sub-headers, from the template file. The template file contains instructions and examples, and is available in the formats .docx, .pdf and .rtf. The self-certification should be submitted as a PDF/A file.

Can we use references to the original application or other documents in the self-certification document?

The requested information needs to be included in its entirety in the self-certification document. Reference to the original application is optional unless specifically requested.

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[1] https://www.icann.org/resources/pages/second-level-lgr-2015-06-21-en

Can we submit the information needed for the document tests in one document?

No. A total of three documents must be submitted: the self-certification document, the DNSSEC Policy Statement and the Data Escrow Agreement.

What naming convention must the Data Escrow deposit files follow?

See "RST Input Data Instructions" found from https://www.icann.org/resources/registry-system-testing for a detailed description of the naming convention of the Data Escrow files.

When reporting load capacity of DNS queries in the self-certification document section 1.1.5, how many tables and graphs do we need to provide?

It is recommended that one table for IPv4 and one table for IPv6 containing UDP, TCP, UDP+DO and TCP+DO be provided as shown in the self-certification template example. The same is valid for the graphs as well. You can choose to separate the DNSSEC queries. We recommend that the IPv4 and IPv6 are not combined in the same tables or graphs.

How do you recommend testing production systems for the self-certification load tests?

The requirement to use production systems allows the use of production hardware and software that are not currently in the live query path. The requirement also allows the ability to extrapolate results of a subset of the total serving infrastructure across the entire system (e.g., one representative server).

Additionally, if a set of TLDs share the same infrastructure, the self-test does not need to be repeated multiple times; the results from one test can be submitted with each of the related TLD's RST self-certification documents.

EPP tests and re-tests

When an EPP test case is run, regardless of the outcome, the objects (domains, keys, etc.) supplied in the input file are affected and the test data must be considered to be consumed. In order for failed tests to be run again, the data must be reset or new test data must be supplied.